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1.27 throwback 4.1.0

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1.31 fs.realpath 1.0.0

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1.36 zlib 1.2.11

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1.37 rapidjson 1.1.0

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1.38 net-snmp 5.9

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1.39 ws 7.2.5

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1.40 utf-8-validate 5.0.2

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1.41 popsicle 12.0.4

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1.42 steno 0.4.4

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1.43 moment-timezone 0.5.28

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1.44 moment 2.24.0

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1.45 cron 1.8.2

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1.46 glob 7.1.6

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1.47 make-error 1.3.5

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1.48 node-gyp-build 3.7.0

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1.49 bufferutil 4.0.1

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1.50 mosquitto 1.6.12

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1.51 mkdirp 1.0.3

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1.52 concat-map 0.0.1

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1.53 uri-js 4.2.2

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URI.js

URI.js is an [RFC 3986](http://www.ietf.org/rfc/rfc3986.txt) compliant, scheme extendable URI parsing/validating/resolving library for all JavaScript environments (browsers, Node.js, etc).
It is also compliant with the IRI ([RFC 3987](http://www.ietf.org/rfc/rfc3987.txt)), IDNA ([RFC 5890](http://www.ietf.org/rfc/rfc5890.txt)), IPv6 Address ([RFC 5952](http://www.ietf.org/rfc/rfc5952.txt)), IPv6 Zone Identifier ([RFC 6874](http://www.ietf.org/rfc/rfc6874.txt)) specifications.

URI.js has an extensive test suite, and works in all (Node.js, web) environments. It weighs in at 6.2kb (gzipped,

16kb deflated).

API

Parsing

```
URI.parse("uri://user:pass@example.com:123/one/two.three?q1=a1&q2=a2#body");
//returns:
//{
//  scheme : "uri",
//  userinfo : "user:pass",
//  host : "example.com",
//  port : 123,
//  path : "/one/two.three",
//  query : "q1=a1&q2=a2",
//  fragment : "body"
//}
```

Serializing

```
URI.serialize({scheme
: "http", host : "example.com", fragment : "footer"}) === "http://example.com/#footer"
```

Resolving

```
URI.resolve("uri://a/b/c/d?q", "../../g") === "uri://a/g"
```

Normalizing

```
URI.normalize("HTTP://ABC.com:80/%7Esmith/home.html") === "http://abc.com/~smith/home.html"
```

Comparison

```
URI.equal("example://a/b/c/%7Bfoo%7D", "eXAMPLE://a/./b/../b/%63/%7bfoo%7d") === true
```

IP Support

```
//IPv4 normalization
URI.normalize("//192.068.001.000") === "//192.68.1.0"

//IPv6 normalization
URI.normalize("//[2001:0:0DB8::0:0001]") === "//[2001:0:db8::1]"

//IPv6 zone identifier support
URI.parse("//[2001:db8::7%25en1]");
//returns:
//{
//  host : "2001:db8::7%en1"
```

//}

IRI Support

//convert IRI to URI
URI.serialize(URI.parse("http://exampl.org/ros")) === "http://xn--exampl-gva.org/ros%C3%A9"
//convert URI to IRI
URI.serialize(URI.parse("http://xn--exampl-gva.org/ros%C3%A9"), {iri:true}) === "http://exampl.org/ros"

Options

All of
the above functions can accept an additional options argument that is an object that can contain one or more of the following properties:

* `scheme` (string)

Indicates the scheme that the URI should be treated as, overriding the URI's normal scheme parsing behavior.

* `reference` (string)

If set to `"suffix"`, it indicates that the URI is in the suffix format, and the validator will use the option's `scheme` property to determine the URI's scheme.

* `tolerant` (boolean, false)

If set to `true`, the parser will relax URI resolving rules.

* `absolutePath` (boolean, false)

If set to `true`, the serializer will not resolve a relative `path` component.

* `iri` (boolean, false)

If set to `true`, the serializer will unescape non-ASCII characters as per [RFC 3987](http://www.ietf.org/rfc/rfc3987.txt).

* `unicodeSupport` (boolean, false)

If set to `true`, the parser will unescape non-ASCII characters in the parsed output as per [RFC 3987](http://www.ietf.org/rfc/rfc3987.txt).

* `domainHost`
(boolean, false)

If set to `true`, the library will treat the `host` component as a domain name, and convert IDNs (International Domain Names) as per [RFC 5891](http://www.ietf.org/rfc/rfc5891.txt).

Scheme Extendable

URI.js supports inserting custom [scheme](http://en.wikipedia.org/wiki/URI_scheme) dependent processing rules. Currently, URI.js has built in support for the following schemes:

* http \[[RFC 2616](http://www.ietf.org/rfc/rfc2616.txt)\]
* https \[[RFC 2818](http://www.ietf.org/rfc/rfc2818.txt)\]
* mailto \[[RFC 6068](http://www.ietf.org/rfc/rfc6068.txt)\]
* urn \[[RFC 2141](http://www.ietf.org/rfc/rfc2141.txt)\]
* urn:uuid \[[RFC 4122](http://www.ietf.org/rfc/rfc4122.txt)\]

HTTP Support

```
URI.equal("HTTP://ABC.COM:80", "http://abc.com/") === true
```

Mailto Support

```
URI.parse("mailto:alpha@example.com,bravo@example.com?subject=SUBSCRIBE&body=Sign%20me%20up!");
//returns:
//{
// scheme : "mailto",
// to : ["alpha@example.com", "bravo@example.com"],
// subject
: "SUBSCRIBE",
// body : "Sign me up!"
//}

URI.serialize({
 scheme : "mailto",
 to : ["alpha@example.com"],
 subject : "REMOVE",
 body : "Please remove me",
 headers : {
  cc : "charlie@example.com"
 }
}) ===
"mailto:alpha@example.com?cc=charlie@example.com&subject=REMOVE&body=Please%20remove%20me"
```

URN Support

```
URI.parse("urn:example:foo");
//returns:
//{
// scheme : "urn",
// nid : "example",
// nss : "foo",
//}
```

URN UUID Support

```
URI.parse("urn:uuid:f81d4fae-7dec-11d0-a765-00a0c91e6bf6");
//returns:
//{
// scheme : "urn",
// nid : "example",
// uuid : "f81d4fae-7dec-11d0-a765-00a0c91e6bf6",
//}
```

Usage

To load in a browser, use the following tag:

```
<script type="text/javascript" src="uri-js/dist/es5/uri.all.min.js"></script>
```

To load in a CommonJS (Node.js) environment, first install with npm by running on the command line:

```
npm install uri-js
```

Then, in your code, load it using:

```
const URI = require("uri-js");
```

If you are
writing your code in ES6+ (ESNEXT) or TypeScript, you would load it using:

```
import * as URI from "uri-js";
```

Or you can load just what you need using named exports:

```
import { parse, serialize, resolve, resolveComponents, normalize, equal, removeDotSegments, pctEncChar,
pctDecChars, escapeComponent, unescapeComponent } from "uri-js";
```

Breaking changes

Breaking changes from 3.x

URN parsing has been completely changed to better align with the specification. Scheme is now always `urn`, but has two new properties: `nid` which contains the Namspace Identifier, and `nss` which contains the Namespace Specific String. The `nss` property will be removed by higher order scheme handlers, such as the UUID URN scheme handler.

The UUID of a URN can now be found in the `uuid` property.

Breaking changes from 2.x

URI validation has been removed as it was slow, exposed a vulnerabilty, and was generally not useful.

Breaking changes from 1.x

The `errors` array on parsed components is
now an `error` string.

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```
/*
* QUnit - A JavaScript Unit Testing Framework
*
* http://docs.jquery.com/QUnit
*
* Copyright (c) 2009 John Resig, Jörn Zaefferer
* Dual licensed under the MIT (MIT-LICENSE.txt)
* and GPL (GPL-LICENSE.txt) licenses.
*/
/**
```

* jsDump
* Copyright (c) 2008 Ariel Flesler - aflesler(at)gmail(dot)com | http://flesler.blogspot.com
* Licensed under BSD (http://www.opensource.org/licenses/bsd-license.php)
* Date: 5/15/2008
* @projectDescription Advanced and extensible data dumping for Javascript.
* @version 1.0.0
* @author Ariel Flesler
* @link {http://flesler.blogspot.com/2008/05/jsdump-pretty-dump-of-any-javascript.html}
*/

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* /opt/cola/permits/1110634955_1606918997.92/0/garycourt-uri-js-4-2-2-0-g4f6f600-1-tar-gz/garycourt-uri-js-4f6f600/src/uri.ts
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{"version":3,"sources":["../../src/util.ts","../../src/regexps-uri.ts","../../node_modules/punycode/punycode.es6.js","../../src/uri.ts","../../src/schemes/mailto.ts","../../src/regexps-iri.ts","../../src/schemes/http.ts","../../src/schemes/https.ts","../../src/schemes/urn.ts","../../src/schemes/urn-uuid.ts","../../src/index.ts"],"names":["merge","sets","Array","_len","_key","arguments","length","slice","xl","x","join","subexp","str","typeOf","o","undefined","Object","prototype","toString","call","split","pop","shift","toLowerCase","toUpperCase","toArray","obj","setInterval","assign","target","source","key","buildExps","isIRI","HEXDIG$$","PCT_ENCODED$","SUB_DELIMS$$","RESERVED$$","UCSCHAR$$","DEC_OCTET_RELAXED$","H16$","LS32$","IPV4ADDRESS$","IPV6ADDRESS1$","IPV6ADDRESS2$","IPV6ADDRESS3$","IPV6ADDRESS4$","IPV6ADDRESS5$","IPV6ADDRESS6$","IPV6ADDRESS7$","IPV6ADDRESS8$","IPV6ADDRESS9$","ZONEID$","UNRESERVED$$","RegExp","IPRIVATE$$","IPV6ADDRESS$","error","type","RangeError","errors","map","array","fn","result","mapDomain","string","parts","replace","regexSeparators","ucs2decode","output","counter","value","charCodeAt","extra","push","pctEncChar","chr","c","pctDecChars","newStr","i","il","parseInt","substr","String","fromCharCode","c2","c3","_normalizeComponentEncoding","components","protocol","decodeUnreserved","decStr","match","UNRESERVED","scheme","PCT_ENCODED","NOT_SCHEME","userinfo","NOT_USERINFO","host","NOT_HOST","path","NOT_PATH","NOT_PATH_NOSCHEME","query","NOT_QUERY","fragment","NOT_FRAGMENT","_stripLeadingZeros","_normalizeIPv4","matches","IPV4ADDRESS","address","_matches","_normalizeIPv6","IPV6ADDRESS","_matches2","zone","reverse","last","_address$toLowerCase$2","first","firstFields","lastFields","isLastFieldIPv4Address","test","fieldCount","lastFieldsStart","fields","allZeroFields","reduce","acc","field","index","lastLongest","longestZeroFields","sort","a","b","newHost","newFirst","newLast","parse","uriString","options","iri","IRI_PROTOCOL","URI_PROTOCOL","reference","URI_PARSE","NO_MATCH_IS_UNDEFINED","port","isNaN","indexOf","schemeHandler","SCHEMES","unicodeSupport","domainHost","punycode","toASCII","e","_recomposeAuthority","uriTokens","_","$1","$2","removeDotSegments","input","RDS1","RDS2","RDS3","im","RDS5","Error","s","serialize","toUnicode","authority","charAt","absolutePath","resolveComponents","base","relative","skipNormalization","tolerant","lastIndexOf","resolve","baseURI","relativeURI","schemelessOptions","normalize","uri","equal","uriA","uriB","escapeComponent","ESCAPE","unescapeComponent","maxInt","regexPunycode","regexNonASCII","floor","Math","stringFromCharCode","ucs2encode","fromCodePoint","apply","toConsumableArray","basicToDigit","codePoint","digitToBasic","digit","flag","adapt","delta","numPoints","firstTime","k","baseMinusTMin","decode","inputLength","n","bias","basic","j","oldi","w","t","baseMinusT","out","splice","encode","_step","Symbol","iterator","_iteratorNormalCompletion","_iterator","next","done","currentValue","basicLength","handledCPCount","m","_step2","_iteratorNormalCompletion2","_iterator2","handledCPCountPlusOne","_step3","_iteratorNormalCompletion3","_iterator3","q","qMinusT","handler","http","O","VCHAR$$","NOT_LOCAL_PART","NOT_HFNAME","NOT_HFVALUE","mailtoComponents","to","unknownHeaders","headers","hfields","hfield","toAddrs","subject","body","addr","toAddr","atIdx","localPart","domain","name","URN_PARSE","urnComponents","nid","nss","urnScheme","uriComponents","UUID","uuidComponents","uuid","https","mailto","urn"],"mappings":";4LAAA,SAAAA,gCAAyBC,EAAAzBC,MAAAAC,GAAAAC,EAAAA,EAAAAA,EAAAAD,EAAAAC,MAAAAA,GAAAAC,UAAAAD,MACKH,EAAAKK,OAAAS,EAAAG,GACf,GAAAKL,EAAAK,GAAAGM,MAAAM,GAAAI,OAAEvB,GADCC,GAAAKP,EAAAKK,OAAAS,EAChBG,EAAAI,EAAAGA,EAAAID,IAAAMC,IACpBA,GAAAKR,EAAAKQ,GAAAGF,MAAAM,GAAAI,YAExBC,GAAAMP,EAAAKO,GAAAID,MAAAM,GACnBN,EAAAKS,KAAAK,UAEVT,GAAAK,GAAId,QAAAAU,GAAAuBC,SACf,MAAAQA,EAAAAM,IAAGtB,QAAAAC,GAAAuBC,SACfA,KAAAMC,UAAAY,YAAAqB,OAAAND,EAAAAa,OAAASE,OAAAOC,UAAAUC,SAASC,KAAAKL,GAAAGM,MAAAM,KAAAKC,MAAAMD,MAAAM,KAAAKE,QAAAQC,cAGrI,QAAAAC,GAA4BZ,SACpBA,GAAAIY,cAAGZ,QAAAAC,GAAAwBC,SAChBA,KAAAQX,WAAAqB,OAAARW,EAAAAgBA,YAAAexB,OAAAQwB,EAAA6B,gBAAAfA,GAAAIpB,QAAAuBoB,EAAAAIN,OAAASM,EAAAAIC,aAAAeD,EAAAAIP,MAA

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,eAAsB,IAAMA,EAAO,eAA2B,IAAMA,EAAO,gBAAuB,gBAChJA,EAAO4B,EAAqB,MAAQA,EAAqB,MAAQ
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 function merge(...sets:Array<string>):string {\n\tif (sets.length > 1) {\n\t\tsets[0] = sets[0].slice(0, -1);\n\t\tconst xl = sets.length - 1;\n\t\tfor (let x = 1; x < xl; ++x) {\n\t\t\tsets[x] = sets[x].slice(1, -1);\n\t\t}\n\t\tsets[xl] = sets[xl].slice(1);\n\t\treturn sets.join('');\n\t} else {\n\t\treturn sets[0];\n\t}\n}\n\nexport function subexp(str:string):string {\n\treturn \"(?:\" + str + \")\";\n}\n\nexport function typeOf(o:any):string {\n\treturn o === undefined ? \"undefined\" : (o === null ? \"null\" : Object.prototype.toString.call(o).split(\" \").pop().split(\"]\").shift().toLowerCase());\n}\n\nexport function toUpperCase(str:string):string {\n\treturn str.toUpperCase();\n}\n\nexport function toArray(obj:any):Array<any>
 {\n\treturn obj !== undefined && obj !== null ? (obj instanceof Array ? obj : (typeof obj.length !== \"number\" || obj.split || obj.setInterval || obj.call ? [obj] : Array.prototype.slice.call(obj))) : [];\n}\n\n\nexport function assign(target: object, source: any): any {\n\tconst obj = target as any;\n\tif (source) {\n\t\tfor (const key in source) {\n\t\t\tobj[key] = source[key];\n\t\t}\n\t}\n\treturn obj;\n}","import { URIRegExps } from \"./uri\";\nimport { merge, subexp } from \"./util\";\n\nexport function buildExps(isIRI:boolean):URIRegExps {\n\tconst\n\t\tALPHA$$ = \"[A-Za-z]\",\n\t\tCR$ = \"[\\\\x0D]\",\n\t\tDIGIT$$ = \"[0-9]\",\n\t\tDQUOTE$$ = \"[\\\\x22]\",\n\t\tHEXDIG$$ = merge(DIGIT$$, \"[A-Fa-f]\"), //case-insensitive\n\t\tLF$$ = \"[\\\\x0A]\",\n\t\tSP$$ = \"[\\\\x20]\",\n\t\tPCT_ENCODED$ = subexp(subexp(\"%[EFef]\" + HEXDIG$$ + \"%\" + HEXDIG$$ + HEXDIG$$ + \"%\" + HEXDIG$$ + HEXDIG$$) + \"|\" + subexp(\"%[89A-Fa-f]\" + HEXDIG$$ + \"%\" + HEXDIG$$ + HEXDIG$$) + \"|\" + subexp(\"%\"
 + HEXDIG$$ + HEXDIG$$)), //expanded\n\t\tGEN_DELIMS$$ = \"[\\\\:\\\\/\\\\?\\\\#\\\\[\\\\]\\\\@]\",\n\t\tSUB_DELIMS$$ = \"[\\\\!\\\\$\\\\&\\\\'\\\\(\\\\)*\\\\+\\\\,\\\\;\\\\=]\",\n\t\tRESERVED$$ = merge(GEN_DELIMS$$, SUB_DELIMS$$),\n\t\tUCSCHAR$$ = isIRI ? \"[\\\\xA0-\\\\u200D\\\\u2010-\\\\u2029\\\\u202F-\\\\uD7FF\\\\uF900-\\\\uFDCF\\\\uFDF0-\\\\uFFEF]\" : \"[]\", //subset, excludes bidi control characters\n\t\tIPRIVATE$$ = isIRI ? \"[\\\\uE000-\\\\uF8FF]\" : \"[]\", //subset\n\t\tUNRESERVED$$ =

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merge(ALPHA$$, DIGIT$$, \"[\\\\-\\\\.\\\\_\\\\~]\", UCSCHAR$$),\n\t\tSCHEME$ = subexp(ALPHA$$ +
merge(ALPHA$$, DIGIT$$, \"[\\\\+\\\\-\\\\.]\") + \"*\"),\n\t\tUSERINFO$ = subexp(subexp(PCT_ENCODED$ +
\"|\" + merge(UNRESERVED$$, SUB_DELIMS$$, \"[\\\\:]\")) + \"*\"),\n\t\tDEC_OCTET$ =
subexp(subexp(\"25[0-5]\") + \"|\" + subexp(\"2[0-4]\" + DIGIT$$) + \"|\" + subexp(\"1\" + DIGIT$$ + DIGIT$$) +
\"|\" + subexp(\"[1-9]\" + DIGIT$$) + \"|\" + DIGIT$$),\n\t\tDEC_OCTET_RELAXED$ = subexp(subexp(\"25[0-
5]\")
 + \"|\" + subexp(\"2[0-4]\" + DIGIT$$) + \"|\" + subexp(\"1\" + DIGIT$$ + DIGIT$$) + \"|\" + subexp(\"0?[1-9]\" +
DIGIT$$) + \"|0?0?\" + DIGIT$$),  //relaxed parsing rules\n\t\tIPV4ADDRESS$ =
subexp(DEC_OCTET_RELAXED$ + \"\\\\.\" + DEC_OCTET_RELAXED$ + \"\\\\.\" +
DEC_OCTET_RELAXED$ + \"\\\\.\" + DEC_OCTET_RELAXED$),\n\t\tH16$ = subexp(HEXDIG$$ +
\"{1,4}\"),\n\t\tLS32$ = subexp(subexp(H16$ + \"\\\\:\" + H16$) + \"|\" + IPV4ADDRESS$),\n\t\tIPV6ADDRESS1$
= subexp(                                    subexp(H16$ + \"\\\\:\") + \"{6}\" + LS32$), //                    6(
h16 \":\" ) ls32\n\t\tIPV6ADDRESS2$ = subexp(                                    \"\\\\:\\\\:\" + subexp(H16$ + \"\\\\:\")
+ \"{5}\" + LS32$), //                \"::\" 5( h16 \":\" ) ls32\n\t\tIPV6ADDRESS3$ = subexp(subexp(
    H16$) + \"?\\\\:\\\\:\" + subexp(H16$ + \"\\\\:\") + \"{4}\" + LS32$), //[            h16 ] \"::\"
 4( h16 \":\" ) ls32\n\t\tIPV6ADDRESS4$ = subexp(subexp(subexp(H16$ + \"\\\\:\") + \"{0,1}\" + H16$) +
\"?\\\\:\\\\:\" + subexp(H16$ + \"\\\\:\") + \"{3}\" + LS32$), //[ *1( h16 \":\" ) h16 ] \"::\" 3( h16 \":\" )
ls32\n\t\tIPV6ADDRESS5$ = subexp(subexp(subexp(H16$ + \"\\\\:\") + \"{0,2}\" + H16$) + \"?\\\\:\\\\:\" +
subexp(H16$ + \"\\\\:\") + \"{2}\" + LS32$), //[ *2( h16 \":\" ) h16 ] \"::\" 2( h16 \":\" ) ls32\n\t\tIPV6ADDRESS6$
= subexp(subexp(subexp(H16$ + \"\\\\:\") + \"{0,3}\" + H16$) + \"?\\\\:\\\\:\" +       H16$ + \"\\\\:\"          + LS32$),
//[ *3( h16 \":\" ) h16 ] \"::\"    h16 \":\"   ls32\n\t\tIPV6ADDRESS7$ = subexp(subexp(subexp(H16$ + \"\\\\:\") +
\"{0,4}\" + H16$) + \"?\\\\:\\\\:\"                          + LS32$), //[ *4( h16 \":\" ) h16 ] \"::\"
ls32\n\t\tIPV6ADDRESS8$ = subexp(subexp(subexp(H16$ + \"\\\\:\") + \"{0,5}\" + H16$) + \"?\\\\:\\\\:\"
          + H16$ ), //[ *5( h16 \":\" ) h16 ] \"::\"            h16\n\t\tIPV6ADDRESS9$
 = subexp(subexp(subexp(H16$ + \"\\\\:\") + \"{0,6}\" + H16$) + \"?\\\\:\\\\:\"                          ), //[ *6( h16
\":\" ) h16 ] \"::\"\n\t\tIPV6ADDRESS$ = subexp([IPV6ADDRESS1$, IPV6ADDRESS2$, IPV6ADDRESS3$,
IPV6ADDRESS4$, IPV6ADDRESS5$, IPV6ADDRESS6$, IPV6ADDRESS7$, IPV6ADDRESS8$,
IPV6ADDRESS9$].join(\"|\")),\n\t\tZONEID$ = subexp(subexp(UNRESERVED$$ + \"|\" + PCT_ENCODED$) +
\"+\"),  //RFC 6874\n\t\tIPV6ADDRZ$ = subexp(IPV6ADDRESS$ + \"\\\\%25\" + ZONEID$),  //RFC
6874\n\t\tIPV6ADDRZ_RELAXED$ = subexp(IPV6ADDRESS$ + subexp(\"\\\\%25|\\\\%(?!\" + HEXDIG$$ +
\"{2})\") + ZONEID$),  //RFC 6874, with relaxed parsing rules\n\t\tIPVFUTURE$ = subexp(\"[vV]\" + HEXDIG$$
+ \"+\\\\.\" + merge(UNRESERVED$$, SUB_DELIMS$$, \"[\\\\:]\") + \"+\"),\n\t\tIP_LITERAL$ = subexp(\"\\\\[\"
+ subexp(IPV6ADDRZ_RELAXED$ + \"|\" + IPV6ADDRESS$ + \"|\" + IPVFUTURE$) + \"\\\\]\"),  //RFC
6874\n\t\tREG_NAME$ = subexp(subexp(PCT_ENCODED$ + \"|\" + merge(UNRESERVED$$,
SUB_DELIMS$$)) +
 \"*\"),\n\t\tHOST$ = subexp(IP_LITERAL$ + \"|\" + IPV4ADDRESS$ + \"(?!\" + REG_NAME$ + \")\" + \"|\" +
REG_NAME$),\n\t\tPORT$ = subexp(DIGIT$$ + \"*\"),\n\t\tAUTHORITY$ = subexp(subexp(USERINFO$ +
\"@\") + \"?\" + HOST$ + subexp(\"\\\\:\" + PORT$) + \"?\"),\n\t\tPCHAR$ = subexp(PCT_ENCODED$ + \"|\" +
merge(UNRESERVED$$, SUB_DELIMS$$, \"[\\\\:\\\\@]\")),\n\t\tSEGMENT$ = subexp(PCHAR$ +
\"*\"),\n\t\tSEGMENT_NZ$ = subexp(PCHAR$ + \"+\"),\n\t\tSEGMENT_NZ_NC$ =
subexp(subexp(PCT_ENCODED$ + \"|\" + merge(UNRESERVED$$, SUB_DELIMS$$, \"[\\\\@]\")) +
\"+\"),\n\t\tPATH_ABEMPTY$ = subexp(subexp(\"\\\\/\" + SEGMENT$) + \"*\"),\n\t\tPATH_ABSOLUTE$ =
subexp(\"\\\\/\" + subexp(SEGMENT_NZ$ + PATH_ABEMPTY$) + \"?\"),  //simplified\n\t\tPATH_NOSCHEME$
= subexp(SEGMENT_NZ_NC$ + PATH_ABEMPTY$),  //simplified\n\t\tPATH_ROOTLESS$ =
subexp(SEGMENT_NZ$ + PATH_ABEMPTY$),  //simplified\n\t\tPATH_EMPTY$ = \"(?!\" + PCHAR$ +
\")\",\n\t\tPATH$ = subexp(PATH_ABEMPTY$ + \"|\" + PATH_ABSOLUTE$ + \"|\" + PATH_NOSCHEME$
 + \"|\" + PATH_ROOTLESS$ + \"|\" + PATH_EMPTY$),\n\t\tQUERY$ = subexp(subexp(PCHAR$ + \"|\" +
merge(\"[\\\\/\\\\?]\", IPRIVATE$$)) + \"*\"),\n\t\tFRAGMENT$ = subexp(subexp(PCHAR$ + \"|[\\\\/\\\\?]\") +
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\"*\"),\n\t\tHIER_PART$ = subexp(subexp(\"\\\\/\\\\/\" + AUTHORITY$ + PATH_ABEMPTY$) + \"|\" + PATH_ABSOLUTE$ + \"|\" + PATH_ROOTLESS$ + \"|\" + PATH_EMPTY$),\n\t\tURI$ = subexp(SCHEME$ + \"\\\\:\" + HIER_PART$ + subexp(\"\\\\?\" + QUERY$) + \"?\" + subexp(\"\\\\#\" + FRAGMENT$) + \"?\"),\n\t\tRELATIVE_PART$ = subexp(subexp(\"\\\\/\\\\/\" + AUTHORITY$ + PATH_ABEMPTY$) + \"|\" + PATH_ABSOLUTE$ + \"|\" + PATH_NOSCHEME$ + \"|\" + PATH_EMPTY$),\n\t\tRELATIVE$ = subexp(RELATIVE_PART$ + subexp(\"\\\\?\" + QUERY$) + \"?\" + subexp(\"\\\\#\" + FRAGMENT$) + \"?\"),\n\t\tURI_REFERENCE$ = subexp(URI$ + \"|\" + RELATIVE$),\n\t\tABSOLUTE_URI$ = subexp(SCHEME$ + \"\\\\:\" + HIER_PART$ + subexp(\"\\\\?\" + QUERY$) + \"?\"),\n\n\t\tGENERIC_REF$ = \"^(\" + SCHEME$ + \")\\\\:\" + subexp(subexp(\"\\\\/\\\\/(\"
+ subexp(\"(\" + USERINFO$ + \")@\") + \"?(\" + HOST$ + \")\" + subexp(\"\\\\:(\" + PORT$ + \")\") + \"?)\") + \"?(\" + PATH_ABEMPTY$ + \"|\" + PATH_ABSOLUTE$ + \"|\" + PATH_ROOTLESS$ + \"|\" + PATH_EMPTY$ + \")\") + subexp(\"\\\\?(\" + QUERY$ + \")\") + \"?\" + subexp(\"\\\\#(\" + FRAGMENT$ + \")\") + \"?$\",\n\t\tRELATIVE_REF$ = \"^(){0}\" + subexp(subexp(\"\\\\/\\\\/(\" + subexp(\"(\" + USERINFO$ + \")@\") + \"?(\" + HOST$ + \")\" + subexp(\"\\\\:(\" + PORT$ + \")\") + \"?)\") + \"?(\" + PATH_ABEMPTY$ + \"|\" + PATH_ABSOLUTE$ + \"|\" + PATH_NOSCHEME$ + \"|\" + PATH_EMPTY$ + \")\") + subexp(\"\\\\?(\" + QUERY$ + \")\") + \"?\" + subexp(\"\\\\#(\" + FRAGMENT$ + \")\") + \"?$\",\n\t\tABSOLUTE_REF$ = \"^(\" + SCHEME$ + \")\\\\:\" + subexp(subexp(\"\\\\/\\\\/(\" + subexp(\"(\" + USERINFO$ + \")@\") + \"?(\" + HOST$ + \")\" + subexp(\"\\\\:(\" + PORT$ + \")\") + \"?)\") + \"?(\" + PATH_ABEMPTY$ + \"|\" + PATH_ABSOLUTE$ + \"|\" + PATH_ROOTLESS$ + \"|\" + PATH_EMPTY$ + \")\") + subexp(\"\\\\?(\"
+ QUERY$ + \")\") + \"?$\",\n\t\tSAMEDOC_REF$ = \"^\" + subexp(\"\\\\#(\" + FRAGMENT$ + \")\") + \"?$\",\n\t\tAUTHORITY_REF$ = \"^\" + subexp(\"(\" + USERINFO$ + \")@\") + \"?(\" + HOST$ + \")\" + subexp(\"\\\\:(\" + PORT$ + \")\") + \"?$\"\n\t;\n\n\treturn {\n\t\tNOT_SCHEME : new RegExp(merge(\"[^]\", ALPHA$$, DIGIT$$, \"[\\\\+\\\\-\\\\.]\"), \"g\"),\n\t\tNOT_USERINFO : new RegExp(merge(\"[^\\\\%\\\\:]\", UNRESERVED$$, SUB_DELIMS$$), \"g\"),\n\t\tNOT_HOST : new RegExp(merge(\"[^\\\\%\\\\[\\\\]\\\\:]\", UNRESERVED$$, SUB_DELIMS$$), \"g\"),\n\t\tNOT_PATH : new RegExp(merge(\"[^\\\\%\\\\/\\\\:\\\\@]\", UNRESERVED$$, SUB_DELIMS$$), \"g\"),\n\t\tNOT_PATH_NOSCHEME : new RegExp(merge(\"[^\\\\%\\\\/\\\\@]\", UNRESERVED$$, SUB_DELIMS$$), \"g\"),\n\t\tNOT_QUERY : new RegExp(merge(\"[^\\\\%]\", UNRESERVED$$, SUB_DELIMS$$, \"[\\\\:\\\\@\\\\/\\\\?]\", IPRIVATE$$), \"g\"),\n\t\tNOT_FRAGMENT : new RegExp(merge(\"[^\\\\%]\", UNRESERVED$$, SUB_DELIMS$$, \"[\\\\:\\\\@\\\\/\\\\?]\"), \"g\"),\n\t\tESCAPE
: new RegExp(merge(\"[^]\", UNRESERVED$$, SUB_DELIMS$$), \"g\"),\n\t\tUNRESERVED : new RegExp(UNRESERVED$$, \"g\"),\n\t\tOTHER_CHARS : new RegExp(merge(\"[^\\\\%]\", UNRESERVED$$, RESERVED$$), \"g\"),\n\t\tPCT_ENCODED : new RegExp(PCT_ENCODED$, \"g\"),\n\t\tIPV4ADDRESS : new RegExp(\"^(\" + IPV4ADDRESS$ + \")$\"),\n\t\tIPV6ADDRESS : new RegExp(\"^\\\\[?(\" + IPV6ADDRESS$ + \")\" + subexp(subexp(\"\\\\%25|\\\\%(?!\" + HEXDIG$$ + \"{2})\") + \"(\" + ZONEID$ + \")\") + \"?\\\\]?$\")
//RFC 6874, with relaxed parsing rules\n\t};\n}\n\nexport default buildExps(false);\n","'use strict';\n\n/** Highest positive signed 32-bit float value */\nconst maxInt = 2147483647; // aka. 0x7FFFFFFF or 2^31-1\n\n/** Bootstring parameters */\nconst base = 36;\nconst tMin = 1;\nconst tMax = 26;\nconst skew = 38;\nconst damp = 700;\nconst initialBias = 72;\nconst initialN = 128; // 0x80\nconst delimiter = '-'; // '\\x2D'\n\n/** Regular expressions */\nconst regexPunycode = /^xn--/;\nconst regexNonASCII
= /[^\\0-\\x7E]/; // non-ASCII chars\nconst regexSeparators = /[\\x2E\\u3002\\uFF0E\\uFF61]/g; // RFC 3490 separators\n\n/** Error messages */\nconst errors = {\n\t'overflow': 'Overflow: input needs wider integers to process',\n\t'not-basic': 'Illegal input >= 0x80 (not a basic code point)',\n\t'invalid-input': 'Invalid input'\n};\n\n/** Convenience shortcuts */\nconst baseMinusTMin = base - tMin;\nconst floor = Math.floor;\nconst stringFromCharCode = String.fromCharCode;\n\n/*--*/\n\n/**\n * A generic error utility function.\n * @private\n * @param {String} type The error type.\n * @returns {Error} Throws a `RangeError` with the applicable error message.\n */\nfunction error(type) {\n\tthrow new RangeError(errors[type]);\n}\n\n/**\n * A generic `Array#map` utility function.\n * @private\n * @param {Array}

array The array to iterate over.\n * @param {Function} callback The function that gets called for every
 array\n * item.\n * @returns {Array} A new array of values returned by the callback function.\n */\nfunction
map(array, fn) {\n\tconst result = [];\n\tlet length = array.length;\n\twhile (length--) {\n\t\tresult[length] =
fn(array[length]);\n\t}\n\treturn result;\n}\n\n/**\n * A simple `Array#map`-like wrapper to work with domain name
strings or email\n * addresses.\n * @private\n * @param {String} domain The domain name or email address.\n *
@param {Function} callback The function that gets called for every\n * character.\n * @returns {Array} A new
string of characters returned by the callback\n * function.\n */\nfunction mapDomain(string, fn) {\n\tconst parts =
string.split('@');\n\tlet result = '';\n\tif (parts.length > 1) {\n\t\t// In email addresses, only the domain name should be
punycoded. Leave\n\t\t// the local part (i.e. everything up to `@`) intact.\n\t\tresult = parts[0] + '@';\n\t\tstring =
parts[1];\n\t}\n\t// Avoid `split(regex)` for IE8 compatibility. See #17.\n\tstring
 = string.replace(regexSeparators, '\\x2E');\n\tconst labels = string.split('.');\n\tconst encoded = map(labels,
fn).join('.');\n\treturn result + encoded;\n}\n\n/**\n * Creates an array containing the numeric code points of each
Unicode\n * character in the string. While JavaScript uses UCS-2 internally,\n * this function will convert a pair of
surrogate halves (each of which\n * UCS-2 exposes as separate characters) into a single code point,\n * matching
UTF-16.\n * @see `punycode.ucs2.encode`\n * @see <https://mathiasbynens.be/notes/javascript-encoding>\n *
@memberOf punycode.ucs2\n * @name decode\n * @param {String} string The Unicode input string (UCS-2).\n *
@returns {Array} The new array of code points.\n */\nfunction ucs2decode(string) {\n\tconst output = [];\n\tlet
counter = 0;\n\tconst length = string.length;\n\twhile (counter < length) {\n\t\tconst value =
string.charCodeAt(counter++);\n\t\tif (value >= 0xD800 && value <= 0xDBFF && counter < length) {\n\t\t\t// It's a
high
 surrogate, and there is a next character.\n\t\t\tconst extra = string.charCodeAt(counter++);\n\t\t\tif ((extra &
0xFC00) == 0xDC00) { // Low surrogate.\n\t\t\t\toutput.push(((value & 0x3FF) << 10) + (extra & 0x3FF) +
0x10000);\n\t\t\t} else {\n\t\t\t\t// It's an unmatched surrogate; only append this code unit, in case the\n\t\t\t\t// next
code unit is the high surrogate of a surrogate pair.\n\t\t\t\toutput.push(value);\n\t\t\t\tcounter--;\n\t\t\t}\n\t\t} else
{\n\t\t\toutput.push(value);\n\t\t}\n\t}\n\treturn output;\n}\n\n/**\n * Creates a string based on an array of numeric
code points.\n * @see `punycode.ucs2.decode`\n * @memberOf punycode.ucs2\n * @name encode\n * @param
{Array} codePoints The array of numeric code points.\n * @returns {String} The new Unicode string (UCS-2).\n
*/\nconst ucs2encode = array => String.fromCodePoint(...array);\n\n/**\n * Converts a basic code point into a
digit/integer.\n * @see `digitToBasic()`\n * @private\n * @param {Number} codePoint The basic numeric
 code point value.\n * @returns {Number} The numeric value of a basic code point (for use in\n * representing
integers) in the range `0` to `base - 1`, or `base` if\n * the code point does not represent a value.\n */\nconst
basicToDigit = function(codePoint) {\n\tif (codePoint - 0x30 < 0x0A) {\n\t\treturn codePoint - 0x16;\n\t}\n\tif
(codePoint - 0x41 < 0x1A) {\n\t\treturn codePoint - 0x41;\n\t}\n\tif (codePoint - 0x61 < 0x1A) {\n\t\treturn
codePoint - 0x61;\n\t}\n\treturn base;\n};\n\n/**\n * Converts a digit/integer into a basic code point.\n * @see
`basicToDigit()`\n * @private\n * @param {Number} digit The numeric value of a basic code point.\n * @returns
{Number} The basic code point whose value (when used for\n * representing integers) is `digit`, which needs to be
in the range\n * `0` to `base - 1`. If `flag` is non-zero, the uppercase form is\n * used; else, the lowercase form is
used. The behavior is undefined\n * if `flag` is non-zero and `digit` has no uppercase form.\n
 */\nconst digitToBasic = function(digit, flag) {\n\t// 0..25 map to ASCII a..z or A..Z\n\t// 26..35 map to ASCII
0..9\n\treturn digit + 22 + 75 * (digit < 26) - ((flag != 0) << 5);\n};\n\n/**\n * Bias adaptation function as per section
3.4 of RFC 3492.\n * https://tools.ietf.org/html/rfc3492#section-3.4\n * @private\n */\nconst adapt = function(delta,
numPoints, firstTime) {\n\tlet k = 0;\n\tdelta = firstTime ? floor(delta / damp) : delta >> 1;\n\tdelta += floor(delta /
numPoints);\n\tfor (/* no initialization */; delta > baseMinusTMin * tMax >> 1; k += base) {\n\t\tdelta = floor(delta
/ baseMinusTMin);\n\t}\n\treturn floor(k + (baseMinusTMin + 1) * delta / (delta + skew));\n};\n\n/**\n * Converts a
Punycode string of ASCII-only symbols to a string of Unicode\n * symbols.\n * @memberOf punycode\n *
@param {String} input The Punycode string of ASCII-only symbols.\n * @returns {String} The resulting string of
Unicode symbols.\n */\nconst decode = function(input) {\n\t// Don't use UCS-2.\n\tconst

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output = [];\n\tconst inputLength = input.length;\n\tlet i = 0;\n\tlet n = initialN;\n\tlet bias = initialBias;\n\n\t// Handle the basic code points: let `basic` be the number of input code\n\t// points before the last delimiter, or `0` if there is none, then copy\n\t// the first basic code points to the output.\n\n\tlet basic = input.lastIndexOf(delimiter);\n\tif (basic < 0) {\n\t\tbasic = 0;\n\t}\n\n\tfor (let j = 0; j < basic; ++j) {\n\t\t// if it's not a basic code point\n\t\tif (input.charCodeAt(j) >= 0x80) {\n\t\t\terror('not-basic');\n\t\t}\n\t\toutput.push(input.charCodeAt(j));\n\t}\n\n\t// Main decoding loop: start just after the last delimiter if any basic code\n\t// points were copied; start at the beginning otherwise.\n\n\tfor (let index = basic > 0 ? basic + 1 : 0; index < inputLength; /* no final expression */) {\n\n\t\t// `index` is the index of the next character to be consumed.\n\t\t// Decode a generalized variable-length integer into `delta`,\n\t\t// which gets added to `i`. The overflow checking is easier\n\t\t// if we increase `i` as we go, then subtract off its starting\n\t\t// value at the end to obtain `delta`.\n\t\tlet oldi = i;\n\t\tfor (let w = 1, k = base; /* no condition */; k += base) {\n\n\t\t\tif (index >= inputLength) {\n\t\t\t\terror('invalid-input');\n\t\t\t}\n\n\t\t\tconst digit = basicToDigit(input.charCodeAt(index++));\n\n\t\t\tif (digit >= base || digit > floor((maxInt - i) / w)) {\n\t\t\t\terror('overflow');\n\t\t\t}\n\n\t\t\ti += digit * w;\n\t\t\tconst t = k <= bias ? tMin : (k >= bias + tMax ? tMax : k - bias);\n\n\t\t\tif (digit < t) {\n\t\t\t\tbreak;\n\t\t\t}\n\n\t\tconst baseMinusT = base - t;\n\t\tif (w > floor(maxInt / baseMinusT)) {\n\t\t\terror('overflow');\n\t\t}\n\n\t\tw *= baseMinusT;\n\n\t}\n\n\tconst out = output.length + 1;\n\tbias = adapt(i - oldi, out, oldi == 0);\n\n\t// `i` was supposed to wrap around from `out` to `0`,\n\t// incrementing `n` each time, so we'll fix that now:\n\tif (floor(i / out) > maxInt - n) {\n\t\terror('overflow');\n\t}\n\n\tn += floor(i / out);\n\ti %= out;\n\n\t// Insert `n` at position `i` of the output.\n\toutput.splice(i++, 0, n);\n\n}\n\nreturn String.fromCodePoint(...output);\n};\n\n/**\n * Converts a string of Unicode symbols (e.g. a domain name label) to a\n * Punycode string of ASCII-only symbols.\n * @memberOf punycode\n * @param {String} input The string of Unicode symbols.\n * @returns {String} The resulting Punycode string of ASCII-only symbols.\n */\nconst encode = function(input) {\n\tconst output = [];\n\n\t// Convert the input in UCS-2 to an array of Unicode code points.\n\tinput = ucs2decode(input);\n\n\t// Cache the length.\n\tlet inputLength = input.length;\n\n\t// Initialize the state.\n\tlet n = initialN;\n\tlet delta = 0;\n\tlet bias = initialBias;\n\n\t// Handle the basic code points.\n\tfor (const currentValue of input) {\n\t\tif (currentValue < 0x80) {\n\t\t\toutput.push(stringFromCharCode(currentValue));\n\t\t}\n\t}\n\n\tlet basicLength = output.length;\n\tlet handledCPCount = basicLength;\n\n\t// `handledCPCount` is the number of code points that have been handled;\n\t// `basicLength` is the number of basic code points.\n\n\t// Finish the basic string with a delimiter unless it's empty.\n\tif (basicLength) {\n\t\toutput.push(delimiter);\n\t}\n\n\t// Main encoding loop:\n\twhile (handledCPCount < inputLength) {\n\n\t\t// All non-basic code points < n have been handled already. Find the next\n\t\t// larger one:\n\t\tlet m = maxInt;\n\t\tfor (const currentValue of input) {\n\t\t\tif (currentValue >= n && currentValue < m) {\n\t\t\t\tm = currentValue;\n\t\t\t}\n\t\t}\n\n\t\t// Increase `delta` enough to advance the decoder's <n,i> state to <m,0>,\n\t\t// but guard against overflow.\n\t\tconst handledCPCountPlusOne = handledCPCount + 1;\n\t\tif (m - n > floor((maxInt - delta) / handledCPCountPlusOne)) {\n\t\t\terror('overflow');\n\t\t}\n\n\t\tdelta += (m - n) * handledCPCountPlusOne;\n\t\tn = m;\n\n\t\tfor (const currentValue of input) {\n\t\t\tif (currentValue < n && ++delta > maxInt) {\n\t\t\t\terror('overflow');\n\t\t\t}\n\t\t\tif (currentValue == n) {\n\t\t\t\t// Represent delta as a generalized variable-length integer.\n\t\t\t\tlet q = delta;\n\t\t\t\tfor (let k = base; /* no condition */; k += base) {\n\t\t\t\t\tconst t = k <= bias ? tMin : (k >= bias + tMax ? tMax : k - bias);\n\t\t\t\t\tif (q < t) {\n\t\t\t\t\t\tbreak;\n\t\t\t\t\t}\n\t\t\t\t\tconst qMinusT = q - t;\n\t\t\t\t\tconst baseMinusT = base - t;\n\t\t\t\t\toutput.push(\n\t\t\t\t\t\tstringFromCharCode(digitToBasic(t + qMinusT % baseMinusT, 0))\n\t\t\t\t\t);\n\t\t\t\t\tq = floor(qMinusT / baseMinusT);\n\t\t\t\t}\n\n\t\t\t\toutput.push(stringFromCharCode(digitToBasic(q, 0)));\n\t\t\t\tbias = adapt(delta, handledCPCountPlusOne, handledCPCount == basicLength);\n\t\t\t\tdelta = 0;\n\t\t\t\t++handledCPCount;\n\t\t\t}\n\t\t}\n\n\t\t++delta;\n\t\t++n;\n\n\t}\n\treturn output.join('');\n};\n\n/**\n
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* Converts a Punycode string representing a domain name or an email address\n * to Unicode. Only the Punycoded parts of the input will be converted, i.e.\n * it doesn't matter if you call it on a string that has already been\n * converted to Unicode.\n * @memberOf punycode\n * @param {String} input The Punycoded domain name or email address to\n * convert to Unicode.\n * @returns {String} The Unicode representation of the given Punycode\n * string.\n */\nconst toUnicode = function(input) {\n\treturn mapDomain(input, function(string) {\n\t\treturn regexPunycode.test(string)\n\t\t\t? decode(string.slice(4).toLowerCase())\n\t\t\t: string;\n\t});\n};\n\n/**\n * Converts a Unicode string representing a domain name or an email address to\n * Punycode. Only the non-ASCII parts of the domain name will be converted,\n * i.e. it doesn't matter if you call it with a domain that's already in\n * ASCII.\n * @memberOf punycode\n * @param {String} input The domain name or email address to convert, as a\n * Unicode string.\n * @returns {String} The Punycode representation of the given domain name or\n * email address.\n */\nconst toASCII = function(input) {\n\treturn mapDomain(input, function(string) {\n\t\treturn regexNonASCII.test(string)\n\t\t\t? 'xn--' + encode(string)\n\t\t\t: string;\n\t});\n};\n\n/*--*/\n\n/** Define the public API */\nconst punycode = {\n\t/**\n\t * A string representing the current Punycode.js version number.\n\t * @memberOf punycode\n\t * @type String\n\t */\n\t'version': '2.1.0',\n\t/**\n\t * An object of methods to convert from JavaScript's internal character\n\t * representation (UCS-2) to Unicode code points, and back.\n\t * @see <https://mathiasbynens.be/notes/javascript-encoding>\n\t * @memberOf punycode\n\t * @type Object\n\t */\n\t'ucs2': {\n\t\t'decode': ucs2decode,\n\t\t'encode': ucs2encode\n\t},\n\t'decode': decode,\n\t'encode': encode,\n\t'toASCII': toASCII,\n\t'toUnicode': toUnicode\n};\n\nexport default punycode;\n","/**\n * URI.js\n *\n * @fileoverview An RFC 3986 compliant, scheme extendable URI parsing/validating/resolving library for JavaScript.\n * @author Gary Court\n * @see http://github.com/garycourt/uri-js\n */\n\n/**\n * Copyright 2011 Gary Court. All rights reserved.\n *\n * Redistribution and use in source and binary forms, with or without modification, are\n * permitted provided that the following conditions are met:\n *\n *   1. Redistributions of source code must retain the above copyright notice, this list of\n *   conditions and the following disclaimer.\n *\n *   2. Redistributions in binary form must reproduce the above copyright notice, this list\n *   of conditions and the following disclaimer in the documentation and/or other materials\n *   provided with the distribution.\n *\n * THIS SOFTWARE IS PROVIDED BY GARY COURT ``AS IS'' AND ANY EXPRESS OR IMPLIED\n * WARRANTIES,
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{ toUpperCase, typeOf, assign } from \"./util\";\n\nexport interface URIComponents {\n\tscheme?:string;\n\tuserinfo?:string;\n\thost?:string;\n\tport?:number|string;\n\tpath?:string;\n\tquery?:string;\n\tfragment?:string;\n\treference?:string;\n\terror?:string;\n}\n\nexport interface URIOptions {\n\tscheme?:string;\n\treference?:string;\n\ttolerant?:boolean;\n\tabsolutePath?:boolean;\n\tiri?:boolean;\n\tunicodeSupport?:boolean;\n\tdomainHost?:boolean;\n}\n\nexport interface URISchemeHandler<Components extends URIComponents = URIComponents, Options extends URIOptions = URIOptions, ParentComponents extends URIComponents = URIComponents> {\n\tscheme:string;\n\tparse(components:ParentComponents, options:Options):Components;\n\tserialize(components:Components,

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options:Options):ParentComponents;\n\tunicodeSupport?:boolean;\n\tdomainHost?:boolean;\n\tabsolutePath?:boolean;\n}\n\nexport interface URIRegExps {\n\tNOT_SCHEME : RegExp,\n\tNOT_USERINFO : RegExp,\n\tNOT_HOST :
 RegExp,\n\tNOT_PATH : RegExp,\n\tNOT_PATH_NOSCHEME : RegExp,\n\tNOT_QUERY : RegExp,\n\tNOT_FRAGMENT : RegExp,\n\tESCAPE : RegExp,\n\tUNRESERVED : RegExp,\n\tOTHER_CHARS : RegExp,\n\tPCT_ENCODED : RegExp,\n\tIPV4ADDRESS : RegExp,\n\tIPV6ADDRESS : RegExp,\n}\n\nexport const SCHEMES:{[scheme:string]:URISchemeHandler} = {};\n\nexport function pctEncChar(chr:string):string {\n\tconst c = chr.charCodeAt(0);\n\tlet e:string;\n\n\tif (c < 16) e = \"%0\" + c.toString(16).toUpperCase();\n\telse if (c < 128) e = \"%\" + c.toString(16).toUpperCase();\n\telse if (c < 2048) e = \"%\" + ((c >> 6) | 192).toString(16).toUpperCase() + \"%\" + ((c & 63) | 128).toString(16).toUpperCase();\n\telse e = \"%\" + ((c >> 12) | 224).toString(16).toUpperCase() + \"%\" + (((c >> 6) & 63) | 128).toString(16).toUpperCase() + \"%\" + ((c & 63) | 128).toString(16).toUpperCase();\n\n\treturn e;\n}\n\nexport function pctDecChars(str:string):string {\n\tlet newStr = \"\";\n\tlet i = 0;\n\tconst il = str.length;\n\n\twhile
 (i < il) {\n\t\tconst c = parseInt(str.substr(i + 1, 2), 16);\n\n\t\tif (c < 128) {\n\t\t\tnewStr += String.fromCharCode(c);\n\t\t\ti += 3;\n\t\t}\n\telse if (c >= 194 && c < 224) {\n\t\t\tif ((il - i) >= 6) {\n\t\t\t\tconst c2 = parseInt(str.substr(i + 4, 2), 16);\n\t\t\t\tnewStr += String.fromCharCode(((c & 31) << 6) | (c2 & 63));\n\t\t\t} else {\n\t\t\t\tnewStr += str.substr(i, 6);\n\t\t\t}\n\t\t\ti += 6;\n\t}\n\telse if (c >= 224) {\n\t\tif ((il - i) >= 9) {\n\t\t\tconst c2 = parseInt(str.substr(i + 4, 2), 16);\n\t\t\tconst c3 = parseInt(str.substr(i + 7, 2), 16);\n\t\t\tnewStr += String.fromCharCode(((c & 15) << 12) | ((c2 & 63) << 6) | (c3 & 63));\n\t\t} else {\n\t\t\tnewStr += str.substr(i, 9);\n\t\t}\n\t\ti += 9;\n\t}\n\telse {\n\t\tnewStr += str.substr(i, 3);\n\t\ti += 3;\n\t}\n\t}\n\n\treturn newStr;\n}\n\nfunction _normalizeComponentEncoding(components:URIComponents, protocol:URIRegExps) {\n\tfunction decodeUnreserved(str:string):string {\n\t\tconst
 decStr = pctDecChars(str);\n\t\treturn (!decStr.match(protocol.UNRESERVED) ? str : decStr);\n\t}\n\n\tif (components.scheme) components.scheme = String(components.scheme).replace(protocol.PCT_ENCODED, decodeUnreserved).toLowerCase().replace(protocol.NOT_SCHEME, \"\");\n\tif (components.userinfo !== undefined) components.userinfo = String(components.userinfo).replace(protocol.PCT_ENCODED, decodeUnreserved).replace(protocol.NOT_USERINFO, pctEncChar).replace(protocol.PCT_ENCODED, toUpperCase);\n\tif (components.host !== undefined) components.host = String(components.host).replace(protocol.PCT_ENCODED, decodeUnreserved).toLowerCase().replace(protocol.NOT_HOST, pctEncChar).replace(protocol.PCT_ENCODED, toUpperCase);\n\tif (components.path !== undefined) components.path = String(components.path).replace(protocol.PCT_ENCODED, decodeUnreserved).replace((components.scheme ? protocol.NOT_PATH : protocol.NOT_PATH_NOSCHEME), pctEncChar).replace(protocol.PCT_ENCODED, toUpperCase);\n\tif (components.query
 !== undefined) components.query = String(components.query).replace(protocol.PCT_ENCODED, decodeUnreserved).replace(protocol.NOT_QUERY, pctEncChar).replace(protocol.PCT_ENCODED, toUpperCase);\n\tif (components.fragment !== undefined) components.fragment = String(components.fragment).replace(protocol.PCT_ENCODED, decodeUnreserved).replace(protocol.NOT_FRAGMENT, pctEncChar).replace(protocol.PCT_ENCODED, toUpperCase);\n\n\treturn components;\n};\n\nfunction _stripLeadingZeros(str:string):string {\n\treturn str.replace(/^0*(.*)/, \"$1\") || \"0\";\n}\n\nfunction _normalizeIPv4(host:string, protocol:URIRegExps):string {\n\tconst matches = host.match(protocol.IPV4ADDRESS) || [];\n\tconst [, address] = matches;\n\t\n\tif (address) {\n\t\treturn address.split(\".\").map(_stripLeadingZeros).join(\".\");\n\t} else {\n\t\treturn host;\n\t}\n}\n\nfunction _normalizeIPv6(host:string, protocol:URIRegExps):string {\n\tconst matches = host.match(protocol.IPV6ADDRESS) || [];\n\tconst [,
 address, zone] = matches;\n\n\tif (address) {\n\t\tconst [last, first] = address.toLowerCase().split('::').reverse();\n\t\tconst firstFields = first ? first.split(\":\").map(_stripLeadingZeros) :
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[];\n\t\tconst lastFields = last.split(\":\").map(_stripLeadingZeros);\n\t\tconst isLastFieldIPv4Address =
protocol.IPV4ADDRESS.test(lastFields[lastFields.length - 1]);\n\t\tconst fieldCount = isLastFieldIPv4Address ? 7 :
8;\n\t\tconst lastFieldsStart = lastFields.length - fieldCount;\n\t\tconst fields = Array<string>(fieldCount);\n\n\t\tfor
(let x = 0; x < fieldCount; ++x) {\n\t\t\tfields[x] = firstFields[x] || lastFields[lastFieldsStart + x] || '';\n\t\t}\n\n\tif
(isLastFieldIPv4Address) {\n\t\t\tfields[fieldCount - 1] = _normalizeIPv4(fields[fieldCount - 1],
protocol);\n\t\t}\n\n\tconst allZeroFields = fields.reduce<Array<{index:number,length:number}>>((acc, field,
index) => {\n\t\tif (!field || field === \"0\") {\n\t\t\tconst lastLongest = acc[acc.length - 1];\n\t\t\tif (lastLongest
 && lastLongest.index + lastLongest.length === index) {\n\t\t\t\tlastLongest.length++;\n\t\t\t} else
{\n\t\t\t\tacc.push({ index, length : 1 });\n\t\t\t}\n\t\t}\n\n\treturn acc;\n\t}, []);\n\n\tconst longestZeroFields =
allZeroFields.sort((a, b) => b.length - a.length)[0];\n\n\tlet newHost:string;\n\tif (longestZeroFields &&
longestZeroFields.length > 1) {\n\t\tconst newFirst = fields.slice(0, longestZeroFields.index) ;\n\t\tconst newLast
= fields.slice(longestZeroFields.index + longestZeroFields.length);\n\t\tnewHost = newFirst.join(\":\") + \"::\" +
newLast.join(\":\");\n\t} else {\n\t\tnewHost = fields.join(\":\");\n\t}\n\n\tif (zone) {\n\t\tnewHost += \"%\" +
zone;\n\t}\n\n\treturn newHost;\n} else {\n\treturn host;\n}\n}\nconst URI_PARSE =
/^(?:([^:\/?#]+):)?(?:\/\/((?:([^\/?#@]*)@)?(\[[^\/?#\]]+\]|[^\/?#:]*)(?:\:(\d*))?))?([^?#]*)(?:\?([^#]*))?(?:#((?:
.|\n|\r)*))?/i;\nconst NO_MATCH_IS_UNDEFINED = (<RegExpMatchArray>(\"\").match(/(){0}/))[1]
 === undefined;\n\nexport function parse(uriString:string, options:URIOptions = {}):URIComponents {\n\tconst
components:URIComponents = {};\n\tconst protocol = (options.iri !== false ? IRI_PROTOCOL :
URI_PROTOCOL);\n\n\tif (options.reference === \"suffix\") uriString = (options.scheme ? options.scheme + \":\" :
\"\") + \"//\" + uriString;\n\n\tconst matches = uriString.match(URI_PARSE);\n\n\tif (matches) {\n\t\tif
(NO_MATCH_IS_UNDEFINED) {\n\t\t\t//store each component\n\t\t\tcomponents.scheme =
matches[1];\n\t\t\tcomponents.userinfo = matches[3];\n\t\t\tcomponents.host = matches[4];\n\t\t\tcomponents.port =
parseInt(matches[5], 10);\n\t\t\tcomponents.path = matches[6] || \"\";\n\t\t\tcomponents.query =
matches[7];\n\t\t\tcomponents.fragment = matches[8];\n\n\t\t\t//fix port number\n\t\t\tif (isNaN(components.port))
{\n\t\t\t\tcomponents.port = matches[5];\n\t\t\t}\n\t\t} else {  //IE FIX for improper RegExp matching\n\t\t\t//store
each component\n\t\t\tcomponents.scheme
 = matches[1] || undefined;\n\t\t\tcomponents.userinfo = (uriString.indexOf(\"@\") !== -1 ? matches[3] :
undefined);\n\t\t\tcomponents.host = (uriString.indexOf(\"//\") !== -1 ? matches[4] :
undefined);\n\t\t\tcomponents.port = parseInt(matches[5], 10);\n\t\t\tcomponents.path = matches[6] ||
\"\";\n\t\t\tcomponents.query = (uriString.indexOf(\"?\") !== -1 ? matches[7] :
undefined);\n\t\t\tcomponents.fragment = (uriString.indexOf(\"#\") !== -1 ? matches[8] : undefined);\n\n\t\t\t//fix
port number\n\t\t\tif (isNaN(components.port)) {\n\t\t\t\tcomponents.port =
(uriString.match(/\\\/(?:.|\n)*\:(?:\/|\?|\#|$)/) ? matches[4] : undefined);\n\t\t\t}\n\t\t}\n\n\tif (components.host)
{\n\t\t//normalize IP hosts\n\t\tcomponents.host = _normalizeIPv6(_normalizeIPv4(components.host, protocol),
protocol);\n\t\t}\n\n\t//determine reference type\n\tif (components.scheme === undefined &&
components.userinfo === undefined && components.host === undefined && components.port ===
 undefined && !components.path && components.query === undefined) {\n\t\tcomponents.reference = \"same-
document\";\n\t} else if (components.scheme === undefined) {\n\t\tcomponents.reference = \"relative\";\n\t}
else if (components.fragment === undefined) {\n\t\tcomponents.reference = \"absolute\";\n\t} else
{\n\t\tcomponents.reference = \"uri\";\n\t}\n\n\t//check for reference errors\n\tif (options.reference &&
options.reference !== \"suffix\" && options.reference !== components.reference) {\n\t\tcomponents.error =
components.error || \"URI is not a \" + options.reference + \" reference.\";\n\t}\n\n\t//find scheme
handler\n\tconst schemeHandler = SCHEMES[(options.scheme || components.scheme ||
\"\").toLowerCase()];\n\n\t//check if scheme can't handle IRIs\n\tif (!options.unicodeSupport &&
(!schemeHandler || !schemeHandler.unicodeSupport)) {\n\t\t//if host component is a domain name\n\t\tif
(components.host && (options.domainHost || (schemeHandler &&
 schemeHandler.domainHost))) {\n\t\t\t//convert Unicode IDN -> ASCII IDN\n\t\t\ttry {\n\t\t\t\tcomponents.host
= punycode.toASCII(components.host.replace(protocol.PCT_ENCODED, pctDecChars).toLowerCase());\n\t\t\t}
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catch (e) {\n\t\t\t\tcomponents.error = components.error || \"Host's domain name can not be converted to ASCII via punycode: \" + e;\n\t\t\t\t}\n\t\t\t}\n\t\t//convert IRI -> URI\n\t\t\t_normalizeComponentEncoding(components, URI_PROTOCOL);\n\t\t} else {\n\t\t//normalize encodings\n\t\t\t_normalizeComponentEncoding(components, protocol);\n\t\t}\n\n\t//perform scheme specific parsing\n\tif (schemeHandler && schemeHandler.parse) {\n\t\tschemeHandler.parse(components, options);\n\t\t}\n\t} else {\n\tcomponents.error = components.error || \"URI can not be parsed.\";\n\t}\n\n\treturn components;\n};\n\nfunction _recomposeAuthority(components:URIComponents, options:URIOptions):string|undefined {\n\tconst protocol = (options.iri !== false ? IRI_PROTOCOL : URI_PROTOCOL);\n\tconst uriTokens:Array<string> = [];\n\n\tif (components.userinfo !== undefined) {\n\t\turiTokens.push(components.userinfo);\n\t\turiTokens.push(\"@\");\n\t}\n\n\tif (components.host !== undefined) {\n\t\t//normalize IP hosts, add brackets and escape zone separator for IPv6\n\t\turiTokens.push(_normalizeIPv6(_normalizeIPv4(String(components.host), protocol), protocol).replace(protocol.IPV6ADDRESS, (_, $1, $2) => \"[\" + $1 + ($2 ? \"%25\" + $2 : \"\") + \"]\"));\n\t}\n\n\tif (typeof components.port === \"number\") {\n\t\turiTokens.push(\":\");\n\t\turiTokens.push(components.port.toString(10));\n\t}\n\n\treturn uriTokens.length ? uriTokens.join(\"\") : undefined;\n};\n\nconst RDS1 = /^\\.\\.?\\//;\nconst RDS2 = /^\\/\\.(\\/|$)/;\nconst RDS3 = /^\\/\\.\\.(\\/|$)/;\nconst RDS4 = /^\\.\\.?$/;\nconst RDS5 = /^\\/?(?:.|\\n)*?(?=\\/|$)/;\n\nexport function removeDotSegments(input:string):string {\n\tconst output:Array<string> = [];\n\n\twhile (input.length) {\n\t\tif (input.match(RDS1)) {\n\t\t\tinput = input.replace(RDS1, \"\");\n\t\t} else if (input.match(RDS2)) {\n\t\t\tinput = input.replace(RDS2, \"/\");\n\t\t} else if (input.match(RDS3)) {\n\t\t\tinput = input.replace(RDS3, \"/\");\n\t\t\toutput.pop();\n\t\t} else if (input === \".\" || input === \"..\") {\n\t\t\tinput = \"\";\n\t\t} else {\n\t\t\tconst im = input.match(RDS5);\n\t\t\tif (im) {\n\t\t\t\tconst s = im[0];\n\t\t\t\tinput = input.slice(s.length);\n\t\t\t\toutput.push(s);\n\t\t} else {\n\t\t\tthrow new Error(\"Unexpected dot segment condition\");\n\t\t}\n\t}\n\n\treturn output.join(\"\");\n};\n\nexport function serialize(components:URIComponents, options:URIOptions = {}):string {\n\tconst protocol = (options.iri ? IRI_PROTOCOL : URI_PROTOCOL);\n\tconst uriTokens:Array<string> = [];\n\n\t//find scheme handler\n\tconst schemeHandler = SCHEMES[(options.scheme || components.scheme || \"\").toLowerCase()];\n\n\t//perform scheme specific serialization\n\tif (schemeHandler && schemeHandler.serialize) schemeHandler.serialize(components, options);\n\n\tif (components.host) {\n\t\t//if host component is an IPv6 address\n\t\tif (protocol.IPV6ADDRESS.test(components.host)) {\n\t\t\t//TODO: normalize IPv6 address as per RFC 5952\n\t\t}\n\n\t\t//if host component is a domain name\n\telse if (options.domainHost || (schemeHandler && schemeHandler.domainHost)) {\n\t\t//convert IDN via punycode\n\t\ttry {\n\t\t\tcomponents.host = (!options.iri ? punycode.toASCII(components.host.replace(protocol.PCT_ENCODED, pctDecChars).toLowerCase()) : punycode.toUnicode(components.host));\n\t\t} catch (e) {\n\t\t\tcomponents.error = components.error || \"Host's domain name can not be converted to \" + (!options.iri ? \"ASCII\" : \"Unicode\") + \" via punycode: \" + e;\n\t\t}\n\t}\n\n\t//normalize encoding\n\t_normalizeComponentEncoding(components, protocol);\n\n\tif (options.reference !== \"suffix\" && components.scheme) {\n\t\turiTokens.push(components.scheme);\n\t\turiTokens.push(\":\");\n\t}\n\n\tconst authority = _recomposeAuthority(components, options);\n\tif (authority !== undefined) {\n\t\tif (options.reference !== \"suffix\") {\n\t\t\turiTokens.push(\"//\");\n\t\t}\n\n\t\turiTokens.push(authority);\n\n\t\tif (components.path && components.path.charAt(0) !== \"/\") {\n\t\t\turiTokens.push(\"/\");\n\t\t}\n\t}\n\n\tif (components.path !== undefined) {\n\t\tlet s = components.path;\n\n\t\tif (!options.absolutePath && (!schemeHandler || !schemeHandler.absolutePath)) {\n\t\t\ts = removeDotSegments(s);\n\t\t}\n\n\t\tif (authority === undefined) {\n\t\t\ts = s.replace(/^\\/\\//, \"/%2F\");  //don't allow the path to start with \"//\"\n\t\t}\n\n\t\turiTokens.push(s);\n\t}\n\n\tif (components.query !== undefined) {\n\t\turiTokens.push(\"?\");\n\t\turiTokens.push(components.query);\n\t}\n\n\tif (components.fragment !== undefined) {\n\t\turiTokens.push(\"#\");\n\t\turiTokens.push(components.fragment);\n\t}\n\n\treturn uriTokens.join(\"\");  //merge tokens into
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 a string\n};\n\nexport function resolveComponents(base:URIComponents, relative:URIComponents,
options:URIOptions = {}, skipNormalization?:boolean):URIComponents {\n\tconst target:URIComponents =
{};\n\n\tif (!skipNormalization) {\n\t\tbase = parse(serialize(base, options), options);  //normalize base
components\n\t\trelative = parse(serialize(relative, options), options);  //normalize relative
components\n\t}\n\toptions = options || {};\n\n\tif (!options.tolerant && relative.scheme) {\n\t\ttarget.scheme =
relative.scheme;\n\t\t//target.authority = relative.authority;\n\t\ttarget.userinfo = relative.userinfo;\n\t\ttarget.host =
relative.host;\n\t\ttarget.port = relative.port;\n\t\ttarget.path = removeDotSegments(relative.path ||
\"\");\n\t\ttarget.query = relative.query;\n\t} else {\n\t\tif (relative.userinfo !== undefined || relative.host !==
undefined || relative.port !== undefined) {\n\t\t\t//target.authority = relative.authority;\n\t\t\ttarget.userinfo =
relative.userinfo;\n\t\t\ttarget.host
 = relative.host;\n\t\t\ttarget.port = relative.port;\n\t\t\ttarget.path = removeDotSegments(relative.path ||
\"\");\n\t\t\ttarget.query = relative.query;\n\t\t} else {\n\t\t\tif (!relative.path) {\n\t\t\t\ttarget.path =
base.path;\n\t\t\t\tif (relative.query !== undefined) {\n\t\t\t\t\ttarget.query = relative.query;\n\t\t\t\t} else
{\n\t\t\t\t\ttarget.query = base.query;\n\t\t\t\t}\n\t\t\t} else {\n\t\t\t\tif (relative.path.charAt(0) === \"/\")
{\n\t\t\t\t\ttarget.path = removeDotSegments(relative.path);\n\t\t\t\t} else {\n\t\t\t\t\tif ((base.userinfo !== undefined ||
base.host !== undefined || base.port !== undefined) && !base.path) {\n\t\t\t\t\t\ttarget.path = \"/\" +
relative.path;\n\t\t\t\t\t} else if (!base.path) {\n\t\t\t\t\t\ttarget.path = relative.path;\n\t\t\t\t\t} else
{\n\t\t\t\t\t\ttarget.path = base.path.slice(0, base.path.lastIndexOf(\"/\") + 1) +
relative.path;\n\t\t\t\t\t}\n\t\t\t\t\ttarget.path = removeDotSegments(target.path);\n\t\t\t\t}\n\t\t\ttarget.query
 = relative.query;\n\t\t}\n\t\t//target.authority = base.authority;\n\t\ttarget.userinfo =
base.userinfo;\n\t\ttarget.host = base.host;\n\t\ttarget.port = base.port;\n\t}\n\ttarget.scheme =
base.scheme;\n\t}\n\n\ttarget.fragment = relative.fragment;\n\n\treturn target;\n};\n\nexport function
resolve(baseURI:string, relativeURI:string, options?:URIOptions):string {\n\tconst schemelessOptions = assign({
scheme : 'null' }, options);\n\treturn serialize(resolveComponents(parse(baseURI, schemelessOptions),
parse(relativeURI, schemelessOptions), schemelessOptions, true), schemelessOptions);\n};\n\nexport function
normalize(uri:string, options?:URIOptions):string;\nexport function normalize(uri:URIComponents,
options?:URIOptions):URIComponents;\nexport function normalize(uri:any, options?:URIOptions):any {\n\tif
(typeof uri === \"string\") {\n\t\turi = serialize(parse(uri, options), options);\n\t} else if (typeOf(uri) === \"object\")
{\n\t\turi = parse(serialize(<URIComponents>uri,
 options), options);\n\t}\n\n\treturn uri;\n};\n\nexport function equal(uriA:string, uriB:string, options?:
URIOptions):boolean;\nexport function equal(uriA:URIComponents, uriB:URIComponents,
options?:URIOptions):boolean;\nexport function equal(uriA:any, uriB:any, options?:URIOptions):boolean {\n\tif
(typeof uriA === \"string\") {\n\t\turiA = serialize(parse(uriA, options), options);\n\t} else if (typeOf(uriA) ===
\"object\") {\n\t\turiA = serialize(<URIComponents>uriA, options);\n\t}\n\n\tif (typeof uriB === \"string\")
{\n\t\turiB = serialize(parse(uriB, options), options);\n\t} else if (typeOf(uriB) === \"object\") {\n\t\turiB =
serialize(<URIComponents>uriB, options);\n\t}\n\n\treturn uriA === uriB;\n};\n\nexport function
escapeComponent(str:string, options?:URIOptions):string {\n\treturn str && str.toString().replace((!options ||
!options.iri ? URI_PROTOCOL.ESCAPE : IRI_PROTOCOL.ESCAPE), pctEncChar);\n};\n\nexport function
unescapeComponent(str:string, options?:URIOptions):string
 {\n\treturn str && str.toString().replace((!options || !options.iri ? URI_PROTOCOL.PCT_ENCODED :
IRI_PROTOCOL.PCT_ENCODED), pctDecChars);\n};\n","import { URISchemeHandler, URIComponents,
URIOptions } from \"../uri\";\nimport { pctEncChar, pctDecChars, unescapeComponent } from \"../uri\";\nimport
punycode from \"punycode\";\nimport { merge, subexp, toUpperCase, toArray } from \"../util\";\n\nexport interface
MailtoHeaders {\n\t[hfname:string]:string\n}\n\nexport interface MailtoComponents extends URIComponents
{\n\tto:Array<string>,\n\theaders?:MailtoHeaders,\n\tsubject?:string,\n\tbody?:string\n}\n\nconst O:MailtoHeaders
= {};\nconst isIRI = true;\n\n//RFC 3986\nconst UNRESERVED$$ = \"[A-Za-z0-9\\\\-\\\\.\\\\_\\\\~\" + (isIRI ?
\"\\\\xA0-\\\\u200D\\\\u2010-\\\\u2029\\\\u202F-\\\\uD7FF\\\\uF900-\\\\uFDCF\\\\uFDF0-\\\\uFFEF\" : \"\") +
\"]\";\nconst HEXDIG$$ = \"[0-9A-Fa-f]\";  //case-insensitive\nconst PCT_ENCODED$ =
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subexp(subexp(\"%[EFef]\" + HEXDIG$$ + \"%\" + HEXDIG$$ + HEXDIG$$
 + \"%\" + HEXDIG$$ + HEXDIG$$) + \"|\" + subexp(\"%[89A-Fa-f]\" + HEXDIG$$ + \"%\" + HEXDIG$$ +
HEXDIG$$) + \"|\" + subexp(\"%\" + HEXDIG$$ + HEXDIG$$));  //expanded\n\n//RFC 5322, except these
symbols as per RFC 6068: @ : / ? # [ ] & ; =\n//const ATEXT$$ = \"[A-Za-z0-9\\\\!\\\\#\\\\$\\\\%\\\\&\\\\'\\\\*\\\\+\\\\-
\\\\/\\\\=\\\\?\\\\^\\\\_\\\\`\\\\{\\\\|\\\\}\\\\~]\";\n//const WSP$$ = \"[\\\\x20\\\\x09]\";\n//const OBS_QTEXT$$ =
\"[\\\\x01-\\\\x08\\\\x0B\\\\x0C\\\\x0E-\\\\x1F\\\\x7F]\";  //(%d1-8 / %d11-12 / %d14-31 / %d127)\n//const QTEXT$$
= merge(\"[\\\\x21\\\\x23-\\\\x5B\\\\x5D-\\\\x7E]\", OBS_QTEXT$$);  //%d33 / %d35-91 / %d93-126 / obs-
qtext\n//const VCHAR$$ = \"[\\\\x21-\\\\x7E]\";\n//const WSP$$ = \"[\\\\x20\\\\x09]\";\n//const OBS_QP$ =
subexp(\"\\\\\\\\\" + merge(\"[\\\\x00\\\\x0D\\\\x0A]\", OBS_QTEXT$$));  //%d0 / CR / LF / obs-qtext\n//const
FWS$ = subexp(subexp(WSP$$ + \"*\" + \"\\\\x0D\\\\x0A\") + \"?\" + WSP$$ + \"+\");\n//const QUOTED_PAIR$
= subexp(subexp(\"\\\\\\\\\"
 + subexp(VCHAR$$ + \"|\" + WSP$$)) + \"|\" + OBS_QP$);\n//const QUOTED_STRING$ = subexp('\\\\\"' +
subexp(FWS$ + \"?\" + QCONTENT$) + \"*\" + FWS$ + \"?\" + '\\\\\"');\nconst ATEXT$$ = \"[A-Za-z0-
9\\\\!\\\\$\\\\%\\\\'\\\\*\\\\+\\\\-\\\\^\\\\_\\\\`\\\\{\\\\|\\\\}\\\\~]\";\nconst QTEXT$$ =
\"[\\\\!\\\\$\\\\%\\\\'\\\\(\\\\)\\\\*\\\\+\\\\,\\\\-\\\\.0-9\\\\<\\\\>A-Z\\\\x5E-\\\\x7E]\";\nconst VCHAR$$ =
merge(QTEXT$$, \"[\\\\\\\\\"\\\\\\\\\]\");\nconst DOT_ATOM_TEXT$ = subexp(ATEXT$$ + \"+\" + subexp(\"\\\\.\" +
ATEXT$$ + \"+\") + \"*\");\nconst QUOTED_PAIR$ = subexp(\"\\\\\\\\\" + VCHAR$$);\nconst QCONTENT$ =
subexp(QTEXT$$ + \"|\" + QUOTED_PAIR$);\nconst QUOTED_STRING$ = subexp('\\\\\"' + QCONTENT$ +
\"*\" + '\\\\\"');\n\n//RFC 6068\nconst DTEXT_NO_OBS$$ = \"[\\\\x21-\\\\x5A\\\\x5E-\\\\x7E]\";  //%d33-90 /
%d94-126\nconst SOME_DELIMS$$ = \"[\\\\!\\\\$\\\\'\\\\(\\\\)\\\\*\\\\+\\\\,\\\\;\\\\:\\\\@]\";\nconst QCHAR$ =
subexp(UNRESERVED$$ + \"|\" + PCT_ENCODED$ + \"|\" + SOME_DELIMS$$);\nconst
 DOMAIN$ = subexp(DOT_ATOM_TEXT$ + \"|\" + \"\\\\[\" + DTEXT_NO_OBS$$ + \"*\" + \"\\\\]\");\nconst
LOCAL_PART$ = subexp(DOT_ATOM_TEXT$ + \"|\" + QUOTED_STRING$);\nconst ADDR_SPEC$ =
subexp(LOCAL_PART$ + \"\\\\@\" + DOMAIN$);\nconst TO$ = subexp(ADDR_SPEC$ + subexp(\"\\\\,\" +
ADDR_SPEC$) + \"*\");\nconst HFNAME$ = subexp(QCHAR$ + \"*\");\nconst HFVALUE$ =
HFNAME$;\nconst HFIELD$ = subexp(HFNAME$ + \"\\\\=\" + HFVALUE$);\nconst HFIELDS2$ =
subexp(HFIELD$ + subexp(\"\\\\&\" + HFIELD$) + \"*\");\nconst HFIELDS$ = subexp(\"\\\\?\" +
HFIELDS2$);\nconst MAILTO_URI = new RegExp(\"^mailto\\\\:\" + TO$ + \"?\" + HFIELDS$ + \"?$\");\n\nconst
UNRESERVED = new RegExp(UNRESERVED$$, \"g\");\nconst PCT_ENCODED = new
RegExp(PCT_ENCODED$, \"g\");\nconst NOT_LOCAL_PART = new RegExp(merge(\"[^]\", ATEXT$$,
\"[\\\\.]\", '[\\\\\"]', VCHAR$$), \"g\");\nconst NOT_DOMAIN = new RegExp(merge(\"[^]\", ATEXT$$, \"[\\\\.]\",
\"[\\\\[]\", DTEXT_NO_OBS$$, \"[\\\\]]\"), \"g\");\nconst NOT_HFNAME = new RegExp(merge(\"[^]\",
 UNRESERVED$$, SOME_DELIMS$$), \"g\");\nconst NOT_HFVALUE = NOT_HFNAME;\nconst TO = new
RegExp(\"^\" + TO$ + \"$\");\nconst HFIELDS = new RegExp(\"^\" + HFIELDS2$ + \"$\");\n\nfunction
decodeUnreserved(str:string):string {\n\tconst decStr = pctDecChars(str);\n\treturn (!decStr.match(UNRESERVED)
? str : decStr);\n}\n\nconst handler:URISchemeHandler<MailtoComponents> =  {\n\tscheme : \"mailto\",\n\n\tparse
: function (components:URIComponents, options:URIOptions):MailtoComponents {\n\t\tconst mailtoComponents =
components as MailtoComponents;\n\t\tconst to = mailtoComponents.to = (mailtoComponents.path ?
mailtoComponents.path.split(\",\") : []);\n\t\tmailtoComponents.path = undefined;\n\n\t\tif
(mailtoComponents.query) {\n\t\t\tlet unknownHeaders = false\n\t\t\tconst headers:MailtoHeaders = {};\n\t\t\tconst
hfields = mailtoComponents.query.split(\"&\");\n\n\t\t\tfor (let x = 0, xl = hfields.length; x < xl; ++x) {\n\t\t\t\tconst
hfield = hfields[x].split(\"=\");\n\n\t\t\t\tswitch (hfield[0])
 {\n\t\t\t\t\tcase \"to\":\n\t\t\t\t\t\tconst toAddrs = hfield[1].split(\",\");\n\t\t\t\t\t\tfor (let x = 0, xl = toAddrs.length; x
< xl; ++x) {\n\t\t\t\t\t\tto.push(toAddrs[x]);\n\t\t\t\t\t}\n\t\t\t\t\tbreak;\n\t\t\t\tcase
\"subject\":\n\t\t\t\t\tmailtoComponents.subject = unescapeComponent(hfield[1],
options);\n\t\t\t\tbreak;\n\t\t\t\tcase \"body\":\n\t\t\t\t\tmailtoComponents.body =
unescapeComponent(hfield[1], options);\n\t\t\t\tbreak;\n\t\t\t\tdefault:\n\t\t\t\tunknownHeaders =
true;\n\t\t\t\theaders[unescapeComponent(hfield[0], options)] = unescapeComponent(hfield[1],
```

options);\n\t\t\t\t\t\tbreak;\n\t\t\t\t}\n\t\t\t}\n\n\t\t\tif (unknownHeaders) mailtoComponents.headers = headers;\n\t\t}\n\n\t\tmailtoComponents.query = undefined;\n\n\t\tfor (let x = 0, xl = to.length; x < xl; ++x) {\n\t\t\tconst addr = to[x].split(\"@\");\n\n\t\t\taddr[0] = unescapeComponent(addr[0]);\n\n\t\t\tif (!options.unicodeSupport) {\n\t\t\t\t//convert Unicode IDN -> ASCII IDN\n\t\t\t\ttry {\n\t\t\t\t\taddr[1] = punycode.toASCII(unescapeComponent(addr[1], options).toLowerCase());\n\t\t\t\t} catch (e) {\n\t\t\t\t\tmailtoComponents.error = mailtoComponents.error || \"Email address's domain name can not be converted to ASCII via punycode: \" + e;\n\t\t\t\t}\n\t\t\t} else {\n\t\t\t\taddr[1] = unescapeComponent(addr[1], options).toLowerCase();\n\t\t\t}\n\n\t\tto[x] = addr.join(\"@\");\n\t\t}\n\n\treturn mailtoComponents;\n\t},\n\nserialize : function (mailtoComponents:MailtoComponents, options:URIOptions):URIComponents {\n\tconst components = mailtoComponents as URIComponents;\n\tconst to = toArray(mailtoComponents.to);\n\tif (to) {\n\t\tfor (let x = 0, xl = to.length; x < xl; ++x) {\n\t\t\tconst toAddr = String(to[x]);\n\t\t\tconst atIdx = toAddr.lastIndexOf(\"@\");\n\t\t\tconst localPart = (toAddr.slice(0, atIdx)).replace(PCT_ENCODED, decodeUnreserved).replace(PCT_ENCODED, toUpperCase).replace(NOT_LOCAL_PART, pctEncChar);\n\t\t\tlet domain = toAddr.slice(atIdx + 1);\n\n\t\t\t//convert IDN via punycode\n\t\t\ttry {\n\t\t\t\tdomain = (!options.iri ? punycode.toASCII(unescapeComponent(domain, options).toLowerCase()) : punycode.toUnicode(domain));\n\t\t\t} catch (e) {\n\t\t\t\tcomponents.error = components.error || \"Email address's domain name can not be converted to \" + (!options.iri ? \"ASCII\" : \"Unicode\") + \" via punycode: \" + e;\n\t\t\t}\n\n\t\t\tto[x] = localPart + \"@\" + domain;\n\t\t}\n\n\tcomponents.path = to.join(\",\");\n\t}\n\n\tconst headers = mailtoComponents.headers = mailtoComponents.headers || {};\n\n\tif (mailtoComponents.subject) headers[\"subject\"] = mailtoComponents.subject;\n\tif (mailtoComponents.body) headers[\"body\"] = mailtoComponents.body;\n\n\tconst fields = [];\n\tfor (const name in headers) {\n\t\tif (headers[name] !== O[name]) {\n\t\t\tfields.push(\n\t\t\t\tname.replace(PCT_ENCODED, decodeUnreserved).replace(PCT_ENCODED, toUpperCase).replace(NOT_HFNAME, pctEncChar) +\n\t\t\t\t\"=\" +\n\t\t\t\theaders[name].replace(PCT_ENCODED, decodeUnreserved).replace(PCT_ENCODED, toUpperCase).replace(NOT_HFVALUE, pctEncChar)\n\t\t\t);\n\t\t}\n\t}\n\n\tif (fields.length) {\n\t\tcomponents.query = fields.join(\"&\");\n\t}\n\n\treturn components;\n\t}\n}\n\nexport default handler;","import { URIRegExps } from \"./uri\";\nimport { buildExps } from \"./regexps-uri\";\n\nexport default buildExps(true);\n","import { URISchemeHandler, URIComponents, URIOptions } from \"../uri\";\n\nconst handler:URISchemeHandler = {\n\tscheme : \"http\",\n\n\tdomainHost : true,\n\n\tparse : function (components:URIComponents, options:URIOptions):URIComponents {\n\t\t//report missing host\n\t\tif (!components.host) {\n\t\t\tcomponents.error = components.error || \"HTTP URIs must have a host.\";\n\t\t}\n\n\treturn components;\n\t},\n\nserialize : function (components:URIComponents, options:URIOptions):URIComponents {\n\t\t//normalize the default port\n\t\tif (components.port === (String(components.scheme).toLowerCase() !== \"https\" ? 80 : 443) || components.port === \"\") {\n\t\t\tcomponents.port = undefined;\n\t\t}\n\t\t//normalize the empty path\n\t\tif (!components.path) {\n\t\t\tcomponents.path = \"/\";\n\t\t}\n\n\t\t//NOTE: We do not parse query strings for HTTP URIs\n\t\t//as WWW Form Url Encoded query strings are part of the HTML4+ spec,\n\t\t//and not the HTTP spec.\n\n\treturn components;\n\t}\n};\n\nexport default handler;","import { URISchemeHandler, URIComponents, URIOptions } from \"../uri\";\nimport http from \"./http\";\n\nconst handler:URISchemeHandler = {\n\tscheme : \"https\",\n\n\tdomainHost : http.domainHost,\n\n\tparse : http.parse,\n\n\tserialize : http.serialize\n}\n\nexport default handler;","import { URISchemeHandler, URIComponents, URIOptions } from \"../uri\";\nimport { pctEncChar, SCHEMES } from \"../uri\";\n\nexport interface URNComponents extends URIComponents {\n\tnid?:string;\n\tnss?:string;\n}\n\nexport interface URNOptions extends URIOptions {\n\tnid?:string;\n}\n\nconst NID$ = \"(?:[0-9A-Za-z][0-9A-Za-z\\\\-]{1,31})\";\nconst PCT_ENCODED$ = \"(?:\\\\%[0-9A-Fa-f]{2})\";\nconst TRANS$$ = \"[0-9A-Za-z\\\\(\\\\)\\\\+\\\\,\\\\-\\\\.\\\\:\\\\=\\\\@\\\\;\\\\$_\\\\!*\\\\'\\\\/\\\\?\\\\#]\";\nconst NSS$ = \"(?:(?:\" +

PCT_ENCODED$ + \"|\" + TRANS$$ + \")+)\";\nconst URN_SCHEME = new RegExp(\"^urn\\\\:(\" + NID$ + \")$\");\nconst URN_PATH = new RegExp(\"^(\" + NID$ + \")\\\\:(\" + NSS$ + \")$\");\nconst URN_PARSE = /^([^\\:]+)\\:(.*)/;\nconst URN_EXCLUDED = /[\\x00-\\x20\\\\\\\"\\&\\<\\>\\[\\]\\^\\`\\{\\|\\}\\~\\x7F-\\xFF]/g;\n\n//RFC 2141\nconst handler:URISchemeHandler<URNComponents,URNOptions> = {\n\tscheme : \"urn\",\n\n\tparse : function (components:URIComponents, options:URNOptions):URNComponents {\n\t\tconst matches = components.path && components.path.match(URN_PARSE);\n\t\tlet urnComponents = components as URNComponents;\n\n\t\tif (matches) {\n\t\t\tconst
 scheme = options.scheme || urnComponents.scheme || \"urn\";\n\t\t\tconst nid = matches[1].toLowerCase();\n\t\t\tconst nss = matches[2];\n\t\t\tconst urnScheme = `${scheme}:${options.nid || nid}`;\n\t\t\tconst schemeHandler = SCHEMES[urnScheme];\n\n\t\t\turnComponents.nid = nid;\n\t\t\turnComponents.nss = nss;\n\t\t\turnComponents.path = undefined;\n\n\t\t\tif (schemeHandler) {\n\t\t\t\turnComponents = schemeHandler.parse(urnComponents, options) as URNComponents;\n\t\t\t}\n\t\t} else {\n\t\t\turnComponents.error = urnComponents.error || \"URN can not be parsed.\";\n\t\t}\n\n\treturn urnComponents;\n\t},\n\n\tserialize : function (urnComponents:URNComponents, options:URNOptions):URIComponents {\n\t\tconst scheme = options.scheme || urnComponents.scheme || \"urn\";\n\t\tconst nid = urnComponents.nid;\n\t\tconst urnScheme = `${scheme}:${options.nid || nid}`;\n\t\tconst schemeHandler = SCHEMES[urnScheme];\n\n\t\tif (schemeHandler) {\n\t\t\turnComponents = schemeHandler.serialize(urnComponents,
 options) as URNComponents;\n\t\t}\n\n\tconst uriComponents = urnComponents as URIComponents;\n\tconst nss = urnComponents.nss;\n\turiComponents.path = `${nid || options.nid}:${nss}`;\n\n\treturn uriComponents;\n\t},\n};\n\nexport default handler;","import { URISchemeHandler, URIComponents, URIOptions } from \"../uri\";\nimport { URNComponents } from \"./urn\";\nimport { SCHEMES } from \"../uri\";\n\nexport interface UUIDComponents extends URNComponents {\n\tuuid?: string;\n}\n\nconst UUID = /^[0-9A-Fa-f]{8}(?:\\-[0-9A-Fa-f]{4}){3}\\-[0-9A-Fa-f]{12}$/;\nconst UUID_PARSE = /^[0-9A-Fa-f\\-]{36}/;\n\n//RFC 4122\nconst handler:URISchemeHandler<UUIDComponents, URIOptions, URNComponents> = {\n\tscheme : \"urn:uuid\",\n\n\tparse : function (urnComponents:URNComponents, options:URIOptions):UUIDComponents {\n\t\tconst uuidComponents = urnComponents as UUIDComponents;\n\t\tuuidComponents.uuid = uuidComponents.nss;\n\t\tuuidComponents.nss = undefined;\n\n\t\tif (!options.tolerant &&
 (!uuidComponents.uuid || !uuidComponents.uuid.match(UUID))) {\n\t\t\tuuidComponents.error = uuidComponents.error || \"UUID is not valid.\";\n\t\t}\n\n\treturn uuidComponents;\n\t},\n\n\tserialize : function (uuidComponents:UUIDComponents, options:URIOptions):URNComponents {\n\t\tconst urnComponents = uuidComponents as URNComponents;\n\t\t//normalize UUID\n\t\turnComponents.nss = (uuidComponents.uuid || \"\").toLowerCase();\n\t\treturn urnComponents;\n\t},\n};\n\nexport default handler;","import { SCHEMES } from \"./uri\";\n\nimport http from \"./schemes/http\";\nSCHEMES[http.scheme] = http;\n\nimport https from \"./schemes/https\";\nSCHEMES[https.scheme] = https;\n\nimport mailto from \"./schemes/mailto\";\nSCHEMES[mailto.scheme] = mailto;\n\nimport urn from \"./schemes/urn\";\nSCHEMES[urn.scheme] = urn;\n\nimport uuid from \"./schemes/urn-uuid\";\nSCHEMES[uuid.scheme] = uuid;\n\nexport * from \"./uri\";\n"]}

Found in path(s):
* /opt/cola/permits/1110634955_1606918997.92/0/garycourt-uri-js-4-2-2-0-g4f6f600-1-tar-gz/garycourt-uri-js-4f6f600/dist/es5/uri.all.min.js.map
No license file was found, but licenses were detected in source scan.

{"version":3,"file":"uri.all.js","sources":["../../src/index.ts","../../src/schemes/urn-uuid.ts","../../src/schemes/urn.ts","../../src/schemes/mailto.ts","../../src/schemes/https.ts","../../src/schemes/http.ts","../../src/uri.ts","../../node_modules/punycode/punycode.es6.js","../../src/regexps-iri.ts","../../src/regexps-uri.ts","../../src/util.ts"],"sourcesContent":["import { SCHEMES } from \"./uri\";\n\nimport http from

\"./schemes/http\";\nSCHEMES[http.scheme] = http;\n\nimport https from \"./schemes/https\";\nSCHEMES[https.scheme] = https;\n\nimport mailto from \"./schemes/mailto\";\nSCHEMES[mailto.scheme] = mailto;\n\nimport urn from \"./schemes/urn\";\nSCHEMES[urn.scheme] = urn;\n\nimport uuid from \"./schemes/urn-uuid\";\nSCHEMES[uuid.scheme] = uuid;\n\nexport * from \"./uri\";\n","import { URISchemeHandler, URIComponents, URIOptions } from \"../uri\";\nimport { URNComponents } from \"./urn\";\nimport { SCHEMES } from \"../uri\";\n\nexport interface UUIDComponents extends URNComponents {\n\tuuid?: string;\n}\n\nconst UUID = /^[0-9A-Fa-f]{8}(?:\\-[0-9A-Fa-f]{4}){3}\\-[0-9A-Fa-f]{12}$/;\nconst UUID_PARSE = /^[0-9A-Fa-f\\-]{36}/;\n\n//RFC 4122\nconst handler:URISchemeHandler<UUIDComponents, URIOptions, URNComponents> = {\n\tscheme : \"urn:uuid\",\n\n\tparse : function (urnComponents:URNComponents, options:URIOptions):UUIDComponents {\n\t\tconst uuidComponents = urnComponents as UUIDComponents;\n\t\tuuidComponents.uuid = uuidComponents.nss;\n\t\tuuidComponents.nss = undefined;\n\n\t\tif (!options.tolerant && (!uuidComponents.uuid || !uuidComponents.uuid.match(UUID))) {\n\t\t\tuuidComponents.error = uuidComponents.error || \"UUID is not valid.\";\n\t\t}\n\n\t\treturn uuidComponents;\n\t},\n\n\tserialize : function (uuidComponents:UUIDComponents, options:URIOptions):URNComponents {\n\t\tconst urnComponents = uuidComponents as URNComponents;\n\t\t//normalize UUID\n\t\turnComponents.nss = (uuidComponents.uuid || \"\").toLowerCase();\n\t\treturn urnComponents;\n\t},\n};\n\nexport default handler;","import { URISchemeHandler, URIComponents, URIOptions } from \"../uri\";\nimport { pctEncChar, SCHEMES } from \"../uri\";\n\nexport interface URNComponents extends URIComponents {\n\tnid?:string;\n\tnss?:string;\n}\n\nexport interface URNOptions extends URIOptions {\n\tnid?:string;\n}\n\nconst NID$ = \"(?:[0-9A-Za-z][0-9A-Za-z\\\\-]{1,31})\";\nconst PCT_ENCODED$ = \"(?:\\\\%[0-9A-Fa-f]{2})\";\nconst TRANS$$ = \"[0-9A-Za-z\\\\(\\\\)\\\\+\\\\,\\\\\\-\\\\.\\\\:\\\\=\\\\@\\\\;\\\\$\\\\_\\\\!\\\\*\\\\'\\\\/\\\\?\\\\#]\";\nconst NSS$ = \"(?:(?:\" + PCT_ENCODED$ + \"|\" + TRANS$$ + \")+)\";\nconst URN_SCHEME = new RegExp(\"^urn\\\\:(\" + NID$ + \")$\");\nconst URN_PATH = new RegExp(\"^(\" + NID$ + \")\\\\:(\" + NSS$ + \")$\");\nconst URN_PARSE = /^([^\\:]+)\\:(.*)/;\nconst URN_EXCLUDED = /[\\x00-\\x20\\\\\\\"\\&\\<\\>\\[\\]\\^\\`\\{\\|\\}\\~\\x7F-\\xFF]/g;\n\n//RFC 2141\nconst handler:URISchemeHandler<URNComponents,URNOptions> = {\n\tscheme : \"urn\",\n\n\tparse : function (components:URIComponents, options:URNOptions):URNComponents {\n\t\tconst matches = components.path && components.path.match(URN_PARSE);\n\t\tlet urnComponents = components as URNComponents;\n\n\t\tif (matches) {\n\t\t\tconst scheme = options.scheme || urnComponents.scheme || \"urn\";\n\t\t\tconst nid = matches[1].toLowerCase();\n\t\t\tconst nss = matches[2];\n\t\t\tconst urnScheme = `${scheme}:${options.nid || nid}`;\n\t\t\tconst schemeHandler = SCHEMES[urnScheme];\n\n\t\t\turnComponents.nid = nid;\n\t\t\turnComponents.nss = nss;\n\t\t\turnComponents.path = undefined;\n\n\t\t\tif (schemeHandler) {\n\t\t\t\turnComponents = schemeHandler.parse(urnComponents, options) as URNComponents;\n\t\t\t}\n\t\t} else {\n\t\t\turnComponents.error = urnComponents.error || \"URN can not be parsed.\";\n\t\t}\n\n\t\treturn urnComponents;\n\t},\n\n\tserialize : function (urnComponents:URNComponents, options:URNOptions):URIComponents {\n\t\tconst scheme = options.scheme || urnComponents.scheme || \"urn\";\n\t\tconst nid = urnComponents.nid;\n\t\tconst urnScheme = `${scheme}:${options.nid || nid}`;\n\t\tconst schemeHandler = SCHEMES[urnScheme];\n\n\t\tif (schemeHandler) {\n\t\t\turnComponents = schemeHandler.serialize(urnComponents, options) as URNComponents;\n\t\t}\n\n\t\tconst uriComponents = urnComponents as URIComponents;\n\t\tconst nss = urnComponents.nss;\n\t\turiComponents.path = `${nid || options.nid}:${nss}`;\n\n\t\treturn uriComponents;\n\t},\n};\n\nexport default handler;","import { URISchemeHandler, URIComponents, URIOptions } from \"../uri\";\nimport { pctEncChar, pctDecChars, unescapeComponent } from \"../uri\";\nimport punycode from \"punycode\";\nimport { merge, subexp, toUpperCase, toArray } from \"../util\";\n\nexport interface MailtoHeaders {\n\t[hfname:string]:string\n}\n\nexport

```
interface MailtoComponents extends URIComponents
{\n\tto:Array<string>,\n\theaders?:MailtoHeaders,\n\tsubject?:string,\n\tbody?:string\n}\n\nconst
 O:MailtoHeaders = {};\nconst isIRI = true;\n\n//RFC 3986\nconst UNRESERVED$$ = \"[A-Za-z0-9\\\\-
\\\\.\\\\_\\\\~\" + (isIRI ? \"\\\\xA0-\\\\u200D\\\\u2010-\\\\u2029\\\\u202F-\\\\uD7FF\\\\uF900-\\\\uFDCF\\\\uFDF0-
\\\\uFFEF\" : \"\") + \"]\";\nconst HEXDIG$$ = \"[0-9A-Fa-f]\";  //case-insensitive\nconst PCT_ENCODED$ =
subexp(subexp(\"%[EFef]\" + HEXDIG$$ + \"%\" + HEXDIG$$ + HEXDIG$$ + \"%\" + HEXDIG$$ +
HEXDIG$$) + \"|\" + subexp(\"%[89A-Fa-f]\" + HEXDIG$$ + \"%\" + HEXDIG$$ + HEXDIG$$) + \"|\" +
subexp(\"%\" + HEXDIG$$ + HEXDIG$$));  //expanded\n\n//RFC 5322, except these symbols as per RFC 6068: @
: / ? # [ ] & ; =\n//const ATEXT$$ = \"[A-Za-z0-9\\\\!\\\\#\\\\$\\\\%\\\\&\\\\'\\\\*\\\\+\\\\-
\\\\/\\\\=\\\\?\\\\^\\\\_\\\\`\\\\{\\\\|\\\\}\\\\~]\";\n//const WSP$$ = \"[\\\\x20\\\\x09]\";\n//const OBS_QTEXT$$ =
\"[\\\\x01-\\\\x08\\\\x0B\\\\x0C\\\\x0E-\\\\x1F\\\\x7F]\";  //(%d1-8 / %d11-12 / %d14-31 / %d127)\n//const QTEXT$$
= merge(\"[\\\\x21\\\\x23-\\\\x5B\\\\x5D-\\\\x7E]\",
 OBS_QTEXT$$);  //%d33 / %d35-91 / %d93-126 / obs-qtext\n//const VCHAR$$ = \"[\\\\x21-\\\\x7E]\";\n//const
WSP$$ = \"[\\\\x20\\\\x09]\";\n//const OBS_QP$ = subexp(\"\\\\\\\\\" + merge(\"[\\\\x00\\\\x0D\\\\x0A]\",
OBS_QTEXT$$));  //%d0 / CR / LF / obs-qtext\n//const FWS$ = subexp(subexp(WSP$$ + \"*\" +
\"\\\\x0D\\\\x0A\") + \"?\" + WSP$$ + \"+\");\n//const QUOTED_PAIR$ = subexp(subexp(\"\\\\\\\\\" +
subexp(VCHAR$$ + \"|\" + WSP$$)) + \"|\" + OBS_QP$);\n//const QUOTED_STRING$ = subexp('\\\\\"' +
subexp(FWS$ + \"?\" + QCONTENT$) + \"*\" + FWS$ + \"?\" + '\\\\\"');\nconst ATEXT$$ = \"[A-Za-z0-
9\\\\!\\\\$\\\\%\\\\'\\\\*\\\\+\\\\-\\\\^\\\\_\\\\`\\\\{\\\\|\\\\}\\\\~]\";\nconst QTEXT$$ =
\"[\\\\!\\\\$\\\\%\\\\'\\\\(\\\\)\\\\*\\\\+\\\\,\\\\-\\\\.0-9\\\\<\\\\>A-Z\\\\x5E-\\\\x7E]\";\nconst VCHAR$$ =
merge(QTEXT$$, \"[\\\\\\\\\\\\\\\\]\");\nconst DOT_ATOM_TEXT$ = subexp(ATEXT$$ + \"+\" + subexp(\"\\\\.\" +
ATEXT$$ + \"+\") + \"*\");\nconst QUOTED_PAIR$ = subexp(\"\\\\\\\\\" + VCHAR$$);\nconst
 QCONTENT$ = subexp(QTEXT$$ + \"|\" + QUOTED_PAIR$);\nconst QUOTED_STRING$ = subexp('\\\\\"' +
QCONTENT$ + \"*\" + '\\\\\"');\n\n//RFC 6068\nconst DTEXT_NO_OBS$$ = \"[\\\\x21-\\\\x5A\\\\x5E-\\\\x7E]\";
//%d33-90 / %d94-126\nconst SOME_DELIMS$$ = \"[\\\\!\\\\$\\\\'\\\\(\\\\)\\\\*\\\\+\\\\,\\\\;\\\\:\\\\@]\";\nconst
QCHAR$ = subexp(UNRESERVED$$ + \"|\" + PCT_ENCODED$ + \"|\" + SOME_DELIMS$$);\nconst
DOMAIN$ = subexp(DOT_ATOM_TEXT$ + \"|\" + \"\\\\[\" + DTEXT_NO_OBS$$ + \"*\" + \"\\\\]\");\nconst
LOCAL_PART$ = subexp(DOT_ATOM_TEXT$ + \"|\" + QUOTED_STRING$);\nconst ADDR_SPEC$ =
subexp(LOCAL_PART$ + \"\\\\@\" + DOMAIN$);\nconst TO$ = subexp(ADDR_SPEC$ + subexp(\"\\\\,\" +
ADDR_SPEC$) + \"*\");\nconst HFNAME$ = subexp(QCHAR$ + \"*\");\nconst HFVALUE$ =
HFNAME$;\nconst HFIELD$ = subexp(HFNAME$ + \"\\\\=\" + HFVALUE$);\nconst HFIELDS2$ =
subexp(HFIELD$ + subexp(\"\\\\&\" + HFIELD$) + \"*\");\nconst HFIELDS$ = subexp(\"\\\\?\" +
HFIELDS2$);\nconst MAILTO_URI = new RegExp(\"^mailto\\\\:\"
 + TO$ + \"?\" + HFIELDS$ + \"?$\");\n\nconst UNRESERVED = new RegExp(UNRESERVED$$, \"g\");\nconst
PCT_ENCODED = new RegExp(PCT_ENCODED$, \"g\");\nconst NOT_LOCAL_PART = new
RegExp(merge(\"[^]\", ATEXT$$, \"[\\\\.]\", '[\\\\\"]', VCHAR$$), \"g\");\nconst NOT_DOMAIN = new
RegExp(merge(\"[^]\", ATEXT$$, \"[\\\\.]\", \"[\\\\[]\", DTEXT_NO_OBS$$, \"[\\\\]]\"), \"g\");\nconst
NOT_HFNAME = new RegExp(merge(\"[^]\", UNRESERVED$$, SOME_DELIMS$$), \"g\");\nconst
NOT_HFVALUE = NOT_HFNAME;\nconst TO = new RegExp(\"^\" + TO$ + \"$\");\nconst HFIELDS = new
RegExp(\"^\" + HFIELDS2$ + \"$\");\n\nfunction decodeUnreserved(str:string):string {\n\tconst decStr =
pctDecChars(str);\n\treturn (!decStr.match(UNRESERVED) ? str : decStr);\n}\n\nconst
handler:URISchemeHandler<MailtoComponents> =  {\n\tscheme : \"mailto\",\n\n\tparse : function
(components:URIComponents, options:URIOptions):MailtoComponents {\n\t\tconst mailtoComponents =
components as MailtoComponents;\n\t\tconst to = mailtoComponents.to
 = (mailtoComponents.path ? mailtoComponents.path.split(\",\") : []);\n\t\tmailtoComponents.path =
undefined;\n\n\t\tif (mailtoComponents.query) {\n\t\t\tlet unknownHeaders = false\n\t\t\tconst
headers:MailtoHeaders = {};\n\t\t\tconst hfields = mailtoComponents.query.split(\"&\");\n\n\t\t\tfor (let x = 0, xl =
hfields.length; x < xl; ++x) {\n\t\t\t\tconst hfield = hfields[x].split(\"=\");\n\n\t\t\t\tswitch (hfield[0]) {\n\t\t\t\t\tcase
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\"to\":\n\t\t\t\t\t\tconst toAddrs = hfield[1].split(\",\");\n\t\t\t\t\t\tfor (let x = 0, xl = toAddrs.length; x < xl; ++x) {\n\t\t\t\t\t\t\to.push(toAddrs[x]);\n\t\t\t\t\t\t}\n\t\t\t\t\t\tbreak;\n\t\t\t\tcase \"subject\":\n\t\t\t\t\to.subject = unescapeComponent(hfield[1], options);\n\t\t\t\t\tbreak;\n\t\t\t\tcase \"body\":\n\t\t\t\t\to.body = unescapeComponent(hfield[1], options);\n\t\t\t\t\tbreak;\n\t\t\t\tdefault:\n\t\t\t\t\tunknownHeaders = true;\n\t\t\t\t\theaders[unescapeComponent(hfield[0], options)] = unescapeComponent(hfield[1], options);\n\t\t\t\t\tbreak;\n\t\t\t}\n\t\t}\n\n\tif (unknownHeaders) o.headers = headers;\n\t}\n\n\to.query = undefined;\n\n\tfor (let x = 0, xl = to.length; x < xl; ++x) {\n\t\tconst addr = to[x].split(\"@\");\n\n\t\taddr[0] = unescapeComponent(addr[0]);\n\n\tif (!options.unicodeSupport) {\n\t\t//convert Unicode IDN -> ASCII IDN\n\t\ttry {\n\t\t\taddr[1] = punycode.toASCII(unescapeComponent(addr[1], options).toLowerCase());\n\t\t} catch (e) {\n\t\t\to.error = o.error || \"Email address's domain name can not be converted to ASCII via punycode: \" + e;\n\t\t}\n\t} else {\n\t\taddr[1] = unescapeComponent(addr[1], options).toLowerCase();\n\t}\n\n\to[x] = addr.join(\"@\");\n\t}\n\n\treturn o;\n},\n\nserialize : function (o:MailtoComponents, options:URIOptions):URIComponents {\n\tconst components = o as URIComponents;\n\tconst to = toArray(o.to);\n\tif (to) {\n\t\tfor (let x = 0, xl = to.length; x < xl; ++x) {\n\t\t\tconst toAddr = String(to[x]);\n\t\t\tconst atIdx = toAddr.lastIndexOf(\"@\");\n\t\t\tconst localPart = (toAddr.slice(0, atIdx)).replace(PCT_ENCODED, decodeUnreserved).replace(PCT_ENCODED, toUpperCase).replace(NOT_LOCAL_PART, pctEncChar);\n\t\t\tlet domain = toAddr.slice(atIdx + 1);\n\n\t\t//convert IDN via punycode\n\t\ttry {\n\t\t\tdomain = (!options.iri ? punycode.toASCII(unescapeComponent(domain, options).toLowerCase()) : punycode.toUnicode(domain));\n\t\t} catch (e) {\n\t\t\tcomponents.error = components.error || \"Email address's domain name can not be converted to \" + (!options.iri ? \"ASCII\" : \"Unicode\") + \" via punycode: \" + e;\n\t\t}\n\n\t\to[x] = localPart + \"@\" + domain;\n\t}\n\n\tcomponents.path = to.join(\",\");\n\t}\n\n\tconst headers = o.headers = o.headers || {};\n\n\tif (o.subject) headers[\"subject\"] = o.subject;\n\tif (o.body) headers[\"body\"] = o.body;\n\n\tconst fields = [];\n\tfor (const name in headers) {\n\t\tif (headers[name] !== O[name]) {\n\t\t\tfields.push(\n\t\t\t\tname.replace(PCT_ENCODED, decodeUnreserved).replace(PCT_ENCODED, toUpperCase).replace(NOT_HFNAME, pctEncChar) +\n\t\t\t\t\"=\" +\n\t\t\t\theaders[name].replace(PCT_ENCODED, decodeUnreserved).replace(PCT_ENCODED, toUpperCase).replace(NOT_HFVALUE, pctEncChar)\n\t\t\t);\n\t\t}\n\t}\n\tif (fields.length) {\n\t\tcomponents.query = fields.join(\"&\");\n\t}\n\n\treturn components;\n}\n\nexport default handler;","import { URISchemeHandler, URIComponents, URIOptions } from \"../uri\";\nimport http from \"./http\";\n\nconst handler:URISchemeHandler = {\n\tscheme : \"https\",\n\tdomainHost : http.domainHost,\n\tparse : http.parse,\n\tserialize : http.serialize\n}\n\nexport default handler;","import { URISchemeHandler, URIComponents, URIOptions } from \"../uri\";\n\nconst handler:URISchemeHandler = {\n\tscheme : \"http\",\n\n\tdomainHost : true,\n\n\tparse : function (components:URIComponents, options:URIOptions):URIComponents {\n\t\t//report missing host\n\t\tif (!components.host) {\n\t\t\tcomponents.error = components.error || \"HTTP URIs must have a host.\";\n\t\t}\n\n\t\treturn components;\n\t},\n\n\tserialize : function (components:URIComponents, options:URIOptions):URIComponents {\n\t\t//normalize the default port\n\t\tif (components.port === (String(components.scheme).toLowerCase() !== \"https\" ? 80 : 443) || components.port === \"\") {\n\t\t\tcomponents.port = undefined;\n\t\t}\n\t\t//normalize the empty path\n\t\tif (!components.path) {\n\t\t\tcomponents.path = \"/\";\n\t\t}\n\n\t\t//NOTE: We do not parse query strings for HTTP URIs\n\t\t//as WWW Form Url Encoded query strings are part of the HTML4+ spec,\n\t\t//and not the HTTP spec.\n\n\t\treturn components;\n\t}\n};\n\nexport default handler;","/**\n * URI.js\n *\n * @fileoverview An RFC 3986 compliant, scheme extendable URI parsing/validating/resolving library for

JavaScript.\n * @author Gary Court\n * @see http://github.com/garycourt/uri-js\n */\n\n/**\n * Copyright 2011 Gary Court. All rights reserved.\n *\n * Redistribution and use in source and binary forms, with or without modification, are\n * permitted provided that the following conditions are met:\n *\n *   1. Redistributions of source code must retain the above copyright notice, this list of\n *   conditions and the following disclaimer.\n *\n *   2. Redistributions in binary form must reproduce the above copyright notice, this list\n *   of conditions and the following disclaimer in the documentation and/or other materials\n *   provided with the distribution.\n *\n * THIS SOFTWARE IS PROVIDED BY GARY COURT ``AS IS'' AND
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 punycode from \"punycode\";\nimport { toUpperCase, typeOf, assign } from \"./util\";\n\nexport interface URIComponents {\n\tscheme?:string;\n\tuserinfo?:string;\n\thost?:string;\n\tport?:number|string;\n\tpath?:string;\n\tquery?:string;\n\tfragment?:string;\n\treference?:string;\n\terror?:string;\n}\n\nexport interface URIOptions {\n\tscheme?:string;\n\treference?:string;\n\ttolerant?:boolean;\n\tabsolutePath?:boolean;\n\tiri?:boolean;\n\tunicodeSupport?:boolean;\n\tdomainHost?:boolean;\n}\n\nexport interface URISchemeHandler<Components extends URIComponents = URIComponents, Options extends URIOptions = URIOptions, ParentComponents extends URIComponents = URIComponents> {\n\tscheme:string;\n\tparse(components:ParentComponents, options:Options):Components;\n\tserialize(components:Components, options:Options):ParentComponents;\n\tunicodeSupport?:boolean;\n\tdomainHost?:boolean;\n\tabsolutePath?:boolean;\n}\n\nexport interface URIRegExps {\n\tNOT_SCHEME : RegExp,\n\tNOT_USERINFO
 : RegExp,\n\tNOT_HOST : RegExp,\n\tNOT_PATH : RegExp,\n\tNOT_PATH_NOSCHEME : RegExp,\n\tNOT_QUERY : RegExp,\n\tNOT_FRAGMENT : RegExp,\n\tESCAPE : RegExp,\n\tUNRESERVED : RegExp,\n\tOTHER_CHARS : RegExp,\n\tPCT_ENCODED : RegExp,\n\tIPV4ADDRESS : RegExp,\n\tIPV6ADDRESS : RegExp,\n}\n\nexport const SCHEMES:{[scheme:string]:URISchemeHandler} = {};\n\nexport function pctEncChar(chr:string):string {\n\tconst c = chr.charCodeAt(0);\n\tlet e:string;\n\n\tif (c < 16) e = \"%0\" + c.toString(16).toUpperCase();\n\telse if (c < 128) e = \"%\" + c.toString(16).toUpperCase();\n\telse if (c < 2048) e = \"%\" + ((c >> 6) | 192).toString(16).toUpperCase() + \"%\" + ((c & 63) | 128).toString(16).toUpperCase();\n\telse e = \"%\" + ((c >> 12) | 224).toString(16).toUpperCase() + \"%\" + (((c >> 6) & 63) | 128).toString(16).toUpperCase() + \"%\" + ((c & 63) | 128).toString(16).toUpperCase();\n\n\treturn e;\n}\n\nexport function pctDecChars(str:string):string {\n\tlet newStr = \"\";\n\tlet i
 = 0;\n\tconst il = str.length;\n\n\twhile (i < il) {\n\t\tconst c = parseInt(str.substr(i + 1, 2), 16);\n\n\t\tif (c < 128) {\n\t\t\tnewStr += String.fromCharCode(c);\n\t\t\ti += 3;\n\t\t}\n\t\telse if (c >= 194 && c < 224) {\n\t\t\tif ((il - i) >= 6) {\n\t\t\t\tconst c2 = parseInt(str.substr(i + 4, 2), 16);\n\t\t\t\tnewStr += String.fromCharCode(((c & 31) << 6) | (c2 & 63));\n\t\t\t} else {\n\t\t\t\tnewStr += str.substr(i, 6);\n\t\t\t}\n\t\t\ti += 6;\n\t\t}\n\t\telse if (c >= 224) {\n\t\t\tif ((il - i) >= 9) {\n\t\t\t\tconst c2 = parseInt(str.substr(i + 4, 2), 16);\n\t\t\t\tconst c3 = parseInt(str.substr(i + 7, 2), 16);\n\t\t\t\tnewStr += String.fromCharCode(((c & 15) << 12) | ((c2 & 63) << 6) | (c3 & 63));\n\t\t\t} else {\n\t\t\t\tnewStr += str.substr(i, 9);\n\t\t\t}\n\t\t\ti += 9;\n\t\t}\n\t\telse {\n\t\t\tnewStr += str.substr(i, 3);\n\t\t\ti +=

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3;\n\t\t}\n\t}\n\n\treturn newStr;\n}\n\nfunction _normalizeComponentEncoding(components:URIComponents, protocol:URIRegExps) {\n\tfunction
 decodeUnreserved(str:string):string {\n\t\tconst decStr = pctDecChars(str);\n\t\treturn (!decStr.match(protocol.UNRESERVED) ? str : decStr);\n\t}\n\n\tif (components.scheme) components.scheme = String(components.scheme).replace(protocol.PCT_ENCODED, decodeUnreserved).toLowerCase().replace(protocol.NOT_SCHEME, \"\");\n\tif (components.userinfo !== undefined) components.userinfo = String(components.userinfo).replace(protocol.PCT_ENCODED, decodeUnreserved).replace(protocol.NOT_USERINFO, pctEncChar).replace(protocol.PCT_ENCODED, toUpperCase);\n\tif (components.host !== undefined) components.host = String(components.host).replace(protocol.PCT_ENCODED, decodeUnreserved).toLowerCase().replace(protocol.NOT_HOST, pctEncChar).replace(protocol.PCT_ENCODED, toUpperCase);\n\tif (components.path !== undefined) components.path = String(components.path).replace(protocol.PCT_ENCODED, decodeUnreserved).replace((components.scheme ? protocol.NOT_PATH : protocol.NOT_PATH_NOSCHEME), pctEncChar).replace(protocol.PCT_ENCODED,
 toUpperCase);\n\tif (components.query !== undefined) components.query = String(components.query).replace(protocol.PCT_ENCODED, decodeUnreserved).replace(protocol.NOT_QUERY, pctEncChar).replace(protocol.PCT_ENCODED, toUpperCase);\n\tif (components.fragment !== undefined) components.fragment = String(components.fragment).replace(protocol.PCT_ENCODED, decodeUnreserved).replace(protocol.NOT_FRAGMENT, pctEncChar).replace(protocol.PCT_ENCODED, toUpperCase);\n\n\treturn components;\n};\n\nfunction _stripLeadingZeros(str:string):string {\n\treturn str.replace(/^0*(.*)/, \"$1\") || \"0\";\n}\n\nfunction _normalizeIPv4(host:string, protocol:URIRegExps):string {\n\tconst matches = host.match(protocol.IPV4ADDRESS) || [];\n\tconst [, address] = matches;\n\t\n\tif (address) {\n\t\treturn address.split(\".\").map(_stripLeadingZeros).join(\".\");\n\t} else {\n\t\treturn host;\n\t}\n}\n\nfunction _normalizeIPv6(host:string, protocol:URIRegExps):string {\n\tconst matches = host.match(protocol.IPV6ADDRESS)
 || [];\n\tconst [, address, zone] = matches;\n\n\tif (address) {\n\t\tconst [last, first] = address.toLowerCase().split('::').reverse();\n\t\tconst firstFields = first ? first.split(\":\").map(_stripLeadingZeros) : [];\n\t\tconst lastFields = last.split(\":\").map(_stripLeadingZeros);\n\t\tconst isLastFieldIPv4Address = protocol.IPV4ADDRESS.test(lastFields[lastFields.length - 1]);\n\t\tconst fieldCount = isLastFieldIPv4Address ? 7 : 8;\n\t\tconst lastFieldsStart = lastFields.length - fieldCount;\n\t\tconst fields = Array<string>(fieldCount);\n\n\t\tfor (let x = 0; x < fieldCount; ++x) {\n\t\t\tfields[x] = firstFields[x] || lastFields[lastFieldsStart + x] || '';\n\t\t}\n\n\tif (isLastFieldIPv4Address) {\n\t\t\tfields[fieldCount - 1] = _normalizeIPv4(fields[fieldCount - 1], protocol);\n\t\t}\n\n\tconst allZeroFields = fields.reduce<Array<{index:number,length:number}>>((acc, field, index) => {\n\t\t\tif (!field || field === \"0\") {\n\t\t\t\tconst lastLongest = acc[acc.length
 - 1];\n\t\t\tif (lastLongest && lastLongest.index + lastLongest.length === index) {\n\t\t\t\tlastLongest.length++;\n\t\t\t} else {\n\t\t\t\tacc.push({ index, length : 1 });\n\t\t\t}\n\t\t}\n\n\treturn acc;\n\t}, []);\n\n\tconst longestZeroFields = allZeroFields.sort((a, b) => b.length - a.length)[0];\n\n\tlet newHost:string;\n\tif (longestZeroFields && longestZeroFields.length > 1) {\n\t\tconst newFirst = fields.slice(0, longestZeroFields.index) ;\n\t\tconst newLast = fields.slice(longestZeroFields.index + longestZeroFields.length);\n\t\tnewHost = newFirst.join(\":\") + \"::\" + newLast.join(\":\");\n\t} else {\n\t\tnewHost = fields.join(\":\");\n\t}\n\n\tif (zone) {\n\t\tnewHost += \"%\" + zone;\n\t}\n\n\treturn newHost;\n} else {\n\treturn host;\n}\n}\n\nconst URI_PARSE = /^(?:([^:\/?#]+):)?(?:\/\/((?:([^\/?#@]*)@)?(\[[^\/?#\]]+\]|[^\/?#:]*)(?:\:(\d*))?))?([^?#]*)(?:\?([^#]*))?(?:#((?:.|\n|\r)*))?/i;\nconst NO_MATCH_IS_UNDEFINED
 = (<RegExpMatchArray>(\"\").match(/(){0}/))[1] === undefined;\n\nexport function parse(uriString:string, options:URIOptions = {}):URIComponents {\n\tconst components:URIComponents = {};\n\tconst protocol = (options.iri !== false ? IRI_PROTOCOL : URI_PROTOCOL);\n\n\tif (options.reference === \"suffix\") uriString = (options.scheme ? options.scheme + \":\" : \"\") + \"//\" + uriString;\n\n\tconst matches =
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uriString.match(URI_PARSE);\n\n\tif (matches) {\n\t\tif (NO_MATCH_IS_UNDEFINED) {\n\t\t\t//store each component\n\t\t\tcomponents.scheme = matches[1];\n\t\t\tcomponents.userinfo = matches[3];\n\t\t\tcomponents.host = matches[4];\n\t\t\tcomponents.port = parseInt(matches[5], 10);\n\t\t\tcomponents.path = matches[6] || \"\";\n\t\t\tcomponents.query = matches[7];\n\t\t\tcomponents.fragment = matches[8];\n\n\t\t\t//fix port number\n\t\t\tif (isNaN(components.port)) {\n\t\t\t\tcomponents.port = matches[5];\n\t\t\t}\n\t\t} else {  //IE FIX for improper RegExp matching\n\t\t\t//store
 each component\n\t\t\tcomponents.scheme = matches[1] || undefined;\n\t\t\tcomponents.userinfo = (uriString.indexOf(\"@\") !== -1 ? matches[3] : undefined);\n\t\t\tcomponents.host = (uriString.indexOf(\"//\") !== -1 ? matches[4] : undefined);\n\t\t\tcomponents.port = parseInt(matches[5], 10);\n\t\t\tcomponents.path = matches[6] || \"\";\n\t\t\tcomponents.query = (uriString.indexOf(\"?\") !== -1 ? matches[7] : undefined);\n\t\t\tcomponents.fragment = (uriString.indexOf(\"#\") !== -1 ? matches[8] : undefined);\n\n\t\t\t//fix port number\n\t\t\tif (isNaN(components.port)) {\n\t\t\t\tcomponents.port = (uriString.match(/\\/\\/(?:.|\\n)*\\:(?:\\/|\\?|\\#|$)/) ? matches[4] : undefined);\n\t\t\t}\n\t\t}\n\n\tif (components.host) {\n\t\t\t//normalize IP hosts\n\t\t\tcomponents.host = _normalizeIPv6(_normalizeIPv4(components.host, protocol), protocol);\n\t\t}\n\n\t//determine reference type\n\tif (components.scheme === undefined && components.userinfo === undefined && components.host
 === undefined && components.port === undefined && !components.path && components.query === undefined) {\n\t\t\tcomponents.reference = \"same-document\";\n\t\t} else if (components.scheme === undefined) {\n\t\t\tcomponents.reference = \"relative\";\n\t\t} else if (components.fragment === undefined) {\n\t\t\tcomponents.reference = \"absolute\";\n\t\t} else {\n\t\t\tcomponents.reference = \"uri\";\n\t\t}\n\n\t//check for reference errors\n\tif (options.reference && options.reference !== \"suffix\" && options.reference !== components.reference) {\n\t\t\tcomponents.error = components.error || \"URI is not a \" + options.reference + \" reference.\";\n\t\t}\n\n\t//find scheme handler\n\tconst schemeHandler = SCHEMES[(options.scheme || components.scheme || \"\").toLowerCase()];\n\n\t//check if scheme can't handle IRIs\n\tif (!options.unicodeSupport && (!schemeHandler || !schemeHandler.unicodeSupport)) {\n\t\t\t//if host component is a domain name\n\t\t\tif (components.host &&
 (options.domainHost || (schemeHandler && schemeHandler.domainHost))) {\n\t\t\t\t//convert Unicode IDN -> ASCII IDN\n\t\t\t\ttry {\n\t\t\t\t\tcomponents.host = punycode.toASCII(components.host.replace(protocol.PCT_ENCODED, pctDecChars).toLowerCase());\n\t\t\t\t} catch (e) {\n\t\t\t\t\tcomponents.error = components.error || \"Host's domain name can not be converted to ASCII via punycode: \" + e;\n\t\t\t\t}\n\t\t\t}\n\t\t\t//convert IRI -> URI\n\t\t\t_normalizeComponentEncoding(components, URI_PROTOCOL);\n\t} else {\n\t\t\t//normalize encodings\n\t\t\t_normalizeComponentEncoding(components, protocol);\n\t}\n\n\t//perform scheme specific parsing\n\tif (schemeHandler && schemeHandler.parse) {\n\t\tschemeHandler.parse(components, options);\n\t}\n} else {\n\tcomponents.error = components.error || \"URI can not be parsed.\";\n\t}\n\n\treturn components;\n};\n\nfunction _recomposeAuthority(components:URIComponents, options:URIOptions):string|undefined {\n\tconst protocol = (options.iri
 !== false ? IRI_PROTOCOL : URI_PROTOCOL);\n\tconst uriTokens:Array<string> = [];\n\n\tif (components.userinfo !== undefined) {\n\t\turiTokens.push(components.userinfo);\n\t\turiTokens.push(\"@\");\n\t}\n\n\tif (components.host !== undefined) {\n\t\t//normalize IP hosts, add brackets and escape zone separator for IPv6\n\t\turiTokens.push(_normalizeIPv6(_normalizeIPv4(String(components.host), protocol), protocol).replace(protocol.IPV6ADDRESS, (_, $1, $2) => \"[\" + $1 + ($2 ? \"%25\" + $2 : \"\") + \"]\"));\n\t}\n\n\tif (typeof components.port === \"number\") {\n\t\turiTokens.push(\":\");\n\t\turiTokens.push(components.port.toString(10));\n\t}\n\n\treturn uriTokens.length ? uriTokens.join(\"\") : undefined;\n};\n\nconst RDS1 = /^\\.\\.?\\//;\nconst RDS2 = /^\\/\\.(\\/|$)/;\nconst RDS3 = /^\\/\\.\\.(\\/|$)/;\nconst RDS4 = /^\\.\\.?$/;\nconst RDS5 = /^\\/?(?:.|\\n)*?(?=\\/|$)/;\n\nexport function removeDotSegments(input:string):string {\n\tconst output:Array<string> = [];\n\n\twhile
```

(input.length) {\n\t\tif (input.match(RDS1)) {\n\t\t\tinput = input.replace(RDS1, \"\");\n\t\t} else if (input.match(RDS2)) {\n\t\t\tinput = input.replace(RDS2, \"/\");\n\t\t} else if (input.match(RDS3)) {\n\t\t\tinput = input.replace(RDS3, \"/\");\n\t\t\toutput.pop();\n\t\t} else if (input === \".\" || input === \"..\") {\n\t\t\tinput = \"\";\n\t\t} else {\n\t\t\tconst im = input.match(RDS5);\n\t\t\tif (im) {\n\t\t\t\tconst s = im[0];\n\t\t\t\tinput = input.slice(s.length);\n\t\t\t\toutput.push(s);\n\t\t\t} else {\n\t\t\t\tthrow new Error(\"Unexpected dot segment condition\");\n\t\t\t}\n\t\t}\n\t}\n\n\treturn output.join(\"\");\n};\n\nexport function serialize(components:URIComponents, options:URIOptions = {}):string {\n\tconst protocol = (options.iri ? IRI_PROTOCOL : URI_PROTOCOL);\n\tconst uriTokens:Array<string> = [];\n\n\t//find scheme handler\n\tconst schemeHandler = SCHEMES[(options.scheme || components.scheme || \"\").toLowerCase()];\n\n\t//perform scheme specific serialization\n\tif (schemeHandler && schemeHandler.serialize) schemeHandler.serialize(components, options);\n\n\tif (components.host) {\n\t\t//if host component is an IPv6 address\n\t\tif (protocol.IPV6ADDRESS.test(components.host)) {\n\t\t\t//TODO: normalize IPv6 address as per RFC 5952\n\t\t}\n\n\t\t//if host component is a domain name\n\t\telse if (options.domainHost || (schemeHandler && schemeHandler.domainHost)) {\n\t\t\t//convert IDN via punycode\n\t\t\ttry {\n\t\t\t\tcomponents.host = (!options.iri ? punycode.toASCII(components.host.replace(protocol.PCT_ENCODED, pctDecChars).toLowerCase()) : punycode.toUnicode(components.host));\n\t\t\t} catch (e) {\n\t\t\t\tcomponents.error = components.error || \"Host's domain name can not be converted to \" + (!options.iri ? \"ASCII\" : \"Unicode\") + \" via punycode: \" + e;\n\t\t\t}\n\t\t}\n\t}\n\n\t//normalize encoding\n\t_normalizeComponentEncoding(components, protocol);\n\n\tif (options.reference !== \"suffix\" && components.scheme) {\n\t\turiTokens.push(components.scheme);\n\t\turiTokens.push(\":\");\n\t}\n\n\tconst authority = _recomposeAuthority(components, options);\n\tif (authority !== undefined) {\n\t\tif (options.reference !== \"suffix\") {\n\t\t\turiTokens.push(\"//\");\n\t\t}\n\t\turiTokens.push(authority);\n\n\t\tif (components.path && components.path.charAt(0) !== \"/\") {\n\t\t\turiTokens.push(\"/\");\n\t\t}\n\t}\n\n\tif (components.path !== undefined) {\n\t\tlet s = components.path;\n\n\t\tif (!options.absolutePath && (!schemeHandler || !schemeHandler.absolutePath)) {\n\t\t\ts = removeDotSegments(s);\n\t\t}\n\n\t\tif (authority === undefined) {\n\t\t\ts = s.replace(/^\\/\\//, \"/%2F\"); //don't allow the path to start with \"//\"\n\t\t}\n\n\t\turiTokens.push(s);\n\t}\n\n\tif (components.query !== undefined) {\n\t\turiTokens.push(\"?\");\n\t\turiTokens.push(components.query);\n\t}\n\n\tif (components.fragment !== undefined) {\n\t\turiTokens.push(\"#\");\n\t\turiTokens.push(components.fragment);\n\t}\n\n\treturn uriTokens.join(\"\"); //merge tokens into a string\n};\n\nexport function resolveComponents(base:URIComponents, relative:URIComponents, options:URIOptions = {}, skipNormalization?:boolean):URIComponents {\n\tconst target:URIComponents = {};\n\n\tif (!skipNormalization) {\n\t\tbase = parse(serialize(base, options), options); //normalize base components\n\t\trelative = parse(serialize(relative, options), options); //normalize relative components\n\t}\n\toptions = options || {};\n\n\tif (!options.tolerant && relative.scheme) {\n\t\ttarget.scheme = relative.scheme;\n\t\t//target.authority = relative.authority;\n\t\ttarget.userinfo = relative.userinfo;\n\t\ttarget.host = relative.host;\n\t\ttarget.port = relative.port;\n\t\ttarget.path = removeDotSegments(relative.path || \"\");\n\t\ttarget.query = relative.query;\n\t} else {\n\t\tif (relative.userinfo !== undefined || relative.host !== undefined || relative.port !== undefined) {\n\t\t\t//target.authority = relative.authority;\n\t\t\ttarget.userinfo = relative.userinfo;\n\t\t\ttarget.host = relative.host;\n\t\t\ttarget.port = relative.port;\n\t\t\ttarget.path = removeDotSegments(relative.path || \"\");\n\t\t\ttarget.query = relative.query;\n\t\t} else {\n\t\t\tif (!relative.path) {\n\t\t\t\ttarget.path = base.path;\n\t\t\t\tif (relative.query !== undefined) {\n\t\t\t\t\ttarget.query = relative.query;\n\t\t\t\t} else {\n\t\t\t\t\ttarget.query = base.query;\n\t\t\t\t}\n\t\t\t} else {\n\t\t\t\tif (relative.path.charAt(0) === \"/\") {\n\t\t\t\t\ttarget.path = removeDotSegments(relative.path);\n\t\t\t\t} else {\n\t\t\t\t\tif ((base.userinfo !== undefined || base.host !== undefined || base.port !== undefined) && !base.path) {\n\t\t\t\t\t\ttarget.path = \"/\" + relative.path;\n\t\t\t\t\t} else if (!base.path) {\n\t\t\t\t\t\ttarget.path = relative.path;\n\t\t\t\t\t} else {\n\t\t\t\t\t\ttarget.path = base.path.slice(0, base.path.lastIndexOf(\"/\") + 1) + relative.path;\n\t\t\t\t\t}\n\t\t\t\t\ttarget.path = removeDotSegments(target.path);\n\t\t\t\t}\n\t\t\t\ttarget.query

= relative.query;\n\t\t\t}\n\t\t\t//target.authority = base.authority;\n\t\t\ttarget.userinfo = base.userinfo;\n\t\t\ttarget.host = base.host;\n\t\t\ttarget.port = base.port;\n\t\t\}\n\t\ttarget.scheme = base.scheme;\n\t\}\n\n\ttarget.fragment = relative.fragment;\n\n\treturn target;\n\};\n\nexport function resolve(baseURI:string, relativeURI:string, options?:URIOptions):string {\n\tconst schemelessOptions = assign({ scheme : 'null' }, options);\n\treturn serialize(resolveComponents(parse(baseURI, schemelessOptions), parse(relativeURI, schemelessOptions), schemelessOptions, true), schemelessOptions);\n\};\n\nexport function normalize(uri:string, options?:URIOptions):string;\nexport function normalize(uri:URIComponents, options?:URIOptions):URIComponents;\nexport function normalize(uri:any, options?:URIOptions):any {\n\tif (typeof uri === \"string\") {\n\t\turi = serialize(parse(uri, options), options);\n\t} else if (typeOf(uri) === \"object\") {\n\t\turi = parse(serialize(<URIComponents>uri, options), options);\n\t}\n\n\treturn uri;\n\};\n\nexport function equal(uriA:string, uriB:string, options?: URIOptions):boolean;\nexport function equal(uriA:URIComponents, uriB:URIComponents, options?:URIOptions):boolean;\nexport function equal(uriA:any, uriB:any, options?:URIOptions):boolean {\n\tif (typeof uriA === \"string\") {\n\t\turiA = serialize(parse(uriA, options), options);\n\t} else if (typeOf(uriA) === \"object\") {\n\t\turiA = serialize(<URIComponents>uriA, options);\n\t}\n\n\tif (typeof uriB === \"string\") {\n\t\turiB = serialize(parse(uriB, options), options);\n\t} else if (typeOf(uriB) === \"object\") {\n\t\turiB = serialize(<URIComponents>uriB, options);\n\t}\n\n\treturn uriA === uriB;\n};\n\nexport function escapeComponent(str:string, options?:URIOptions):string {\n\treturn str && str.toString().replace((!options || !options.iri ? URI_PROTOCOL.ESCAPE : IRI_PROTOCOL.ESCAPE), pctEncChar);\n};\n\nexport function unescapeComponent(str:string, options?:URIOptions):string {\n\treturn str && str.toString().replace((!options || !options.iri ? URI_PROTOCOL.PCT_ENCODED : IRI_PROTOCOL.PCT_ENCODED), pctDecChars);\n};\n\n","'use strict';\n\n/** Highest positive signed 32-bit float value */\nconst maxInt = 2147483647; // aka. 0x7FFFFFFF or 2^31-1\n\n/** Bootstring parameters */\nconst base = 36;\nconst tMin = 1;\nconst tMax = 26;\nconst skew = 38;\nconst damp = 700;\nconst initialBias = 72;\nconst initialN = 128; // 0x80\nconst delimiter = '-'; // '\\x2D'\n\n/** Regular expressions */\nconst regexPunycode = /^xn--/;\nconst regexNonASCII = /[^\\0-\\x7E]/; // non-ASCII chars\nconst regexSeparators = /[\\x2E\\u3002\\uFF0E\\uFF61]/g; // RFC 3490 separators\n\n/** Error messages */\nconst errors = {\n\t'overflow': 'Overflow: input needs wider integers to process',\n\t'not-basic': 'Illegal input >= 0x80 (not a basic code point)',\n\t'invalid-input': 'Invalid input'\n};\n\n/** Convenience shortcuts */\nconst baseMinusTMin = base - tMin;\nconst floor = Math.floor;\nconst stringFromCharCode = String.fromCharCode;\n\n/*--*/\n\n/**\n * A generic error utility function.\n * @private\n * @param {String} type The error type.\n * @returns {Error} Throws a `RangeError` with the applicable error message.\n */\nfunction error(type) {\n\tthrow new RangeError(errors[type]);\n}\n\n/**\n * A generic `Array#map` utility function.\n * @private\n * @param {Array} array The array to iterate over.\n * @param {Function} callback The function that gets called for every array\n * item.\n * @returns {Array} A new array of values returned by the callback function.\n */\nfunction map(array, fn) {\n\tconst result = [];\n\tlet length = array.length;\n\twhile (length--) {\n\t\tresult[length] = fn(array[length]);\n\t}\n\treturn result;\n}\n\n/**\n * A simple `Array#map`-like wrapper to work with domain name strings or email\n * addresses.\n * @private\n * @param {String} domain The domain name or email address.\n * @param {Function} callback The function that gets called for every\n * character.\n * @returns {Array} A new string of characters returned by the callback\n * function.\n */\nfunction mapDomain(string, fn) {\n\tconst parts = string.split('@');\n\tlet result = '';\n\tif (parts.length > 1) {\n\t\t// In email addresses, only the domain name should be punycoded. Leave\n\t\t// the local part (i.e. everything up to `@`) intact.\n\t\tresult = parts[0] + '@';\n\t\tstring = parts[1];\n\t}\n\t// Avoid `split(regex)` for IE8 compatibility. See #17.\n\tstring = string.replace(regexSeparators, '\\x2E');\n\tconst labels = string.split('.');\n\tconst encoded = map(labels, fn).join('.');\n\treturn result + encoded;\n}\n\n/**\n * Creates an array containing the numeric code points of each Unicode\n * character in the string. While JavaScript uses UCS-2 internally,\n * this function will convert a pair of surrogate halves (each of which\n * UCS-2 exposes

as separate characters) into a single code point,\n * matching UTF-16.\n * @see `punycode.ucs2.encode`\n * @see <https://mathiasbynens.be/notes/javascript-encoding>\n * @memberOf punycode.ucs2\n * @name decode\n * @param {String} string The Unicode input string (UCS-2).\n * @returns {Array} The new array of code points.\n */\nfunction ucs2decode(string) {\n\tconst output = [];\n\tlet counter = 0;\n\tconst length = string.length;\n\twhile (counter < length) {\n\t\tconst value = string.charCodeAt(counter++);\n\t\tif (value >= 0xD800 && value <= 0xDBFF && counter < length) {\n\t\t\t// It's a high surrogate, and there is a next character.\n\t\t\tconst extra = string.charCodeAt(counter++);\n\t\t\tif ((extra & 0xFC00) == 0xDC00) { // Low surrogate.\n\t\t\t\toutput.push(((value & 0x3FF) << 10) + (extra & 0x3FF) + 0x10000);\n\t\t\t} else {\n\t\t\t\t// It's an unmatched surrogate; only append this code unit, in case the\n\t\t\t\t next code unit is the high surrogate of a surrogate pair.\n\t\t\t\toutput.push(value);\n\t\t\t\tcounter--;\n\t\t\t}\n\t\t}
else {\n\t\t\toutput.push(value);\n\t\t}\n\t}\n\treturn output;\n}\n\n/**\n * Creates a string based on an array of numeric code points.\n * @see `punycode.ucs2.decode`\n * @memberOf punycode.ucs2\n * @name encode\n * @param {Array} codePoints The array of numeric code points.\n * @returns {String} The new Unicode string (UCS-2).\n */\nconst ucs2encode = array => String.fromCodePoint(...array);\n\n/**\n * Converts a basic code point into a digit/integer.\n * @see `digitToBasic()`\n * @private\n * @param {Number} codePoint The basic numeric code point value.\n * @returns {Number} The numeric value of a basic code point (for use in\n * representing integers) in the range `0` to `base - 1`, or `base` if\n * the code point does not represent a value.\n */\nconst basicToDigit = function(codePoint) {\n\tif (codePoint - 0x30 < 0x0A) {\n\t\treturn codePoint - 0x16;\n\t}\n\tif (codePoint - 0x41 < 0x1A) {\n\t\treturn codePoint - 0x41;\n\t}\n\tif
(codePoint - 0x61 < 0x1A) {\n\t\treturn codePoint - 0x61;\n\t}\n\treturn base;\n};\n\n/**\n * Converts a digit/integer into a basic code point.\n * @see `basicToDigit()`\n * @private\n * @param {Number} digit The numeric value of a basic code point.\n * @returns {Number} The basic code point whose value (when used for\n * representing integers) is `digit`, which needs to be in the range\n * `0` to `base - 1`. If `flag` is non-zero, the uppercase form is\n * used; else, the lowercase form is used. The behavior is undefined\n * if `flag` is non-zero and `digit` has no uppercase form.\n */\nconst digitToBasic = function(digit, flag) {\n\t// 0..25 map to ASCII a..z or A..Z\n\t// 26..35 map to ASCII 0..9\n\treturn digit + 22 + 75 * (digit < 26) - ((flag != 0) << 5);\n};\n\n/**\n * Bias adaptation function as per section 3.4 of RFC 3492.\n * https://tools.ietf.org/html/rfc3492#section-3.4\n * @private\n */\nconst adapt = function(delta, numPoints, firstTime) {\n\tlet k = 0;\n\tdelta
= firstTime ? floor(delta / damp) : delta >> 1;\n\tdelta += floor(delta / numPoints);\n\tfor (/* no initialization */;
delta > baseMinusTMin * tMax >> 1; k += base) {\n\t\tdelta = floor(delta / baseMinusTMin);\n\t}\n\treturn floor(k + (baseMinusTMin + 1) * delta / (delta + skew));\n};\n\n/**\n * Converts a Punycode string of ASCII-only symbols to a string of Unicode\n * symbols.\n * @memberOf punycode\n * @param {String} input The Punycode string of ASCII-only symbols.\n * @returns {String} The resulting string of Unicode symbols.\n */\nconst decode = function(input) {\n\t// Don't use UCS-2.\n\tconst output = [];\n\tconst inputLength = input.length;\n\tlet i = 0;\n\tlet n = initialN;\n\tlet bias = initialBias;\n\n\t// Handle the basic code points: let `basic` be the number of input code\n\t// points before the last delimiter, or `0` if there is none, then copy\n\t// the first basic code points to the output.\n\n\tlet basic = input.lastIndexOf(delimiter);\n\tif (basic < 0) {\n\t\tbasic
= 0;\n\t}\n\n\tfor (let j = 0; j < basic; ++j) {\n\t\t// if it's not a basic code point\n\t\tif (input.charCodeAt(j) >= 0x80) {\n\t\t\terror('not-basic');\n\t\t}\n\t\toutput.push(input.charCodeAt(j));\n\t}\n\n\t// Main decoding loop: start just after the last delimiter if any basic code\n\t// points were copied; start at the beginning otherwise.\n\n\tfor (let index = basic > 0 ? basic + 1 : 0; index < inputLength; /* no final expression */) {\n\n\t\t// `index` is the index of the next character to be consumed.\n\t\t// Decode a generalized variable-length integer into `delta`,\n\t\t// which gets added to `i`. The overflow checking is easier\n\t\t// if we increase `i` as we go, then subtract off its starting\n\t\t// value at the end to obtain `delta`.\n\t\tlet oldi = i;\n\t\tfor (let w = 1, k = base; /* no condition */; k += base) {\n\n\t\t\tif (index >= inputLength) {\n\t\t\t\terror('invalid-input');\n\t\t\t}\n\n\t\t\tconst digit =
basicToDigit(input.charCodeAt(index++));\n\n\t\tif
(digit >= base || digit > floor((maxInt - i) / w)) {\n\t\t\terror('overflow');\n\t\t}\n\n\t\ti += digit * w;\n\t\tconst t = k <= bias ? tMin : (k >= bias + tMax ? tMax : k - bias);\n\n\t\tif (digit < t) {\n\t\t\tbreak;\n\t\t}\n\n\t\tconst

baseMinusT = base - t;\n\t\t\tif (w > floor(maxInt / baseMinusT)) {\n\t\t\t\terror('overflow');\n\t\t\t}\n\n\t\t\tw *= baseMinusT;\n\n\t\t}\n\n\t\tconst out = output.length + 1;\n\t\tbias = adapt(i - oldi, out, oldi == 0);\n\n\t\t// `i` was supposed to wrap around from `out` to `0`,\n\t\t// incrementing `n` each time, so we'll fix that now:\n\t\tif (floor(i / out) > maxInt - n) {\n\t\t\terror('overflow');\n\t\t}\n\n\tn += floor(i / out);\n\t\ti %= out;\n\n\t\t// Insert `n` at position `i` of the output.\n\t\toutput.splice(i++, 0, n);\n\n\t}\n\n\treturn String.fromCodePoint(...output);\n};\n\n/**\n * Converts a string of Unicode symbols (e.g. a domain name label) to a\n * Punycode string of ASCII-only symbols.\n * @memberOf punycode\n * @param {String} input The string of Unicode symbols.\n * @returns {String} The resulting Punycode string of ASCII-only symbols.\n */\nconst encode = function(input) {\n\tconst output = [];\n\n\t// Convert the input in UCS-2 to an array of Unicode code points.\n\tinput = ucs2decode(input);\n\n\t// Cache the length.\n\tlet inputLength = input.length;\n\n\t// Initialize the state.\n\tlet n = initialN;\n\tlet delta = 0;\n\tlet bias = initialBias;\n\n\t// Handle the basic code points.\n\tfor (const currentValue of input) {\n\t\tif (currentValue < 0x80) {\n\t\t\toutput.push(stringFromCharCode(currentValue));\n\t\t}\n\t}\n\n\tlet basicLength = output.length;\n\tlet handledCPCount = basicLength;\n\n\t// `handledCPCount` is the number of code points that have been handled;\n\t// `basicLength` is the number of basic code points.\n\n\t// Finish the basic string with a delimiter unless it's empty.\n\tif (basicLength) {\n\t\toutput.push(delimiter);\n\t}\n\n\t// Main encoding loop:\n\twhile (handledCPCount < inputLength) {\n\n\t\t// All non-basic code points < n have been handled already. Find the next\n\t\t// larger one:\n\t\tlet m = maxInt;\n\t\tfor (const currentValue of input) {\n\t\t\tif (currentValue >= n && currentValue < m) {\n\t\t\t\tm = currentValue;\n\t\t\t}\n\t\t}\n\n\t\t// Increase `delta` enough to advance the decoder's <n,i> state to <m,0>,\n\t\t// but guard against overflow.\n\t\tconst handledCPCountPlusOne = handledCPCount + 1;\n\t\tif (m - n > floor((maxInt - delta) / handledCPCountPlusOne)) {\n\t\t\terror('overflow');\n\t\t}\n\n\t\tdelta += (m - n) * handledCPCountPlusOne;\n\t\tn = m;\n\n\t\tfor (const currentValue of input) {\n\t\t\tif (currentValue < n && ++delta > maxInt) {\n\t\t\t\terror('overflow');\n\t\t\t}\n\t\t\tif (currentValue == n) {\n\t\t\t\t// Represent delta as a generalized variable-length integer.\n\t\t\t\tlet q = delta;\n\t\t\t\tfor (let k = base; /* no condition */; k += base) {\n\t\t\t\t\tconst t = k <= bias ? tMin : (k >= bias + tMax ? tMax : k - bias);\n\t\t\t\t\tif (q < t) {\n\t\t\t\t\t\tbreak;\n\t\t\t\t\t}\n\t\t\t\t\tconst qMinusT = q - t;\n\t\t\t\t\tconst baseMinusT = base - t;\n\t\t\t\t\toutput.push(\n\t\t\t\t\t\tstringFromCharCode(digitToBasic(t + qMinusT % baseMinusT, 0))\n\t\t\t\t\t);\n\t\t\t\t\tq = floor(qMinusT / baseMinusT);\n\t\t\t\t}\n\n\t\t\t\toutput.push(stringFromCharCode(digitToBasic(q, 0)));\n\t\t\t\tbias = adapt(delta, handledCPCountPlusOne, handledCPCount == basicLength);\n\t\t\t\tdelta = 0;\n\t\t\t\t++handledCPCount;\n\t\t\t}\n\t\t}\n\n\t\t++delta;\n\t\t++n;\n\n\t}\n\treturn output.join('');\n};\n\n/**\n * Converts a Punycode string representing a domain name or an email address\n * to Unicode. Only the Punycoded parts of the input will be converted, i.e.\n * it doesn't matter if you call it on a string that has already been\n * converted to Unicode.\n * @memberOf punycode\n * @param {String} input The Punycoded domain name or email address to\n * convert to Unicode.\n * @returns {String} The Unicode representation of the given Punycode\n * string.\n */\nconst toUnicode = function(input) {\n\treturn mapDomain(input, function(string) {\n\t\treturn regexPunycode.test(string)\n\t\t\t? decode(string.slice(4).toLowerCase())\n\t\t\t: string;\n\t});\n};\n\n/**\n * Converts a Unicode string representing a domain name or an email address to\n * Punycode. Only the non-ASCII parts of the domain name will be converted,\n * i.e. it doesn't matter if you call it with a domain that's already in\n * ASCII.\n * @memberOf punycode\n * @param {String} input The domain name or email address to convert, as a\n * Unicode string.\n * @returns {String} The Punycode representation of the given domain name or\n * email address.\n */\nconst toASCII = function(input) {\n\treturn mapDomain(input, function(string) {\n\t\treturn regexNonASCII.test(string)\n\t\t\t? 'xn--' + encode(string)\n\t\t\t: string;\n\t});\n};\n\n/*--*/\n\n/**\n * Define the public API\n */\nconst punycode = {\n\t/**\n\t * A string representing the current Punycode.js version number.\n\t * @memberOf punycode\n\t * @type String\n\t */\n\t'version': '2.1.0',\n\t/**\n\t * An object of methods to convert from JavaScript's internal character\n\t * representation (UCS-2) to Unicode code points, and back.\n\t *

@see <https://mathiasbynens.be/notes/javascript-encoding>\n\t * @memberOf punycode\n\t * @type Object\n\t */\n\t'ucs2': {\n\t\t'decode': ucs2decode,\n\t\t'encode': ucs2encode\n\t},\n\t'decode': decode,\n\t'encode': encode,\n\t'toASCII': toASCII,\n\t'toUnicode': toUnicode\n};\n\nexport default punycode;\n","import { URIRegExps } from \"./uri\";\nimport { buildExps } from \"./regexps-uri\";\n\nexport default buildExps(true);\n","import { URIRegExps } from \"./uri\";\nimport { merge, subexp } from \"./util\";\n\nexport function buildExps(isIRI:boolean):URIRegExps {\n\tconst\n\t\tALPHA$$ = \"[A-Za-z]\",\n\t\tCR$ = \"[\\\\x0D]\",\n\t\tDIGIT$$ = \"[0-9]\",\n\t\tDQUOTE$$ = \"[\\\\x22]\",\n\t\tHEXDIG$$ = merge(DIGIT$$, \"[A-Fa-f]\"), //case-insensitive\n\t\tLF$$ = \"[\\\\x0A]\",\n\t\tSP$$ = \"[\\\\x20]\",\n\t\tPCT_ENCODED$ = subexp(subexp(\"%[EFef]\" + HEXDIG$$ + \"%\" + HEXDIG$$ + HEXDIG$$ + \"%\" + HEXDIG$$ + HEXDIG$$) + \"|\" + subexp(\"%[89A-Fa-f]\" + HEXDIG$$ + \"%\" + HEXDIG$$ + HEXDIG$$) + \"|\" + subexp(\"%\" + HEXDIG$$ + HEXDIG$$)), //expanded\n\t\tGEN_DELIMS$$ = \"[\\\\:\\\\/\\\\?\\\\#\\\\[\\\\]\\\\@]\",\n\t\tSUB_DELIMS$$ = \"[\\\\!\\\\$\\\\&\\\\'\\\\(\\\\)\\\\*\\\\+\\\\,\\\\;\\\\=]\",\n\t\tRESERVED$$ = merge(GEN_DELIMS$$, SUB_DELIMS$$),\n\t\tUCSCHAR$$ = isIRI ? \"[\\\\xA0-\\\\u200D\\\\u2010-\\\\u2029\\\\u202F-\\\\uD7FF\\\\uF900-\\\\uFDCF\\\\uFDF0-\\\\uFFEF]\" : \"[]\", //subset, excludes bidi control characters\n\t\tIPRIVATE$$ = isIRI ? \"[\\\\uE000-\\\\uF8FF]\" : \"[]\", //subset\n\t\tUNRESERVED$$ = merge(ALPHA$$, DIGIT$$, \"[\\\\-\\\\.\\\\_\\\\~]\", UCSCHAR$$),\n\t\tSCHEME$ = subexp(ALPHA$$ + merge(ALPHA$$, DIGIT$$, \"[\\\\+\\\\-\\\\.]\")
 + \"*\"),\n\t\tUSERINFO$ = subexp(subexp(PCT_ENCODED$ + \"|\" + merge(UNRESERVED$$, SUB_DELIMS$$, \"[\\\\:]\")) + \"*\"),\n\t\tDEC_OCTET$ = subexp(subexp(\"25[0-5]\") + \"|\" + subexp(\"2[0-4]\" + DIGIT$$) + \"|\" + subexp(\"1\" + DIGIT$$ + DIGIT$$) + \"|\" + subexp(\"[1-9]\" + DIGIT$$) + \"|\" + DIGIT$$),\n\t\tDEC_OCTET_RELAXED$ = subexp(subexp(\"25[0-5]\") + \"|\" + subexp(\"2[0-4]\" + DIGIT$$) + \"|\" + subexp(\"1\" + DIGIT$$ + DIGIT$$) + \"|\" + subexp(\"0?[1-9]\" + DIGIT$$) + \"|0?0?\" + DIGIT$$), //relaxed parsing rules\n\t\tIPV4ADDRESS$ = subexp(DEC_OCTET_RELAXED$ + \"\\\\.\" + DEC_OCTET_RELAXED$ + \"\\\\.\" + DEC_OCTET_RELAXED$ + \"\\\\.\" + DEC_OCTET_RELAXED$),\n\t\tH16$ = subexp(HEXDIG$$ + \"{1,4}\"),\n\t\tLS32$ = subexp(subexp(H16$ + \"\\\\:\" + H16$) + \"|\" + IPV4ADDRESS$),\n\t\tIPV6ADDRESS1$ = subexp(
subexp(H16$ + \"\\\\:\") + \"{6}\" + LS32$), //   6(h16 \":\") ls32\n\t\tIPV6ADDRESS2$
 = subexp(\"\\\\:\\\\:\" + subexp(H16$ + \"\\\\:\") + \"{5}\" + LS32$), //
\"::\" 5(h16 \":\") ls32\n\t\tIPV6ADDRESS3$ = subexp(subexp(H16$) + \"?\\\\:\\\\:\" + subexp(H16$ + \"\\\\:\") + \"{4}\" + LS32$), //[h16] \"::\" 4(h16 \":\") ls32\n\t\tIPV6ADDRESS4$ = subexp(subexp(subexp(H16$ + \"\\\\:\") + \"{0,1}\" + H16$) + \"?\\\\:\\\\:\" + subexp(H16$ + \"\\\\:\") + \"{3}\" + LS32$), //[*1(h16 \":\") h16] \"::\" 3(h16 \":\") ls32\n\t\tIPV6ADDRESS5$ = subexp(subexp(subexp(H16$ + \"\\\\:\") + \"{0,2}\" + H16$) + \"?\\\\:\\\\:\" + subexp(H16$ + \"\\\\:\") + \"{2}\" + LS32$), //[*2(h16 \":\") h16] \"::\" 2(h16 \":\") ls32\n\t\tIPV6ADDRESS6$ = subexp(subexp(subexp(H16$ + \"\\\\:\") + \"{0,3}\" + H16$) + \"?\\\\:\\\\:\" +   H16$ + \"\\\\:\"   + LS32$), //[*3(h16 \":\") h16] \"::\"   h16 \":\" ls32\n\t\tIPV6ADDRESS7$ = subexp(subexp(subexp(H16$
 + \"\\\\:\") + \"{0,4}\" + H16$) + \"?\\\\:\\\\:\"   + LS32$), //[*4(h16 \":\") h16] \"::\" ls32\n\t\tIPV6ADDRESS8$ = subexp(subexp(subexp(H16$ + \"\\\\:\") + \"{0,5}\" + H16$) + \"?\\\\:\\\\:\"
        + H16$), //[*5(h16 \":\") h16] \"::\"   h16\n\t\tIPV6ADDRESS9$ = subexp(subexp(subexp(H16$ + \"\\\\:\") + \"{0,6}\" + H16$) + \"?\\\\:\\\\:\"   ), //[*6(h16 \":\") h16] \"::\"\n\t\tIPV6ADDRESS$ = subexp([IPV6ADDRESS1$, IPV6ADDRESS2$, IPV6ADDRESS3$, IPV6ADDRESS4$, IPV6ADDRESS5$, IPV6ADDRESS6$, IPV6ADDRESS7$, IPV6ADDRESS8$, IPV6ADDRESS9$].join(\"|\")),\n\t\tZONEID$ = subexp(subexp(UNRESERVED$$ + \"|\" + PCT_ENCODED$) + \"+\"), //RFC 6874\n\t\tIPV6ADDRZ$ = subexp(IPV6ADDRESS$ + \"\\\\%25\" + ZONEID$), //RFC 6874\n\t\tIPV6ADDRZ_RELAXED$ = subexp(IPV6ADDRESS$ + subexp(\"\\\\%25|\\\\%(?!\" + HEXDIG$$ + \"{2})\") + ZONEID$), //RFC 6874, with relaxed

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parsing rules\n\t\tIPVFUTURE$ = subexp(\"[vV]\" + HEXDIG$$ + \"+\\\\.\" + merge(UNRESERVED$$,
SUB_DELIMS$$, \"[\\\\:]\") + \"+\"),\n\t\tIP_LITERAL$ = subexp(\"\\\\[\" + subexp(IPV6ADDRZ_RELAXED$ +
\"|\" + IPV6ADDRESS$ + \"|\" + IPVFUTURE$) + \"\\\\]\"),  //RFC 6874\n\t\tREG_NAME$ =
subexp(subexp(PCT_ENCODED$ + \"|\" + merge(UNRESERVED$$, SUB_DELIMS$$)) + \"*\"),\n\t\tHOST$ =
subexp(IP_LITERAL$ + \"|\" + IPV4ADDRESS$ + \"(?!\" + REG_NAME$ + \")\" + \"|\" +
REG_NAME$),\n\t\tPORT$ = subexp(DIGIT$$ + \"*\"),\n\t\tAUTHORITY$ = subexp(subexp(USERINFO$ +
\"@\") + \"?\" + HOST$ + subexp(\"\\\\:\" + PORT$) + \"?\"),\n\t\tPCHAR$ = subexp(PCT_ENCODED$ + \"|\" +
merge(UNRESERVED$$, SUB_DELIMS$$, \"[\\\\:\\\\@]\")),\n\t\tSEGMENT$ = subexp(PCHAR$ +
\"*\"),\n\t\tSEGMENT_NZ$ = subexp(PCHAR$ + \"+\"),\n\t\tSEGMENT_NZ_NC$ =
subexp(subexp(PCT_ENCODED$ + \"|\" + merge(UNRESERVED$$, SUB_DELIMS$$, \"[\\\\@]\")) +
\"+\"),\n\t\tPATH_ABEMPTY$ = subexp(subexp(\"\\\\/\" + SEGMENT$) + \"*\"),\n\t\tPATH_ABSOLUTE$
 = subexp(\"\\\\/\" + subexp(SEGMENT_NZ$ + PATH_ABEMPTY$) + \"?\"),
//simplified\n\t\tPATH_NOSCHEME$ = subexp(SEGMENT_NZ_NC$ + PATH_ABEMPTY$),
//simplified\n\t\tPATH_ROOTLESS$ = subexp(SEGMENT_NZ$ + PATH_ABEMPTY$),
//simplified\n\t\tPATH_EMPTY$ = \"(?!\" + PCHAR$ + \")\",\n\t\tPATH$ = subexp(PATH_ABEMPTY$ + \"|\" +
PATH_ABSOLUTE$ + \"|\" + PATH_NOSCHEME$ + \"|\" + PATH_ROOTLESS$ + \"|\" +
PATH_EMPTY$),\n\t\tQUERY$ = subexp(subexp(PCHAR$ + \"|\" + merge(\"[\\\\/\\\\?]\", IPRIVATE$$)) +
\"*\"),\n\t\tFRAGMENT$ = subexp(subexp(PCHAR$ + \"|[\\\\/\\\\?]\") + \"*\"),\n\t\tHIER_PART$ =
subexp(subexp(\"\\\\/\\\\/\" + AUTHORITY$ + PATH_ABEMPTY$) + \"|\" + PATH_ABSOLUTE$ + \"|\" +
PATH_ROOTLESS$ + \"|\" + PATH_EMPTY$),\n\t\tURI$ = subexp(SCHEME$ + \"\\\\:\" + HIER_PART$ +
subexp(\"\\\\?\" + QUERY$) + \"?\" + subexp(\"\\\\#\" + FRAGMENT$) + \"?\"),\n\t\tRELATIVE_PART$ =
subexp(subexp(\"\\\\/\\\\/\" + AUTHORITY$ + PATH_ABEMPTY$) + \"|\" + PATH_ABSOLUTE$ + \"|\" +
PATH_NOSCHEME$ + \"|\" + PATH_EMPTY$),\n\t\tRELATIVE$
 = subexp(RELATIVE_PART$ + subexp(\"\\\\?\" + QUERY$) + \"?\" + subexp(\"\\\\#\" + FRAGMENT$) +
\"?\"),\n\t\tURI_REFERENCE$ = subexp(URI$ + \"|\" + RELATIVE$),\n\t\tABSOLUTE_URI$ =
subexp(SCHEME$ + \"\\\\:\" + HIER_PART$ + subexp(\"\\\\?\" + QUERY$) + \"?\"),\n\n\t\tGENERIC_REF$ =
\"^(\" + SCHEME$ + \")\\\\:\" + subexp(subexp(\"\\\\/\\\\/(\" + subexp(\"(\" + USERINFO$ + \")@\") + \"?(\" +
HOST$ + \")\" + subexp(\"\\\\:(\" + PORT$ + \")\") + \"?)\") + \"?(\" + PATH_ABEMPTY$ + \"|\" +
PATH_ABSOLUTE$ + \"|\" + PATH_ROOTLESS$ + \"|\" + PATH_EMPTY$ + \")\") + subexp(\"\\\\?(\" +
QUERY$ + \")\") + \"?\" + subexp(\"\\\\#(\" + FRAGMENT$ + \")\") + \"?$\",\n\t\tRELATIVE_REF$ = \"^(){0}\" +
subexp(subexp(\"\\\\/\\\\/(\" + subexp(\"(\" + USERINFO$ + \")@\") + \"?(\" + HOST$ + \")\" + subexp(\"\\\\:(\" +
PORT$ + \")\") + \"?)\") + \"?(\" + PATH_ABEMPTY$ + \"|\" + PATH_ABSOLUTE$ + \"|\" +
PATH_NOSCHEME$ + \"|\" + PATH_EMPTY$ + \")\") + subexp(\"\\\\?(\" + QUERY$ + \")\") + \"?\"
 + subexp(\"\\\\#(\" + FRAGMENT$ + \")\") + \"?$\",\n\t\tABSOLUTE_REF$ = \"^(\" + SCHEME$ + \")\\\\:\" +
subexp(subexp(\"\\\\/\\\\/(\" + subexp(\"(\" + USERINFO$ + \")@\") + \"?(\" + HOST$ + \")\" + subexp(\"\\\\:(\" +
PORT$ + \")\") + \"?)\") + \"?(\" + PATH_ABEMPTY$ + \"|\" + PATH_ABSOLUTE$ + \"|\" +
PATH_ROOTLESS$ + \"|\" + PATH_EMPTY$ + \")\") + subexp(\"\\\\?(\" + QUERY$ + \")\") +
\"?$\",\n\t\tSAMEDOC_REF$ = \"^\" + subexp(\"\\\\#(\" + FRAGMENT$ + \")\") +
\"?$\",\n\t\tAUTHORITY_REF$ = \"^\" + subexp(\"(\" + USERINFO$ + \")@\") + \"?(\" + HOST$ + \")\" +
subexp(\"\\\\:(\" + PORT$ + \")\") + \"?$\"\n\t;\n\n\treturn {\n\t\tNOT_SCHEME : new RegExp(merge(\"[^]\",
ALPHA$$, DIGIT$$, \"[\\\\+\\\\-\\\\.]\"), \"g\"),\n\t\tNOT_USERINFO : new RegExp(merge(\"[^\\\\%\\\\:]\",
UNRESERVED$$, SUB_DELIMS$$), \"g\"),\n\t\tNOT_HOST : new RegExp(merge(\"[^\\\\%\\\\[\\\\]\\\\:]\",
UNRESERVED$$, SUB_DELIMS$$), \"g\"),\n\t\tNOT_PATH : new RegExp(merge(\"[^\\\\%\\\\/\\\\:\\\\@]\",
UNRESERVED$$, SUB_DELIMS$$),
 \"g\"),\n\t\tNOT_PATH_NOSCHEME : new RegExp(merge(\"[^\\\\%\\\\/\\\\@]\", UNRESERVED$$,
SUB_DELIMS$$), \"g\"),\n\t\tNOT_QUERY : new RegExp(merge(\"[^\\\\%]\", UNRESERVED$$,
SUB_DELIMS$$, \"[\\\\:\\\\@\\\\/\\\\?]\", IPRIVATE$$), \"g\"),\n\t\tNOT_FRAGMENT : new
RegExp(merge(\"[^\\\\%]\", UNRESERVED$$, SUB_DELIMS$$, \"[\\\\:\\\\@\\\\/\\\\?]\"), \"g\"),\n\t\tESCAPE :
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new RegExp(merge(\"[^]\", UNRESERVED$$, SUB_DELIMS$$), \"g\"),\n\t\tUNRESERVED : new RegExp(UNRESERVED$$, \"g\"),\n\t\tOTHER_CHARS : new RegExp(merge(\"[^\\\\%]\", UNRESERVED$$, RESERVED$$), \"g\"),\n\t\tPCT_ENCODED : new RegExp(PCT_ENCODED$, \"g\"),\n\t\tIPV4ADDRESS : new RegExp(\"^(\" + IPV4ADDRESS$ + \")$\"),\n\t\tIPV6ADDRESS : new RegExp(\"^\\\\[?(\" + IPV6ADDRESS$ + \")\" + subexp(subexp(\"\\\\%25|\\\\%(?!\" + HEXDIG$$ + \"{2})\") + \"(\" + ZONEID$ + \")\") + \"?\\\\]?$\") //RFC 6874, with relaxed parsing rules\n\t};\n}\n\nexport default buildExps(false);\n","export function merge(...sets:Array<string>):string
{\n\tif (sets.length > 1) {\n\t\tsets[0] = sets[0].slice(0, -1);\n\t\tconst xl = sets.length - 1;\n\t\tfor (let x = 1; x < xl; ++x) {\n\t\t\tsets[x] = sets[x].slice(1, -1);\n\t\t}\n\t\tsets[xl] = sets[xl].slice(1);\n\treturn sets.join('');\n} else {\n\treturn sets[0];\n}\n}\n\nexport function subexp(str:string):string {\n\treturn \"(?:\" + str + \")\";\n}\n\nexport function typeOf(o:any):string {\n\treturn o === undefined ? \"undefined\" : (o === null ? \"null\" : Object.prototype.toString.call(o).split(\" \").pop().split(\"]\").shift().toLowerCase());\n}\n\nexport function toUpperCase(str:string):string {\n\treturn str.toUpperCase();\n}\n\nexport function toArray(obj:any):Array<any> {\n\treturn obj !== undefined && obj !== null ? (obj instanceof Array ? obj : (typeof obj.length !== \"number\" || obj.split || obj.setInterval || obj.call ? [obj] : Array.prototype.slice.call(obj))) : [];\n}\n\n\nexport function assign(target: object, source: any): any {\n\tconst obj = target as
any;\n\tif (source) {\n\t\tfor (const key in source) {\n\t\t\tobj[key] = source[key];\n\t\t}\n\t}\n\treturn obj;\n}"],"names":["SCHEMES","uuid","scheme","urn","mailto","https","http","urnComponents","nss","uuidComponents","toLowerCase","options","error","tolerant","match","UUID","undefined","handler","uriComponents","path","nid","schemeHandler","serialize","urnScheme","parse","matches","components","URN_PARSE","query","fields","join","length","push","name","replace","PCT_ENCODED","decodeUnreserved","toUpperCase","NOT_HFNAME","pctEncChar","headers","NOT_HFVALUE","O","mailtoComponents","body","subject","to","x","localPart","domain","iri","e","punycode","toASCII","unescapeComponent","toUnicode","toAddr","slice","atIdx","NOT_LOCAL_PART","lastIndexOf","String","xl","toArray","addr","unicodeSupport","split","unknownHeaders","hfield","toAddrs","hfields","decStr","UNRESERVED","str","pctDecChars","RegExp","merge","UNRESERVED$$","SOME_DELIMS$$","ATEXT$$","VCHAR$$","PCT_ENCODED$","QTEXT$$","subexp","HEXDIG$$","isIRI","domainHost","port","host","toString","URI_PROTOCOL","IRI_PROTOCOL","ESCAPE","escapeComponent","uriA","uriB","typeOf","equal","uri","normalize","resolveComponents","baseURI","schemelessOptions","relativeURI","assign","resolve","target","fragment","relative","base","userinfo","removeDotSegments","charAt","skipNormalization","uriTokens","s","authority","absolutePath","reference","_recomposeAuthority","protocol","IPV6ADDRESS","test","output","Error","input","im","RDS5","pop","RDS3","RDS2","RDS1","$1","$2","_normalizeIPv6","_normalizeIPv4","_","uriString","isNaN","indexOf","parseInt","NO_MATCH_IS_UNDEFINED","URI_PARSE","newHost","zone","newFirst","newLast","longestZeroFields","index","b","a","allZeroFields","sort","acc","lastLongest","field","reduce","fieldCount","isLastFieldIPv4Address","firstFields","lastFields","lastFieldsStart","Array","IPV4ADDRESS","last","map","_stripLeadingZeros","first","address","reverse","NOT_FRAGMENT","NOT_QUERY","NOT_PATH","NOT_PATH_NOSCHEME","NOT_HOST","NOT_USERINFO","NOT_SCHEME","_normalizeComponentEncoding","newStr","substr","i","fromCharCode","c","c2","c3","il","chr","charCodeAt","encode","decode","ucs2encode","ucs2decode","regexNonASCII","string","mapDomain","regexPunycode","n","delta","handledCPCount","adapt","handledCPCountPlusOne","basicLength","stringFromCharCode","digitToBasic","q","floor","qMinusT","baseMinusT","t","k","bias","tMin","tMax","currentValue","maxInt","m","inputLength","delimiter","initialBias","initialN","fromCodePoint","splice","out","oldi","w","digit","basicToDigit","basic","j","baseMinusTMin","skew","numPoints","firstTime","damp","flag","codePoint","array","value","extra","counter","result","encoded","labels","fn","regexSeparators","parts","RangeError","errors","type","Math","buildExps","IPV6ADDRESS$","ZONEID$","IPV4ADDRESS$","RESERVED$$","SUB_DELIMS$$","IPRIVATE$$","ALPHA$$","DIGIT$$","AUTHORITY_REF$","USERINFO$","HOST$","PORT$","SAMEDOC_REF$","FRAGMENT$","ABSOLUTE_REF$","SCHEME$","PATH_ABEMPTY$","PATH_ABSOLUTE$","PATH_ROOTLESS$","PATH_EMPTY$","QUERY$","RELATIVE_REF$","PATH_NOSCHEME$","GENERIC_REF$","ABSOLUTE_URI$","HIER_PART$","URI_REFERENCE$","URI$","RELATIVE$","RELATIVE_PART$","AUTHORITY$","PCHAR$","PATH$","SEGMENT_NZ$","SEGMENT_NZ_NC$",

"SEGMENT$","IP_LITERAL$","REG_NAME$","IPV6ADDRZ_RELAXED$","IPVFUTURE$","IPV6ADDRES
S1$","IPV6ADDRESS2$","IPV6ADDRESS3$","IPV6ADDRESS4$","IPV6ADDRESS5$","IPV6ADDRESS6$","I
PV6ADDRESS7$","IPV6ADDRESS8$","IPV6ADDRESS9$","H16$","LS32$","DEC_OCTET_RELAXED$","DE
C_OCTET$","UCSCHAR$$","GEN_DELIMS$$","SP$$","DQUOTE$$","CR$","obj","key","source","setInterval",
"call","prototype","o","Object","shift","sets"],"mappings":";;;;;;;AUAA,SAAA4E,KAAA,GAAA;sCAAyBkP,IAAz
B;YAAA;;;QACKA,KAAK/R,MAAL,GAAc,CAAlB,EAAqB;aACf,CAAL,IAAU+R,KAAK,CAAL,EAAQrQ,KA
AR,CAAc,CAAd,EAAiB,CAAC,CAAlB,CAAV;YACMK,KAAKgQ,KAAK/R,MAAL,GAAc,CAAzB;aACK,IAA
IgB,IAAI,CAAb,EAAgBA,IAAIe,EAApB,EAAwB,EAAEf,CAA1B,EAA6B;iBACvBA,CAAL,IAAU+Q,KAAK/Q
,CAAL,EAAQU,KAAR,CAAc,CAAd,EAAiB,CAAC,CAAlB,CAAV;;aAEIK,EAAL,IAAWgQ,KAAKhQ,EAAL,E
AASL,KAAT,CAAe,CAAf,CAAX;eACOqQ,KAAKhS,IAAL,CAAU,EAAV,CAAP;KAPD,MAQO;eACCgS,KAA
K,CAAL,CAAP;;;AAIF,AAAA,SAAA3O,MAAA,CAAuBV,GAAvB,EAAA;WACQ,QAAQA,GAAR,GAAc,GA
ArB;;AAGD,AAAA,SAAAuB,MAAA,CAAuB2N,CAAvB,EAAA;WACQA,MAAM3S,SAAN,GAAkB,WAAlB,G
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CAA/B,EAAkCzP,KAAlC,CAAwC,GAAxC,EAA6C8D,GAA7C,GAAmD9D,KAAnD,CAAyD,GAAzD,EAA8D2
P,KAA9D,GAAsEnT,WAAtE,EAA9D;;AAGD,AAAA,SAAA2B,WAAA,CAA4BoC,GAA5B,EAAA;WACQA,IA
AIpC,WAAJ,EAAP;;AAGD,AAAA,SAAA0B,OAAA,CAAwBsP,GAAxB,EAAA;WACQA,QAAQrS,SAAR,IAA
qBqS,QAAQ,IAA7B,GAAqCA,eAAenJ,KAAf,GAAuBmJ,GAAvB,GAA8B,OAAOA,IAAItR,MAAX,KAAsB,QA
AtB,IAAkCsR,IAAInP,KAAtC,IAA+CmP,IAAIG,WAAnD,IAAkEH,IAAII,IAAtE,GAA6E,CAACJ,GAAD,CAA7
E,GAAqFnJ,MAAMwJ,SAAN,CAAgBjQ,KAAhB,CAAsBgQ,IAAtB,CAA2BJ,GAA3B,CAAxJ,GAA4L,EAAnM;;
AAID,AAAA,SAAA7M,MAAA,CAAuBE,MAAvB,EAAuC6M,MAAvC,EAAA;QACOF,MAAM3M,MAAZ;QA
CI6M,MAAJ,EAAY;aACN,IAAMD,GAAX,IAAkBC,MAAlB,EAA0B;gBACrBD,GAAJ,IAAWC,OAAOD,GAAP
,CAAX;;;WAGKD,GAAP;;;ADnCD,SAAA3D,SAAA,CAA0BrK,KAA1B,EAAA;QAEE4K,UAAU,UADX;QAEC
mD,MAAM,SAFP;QAGClD,UAAU,OAHX;QAICiD,WAAW,SAJZ;QAKC/N,WAAWR,MAAMsL,OAAN,EAAAe
,UAAf,CALZ;;WAMQ,SANR;QAOCgD,OAAO,SAPR;QAQCjO,eAAeE,OAAOA,OAAO,YAAYC,QAAZ,GAAAu
B,GAAvB,GAA6BA,QAA7B,GAAwCA,QAAxC,GAAmD,GAAnD,GAAyDA,QAAzD,GAAoEA,QAA3E,IAAuF
,GAAvF,GAA6FD,OAAO,gBAAgBC,QAAhB,GAA2B,GAA3B,GAAiCA,QAAjC,GAA4CA,QAAnD,CAA7F,GA
A4J,GAA5J,GAAkKD,OAAO,MAAMC,QAAN,GAAiBA,QAAxB,CAAzK,CARhB;;mBASgB,yBAThB;QAUC2
K,eAAe,qCAVhB;QAWCD,aAAalL,MAAMqO,YAAN,EAAoBlD,YAApB,CAXd;QAYCiD,YAAY3N,QAAQ,6E
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AKC,MAAb,IAAuBD,SAAvB,CAAEA;;;;;;;;;;;;;;;;;"}

Found
 in path(s):
* /opt/cola/permits/1110634955_1606918997.92/0/garycourt-uri-js-4-2-2-0-g4f6f600-1-tar-gz/garycourt-uri-js-4f6f600/dist/es5/uri.all.js.map
No license file was found, but licenses were detected in source scan.

```
import resolve from 'rollup-plugin-node-resolve';
import babel from 'rollup-plugin-babel';
const packageJson = require('./package.json');

export default {
 entry : "dist/esnext/index.js",
 format : "umd",
 moduleName : "URI",
 plugins: [
  resolve({
   module: true,
   jsnext: true,
   preferBuiltins: false
  }),

  babel({
    "presets": [
     ["latest", {
       "es2015": {
```

```
          "modules": false
        }
       }]
    ],
    "plugins": ["external-helpers"],
    "externalHelpers": false
  }
)
 ],
 dest  : "dist/es5/uri.all.js",
 sourceMap: true,
 banner: "/** @license URI.js v" + packageJson.version + " (c) 2011 Gary Court. License:
http://github.com/garycourt/uri-js */"
}
```

Found in path(s):
* /opt/cola/permits/1110634955_1606918997.92/0/garycourt-uri-js-4-2-2-0-g4f6f600-1-tar-gz/garycourt-uri-js-4f6f600/rollup.config.js

1.54 json-schema-traverse 0.4.1

1.54.1 Available under license :

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1.55 delayed-stream 1.0.0

1.55.1 Available under license :

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1.56 asynckit 0.4.0

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1.57 combined-stream 1.0.8

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1.58 azure-iot-sdk-c 1.3.9

1.58.1 Available under license :

Format: http://www.debian.org/doc/packaging-manuals/copyright-format/1.0/
Upstream-Name: azure-iot-sdk-c
Source: https://github.com/Azure/azure-iot-sdk-c.git

Files: *
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Files: debian/*
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1.68 fast-deep-equal 3.1.1

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1.70 fmt 7.0.1

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A. HISTORY OF THE SOFTWARE
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Python was created in the early 1990s by Guido van Rossum at Stichting
Mathematisch Centrum (CWI, see http://www.cwi.nl) in the Netherlands
as a successor of a language called ABC. Guido remains Python's
principal author, although it includes many contributions from others.

In 1995, Guido continued his work on Python at the Corporation for
National Research Initiatives (CNRI, see http://www.cnri.reston.va.us)
in Reston, Virginia where he released several versions of the
software.

In May 2000, Guido and the Python core development team moved to
BeOpen.com to form the BeOpen PythonLabs team. In October of the same
year, the PythonLabs team moved to Digital Creations (now Zope
Corporation, see http://www.zope.com). In 2001, the Python Software
Foundation (PSF, see http://www.python.org/psf/) was formed, a
non-profit organization created specifically to own Python-related
Intellectual Property. Zope Corporation is a sponsoring member

of
the PSF.

All Python releases are Open Source (see http://www.opensource.org for the Open Source Definition). Historically, most, but not all, Python releases have also been GPL-compatible; the table below summarizes the various releases.

Release	Derived from	Year	Owner	GPL-compatible? (1)
0.9.0 thru 1.2		1991-1995	CWI	yes
1.3 thru 1.5.2	1.2	1995-1999	CNRI	yes
1.6	1.5.2	2000	CNRI	no
2.0	1.6	2000	BeOpen.com	no
1.6.1	1.6	2001	CNRI	yes (2)
2.1	2.0+1.6.1	2001	PSF	no
2.0.1	2.0+1.6.1	2001	PSF	yes
2.1.1	2.1+2.0.1	2001	PSF	yes
2.2	2.1.1	2001	PSF	yes
2.1.2	2.1.1	2002	PSF	yes
2.1.3	2.1.2	2002	PSF	yes
2.2.1	2.2	2002	PSF	yes
2.2.2	2.2.1	2002	PSF	yes
2.2.3	2.2.2	2003	PSF	yes
2.3	2.2.2	2002-2003	PSF	yes
2.3.1	2.3	2002-2003	PSF	yes
2.3.2	2.3.1	2002-2003	PSF	yes
2.3.3	2.3.2	2002-2003	PSF	yes
2.3.4	2.3.3	2004	PSF	yes
2.3.5	2.3.4	2005	PSF	yes
2.4	2.3	2004	PSF	yes
2.4.1	2.4	2005	PSF	yes
2.4.2	2.4.1	2005	PSF	yes
2.4.3	2.4.2	2006	PSF	yes
2.4.4	2.4.3	2006	PSF	yes
2.5	2.4	2006	PSF	yes
2.5.1	2.5	2007	PSF	yes
2.5.2	2.5.1	2008	PSF	yes
2.5.3	2.5.2	2008	PSF	yes
2.6	2.5	2008	PSF	yes
2.6.1	2.6	2008	PSF	yes
2.6.2	2.6.1	2009	PSF	yes
2.6.3	2.6.2	2009	PSF	yes
2.6.4	2.6.3	2009	PSF	yes
2.6.5	2.6.4	2010	PSF	yes
3.0	2.6	2008	PSF	yes

3.0.1	3.0	2009	PSF	yes
3.1	3.0.1	2009	PSF	yes
3.1.1	3.1	2009	PSF	yes
3.1.2	3.1.1	2010	PSF	yes
3.1.3	3.1.2	2010	PSF	yes
3.1.4	3.1.3	2011	PSF	yes
3.2	3.1	2011	PSF	yes
3.2.1	3.2	2011	PSF	yes
3.2.2	3.2.1	2011	PSF	yes
3.2.3	3.2.2	2012	PSF	yes
3.3.0	3.2	2012	PSF	yes

Footnotes:

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1.78 ajv 6.12.0

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1.79 azure-iot-sdk-c LTS_07_2020_Ref01

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1.80 duktape 2.5.0

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1.81 graphql 15.5.0

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William E. Kempf () (email to Beman Dawes, 9/14/2006 4:18 PM)
Joerg Walter (jhr.walter - at - t-online.de : email to ublas mailing list Mon, 17 Sep 2007 10:17:08 +0200)
Mathias Koch (mkoch - at - idesis.de 7 : email to boost-owner@lists.boost.org Sep 2007 13:20:09 +0200)

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[#mpl]
MPL Support, <boost/mp11/mpl.hpp>
:toc:
:toc-title:
:idprefix:

The header `<boost/mp11/mpl.hpp>`, when included, defines the
necessary support infrastructure for `mp_list` and `std::tuple`
to be valid link:../../../../libs/mpl[MPL] sequences.

NOTE: `mpl.hpp` is not included by `<boost/mp11.hpp>`.

It's also possible to only enable support for `mp_list` by
including `<boost/mp11/mpl_list.hpp>`, and for `std::tuple`
by including `<boost/mp11/mpl_tuple.hpp>`. This may be required
because some libraries, such as Boost.Fusion, contain their own MPL

support for `std::tuple`, which conflicts with Mp11's one.
<!DOCTYPE html>
<html>
 <head></head>
 <body>
  <h3>
   Copyright Test
  </h3>

   1963, 1964, 1965 Jane Doe

   2018 Joe Blow, John Coe

   1977, 1985 Someone else

 </body>
</html>
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<article id="copyright_test" last-revision="DEBUG MODE Date: 2000/12/20 12:00:00 $"
xmlns:xi="http://www.w3.org/2001/XInclude">
 <title>Copyright Test</title>
 <articleinfo>
  <copyright>
   <year>1963</year> <year>1964</year> <year>1965</year> <holder>Jane Doe</holder>
  </copyright>
  <copyright>

```
    <year>2018</year> <holder>Joe Blow, John Coe</holder>
   </copyright>
   <copyright>
    <year>1977</year> <year>1985</year> <holder>Someone else</holder>
   </copyright>
 </articleinfo>
</article>
```

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<opc:TypeDictionary xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:tns="http://opcfoundation.org/UA/POWERLINK/" DefaultByteOrder="LittleEndian"
xmlns:opc="http://opcfoundation.org/BinarySchema/" xmlns:ua="http://opcfoundation.org/UA/"
TargetNamespace="http://opcfoundation.org/UA/POWERLINK/">
  <opc:Import Namespace="http://opcfoundation.org/UA/"/>
  <opc:StructuredType BaseType="ua:ExtensionObject" Name="ErrorRegisterBits">
    <opc:Documentation>Represents the values of the POWERLINK ErrorRegister </opc:Documentation>
    <opc:Field TypeName="opc:ByteString" Name="Value"/>
    <opc:Field TypeName="opc:ByteString" Name="ValidBits"/>
  </opc:StructuredType>
  <opc:StructuredType BaseType="ua:ExtensionObject" Name="PowerlinkAttribute">
    <opc:Documentation>Represents the POWERLINK entry attributes</opc:Documentation>
    <opc:Field TypeName="opc:ByteString" Name="Value"/>
    <opc:Field TypeName="opc:ByteString" Name="ValidBits"/>
  </opc:StructuredType>
```

```
   <opc:StructuredType BaseType="ua:ExtensionObject" Name="PowerlinkErrorEntryDataType">
      <opc:Documentation>Represents the entries of the POWERLINK Object ERR_History_ADOM (Object 1003h, SubIndex 1..254)</opc:Documentation>
      <opc:Field TypeName="opc:UInt16" Name="entryType"/>
      <opc:Field TypeName="opc:UInt16" Name="errorCode"/>
      <opc:Field TypeName="opc:UInt64" Name="timeStamp"/>
      <opc:Field TypeName="opc:UInt64" Name="additionalInformation"/>
   </opc:StructuredType>
   <opc:StructuredType BaseType="ua:ExtensionObject" Name="PowerlinkIpAddressDataType">
      <opc:Documentation>Structure DataType PowerlinkIpAddressDataType to represent POWERLINK Objects of the POWERLINK data type IP_ADDRESS</opc:Documentation>
      <opc:Field TypeName="opc:Byte" Name="b1"/>
      <opc:Field TypeName="opc:Byte" Name="b2"/>
      <opc:Field TypeName="opc:Byte" Name="b3"/>
      <opc:Field TypeName="opc:Byte" Name="b4"/>
   </opc:StructuredType>
    <opc:StructuredType BaseType="ua:ExtensionObject" Name="PowerlinkPDOMappingEntryDataType">
      <opc:Documentation>Structure DataType PowerlinkPDOMappingEntryDataType to represent the entries of POWERLINK Objects like PDO_RxCommParam_00h_REC</opc:Documentation>
      <opc:Field TypeName="opc:UInt16" Name="length"/>
      <opc:Field TypeName="opc:UInt16" Name="offset"/>
      <opc:Field TypeName="opc:Byte" Name="reserved"/>
      <opc:Field TypeName="opc:Byte" Name="subIndex"/>
      <opc:Field TypeName="opc:UInt16" Name="index"/>
   </opc:StructuredType>
   <opc:EnumeratedType LengthInBits="32" Name="PowerlinkNMTResetCmdEnumeration">
      <opc:Documentation>This DataType is an Enumeration that represents the NMT reset commands for POWERLINK</opc:Documentation>
      <opc:EnumeratedValue Name="NMTResetNode" Value="40"/>
      <opc:EnumeratedValue Name="NMTResetCommunication" Value="41"/>
      <opc:EnumeratedValue Name="NMTResetConfiguration" Value="42"/>
       <opc:EnumeratedValue Name="NMTSwReset" Value="43"/>
      <opc:EnumeratedValue Name="NMTInvalidService" Value="255"/>
   </opc:EnumeratedType>
   <opc:EnumeratedType LengthInBits="32" Name="PowerlinkNMTStateEnumeration">
      <opc:Documentation>This DataType is an enumeration that represents the NMT State</opc:Documentation>
      <opc:EnumeratedValue Name="NMT_GS_OFF " Value="0"/>
      <opc:EnumeratedValue Name="NMT_GS_INITIALISING" Value="25"/>
      <opc:EnumeratedValue Name="NMT_GS_RESET_APPLICATION" Value="41"/>
      <opc:EnumeratedValue Name="NMT_GS_RESET_COMMUNICATION" Value="57"/>
      <opc:EnumeratedValue Name="NMT_GS_RESET_CONFIGURATION" Value="121"/>
      <opc:EnumeratedValue Name="NMT_XS_NOT_ACTIVE" Value="28"/>
      <opc:EnumeratedValue Name="NMT_XS_PRE_OPERATIONAL_1" Value="29"/>
      <opc:EnumeratedValue Name="NMT_XS_PRE_OPERATIONAL_2" Value="93"/>
      <opc:EnumeratedValue Name="NMT_XS_READY_TO_OPERATE" Value="109"/>
      <opc:EnumeratedValue
 Name="NMT_XS_OPERATIONAL" Value="253"/>
      <opc:EnumeratedValue Name="NMT_CS_STOPPED" Value="77"/>
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```
      <opc:EnumeratedValue Name="NMT_XS_BASIC_ETHERNET" Value="30"/>
  </opc:EnumeratedType>
</opc:TypeDictionary>
```

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xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:ua="http://opcfoundation.org/UA/"
xmlns:tns="http://opcfoundation.org/UA/"
DefaultByteOrder="LittleEndian"
TargetNamespace="http://opcfoundation.org/UA/"
>

<opc:Import Namespace="http://opcfoundation.org/BinarySchema/" />

<!-- Transport types begin -->

<opc:EnumeratedType Name="MessageType" LengthInBits="32">
<opc:Documentation>Message Type and whether the message contains an intermediate
chunk</opc:Documentation>
<opc:EnumeratedValue Name="ACK" Value="0x4B4341" />
<opc:EnumeratedValue Name="HEL" Value="0x4C4548" />
<opc:EnumeratedValue Name="MSG" Value="0x47534D" />
<opc:EnumeratedValue Name="OPN" Value="0x4E504F" />
<opc:EnumeratedValue Name="CLO" Value="0x4F4C43" />
<opc:EnumeratedValue Name="ERR" Value="0x525245" />
</opc:EnumeratedType>

<opc:EnumeratedType Name="ChunkType" LengthInBits="32">

```
  <opc:Documentation>Type
of the chunk</opc:Documentation>
  <opc:EnumeratedValue Name="FINAL" Value="0x46000000" />
  <opc:EnumeratedValue Name="INTERMEDIATE" Value="0x43000000" />
  <opc:EnumeratedValue Name="ABORT" Value="0x41000000" />

</opc:EnumeratedType>

 <opc:StructuredType Name="TcpMessageHeader">
  <opc:Documentation>TCP Header</opc:Documentation>
  <opc:Field Name="MessageTypeAndChunkType" TypeName="opc:UInt32" />
  <opc:Field Name="MessageSize" TypeName="opc:UInt32" />
</opc:StructuredType>

 <opc:StructuredType Name="TcpHelloMessage">
  <opc:Documentation>Hello Message</opc:Documentation>
  <opc:Field Name="ProtocolVersion" TypeName="opc:UInt32" />
  <opc:Field Name="ReceiveBufferSize" TypeName="opc:UInt32" />
  <opc:Field Name="SendBufferSize" TypeName="opc:UInt32" />
  <opc:Field Name="MaxMessageSize" TypeName="opc:UInt32" />
<opc:Field Name="MaxChunkCount" TypeName="opc:UInt32" />
  <opc:Field Name="EndpointUrl" TypeName="opc:String" />
 </opc:StructuredType>

 <opc:StructuredType Name="TcpAcknowledgeMessage">
  <opc:Documentation>Acknowledge Message</opc:Documentation>
  <opc:Field Name="ProtocolVersion" TypeName="opc:UInt32" />
  <opc:Field Name="ReceiveBufferSize" TypeName="opc:UInt32" />
  <opc:Field Name="SendBufferSize" TypeName="opc:UInt32" />
  <opc:Field Name="MaxMessageSize" TypeName="opc:UInt32" />
<opc:Field Name="MaxChunkCount" TypeName="opc:UInt32" />
</opc:StructuredType>

<opc:StructuredType Name="TcpErrorMessage">
  <opc:Documentation>Error Message</opc:Documentation>
  <opc:Field Name="Error" TypeName="opc:UInt32" />
  <opc:Field Name="Reason" TypeName="opc:String" />
</opc:StructuredType>

<opc:StructuredType Name="SecureConversationMessageHeader">
  <opc:Documentation>Secure Layer Sequence Header</opc:Documentation>
  <opc:Field Name="MessageHeader" TypeName="opc:TcpMessageHeader" />
  <opc:Field Name="SecureChannelId" TypeName="opc:UInt32" />
</opc:StructuredType>

<opc:StructuredType Name="AsymmetricAlgorithmSecurityHeader">
  <opc:Documentation>Security Header</opc:Documentation>
  <opc:Field Name="SecurityPolicyUri" TypeName="opc:ByteString" />
```

```
  <opc:Field Name="SenderCertificate" TypeName="opc:ByteString" />
  <opc:Field Name="ReceiverCertificateThumbprint" TypeName="opc:ByteString" />
 </opc:StructuredType>

 <opc:StructuredType Name="SymmetricAlgorithmSecurityHeader">
  <opc:Documentation>Secure Layer Symmetric Algorithm Header</opc:Documentation>
  <opc:Field Name="TokenId" TypeName="opc:UInt32" />
 </opc:StructuredType>

 <opc:StructuredType Name="SequenceHeader">
  <opc:Documentation>Secure Layer Sequence Header</opc:Documentation>
  <opc:Field Name="SequenceNumber" TypeName="opc:UInt32" />
  <opc:Field Name="RequestId" TypeName="opc:UInt32"/>
 </opc:StructuredType>

 <opc:StructuredType Name="SecureConversationMessageFooter">
  <opc:Documentation>Secure Conversation Message Footer</opc:Documentation>
   <opc:Field Name="PaddingSize" TypeName="opc:Byte" />
  <opc:Field Name="Padding" TypeName="opc:Byte" LengthField="PaddingSize" />
  <opc:Field Name="Signature" TypeName="opc:Byte"/>
 </opc:StructuredType>

 <opc:StructuredType Name="SecureConversationMessageAbortBody">
  <opc:Documentation>Secure Conversation Message Abort Body</opc:Documentation>
  <opc:Field Name="Error" TypeName="opc:UInt32" />
  <opc:Field Name="Reason" TypeName="opc:String" />
 </opc:StructuredType>

<!-- Transport types end -->

</opc:TypeDictionary>
<?xml version="1.0" encoding="utf-8" ?>
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 xmlns:opc="http://opcfoundation.org/BinarySchema/"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
 xmlns:ua="http://opcfoundation.org/UA/"
 xmlns:tns="http://yourorganisation.org/test/"
 DefaultByteOrder="LittleEndian"
 TargetNamespace="http://yourorganisation.org/test/"
>
 <opc:Import Namespace="http://opcfoundation.org/UA/" Location="Opc.Ua.BinarySchema.bsd"/>

 <opc:StructuredType Name="Point" BaseType="ua:ExtensionObject">
  <opc:Field Name="x" TypeName="opc:Double" />
  <opc:Field Name="y" TypeName="opc:Double" />
 </opc:StructuredType>

 <opc:StructuredType Name="NestedPoint" BaseType="ua:ExtensionObject">
   <opc:Field Name="x" TypeName="opc:Double" />
  <opc:Field Name="y" TypeName="opc:Double" />
  <opc:Field Name="point1" TypeName="tns:Point" />
 </opc:StructuredType>

  <opc:StructuredType Name="PointWithArray" BaseType="ua:ExtensionObject">
  <opc:Field Name="x" TypeName="opc:Double" />
  <opc:Field Name="y" TypeName="opc:Double" />
  <opc:Field Name="z" TypeName="opc:Double" />
  <opc:Field Name="array1Size" TypeName="opc:UInt32" />
  <opc:Field Name="array1" TypeName="opc:Double" LengthField="array1Size" />
 </opc:StructuredType>

</opc:TypeDictionary>
Format: https://www.debian.org/doc/packaging-manuals/copyright-format/1.0/
Upstream-Name: open62541
Upstream-Contact: open62541 Team <open62541-core@googlegroups.com>
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 xmlns:ua="http://opcfoundation.org/UA/"
 xmlns:tns="http://opcfoundation.org/UA/"
 DefaultByteOrder="LittleEndian"
 TargetNamespace="http://opcfoundation.org/UA/"
>

 <opc:Import Namespace="http://opcfoundation.org/BinarySchema/" />

 <opc:StructuredType Name="XmlElement">
  <opc:Documentation>An XML element encoded as a UTF-8 string.</opc:Documentation>
  <opc:Field Name="Length" TypeName="opc:Int32" />
  <opc:Field Name="Value" TypeName="opc:Char" LengthField="Length" />
 </opc:StructuredType>

 <opc:EnumeratedType
 Name="NodeIdType" LengthInBits="6">
  <opc:Documentation>The possible encodings for a NodeId value.</opc:Documentation>
  <opc:EnumeratedValue Name="TwoByte" Value="0" />
  <opc:EnumeratedValue Name="FourByte" Value="1" />
  <opc:EnumeratedValue Name="Numeric" Value="2" />
  <opc:EnumeratedValue Name="String" Value="3" />
  <opc:EnumeratedValue Name="Guid" Value="4" />
  <opc:EnumeratedValue Name="ByteString" Value="5" />
 </opc:EnumeratedType>

 <opc:StructuredType Name="TwoByteNodeId">
  <opc:Field Name="Identifier" TypeName="opc:Byte" />
 </opc:StructuredType>

 <opc:StructuredType Name="FourByteNodeId">
  <opc:Field Name="NamespaceIndex" TypeName="opc:Byte" />
  <opc:Field Name="Identifier" TypeName="opc:UInt16" />
 </opc:StructuredType>

 <opc:StructuredType Name="NumericNodeId">
```

```
  <opc:Field Name="NamespaceIndex" TypeName="opc:UInt16" />
  <opc:Field Name="Identifier" TypeName="opc:UInt32" />
 </opc:StructuredType>

 <opc:StructuredType
 Name="StringNodeId">
  <opc:Field Name="NamespaceIndex" TypeName="opc:UInt16" />
  <opc:Field Name="Identifier" TypeName="opc:CharArray" />
 </opc:StructuredType>

 <opc:StructuredType Name="GuidNodeId">
  <opc:Field Name="NamespaceIndex" TypeName="opc:UInt16" />
  <opc:Field Name="Identifier" TypeName="opc:Guid" />
 </opc:StructuredType>

 <opc:StructuredType Name="ByteStringNodeId">
  <opc:Field Name="NamespaceIndex" TypeName="opc:UInt16" />
  <opc:Field Name="Identifier" TypeName="opc:ByteString" />
 </opc:StructuredType>

 <opc:StructuredType Name="NodeId">
  <opc:Documentation>An identifier for a node in a UA server address space.</opc:Documentation>
  <opc:Field Name="NodeIdType" TypeName="ua:NodeIdType" />
  <opc:Field Name="Reserved1" TypeName="opc:Bit" Length="2" />
  <opc:Field Name="TwoByte" TypeName="ua:TwoByteNodeId" SwitchField="NodeIdType" SwitchValue="0" />
  <opc:Field Name="FourByte" TypeName="ua:FourByteNodeId" SwitchField="NodeIdType" SwitchValue="1"
 />
  <opc:Field Name="Numeric" TypeName="ua:NumericNodeId" SwitchField="NodeIdType" SwitchValue="2" />
  <opc:Field Name="String" TypeName="ua:StringNodeId" SwitchField="NodeIdType" SwitchValue="3" />
  <opc:Field Name="Guid" TypeName="ua:GuidNodeId" SwitchField="NodeIdType" SwitchValue="4" />
  <opc:Field Name="ByteString" TypeName="ua:ByteStringNodeId" SwitchField="NodeIdType"
 SwitchValue="5" />
 </opc:StructuredType>

 <opc:StructuredType Name="ExpandedNodeId">
  <opc:Documentation>An identifier for a node in a UA server address space qualified with a complete namespace
 string.</opc:Documentation>
  <opc:Field Name="NodeIdType" TypeName="ua:NodeIdType" />
  <opc:Field Name="ServerIndexSpecified" TypeName="opc:Bit" />
  <opc:Field Name="NamespaceURISpecified" TypeName="opc:Bit" />
  <opc:Field Name="TwoByte" TypeName="ua:TwoByteNodeId" SwitchField="NodeIdType" SwitchValue="0" />
  <opc:Field Name="FourByte" TypeName="ua:FourByteNodeId" SwitchField="NodeIdType"
 SwitchValue="1" />
  <opc:Field Name="Numeric" TypeName="ua:NumericNodeId" SwitchField="NodeIdType" SwitchValue="2" />
  <opc:Field Name="String" TypeName="ua:StringNodeId" SwitchField="NodeIdType" SwitchValue="3" />
  <opc:Field Name="Guid" TypeName="ua:GuidNodeId" SwitchField="NodeIdType" SwitchValue="4" />
  <opc:Field Name="ByteString" TypeName="ua:ByteStringNodeId" SwitchField="NodeIdType"
 SwitchValue="5" />
```

```
  <opc:Field Name="NamespaceURI" TypeName="opc:CharArray" SwitchField="NamespaceURISpecified"/>
  <opc:Field Name="ServerIndex" TypeName="opc:UInt32" SwitchField="ServerIndexSpecified"/>
 </opc:StructuredType>

 <opc:OpaqueType Name="StatusCode" LengthInBits="32" ByteOrderSignificant="true">
  <opc:Documentation>A 32-bit status code value.</opc:Documentation>
 </opc:OpaqueType>

 <opc:StructuredType Name="DiagnosticInfo">
  <opc:Documentation>A recursive structure containing diagnostic information associated with a status
code.</opc:Documentation>
   <opc:Field Name="SymbolicIdSpecified" TypeName="opc:Bit" />
  <opc:Field Name="NamespaceURISpecified" TypeName="opc:Bit" />
  <opc:Field Name="LocaleSpecified" TypeName="opc:Bit" />
  <opc:Field Name="LocalizedTextSpecified" TypeName="opc:Bit" />
  <opc:Field Name="AdditionalInfoSpecified" TypeName="opc:Bit" />
  <opc:Field Name="InnerStatusCodeSpecified" TypeName="opc:Bit" />
  <opc:Field Name="InnerDiagnosticInfoSpecified" TypeName="opc:Bit" />
  <opc:Field Name="Reserved1" TypeName="opc:Bit" Length="2" />
  <opc:Field Name="SymbolicId" TypeName="opc:Int32" SwitchField="SymbolicIdSpecified" />
  <opc:Field Name="NamespaceURI" TypeName="opc:Int32" SwitchField="NamespaceURISpecified" />
  <opc:Field Name="Locale" TypeName="opc:Int32" SwitchField="LocaleSpecified" />
  <opc:Field Name="LocalizedText" TypeName="opc:Int32" SwitchField="LocalizedTextSpecified" />
  <opc:Field Name="AdditionalInfo" TypeName="opc:CharArray" SwitchField="AdditionalInfoSpecified"
 />
  <opc:Field Name="InnerStatusCode" TypeName="ua:StatusCode" SwitchField="InnerStatusCodeSpecified" />
  <opc:Field Name="InnerDiagnosticInfo" TypeName="ua:DiagnosticInfo"
SwitchField="InnerDiagnosticInfoSpecified" />
 </opc:StructuredType>

 <opc:StructuredType Name="QualifiedName">
  <opc:Documentation>A string qualified with a namespace index.</opc:Documentation>
  <opc:Field Name="NamespaceIndex" TypeName="opc:UInt16" />
  <opc:Field Name="Name" TypeName="opc:CharArray" />
 </opc:StructuredType>

 <opc:StructuredType Name="LocalizedText">
  <opc:Documentation>A string qualified with a namespace index.</opc:Documentation>
  <opc:Field Name="LocaleSpecified" TypeName="opc:Bit" />
  <opc:Field Name="TextSpecified" TypeName="opc:Bit" />
  <opc:Field Name="Reserved1" TypeName="opc:Bit" Length="6" />
  <opc:Field Name="Locale" TypeName="opc:CharArray" SwitchField="LocaleSpecified" />
  <opc:Field Name="Text" TypeName="opc:CharArray" SwitchField="TextSpecified"
 />
 </opc:StructuredType>

 <opc:StructuredType Name="DataValue">
  <opc:Documentation>A value with an associated timestamp, and quality.</opc:Documentation>
```

```
  <opc:Field Name="ValueSpecified" TypeName="opc:Bit" />
  <opc:Field Name="StatusCodeSpecified" TypeName="opc:Bit" />
  <opc:Field Name="SourceTimestampSpecified" TypeName="opc:Bit" />
  <opc:Field Name="SourcePicosecondsSpecified" TypeName="opc:Bit" />
  <opc:Field Name="ServerTimestampSpecified" TypeName="opc:Bit" />
  <opc:Field Name="ServerPicosecondsSpecified" TypeName="opc:Bit" />
  <opc:Field Name="Reserved1" TypeName="opc:Bit" Length="2" />
  <opc:Field Name="Value" TypeName="ua:Variant" SwitchField="ValueSpecified" />
  <opc:Field Name="StatusCode" TypeName="ua:StatusCode" SwitchField="StatusCodeSpecified" />
  <opc:Field Name="SourceTimestamp" TypeName="opc:DateTime" SwitchField="SourceTimestampSpecified" />
  <opc:Field Name="SourcePicoseconds" TypeName="opc:UInt16" SwitchField="SourcePicosecondsSpecified"
/>
  <opc:Field Name="ServerTimestamp" TypeName="opc:DateTime" SwitchField="ServerTimestampSpecified" />
  <opc:Field Name="ServerPicoseconds" TypeName="opc:UInt16" SwitchField="ServerPicosecondsSpecified" />
</opc:StructuredType>

<opc:StructuredType Name="ExtensionObject">
  <opc:Documentation>A serialized object prefixed with its data type identifier.</opc:Documentation>
  <opc:Field Name="TypeIdSpecified" TypeName="opc:Bit" />
  <opc:Field Name="BinaryBody" TypeName="opc:Bit" />
  <opc:Field Name="XmlBody" TypeName="opc:Bit" />
  <opc:Field Name="Reserved1" TypeName="opc:Bit" Length="5" />
  <opc:Field Name="TypeId" TypeName="ua:ExpandedNodeId" SwitchField="TypeIdSpecified" />
  <opc:Field Name="BodyLength" TypeName="opc:Int32" />
  <opc:Field Name="Body" TypeName="opc:Byte" LengthField="BodyLength" />
</opc:StructuredType>

<opc:StructuredType Name="Variant">
  <opc:Documentation>A union of several types.</opc:Documentation>
  <opc:Field
Name="VariantType" TypeName="opc:Bit" Length="6" />
  <opc:Field Name="ArrayDimensionsSpecified" TypeName="opc:Bit" Length="1"/>
  <opc:Field Name="ArrayLengthSpecified" TypeName="opc:Bit" Length="1"/>
  <opc:Field Name="ArrayLength" TypeName="opc:Int32" SwitchField="ArrayLengthSpecified" />
  <opc:Field Name="Boolean" TypeName="opc:Boolean" LengthField="ArrayLength" SwitchField="VariantType"
SwitchValue="1" />
  <opc:Field Name="SByte" TypeName="opc:SByte" LengthField="ArrayLength" SwitchField="VariantType"
SwitchValue="2" />
  <opc:Field Name="Byte" TypeName="opc:Byte" LengthField="ArrayLength" SwitchField="VariantType"
SwitchValue="3" />
  <opc:Field Name="Int16" TypeName="opc:Int16" LengthField="ArrayLength" SwitchField="VariantType"
SwitchValue="4" />
  <opc:Field Name="UInt16" TypeName="opc:UInt16" LengthField="ArrayLength" SwitchField="VariantType"
SwitchValue="5" />
  <opc:Field Name="Int32" TypeName="opc:Int32" LengthField="ArrayLength" SwitchField="VariantType"
SwitchValue="6" />
  <opc:Field Name="UInt32" TypeName="opc:UInt32" LengthField="ArrayLength" SwitchField="VariantType"
SwitchValue="7" />
```

```
  <opc:Field Name="Int64" TypeName="opc:Int64" LengthField="ArrayLength" SwitchField="VariantType"
SwitchValue="8" />
  <opc:Field Name="UInt64" TypeName="opc:UInt64" LengthField="ArrayLength" SwitchField="VariantType"
SwitchValue="9" />
  <opc:Field Name="Float" TypeName="opc:Float" LengthField="ArrayLength" SwitchField="VariantType"
SwitchValue="10" />
  <opc:Field Name="Double" TypeName="opc:Double" LengthField="ArrayLength" SwitchField="VariantType"
SwitchValue="11" />
  <opc:Field Name="String" TypeName="opc:CharArray" LengthField="ArrayLength"
SwitchField="VariantType" SwitchValue="12" />
  <opc:Field Name="DateTime" TypeName="opc:DateTime" LengthField="ArrayLength"
SwitchField="VariantType" SwitchValue="13" />
  <opc:Field Name="Guid" TypeName="opc:Guid" LengthField="ArrayLength" SwitchField="VariantType"
SwitchValue="14"
 />
  <opc:Field Name="ByteString" TypeName="opc:ByteString" LengthField="ArrayLength"
SwitchField="VariantType" SwitchValue="15" />
  <opc:Field Name="XmlElement" TypeName="ua:XmlElement" LengthField="ArrayLength"
SwitchField="VariantType" SwitchValue="16" />
  <opc:Field Name="NodeId" TypeName="ua:NodeId" LengthField="ArrayLength" SwitchField="VariantType"
SwitchValue="17" />
  <opc:Field Name="ExpandedNodeId" TypeName="ua:ExpandedNodeId" LengthField="ArrayLength"
SwitchField="VariantType" SwitchValue="18" />
  <opc:Field Name="StatusCode" TypeName="ua:StatusCode" LengthField="ArrayLength"
SwitchField="VariantType" SwitchValue="19" />
  <opc:Field Name="QualifiedName" TypeName="ua:QualifiedName" LengthField="ArrayLength"
SwitchField="VariantType" SwitchValue="20" />
  <opc:Field Name="LocalizedText" TypeName="ua:LocalizedText" LengthField="ArrayLength"
SwitchField="VariantType" SwitchValue="21" />
  <opc:Field Name="ExtensionObject" TypeName="ua:ExtensionObject"
 LengthField="ArrayLength" SwitchField="VariantType" SwitchValue="22" />
  <opc:Field Name="DataValue" TypeName="ua:DataValue" LengthField="ArrayLength"
SwitchField="VariantType" SwitchValue="23" />
  <opc:Field Name="Variant" TypeName="ua:Variant" LengthField="ArrayLength" SwitchField="VariantType"
SwitchValue="24" />
  <opc:Field Name="DiagnosticInfo" TypeName="ua:DiagnosticInfo" LengthField="ArrayLength"
SwitchField="VariantType" SwitchValue="25" />
  <opc:Field Name="NoOfArrayDimensions" TypeName="opc:Int32" SwitchField="ArrayDimensionsSpecified"
/>
  <opc:Field Name="ArrayDimensions" TypeName="opc:Int32" LengthField="NoOfArrayDimensions"
SwitchField="ArrayDimensionsSpecified" />
 </opc:StructuredType>

 <opc:EnumeratedType Name="NamingRuleType" LengthInBits="32">
  <opc:EnumeratedValue Name="Mandatory" Value="1" />
  <opc:EnumeratedValue Name="Optional" Value="2" />
  <opc:EnumeratedValue Name="Constraint" Value="3" />
 </opc:EnumeratedType>
```

```
<opc:OpaqueType
Name="ImageBMP">
  <opc:Documentation>An image encoded in BMP format.</opc:Documentation>
</opc:OpaqueType>

<opc:OpaqueType Name="ImageGIF">
  <opc:Documentation>An image encoded in GIF format.</opc:Documentation>
</opc:OpaqueType>

<opc:OpaqueType Name="ImageJPG">
  <opc:Documentation>An image encoded in JPEG format.</opc:Documentation>
</opc:OpaqueType>

<opc:OpaqueType Name="ImagePNG">
  <opc:Documentation>An image encoded in PNG format.</opc:Documentation>
</opc:OpaqueType>

<opc:OpaqueType Name="AudioDataType">
  <opc:Documentation>An image encoded in PNG format.</opc:Documentation>
</opc:OpaqueType>

<opc:OpaqueType Name="BitFieldMaskDataType">
  <opc:Documentation>A mask of 32 bits that can be updated individually by using the top 32 bits as a
mask.</opc:Documentation>
</opc:OpaqueType>

<opc:StructuredType Name="KeyValuePair" BaseType="ua:ExtensionObject">
  <opc:Field Name="Key" TypeName="ua:QualifiedName" />
  <opc:Field Name="Value"
TypeName="ua:Variant" />
</opc:StructuredType>

<opc:StructuredType Name="EndpointType" BaseType="ua:ExtensionObject">
  <opc:Field Name="EndpointUrl" TypeName="opc:String" />
  <opc:Field Name="SecurityMode" TypeName="tns:MessageSecurityMode" />
  <opc:Field Name="SecurityPolicyUri" TypeName="opc:String" />
  <opc:Field Name="TransportProfileUri" TypeName="opc:String" />
</opc:StructuredType>

<opc:EnumeratedType Name="OpenFileMode" LengthInBits="32">
  <opc:EnumeratedValue Name="Read" Value="1" />
  <opc:EnumeratedValue Name="Write" Value="2" />
  <opc:EnumeratedValue Name="EraseExisting" Value="4" />
  <opc:EnumeratedValue Name="Append" Value="8" />
</opc:EnumeratedType>
```

```
<opc:EnumeratedType Name="IdentityCriteriaType" LengthInBits="32">
  <opc:EnumeratedValue Name="UserName" Value="1" />
  <opc:EnumeratedValue Name="Thumbprint" Value="2" />
  <opc:EnumeratedValue Name="Role" Value="3" />
  <opc:EnumeratedValue Name="GroupId" Value="4" />
  <opc:EnumeratedValue
Name="Anonymous" Value="5" />
  <opc:EnumeratedValue Name="AuthenticatedUser" Value="6" />
</opc:EnumeratedType>

<opc:StructuredType Name="IdentityMappingRuleType" BaseType="ua:ExtensionObject">
  <opc:Field Name="CriteriaType" TypeName="tns:IdentityCriteriaType" />
  <opc:Field Name="Criteria" TypeName="opc:String" />
</opc:StructuredType>

<opc:EnumeratedType Name="TrustListMasks" LengthInBits="32">
  <opc:EnumeratedValue Name="None" Value="0" />
  <opc:EnumeratedValue Name="TrustedCertificates" Value="1" />
  <opc:EnumeratedValue Name="TrustedCrls" Value="2" />
  <opc:EnumeratedValue Name="IssuerCertificates" Value="4" />
  <opc:EnumeratedValue Name="IssuerCrls" Value="8" />
  <opc:EnumeratedValue Name="All" Value="15" />
</opc:EnumeratedType>

<opc:StructuredType Name="TrustListDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="SpecifiedLists" TypeName="opc:UInt32" />
  <opc:Field Name="NoOfTrustedCertificates" TypeName="opc:Int32"
/>
  <opc:Field Name="TrustedCertificates" TypeName="opc:ByteString" LengthField="NoOfTrustedCertificates" />
  <opc:Field Name="NoOfTrustedCrls" TypeName="opc:Int32" />
  <opc:Field Name="TrustedCrls" TypeName="opc:ByteString" LengthField="NoOfTrustedCrls" />
  <opc:Field Name="NoOfIssuerCertificates" TypeName="opc:Int32" />
  <opc:Field Name="IssuerCertificates" TypeName="opc:ByteString" LengthField="NoOfIssuerCertificates" />
  <opc:Field Name="NoOfIssuerCrls" TypeName="opc:Int32" />
  <opc:Field Name="IssuerCrls" TypeName="opc:ByteString" LengthField="NoOfIssuerCrls" />
</opc:StructuredType>

<opc:StructuredType Name="DecimalDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="Scale" TypeName="opc:Int16" />
  <opc:Field Name="Value" TypeName="opc:ByteString" />
</opc:StructuredType>

<opc:StructuredType Name="DataTypeSchemaHeader" BaseType="ua:ExtensionObject">
  <opc:Field Name="NoOfNamespaces" TypeName="opc:Int32" />
  <opc:Field
Name="Namespaces" TypeName="opc:String" LengthField="NoOfNamespaces" />
  <opc:Field Name="NoOfStructureDataTypes" TypeName="opc:Int32" />
  <opc:Field Name="StructureDataTypes" TypeName="tns:StructureDescription"
```

```
LengthField="NoOfStructureDataTypes" />
  <opc:Field Name="NoOfEnumDataTypes" TypeName="opc:Int32" />
  <opc:Field Name="EnumDataTypes" TypeName="tns:EnumDescription" LengthField="NoOfEnumDataTypes"
/>
  <opc:Field Name="NoOfSimpleDataTypes" TypeName="opc:Int32" />
  <opc:Field Name="SimpleDataTypes" TypeName="tns:SimpleTypeDescription"
LengthField="NoOfSimpleDataTypes" />
 </opc:StructuredType>

 <opc:StructuredType Name="DataTypeDescription" BaseType="ua:ExtensionObject">
  <opc:Field Name="DataTypeId" TypeName="ua:NodeId" />
  <opc:Field Name="Name" TypeName="ua:QualifiedName" />
 </opc:StructuredType>

 <opc:StructuredType Name="StructureDescription" BaseType="tns:DataTypeDescription">
  <opc:Field Name="DataTypeId" TypeName="ua:NodeId" SourceType="tns:DataTypeDescription"
 />
  <opc:Field Name="Name" TypeName="ua:QualifiedName" SourceType="tns:DataTypeDescription" />
  <opc:Field Name="StructureDefinition" TypeName="tns:StructureDefinition" />
 </opc:StructuredType>

 <opc:StructuredType Name="EnumDescription" BaseType="tns:DataTypeDescription">
  <opc:Field Name="DataTypeId" TypeName="ua:NodeId" SourceType="tns:DataTypeDescription" />
  <opc:Field Name="Name" TypeName="ua:QualifiedName" SourceType="tns:DataTypeDescription" />
  <opc:Field Name="EnumDefinition" TypeName="tns:EnumDefinition" />
  <opc:Field Name="BuiltInType" TypeName="opc:Byte" />
 </opc:StructuredType>

 <opc:StructuredType Name="SimpleTypeDescription" BaseType="tns:DataTypeDescription">
  <opc:Field Name="DataTypeId" TypeName="ua:NodeId" SourceType="tns:DataTypeDescription" />
  <opc:Field Name="Name" TypeName="ua:QualifiedName" SourceType="tns:DataTypeDescription" />
  <opc:Field Name="BaseDataType" TypeName="ua:NodeId" />
  <opc:Field
 Name="BuiltInType" TypeName="opc:Byte" />
 </opc:StructuredType>

 <opc:StructuredType Name="UABinaryFileDataType" BaseType="tns:DataTypeSchemaHeader">
  <opc:Field Name="NoOfNamespaces" TypeName="opc:Int32" />
  <opc:Field Name="Namespaces" TypeName="opc:String" LengthField="NoOfNamespaces" />
  <opc:Field Name="NoOfStructureDataTypes" TypeName="opc:Int32" />
  <opc:Field Name="StructureDataTypes" TypeName="tns:StructureDescription"
LengthField="NoOfStructureDataTypes" />
  <opc:Field Name="NoOfEnumDataTypes" TypeName="opc:Int32" />
  <opc:Field Name="EnumDataTypes" TypeName="tns:EnumDescription" LengthField="NoOfEnumDataTypes"
/>
  <opc:Field Name="NoOfSimpleDataTypes" TypeName="opc:Int32" />
  <opc:Field Name="SimpleDataTypes" TypeName="tns:SimpleTypeDescription"
LengthField="NoOfSimpleDataTypes" />
```

```
  <opc:Field Name="SchemaLocation" TypeName="opc:String" />
  <opc:Field Name="NoOfFileHeader" TypeName="opc:Int32" />
  <opc:Field Name="FileHeader" TypeName="tns:KeyValuePair"
 LengthField="NoOfFileHeader" />
  <opc:Field Name="Body" TypeName="ua:Variant" />
 </opc:StructuredType>

 <opc:EnumeratedType Name="PubSubState" LengthInBits="32">
  <opc:EnumeratedValue Name="Disabled" Value="0" />
  <opc:EnumeratedValue Name="Paused" Value="1" />
  <opc:EnumeratedValue Name="Operational" Value="2" />
  <opc:EnumeratedValue Name="Error" Value="3" />
 </opc:EnumeratedType>

 <opc:StructuredType Name="DataSetMetaDataType" BaseType="tns:DataTypeSchemaHeader">
  <opc:Field Name="NoOfNamespaces" TypeName="opc:Int32" />
  <opc:Field Name="Namespaces" TypeName="opc:String" LengthField="NoOfNamespaces" />
  <opc:Field Name="NoOfStructureDataTypes" TypeName="opc:Int32" />
  <opc:Field Name="StructureDataTypes" TypeName="tns:StructureDescription"
LengthField="NoOfStructureDataTypes" />
  <opc:Field Name="NoOfEnumDataTypes" TypeName="opc:Int32" />
  <opc:Field Name="EnumDataTypes" TypeName="tns:EnumDescription" LengthField="NoOfEnumDataTypes"
 />
  <opc:Field Name="NoOfSimpleDataTypes" TypeName="opc:Int32" />
  <opc:Field Name="SimpleDataTypes" TypeName="tns:SimpleTypeDescription"
LengthField="NoOfSimpleDataTypes" />
  <opc:Field Name="Name" TypeName="opc:String" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" />
  <opc:Field Name="NoOfFields" TypeName="opc:Int32" />
  <opc:Field Name="Fields" TypeName="tns:FieldMetaData" LengthField="NoOfFields" />
  <opc:Field Name="DataSetClassId" TypeName="opc:Guid" />
  <opc:Field Name="ConfigurationVersion" TypeName="tns:ConfigurationVersionDataType" />
 </opc:StructuredType>

 <opc:StructuredType Name="FieldMetaData" BaseType="ua:ExtensionObject">
  <opc:Field Name="Name" TypeName="opc:String" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" />
  <opc:Field Name="FieldFlags" TypeName="tns:DataSetFieldFlags" />
  <opc:Field Name="BuiltInType" TypeName="opc:Byte" />
  <opc:Field Name="DataType" TypeName="ua:NodeId" />
  <opc:Field
 Name="ValueRank" TypeName="opc:Int32" />
  <opc:Field Name="NoOfArrayDimensions" TypeName="opc:Int32" />
  <opc:Field Name="ArrayDimensions" TypeName="opc:UInt32" LengthField="NoOfArrayDimensions" />
  <opc:Field Name="MaxStringLength" TypeName="opc:UInt32" />
  <opc:Field Name="DataSetFieldId" TypeName="opc:Guid" />
  <opc:Field Name="NoOfProperties" TypeName="opc:Int32" />
  <opc:Field Name="Properties" TypeName="tns:KeyValuePair" LengthField="NoOfProperties" />
```

```
 </opc:StructuredType>

 <opc:EnumeratedType Name="DataSetFieldFlags" LengthInBits="16" IsOptionSet="true">
  <opc:EnumeratedValue Name="None" Value="0" />
  <opc:EnumeratedValue Name="PromotedField" Value="1" />
 </opc:EnumeratedType>

 <opc:StructuredType Name="ConfigurationVersionDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="MajorVersion" TypeName="opc:UInt32" />
  <opc:Field Name="MinorVersion" TypeName="opc:UInt32" />
 </opc:StructuredType>

 <opc:StructuredType Name="PublishedDataSetDataType"
 BaseType="ua:ExtensionObject">
  <opc:Field Name="Name" TypeName="opc:String" />
  <opc:Field Name="NoOfDataSetFolder" TypeName="opc:Int32" />
  <opc:Field Name="DataSetFolder" TypeName="opc:String" LengthField="NoOfDataSetFolder" />
  <opc:Field Name="DataSetMetaData" TypeName="tns:DataSetMetaDataType" />
  <opc:Field Name="NoOfExtensionFields" TypeName="opc:Int32" />
  <opc:Field Name="ExtensionFields" TypeName="tns:KeyValuePair" LengthField="NoOfExtensionFields" />
  <opc:Field Name="DataSetSource" TypeName="ua:ExtensionObject" />
 </opc:StructuredType>

 <opc:StructuredType Name="PublishedDataSetSourceDataType" BaseType="ua:ExtensionObject">
 </opc:StructuredType>

 <opc:StructuredType Name="PublishedVariableDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="PublishedVariable" TypeName="ua:NodeId" />
  <opc:Field Name="AttributeId" TypeName="opc:UInt32" />
  <opc:Field Name="SamplingIntervalHint" TypeName="opc:Double" />
  <opc:Field
 Name="DeadbandType" TypeName="opc:UInt32" />
  <opc:Field Name="DeadbandValue" TypeName="opc:Double" />
  <opc:Field Name="IndexRange" TypeName="opc:String" />
  <opc:Field Name="SubstituteValue" TypeName="ua:Variant" />
  <opc:Field Name="NoOfMetaDataProperties" TypeName="opc:Int32" />
  <opc:Field Name="MetaDataProperties" TypeName="ua:QualifiedName"
LengthField="NoOfMetaDataProperties" />
 </opc:StructuredType>

 <opc:StructuredType Name="PublishedDataItemsDataType" BaseType="tns:PublishedDataSetSourceDataType">
  <opc:Field Name="NoOfPublishedData" TypeName="opc:Int32" />
  <opc:Field Name="PublishedData" TypeName="tns:PublishedVariableDataType"
LengthField="NoOfPublishedData" />
 </opc:StructuredType>

 <opc:StructuredType Name="PublishedEventsDataType" BaseType="tns:PublishedDataSetSourceDataType">
  <opc:Field Name="EventNotifier" TypeName="ua:NodeId" />
```

```
  <opc:Field Name="NoOfSelectedFields" TypeName="opc:Int32" />
  <opc:Field Name="SelectedFields"
 TypeName="tns:SimpleAttributeOperand" LengthField="NoOfSelectedFields" />
  <opc:Field Name="Filter" TypeName="tns:ContentFilter" />
 </opc:StructuredType>

 <opc:EnumeratedType Name="DataSetFieldContentMask" LengthInBits="32" IsOptionSet="true">
  <opc:EnumeratedValue Name="None" Value="0" />
  <opc:EnumeratedValue Name="StatusCode" Value="1" />
  <opc:EnumeratedValue Name="SourceTimestamp" Value="2" />
  <opc:EnumeratedValue Name="ServerTimestamp" Value="4" />
  <opc:EnumeratedValue Name="SourcePicoSeconds" Value="8" />
  <opc:EnumeratedValue Name="ServerPicoSeconds" Value="16" />
  <opc:EnumeratedValue Name="RawData" Value="32" />
 </opc:EnumeratedType>

 <opc:StructuredType Name="DataSetWriterDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="Name" TypeName="opc:String" />
  <opc:Field Name="Enabled" TypeName="opc:Boolean" />
  <opc:Field Name="DataSetWriterId" TypeName="opc:UInt16" />
  <opc:Field Name="DataSetFieldContentMask" TypeName="tns:DataSetFieldContentMask"
/>
  <opc:Field Name="KeyFrameCount" TypeName="opc:UInt32" />
  <opc:Field Name="DataSetName" TypeName="opc:String" />
  <opc:Field Name="NoOfDataSetWriterProperties" TypeName="opc:Int32" />
  <opc:Field Name="DataSetWriterProperties" TypeName="tns:KeyValuePair"
LengthField="NoOfDataSetWriterProperties" />
  <opc:Field Name="TransportSettings" TypeName="ua:ExtensionObject" />
  <opc:Field Name="MessageSettings" TypeName="ua:ExtensionObject" />
 </opc:StructuredType>

 <opc:StructuredType Name="DataSetWriterTransportDataType" BaseType="ua:ExtensionObject">
 </opc:StructuredType>

 <opc:StructuredType Name="DataSetWriterMessageDataType" BaseType="ua:ExtensionObject">
 </opc:StructuredType>

 <opc:StructuredType Name="PubSubGroupDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="Name" TypeName="opc:String" />
  <opc:Field Name="Enabled" TypeName="opc:Boolean" />
  <opc:Field Name="SecurityMode" TypeName="tns:MessageSecurityMode"
/>
  <opc:Field Name="SecurityGroupId" TypeName="opc:String" />
  <opc:Field Name="NoOfSecurityKeyServices" TypeName="opc:Int32" />
  <opc:Field Name="SecurityKeyServices" TypeName="tns:EndpointDescription"
LengthField="NoOfSecurityKeyServices" />
  <opc:Field Name="MaxNetworkMessageSize" TypeName="opc:UInt32" />
  <opc:Field Name="NoOfGroupProperties" TypeName="opc:Int32" />
```

```
  <opc:Field Name="GroupProperties" TypeName="tns:KeyValuePair" LengthField="NoOfGroupProperties" />
 </opc:StructuredType>

 <opc:StructuredType Name="WriterGroupDataType" BaseType="tns:PubSubGroupDataType">
  <opc:Field Name="Name" TypeName="opc:String" SourceType="tns:PubSubGroupDataType" />
  <opc:Field Name="Enabled" TypeName="opc:Boolean" SourceType="tns:PubSubGroupDataType" />
  <opc:Field Name="SecurityMode" TypeName="tns:MessageSecurityMode"
SourceType="tns:PubSubGroupDataType" />
  <opc:Field Name="SecurityGroupId" TypeName="opc:String" SourceType="tns:PubSubGroupDataType" />

 <opc:Field Name="NoOfSecurityKeyServices" TypeName="opc:Int32" />
  <opc:Field Name="SecurityKeyServices" TypeName="tns:EndpointDescription"
LengthField="NoOfSecurityKeyServices" />
  <opc:Field Name="MaxNetworkMessageSize" TypeName="opc:UInt32"
SourceType="tns:PubSubGroupDataType" />
  <opc:Field Name="NoOfGroupProperties" TypeName="opc:Int32" />
  <opc:Field Name="GroupProperties" TypeName="tns:KeyValuePair" LengthField="NoOfGroupProperties" />
  <opc:Field Name="WriterGroupId" TypeName="opc:UInt16" />
  <opc:Field Name="PublishingInterval" TypeName="opc:Double" />
  <opc:Field Name="KeepAliveTime" TypeName="opc:Double" />
  <opc:Field Name="Priority" TypeName="opc:Byte" />
  <opc:Field Name="NoOfLocaleIds" TypeName="opc:Int32" />
  <opc:Field Name="LocaleIds" TypeName="opc:String" LengthField="NoOfLocaleIds" />
  <opc:Field Name="HeaderLayoutUri" TypeName="opc:String" />
  <opc:Field Name="TransportSettings" TypeName="ua:ExtensionObject" />
  <opc:Field Name="MessageSettings"
 TypeName="ua:ExtensionObject" />
  <opc:Field Name="NoOfDataSetWriters" TypeName="opc:Int32" />
  <opc:Field Name="DataSetWriters" TypeName="tns:DataSetWriterDataType"
LengthField="NoOfDataSetWriters" />
 </opc:StructuredType>

 <opc:StructuredType Name="WriterGroupTransportDataType" BaseType="ua:ExtensionObject">
 </opc:StructuredType>

 <opc:StructuredType Name="WriterGroupMessageDataType" BaseType="ua:ExtensionObject">
 </opc:StructuredType>

 <opc:StructuredType Name="PubSubConnectionDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="Name" TypeName="opc:String" />
  <opc:Field Name="Enabled" TypeName="opc:Boolean" />
  <opc:Field Name="PublisherId" TypeName="ua:Variant" />
  <opc:Field Name="TransportProfileUri" TypeName="opc:String" />
  <opc:Field Name="Address" TypeName="ua:ExtensionObject" />
  <opc:Field Name="NoOfConnectionProperties" TypeName="opc:Int32" />
  <opc:Field Name="ConnectionProperties" TypeName="tns:KeyValuePair"
 LengthField="NoOfConnectionProperties" />
  <opc:Field Name="TransportSettings" TypeName="ua:ExtensionObject" />
```

```
  <opc:Field Name="NoOfWriterGroups" TypeName="opc:Int32" />
  <opc:Field Name="WriterGroups" TypeName="tns:WriterGroupDataType" LengthField="NoOfWriterGroups" />
  <opc:Field Name="NoOfReaderGroups" TypeName="opc:Int32" />
  <opc:Field Name="ReaderGroups" TypeName="tns:ReaderGroupDataType" LengthField="NoOfReaderGroups"
/>
 </opc:StructuredType>

 <opc:StructuredType Name="ConnectionTransportDataType" BaseType="ua:ExtensionObject">
 </opc:StructuredType>

 <opc:StructuredType Name="NetworkAddressDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="NetworkInterface" TypeName="opc:String" />
 </opc:StructuredType>

 <opc:StructuredType Name="NetworkAddressUrlDataType" BaseType="tns:NetworkAddressDataType">
  <opc:Field Name="NetworkInterface" TypeName="opc:String" SourceType="tns:NetworkAddressDataType" />
  <opc:Field Name="Url" TypeName="opc:String"
 />
 </opc:StructuredType>

 <opc:StructuredType Name="ReaderGroupDataType" BaseType="tns:PubSubGroupDataType">
  <opc:Field Name="Name" TypeName="opc:String" SourceType="tns:PubSubGroupDataType" />
  <opc:Field Name="Enabled" TypeName="opc:Boolean" SourceType="tns:PubSubGroupDataType" />
  <opc:Field Name="SecurityMode" TypeName="tns:MessageSecurityMode"
SourceType="tns:PubSubGroupDataType" />
  <opc:Field Name="SecurityGroupId" TypeName="opc:String" SourceType="tns:PubSubGroupDataType" />
  <opc:Field Name="NoOfSecurityKeyServices" TypeName="opc:Int32" />
  <opc:Field Name="SecurityKeyServices" TypeName="tns:EndpointDescription"
LengthField="NoOfSecurityKeyServices" />
  <opc:Field Name="MaxNetworkMessageSize" TypeName="opc:UInt32"
SourceType="tns:PubSubGroupDataType" />
  <opc:Field Name="NoOfGroupProperties" TypeName="opc:Int32" />
  <opc:Field Name="GroupProperties" TypeName="tns:KeyValuePair" LengthField="NoOfGroupProperties" />
  <opc:Field Name="TransportSettings"
 TypeName="ua:ExtensionObject" />
  <opc:Field Name="MessageSettings" TypeName="ua:ExtensionObject" />
  <opc:Field Name="NoOfDataSetReaders" TypeName="opc:Int32" />
  <opc:Field Name="DataSetReaders" TypeName="tns:DataSetReaderDataType"
LengthField="NoOfDataSetReaders" />
 </opc:StructuredType>

 <opc:StructuredType Name="ReaderGroupTransportDataType" BaseType="ua:ExtensionObject">
 </opc:StructuredType>

 <opc:StructuredType Name="ReaderGroupMessageDataType" BaseType="ua:ExtensionObject">
 </opc:StructuredType>

 <opc:StructuredType Name="DataSetReaderDataType" BaseType="ua:ExtensionObject">
```

```
  <opc:Field Name="Name" TypeName="opc:String" />
  <opc:Field Name="Enabled" TypeName="opc:Boolean" />
  <opc:Field Name="PublisherId" TypeName="ua:Variant" />
  <opc:Field Name="WriterGroupId" TypeName="opc:UInt16" />
  <opc:Field Name="DataSetWriterId" TypeName="opc:UInt16" />
  <opc:Field Name="DataSetMetaData" TypeName="tns:DataSetMetaDataType" />
  <opc:Field
 Name="DataSetFieldContentMask" TypeName="tns:DataSetFieldContentMask" />
  <opc:Field Name="MessageReceiveTimeout" TypeName="opc:Double" />
  <opc:Field Name="KeyFrameCount" TypeName="opc:UInt32" />
  <opc:Field Name="HeaderLayoutUri" TypeName="opc:String" />
  <opc:Field Name="SecurityMode" TypeName="tns:MessageSecurityMode" />
  <opc:Field Name="SecurityGroupId" TypeName="opc:String" />
  <opc:Field Name="NoOfSecurityKeyServices" TypeName="opc:Int32" />
  <opc:Field Name="SecurityKeyServices" TypeName="tns:EndpointDescription"
LengthField="NoOfSecurityKeyServices" />
  <opc:Field Name="NoOfDataSetReaderProperties" TypeName="opc:Int32" />
  <opc:Field Name="DataSetReaderProperties" TypeName="tns:KeyValuePair"
LengthField="NoOfDataSetReaderProperties" />
  <opc:Field Name="TransportSettings" TypeName="ua:ExtensionObject" />
  <opc:Field Name="MessageSettings" TypeName="ua:ExtensionObject" />
  <opc:Field Name="SubscribedDataSet" TypeName="ua:ExtensionObject"
 />
 </opc:StructuredType>

 <opc:StructuredType Name="DataSetReaderTransportDataType" BaseType="ua:ExtensionObject">
 </opc:StructuredType>

 <opc:StructuredType Name="DataSetReaderMessageDataType" BaseType="ua:ExtensionObject">
 </opc:StructuredType>

 <opc:StructuredType Name="SubscribedDataSetDataType" BaseType="ua:ExtensionObject">
 </opc:StructuredType>

 <opc:StructuredType Name="TargetVariablesDataType" BaseType="tns:SubscribedDataSetDataType">
  <opc:Field Name="NoOfTargetVariables" TypeName="opc:Int32" />
  <opc:Field Name="TargetVariables" TypeName="tns:FieldTargetDataType"
LengthField="NoOfTargetVariables" />
 </opc:StructuredType>

 <opc:StructuredType Name="FieldTargetDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="DataSetFieldId" TypeName="opc:Guid" />
  <opc:Field Name="ReceiverIndexRange" TypeName="opc:String" />
  <opc:Field Name="TargetNodeId" TypeName="ua:NodeId" />
  <opc:Field Name="AttributeId" TypeName="opc:UInt32" />

 <opc:Field Name="WriteIndexRange" TypeName="opc:String" />
  <opc:Field Name="OverrideValueHandling" TypeName="tns:OverrideValueHandling" />
```

```
  <opc:Field Name="OverrideValue" TypeName="ua:Variant" />
 </opc:StructuredType>

 <opc:EnumeratedType Name="OverrideValueHandling" LengthInBits="32">
  <opc:EnumeratedValue Name="Disabled" Value="0" />
  <opc:EnumeratedValue Name="LastUsableValue" Value="1" />
  <opc:EnumeratedValue Name="OverrideValue" Value="2" />
 </opc:EnumeratedType>

 <opc:StructuredType Name="SubscribedDataSetMirrorDataType" BaseType="tns:SubscribedDataSetDataType">
  <opc:Field Name="ParentNodeName" TypeName="opc:String" />
  <opc:Field Name="NoOfRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="RolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfRolePermissions" />
 </opc:StructuredType>

 <opc:StructuredType Name="PubSubConfigurationDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="NoOfPublishedDataSets" TypeName="opc:Int32"
 />
  <opc:Field Name="PublishedDataSets" TypeName="tns:PublishedDataSetDataType"
LengthField="NoOfPublishedDataSets" />
  <opc:Field Name="NoOfConnections" TypeName="opc:Int32" />
  <opc:Field Name="Connections" TypeName="tns:PubSubConnectionDataType"
LengthField="NoOfConnections" />
  <opc:Field Name="Enabled" TypeName="opc:Boolean" />
 </opc:StructuredType>

 <opc:EnumeratedType Name="DataSetOrderingType" LengthInBits="32">
  <opc:EnumeratedValue Name="Undefined" Value="0" />
  <opc:EnumeratedValue Name="AscendingWriterId" Value="1" />
  <opc:EnumeratedValue Name="AscendingWriterIdSingle" Value="2" />
 </opc:EnumeratedType>

 <opc:EnumeratedType Name="UadpNetworkMessageContentMask" LengthInBits="32" IsOptionSet="true">
  <opc:EnumeratedValue Name="None" Value="0" />
  <opc:EnumeratedValue Name="PublisherId" Value="1" />
  <opc:EnumeratedValue Name="GroupHeader" Value="2" />
  <opc:EnumeratedValue Name="WriterGroupId" Value="4" />
  <opc:EnumeratedValue
 Name="GroupVersion" Value="8" />
  <opc:EnumeratedValue Name="NetworkMessageNumber" Value="16" />
  <opc:EnumeratedValue Name="SequenceNumber" Value="32" />
  <opc:EnumeratedValue Name="PayloadHeader" Value="64" />
  <opc:EnumeratedValue Name="Timestamp" Value="128" />
  <opc:EnumeratedValue Name="PicoSeconds" Value="256" />
  <opc:EnumeratedValue Name="DataSetClassId" Value="512" />
  <opc:EnumeratedValue Name="PromotedFields" Value="1024" />
 </opc:EnumeratedType>
```

```
 <opc:StructuredType Name="UadpWriterGroupMessageDataType"
BaseType="tns:WriterGroupMessageDataType">
  <opc:Field Name="GroupVersion" TypeName="opc:UInt32" />
  <opc:Field Name="DataSetOrdering" TypeName="tns:DataSetOrderingType" />
  <opc:Field Name="NetworkMessageContentMask" TypeName="tns:UadpNetworkMessageContentMask" />
  <opc:Field Name="SamplingOffset" TypeName="opc:Double" />
  <opc:Field Name="NoOfPublishingOffset" TypeName="opc:Int32" />
  <opc:Field Name="PublishingOffset"
 TypeName="opc:Double" LengthField="NoOfPublishingOffset" />
 </opc:StructuredType>

 <opc:EnumeratedType Name="UadpDataSetMessageContentMask" LengthInBits="32" IsOptionSet="true">
  <opc:EnumeratedValue Name="None" Value="0" />
  <opc:EnumeratedValue Name="Timestamp" Value="1" />
  <opc:EnumeratedValue Name="PicoSeconds" Value="2" />
  <opc:EnumeratedValue Name="Status" Value="4" />
  <opc:EnumeratedValue Name="MajorVersion" Value="8" />
  <opc:EnumeratedValue Name="MinorVersion" Value="16" />
  <opc:EnumeratedValue Name="SequenceNumber" Value="32" />
 </opc:EnumeratedType>

 <opc:StructuredType Name="UadpDataSetWriterMessageDataType"
BaseType="tns:DataSetWriterMessageDataType">
  <opc:Field Name="DataSetMessageContentMask" TypeName="tns:UadpDataSetMessageContentMask" />
  <opc:Field Name="ConfiguredSize" TypeName="opc:UInt16" />
  <opc:Field Name="NetworkMessageNumber" TypeName="opc:UInt16" />
  <opc:Field Name="DataSetOffset" TypeName="opc:UInt16" />
 </opc:StructuredType>

  <opc:StructuredType Name="UadpDataSetReaderMessageDataType"
BaseType="tns:DataSetReaderMessageDataType">
  <opc:Field Name="GroupVersion" TypeName="opc:UInt32" />
  <opc:Field Name="NetworkMessageNumber" TypeName="opc:UInt16" />
  <opc:Field Name="DataSetOffset" TypeName="opc:UInt16" />
  <opc:Field Name="DataSetClassId" TypeName="opc:Guid" />
  <opc:Field Name="NetworkMessageContentMask" TypeName="tns:UadpNetworkMessageContentMask" />
  <opc:Field Name="DataSetMessageContentMask" TypeName="tns:UadpDataSetMessageContentMask" />
  <opc:Field Name="PublishingInterval" TypeName="opc:Double" />
  <opc:Field Name="ReceiveOffset" TypeName="opc:Double" />
  <opc:Field Name="ProcessingOffset" TypeName="opc:Double" />
 </opc:StructuredType>

 <opc:EnumeratedType Name="JsonNetworkMessageContentMask" LengthInBits="32" IsOptionSet="true">
  <opc:EnumeratedValue Name="None" Value="0" />
  <opc:EnumeratedValue Name="NetworkMessageHeader" Value="1" />
```

```
  <opc:EnumeratedValue Name="DataSetMessageHeader" Value="2" />
  <opc:EnumeratedValue Name="SingleDataSetMessage" Value="4" />
  <opc:EnumeratedValue Name="PublisherId" Value="8" />
  <opc:EnumeratedValue Name="DataSetClassId" Value="16" />
  <opc:EnumeratedValue Name="ReplyTo" Value="32" />
 </opc:EnumeratedType>

 <opc:StructuredType Name="JsonWriterGroupMessageDataType"
BaseType="tns:WriterGroupMessageDataType">
  <opc:Field Name="NetworkMessageContentMask" TypeName="tns:JsonNetworkMessageContentMask" />
 </opc:StructuredType>

 <opc:EnumeratedType Name="JsonDataSetMessageContentMask" LengthInBits="32" IsOptionSet="true">
  <opc:EnumeratedValue Name="None" Value="0" />
  <opc:EnumeratedValue Name="DataSetWriterId" Value="1" />
  <opc:EnumeratedValue Name="MetaDataVersion" Value="2" />
  <opc:EnumeratedValue Name="SequenceNumber" Value="4" />
  <opc:EnumeratedValue Name="Timestamp" Value="8" />
  <opc:EnumeratedValue Name="Status" Value="16" />
 </opc:EnumeratedType>

  <opc:StructuredType Name="JsonDataSetWriterMessageDataType"
BaseType="tns:DataSetWriterMessageDataType">
  <opc:Field Name="DataSetMessageContentMask" TypeName="tns:JsonDataSetMessageContentMask" />
 </opc:StructuredType>

 <opc:StructuredType Name="JsonDataSetReaderMessageDataType"
BaseType="tns:DataSetReaderMessageDataType">
  <opc:Field Name="NetworkMessageContentMask" TypeName="tns:JsonNetworkMessageContentMask" />
  <opc:Field Name="DataSetMessageContentMask" TypeName="tns:JsonDataSetMessageContentMask" />
 </opc:StructuredType>

 <opc:StructuredType Name="DatagramConnectionTransportDataType"
BaseType="tns:ConnectionTransportDataType">
  <opc:Field Name="DiscoveryAddress" TypeName="ua:ExtensionObject" />
 </opc:StructuredType>

 <opc:StructuredType Name="DatagramWriterGroupTransportDataType"
BaseType="tns:WriterGroupTransportDataType">
  <opc:Field Name="MessageRepeatCount" TypeName="opc:Byte" />
  <opc:Field Name="MessageRepeatDelay" TypeName="opc:Double"
 />
 </opc:StructuredType>

 <opc:StructuredType Name="BrokerConnectionTransportDataType"
BaseType="tns:ConnectionTransportDataType">
  <opc:Field Name="ResourceUri" TypeName="opc:String" />
  <opc:Field Name="AuthenticationProfileUri" TypeName="opc:String" />
```

```
</opc:StructuredType>

<opc:EnumeratedType Name="BrokerTransportQualityOfService" LengthInBits="32">
  <opc:EnumeratedValue Name="NotSpecified" Value="0" />
  <opc:EnumeratedValue Name="BestEffort" Value="1" />
  <opc:EnumeratedValue Name="AtLeastOnce" Value="2" />
  <opc:EnumeratedValue Name="AtMostOnce" Value="3" />
  <opc:EnumeratedValue Name="ExactlyOnce" Value="4" />
</opc:EnumeratedType>

<opc:StructuredType Name="BrokerWriterGroupTransportDataType"
BaseType="tns:WriterGroupTransportDataType">
  <opc:Field Name="QueueName" TypeName="opc:String" />
  <opc:Field Name="ResourceUri" TypeName="opc:String" />
  <opc:Field Name="AuthenticationProfileUri" TypeName="opc:String" />
  <opc:Field
 Name="RequestedDeliveryGuarantee" TypeName="tns:BrokerTransportQualityOfService" />
</opc:StructuredType>

<opc:StructuredType Name="BrokerDataSetWriterTransportDataType"
BaseType="tns:DataSetWriterTransportDataType">
  <opc:Field Name="QueueName" TypeName="opc:String" />
  <opc:Field Name="ResourceUri" TypeName="opc:String" />
  <opc:Field Name="AuthenticationProfileUri" TypeName="opc:String" />
  <opc:Field Name="RequestedDeliveryGuarantee" TypeName="tns:BrokerTransportQualityOfService" />
  <opc:Field Name="MetaDataQueueName" TypeName="opc:String" />
  <opc:Field Name="MetaDataUpdateTime" TypeName="opc:Double" />
</opc:StructuredType>

<opc:StructuredType Name="BrokerDataSetReaderTransportDataType"
BaseType="tns:DataSetReaderTransportDataType">
  <opc:Field Name="QueueName" TypeName="opc:String" />
  <opc:Field Name="ResourceUri" TypeName="opc:String" />
  <opc:Field Name="AuthenticationProfileUri" TypeName="opc:String" />
  <opc:Field Name="RequestedDeliveryGuarantee"
 TypeName="tns:BrokerTransportQualityOfService" />
  <opc:Field Name="MetaDataQueueName" TypeName="opc:String" />
</opc:StructuredType>

<opc:EnumeratedType Name="DiagnosticsLevel" LengthInBits="32">
  <opc:EnumeratedValue Name="Basic" Value="0" />
  <opc:EnumeratedValue Name="Advanced" Value="1" />
  <opc:EnumeratedValue Name="Info" Value="2" />
  <opc:EnumeratedValue Name="Log" Value="3" />
  <opc:EnumeratedValue Name="Debug" Value="4" />
</opc:EnumeratedType>

<opc:EnumeratedType Name="PubSubDiagnosticsCounterClassification" LengthInBits="32">
```

```
  <opc:EnumeratedValue Name="Information" Value="0" />
  <opc:EnumeratedValue Name="Error" Value="1" />
</opc:EnumeratedType>

<opc:EnumeratedType Name="IdType" LengthInBits="32">
  <opc:Documentation>The type of identifier used in a node id.</opc:Documentation>
  <opc:EnumeratedValue Name="Numeric" Value="0" />
  <opc:EnumeratedValue Name="String" Value="1" />
  <opc:EnumeratedValue Name="Guid"
Value="2" />
  <opc:EnumeratedValue Name="Opaque" Value="3" />
</opc:EnumeratedType>

<opc:EnumeratedType Name="NodeClass" LengthInBits="32">
  <opc:Documentation>A mask specifying the class of the node.</opc:Documentation>
  <opc:EnumeratedValue Name="Unspecified" Value="0" />
  <opc:EnumeratedValue Name="Object" Value="1" />
  <opc:EnumeratedValue Name="Variable" Value="2" />
  <opc:EnumeratedValue Name="Method" Value="4" />
  <opc:EnumeratedValue Name="ObjectType" Value="8" />
  <opc:EnumeratedValue Name="VariableType" Value="16" />
  <opc:EnumeratedValue Name="ReferenceType" Value="32" />
  <opc:EnumeratedValue Name="DataType" Value="64" />
  <opc:EnumeratedValue Name="View" Value="128" />
</opc:EnumeratedType>

<opc:EnumeratedType Name="PermissionType" LengthInBits="32" IsOptionSet="true">
  <opc:EnumeratedValue Name="None" Value="0" />
  <opc:EnumeratedValue Name="Browse" Value="1" />
  <opc:EnumeratedValue Name="ReadRolePermissions" Value="2"
/>
  <opc:EnumeratedValue Name="WriteAttribute" Value="4" />
  <opc:EnumeratedValue Name="WriteRolePermissions" Value="8" />
  <opc:EnumeratedValue Name="WriteHistorizing" Value="16" />
  <opc:EnumeratedValue Name="Read" Value="32" />
  <opc:EnumeratedValue Name="Write" Value="64" />
  <opc:EnumeratedValue Name="ReadHistory" Value="128" />
  <opc:EnumeratedValue Name="InsertHistory" Value="256" />
  <opc:EnumeratedValue Name="ModifyHistory" Value="512" />
  <opc:EnumeratedValue Name="DeleteHistory" Value="1024" />
  <opc:EnumeratedValue Name="ReceiveEvents" Value="2048" />
  <opc:EnumeratedValue Name="Call" Value="4096" />
  <opc:EnumeratedValue Name="AddReference" Value="8192" />
  <opc:EnumeratedValue Name="RemoveReference" Value="16384" />
  <opc:EnumeratedValue Name="DeleteNode" Value="32768" />
  <opc:EnumeratedValue Name="AddNode" Value="65536" />
</opc:EnumeratedType>
```

```
<opc:EnumeratedType Name="AccessLevelType" LengthInBits="8" IsOptionSet="true">
   <opc:EnumeratedValue Name="None" Value="0" />
  <opc:EnumeratedValue Name="CurrentRead" Value="1" />
  <opc:EnumeratedValue Name="CurrentWrite" Value="2" />
  <opc:EnumeratedValue Name="HistoryRead" Value="4" />
  <opc:EnumeratedValue Name="HistoryWrite" Value="8" />
  <opc:EnumeratedValue Name="SemanticChange" Value="16" />
  <opc:EnumeratedValue Name="StatusWrite" Value="32" />
  <opc:EnumeratedValue Name="TimestampWrite" Value="64" />
</opc:EnumeratedType>

<opc:EnumeratedType Name="AccessLevelExType" LengthInBits="32" IsOptionSet="true">
  <opc:EnumeratedValue Name="None" Value="0" />
  <opc:EnumeratedValue Name="CurrentRead" Value="1" />
  <opc:EnumeratedValue Name="CurrentWrite" Value="2" />
  <opc:EnumeratedValue Name="HistoryRead" Value="4" />
  <opc:EnumeratedValue Name="HistoryWrite" Value="8" />
  <opc:EnumeratedValue Name="SemanticChange" Value="16" />
  <opc:EnumeratedValue Name="StatusWrite" Value="32" />
  <opc:EnumeratedValue
Name="TimestampWrite" Value="64" />
  <opc:EnumeratedValue Name="NonatomicRead" Value="256" />
  <opc:EnumeratedValue Name="NonatomicWrite" Value="512" />
  <opc:EnumeratedValue Name="WriteFullArrayOnly" Value="1024" />
</opc:EnumeratedType>

<opc:EnumeratedType Name="EventNotifierType" LengthInBits="8" IsOptionSet="true">
  <opc:EnumeratedValue Name="None" Value="0" />
  <opc:EnumeratedValue Name="SubscribeToEvents" Value="1" />
  <opc:EnumeratedValue Name="HistoryRead" Value="4" />
  <opc:EnumeratedValue Name="HistoryWrite" Value="8" />
</opc:EnumeratedType>

<opc:StructuredType Name="RolePermissionType" BaseType="ua:ExtensionObject">
  <opc:Field Name="RoleId" TypeName="ua:NodeId" />
  <opc:Field Name="Permissions" TypeName="tns:PermissionType" />
</opc:StructuredType>

<opc:EnumeratedType Name="AccessRestrictionType" LengthInBits="32">
  <opc:EnumeratedValue Name="SigningRequired" Value="0" />
  <opc:EnumeratedValue Name="EncryptionRequired" Value="1"
/>
  <opc:EnumeratedValue Name="SessionRequired" Value="2" />
</opc:EnumeratedType>

<opc:EnumeratedType Name="StructureType" LengthInBits="32">
  <opc:EnumeratedValue Name="Structure" Value="0" />
  <opc:EnumeratedValue Name="StructureWithOptionalFields" Value="1" />
```

```
  <opc:EnumeratedValue Name="Union" Value="2" />
 </opc:EnumeratedType>

 <opc:StructuredType Name="StructureField" BaseType="ua:ExtensionObject">
  <opc:Field Name="Name" TypeName="opc:String" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" />
  <opc:Field Name="DataType" TypeName="ua:NodeId" />
  <opc:Field Name="ValueRank" TypeName="opc:Int32" />
  <opc:Field Name="NoOfArrayDimensions" TypeName="opc:Int32" />
  <opc:Field Name="ArrayDimensions" TypeName="opc:UInt32" LengthField="NoOfArrayDimensions" />
  <opc:Field Name="MaxStringLength" TypeName="opc:UInt32" />
  <opc:Field Name="IsOptional" TypeName="opc:Boolean" />
 </opc:StructuredType>

 <opc:StructuredType Name="StructureDefinition"
 BaseType="tns:DataTypeDefinition">
  <opc:Field Name="DefaultEncodingId" TypeName="ua:NodeId" />
  <opc:Field Name="BaseDataType" TypeName="ua:NodeId" />
  <opc:Field Name="StructureType" TypeName="tns:StructureType" />
  <opc:Field Name="NoOfFields" TypeName="opc:Int32" />
  <opc:Field Name="Fields" TypeName="tns:StructureField" LengthField="NoOfFields" />
 </opc:StructuredType>

 <opc:StructuredType Name="EnumDefinition" BaseType="tns:DataTypeDefinition">
  <opc:Field Name="NoOfFields" TypeName="opc:Int32" />
  <opc:Field Name="Fields" TypeName="tns:EnumField" LengthField="NoOfFields" />
 </opc:StructuredType>

 <opc:StructuredType Name="Node" BaseType="ua:ExtensionObject">
  <opc:Documentation>Specifies the attributes which belong to all nodes.</opc:Documentation>
  <opc:Field Name="NodeId" TypeName="ua:NodeId" />
  <opc:Field Name="NodeClass" TypeName="tns:NodeClass" />
  <opc:Field Name="BrowseName" TypeName="ua:QualifiedName" />

 <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" />
  <opc:Field Name="NoOfRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="RolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfRolePermissions" />
  <opc:Field Name="NoOfUserRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="UserRolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfUserRolePermissions" />
  <opc:Field Name="AccessRestrictions" TypeName="opc:UInt16" />
  <opc:Field Name="NoOfReferences" TypeName="opc:Int32" />
  <opc:Field Name="References" TypeName="tns:ReferenceNode" LengthField="NoOfReferences" />
 </opc:StructuredType>
```

```
 <opc:StructuredType Name="InstanceNode" BaseType="tns:Node">
  <opc:Field Name="NodeId" TypeName="ua:NodeId" SourceType="tns:Node" />
  <opc:Field
 Name="NodeClass" TypeName="tns:NodeClass" SourceType="tns:Node" />
  <opc:Field Name="BrowseName" TypeName="ua:QualifiedName" SourceType="tns:Node" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:Node" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:Node" />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:Node" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:Node" />
  <opc:Field Name="NoOfRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="RolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfRolePermissions" />
  <opc:Field Name="NoOfUserRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="UserRolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfUserRolePermissions" />
  <opc:Field Name="AccessRestrictions" TypeName="opc:UInt16" SourceType="tns:Node" />
  <opc:Field Name="NoOfReferences" TypeName="opc:Int32"
 />
  <opc:Field Name="References" TypeName="tns:ReferenceNode" LengthField="NoOfReferences" />
 </opc:StructuredType>

 <opc:StructuredType Name="TypeNode" BaseType="tns:Node">
  <opc:Field Name="NodeId" TypeName="ua:NodeId" SourceType="tns:Node" />
  <opc:Field Name="NodeClass" TypeName="tns:NodeClass" SourceType="tns:Node" />
  <opc:Field Name="BrowseName" TypeName="ua:QualifiedName" SourceType="tns:Node" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:Node" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:Node" />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:Node" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:Node" />
  <opc:Field Name="NoOfRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="RolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfRolePermissions" />
  <opc:Field Name="NoOfUserRolePermissions" TypeName="opc:Int32"
 />
  <opc:Field Name="UserRolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfUserRolePermissions" />
  <opc:Field Name="AccessRestrictions" TypeName="opc:UInt16" SourceType="tns:Node" />
  <opc:Field Name="NoOfReferences" TypeName="opc:Int32" />
  <opc:Field Name="References" TypeName="tns:ReferenceNode" LengthField="NoOfReferences" />
 </opc:StructuredType>

 <opc:StructuredType Name="ObjectNode" BaseType="tns:InstanceNode">
  <opc:Documentation>Specifies the attributes which belong to object nodes.</opc:Documentation>
  <opc:Field Name="NodeId" TypeName="ua:NodeId" SourceType="tns:Node" />
  <opc:Field Name="NodeClass" TypeName="tns:NodeClass" SourceType="tns:Node" />
  <opc:Field Name="BrowseName" TypeName="ua:QualifiedName" SourceType="tns:Node" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:Node" />
```

```
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:Node" />
  <opc:Field Name="WriteMask"
 TypeName="opc:UInt32" SourceType="tns:Node" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:Node" />
  <opc:Field Name="NoOfRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="RolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfRolePermissions" />
  <opc:Field Name="NoOfUserRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="UserRolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfUserRolePermissions" />
  <opc:Field Name="AccessRestrictions" TypeName="opc:UInt16" SourceType="tns:Node" />
  <opc:Field Name="NoOfReferences" TypeName="opc:Int32" />
  <opc:Field Name="References" TypeName="tns:ReferenceNode" LengthField="NoOfReferences" />
  <opc:Field Name="EventNotifier" TypeName="opc:Byte" />
 </opc:StructuredType>

 <opc:StructuredType Name="ObjectTypeNode" BaseType="tns:TypeNode">
  <opc:Documentation>Specifies the attributes which belong to object type nodes.</opc:Documentation>
   <opc:Field Name="NodeId" TypeName="ua:NodeId" SourceType="tns:Node" />
  <opc:Field Name="NodeClass" TypeName="tns:NodeClass" SourceType="tns:Node" />
  <opc:Field Name="BrowseName" TypeName="ua:QualifiedName" SourceType="tns:Node" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:Node" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:Node" />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:Node" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:Node" />
  <opc:Field Name="NoOfRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="RolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfRolePermissions" />
  <opc:Field Name="NoOfUserRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="UserRolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfUserRolePermissions" />
  <opc:Field Name="AccessRestrictions" TypeName="opc:UInt16"
 SourceType="tns:Node" />
  <opc:Field Name="NoOfReferences" TypeName="opc:Int32" />
  <opc:Field Name="References" TypeName="tns:ReferenceNode" LengthField="NoOfReferences" />
  <opc:Field Name="IsAbstract" TypeName="opc:Boolean" />
 </opc:StructuredType>

 <opc:StructuredType Name="VariableNode" BaseType="tns:InstanceNode">
  <opc:Documentation>Specifies the attributes which belong to variable nodes.</opc:Documentation>
  <opc:Field Name="NodeId" TypeName="ua:NodeId" SourceType="tns:Node" />
  <opc:Field Name="NodeClass" TypeName="tns:NodeClass" SourceType="tns:Node" />
  <opc:Field Name="BrowseName" TypeName="ua:QualifiedName" SourceType="tns:Node" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:Node" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:Node" />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:Node" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:Node"
```

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/>
  <opc:Field Name="NoOfRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="RolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfRolePermissions" />
  <opc:Field Name="NoOfUserRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="UserRolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfUserRolePermissions" />
  <opc:Field Name="AccessRestrictions" TypeName="opc:UInt16" SourceType="tns:Node" />
  <opc:Field Name="NoOfReferences" TypeName="opc:Int32" />
  <opc:Field Name="References" TypeName="tns:ReferenceNode" LengthField="NoOfReferences" />
  <opc:Field Name="Value" TypeName="ua:Variant" />
  <opc:Field Name="DataType" TypeName="ua:NodeId" />
  <opc:Field Name="ValueRank" TypeName="opc:Int32" />
  <opc:Field Name="NoOfArrayDimensions" TypeName="opc:Int32" />
  <opc:Field Name="ArrayDimensions" TypeName="opc:UInt32" LengthField="NoOfArrayDimensions" />
  <opc:Field Name="AccessLevel" TypeName="opc:Byte"
/>
  <opc:Field Name="UserAccessLevel" TypeName="opc:Byte" />
  <opc:Field Name="MinimumSamplingInterval" TypeName="opc:Double" />
  <opc:Field Name="Historizing" TypeName="opc:Boolean" />
  <opc:Field Name="AccessLevelEx" TypeName="opc:UInt32" />
 </opc:StructuredType>

 <opc:StructuredType Name="VariableTypeNode" BaseType="tns:TypeNode">
  <opc:Documentation>Specifies the attributes which belong to variable type nodes.</opc:Documentation>
  <opc:Field Name="NodeId" TypeName="ua:NodeId" SourceType="tns:Node" />
  <opc:Field Name="NodeClass" TypeName="tns:NodeClass" SourceType="tns:Node" />
  <opc:Field Name="BrowseName" TypeName="ua:QualifiedName" SourceType="tns:Node" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:Node" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:Node" />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:Node" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32"
 SourceType="tns:Node" />
  <opc:Field Name="NoOfRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="RolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfRolePermissions" />
  <opc:Field Name="NoOfUserRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="UserRolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfUserRolePermissions" />
  <opc:Field Name="AccessRestrictions" TypeName="opc:UInt16" SourceType="tns:Node" />
  <opc:Field Name="NoOfReferences" TypeName="opc:Int32" />
  <opc:Field Name="References" TypeName="tns:ReferenceNode" LengthField="NoOfReferences" />
  <opc:Field Name="Value" TypeName="ua:Variant" />
  <opc:Field Name="DataType" TypeName="ua:NodeId" />
  <opc:Field Name="ValueRank" TypeName="opc:Int32" />
  <opc:Field Name="NoOfArrayDimensions" TypeName="opc:Int32" />
  <opc:Field Name="ArrayDimensions" TypeName="opc:UInt32" LengthField="NoOfArrayDimensions" />
  <opc:Field Name="IsAbstract"
```

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 TypeName="opc:Boolean" />
 </opc:StructuredType>

 <opc:StructuredType Name="ReferenceTypeNode" BaseType="tns:TypeNode">
   <opc:Documentation>Specifies the attributes which belong to reference type nodes.</opc:Documentation>
   <opc:Field Name="NodeId" TypeName="ua:NodeId" SourceType="tns:Node" />
   <opc:Field Name="NodeClass" TypeName="tns:NodeClass" SourceType="tns:Node" />
   <opc:Field Name="BrowseName" TypeName="ua:QualifiedName" SourceType="tns:Node" />
   <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:Node" />
   <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:Node" />
   <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:Node" />
   <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:Node" />
   <opc:Field Name="NoOfRolePermissions" TypeName="opc:Int32" />
   <opc:Field Name="RolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfRolePermissions" />
   <opc:Field
 Name="NoOfUserRolePermissions" TypeName="opc:Int32" />
   <opc:Field Name="UserRolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfUserRolePermissions" />
   <opc:Field Name="AccessRestrictions" TypeName="opc:UInt16" SourceType="tns:Node" />
   <opc:Field Name="NoOfReferences" TypeName="opc:Int32" />
   <opc:Field Name="References" TypeName="tns:ReferenceNode" LengthField="NoOfReferences" />
   <opc:Field Name="IsAbstract" TypeName="opc:Boolean" />
   <opc:Field Name="Symmetric" TypeName="opc:Boolean" />
   <opc:Field Name="InverseName" TypeName="ua:LocalizedText" />
 </opc:StructuredType>

 <opc:StructuredType Name="MethodNode" BaseType="tns:InstanceNode">
   <opc:Documentation>Specifies the attributes which belong to method nodes.</opc:Documentation>
   <opc:Field Name="NodeId" TypeName="ua:NodeId" SourceType="tns:Node" />
   <opc:Field Name="NodeClass" TypeName="tns:NodeClass" SourceType="tns:Node" />
   <opc:Field Name="BrowseName" TypeName="ua:QualifiedName"
 SourceType="tns:Node" />
   <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:Node" />
   <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:Node" />
   <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:Node" />
   <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:Node" />
   <opc:Field Name="NoOfRolePermissions" TypeName="opc:Int32" />
   <opc:Field Name="RolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfRolePermissions" />
   <opc:Field Name="NoOfUserRolePermissions" TypeName="opc:Int32" />
   <opc:Field Name="UserRolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfUserRolePermissions" />
   <opc:Field Name="AccessRestrictions" TypeName="opc:UInt16" SourceType="tns:Node" />
   <opc:Field Name="NoOfReferences" TypeName="opc:Int32" />
   <opc:Field Name="References" TypeName="tns:ReferenceNode" LengthField="NoOfReferences" />
   <opc:Field Name="Executable"
```

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 TypeName="opc:Boolean" />
  <opc:Field Name="UserExecutable" TypeName="opc:Boolean" />
 </opc:StructuredType>

 <opc:StructuredType Name="ViewNode" BaseType="tns:InstanceNode">
  <opc:Field Name="NodeId" TypeName="ua:NodeId" SourceType="tns:Node" />
  <opc:Field Name="NodeClass" TypeName="tns:NodeClass" SourceType="tns:Node" />
  <opc:Field Name="BrowseName" TypeName="ua:QualifiedName" SourceType="tns:Node" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:Node" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:Node" />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:Node" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:Node" />
  <opc:Field Name="NoOfRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="RolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfRolePermissions" />
  <opc:Field Name="NoOfUserRolePermissions" TypeName="opc:Int32"
 />
  <opc:Field Name="UserRolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfUserRolePermissions" />
  <opc:Field Name="AccessRestrictions" TypeName="opc:UInt16" SourceType="tns:Node" />
  <opc:Field Name="NoOfReferences" TypeName="opc:Int32" />
  <opc:Field Name="References" TypeName="tns:ReferenceNode" LengthField="NoOfReferences" />
  <opc:Field Name="ContainsNoLoops" TypeName="opc:Boolean" />
  <opc:Field Name="EventNotifier" TypeName="opc:Byte" />
 </opc:StructuredType>

 <opc:StructuredType Name="DataTypeNode" BaseType="tns:TypeNode">
  <opc:Field Name="NodeId" TypeName="ua:NodeId" SourceType="tns:Node" />
  <opc:Field Name="NodeClass" TypeName="tns:NodeClass" SourceType="tns:Node" />
  <opc:Field Name="BrowseName" TypeName="ua:QualifiedName" SourceType="tns:Node" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:Node" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:Node"
 />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:Node" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:Node" />
  <opc:Field Name="NoOfRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="RolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfRolePermissions" />
  <opc:Field Name="NoOfUserRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="UserRolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfUserRolePermissions" />
  <opc:Field Name="AccessRestrictions" TypeName="opc:UInt16" SourceType="tns:Node" />
  <opc:Field Name="NoOfReferences" TypeName="opc:Int32" />
  <opc:Field Name="References" TypeName="tns:ReferenceNode" LengthField="NoOfReferences" />
  <opc:Field Name="IsAbstract" TypeName="opc:Boolean" />
  <opc:Field Name="DataTypeDefinition" TypeName="ua:ExtensionObject" />
 </opc:StructuredType>
```

```
<opc:StructuredType Name="ReferenceNode" BaseType="ua:ExtensionObject">
  <opc:Documentation>Specifies a reference which belongs to a node.</opc:Documentation>
  <opc:Field Name="ReferenceTypeId" TypeName="ua:NodeId" />
  <opc:Field Name="IsInverse" TypeName="opc:Boolean" />
  <opc:Field Name="TargetId" TypeName="ua:ExpandedNodeId" />
</opc:StructuredType>

<opc:StructuredType Name="Argument" BaseType="ua:ExtensionObject">
  <opc:Documentation>An argument for a method.</opc:Documentation>
  <opc:Field Name="Name" TypeName="opc:String" />
  <opc:Field Name="DataType" TypeName="ua:NodeId" />
  <opc:Field Name="ValueRank" TypeName="opc:Int32" />
  <opc:Field Name="NoOfArrayDimensions" TypeName="opc:Int32" />
  <opc:Field Name="ArrayDimensions" TypeName="opc:UInt32" LengthField="NoOfArrayDimensions" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" />
</opc:StructuredType>

<opc:StructuredType Name="EnumValueType" BaseType="ua:ExtensionObject">
  <opc:Documentation>A mapping between a value of an enumerated type
and a name and description.</opc:Documentation>
  <opc:Field Name="Value" TypeName="opc:Int64" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" />
</opc:StructuredType>

<opc:StructuredType Name="EnumField" BaseType="tns:EnumValueType">
  <opc:Field Name="Value" TypeName="opc:Int64" SourceType="tns:EnumValueType" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:EnumValueType" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:EnumValueType" />
  <opc:Field Name="Name" TypeName="opc:String" />
</opc:StructuredType>

<opc:StructuredType Name="OptionSet" BaseType="ua:ExtensionObject">
  <opc:Documentation>This abstract Structured DataType is the base DataType for all DataTypes representing a bit
mask.</opc:Documentation>
  <opc:Field Name="Value" TypeName="opc:ByteString" />
  <opc:Field Name="ValidBits" TypeName="opc:ByteString"
/>
</opc:StructuredType>

<opc:StructuredType Name="Union" BaseType="ua:ExtensionObject">
  <opc:Documentation>This abstract DataType is the base DataType for all union
DataTypes.</opc:Documentation>
</opc:StructuredType>

<opc:OpaqueType Name="NormalizedString">
  <opc:Documentation>A string normalized based on the rules in the unicode specification.</opc:Documentation>
</opc:OpaqueType>
```

```
<opc:OpaqueType Name="DecimalString">
  <opc:Documentation>An arbitraty numeric value.</opc:Documentation>
</opc:OpaqueType>

<opc:OpaqueType Name="DurationString">
  <opc:Documentation>A period of time formatted as defined in ISO 8601-2000.</opc:Documentation>
</opc:OpaqueType>

<opc:OpaqueType Name="TimeString">
  <opc:Documentation>A time formatted as defined in ISO 8601-2000.</opc:Documentation>
</opc:OpaqueType>

<opc:OpaqueType Name="DateString">
  <opc:Documentation>A date formatted as defined in ISO 8601-2000.</opc:Documentation>
</opc:OpaqueType>

<opc:OpaqueType
Name="Duration">
  <opc:Documentation>A period of time measured in milliseconds.</opc:Documentation>
</opc:OpaqueType>

<opc:OpaqueType Name="UtcTime">
  <opc:Documentation>A date/time value specified in Universal Coordinated Time (UTC).</opc:Documentation>
</opc:OpaqueType>

<opc:OpaqueType Name="LocaleId">
  <opc:Documentation>An identifier for a user locale.</opc:Documentation>
</opc:OpaqueType>

<opc:StructuredType Name="TimeZoneDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="Offset" TypeName="opc:Int16" />
  <opc:Field Name="DaylightSavingInOffset" TypeName="opc:Boolean" />
</opc:StructuredType>

<opc:OpaqueType Name="Index">
  <opc:Documentation>This primitive data type is a UInt32 that identifies an element of an
array.</opc:Documentation>
</opc:OpaqueType>

<opc:OpaqueType Name="IntegerId">
  <opc:Documentation>A numeric identifier for an object.</opc:Documentation>
</opc:OpaqueType>

<opc:EnumeratedType Name="ApplicationType"
LengthInBits="32">
  <opc:Documentation>The types of applications.</opc:Documentation>
  <opc:EnumeratedValue Name="Server" Value="0" />
```

```
  <opc:EnumeratedValue Name="Client" Value="1" />
  <opc:EnumeratedValue Name="ClientAndServer" Value="2" />
  <opc:EnumeratedValue Name="DiscoveryServer" Value="3" />
 </opc:EnumeratedType>

 <opc:StructuredType Name="ApplicationDescription" BaseType="ua:ExtensionObject">
  <opc:Documentation>Describes an application and how to find it.</opc:Documentation>
  <opc:Field Name="ApplicationUri" TypeName="opc:String" />
  <opc:Field Name="ProductUri" TypeName="opc:String" />
  <opc:Field Name="ApplicationName" TypeName="ua:LocalizedText" />
  <opc:Field Name="ApplicationType" TypeName="tns:ApplicationType" />
  <opc:Field Name="GatewayServerUri" TypeName="opc:String" />
  <opc:Field Name="DiscoveryProfileUri" TypeName="opc:String" />
  <opc:Field Name="NoOfDiscoveryUrls" TypeName="opc:Int32" />
  <opc:Field Name="DiscoveryUrls"
 TypeName="opc:String" LengthField="NoOfDiscoveryUrls" />
 </opc:StructuredType>

 <opc:StructuredType Name="RequestHeader" BaseType="ua:ExtensionObject">
  <opc:Documentation>The header passed with every server request.</opc:Documentation>
  <opc:Field Name="AuthenticationToken" TypeName="ua:NodeId" />
  <opc:Field Name="Timestamp" TypeName="opc:DateTime" />
  <opc:Field Name="RequestHandle" TypeName="opc:UInt32" />
  <opc:Field Name="ReturnDiagnostics" TypeName="opc:UInt32" />
  <opc:Field Name="AuditEntryId" TypeName="opc:String" />
  <opc:Field Name="TimeoutHint" TypeName="opc:UInt32" />
  <opc:Field Name="AdditionalHeader" TypeName="ua:ExtensionObject" />
 </opc:StructuredType>

 <opc:StructuredType Name="ResponseHeader" BaseType="ua:ExtensionObject">
  <opc:Documentation>The header passed with every server response.</opc:Documentation>
  <opc:Field Name="Timestamp" TypeName="opc:DateTime" />
  <opc:Field Name="RequestHandle" TypeName="opc:UInt32"
 />
  <opc:Field Name="ServiceResult" TypeName="ua:StatusCode" />
  <opc:Field Name="ServiceDiagnostics" TypeName="ua:DiagnosticInfo" />
  <opc:Field Name="NoOfStringTable" TypeName="opc:Int32" />
  <opc:Field Name="StringTable" TypeName="opc:String" LengthField="NoOfStringTable" />
  <opc:Field Name="AdditionalHeader" TypeName="ua:ExtensionObject" />
 </opc:StructuredType>

 <opc:OpaqueType Name="VersionTime">
 </opc:OpaqueType>

 <opc:StructuredType Name="ServiceFault" BaseType="ua:ExtensionObject">
  <opc:Documentation>The response returned by all services when there is a service level
error.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
```

```
</opc:StructuredType>

<opc:StructuredType Name="SessionlessInvokeRequestType" BaseType="ua:ExtensionObject">
  <opc:Field Name="NoOfUrisVersion" TypeName="opc:Int32" />
  <opc:Field Name="UrisVersion" TypeName="opc:UInt32" LengthField="NoOfUrisVersion" />
  <opc:Field Name="NoOfNamespaceUris"
TypeName="opc:Int32" />
  <opc:Field Name="NamespaceUris" TypeName="opc:String" LengthField="NoOfNamespaceUris" />
  <opc:Field Name="NoOfServerUris" TypeName="opc:Int32" />
  <opc:Field Name="ServerUris" TypeName="opc:String" LengthField="NoOfServerUris" />
  <opc:Field Name="NoOfLocaleIds" TypeName="opc:Int32" />
  <opc:Field Name="LocaleIds" TypeName="opc:String" LengthField="NoOfLocaleIds" />
  <opc:Field Name="ServiceId" TypeName="opc:UInt32" />
</opc:StructuredType>

<opc:StructuredType Name="SessionlessInvokeResponseType" BaseType="ua:ExtensionObject">
  <opc:Field Name="NoOfNamespaceUris" TypeName="opc:Int32" />
  <opc:Field Name="NamespaceUris" TypeName="opc:String" LengthField="NoOfNamespaceUris" />
  <opc:Field Name="NoOfServerUris" TypeName="opc:Int32" />
  <opc:Field Name="ServerUris" TypeName="opc:String" LengthField="NoOfServerUris" />
  <opc:Field Name="ServiceId" TypeName="opc:UInt32" />
</opc:StructuredType>

<opc:StructuredType
Name="FindServersRequest" BaseType="ua:ExtensionObject">
  <opc:Documentation>Finds the servers known to the discovery server.</opc:Documentation>
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="EndpointUrl" TypeName="opc:String" />
  <opc:Field Name="NoOfLocaleIds" TypeName="opc:Int32" />
  <opc:Field Name="LocaleIds" TypeName="opc:String" LengthField="NoOfLocaleIds" />
  <opc:Field Name="NoOfServerUris" TypeName="opc:Int32" />
  <opc:Field Name="ServerUris" TypeName="opc:String" LengthField="NoOfServerUris" />
</opc:StructuredType>

<opc:StructuredType Name="FindServersResponse" BaseType="ua:ExtensionObject">
  <opc:Documentation>Finds the servers known to the discovery server.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfServers" TypeName="opc:Int32" />
  <opc:Field Name="Servers" TypeName="tns:ApplicationDescription" LengthField="NoOfServers"
/>
</opc:StructuredType>

<opc:StructuredType Name="ServerOnNetwork" BaseType="ua:ExtensionObject">
  <opc:Field Name="RecordId" TypeName="opc:UInt32" />
  <opc:Field Name="ServerName" TypeName="opc:String" />
  <opc:Field Name="DiscoveryUrl" TypeName="opc:String" />
  <opc:Field Name="NoOfServerCapabilities" TypeName="opc:Int32" />
  <opc:Field Name="ServerCapabilities" TypeName="opc:String" LengthField="NoOfServerCapabilities" />
```

```
 </opc:StructuredType>

 <opc:StructuredType Name="FindServersOnNetworkRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="StartingRecordId" TypeName="opc:UInt32" />
  <opc:Field Name="MaxRecordsToReturn" TypeName="opc:UInt32" />
  <opc:Field Name="NoOfServerCapabilityFilter" TypeName="opc:Int32" />
  <opc:Field Name="ServerCapabilityFilter" TypeName="opc:String" LengthField="NoOfServerCapabilityFilter"
/>
 </opc:StructuredType>

 <opc:StructuredType Name="FindServersOnNetworkResponse"
 BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="LastCounterResetTime" TypeName="opc:DateTime" />
  <opc:Field Name="NoOfServers" TypeName="opc:Int32" />
  <opc:Field Name="Servers" TypeName="tns:ServerOnNetwork" LengthField="NoOfServers" />
 </opc:StructuredType>

 <opc:OpaqueType Name="ApplicationInstanceCertificate">
  <opc:Documentation>A certificate for an instance of an application.</opc:Documentation>
 </opc:OpaqueType>

 <opc:EnumeratedType Name="MessageSecurityMode" LengthInBits="32">
  <opc:Documentation>The type of security to use on a message.</opc:Documentation>
  <opc:EnumeratedValue Name="Invalid" Value="0" />
  <opc:EnumeratedValue Name="None" Value="1" />
  <opc:EnumeratedValue Name="Sign" Value="2" />
  <opc:EnumeratedValue Name="SignAndEncrypt" Value="3" />
 </opc:EnumeratedType>

 <opc:EnumeratedType Name="UserTokenType" LengthInBits="32">

 <opc:Documentation>The possible user token types.</opc:Documentation>
  <opc:EnumeratedValue Name="Anonymous" Value="0" />
  <opc:EnumeratedValue Name="UserName" Value="1" />
  <opc:EnumeratedValue Name="Certificate" Value="2" />
  <opc:EnumeratedValue Name="IssuedToken" Value="3" />
 </opc:EnumeratedType>

 <opc:StructuredType Name="UserTokenPolicy" BaseType="ua:ExtensionObject">
  <opc:Documentation>Describes a user token that can be used with a server.</opc:Documentation>
  <opc:Field Name="PolicyId" TypeName="opc:String" />
  <opc:Field Name="TokenType" TypeName="tns:UserTokenType" />
  <opc:Field Name="IssuedTokenType" TypeName="opc:String" />
  <opc:Field Name="IssuerEndpointUrl" TypeName="opc:String" />
  <opc:Field Name="SecurityPolicyUri" TypeName="opc:String" />
 </opc:StructuredType>
```

```
 <opc:StructuredType Name="EndpointDescription" BaseType="ua:ExtensionObject">
  <opc:Documentation>The description of a endpoint that can be used to access a server.</opc:Documentation>
   <opc:Field Name="EndpointUrl" TypeName="opc:String" />
  <opc:Field Name="Server" TypeName="tns:ApplicationDescription" />
  <opc:Field Name="ServerCertificate" TypeName="opc:ByteString" />
  <opc:Field Name="SecurityMode" TypeName="tns:MessageSecurityMode" />
  <opc:Field Name="SecurityPolicyUri" TypeName="opc:String" />
  <opc:Field Name="NoOfUserIdentityTokens" TypeName="opc:Int32" />
  <opc:Field Name="UserIdentityTokens" TypeName="tns:UserTokenPolicy"
LengthField="NoOfUserIdentityTokens" />
  <opc:Field Name="TransportProfileUri" TypeName="opc:String" />
  <opc:Field Name="SecurityLevel" TypeName="opc:Byte" />
 </opc:StructuredType>

 <opc:StructuredType Name="GetEndpointsRequest" BaseType="ua:ExtensionObject">
  <opc:Documentation>Gets the endpoints used by the server.</opc:Documentation>
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="EndpointUrl" TypeName="opc:String" />
  <opc:Field Name="NoOfLocaleIds"
 TypeName="opc:Int32" />
  <opc:Field Name="LocaleIds" TypeName="opc:String" LengthField="NoOfLocaleIds" />
  <opc:Field Name="NoOfProfileUris" TypeName="opc:Int32" />
  <opc:Field Name="ProfileUris" TypeName="opc:String" LengthField="NoOfProfileUris" />
 </opc:StructuredType>

 <opc:StructuredType Name="GetEndpointsResponse" BaseType="ua:ExtensionObject">
  <opc:Documentation>Gets the endpoints used by the server.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfEndpoints" TypeName="opc:Int32" />
  <opc:Field Name="Endpoints" TypeName="tns:EndpointDescription" LengthField="NoOfEndpoints" />
 </opc:StructuredType>

 <opc:StructuredType Name="RegisteredServer" BaseType="ua:ExtensionObject">
  <opc:Documentation>The information required to register a server with a discovery server.</opc:Documentation>
  <opc:Field Name="ServerUri" TypeName="opc:String" />
  <opc:Field Name="ProductUri" TypeName="opc:String"
 />
  <opc:Field Name="NoOfServerNames" TypeName="opc:Int32" />
  <opc:Field Name="ServerNames" TypeName="ua:LocalizedText" LengthField="NoOfServerNames" />
  <opc:Field Name="ServerType" TypeName="tns:ApplicationType" />
  <opc:Field Name="GatewayServerUri" TypeName="opc:String" />
  <opc:Field Name="NoOfDiscoveryUrls" TypeName="opc:Int32" />
  <opc:Field Name="DiscoveryUrls" TypeName="opc:String" LengthField="NoOfDiscoveryUrls" />
  <opc:Field Name="SemaphoreFilePath" TypeName="opc:String" />
  <opc:Field Name="IsOnline" TypeName="opc:Boolean" />
 </opc:StructuredType>
```

```
<opc:StructuredType Name="RegisterServerRequest" BaseType="ua:ExtensionObject">
  <opc:Documentation>Registers a server with the discovery server.</opc:Documentation>
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="Server" TypeName="tns:RegisteredServer" />
</opc:StructuredType>

<opc:StructuredType Name="RegisterServerResponse" BaseType="ua:ExtensionObject">
   <opc:Documentation>Registers a server with the discovery server.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
</opc:StructuredType>

<opc:StructuredType Name="DiscoveryConfiguration" BaseType="ua:ExtensionObject">
  <opc:Documentation>A base type for discovery configuration information.</opc:Documentation>
</opc:StructuredType>

<opc:StructuredType Name="MdnsDiscoveryConfiguration" BaseType="tns:DiscoveryConfiguration">
  <opc:Documentation>The discovery information needed for mDNS registration.</opc:Documentation>
  <opc:Field Name="MdnsServerName" TypeName="opc:String" />
  <opc:Field Name="NoOfServerCapabilities" TypeName="opc:Int32" />
  <opc:Field Name="ServerCapabilities" TypeName="opc:String" LengthField="NoOfServerCapabilities" />
</opc:StructuredType>

<opc:StructuredType Name="RegisterServer2Request" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader"
/>
  <opc:Field Name="Server" TypeName="tns:RegisteredServer" />
  <opc:Field Name="NoOfDiscoveryConfiguration" TypeName="opc:Int32" />
  <opc:Field Name="DiscoveryConfiguration" TypeName="ua:ExtensionObject"
LengthField="NoOfDiscoveryConfiguration" />
</opc:StructuredType>

<opc:StructuredType Name="RegisterServer2Response" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfConfigurationResults" TypeName="opc:Int32" />
  <opc:Field Name="ConfigurationResults" TypeName="ua:StatusCode"
LengthField="NoOfConfigurationResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
</opc:StructuredType>

<opc:EnumeratedType Name="SecurityTokenRequestType" LengthInBits="32">
  <opc:Documentation>Indicates whether a token if being created or renewed.</opc:Documentation>

 <opc:EnumeratedValue Name="Issue" Value="0" />
  <opc:EnumeratedValue Name="Renew" Value="1" />
</opc:EnumeratedType>

<opc:StructuredType Name="ChannelSecurityToken" BaseType="ua:ExtensionObject">
```

```
  <opc:Documentation>The token that identifies a set of keys for an active secure channel.</opc:Documentation>
  <opc:Field Name="ChannelId" TypeName="opc:UInt32" />
  <opc:Field Name="TokenId" TypeName="opc:UInt32" />
  <opc:Field Name="CreatedAt" TypeName="opc:DateTime" />
  <opc:Field Name="RevisedLifetime" TypeName="opc:UInt32" />
</opc:StructuredType>

<opc:StructuredType Name="OpenSecureChannelRequest" BaseType="ua:ExtensionObject">
  <opc:Documentation>Creates a secure channel with a server.</opc:Documentation>
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="ClientProtocolVersion" TypeName="opc:UInt32" />
  <opc:Field Name="RequestType" TypeName="tns:SecurityTokenRequestType" />
  <opc:Field Name="SecurityMode" TypeName="tns:MessageSecurityMode"
/>
  <opc:Field Name="ClientNonce" TypeName="opc:ByteString" />
  <opc:Field Name="RequestedLifetime" TypeName="opc:UInt32" />
</opc:StructuredType>

<opc:StructuredType Name="OpenSecureChannelResponse" BaseType="ua:ExtensionObject">
  <opc:Documentation>Creates a secure channel with a server.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="ServerProtocolVersion" TypeName="opc:UInt32" />
  <opc:Field Name="SecurityToken" TypeName="tns:ChannelSecurityToken" />
  <opc:Field Name="ServerNonce" TypeName="opc:ByteString" />
</opc:StructuredType>

<opc:StructuredType Name="CloseSecureChannelRequest" BaseType="ua:ExtensionObject">
  <opc:Documentation>Closes a secure channel.</opc:Documentation>
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
</opc:StructuredType>

<opc:StructuredType Name="CloseSecureChannelResponse" BaseType="ua:ExtensionObject">
  <opc:Documentation>Closes
a secure channel.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
</opc:StructuredType>

<opc:StructuredType Name="SignedSoftwareCertificate" BaseType="ua:ExtensionObject">
  <opc:Documentation>A software certificate with a digital signature.</opc:Documentation>
  <opc:Field Name="CertificateData" TypeName="opc:ByteString" />
  <opc:Field Name="Signature" TypeName="opc:ByteString" />
</opc:StructuredType>

<opc:OpaqueType Name="SessionAuthenticationToken">
  <opc:Documentation>A unique identifier for a session used to authenticate requests.</opc:Documentation>
</opc:OpaqueType>

<opc:StructuredType Name="SignatureData" BaseType="ua:ExtensionObject">
```

```
  <opc:Documentation>A digital signature.</opc:Documentation>
  <opc:Field Name="Algorithm" TypeName="opc:String" />
  <opc:Field Name="Signature" TypeName="opc:ByteString" />
 </opc:StructuredType>

 <opc:StructuredType Name="CreateSessionRequest" BaseType="ua:ExtensionObject">
   <opc:Documentation>Creates a new session with the server.</opc:Documentation>
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="ClientDescription" TypeName="tns:ApplicationDescription" />
  <opc:Field Name="ServerUri" TypeName="opc:String" />
  <opc:Field Name="EndpointUrl" TypeName="opc:String" />
  <opc:Field Name="SessionName" TypeName="opc:String" />
  <opc:Field Name="ClientNonce" TypeName="opc:ByteString" />
  <opc:Field Name="ClientCertificate" TypeName="opc:ByteString" />
  <opc:Field Name="RequestedSessionTimeout" TypeName="opc:Double" />
  <opc:Field Name="MaxResponseMessageSize" TypeName="opc:UInt32" />
 </opc:StructuredType>

 <opc:StructuredType Name="CreateSessionResponse" BaseType="ua:ExtensionObject">
  <opc:Documentation>Creates a new session with the server.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="SessionId" TypeName="ua:NodeId"
 />
  <opc:Field Name="AuthenticationToken" TypeName="ua:NodeId" />
  <opc:Field Name="RevisedSessionTimeout" TypeName="opc:Double" />
  <opc:Field Name="ServerNonce" TypeName="opc:ByteString" />
  <opc:Field Name="ServerCertificate" TypeName="opc:ByteString" />
  <opc:Field Name="NoOfServerEndpoints" TypeName="opc:Int32" />
  <opc:Field Name="ServerEndpoints" TypeName="tns:EndpointDescription"
LengthField="NoOfServerEndpoints" />
  <opc:Field Name="NoOfServerSoftwareCertificates" TypeName="opc:Int32" />
  <opc:Field Name="ServerSoftwareCertificates" TypeName="tns:SignedSoftwareCertificate"
LengthField="NoOfServerSoftwareCertificates" />
  <opc:Field Name="ServerSignature" TypeName="tns:SignatureData" />
  <opc:Field Name="MaxRequestMessageSize" TypeName="opc:UInt32" />
 </opc:StructuredType>

 <opc:StructuredType Name="UserIdentityToken" BaseType="ua:ExtensionObject">
  <opc:Documentation>A base type for a user identity token.</opc:Documentation>
   <opc:Field Name="PolicyId" TypeName="opc:String" />
 </opc:StructuredType>

 <opc:StructuredType Name="AnonymousIdentityToken" BaseType="tns:UserIdentityToken">
  <opc:Documentation>A token representing an anonymous user.</opc:Documentation>
  <opc:Field Name="PolicyId" TypeName="opc:String" SourceType="tns:UserIdentityToken" />
 </opc:StructuredType>

 <opc:StructuredType Name="UserNameIdentityToken" BaseType="tns:UserIdentityToken">
```

```
  <opc:Documentation>A token representing a user identified by a user name and password.</opc:Documentation>
  <opc:Field Name="PolicyId" TypeName="opc:String" SourceType="tns:UserIdentityToken" />
  <opc:Field Name="UserName" TypeName="opc:String" />
  <opc:Field Name="Password" TypeName="opc:ByteString" />
  <opc:Field Name="EncryptionAlgorithm" TypeName="opc:String" />
 </opc:StructuredType>

 <opc:StructuredType Name="X509IdentityToken" BaseType="tns:UserIdentityToken">
  <opc:Documentation>A token representing a user identified
 by an X509 certificate.</opc:Documentation>
  <opc:Field Name="PolicyId" TypeName="opc:String" SourceType="tns:UserIdentityToken" />
  <opc:Field Name="CertificateData" TypeName="opc:ByteString" />
 </opc:StructuredType>

 <opc:StructuredType Name="IssuedIdentityToken" BaseType="tns:UserIdentityToken">
  <opc:Documentation>A token representing a user identified by a WS-Security XML token.</opc:Documentation>
  <opc:Field Name="PolicyId" TypeName="opc:String" SourceType="tns:UserIdentityToken" />
  <opc:Field Name="TokenData" TypeName="opc:ByteString" />
  <opc:Field Name="EncryptionAlgorithm" TypeName="opc:String" />
 </opc:StructuredType>

 <opc:OpaqueType Name="RsaEncryptedSecret">
 </opc:OpaqueType>

 <opc:StructuredType Name="ActivateSessionRequest" BaseType="ua:ExtensionObject">
  <opc:Documentation>Activates a session with the server.</opc:Documentation>
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="ClientSignature"
 TypeName="tns:SignatureData" />
  <opc:Field Name="NoOfClientSoftwareCertificates" TypeName="opc:Int32" />
  <opc:Field Name="ClientSoftwareCertificates" TypeName="tns:SignedSoftwareCertificate"
LengthField="NoOfClientSoftwareCertificates" />
  <opc:Field Name="NoOfLocaleIds" TypeName="opc:Int32" />
  <opc:Field Name="LocaleIds" TypeName="opc:String" LengthField="NoOfLocaleIds" />
  <opc:Field Name="UserIdentityToken" TypeName="ua:ExtensionObject" />
  <opc:Field Name="UserTokenSignature" TypeName="tns:SignatureData" />
 </opc:StructuredType>

 <opc:StructuredType Name="ActivateSessionResponse" BaseType="ua:ExtensionObject">
  <opc:Documentation>Activates a session with the server.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="ServerNonce" TypeName="opc:ByteString" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="ua:StatusCode" LengthField="NoOfResults"
 />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
 </opc:StructuredType>
```

```
<opc:StructuredType Name="CloseSessionRequest" BaseType="ua:ExtensionObject">
  <opc:Documentation>Closes a session with the server.</opc:Documentation>
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="DeleteSubscriptions" TypeName="opc:Boolean" />
</opc:StructuredType>

<opc:StructuredType Name="CloseSessionResponse" BaseType="ua:ExtensionObject">
  <opc:Documentation>Closes a session with the server.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
</opc:StructuredType>

<opc:StructuredType Name="CancelRequest" BaseType="ua:ExtensionObject">
  <opc:Documentation>Cancels an outstanding request.</opc:Documentation>
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field
Name="RequestHandle" TypeName="opc:UInt32" />
</opc:StructuredType>

<opc:StructuredType Name="CancelResponse" BaseType="ua:ExtensionObject">
  <opc:Documentation>Cancels an outstanding request.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="CancelCount" TypeName="opc:UInt32" />
</opc:StructuredType>

<opc:EnumeratedType Name="NodeAttributesMask" LengthInBits="32">
  <opc:Documentation>The bits used to specify default attributes for a new node.</opc:Documentation>
  <opc:EnumeratedValue Name="None" Value="0" />
  <opc:EnumeratedValue Name="AccessLevel" Value="1" />
  <opc:EnumeratedValue Name="ArrayDimensions" Value="2" />
  <opc:EnumeratedValue Name="BrowseName" Value="4" />
  <opc:EnumeratedValue Name="ContainsNoLoops" Value="8" />
  <opc:EnumeratedValue Name="DataType" Value="16" />
  <opc:EnumeratedValue Name="Description" Value="32" />
  <opc:EnumeratedValue Name="DisplayName" Value="64"
/>
  <opc:EnumeratedValue Name="EventNotifier" Value="128" />
  <opc:EnumeratedValue Name="Executable" Value="256" />
  <opc:EnumeratedValue Name="Historizing" Value="512" />
  <opc:EnumeratedValue Name="InverseName" Value="1024" />
  <opc:EnumeratedValue Name="IsAbstract" Value="2048" />
  <opc:EnumeratedValue Name="MinimumSamplingInterval" Value="4096" />
  <opc:EnumeratedValue Name="NodeClass" Value="8192" />
  <opc:EnumeratedValue Name="NodeId" Value="16384" />
  <opc:EnumeratedValue Name="Symmetric" Value="32768" />
  <opc:EnumeratedValue Name="UserAccessLevel" Value="65536" />
  <opc:EnumeratedValue Name="UserExecutable" Value="131072" />
  <opc:EnumeratedValue Name="UserWriteMask" Value="262144" />
```

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  <opc:EnumeratedValue Name="ValueRank" Value="524288" />
  <opc:EnumeratedValue Name="WriteMask" Value="1048576" />
  <opc:EnumeratedValue Name="Value" Value="2097152" />
  <opc:EnumeratedValue Name="DataTypeDefinition" Value="4194304" />
  <opc:EnumeratedValue
Name="RolePermissions" Value="8388608" />
  <opc:EnumeratedValue Name="AccessRestrictions" Value="16777216" />
  <opc:EnumeratedValue Name="All" Value="33554431" />
  <opc:EnumeratedValue Name="BaseNode" Value="26501220" />
  <opc:EnumeratedValue Name="Object" Value="26501348" />
  <opc:EnumeratedValue Name="ObjectType" Value="26503268" />
  <opc:EnumeratedValue Name="Variable" Value="26571383" />
  <opc:EnumeratedValue Name="VariableType" Value="28600438" />
  <opc:EnumeratedValue Name="Method" Value="26632548" />
  <opc:EnumeratedValue Name="ReferenceType" Value="26537060" />
  <opc:EnumeratedValue Name="View" Value="26501356" />
</opc:EnumeratedType>

<opc:StructuredType Name="NodeAttributes" BaseType="ua:ExtensionObject">
  <opc:Documentation>The base attributes for all nodes.</opc:Documentation>
  <opc:Field Name="SpecifiedAttributes" TypeName="opc:UInt32" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" />
  <opc:Field
Name="Description" TypeName="ua:LocalizedText" />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" />
</opc:StructuredType>

<opc:StructuredType Name="ObjectAttributes" BaseType="tns:NodeAttributes">
  <opc:Documentation>The attributes for an object node.</opc:Documentation>
  <opc:Field Name="SpecifiedAttributes" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:NodeAttributes" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:NodeAttributes" />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="EventNotifier" TypeName="opc:Byte" />
</opc:StructuredType>

<opc:StructuredType Name="VariableAttributes" BaseType="tns:NodeAttributes">
  <opc:Documentation>The
attributes for a variable node.</opc:Documentation>
  <opc:Field Name="SpecifiedAttributes" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:NodeAttributes" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:NodeAttributes" />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="Value" TypeName="ua:Variant" />
  <opc:Field Name="DataType" TypeName="ua:NodeId" />
```

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  <opc:Field Name="ValueRank" TypeName="opc:Int32" />
  <opc:Field Name="NoOfArrayDimensions" TypeName="opc:Int32" />
  <opc:Field Name="ArrayDimensions" TypeName="opc:UInt32" LengthField="NoOfArrayDimensions" />
  <opc:Field Name="AccessLevel" TypeName="opc:Byte" />
  <opc:Field Name="UserAccessLevel" TypeName="opc:Byte" />
  <opc:Field
Name="MinimumSamplingInterval" TypeName="opc:Double" />
  <opc:Field Name="Historizing" TypeName="opc:Boolean" />
</opc:StructuredType>

<opc:StructuredType Name="MethodAttributes" BaseType="tns:NodeAttributes">
  <opc:Documentation>The attributes for a method node.</opc:Documentation>
  <opc:Field Name="SpecifiedAttributes" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:NodeAttributes" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:NodeAttributes" />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="Executable" TypeName="opc:Boolean" />
  <opc:Field Name="UserExecutable" TypeName="opc:Boolean" />
</opc:StructuredType>

<opc:StructuredType Name="ObjectTypeAttributes" BaseType="tns:NodeAttributes">
   <opc:Documentation>The attributes for an object type node.</opc:Documentation>
  <opc:Field Name="SpecifiedAttributes" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:NodeAttributes" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:NodeAttributes" />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="IsAbstract" TypeName="opc:Boolean" />
</opc:StructuredType>

<opc:StructuredType Name="VariableTypeAttributes" BaseType="tns:NodeAttributes">
  <opc:Documentation>The attributes for a variable type node.</opc:Documentation>
  <opc:Field Name="SpecifiedAttributes" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:NodeAttributes"
/>
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:NodeAttributes" />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="Value" TypeName="ua:Variant" />
  <opc:Field Name="DataType" TypeName="ua:NodeId" />
  <opc:Field Name="ValueRank" TypeName="opc:Int32" />
  <opc:Field Name="NoOfArrayDimensions" TypeName="opc:Int32" />
  <opc:Field Name="ArrayDimensions" TypeName="opc:UInt32" LengthField="NoOfArrayDimensions" />
  <opc:Field Name="IsAbstract" TypeName="opc:Boolean" />
</opc:StructuredType>

<opc:StructuredType Name="ReferenceTypeAttributes" BaseType="tns:NodeAttributes">
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  <opc:Documentation>The attributes for a reference type node.</opc:Documentation>
  <opc:Field Name="SpecifiedAttributes" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText"
SourceType="tns:NodeAttributes" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:NodeAttributes" />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="IsAbstract" TypeName="opc:Boolean" />
  <opc:Field Name="Symmetric" TypeName="opc:Boolean" />
  <opc:Field Name="InverseName" TypeName="ua:LocalizedText" />
</opc:StructuredType>

<opc:StructuredType Name="DataTypeAttributes" BaseType="tns:NodeAttributes">
  <opc:Documentation>The attributes for a data type node.</opc:Documentation>
  <opc:Field Name="SpecifiedAttributes" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:NodeAttributes" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:NodeAttributes" />

  <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="IsAbstract" TypeName="opc:Boolean" />
</opc:StructuredType>

<opc:StructuredType Name="ViewAttributes" BaseType="tns:NodeAttributes">
  <opc:Documentation>The attributes for a view node.</opc:Documentation>
  <opc:Field Name="SpecifiedAttributes" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:NodeAttributes" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:NodeAttributes" />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="ContainsNoLoops" TypeName="opc:Boolean" />
  <opc:Field Name="EventNotifier" TypeName="opc:Byte"
/>
</opc:StructuredType>

<opc:StructuredType Name="GenericAttributeValue" BaseType="ua:ExtensionObject">
  <opc:Field Name="AttributeId" TypeName="opc:UInt32" />
  <opc:Field Name="Value" TypeName="ua:Variant" />
</opc:StructuredType>

<opc:StructuredType Name="GenericAttributes" BaseType="tns:NodeAttributes">
  <opc:Field Name="SpecifiedAttributes" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:NodeAttributes" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:NodeAttributes" />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="NoOfAttributeValues" TypeName="opc:Int32" />
  <opc:Field Name="AttributeValues" TypeName="tns:GenericAttributeValue"
```

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LengthField="NoOfAttributeValues" />
 </opc:StructuredType>

  <opc:StructuredType Name="AddNodesItem" BaseType="ua:ExtensionObject">
   <opc:Documentation>A request to add a node to the server address space.</opc:Documentation>
   <opc:Field Name="ParentNodeId" TypeName="ua:ExpandedNodeId" />
   <opc:Field Name="ReferenceTypeId" TypeName="ua:NodeId" />
   <opc:Field Name="RequestedNewNodeId" TypeName="ua:ExpandedNodeId" />
   <opc:Field Name="BrowseName" TypeName="ua:QualifiedName" />
   <opc:Field Name="NodeClass" TypeName="tns:NodeClass" />
   <opc:Field Name="NodeAttributes" TypeName="ua:ExtensionObject" />
   <opc:Field Name="TypeDefinition" TypeName="ua:ExpandedNodeId" />
  </opc:StructuredType>

  <opc:StructuredType Name="AddNodesResult" BaseType="ua:ExtensionObject">
   <opc:Documentation>A result of an add node operation.</opc:Documentation>
   <opc:Field Name="StatusCode" TypeName="ua:StatusCode" />
   <opc:Field Name="AddedNodeId" TypeName="ua:NodeId" />
  </opc:StructuredType>

  <opc:StructuredType Name="AddNodesRequest"
  BaseType="ua:ExtensionObject">
   <opc:Documentation>Adds one or more nodes to the server address space.</opc:Documentation>
   <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
   <opc:Field Name="NoOfNodesToAdd" TypeName="opc:Int32" />
   <opc:Field Name="NodesToAdd" TypeName="tns:AddNodesItem" LengthField="NoOfNodesToAdd" />
  </opc:StructuredType>

  <opc:StructuredType Name="AddNodesResponse" BaseType="ua:ExtensionObject">
   <opc:Documentation>Adds one or more nodes to the server address space.</opc:Documentation>
   <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
   <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
   <opc:Field Name="Results" TypeName="tns:AddNodesResult" LengthField="NoOfResults" />
   <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
   <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
  </opc:StructuredType>

  <opc:StructuredType Name="AddReferencesItem"
  BaseType="ua:ExtensionObject">
   <opc:Documentation>A request to add a reference to the server address space.</opc:Documentation>
   <opc:Field Name="SourceNodeId" TypeName="ua:NodeId" />
   <opc:Field Name="ReferenceTypeId" TypeName="ua:NodeId" />
   <opc:Field Name="IsForward" TypeName="opc:Boolean" />
   <opc:Field Name="TargetServerUri" TypeName="opc:String" />
   <opc:Field Name="TargetNodeId" TypeName="ua:ExpandedNodeId" />
   <opc:Field Name="TargetNodeClass" TypeName="tns:NodeClass" />
  </opc:StructuredType>
```

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<opc:StructuredType Name="AddReferencesRequest" BaseType="ua:ExtensionObject">
  <opc:Documentation>Adds one or more references to the server address space.</opc:Documentation>
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="NoOfReferencesToAdd" TypeName="opc:Int32" />
  <opc:Field Name="ReferencesToAdd" TypeName="tns:AddReferencesItem"
LengthField="NoOfReferencesToAdd" />
</opc:StructuredType>

<opc:StructuredType
Name="AddReferencesResponse" BaseType="ua:ExtensionObject">
  <opc:Documentation>Adds one or more references to the server address space.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="ua:StatusCode" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
</opc:StructuredType>

<opc:StructuredType Name="DeleteNodesItem" BaseType="ua:ExtensionObject">
  <opc:Documentation>A request to delete a node to the server address space.</opc:Documentation>
  <opc:Field Name="NodeId" TypeName="ua:NodeId" />
  <opc:Field Name="DeleteTargetReferences" TypeName="opc:Boolean" />
</opc:StructuredType>

<opc:StructuredType Name="DeleteNodesRequest" BaseType="ua:ExtensionObject">
  <opc:Documentation>Delete
one or more nodes from the server address space.</opc:Documentation>
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="NoOfNodesToDelete" TypeName="opc:Int32" />
  <opc:Field Name="NodesToDelete" TypeName="tns:DeleteNodesItem" LengthField="NoOfNodesToDelete" />
</opc:StructuredType>

<opc:StructuredType Name="DeleteNodesResponse" BaseType="ua:ExtensionObject">
  <opc:Documentation>Delete one or more nodes from the server address space.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="ua:StatusCode" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
</opc:StructuredType>

<opc:StructuredType Name="DeleteReferencesItem" BaseType="ua:ExtensionObject">
   <opc:Documentation>A request to delete a node from the server address space.</opc:Documentation>
  <opc:Field Name="SourceNodeId" TypeName="ua:NodeId" />
  <opc:Field Name="ReferenceTypeId" TypeName="ua:NodeId" />
  <opc:Field Name="IsForward" TypeName="opc:Boolean" />
  <opc:Field Name="TargetNodeId" TypeName="ua:ExpandedNodeId" />
  <opc:Field Name="DeleteBidirectional" TypeName="opc:Boolean" />
```

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 </opc:StructuredType>

 <opc:StructuredType Name="DeleteReferencesRequest" BaseType="ua:ExtensionObject">
  <opc:Documentation>Delete one or more references from the server address space.</opc:Documentation>
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="NoOfReferencesToDelete" TypeName="opc:Int32" />
  <opc:Field Name="ReferencesToDelete" TypeName="tns:DeleteReferencesItem"
LengthField="NoOfReferencesToDelete" />
 </opc:StructuredType>

 <opc:StructuredType Name="DeleteReferencesResponse" BaseType="ua:ExtensionObject">
   <opc:Documentation>Delete one or more references from the server address space.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="ua:StatusCode" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
 </opc:StructuredType>

 <opc:EnumeratedType Name="AttributeWriteMask" LengthInBits="32" IsOptionSet="true">
  <opc:Documentation>Define bits used to indicate which attributes are writable.</opc:Documentation>
  <opc:EnumeratedValue Name="None" Value="0" />
  <opc:EnumeratedValue Name="AccessLevel" Value="1" />
  <opc:EnumeratedValue Name="ArrayDimensions" Value="2" />
  <opc:EnumeratedValue Name="BrowseName" Value="4" />
  <opc:EnumeratedValue Name="ContainsNoLoops" Value="8" />
  <opc:EnumeratedValue
 Name="DataType" Value="16" />
  <opc:EnumeratedValue Name="Description" Value="32" />
  <opc:EnumeratedValue Name="DisplayName" Value="64" />
  <opc:EnumeratedValue Name="EventNotifier" Value="128" />
  <opc:EnumeratedValue Name="Executable" Value="256" />
  <opc:EnumeratedValue Name="Historizing" Value="512" />
  <opc:EnumeratedValue Name="InverseName" Value="1024" />
  <opc:EnumeratedValue Name="IsAbstract" Value="2048" />
  <opc:EnumeratedValue Name="MinimumSamplingInterval" Value="4096" />
  <opc:EnumeratedValue Name="NodeClass" Value="8192" />
  <opc:EnumeratedValue Name="NodeId" Value="16384" />
  <opc:EnumeratedValue Name="Symmetric" Value="32768" />
  <opc:EnumeratedValue Name="UserAccessLevel" Value="65536" />
  <opc:EnumeratedValue Name="UserExecutable" Value="131072" />
  <opc:EnumeratedValue Name="UserWriteMask" Value="262144" />
  <opc:EnumeratedValue Name="ValueRank" Value="524288" />
  <opc:EnumeratedValue Name="WriteMask"
 Value="1048576" />
  <opc:EnumeratedValue Name="ValueForVariableType" Value="2097152" />
  <opc:EnumeratedValue Name="DataTypeDefinition" Value="4194304" />
  <opc:EnumeratedValue Name="RolePermissions" Value="8388608" />
```

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  <opc:EnumeratedValue Name="AccessRestrictions" Value="16777216" />
  <opc:EnumeratedValue Name="AccessLevelEx" Value="33554432" />
 </opc:EnumeratedType>

 <opc:EnumeratedType Name="BrowseDirection" LengthInBits="32">
  <opc:Documentation>The directions of the references to return.</opc:Documentation>
  <opc:EnumeratedValue Name="Forward" Value="0" />
  <opc:EnumeratedValue Name="Inverse" Value="1" />
  <opc:EnumeratedValue Name="Both" Value="2" />
  <opc:EnumeratedValue Name="Invalid" Value="3" />
 </opc:EnumeratedType>

 <opc:StructuredType Name="ViewDescription" BaseType="ua:ExtensionObject">
  <opc:Documentation>The view to browse.</opc:Documentation>
  <opc:Field Name="ViewId" TypeName="ua:NodeId" />
  <opc:Field Name="Timestamp" TypeName="opc:DateTime"
 />
  <opc:Field Name="ViewVersion" TypeName="opc:UInt32" />
 </opc:StructuredType>

 <opc:StructuredType Name="BrowseDescription" BaseType="ua:ExtensionObject">
  <opc:Documentation>A request to browse the the references from a node.</opc:Documentation>
  <opc:Field Name="NodeId" TypeName="ua:NodeId" />
  <opc:Field Name="BrowseDirection" TypeName="tns:BrowseDirection" />
  <opc:Field Name="ReferenceTypeId" TypeName="ua:NodeId" />
  <opc:Field Name="IncludeSubtypes" TypeName="opc:Boolean" />
  <opc:Field Name="NodeClassMask" TypeName="opc:UInt32" />
  <opc:Field Name="ResultMask" TypeName="opc:UInt32" />
 </opc:StructuredType>

 <opc:EnumeratedType Name="BrowseResultMask" LengthInBits="32">
  <opc:Documentation>A bit mask which specifies what should be returned in a browse
response.</opc:Documentation>
  <opc:EnumeratedValue Name="None" Value="0" />
  <opc:EnumeratedValue Name="ReferenceTypeId" Value="1" />
  <opc:EnumeratedValue Name="IsForward"
 Value="2" />
  <opc:EnumeratedValue Name="NodeClass" Value="4" />
  <opc:EnumeratedValue Name="BrowseName" Value="8" />
  <opc:EnumeratedValue Name="DisplayName" Value="16" />
  <opc:EnumeratedValue Name="TypeDefinition" Value="32" />
  <opc:EnumeratedValue Name="All" Value="63" />
  <opc:EnumeratedValue Name="ReferenceTypeInfo" Value="3" />
  <opc:EnumeratedValue Name="TargetInfo" Value="60" />
 </opc:EnumeratedType>

 <opc:StructuredType Name="ReferenceDescription" BaseType="ua:ExtensionObject">
  <opc:Documentation>The description of a reference.</opc:Documentation>
```

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  <opc:Field Name="ReferenceTypeId" TypeName="ua:NodeId" />
  <opc:Field Name="IsForward" TypeName="opc:Boolean" />
  <opc:Field Name="NodeId" TypeName="ua:ExpandedNodeId" />
  <opc:Field Name="BrowseName" TypeName="ua:QualifiedName" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" />
  <opc:Field Name="NodeClass" TypeName="tns:NodeClass" />
  <opc:Field Name="TypeDefinition"
 TypeName="ua:ExpandedNodeId" />
 </opc:StructuredType>

 <opc:OpaqueType Name="ContinuationPoint">
  <opc:Documentation>An identifier for a suspended query or browse operation.</opc:Documentation>
 </opc:OpaqueType>

 <opc:StructuredType Name="BrowseResult" BaseType="ua:ExtensionObject">
  <opc:Documentation>The result of a browse operation.</opc:Documentation>
  <opc:Field Name="StatusCode" TypeName="ua:StatusCode" />
  <opc:Field Name="ContinuationPoint" TypeName="opc:ByteString" />
  <opc:Field Name="NoOfReferences" TypeName="opc:Int32" />
  <opc:Field Name="References" TypeName="tns:ReferenceDescription" LengthField="NoOfReferences" />
 </opc:StructuredType>

 <opc:StructuredType Name="BrowseRequest" BaseType="ua:ExtensionObject">
  <opc:Documentation>Browse the references for one or more nodes from the server address
space.</opc:Documentation>
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="View" TypeName="tns:ViewDescription"
 />
  <opc:Field Name="RequestedMaxReferencesPerNode" TypeName="opc:UInt32" />
  <opc:Field Name="NoOfNodesToBrowse" TypeName="opc:Int32" />
  <opc:Field Name="NodesToBrowse" TypeName="tns:BrowseDescription" LengthField="NoOfNodesToBrowse"
/>
 </opc:StructuredType>

 <opc:StructuredType Name="BrowseResponse" BaseType="ua:ExtensionObject">
  <opc:Documentation>Browse the references for one or more nodes from the server address
space.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="tns:BrowseResult" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
 </opc:StructuredType>

 <opc:StructuredType Name="BrowseNextRequest" BaseType="ua:ExtensionObject">
  <opc:Documentation>Continues
 one or more browse operations.</opc:Documentation>
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
```

```
  <opc:Field Name="ReleaseContinuationPoints" TypeName="opc:Boolean" />
  <opc:Field Name="NoOfContinuationPoints" TypeName="opc:Int32" />
  <opc:Field Name="ContinuationPoints" TypeName="opc:ByteString" LengthField="NoOfContinuationPoints" />
</opc:StructuredType>

<opc:StructuredType Name="BrowseNextResponse" BaseType="ua:ExtensionObject">
  <opc:Documentation>Continues one or more browse operations.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="tns:BrowseResult" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
</opc:StructuredType>

<opc:StructuredType Name="RelativePathElement"
BaseType="ua:ExtensionObject">
  <opc:Documentation>An element in a relative path.</opc:Documentation>
  <opc:Field Name="ReferenceTypeId" TypeName="ua:NodeId" />
  <opc:Field Name="IsInverse" TypeName="opc:Boolean" />
  <opc:Field Name="IncludeSubtypes" TypeName="opc:Boolean" />
  <opc:Field Name="TargetName" TypeName="ua:QualifiedName" />
</opc:StructuredType>

<opc:StructuredType Name="RelativePath" BaseType="ua:ExtensionObject">
  <opc:Documentation>A relative path constructed from reference types and browse names.</opc:Documentation>
  <opc:Field Name="NoOfElements" TypeName="opc:Int32" />
  <opc:Field Name="Elements" TypeName="tns:RelativePathElement" LengthField="NoOfElements" />
</opc:StructuredType>

<opc:StructuredType Name="BrowsePath" BaseType="ua:ExtensionObject">
  <opc:Documentation>A request to translate a path into a node id.</opc:Documentation>
  <opc:Field Name="StartingNode" TypeName="ua:NodeId" />
  <opc:Field Name="RelativePath"
TypeName="tns:RelativePath" />
</opc:StructuredType>

<opc:StructuredType Name="BrowsePathTarget" BaseType="ua:ExtensionObject">
  <opc:Documentation>The target of the translated path.</opc:Documentation>
  <opc:Field Name="TargetId" TypeName="ua:ExpandedNodeId" />
  <opc:Field Name="RemainingPathIndex" TypeName="opc:UInt32" />
</opc:StructuredType>

<opc:StructuredType Name="BrowsePathResult" BaseType="ua:ExtensionObject">
  <opc:Documentation>The result of a translate opearation.</opc:Documentation>
  <opc:Field Name="StatusCode" TypeName="ua:StatusCode" />
  <opc:Field Name="NoOfTargets" TypeName="opc:Int32" />
  <opc:Field Name="Targets" TypeName="tns:BrowsePathTarget" LengthField="NoOfTargets" />
</opc:StructuredType>
```

```
<opc:StructuredType Name="TranslateBrowsePathsToNodeIdsRequest" BaseType="ua:ExtensionObject">
  <opc:Documentation>Translates one or more paths in the server address space.</opc:Documentation>
  <opc:Field Name="RequestHeader"
TypeName="tns:RequestHeader" />
  <opc:Field Name="NoOfBrowsePaths" TypeName="opc:Int32" />
  <opc:Field Name="BrowsePaths" TypeName="tns:BrowsePath" LengthField="NoOfBrowsePaths" />
</opc:StructuredType>

<opc:StructuredType Name="TranslateBrowsePathsToNodeIdsResponse" BaseType="ua:ExtensionObject">
  <opc:Documentation>Translates one or more paths in the server address space.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="tns:BrowsePathResult" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
</opc:StructuredType>

<opc:StructuredType Name="RegisterNodesRequest" BaseType="ua:ExtensionObject">
  <opc:Documentation>Registers one or more nodes for repeated use within a session.</opc:Documentation>
   <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="NoOfNodesToRegister" TypeName="opc:Int32" />
  <opc:Field Name="NodesToRegister" TypeName="ua:NodeId" LengthField="NoOfNodesToRegister" />
</opc:StructuredType>

<opc:StructuredType Name="RegisterNodesResponse" BaseType="ua:ExtensionObject">
  <opc:Documentation>Registers one or more nodes for repeated use within a session.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfRegisteredNodeIds" TypeName="opc:Int32" />
  <opc:Field Name="RegisteredNodeIds" TypeName="ua:NodeId" LengthField="NoOfRegisteredNodeIds" />
</opc:StructuredType>

<opc:StructuredType Name="UnregisterNodesRequest" BaseType="ua:ExtensionObject">
  <opc:Documentation>Unregisters one or more previously registered nodes.</opc:Documentation>
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="NoOfNodesToUnregister"
TypeName="opc:Int32" />
  <opc:Field Name="NodesToUnregister" TypeName="ua:NodeId" LengthField="NoOfNodesToUnregister" />
</opc:StructuredType>

<opc:StructuredType Name="UnregisterNodesResponse" BaseType="ua:ExtensionObject">
  <opc:Documentation>Unregisters one or more previously registered nodes.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
</opc:StructuredType>

<opc:OpaqueType Name="Counter">
  <opc:Documentation>A monotonically increasing value.</opc:Documentation>
</opc:OpaqueType>
```

```
<opc:OpaqueType Name="NumericRange">
  <opc:Documentation>Specifies a range of array indexes.</opc:Documentation>
</opc:OpaqueType>

<opc:OpaqueType Name="Time">
  <opc:Documentation>A time value specified as HH:MM:SS.SSS.</opc:Documentation>
</opc:OpaqueType>

<opc:OpaqueType Name="Date">
  <opc:Documentation>A date value.</opc:Documentation>
</opc:OpaqueType>

<opc:StructuredType Name="EndpointConfiguration"
BaseType="ua:ExtensionObject">
  <opc:Field Name="OperationTimeout" TypeName="opc:Int32" />
  <opc:Field Name="UseBinaryEncoding" TypeName="opc:Boolean" />
  <opc:Field Name="MaxStringLength" TypeName="opc:Int32" />
  <opc:Field Name="MaxByteStringLength" TypeName="opc:Int32" />
  <opc:Field Name="MaxArrayLength" TypeName="opc:Int32" />
  <opc:Field Name="MaxMessageSize" TypeName="opc:Int32" />
  <opc:Field Name="MaxBufferSize" TypeName="opc:Int32" />
  <opc:Field Name="ChannelLifetime" TypeName="opc:Int32" />
  <opc:Field Name="SecurityTokenLifetime" TypeName="opc:Int32" />
</opc:StructuredType>

<opc:StructuredType Name="QueryDataDescription" BaseType="ua:ExtensionObject">
  <opc:Field Name="RelativePath" TypeName="tns:RelativePath" />
  <opc:Field Name="AttributeId" TypeName="opc:UInt32" />
  <opc:Field Name="IndexRange" TypeName="opc:String" />
</opc:StructuredType>

<opc:StructuredType Name="NodeTypeDescription" BaseType="ua:ExtensionObject">
   <opc:Field Name="TypeDefinitionNode" TypeName="ua:ExpandedNodeId" />
  <opc:Field Name="IncludeSubTypes" TypeName="opc:Boolean" />
  <opc:Field Name="NoOfDataToReturn" TypeName="opc:Int32" />
  <opc:Field Name="DataToReturn" TypeName="tns:QueryDataDescription" LengthField="NoOfDataToReturn"
/>
</opc:StructuredType>

<opc:EnumeratedType Name="FilterOperator" LengthInBits="32">
  <opc:EnumeratedValue Name="Equals" Value="0" />
  <opc:EnumeratedValue Name="IsNull" Value="1" />
  <opc:EnumeratedValue Name="GreaterThan" Value="2" />
  <opc:EnumeratedValue Name="LessThan" Value="3" />
  <opc:EnumeratedValue Name="GreaterThanOrEqual" Value="4" />
  <opc:EnumeratedValue Name="LessThanOrEqual" Value="5" />
  <opc:EnumeratedValue Name="Like" Value="6" />
```

```
  <opc:EnumeratedValue Name="Not" Value="7" />
  <opc:EnumeratedValue Name="Between" Value="8" />
  <opc:EnumeratedValue Name="InList" Value="9" />
  <opc:EnumeratedValue Name="And" Value="10" />
  <opc:EnumeratedValue
Name="Or" Value="11" />
  <opc:EnumeratedValue Name="Cast" Value="12" />
  <opc:EnumeratedValue Name="InView" Value="13" />
  <opc:EnumeratedValue Name="OfType" Value="14" />
  <opc:EnumeratedValue Name="RelatedTo" Value="15" />
  <opc:EnumeratedValue Name="BitwiseAnd" Value="16" />
  <opc:EnumeratedValue Name="BitwiseOr" Value="17" />
</opc:EnumeratedType>

<opc:StructuredType Name="QueryDataSet" BaseType="ua:ExtensionObject">
  <opc:Field Name="NodeId" TypeName="ua:ExpandedNodeId" />
  <opc:Field Name="TypeDefinitionNode" TypeName="ua:ExpandedNodeId" />
  <opc:Field Name="NoOfValues" TypeName="opc:Int32" />
  <opc:Field Name="Values" TypeName="ua:Variant" LengthField="NoOfValues" />
</opc:StructuredType>

<opc:StructuredType Name="NodeReference" BaseType="ua:ExtensionObject">
  <opc:Field Name="NodeId" TypeName="ua:NodeId" />
  <opc:Field Name="ReferenceTypeId" TypeName="ua:NodeId" />
  <opc:Field Name="IsForward" TypeName="opc:Boolean"
/>
  <opc:Field Name="NoOfReferencedNodeIds" TypeName="opc:Int32" />
  <opc:Field Name="ReferencedNodeIds" TypeName="ua:NodeId" LengthField="NoOfReferencedNodeIds" />
</opc:StructuredType>

<opc:StructuredType Name="ContentFilterElement" BaseType="ua:ExtensionObject">
  <opc:Field Name="FilterOperator" TypeName="tns:FilterOperator" />
  <opc:Field Name="NoOfFilterOperands" TypeName="opc:Int32" />
  <opc:Field Name="FilterOperands" TypeName="ua:ExtensionObject" LengthField="NoOfFilterOperands" />
</opc:StructuredType>

<opc:StructuredType Name="ContentFilter" BaseType="ua:ExtensionObject">
  <opc:Field Name="NoOfElements" TypeName="opc:Int32" />
  <opc:Field Name="Elements" TypeName="tns:ContentFilterElement" LengthField="NoOfElements" />
</opc:StructuredType>

<opc:StructuredType Name="FilterOperand" BaseType="ua:ExtensionObject">
</opc:StructuredType>

<opc:StructuredType Name="ElementOperand" BaseType="tns:FilterOperand">
  <opc:Field Name="Index" TypeName="opc:UInt32"
/>
</opc:StructuredType>
```

```
 <opc:StructuredType Name="LiteralOperand" BaseType="tns:FilterOperand">
  <opc:Field Name="Value" TypeName="ua:Variant" />
 </opc:StructuredType>

 <opc:StructuredType Name="AttributeOperand" BaseType="tns:FilterOperand">
  <opc:Field Name="NodeId" TypeName="ua:NodeId" />
  <opc:Field Name="Alias" TypeName="opc:String" />
  <opc:Field Name="BrowsePath" TypeName="tns:RelativePath" />
  <opc:Field Name="AttributeId" TypeName="opc:UInt32" />
  <opc:Field Name="IndexRange" TypeName="opc:String" />
 </opc:StructuredType>

 <opc:StructuredType Name="SimpleAttributeOperand" BaseType="tns:FilterOperand">
  <opc:Field Name="TypeDefinitionId" TypeName="ua:NodeId" />
  <opc:Field Name="NoOfBrowsePath" TypeName="opc:Int32" />
  <opc:Field Name="BrowsePath" TypeName="ua:QualifiedName" LengthField="NoOfBrowsePath" />
  <opc:Field Name="AttributeId" TypeName="opc:UInt32" />
  <opc:Field Name="IndexRange" TypeName="opc:String"
 />
 </opc:StructuredType>

 <opc:StructuredType Name="ContentFilterElementResult" BaseType="ua:ExtensionObject">
  <opc:Field Name="StatusCode" TypeName="ua:StatusCode" />
  <opc:Field Name="NoOfOperandStatusCodes" TypeName="opc:Int32" />
  <opc:Field Name="OperandStatusCodes" TypeName="ua:StatusCode" LengthField="NoOfOperandStatusCodes"
/>
  <opc:Field Name="NoOfOperandDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="OperandDiagnosticInfos" TypeName="ua:DiagnosticInfo"
LengthField="NoOfOperandDiagnosticInfos" />
 </opc:StructuredType>

 <opc:StructuredType Name="ContentFilterResult" BaseType="ua:ExtensionObject">
  <opc:Field Name="NoOfElementResults" TypeName="opc:Int32" />
  <opc:Field Name="ElementResults" TypeName="tns:ContentFilterElementResult"
LengthField="NoOfElementResults" />
  <opc:Field Name="NoOfElementDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="ElementDiagnosticInfos" TypeName="ua:DiagnosticInfo"
LengthField="NoOfElementDiagnosticInfos"
 />
 </opc:StructuredType>

 <opc:StructuredType Name="ParsingResult" BaseType="ua:ExtensionObject">
  <opc:Field Name="StatusCode" TypeName="ua:StatusCode" />
  <opc:Field Name="NoOfDataStatusCodes" TypeName="opc:Int32" />
  <opc:Field Name="DataStatusCodes" TypeName="ua:StatusCode" LengthField="NoOfDataStatusCodes" />
  <opc:Field Name="NoOfDataDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DataDiagnosticInfos" TypeName="ua:DiagnosticInfo"
```

```
LengthField="NoOfDataDiagnosticInfos" />
 </opc:StructuredType>

 <opc:StructuredType Name="QueryFirstRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="View" TypeName="tns:ViewDescription" />
  <opc:Field Name="NoOfNodeTypes" TypeName="opc:Int32" />
  <opc:Field Name="NodeTypes" TypeName="tns:NodeTypeDescription" LengthField="NoOfNodeTypes" />
  <opc:Field Name="Filter" TypeName="tns:ContentFilter" />
  <opc:Field Name="MaxDataSetsToReturn"
TypeName="opc:UInt32" />
  <opc:Field Name="MaxReferencesToReturn" TypeName="opc:UInt32" />
 </opc:StructuredType>

 <opc:StructuredType Name="QueryFirstResponse" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfQueryDataSets" TypeName="opc:Int32" />
  <opc:Field Name="QueryDataSets" TypeName="tns:QueryDataSet" LengthField="NoOfQueryDataSets" />
  <opc:Field Name="ContinuationPoint" TypeName="opc:ByteString" />
  <opc:Field Name="NoOfParsingResults" TypeName="opc:Int32" />
  <opc:Field Name="ParsingResults" TypeName="tns:ParsingResult" LengthField="NoOfParsingResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
  <opc:Field Name="FilterResult" TypeName="tns:ContentFilterResult" />
 </opc:StructuredType>

 <opc:StructuredType Name="QueryNextRequest"
BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="ReleaseContinuationPoint" TypeName="opc:Boolean" />
  <opc:Field Name="ContinuationPoint" TypeName="opc:ByteString" />
 </opc:StructuredType>

 <opc:StructuredType Name="QueryNextResponse" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfQueryDataSets" TypeName="opc:Int32" />
  <opc:Field Name="QueryDataSets" TypeName="tns:QueryDataSet" LengthField="NoOfQueryDataSets" />
  <opc:Field Name="RevisedContinuationPoint" TypeName="opc:ByteString" />
 </opc:StructuredType>

 <opc:EnumeratedType Name="TimestampsToReturn" LengthInBits="32">
  <opc:EnumeratedValue Name="Source" Value="0" />
  <opc:EnumeratedValue Name="Server" Value="1" />
  <opc:EnumeratedValue Name="Both" Value="2" />
  <opc:EnumeratedValue Name="Neither" Value="3" />
  <opc:EnumeratedValue Name="Invalid" Value="4"
/>
 </opc:EnumeratedType>
```

```
<opc:StructuredType Name="ReadValueId" BaseType="ua:ExtensionObject">
  <opc:Field Name="NodeId" TypeName="ua:NodeId" />
  <opc:Field Name="AttributeId" TypeName="opc:UInt32" />
  <opc:Field Name="IndexRange" TypeName="opc:String" />
  <opc:Field Name="DataEncoding" TypeName="ua:QualifiedName" />
</opc:StructuredType>

<opc:StructuredType Name="ReadRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="MaxAge" TypeName="opc:Double" />
  <opc:Field Name="TimestampsToReturn" TypeName="tns:TimestampsToReturn" />
  <opc:Field Name="NoOfNodesToRead" TypeName="opc:Int32" />
  <opc:Field Name="NodesToRead" TypeName="tns:ReadValueId" LengthField="NoOfNodesToRead" />
</opc:StructuredType>

<opc:StructuredType Name="ReadResponse" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32"
/>
  <opc:Field Name="Results" TypeName="ua:DataValue" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
</opc:StructuredType>

<opc:StructuredType Name="HistoryReadValueId" BaseType="ua:ExtensionObject">
  <opc:Field Name="NodeId" TypeName="ua:NodeId" />
  <opc:Field Name="IndexRange" TypeName="opc:String" />
  <opc:Field Name="DataEncoding" TypeName="ua:QualifiedName" />
  <opc:Field Name="ContinuationPoint" TypeName="opc:ByteString" />
</opc:StructuredType>

<opc:StructuredType Name="HistoryReadResult" BaseType="ua:ExtensionObject">
  <opc:Field Name="StatusCode" TypeName="ua:StatusCode" />
  <opc:Field Name="ContinuationPoint" TypeName="opc:ByteString" />
  <opc:Field Name="HistoryData" TypeName="ua:ExtensionObject" />
</opc:StructuredType>

<opc:StructuredType Name="HistoryReadDetails" BaseType="ua:ExtensionObject">
 </opc:StructuredType>

<opc:StructuredType Name="ReadEventDetails" BaseType="tns:HistoryReadDetails">
  <opc:Field Name="NumValuesPerNode" TypeName="opc:UInt32" />
  <opc:Field Name="StartTime" TypeName="opc:DateTime" />
  <opc:Field Name="EndTime" TypeName="opc:DateTime" />
  <opc:Field Name="Filter" TypeName="tns:EventFilter" />
</opc:StructuredType>
```

```
<opc:StructuredType Name="ReadRawModifiedDetails" BaseType="tns:HistoryReadDetails">
  <opc:Field Name="IsReadModified" TypeName="opc:Boolean" />
  <opc:Field Name="StartTime" TypeName="opc:DateTime" />
  <opc:Field Name="EndTime" TypeName="opc:DateTime" />
  <opc:Field Name="NumValuesPerNode" TypeName="opc:UInt32" />
  <opc:Field Name="ReturnBounds" TypeName="opc:Boolean" />
</opc:StructuredType>

<opc:StructuredType Name="ReadProcessedDetails" BaseType="tns:HistoryReadDetails">
  <opc:Field Name="StartTime" TypeName="opc:DateTime" />
  <opc:Field Name="EndTime" TypeName="opc:DateTime"
/>
  <opc:Field Name="ProcessingInterval" TypeName="opc:Double" />
  <opc:Field Name="NoOfAggregateType" TypeName="opc:Int32" />
  <opc:Field Name="AggregateType" TypeName="ua:NodeId" LengthField="NoOfAggregateType" />
  <opc:Field Name="AggregateConfiguration" TypeName="tns:AggregateConfiguration" />
</opc:StructuredType>

<opc:StructuredType Name="ReadAtTimeDetails" BaseType="tns:HistoryReadDetails">
  <opc:Field Name="NoOfReqTimes" TypeName="opc:Int32" />
  <opc:Field Name="ReqTimes" TypeName="opc:DateTime" LengthField="NoOfReqTimes" />
  <opc:Field Name="UseSimpleBounds" TypeName="opc:Boolean" />
</opc:StructuredType>

<opc:StructuredType Name="HistoryData" BaseType="ua:ExtensionObject">
  <opc:Field Name="NoOfDataValues" TypeName="opc:Int32" />
  <opc:Field Name="DataValues" TypeName="ua:DataValue" LengthField="NoOfDataValues" />
</opc:StructuredType>

<opc:StructuredType Name="ModificationInfo" BaseType="ua:ExtensionObject">
  <opc:Field Name="ModificationTime"
TypeName="opc:DateTime" />
  <opc:Field Name="UpdateType" TypeName="tns:HistoryUpdateType" />
  <opc:Field Name="UserName" TypeName="opc:String" />
</opc:StructuredType>

<opc:StructuredType Name="HistoryModifiedData" BaseType="tns:HistoryData">
  <opc:Field Name="NoOfDataValues" TypeName="opc:Int32" />
  <opc:Field Name="DataValues" TypeName="ua:DataValue" LengthField="NoOfDataValues" />
  <opc:Field Name="NoOfModificationInfos" TypeName="opc:Int32" />
  <opc:Field Name="ModificationInfos" TypeName="tns:ModificationInfo"
LengthField="NoOfModificationInfos" />
</opc:StructuredType>

<opc:StructuredType Name="HistoryEvent" BaseType="ua:ExtensionObject">
  <opc:Field Name="NoOfEvents" TypeName="opc:Int32" />
  <opc:Field Name="Events" TypeName="tns:HistoryEventFieldList" LengthField="NoOfEvents" />
</opc:StructuredType>
```

```
<opc:StructuredType Name="HistoryReadRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader"
/>
  <opc:Field Name="HistoryReadDetails" TypeName="ua:ExtensionObject" />
  <opc:Field Name="TimestampsToReturn" TypeName="tns:TimestampsToReturn" />
  <opc:Field Name="ReleaseContinuationPoints" TypeName="opc:Boolean" />
  <opc:Field Name="NoOfNodesToRead" TypeName="opc:Int32" />
  <opc:Field Name="NodesToRead" TypeName="tns:HistoryReadValueId" LengthField="NoOfNodesToRead" />
</opc:StructuredType>

<opc:StructuredType Name="HistoryReadResponse" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="tns:HistoryReadResult" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
</opc:StructuredType>

<opc:StructuredType Name="WriteValue" BaseType="ua:ExtensionObject">
   <opc:Field Name="NodeId" TypeName="ua:NodeId" />
  <opc:Field Name="AttributeId" TypeName="opc:UInt32" />
  <opc:Field Name="IndexRange" TypeName="opc:String" />
  <opc:Field Name="Value" TypeName="ua:DataValue" />
</opc:StructuredType>

<opc:StructuredType Name="WriteRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="NoOfNodesToWrite" TypeName="opc:Int32" />
  <opc:Field Name="NodesToWrite" TypeName="tns:WriteValue" LengthField="NoOfNodesToWrite" />
</opc:StructuredType>

<opc:StructuredType Name="WriteResponse" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="ua:StatusCode" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo"
LengthField="NoOfDiagnosticInfos" />
</opc:StructuredType>

<opc:StructuredType Name="HistoryUpdateDetails" BaseType="ua:ExtensionObject">
  <opc:Field Name="NodeId" TypeName="ua:NodeId" />
</opc:StructuredType>

<opc:EnumeratedType Name="HistoryUpdateType" LengthInBits="32">
  <opc:EnumeratedValue Name="Insert" Value="1" />
  <opc:EnumeratedValue Name="Replace" Value="2" />
```

```
  <opc:EnumeratedValue Name="Update" Value="3" />
  <opc:EnumeratedValue Name="Delete" Value="4" />
</opc:EnumeratedType>

<opc:EnumeratedType Name="PerformUpdateType" LengthInBits="32">
  <opc:EnumeratedValue Name="Insert" Value="1" />
  <opc:EnumeratedValue Name="Replace" Value="2" />
  <opc:EnumeratedValue Name="Update" Value="3" />
  <opc:EnumeratedValue Name="Remove" Value="4" />
</opc:EnumeratedType>

<opc:StructuredType Name="UpdateDataDetails" BaseType="tns:HistoryUpdateDetails">
  <opc:Field Name="NodeId" TypeName="ua:NodeId" SourceType="tns:HistoryUpdateDetails" />

<opc:Field Name="PerformInsertReplace" TypeName="tns:PerformUpdateType" />
  <opc:Field Name="NoOfUpdateValues" TypeName="opc:Int32" />
  <opc:Field Name="UpdateValues" TypeName="ua:DataValue" LengthField="NoOfUpdateValues" />
</opc:StructuredType>

<opc:StructuredType Name="UpdateStructureDataDetails" BaseType="tns:HistoryUpdateDetails">
  <opc:Field Name="NodeId" TypeName="ua:NodeId" SourceType="tns:HistoryUpdateDetails" />
  <opc:Field Name="PerformInsertReplace" TypeName="tns:PerformUpdateType" />
  <opc:Field Name="NoOfUpdateValues" TypeName="opc:Int32" />
  <opc:Field Name="UpdateValues" TypeName="ua:DataValue" LengthField="NoOfUpdateValues" />
</opc:StructuredType>

<opc:StructuredType Name="UpdateEventDetails" BaseType="tns:HistoryUpdateDetails">
  <opc:Field Name="NodeId" TypeName="ua:NodeId" SourceType="tns:HistoryUpdateDetails" />
  <opc:Field Name="PerformInsertReplace" TypeName="tns:PerformUpdateType" />
  <opc:Field Name="Filter" TypeName="tns:EventFilter"
/>
  <opc:Field Name="NoOfEventData" TypeName="opc:Int32" />
  <opc:Field Name="EventData" TypeName="tns:HistoryEventFieldList" LengthField="NoOfEventData" />
</opc:StructuredType>

<opc:StructuredType Name="DeleteRawModifiedDetails" BaseType="tns:HistoryUpdateDetails">
  <opc:Field Name="NodeId" TypeName="ua:NodeId" SourceType="tns:HistoryUpdateDetails" />
  <opc:Field Name="IsDeleteModified" TypeName="opc:Boolean" />
  <opc:Field Name="StartTime" TypeName="opc:DateTime" />
  <opc:Field Name="EndTime" TypeName="opc:DateTime" />
</opc:StructuredType>

<opc:StructuredType Name="DeleteAtTimeDetails" BaseType="tns:HistoryUpdateDetails">
  <opc:Field Name="NodeId" TypeName="ua:NodeId" SourceType="tns:HistoryUpdateDetails" />
  <opc:Field Name="NoOfReqTimes" TypeName="opc:Int32" />
  <opc:Field Name="ReqTimes" TypeName="opc:DateTime" LengthField="NoOfReqTimes" />
</opc:StructuredType>
```

```
 <opc:StructuredType Name="DeleteEventDetails" BaseType="tns:HistoryUpdateDetails">
   <opc:Field Name="NodeId" TypeName="ua:NodeId" SourceType="tns:HistoryUpdateDetails" />
  <opc:Field Name="NoOfEventIds" TypeName="opc:Int32" />
  <opc:Field Name="EventIds" TypeName="opc:ByteString" LengthField="NoOfEventIds" />
 </opc:StructuredType>

 <opc:StructuredType Name="HistoryUpdateResult" BaseType="ua:ExtensionObject">
  <opc:Field Name="StatusCode" TypeName="ua:StatusCode" />
  <opc:Field Name="NoOfOperationResults" TypeName="opc:Int32" />
  <opc:Field Name="OperationResults" TypeName="ua:StatusCode" LengthField="NoOfOperationResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
 </opc:StructuredType>

 <opc:StructuredType Name="HistoryUpdateRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="NoOfHistoryUpdateDetails" TypeName="opc:Int32"
 />
  <opc:Field Name="HistoryUpdateDetails" TypeName="ua:ExtensionObject"
LengthField="NoOfHistoryUpdateDetails" />
 </opc:StructuredType>

 <opc:StructuredType Name="HistoryUpdateResponse" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="tns:HistoryUpdateResult" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
 </opc:StructuredType>

 <opc:StructuredType Name="CallMethodRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="ObjectId" TypeName="ua:NodeId" />
  <opc:Field Name="MethodId" TypeName="ua:NodeId" />
  <opc:Field Name="NoOfInputArguments" TypeName="opc:Int32" />
  <opc:Field Name="InputArguments" TypeName="ua:Variant" LengthField="NoOfInputArguments" />
 </opc:StructuredType>

  <opc:StructuredType Name="CallMethodResult" BaseType="ua:ExtensionObject">
  <opc:Field Name="StatusCode" TypeName="ua:StatusCode" />
  <opc:Field Name="NoOfInputArgumentResults" TypeName="opc:Int32" />
  <opc:Field Name="InputArgumentResults" TypeName="ua:StatusCode"
LengthField="NoOfInputArgumentResults" />
  <opc:Field Name="NoOfInputArgumentDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="InputArgumentDiagnosticInfos" TypeName="ua:DiagnosticInfo"
LengthField="NoOfInputArgumentDiagnosticInfos" />
  <opc:Field Name="NoOfOutputArguments" TypeName="opc:Int32" />
  <opc:Field Name="OutputArguments" TypeName="ua:Variant" LengthField="NoOfOutputArguments" />
 </opc:StructuredType>
```

```
<opc:StructuredType Name="CallRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="NoOfMethodsToCall" TypeName="opc:Int32" />
  <opc:Field Name="MethodsToCall" TypeName="tns:CallMethodRequest"
LengthField="NoOfMethodsToCall" />
</opc:StructuredType>

<opc:StructuredType Name="CallResponse" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="tns:CallMethodResult" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
</opc:StructuredType>

<opc:EnumeratedType Name="MonitoringMode" LengthInBits="32">
  <opc:EnumeratedValue Name="Disabled" Value="0" />
  <opc:EnumeratedValue Name="Sampling" Value="1" />
  <opc:EnumeratedValue Name="Reporting" Value="2" />
</opc:EnumeratedType>

<opc:EnumeratedType Name="DataChangeTrigger" LengthInBits="32">
  <opc:EnumeratedValue Name="Status" Value="0" />
  <opc:EnumeratedValue Name="StatusValue" Value="1" />
  <opc:EnumeratedValue
Name="StatusValueTimestamp" Value="2" />
</opc:EnumeratedType>

<opc:EnumeratedType Name="DeadbandType" LengthInBits="32">
  <opc:EnumeratedValue Name="None" Value="0" />
  <opc:EnumeratedValue Name="Absolute" Value="1" />
  <opc:EnumeratedValue Name="Percent" Value="2" />
</opc:EnumeratedType>

<opc:StructuredType Name="MonitoringFilter" BaseType="ua:ExtensionObject">
</opc:StructuredType>

<opc:StructuredType Name="DataChangeFilter" BaseType="tns:MonitoringFilter">
  <opc:Field Name="Trigger" TypeName="tns:DataChangeTrigger" />
  <opc:Field Name="DeadbandType" TypeName="opc:UInt32" />
  <opc:Field Name="DeadbandValue" TypeName="opc:Double" />
</opc:StructuredType>

<opc:StructuredType Name="EventFilter" BaseType="tns:MonitoringFilter">
  <opc:Field Name="NoOfSelectClauses" TypeName="opc:Int32" />
  <opc:Field Name="SelectClauses" TypeName="tns:SimpleAttributeOperand" LengthField="NoOfSelectClauses"
/>
```

```
  <opc:Field Name="WhereClause" TypeName="tns:ContentFilter"
/>
 </opc:StructuredType>

 <opc:StructuredType Name="AggregateConfiguration" BaseType="ua:ExtensionObject">
  <opc:Field Name="UseServerCapabilitiesDefaults" TypeName="opc:Boolean" />
  <opc:Field Name="TreatUncertainAsBad" TypeName="opc:Boolean" />
  <opc:Field Name="PercentDataBad" TypeName="opc:Byte" />
  <opc:Field Name="PercentDataGood" TypeName="opc:Byte" />
  <opc:Field Name="UseSlopedExtrapolation" TypeName="opc:Boolean" />
 </opc:StructuredType>

 <opc:StructuredType Name="AggregateFilter" BaseType="tns:MonitoringFilter">
  <opc:Field Name="StartTime" TypeName="opc:DateTime" />
  <opc:Field Name="AggregateType" TypeName="ua:NodeId" />
  <opc:Field Name="ProcessingInterval" TypeName="opc:Double" />
  <opc:Field Name="AggregateConfiguration" TypeName="tns:AggregateConfiguration" />
 </opc:StructuredType>

 <opc:StructuredType Name="MonitoringFilterResult" BaseType="ua:ExtensionObject">
 </opc:StructuredType>

 <opc:StructuredType Name="EventFilterResult"
 BaseType="tns:MonitoringFilterResult">
  <opc:Field Name="NoOfSelectClauseResults" TypeName="opc:Int32" />
  <opc:Field Name="SelectClauseResults" TypeName="ua:StatusCode" LengthField="NoOfSelectClauseResults"
/>
  <opc:Field Name="NoOfSelectClauseDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="SelectClauseDiagnosticInfos" TypeName="ua:DiagnosticInfo"
LengthField="NoOfSelectClauseDiagnosticInfos" />
  <opc:Field Name="WhereClauseResult" TypeName="tns:ContentFilterResult" />
 </opc:StructuredType>

 <opc:StructuredType Name="AggregateFilterResult" BaseType="tns:MonitoringFilterResult">
  <opc:Field Name="RevisedStartTime" TypeName="opc:DateTime" />
  <opc:Field Name="RevisedProcessingInterval" TypeName="opc:Double" />
  <opc:Field Name="RevisedAggregateConfiguration" TypeName="tns:AggregateConfiguration" />
 </opc:StructuredType>

 <opc:StructuredType Name="MonitoringParameters" BaseType="ua:ExtensionObject">
  <opc:Field Name="ClientHandle"
 TypeName="opc:UInt32" />
  <opc:Field Name="SamplingInterval" TypeName="opc:Double" />
  <opc:Field Name="Filter" TypeName="ua:ExtensionObject" />
  <opc:Field Name="QueueSize" TypeName="opc:UInt32" />
  <opc:Field Name="DiscardOldest" TypeName="opc:Boolean" />
 </opc:StructuredType>
```

```
 <opc:StructuredType Name="MonitoredItemCreateRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="ItemToMonitor" TypeName="tns:ReadValueId" />
  <opc:Field Name="MonitoringMode" TypeName="tns:MonitoringMode" />
  <opc:Field Name="RequestedParameters" TypeName="tns:MonitoringParameters" />
 </opc:StructuredType>

 <opc:StructuredType Name="MonitoredItemCreateResult" BaseType="ua:ExtensionObject">
  <opc:Field Name="StatusCode" TypeName="ua:StatusCode" />
  <opc:Field Name="MonitoredItemId" TypeName="opc:UInt32" />
  <opc:Field Name="RevisedSamplingInterval" TypeName="opc:Double" />
  <opc:Field Name="RevisedQueueSize" TypeName="opc:UInt32" />
  <opc:Field Name="FilterResult"
 TypeName="ua:ExtensionObject" />
 </opc:StructuredType>

 <opc:StructuredType Name="CreateMonitoredItemsRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="SubscriptionId" TypeName="opc:UInt32" />
  <opc:Field Name="TimestampsToReturn" TypeName="tns:TimestampsToReturn" />
  <opc:Field Name="NoOfItemsToCreate" TypeName="opc:Int32" />
  <opc:Field Name="ItemsToCreate" TypeName="tns:MonitoredItemCreateRequest"
LengthField="NoOfItemsToCreate" />
 </opc:StructuredType>

 <opc:StructuredType Name="CreateMonitoredItemsResponse" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="tns:MonitoredItemCreateResult" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo"
 LengthField="NoOfDiagnosticInfos" />
 </opc:StructuredType>

 <opc:StructuredType Name="MonitoredItemModifyRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="MonitoredItemId" TypeName="opc:UInt32" />
  <opc:Field Name="RequestedParameters" TypeName="tns:MonitoringParameters" />
 </opc:StructuredType>

 <opc:StructuredType Name="MonitoredItemModifyResult" BaseType="ua:ExtensionObject">
  <opc:Field Name="StatusCode" TypeName="ua:StatusCode" />
  <opc:Field Name="RevisedSamplingInterval" TypeName="opc:Double" />
  <opc:Field Name="RevisedQueueSize" TypeName="opc:UInt32" />
  <opc:Field Name="FilterResult" TypeName="ua:ExtensionObject" />
 </opc:StructuredType>

 <opc:StructuredType Name="ModifyMonitoredItemsRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="SubscriptionId" TypeName="opc:UInt32" />
```

```
  <opc:Field Name="TimestampsToReturn" TypeName="tns:TimestampsToReturn"
/>
  <opc:Field Name="NoOfItemsToModify" TypeName="opc:Int32" />
  <opc:Field Name="ItemsToModify" TypeName="tns:MonitoredItemModifyRequest"
LengthField="NoOfItemsToModify" />
 </opc:StructuredType>

 <opc:StructuredType Name="ModifyMonitoredItemsResponse" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="tns:MonitoredItemModifyResult" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
 </opc:StructuredType>

 <opc:StructuredType Name="SetMonitoringModeRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="SubscriptionId" TypeName="opc:UInt32" />
  <opc:Field Name="MonitoringMode" TypeName="tns:MonitoringMode"
/>
  <opc:Field Name="NoOfMonitoredItemIds" TypeName="opc:Int32" />
  <opc:Field Name="MonitoredItemIds" TypeName="opc:UInt32" LengthField="NoOfMonitoredItemIds" />
 </opc:StructuredType>

 <opc:StructuredType Name="SetMonitoringModeResponse" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="ua:StatusCode" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
 </opc:StructuredType>

 <opc:StructuredType Name="SetTriggeringRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="SubscriptionId" TypeName="opc:UInt32" />
  <opc:Field Name="TriggeringItemId" TypeName="opc:UInt32" />
  <opc:Field Name="NoOfLinksToAdd"
TypeName="opc:Int32" />
  <opc:Field Name="LinksToAdd" TypeName="opc:UInt32" LengthField="NoOfLinksToAdd" />
  <opc:Field Name="NoOfLinksToRemove" TypeName="opc:Int32" />
  <opc:Field Name="LinksToRemove" TypeName="opc:UInt32" LengthField="NoOfLinksToRemove" />
 </opc:StructuredType>

 <opc:StructuredType Name="SetTriggeringResponse" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfAddResults" TypeName="opc:Int32" />
  <opc:Field Name="AddResults" TypeName="ua:StatusCode" LengthField="NoOfAddResults" />
  <opc:Field Name="NoOfAddDiagnosticInfos" TypeName="opc:Int32" />
```

```
  <opc:Field Name="AddDiagnosticInfos" TypeName="ua:DiagnosticInfo"
LengthField="NoOfAddDiagnosticInfos" />
  <opc:Field Name="NoOfRemoveResults" TypeName="opc:Int32" />
  <opc:Field Name="RemoveResults" TypeName="ua:StatusCode" LengthField="NoOfRemoveResults" />
  <opc:Field Name="NoOfRemoveDiagnosticInfos" TypeName="opc:Int32"
/>
  <opc:Field Name="RemoveDiagnosticInfos" TypeName="ua:DiagnosticInfo"
LengthField="NoOfRemoveDiagnosticInfos" />
 </opc:StructuredType>

 <opc:StructuredType Name="DeleteMonitoredItemsRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="SubscriptionId" TypeName="opc:UInt32" />
  <opc:Field Name="NoOfMonitoredItemIds" TypeName="opc:Int32" />
  <opc:Field Name="MonitoredItemIds" TypeName="opc:UInt32" LengthField="NoOfMonitoredItemIds" />
 </opc:StructuredType>

 <opc:StructuredType Name="DeleteMonitoredItemsResponse" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="ua:StatusCode" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos"
/>
 </opc:StructuredType>

 <opc:StructuredType Name="CreateSubscriptionRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="RequestedPublishingInterval" TypeName="opc:Double" />
  <opc:Field Name="RequestedLifetimeCount" TypeName="opc:UInt32" />
  <opc:Field Name="RequestedMaxKeepAliveCount" TypeName="opc:UInt32" />
  <opc:Field Name="MaxNotificationsPerPublish" TypeName="opc:UInt32" />
  <opc:Field Name="PublishingEnabled" TypeName="opc:Boolean" />
  <opc:Field Name="Priority" TypeName="opc:Byte" />
 </opc:StructuredType>

 <opc:StructuredType Name="CreateSubscriptionResponse" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="SubscriptionId" TypeName="opc:UInt32" />
  <opc:Field Name="RevisedPublishingInterval" TypeName="opc:Double" />
  <opc:Field Name="RevisedLifetimeCount" TypeName="opc:UInt32"
/>
  <opc:Field Name="RevisedMaxKeepAliveCount" TypeName="opc:UInt32" />
 </opc:StructuredType>

 <opc:StructuredType Name="ModifySubscriptionRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="SubscriptionId" TypeName="opc:UInt32" />
```

```
  <opc:Field Name="RequestedPublishingInterval" TypeName="opc:Double" />
  <opc:Field Name="RequestedLifetimeCount" TypeName="opc:UInt32" />
  <opc:Field Name="RequestedMaxKeepAliveCount" TypeName="opc:UInt32" />
  <opc:Field Name="MaxNotificationsPerPublish" TypeName="opc:UInt32" />
  <opc:Field Name="Priority" TypeName="opc:Byte" />
 </opc:StructuredType>

 <opc:StructuredType Name="ModifySubscriptionResponse" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="RevisedPublishingInterval" TypeName="opc:Double" />
  <opc:Field Name="RevisedLifetimeCount" TypeName="opc:UInt32" />
  <opc:Field
 Name="RevisedMaxKeepAliveCount" TypeName="opc:UInt32" />
 </opc:StructuredType>

 <opc:StructuredType Name="SetPublishingModeRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="PublishingEnabled" TypeName="opc:Boolean" />
  <opc:Field Name="NoOfSubscriptionIds" TypeName="opc:Int32" />
  <opc:Field Name="SubscriptionIds" TypeName="opc:UInt32" LengthField="NoOfSubscriptionIds" />
 </opc:StructuredType>

 <opc:StructuredType Name="SetPublishingModeResponse" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="ua:StatusCode" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
 </opc:StructuredType>

 <opc:StructuredType
 Name="NotificationMessage" BaseType="ua:ExtensionObject">
  <opc:Field Name="SequenceNumber" TypeName="opc:UInt32" />
  <opc:Field Name="PublishTime" TypeName="opc:DateTime" />
  <opc:Field Name="NoOfNotificationData" TypeName="opc:Int32" />
  <opc:Field Name="NotificationData" TypeName="ua:ExtensionObject" LengthField="NoOfNotificationData" />
 </opc:StructuredType>

 <opc:StructuredType Name="NotificationData" BaseType="ua:ExtensionObject">
 </opc:StructuredType>

 <opc:StructuredType Name="DataChangeNotification" BaseType="tns:NotificationData">
  <opc:Field Name="NoOfMonitoredItems" TypeName="opc:Int32" />
  <opc:Field Name="MonitoredItems" TypeName="tns:MonitoredItemNotification"
LengthField="NoOfMonitoredItems" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
 </opc:StructuredType>
```

```
<opc:StructuredType Name="MonitoredItemNotification"
BaseType="ua:ExtensionObject">
  <opc:Field Name="ClientHandle" TypeName="opc:UInt32" />
  <opc:Field Name="Value" TypeName="ua:DataValue" />
</opc:StructuredType>

<opc:StructuredType Name="EventNotificationList" BaseType="tns:NotificationData">
  <opc:Field Name="NoOfEvents" TypeName="opc:Int32" />
  <opc:Field Name="Events" TypeName="tns:EventFieldList" LengthField="NoOfEvents" />
</opc:StructuredType>

<opc:StructuredType Name="EventFieldList" BaseType="ua:ExtensionObject">
  <opc:Field Name="ClientHandle" TypeName="opc:UInt32" />
  <opc:Field Name="NoOfEventFields" TypeName="opc:Int32" />
  <opc:Field Name="EventFields" TypeName="ua:Variant" LengthField="NoOfEventFields" />
</opc:StructuredType>

<opc:StructuredType Name="HistoryEventFieldList" BaseType="ua:ExtensionObject">
  <opc:Field Name="NoOfEventFields" TypeName="opc:Int32" />
  <opc:Field Name="EventFields" TypeName="ua:Variant" LengthField="NoOfEventFields" />
</opc:StructuredType>


<opc:StructuredType Name="StatusChangeNotification" BaseType="tns:NotificationData">
  <opc:Field Name="Status" TypeName="ua:StatusCode" />
  <opc:Field Name="DiagnosticInfo" TypeName="ua:DiagnosticInfo" />
</opc:StructuredType>

<opc:StructuredType Name="SubscriptionAcknowledgement" BaseType="ua:ExtensionObject">
  <opc:Field Name="SubscriptionId" TypeName="opc:UInt32" />
  <opc:Field Name="SequenceNumber" TypeName="opc:UInt32" />
</opc:StructuredType>

<opc:StructuredType Name="PublishRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="NoOfSubscriptionAcknowledgements" TypeName="opc:Int32" />
  <opc:Field Name="SubscriptionAcknowledgements" TypeName="tns:SubscriptionAcknowledgement"
LengthField="NoOfSubscriptionAcknowledgements" />
</opc:StructuredType>

<opc:StructuredType Name="PublishResponse" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader"
/>
  <opc:Field Name="SubscriptionId" TypeName="opc:UInt32" />
  <opc:Field Name="NoOfAvailableSequenceNumbers" TypeName="opc:Int32" />
  <opc:Field Name="AvailableSequenceNumbers" TypeName="opc:UInt32"
LengthField="NoOfAvailableSequenceNumbers" />
```

```
  <opc:Field Name="MoreNotifications" TypeName="opc:Boolean" />
  <opc:Field Name="NotificationMessage" TypeName="tns:NotificationMessage" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="ua:StatusCode" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
 </opc:StructuredType>

 <opc:StructuredType Name="RepublishRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="SubscriptionId" TypeName="opc:UInt32" />
  <opc:Field Name="RetransmitSequenceNumber" TypeName="opc:UInt32"
 />
 </opc:StructuredType>

 <opc:StructuredType Name="RepublishResponse" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NotificationMessage" TypeName="tns:NotificationMessage" />
 </opc:StructuredType>

 <opc:StructuredType Name="TransferResult" BaseType="ua:ExtensionObject">
  <opc:Field Name="StatusCode" TypeName="ua:StatusCode" />
  <opc:Field Name="NoOfAvailableSequenceNumbers" TypeName="opc:Int32" />
  <opc:Field Name="AvailableSequenceNumbers" TypeName="opc:UInt32"
LengthField="NoOfAvailableSequenceNumbers" />
 </opc:StructuredType>

 <opc:StructuredType Name="TransferSubscriptionsRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="NoOfSubscriptionIds" TypeName="opc:Int32" />
  <opc:Field Name="SubscriptionIds" TypeName="opc:UInt32" LengthField="NoOfSubscriptionIds" />
  <opc:Field Name="SendInitialValues"
 TypeName="opc:Boolean" />
 </opc:StructuredType>

 <opc:StructuredType Name="TransferSubscriptionsResponse" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="tns:TransferResult" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
 </opc:StructuredType>

 <opc:StructuredType Name="DeleteSubscriptionsRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="NoOfSubscriptionIds" TypeName="opc:Int32" />
  <opc:Field Name="SubscriptionIds" TypeName="opc:UInt32" LengthField="NoOfSubscriptionIds" />
 </opc:StructuredType>
```

```
<opc:StructuredType Name="DeleteSubscriptionsResponse" BaseType="ua:ExtensionObject">

 <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="ua:StatusCode" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
</opc:StructuredType>

<opc:StructuredType Name="BuildInfo" BaseType="ua:ExtensionObject">
  <opc:Field Name="ProductUri" TypeName="opc:String" />
  <opc:Field Name="ManufacturerName" TypeName="opc:String" />
  <opc:Field Name="ProductName" TypeName="opc:String" />
  <opc:Field Name="SoftwareVersion" TypeName="opc:String" />
  <opc:Field Name="BuildNumber" TypeName="opc:String" />
  <opc:Field Name="BuildDate" TypeName="opc:DateTime" />
</opc:StructuredType>

<opc:EnumeratedType Name="RedundancySupport" LengthInBits="32">
  <opc:EnumeratedValue Name="None" Value="0" />
  <opc:EnumeratedValue
Name="Cold" Value="1" />
  <opc:EnumeratedValue Name="Warm" Value="2" />
  <opc:EnumeratedValue Name="Hot" Value="3" />
  <opc:EnumeratedValue Name="Transparent" Value="4" />
  <opc:EnumeratedValue Name="HotAndMirrored" Value="5" />
</opc:EnumeratedType>

<opc:EnumeratedType Name="ServerState" LengthInBits="32">
  <opc:EnumeratedValue Name="Running" Value="0" />
  <opc:EnumeratedValue Name="Failed" Value="1" />
  <opc:EnumeratedValue Name="NoConfiguration" Value="2" />
  <opc:EnumeratedValue Name="Suspended" Value="3" />
  <opc:EnumeratedValue Name="Shutdown" Value="4" />
  <opc:EnumeratedValue Name="Test" Value="5" />
  <opc:EnumeratedValue Name="CommunicationFault" Value="6" />
  <opc:EnumeratedValue Name="Unknown" Value="7" />
</opc:EnumeratedType>

<opc:StructuredType Name="RedundantServerDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="ServerId" TypeName="opc:String" />
  <opc:Field Name="ServiceLevel" TypeName="opc:Byte" />
  <opc:Field
Name="ServerState" TypeName="tns:ServerState" />
</opc:StructuredType>

<opc:StructuredType Name="EndpointUrlListDataType" BaseType="ua:ExtensionObject">
```

```
  <opc:Field Name="NoOfEndpointUrlList" TypeName="opc:Int32" />
  <opc:Field Name="EndpointUrlList" TypeName="opc:String" LengthField="NoOfEndpointUrlList" />
 </opc:StructuredType>

 <opc:StructuredType Name="NetworkGroupDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="ServerUri" TypeName="opc:String" />
  <opc:Field Name="NoOfNetworkPaths" TypeName="opc:Int32" />
  <opc:Field Name="NetworkPaths" TypeName="tns:EndpointUrlListDataType"
LengthField="NoOfNetworkPaths" />
 </opc:StructuredType>

 <opc:StructuredType Name="SamplingIntervalDiagnosticsDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="SamplingInterval" TypeName="opc:Double" />
  <opc:Field Name="MonitoredItemCount" TypeName="opc:UInt32" />
  <opc:Field Name="MaxMonitoredItemCount" TypeName="opc:UInt32" />
  <opc:Field Name="DisabledMonitoredItemCount"
 TypeName="opc:UInt32" />
 </opc:StructuredType>

 <opc:StructuredType Name="ServerDiagnosticsSummaryDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="ServerViewCount" TypeName="opc:UInt32" />
  <opc:Field Name="CurrentSessionCount" TypeName="opc:UInt32" />
  <opc:Field Name="CumulatedSessionCount" TypeName="opc:UInt32" />
  <opc:Field Name="SecurityRejectedSessionCount" TypeName="opc:UInt32" />
  <opc:Field Name="RejectedSessionCount" TypeName="opc:UInt32" />
  <opc:Field Name="SessionTimeoutCount" TypeName="opc:UInt32" />
  <opc:Field Name="SessionAbortCount" TypeName="opc:UInt32" />
  <opc:Field Name="CurrentSubscriptionCount" TypeName="opc:UInt32" />
  <opc:Field Name="CumulatedSubscriptionCount" TypeName="opc:UInt32" />
  <opc:Field Name="PublishingIntervalCount" TypeName="opc:UInt32" />
  <opc:Field Name="SecurityRejectedRequestsCount" TypeName="opc:UInt32" />
  <opc:Field Name="RejectedRequestsCount" TypeName="opc:UInt32"
 />
 </opc:StructuredType>

 <opc:StructuredType Name="ServerStatusDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="StartTime" TypeName="opc:DateTime" />
  <opc:Field Name="CurrentTime" TypeName="opc:DateTime" />
  <opc:Field Name="State" TypeName="tns:ServerState" />
  <opc:Field Name="BuildInfo" TypeName="tns:BuildInfo" />
  <opc:Field Name="SecondsTillShutdown" TypeName="opc:UInt32" />
  <opc:Field Name="ShutdownReason" TypeName="ua:LocalizedText" />
 </opc:StructuredType>

 <opc:StructuredType Name="SessionDiagnosticsDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="SessionId" TypeName="ua:NodeId" />
  <opc:Field Name="SessionName" TypeName="opc:String" />
  <opc:Field Name="ClientDescription" TypeName="tns:ApplicationDescription" />
```

```
  <opc:Field Name="ServerUri" TypeName="opc:String" />
  <opc:Field Name="EndpointUrl" TypeName="opc:String" />
  <opc:Field Name="NoOfLocaleIds" TypeName="opc:Int32" />
  <opc:Field Name="LocaleIds"
TypeName="opc:String" LengthField="NoOfLocaleIds" />
  <opc:Field Name="ActualSessionTimeout" TypeName="opc:Double" />
  <opc:Field Name="MaxResponseMessageSize" TypeName="opc:UInt32" />
  <opc:Field Name="ClientConnectionTime" TypeName="opc:DateTime" />
  <opc:Field Name="ClientLastContactTime" TypeName="opc:DateTime" />
  <opc:Field Name="CurrentSubscriptionsCount" TypeName="opc:UInt32" />
  <opc:Field Name="CurrentMonitoredItemsCount" TypeName="opc:UInt32" />
  <opc:Field Name="CurrentPublishRequestsInQueue" TypeName="opc:UInt32" />
  <opc:Field Name="TotalRequestCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="UnauthorizedRequestCount" TypeName="opc:UInt32" />
  <opc:Field Name="ReadCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="HistoryReadCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="WriteCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="HistoryUpdateCount" TypeName="tns:ServiceCounterDataType"
/>
  <opc:Field Name="CallCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="CreateMonitoredItemsCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="ModifyMonitoredItemsCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="SetMonitoringModeCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="SetTriggeringCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="DeleteMonitoredItemsCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="CreateSubscriptionCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="ModifySubscriptionCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="SetPublishingModeCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="PublishCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="RepublishCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="TransferSubscriptionsCount" TypeName="tns:ServiceCounterDataType"
/>
  <opc:Field Name="DeleteSubscriptionsCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="AddNodesCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="AddReferencesCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="DeleteNodesCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="DeleteReferencesCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="BrowseCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="BrowseNextCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="TranslateBrowsePathsToNodeIdsCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="QueryFirstCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="QueryNextCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="RegisterNodesCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="UnregisterNodesCount" TypeName="tns:ServiceCounterDataType"
/>
 </opc:StructuredType>

 <opc:StructuredType Name="SessionSecurityDiagnosticsDataType" BaseType="ua:ExtensionObject">
```

```
  <opc:Field Name="SessionId" TypeName="ua:NodeId" />
  <opc:Field Name="ClientUserIdOfSession" TypeName="opc:String" />
  <opc:Field Name="NoOfClientUserIdHistory" TypeName="opc:Int32" />
  <opc:Field Name="ClientUserIdHistory" TypeName="opc:String" LengthField="NoOfClientUserIdHistory" />
  <opc:Field Name="AuthenticationMechanism" TypeName="opc:String" />
  <opc:Field Name="Encoding" TypeName="opc:String" />
  <opc:Field Name="TransportProtocol" TypeName="opc:String" />
  <opc:Field Name="SecurityMode" TypeName="tns:MessageSecurityMode" />
  <opc:Field Name="SecurityPolicyUri" TypeName="opc:String" />
  <opc:Field Name="ClientCertificate" TypeName="opc:ByteString" />
</opc:StructuredType>

<opc:StructuredType Name="ServiceCounterDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="TotalCount" TypeName="opc:UInt32"
/>
  <opc:Field Name="ErrorCount" TypeName="opc:UInt32" />
</opc:StructuredType>

<opc:StructuredType Name="StatusResult" BaseType="ua:ExtensionObject">
  <opc:Field Name="StatusCode" TypeName="ua:StatusCode" />
  <opc:Field Name="DiagnosticInfo" TypeName="ua:DiagnosticInfo" />
</opc:StructuredType>

<opc:StructuredType Name="SubscriptionDiagnosticsDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="SessionId" TypeName="ua:NodeId" />
  <opc:Field Name="SubscriptionId" TypeName="opc:UInt32" />
  <opc:Field Name="Priority" TypeName="opc:Byte" />
  <opc:Field Name="PublishingInterval" TypeName="opc:Double" />
  <opc:Field Name="MaxKeepAliveCount" TypeName="opc:UInt32" />
  <opc:Field Name="MaxLifetimeCount" TypeName="opc:UInt32" />
  <opc:Field Name="MaxNotificationsPerPublish" TypeName="opc:UInt32" />
  <opc:Field Name="PublishingEnabled" TypeName="opc:Boolean" />
  <opc:Field Name="ModifyCount" TypeName="opc:UInt32" />
  <opc:Field Name="EnableCount"
TypeName="opc:UInt32" />
  <opc:Field Name="DisableCount" TypeName="opc:UInt32" />
  <opc:Field Name="RepublishRequestCount" TypeName="opc:UInt32" />
  <opc:Field Name="RepublishMessageRequestCount" TypeName="opc:UInt32" />
  <opc:Field Name="RepublishMessageCount" TypeName="opc:UInt32" />
  <opc:Field Name="TransferRequestCount" TypeName="opc:UInt32" />
  <opc:Field Name="TransferredToAltClientCount" TypeName="opc:UInt32" />
  <opc:Field Name="TransferredToSameClientCount" TypeName="opc:UInt32" />
  <opc:Field Name="PublishRequestCount" TypeName="opc:UInt32" />
  <opc:Field Name="DataChangeNotificationsCount" TypeName="opc:UInt32" />
  <opc:Field Name="EventNotificationsCount" TypeName="opc:UInt32" />
  <opc:Field Name="NotificationsCount" TypeName="opc:UInt32" />
  <opc:Field Name="LatePublishRequestCount" TypeName="opc:UInt32" />
  <opc:Field Name="CurrentKeepAliveCount" TypeName="opc:UInt32" />
```

```
  <opc:Field Name="CurrentLifetimeCount" TypeName="opc:UInt32"
/>
  <opc:Field Name="UnacknowledgedMessageCount" TypeName="opc:UInt32" />
  <opc:Field Name="DiscardedMessageCount" TypeName="opc:UInt32" />
  <opc:Field Name="MonitoredItemCount" TypeName="opc:UInt32" />
  <opc:Field Name="DisabledMonitoredItemCount" TypeName="opc:UInt32" />
  <opc:Field Name="MonitoringQueueOverflowCount" TypeName="opc:UInt32" />
  <opc:Field Name="NextSequenceNumber" TypeName="opc:UInt32" />
  <opc:Field Name="EventQueueOverFlowCount" TypeName="opc:UInt32" />
</opc:StructuredType>

<opc:EnumeratedType Name="ModelChangeStructureVerbMask" LengthInBits="32">
  <opc:EnumeratedValue Name="NodeAdded" Value="1" />
  <opc:EnumeratedValue Name="NodeDeleted" Value="2" />
  <opc:EnumeratedValue Name="ReferenceAdded" Value="4" />
  <opc:EnumeratedValue Name="ReferenceDeleted" Value="8" />
  <opc:EnumeratedValue Name="DataTypeChanged" Value="16" />
</opc:EnumeratedType>

<opc:StructuredType Name="ModelChangeStructureDataType" BaseType="ua:ExtensionObject">
   <opc:Field Name="Affected" TypeName="ua:NodeId" />
  <opc:Field Name="AffectedType" TypeName="ua:NodeId" />
  <opc:Field Name="Verb" TypeName="opc:Byte" />
</opc:StructuredType>

<opc:StructuredType Name="SemanticChangeStructureDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="Affected" TypeName="ua:NodeId" />
  <opc:Field Name="AffectedType" TypeName="ua:NodeId" />
</opc:StructuredType>

<opc:StructuredType Name="Range" BaseType="ua:ExtensionObject">
  <opc:Field Name="Low" TypeName="opc:Double" />
  <opc:Field Name="High" TypeName="opc:Double" />
</opc:StructuredType>

<opc:StructuredType Name="EUInformation" BaseType="ua:ExtensionObject">
  <opc:Field Name="NamespaceUri" TypeName="opc:String" />
  <opc:Field Name="UnitId" TypeName="opc:Int32" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" />
</opc:StructuredType>

<opc:EnumeratedType
Name="AxisScaleEnumeration" LengthInBits="32">
  <opc:EnumeratedValue Name="Linear" Value="0" />
  <opc:EnumeratedValue Name="Log" Value="1" />
  <opc:EnumeratedValue Name="Ln" Value="2" />
</opc:EnumeratedType>
```

```
 <opc:StructuredType Name="ComplexNumberType" BaseType="ua:ExtensionObject">
  <opc:Field Name="Real" TypeName="opc:Float" />
  <opc:Field Name="Imaginary" TypeName="opc:Float" />
 </opc:StructuredType>

 <opc:StructuredType Name="DoubleComplexNumberType" BaseType="ua:ExtensionObject">
  <opc:Field Name="Real" TypeName="opc:Double" />
  <opc:Field Name="Imaginary" TypeName="opc:Double" />
 </opc:StructuredType>

 <opc:StructuredType Name="AxisInformation" BaseType="ua:ExtensionObject">
  <opc:Field Name="EngineeringUnits" TypeName="tns:EUInformation" />
  <opc:Field Name="EURange" TypeName="tns:Range" />
  <opc:Field Name="Title" TypeName="ua:LocalizedText" />
  <opc:Field Name="AxisScaleType" TypeName="tns:AxisScaleEnumeration" />
  <opc:Field
 Name="NoOfAxisSteps" TypeName="opc:Int32" />
  <opc:Field Name="AxisSteps" TypeName="opc:Double" LengthField="NoOfAxisSteps" />
 </opc:StructuredType>

 <opc:StructuredType Name="XVType" BaseType="ua:ExtensionObject">
  <opc:Field Name="X" TypeName="opc:Double" />
  <opc:Field Name="Value" TypeName="opc:Float" />
 </opc:StructuredType>

 <opc:StructuredType Name="ProgramDiagnosticDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="CreateSessionId" TypeName="ua:NodeId" />
  <opc:Field Name="CreateClientName" TypeName="opc:String" />
  <opc:Field Name="InvocationCreationTime" TypeName="opc:DateTime" />
  <opc:Field Name="LastTransitionTime" TypeName="opc:DateTime" />
  <opc:Field Name="LastMethodCall" TypeName="opc:String" />
  <opc:Field Name="LastMethodSessionId" TypeName="ua:NodeId" />
  <opc:Field Name="NoOfLastMethodInputArguments" TypeName="opc:Int32" />
  <opc:Field Name="LastMethodInputArguments" TypeName="tns:Argument"
 LengthField="NoOfLastMethodInputArguments"
 />
  <opc:Field Name="NoOfLastMethodOutputArguments" TypeName="opc:Int32" />
  <opc:Field Name="LastMethodOutputArguments" TypeName="tns:Argument"
 LengthField="NoOfLastMethodOutputArguments" />
  <opc:Field Name="LastMethodCallTime" TypeName="opc:DateTime" />
  <opc:Field Name="LastMethodReturnStatus" TypeName="tns:StatusResult" />
 </opc:StructuredType>

 <opc:StructuredType Name="ProgramDiagnostic2DataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="CreateSessionId" TypeName="ua:NodeId" />
  <opc:Field Name="CreateClientName" TypeName="opc:String" />
  <opc:Field Name="InvocationCreationTime" TypeName="opc:DateTime" />
```

```
  <opc:Field Name="LastTransitionTime" TypeName="opc:DateTime" />
  <opc:Field Name="LastMethodCall" TypeName="opc:String" />
  <opc:Field Name="LastMethodSessionId" TypeName="ua:NodeId" />
  <opc:Field Name="NoOfLastMethodInputArguments" TypeName="opc:Int32" />
  <opc:Field Name="LastMethodInputArguments" TypeName="tns:Argument"
 LengthField="NoOfLastMethodInputArguments" />
  <opc:Field Name="NoOfLastMethodOutputArguments" TypeName="opc:Int32" />
  <opc:Field Name="LastMethodOutputArguments" TypeName="tns:Argument"
LengthField="NoOfLastMethodOutputArguments" />
  <opc:Field Name="NoOfLastMethodInputValues" TypeName="opc:Int32" />
  <opc:Field Name="LastMethodInputValues" TypeName="ua:Variant"
LengthField="NoOfLastMethodInputValues" />
  <opc:Field Name="NoOfLastMethodOutputValues" TypeName="opc:Int32" />
  <opc:Field Name="LastMethodOutputValues" TypeName="ua:Variant"
LengthField="NoOfLastMethodOutputValues" />
  <opc:Field Name="LastMethodCallTime" TypeName="opc:DateTime" />
  <opc:Field Name="LastMethodReturnStatus" TypeName="tns:StatusResult" />
 </opc:StructuredType>

 <opc:StructuredType Name="Annotation" BaseType="ua:ExtensionObject">
  <opc:Field Name="Message" TypeName="opc:String" />
  <opc:Field Name="UserName" TypeName="opc:String" />
  <opc:Field Name="AnnotationTime"
 TypeName="opc:DateTime" />
 </opc:StructuredType>

 <opc:EnumeratedType Name="ExceptionDeviationFormat" LengthInBits="32">
  <opc:EnumeratedValue Name="AbsoluteValue" Value="0" />
  <opc:EnumeratedValue Name="PercentOfValue" Value="1" />
  <opc:EnumeratedValue Name="PercentOfRange" Value="2" />
  <opc:EnumeratedValue Name="PercentOfEURange" Value="3" />
  <opc:EnumeratedValue Name="Unknown" Value="4" />
 </opc:EnumeratedType>

</opc:TypeDictionary>
<?xml version="1.0" encoding="utf-8" ?>
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```
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-->

<opc:TypeDictionary
 xmlns:opc="http://opcfoundation.org/BinarySchema/"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
 xmlns:ua="http://opcfoundation.org/UA/"
 xmlns:tns="http://yourorganisation.org/test/"
 DefaultByteOrder="LittleEndian"
 TargetNamespace="http://yourorganisation.org/test/"
>
 <opc:Import Namespace="http://opcfoundation.org/UA/" Location="Opc.Ua.BinarySchema.bsd"/>

 <opc:StructuredType Name="Point" BaseType="ua:ExtensionObject">
   <opc:Field Name="x" TypeName="opc:Double" />
   <opc:Field Name="y" TypeName="opc:Double" />
 </opc:StructuredType>

 <opc:StructuredType Name="NestedPoint" BaseType="ua:ExtensionObject">
    <opc:Field Name="x" TypeName="opc:Double" />
   <opc:Field Name="y" TypeName="opc:Double" />
   <opc:Field Name="point1" TypeName="tns:Point" />
 </opc:StructuredType>

  <opc:StructuredType Name="PointWithArray" BaseType="ua:ExtensionObject">
   <opc:Field Name="x" TypeName="opc:Double" />
   <opc:Field Name="y" TypeName="opc:Double" />
   <opc:Field Name="z" TypeName="opc:Double" />
   <opc:Field Name="NoOfArrayDimensions" TypeName="opc:Int32" />
   <opc:Field Name="array1" TypeName="opc:Double" LengthField="NoOfArrayDimensions" />
 </opc:StructuredType>

 <opc:StructuredType Name="PointWithPointArray" BaseType="ua:ExtensionObject">
```

```
  <opc:Field Name="x" TypeName="opc:Double" />
  <opc:Field Name="y" TypeName="opc:Double" />
  <opc:Field Name="z" TypeName="opc:Double" />
  <opc:Field Name="NoOfArrayDimensions" TypeName="opc:Int32" />
  <opc:Field Name="array1" TypeName="tns:Point" LengthField="NoOfArrayDimensions" />
 </opc:StructuredType>

</opc:TypeDictionary>
```

1.108 open62541 v1.2.3-dev-280-gff87c287

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<opc:TypeDictionary xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
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TargetNamespace="http://opcfoundation.org/UA/POWERLINK/">
  <opc:Import Namespace="http://opcfoundation.org/UA/"/>
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    <opc:Documentation>Represents the values of the POWERLINK ErrorRegister </opc:Documentation>
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    <opc:Field TypeName="opc:ByteString" Name="ValidBits"/>
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  <opc:StructuredType BaseType="ua:ExtensionObject" Name="PowerlinkAttribute">
    <opc:Documentation>Represents the POWERLINK entry attributes</opc:Documentation>
    <opc:Field TypeName="opc:ByteString" Name="Value"/>
    <opc:Field TypeName="opc:ByteString" Name="ValidBits"/>
  </opc:StructuredType>
   <opc:StructuredType BaseType="ua:ExtensionObject" Name="PowerlinkErrorEntryDataType">
    <opc:Documentation>Represents the entries of the POWERLINK Object ERR_History_ADOM (Object 1003h,
SubIndex 1..254)</opc:Documentation>
    <opc:Field TypeName="opc:UInt16" Name="entryType"/>
    <opc:Field TypeName="opc:UInt16" Name="errorCode"/>
    <opc:Field TypeName="opc:UInt64" Name="timeStamp"/>
    <opc:Field TypeName="opc:UInt64" Name="additionalInformation"/>
  </opc:StructuredType>
  <opc:StructuredType BaseType="ua:ExtensionObject" Name="PowerlinkIpAddressDataType">
    <opc:Documentation>Structure DataType PowerlinkIpAddressDataType to represent POWERLINK Objects of
the POWERLINK data type IP_ADDRESS</opc:Documentation>
    <opc:Field TypeName="opc:Byte" Name="b1"/>
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   <opc:StructuredType BaseType="ua:ExtensionObject" Name="PowerlinkPDOMappingEntryDataType">
    <opc:Documentation>Structure DataType PowerlinkPDOMappingEntryDataType to represent the entries of
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    <opc:Field TypeName="opc:UInt16" Name="length"/>
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      <opc:Field TypeName="opc:UInt16" Name="offset"/>
      <opc:Field TypeName="opc:Byte" Name="reserved"/>
      <opc:Field TypeName="opc:Byte" Name="subIndex"/>
      <opc:Field TypeName="opc:UInt16" Name="index"/>
  </opc:StructuredType>
  <opc:EnumeratedType LengthInBits="32" Name="PowerlinkNMTResetCmdEnumeration">
      <opc:Documentation>This DataType is an Enumeration that represents the NMT reset commands for
POWERLINK</opc:Documentation>
      <opc:EnumeratedValue Name="NMTResetNode" Value="40"/>
      <opc:EnumeratedValue Name="NMTResetCommunication" Value="41"/>
      <opc:EnumeratedValue Name="NMTResetConfiguration" Value="42"/>
       <opc:EnumeratedValue Name="NMTSwReset" Value="43"/>
      <opc:EnumeratedValue Name="NMTInvalidService" Value="255"/>
  </opc:EnumeratedType>
  <opc:EnumeratedType LengthInBits="32" Name="PowerlinkNMTStateEnumeration">
      <opc:Documentation>This DataType is an enumeration that represents the NMT State</opc:Documentation>
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      <opc:EnumeratedValue Name="NMT_GS_RESET_CONFIGURATION" Value="121"/>
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      <opc:EnumeratedValue Name="NMT_XS_PRE_OPERATIONAL_1" Value="29"/>
      <opc:EnumeratedValue Name="NMT_XS_PRE_OPERATIONAL_2" Value="93"/>
      <opc:EnumeratedValue Name="NMT_XS_READY_TO_OPERATE" Value="109"/>
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 Name="NMT_XS_OPERATIONAL" Value="253"/>
      <opc:EnumeratedValue Name="NMT_CS_STOPPED" Value="77"/>
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<opc:StructuredType BaseType="ua:ExtensionObject" Name="AntennaNameIdPair">
 <opc:Field TypeName="opc:Int32" Name="AntennaId"/>
  <opc:Field TypeName="opc:CharArray" Name="AntennaName"/>
</opc:StructuredType>
<opc:StructuredType BaseType="ua:ExtensionObject" Name="DhcpGeoConfCoordinate">
 <opc:Field TypeName="opc:Byte" Name="LaRes"/>
 <opc:Field TypeName="opc:Int16" Name="LatitudeInteger"/>
 <opc:Field TypeName="opc:Int32" Name="LatitudeFraction"/>
 <opc:Field TypeName="opc:Byte" Name="LoRes"/>
 <opc:Field TypeName="opc:Int16" Name="LongitudeInteger"/>
 <opc:Field TypeName="opc:Int32" Name="LongitudeFraction"/>
 <opc:Field TypeName="opc:Byte" Name="AT"/>
```

```
 <opc:Field TypeName="opc:Byte" Name="AltRes"/>
 <opc:Field TypeName="opc:Int32" Name="AltitudeInteger"/>
 <opc:Field TypeName="opc:Int16" Name="AltitudeFraction"/>
 <opc:Field TypeName="opc:Byte" Name="Datum"/>
</opc:StructuredType>
<opc:StructuredType BaseType="ua:ExtensionObject" Name="LocalCoordinate">
 <opc:Field TypeName="opc:Double" Name="X"/>
 <opc:Field TypeName="opc:Double" Name="Y"/>
 <opc:Field TypeName="opc:Double" Name="Z"/>
  <opc:Field TypeName="opc:DateTime" Name="Timestamp"/>
 <opc:Field TypeName="opc:Double" Name="DilutionOfPrecision"/>
 <opc:Field TypeName="opc:Int32" Name="UsefulPrecision"/>
</opc:StructuredType>
<opc:StructuredType BaseType="ua:ExtensionObject" Name="Position">
 <opc:Field TypeName="opc:Int32" Name="PositionX"/>
 <opc:Field TypeName="opc:Int32" Name="PositionY"/>
 <opc:Field TypeName="opc:Int32" Name="SizeX"/>
 <opc:Field TypeName="opc:Int32" Name="SizeY"/>
 <opc:Field TypeName="opc:Int32" Name="Rotation"/>
</opc:StructuredType>
<opc:StructuredType BaseType="ua:ExtensionObject" Name="RfidSighting">
 <opc:Field TypeName="opc:Int32" Name="Antenna"/>
 <opc:Field TypeName="opc:Int32" Name="Strength"/>
 <opc:Field TypeName="opc:DateTime" Name="Timestamp"/>
 <opc:Field TypeName="opc:Int32" Name="CurrentPowerLevel"/>
</opc:StructuredType>
<opc:StructuredType BaseType="ua:ExtensionObject" Name="Rotation">
 <opc:Field TypeName="opc:Double" Name="Yaw"/>
 <opc:Field
 TypeName="opc:Double" Name="Pitch"/>
 <opc:Field TypeName="opc:Double" Name="Roll"/>
</opc:StructuredType>
<opc:StructuredType BaseType="ua:ExtensionObject" Name="ScanDataEpc">
 <opc:Field TypeName="opc:UInt16" Name="PC"/>
 <opc:Field TypeName="opc:ByteString" Name="UId"/>
 <opc:Field TypeName="opc:UInt16" Name="XPC_W1"/>
 <opc:Field TypeName="opc:UInt16" Name="XPC_W2"/>
</opc:StructuredType>
<opc:StructuredType BaseType="ua:ExtensionObject" Name="ScanResult">
 <opc:Field TypeName="opc:Bit" Name="LocationSpecified"/>
 <opc:Field Length="31" TypeName="opc:Bit" Name="Reserved1"/>
 <opc:Field TypeName="opc:CharArray" Name="CodeType"/>
 <opc:Field TypeName="tns:ScanData" Name="ScanData"/>
 <opc:Field TypeName="opc:DateTime" Name="Timestamp"/>
 <opc:Field SwitchField="LocationSpecified" TypeName="tns:Location" Name="Location"/>
</opc:StructuredType>
<opc:StructuredType BaseType="tns:ScanResult" Name="OcrScanResult">
 <opc:Field TypeName="opc:Bit" Name="LocationSpecified"/>
```

```
  <opc:Field TypeName="opc:Bit" Name="FontSpecified"/>
 <opc:Field TypeName="opc:Bit" Name="DecodingTimeSpecified"/>
 <opc:Field Length="29" TypeName="opc:Bit" Name="Reserved1"/>
 <opc:Field SourceType="tns:ScanResult" TypeName="opc:CharArray" Name="CodeType"/>
 <opc:Field SourceType="tns:ScanResult" TypeName="tns:ScanData" Name="ScanData"/>
 <opc:Field SourceType="tns:ScanResult" TypeName="opc:DateTime" Name="Timestamp"/>
 <opc:Field SwitchField="LocationSpecified" SourceType="tns:ScanResult" TypeName="tns:Location"
Name="Location"/>
 <opc:Field TypeName="ua:NodeId" Name="ImageId"/>
 <opc:Field TypeName="opc:Byte" Name="Quality"/>
 <opc:Field TypeName="tns:Position" Name="Position"/>
 <opc:Field SwitchField="FontSpecified" TypeName="opc:CharArray" Name="Font"/>
 <opc:Field SwitchField="DecodingTimeSpecified" TypeName="opc:DateTime" Name="DecodingTime"/>
</opc:StructuredType>
<opc:StructuredType BaseType="tns:ScanResult" Name="OpticalScanResult">
 <opc:Field TypeName="opc:Bit"
 Name="LocationSpecified"/>
 <opc:Field TypeName="opc:Bit" Name="GradeSpecified"/>
 <opc:Field TypeName="opc:Bit" Name="PositionSpecified"/>
 <opc:Field TypeName="opc:Bit" Name="SymbologySpecified"/>
 <opc:Field TypeName="opc:Bit" Name="ImageIdSpecified"/>
 <opc:Field Length="27" TypeName="opc:Bit" Name="Reserved1"/>
 <opc:Field SourceType="tns:ScanResult" TypeName="opc:CharArray" Name="CodeType"/>
 <opc:Field SourceType="tns:ScanResult" TypeName="tns:ScanData" Name="ScanData"/>
 <opc:Field SourceType="tns:ScanResult" TypeName="opc:DateTime" Name="Timestamp"/>
 <opc:Field SwitchField="LocationSpecified" SourceType="tns:ScanResult" TypeName="tns:Location"
Name="Location"/>
 <opc:Field SwitchField="GradeSpecified" TypeName="opc:Float" Name="Grade"/>
 <opc:Field SwitchField="PositionSpecified" TypeName="tns:Position" Name="Position"/>
 <opc:Field SwitchField="SymbologySpecified" TypeName="opc:CharArray" Name="Symbology"/>
 <opc:Field SwitchField="ImageIdSpecified" TypeName="ua:NodeId"
 Name="ImageId"/>
</opc:StructuredType>
<opc:StructuredType BaseType="tns:OpticalScanResult" Name="OpticalVerifierScanResult">
 <opc:Field TypeName="opc:Bit" Name="LocationSpecified"/>
 <opc:Field TypeName="opc:Bit" Name="GradeSpecified"/>
 <opc:Field TypeName="opc:Bit" Name="PositionSpecified"/>
 <opc:Field TypeName="opc:Bit" Name="SymbologySpecified"/>
 <opc:Field TypeName="opc:Bit" Name="ImageIdSpecified"/>
 <opc:Field Length="27" TypeName="opc:Bit" Name="Reserved1"/>
 <opc:Field SourceType="tns:ScanResult" TypeName="opc:CharArray" Name="CodeType"/>
 <opc:Field SourceType="tns:ScanResult" TypeName="tns:ScanData" Name="ScanData"/>
 <opc:Field SourceType="tns:ScanResult" TypeName="opc:DateTime" Name="Timestamp"/>
 <opc:Field SwitchField="LocationSpecified" SourceType="tns:ScanResult" TypeName="tns:Location"
Name="Location"/>
 <opc:Field SwitchField="GradeSpecified" SourceType="tns:OpticalScanResult" TypeName="opc:Float"
Name="Grade"/>
 <opc:Field SwitchField="PositionSpecified"
```

```
 SourceType="tns:OpticalScanResult" TypeName="tns:Position" Name="Position"/>
 <opc:Field SwitchField="SymbologySpecified" SourceType="tns:OpticalScanResult"
TypeName="opc:CharArray" Name="Symbology"/>
 <opc:Field SwitchField="ImageIdSpecified" SourceType="tns:OpticalScanResult" TypeName="ua:NodeId"
Name="ImageId"/>
 <opc:Field TypeName="opc:CharArray" Name="IsoGrade"/>
 <opc:Field TypeName="opc:Int16" Name="RMin"/>
 <opc:Field TypeName="opc:Int16" Name="SymbolContrast"/>
 <opc:Field TypeName="opc:Int16" Name="ECMin"/>
 <opc:Field TypeName="opc:Int16" Name="Modulation"/>
 <opc:Field TypeName="opc:Int16" Name="Defects"/>
 <opc:Field TypeName="opc:Int16" Name="Decodability"/>
 <opc:Field TypeName="opc:Int16" Name="Decode"/>
 <opc:Field TypeName="opc:Int16" Name="PrintGain"/>
</opc:StructuredType>
<opc:StructuredType BaseType="tns:ScanResult" Name="RfidScanResult">
 <opc:Field TypeName="opc:Bit" Name="LocationSpecified"/>
 <opc:Field Length="31" TypeName="opc:Bit"
 Name="Reserved1"/>
 <opc:Field SourceType="tns:ScanResult" TypeName="opc:CharArray" Name="CodeType"/>
 <opc:Field SourceType="tns:ScanResult" TypeName="tns:ScanData" Name="ScanData"/>
 <opc:Field SourceType="tns:ScanResult" TypeName="opc:DateTime" Name="Timestamp"/>
 <opc:Field SwitchField="LocationSpecified" SourceType="tns:ScanResult" TypeName="tns:Location"
Name="Location"/>
 <opc:Field TypeName="opc:Int32" Name="NoOfSighting"/>
 <opc:Field LengthField="NoOfSighting" TypeName="tns:RfidSighting" Name="Sighting"/>
</opc:StructuredType>
<opc:StructuredType BaseType="tns:ScanResult" Name="RtlsLocationResult">
 <opc:Field TypeName="opc:Bit" Name="LocationSpecified"/>
 <opc:Field Length="31" TypeName="opc:Bit" Name="Reserved1"/>
 <opc:Field SourceType="tns:ScanResult" TypeName="opc:CharArray" Name="CodeType"/>
 <opc:Field SourceType="tns:ScanResult" TypeName="tns:ScanData" Name="ScanData"/>
 <opc:Field SourceType="tns:ScanResult" TypeName="opc:DateTime" Name="Timestamp"/>
  <opc:Field SwitchField="LocationSpecified" SourceType="tns:ScanResult" TypeName="tns:Location"
Name="Location"/>
 <opc:Field TypeName="opc:Double" Name="Speed"/>
 <opc:Field TypeName="opc:Double" Name="Heading"/>
 <opc:Field TypeName="tns:Rotation" Name="Rotation"/>
 <opc:Field TypeName="opc:DateTime" Name="ReceiveTime"/>
</opc:StructuredType>
<opc:StructuredType BaseType="ua:ExtensionObject" Name="ScanSettings">
 <opc:Field TypeName="opc:Bit" Name="LocationTypeSpecified"/>
 <opc:Field Length="31" TypeName="opc:Bit" Name="Reserved1"/>
 <opc:Field TypeName="opc:Double" Name="Duration"/>
 <opc:Field TypeName="opc:Int32" Name="Cycles"/>
 <opc:Field TypeName="opc:Boolean" Name="DataAvailable"/>
 <opc:Field SwitchField="LocationTypeSpecified" TypeName="tns:LocationTypeEnumeration"
Name="LocationType"/>
```

```
</opc:StructuredType>
<opc:StructuredType BaseType="ua:Union" Name="Location">
 <opc:Field TypeName="opc:UInt32" Name="SwitchField"/>
 <opc:Field SwitchField="SwitchField"
 TypeName="opc:CharArray" SwitchValue="1" Name="NMEA"/>
 <opc:Field SwitchField="SwitchField" TypeName="tns:LocalCoordinate" SwitchValue="2" Name="Local"/>
 <opc:Field SwitchField="SwitchField" TypeName="tns:WGS84Coordinate" SwitchValue="3" Name="WGS84"/>
 <opc:Field SwitchField="SwitchField" TypeName="opc:CharArray" SwitchValue="4" Name="Name"/>
</opc:StructuredType>
<opc:StructuredType BaseType="ua:Union" Name="ScanData">
 <opc:Field TypeName="opc:UInt32" Name="SwitchField"/>
 <opc:Field SwitchField="SwitchField" TypeName="opc:ByteString" SwitchValue="1" Name="ByteString"/>
 <opc:Field SwitchField="SwitchField" TypeName="opc:CharArray" SwitchValue="2" Name="String"/>
 <opc:Field SwitchField="SwitchField" TypeName="tns:ScanDataEpc" SwitchValue="3" Name="Epc"/>
 <opc:Field SwitchField="SwitchField" TypeName="ua:Variant" SwitchValue="4" Name="Custom"/>
</opc:StructuredType>
<opc:StructuredType BaseType="ua:ExtensionObject" Name="WGS84Coordinate">
 <opc:Field TypeName="opc:CharArray"
 Name="N/S Hemisphere"/>
 <opc:Field TypeName="opc:Double" Name="Latitude"/>
 <opc:Field TypeName="opc:CharArray" Name="E/W Hemisphere"/>
 <opc:Field TypeName="opc:Double" Name="Longitude"/>
 <opc:Field TypeName="opc:Double" Name="Altitude"/>
 <opc:Field TypeName="opc:DateTime" Name="Timestamp"/>
 <opc:Field TypeName="opc:Double" Name="DilutionOfPrecision"/>
 <opc:Field TypeName="opc:Int32" Name="UsefulPrecisionLatLon"/>
 <opc:Field TypeName="opc:Int32" Name="UsefulPrecisionAlt"/>
</opc:StructuredType>
<opc:EnumeratedType LengthInBits="32" Name="AutoIdOperationStatusEnumeration">
 <opc:EnumeratedValue Name="SUCCESS" Value="0"/>
 <opc:EnumeratedValue Name="MISC_ERROR_TOTAL" Value="1"/>
 <opc:EnumeratedValue Name="MISC_ERROR_PARTIAL" Value="2"/>
 <opc:EnumeratedValue Name="PERMISSON_ERROR" Value="3"/>
 <opc:EnumeratedValue Name="PASSWORD_ERROR" Value="4"/>
 <opc:EnumeratedValue Name="REGION_NOT_FOUND_ERROR" Value="5"/>
 <opc:EnumeratedValue Name="OP_NOT_POSSIBLE_ERROR"
 Value="6"/>
 <opc:EnumeratedValue Name="OUT_OF_RANGE_ERROR" Value="7"/>
 <opc:EnumeratedValue Name="NO_IDENTIFIER" Value="8"/>
 <opc:EnumeratedValue Name="MULTIPLE_IDENTIFIERS" Value="9"/>
 <opc:EnumeratedValue Name="READ_ERROR" Value="10"/>
 <opc:EnumeratedValue Name="DECODING_ERROR" Value="11"/>
 <opc:EnumeratedValue Name="MATCH_ERROR" Value="12"/>
 <opc:EnumeratedValue Name="CODE_NOT_SUPPORTED" Value="13"/>
 <opc:EnumeratedValue Name="WRITE_ERROR" Value="14"/>
 <opc:EnumeratedValue Name="NOT_SUPPORTED_BY_DEVICE" Value="15"/>
 <opc:EnumeratedValue Name="NOT_SUPPORTED_BY_TAG" Value="16"/>
 <opc:EnumeratedValue Name="DEVICE_NOT_READY" Value="17"/>
```

```
 <opc:EnumeratedValue Name="INVALID_CONFIGURATION" Value="18"/>
 <opc:EnumeratedValue Name="RF_COMMUNICATION_ERROR" Value="19"/>
 <opc:EnumeratedValue Name="DEVICE_FAULT" Value="20"/>
 <opc:EnumeratedValue Name="TAG_HAS_LOW_BATTERY" Value="21"/>
</opc:EnumeratedType>
<opc:EnumeratedType LengthInBits="32" Name="DeviceStatusEnumeration">
  <opc:EnumeratedValue Name="Idle" Value="0"/>
 <opc:EnumeratedValue Name="Error" Value="1"/>
 <opc:EnumeratedValue Name="Scanning" Value="2"/>
 <opc:EnumeratedValue Name="Busy" Value="3"/>
</opc:EnumeratedType>
<opc:EnumeratedType LengthInBits="32" Name="LocationTypeEnumeration">
 <opc:EnumeratedValue Name="NMEA" Value="0"/>
 <opc:EnumeratedValue Name="LOCAL" Value="1"/>
 <opc:EnumeratedValue Name="WGS84" Value="2"/>
 <opc:EnumeratedValue Name="NAME" Value="3"/>
</opc:EnumeratedType>
<opc:EnumeratedType LengthInBits="32" Name="RfidLockOperationEnumeration">
 <opc:EnumeratedValue Name="Lock" Value="0"/>
 <opc:EnumeratedValue Name="Unlock" Value="1"/>
 <opc:EnumeratedValue Name="PermanentLock" Value="2"/>
 <opc:EnumeratedValue Name="PermanentUnlock" Value="3"/>
</opc:EnumeratedType>
<opc:EnumeratedType LengthInBits="32" Name="RfidLockRegionEnumeration">
 <opc:EnumeratedValue Name="Kill" Value="0"/>
 <opc:EnumeratedValue Name="Access" Value="1"/>
  <opc:EnumeratedValue Name="EPC" Value="2"/>
 <opc:EnumeratedValue Name="TID" Value="3"/>
 <opc:EnumeratedValue Name="User" Value="4"/>
</opc:EnumeratedType>
<opc:EnumeratedType LengthInBits="32" Name="RfidPasswordTypeEnumeration">
 <opc:EnumeratedValue Name="Access" Value="0"/>
 <opc:EnumeratedValue Name="Kill" Value="1"/>
 <opc:EnumeratedValue Name="Read" Value="2"/>
 <opc:EnumeratedValue Name="Write" Value="3"/>
</opc:EnumeratedType>
</opc:TypeDictionary>
<opc:TypeDictionary
 xmlns:opc="http://opcfoundation.org/BinarySchema/"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
 xmlns:ua="http://opcfoundation.org/UA/"
 xmlns:tns="http://opcfoundation.org/UA/"
 DefaultByteOrder="LittleEndian"
 TargetNamespace="http://opcfoundation.org/UA/"
>

 <opc:Import Namespace="http://opcfoundation.org/BinarySchema/" />
```

```
<!-- Transport types begin  -->

 <opc:EnumeratedType Name="MessageType" LengthInBits="32">
   <opc:Documentation>Message Type and whether the message contains an intermediate
chunk</opc:Documentation>
   <opc:EnumeratedValue Name="ACK" Value="0x4B4341" />
   <opc:EnumeratedValue Name="HEL" Value="0x4C4548" />
   <opc:EnumeratedValue Name="MSG" Value="0x47534D" />
   <opc:EnumeratedValue Name="OPN" Value="0x4E504F" />
   <opc:EnumeratedValue Name="CLO" Value="0x4F4C43" />
   <opc:EnumeratedValue Name="ERR" Value="0x525245" />
   <opc:EnumeratedValue Name="INVALID" Value="0x0" />
 </opc:EnumeratedType>

 <opc:EnumeratedType
 Name="ChunkType" LengthInBits="32">
   <opc:Documentation>Type of the chunk</opc:Documentation>
   <opc:EnumeratedValue Name="FINAL" Value="0x46000000" />
   <opc:EnumeratedValue Name="INTERMEDIATE" Value="0x43000000" />
   <opc:EnumeratedValue Name="ABORT" Value="0x41000000" />
 </opc:EnumeratedType>

  <opc:StructuredType Name="TcpMessageHeader">
   <opc:Documentation>TCP Header</opc:Documentation>
   <opc:Field Name="MessageTypeAndChunkType" TypeName="opc:UInt32" />
   <opc:Field Name="MessageSize" TypeName="opc:UInt32" />
 </opc:StructuredType>

  <opc:StructuredType Name="TcpHelloMessage">
   <opc:Documentation>Hello Message</opc:Documentation>
   <opc:Field Name="ProtocolVersion" TypeName="opc:UInt32" />
   <opc:Field Name="ReceiveBufferSize" TypeName="opc:UInt32" />
   <opc:Field Name="SendBufferSize" TypeName="opc:UInt32" />
   <opc:Field Name="MaxMessageSize" TypeName="opc:UInt32" />
 <opc:Field Name="MaxChunkCount" TypeName="opc:UInt32" />
   <opc:Field
 Name="EndpointUrl" TypeName="opc:String" />
 </opc:StructuredType>

  <opc:StructuredType Name="TcpAcknowledgeMessage">
   <opc:Documentation>Acknowledge Message</opc:Documentation>
   <opc:Field Name="ProtocolVersion" TypeName="opc:UInt32" />
   <opc:Field Name="ReceiveBufferSize" TypeName="opc:UInt32" />
   <opc:Field Name="SendBufferSize" TypeName="opc:UInt32" />
   <opc:Field Name="MaxMessageSize" TypeName="opc:UInt32" />
 <opc:Field Name="MaxChunkCount" TypeName="opc:UInt32" />
 </opc:StructuredType>
```

```
 <opc:StructuredType Name="TcpErrorMessage">
  <opc:Documentation>Error Message</opc:Documentation>
  <opc:Field Name="Error" TypeName="opc:UInt32" />
  <opc:Field Name="Reason" TypeName="opc:String" />
 </opc:StructuredType>

 <opc:StructuredType Name="AsymmetricAlgorithmSecurityHeader">
  <opc:Documentation>Asymmetric Security Header</opc:Documentation>
  <opc:Field Name="SecurityPolicyUri" TypeName="opc:ByteString" />
  <opc:Field Name="SenderCertificate"
TypeName="opc:ByteString" />
  <opc:Field Name="ReceiverCertificateThumbprint" TypeName="opc:ByteString" />
 </opc:StructuredType>

 <opc:StructuredType Name="SymmetricAlgorithmSecurityHeader">
  <opc:Documentation>Symmetric Security Header</opc:Documentation>
  <opc:Field Name="TokenId" TypeName="opc:UInt32" />
 </opc:StructuredType>

 <opc:StructuredType Name="SequenceHeader">
  <opc:Documentation>Secure Layer Sequence Header</opc:Documentation>
  <opc:Field Name="SequenceNumber" TypeName="opc:UInt32" />
  <opc:Field Name="RequestId" TypeName="opc:UInt32"/>
 </opc:StructuredType>

<!-- Transport types end -->

</opc:TypeDictionary>
<?xml version="1.0" encoding="utf-8" ?>
<!--
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-->

<opc:TypeDictionary
 xmlns:opc="http://opcfoundation.org/BinarySchema/"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
 xmlns:ua="http://opcfoundation.org/UA/"
 xmlns:tns="http://yourorganisation.org/test/"
 DefaultByteOrder="LittleEndian"
 TargetNamespace="http://yourorganisation.org/test/"
>
 <opc:Import Namespace="http://opcfoundation.org/UA/" Location="Opc.Ua.BinarySchema.bsd"/>

 <opc:StructuredType Name="Point" BaseType="ua:ExtensionObject">
   <opc:Field Name="x" TypeName="opc:Double" />
   <opc:Field Name="y" TypeName="opc:Double" />
 </opc:StructuredType>

 <opc:StructuredType Name="NestedPoint" BaseType="ua:ExtensionObject">
    <opc:Field Name="x" TypeName="opc:Double" />
   <opc:Field Name="y" TypeName="opc:Double" />
   <opc:Field Name="point1" TypeName="tns:Point" />
 </opc:StructuredType>

  <opc:StructuredType Name="PointWithArray" BaseType="ua:ExtensionObject">
   <opc:Field Name="x" TypeName="opc:Double" />
   <opc:Field Name="y" TypeName="opc:Double" />
   <opc:Field Name="z" TypeName="opc:Double" />
   <opc:Field Name="array1Size" TypeName="opc:UInt32" />
   <opc:Field Name="array1" TypeName="opc:Double" LengthField="array1Size" />
 </opc:StructuredType>

 <opc:StructuredType BaseType="ua:Union" Name="SelfContainingUnion">
   <opc:Field TypeName="opc:UInt32" Name="SwitchField"/>
   <opc:Field SwitchField="SwitchField" TypeName="opc:Double" SwitchValue="1" Name="Double"/>
   <opc:Field SwitchField="SwitchField" TypeName="opc:Int32" SwitchValue="2" Name="NoOfArray"/>
   <opc:Field LengthField="NoOfArray" SwitchField="SwitchField" TypeName="tns:SelfContainingUnion"
SwitchValue="2"
 Name="Array"/>
 </opc:StructuredType>
```

</opc:TypeDictionary>
Format: https://www.debian.org/doc/packaging-manuals/copyright-format/1.0/
Upstream-Name: open62541
Upstream-Contact: open62541 Team <open62541-core@googlegroups.com>
Source: https://open62541.org/

Files: *
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<opc:TypeDictionary
 xmlns:opc="http://opcfoundation.org/BinarySchema/"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
 xmlns:ua="http://opcfoundation.org/UA/"
 xmlns:tns="http://opcfoundation.org/UA/"
 DefaultByteOrder="LittleEndian"
 TargetNamespace="http://opcfoundation.org/UA/"
>

 <opc:Import Namespace="http://opcfoundation.org/BinarySchema/" />

 <opc:StructuredType Name="XmlElement">
  <opc:Documentation>An XML element encoded as a UTF-8 string.</opc:Documentation>
  <opc:Field Name="Length" TypeName="opc:Int32" />
  <opc:Field Name="Value" TypeName="opc:Char" LengthField="Length" />
 </opc:StructuredType>

 <opc:EnumeratedType
 Name="NodeIdType" LengthInBits="6">
  <opc:Documentation>The possible encodings for a NodeId value.</opc:Documentation>
  <opc:EnumeratedValue Name="TwoByte" Value="0" />
  <opc:EnumeratedValue Name="FourByte" Value="1" />
  <opc:EnumeratedValue Name="Numeric" Value="2" />
  <opc:EnumeratedValue Name="String" Value="3" />
  <opc:EnumeratedValue Name="Guid" Value="4" />
  <opc:EnumeratedValue Name="ByteString" Value="5" />
 </opc:EnumeratedType>

 <opc:StructuredType Name="TwoByteNodeId">
  <opc:Field Name="Identifier" TypeName="opc:Byte" />
 </opc:StructuredType>
```

```
 <opc:StructuredType Name="FourByteNodeId">
  <opc:Field Name="NamespaceIndex" TypeName="opc:Byte" />
  <opc:Field Name="Identifier" TypeName="opc:UInt16" />
 </opc:StructuredType>

 <opc:StructuredType Name="NumericNodeId">
  <opc:Field Name="NamespaceIndex" TypeName="opc:UInt16" />
  <opc:Field Name="Identifier" TypeName="opc:UInt32" />
 </opc:StructuredType>

 <opc:StructuredType
 Name="StringNodeId">
  <opc:Field Name="NamespaceIndex" TypeName="opc:UInt16" />
  <opc:Field Name="Identifier" TypeName="opc:CharArray" />
 </opc:StructuredType>

 <opc:StructuredType Name="GuidNodeId">
  <opc:Field Name="NamespaceIndex" TypeName="opc:UInt16" />
  <opc:Field Name="Identifier" TypeName="opc:Guid" />
 </opc:StructuredType>

 <opc:StructuredType Name="ByteStringNodeId">
  <opc:Field Name="NamespaceIndex" TypeName="opc:UInt16" />
  <opc:Field Name="Identifier" TypeName="opc:ByteString" />
 </opc:StructuredType>

 <opc:StructuredType Name="NodeId">
  <opc:Documentation>An identifier for a node in a UA server address space.</opc:Documentation>
  <opc:Field Name="NodeIdType" TypeName="ua:NodeIdType" />
  <opc:Field Name="Reserved1" TypeName="opc:Bit" Length="2" />
  <opc:Field Name="TwoByte" TypeName="ua:TwoByteNodeId" SwitchField="NodeIdType" SwitchValue="0" />
  <opc:Field Name="FourByte" TypeName="ua:FourByteNodeId" SwitchField="NodeIdType" SwitchValue="1"
 />
  <opc:Field Name="Numeric" TypeName="ua:NumericNodeId" SwitchField="NodeIdType" SwitchValue="2" />
  <opc:Field Name="String" TypeName="ua:StringNodeId" SwitchField="NodeIdType" SwitchValue="3" />
  <opc:Field Name="Guid" TypeName="ua:GuidNodeId" SwitchField="NodeIdType" SwitchValue="4" />
  <opc:Field Name="ByteString" TypeName="ua:ByteStringNodeId" SwitchField="NodeIdType"
SwitchValue="5" />
 </opc:StructuredType>

 <opc:StructuredType Name="ExpandedNodeId">
  <opc:Documentation>An identifier for a node in a UA server address space qualified with a complete namespace
string.</opc:Documentation>
  <opc:Field Name="NodeIdType" TypeName="ua:NodeIdType" />
  <opc:Field Name="ServerIndexSpecified" TypeName="opc:Bit" />
  <opc:Field Name="NamespaceURISpecified" TypeName="opc:Bit" />
  <opc:Field Name="TwoByte" TypeName="ua:TwoByteNodeId" SwitchField="NodeIdType" SwitchValue="0" />
  <opc:Field Name="FourByte" TypeName="ua:FourByteNodeId" SwitchField="NodeIdType"
```

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 SwitchValue="1" />
   <opc:Field Name="Numeric" TypeName="ua:NumericNodeId" SwitchField="NodeIdType" SwitchValue="2" />
   <opc:Field Name="String" TypeName="ua:StringNodeId" SwitchField="NodeIdType" SwitchValue="3" />
   <opc:Field Name="Guid" TypeName="ua:GuidNodeId" SwitchField="NodeIdType" SwitchValue="4" />
   <opc:Field Name="ByteString" TypeName="ua:ByteStringNodeId" SwitchField="NodeIdType"
SwitchValue="5" />
   <opc:Field Name="NamespaceURI" TypeName="opc:CharArray" SwitchField="NamespaceURISpecified"/>
   <opc:Field Name="ServerIndex" TypeName="opc:UInt32" SwitchField="ServerIndexSpecified"/>
 </opc:StructuredType>

 <opc:OpaqueType Name="StatusCode" LengthInBits="32" ByteOrderSignificant="true">
   <opc:Documentation>A 32-bit status code value.</opc:Documentation>
 </opc:OpaqueType>

 <opc:StructuredType Name="DiagnosticInfo">
   <opc:Documentation>A recursive structure containing diagnostic information associated with a status
code.</opc:Documentation>
    <opc:Field Name="SymbolicIdSpecified" TypeName="opc:Bit" />
   <opc:Field Name="NamespaceURISpecified" TypeName="opc:Bit" />
   <opc:Field Name="LocaleSpecified" TypeName="opc:Bit" />
   <opc:Field Name="LocalizedTextSpecified" TypeName="opc:Bit" />
   <opc:Field Name="AdditionalInfoSpecified" TypeName="opc:Bit" />
   <opc:Field Name="InnerStatusCodeSpecified" TypeName="opc:Bit" />
   <opc:Field Name="InnerDiagnosticInfoSpecified" TypeName="opc:Bit" />
   <opc:Field Name="Reserved1" TypeName="opc:Bit" Length="2" />
   <opc:Field Name="SymbolicId" TypeName="opc:Int32" SwitchField="SymbolicIdSpecified" />
   <opc:Field Name="NamespaceURI" TypeName="opc:Int32" SwitchField="NamespaceURISpecified" />
   <opc:Field Name="Locale" TypeName="opc:Int32" SwitchField="LocaleSpecified" />
   <opc:Field Name="LocalizedText" TypeName="opc:Int32" SwitchField="LocalizedTextSpecified" />
   <opc:Field Name="AdditionalInfo" TypeName="opc:CharArray" SwitchField="AdditionalInfoSpecified"
 />
   <opc:Field Name="InnerStatusCode" TypeName="ua:StatusCode" SwitchField="InnerStatusCodeSpecified" />
   <opc:Field Name="InnerDiagnosticInfo" TypeName="ua:DiagnosticInfo"
SwitchField="InnerDiagnosticInfoSpecified" />
 </opc:StructuredType>

 <opc:StructuredType Name="QualifiedName">
   <opc:Documentation>A string qualified with a namespace index.</opc:Documentation>
   <opc:Field Name="NamespaceIndex" TypeName="opc:UInt16" />
   <opc:Field Name="Name" TypeName="opc:CharArray" />
 </opc:StructuredType>

 <opc:StructuredType Name="LocalizedText">
   <opc:Documentation>A string qualified with a namespace index.</opc:Documentation>
   <opc:Field Name="LocaleSpecified" TypeName="opc:Bit" />
   <opc:Field Name="TextSpecified" TypeName="opc:Bit" />
   <opc:Field Name="Reserved1" TypeName="opc:Bit" Length="6" />
   <opc:Field Name="Locale" TypeName="opc:CharArray" SwitchField="LocaleSpecified" />
```

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  <opc:Field Name="Text" TypeName="opc:CharArray" SwitchField="TextSpecified"
/>
 </opc:StructuredType>

 <opc:StructuredType Name="DataValue">
  <opc:Documentation>A value with an associated timestamp, and quality.</opc:Documentation>
  <opc:Field Name="ValueSpecified" TypeName="opc:Bit" />
  <opc:Field Name="StatusCodeSpecified" TypeName="opc:Bit" />
  <opc:Field Name="SourceTimestampSpecified" TypeName="opc:Bit" />
  <opc:Field Name="SourcePicosecondsSpecified" TypeName="opc:Bit" />
  <opc:Field Name="ServerTimestampSpecified" TypeName="opc:Bit" />
  <opc:Field Name="ServerPicosecondsSpecified" TypeName="opc:Bit" />
  <opc:Field Name="Reserved1" TypeName="opc:Bit" Length="2" />
  <opc:Field Name="Value" TypeName="ua:Variant" SwitchField="ValueSpecified" />
  <opc:Field Name="StatusCode" TypeName="ua:StatusCode" SwitchField="StatusCodeSpecified" />
  <opc:Field Name="SourceTimestamp" TypeName="opc:DateTime" SwitchField="SourceTimestampSpecified" />
  <opc:Field Name="SourcePicoseconds" TypeName="opc:UInt16" SwitchField="SourcePicosecondsSpecified"
/>
  <opc:Field Name="ServerTimestamp" TypeName="opc:DateTime" SwitchField="ServerTimestampSpecified" />
  <opc:Field Name="ServerPicoseconds" TypeName="opc:UInt16" SwitchField="ServerPicosecondsSpecified" />
 </opc:StructuredType>

 <opc:StructuredType Name="ExtensionObject">
  <opc:Documentation>A serialized object prefixed with its data type identifier.</opc:Documentation>
  <opc:Field Name="TypeIdSpecified" TypeName="opc:Bit" />
  <opc:Field Name="BinaryBody" TypeName="opc:Bit" />
  <opc:Field Name="XmlBody" TypeName="opc:Bit" />
  <opc:Field Name="Reserved1" TypeName="opc:Bit" Length="5" />
  <opc:Field Name="TypeId" TypeName="ua:ExpandedNodeId" SwitchField="TypeIdSpecified" />
  <opc:Field Name="BodyLength" TypeName="opc:Int32" />
  <opc:Field Name="Body" TypeName="opc:Byte" LengthField="BodyLength" />
 </opc:StructuredType>

 <opc:StructuredType Name="Variant">
  <opc:Documentation>A union of several types.</opc:Documentation>
  <opc:Field
 Name="VariantType" TypeName="opc:Bit" Length="6" />
  <opc:Field Name="ArrayDimensionsSpecified" TypeName="opc:Bit" Length="1"/>
  <opc:Field Name="ArrayLengthSpecified" TypeName="opc:Bit" Length="1"/>
  <opc:Field Name="ArrayLength" TypeName="opc:Int32" SwitchField="ArrayLengthSpecified" />
  <opc:Field Name="Boolean" TypeName="opc:Boolean" LengthField="ArrayLength" SwitchField="VariantType"
SwitchValue="1" />
  <opc:Field Name="SByte" TypeName="opc:SByte" LengthField="ArrayLength" SwitchField="VariantType"
SwitchValue="2" />
  <opc:Field Name="Byte" TypeName="opc:Byte" LengthField="ArrayLength" SwitchField="VariantType"
SwitchValue="3" />
  <opc:Field Name="Int16" TypeName="opc:Int16" LengthField="ArrayLength" SwitchField="VariantType"
SwitchValue="4" />
```

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  <opc:Field Name="UInt16" TypeName="opc:UInt16" LengthField="ArrayLength" SwitchField="VariantType"
SwitchValue="5" />
  <opc:Field Name="Int32" TypeName="opc:Int32" LengthField="ArrayLength" SwitchField="VariantType"
 SwitchValue="6" />
  <opc:Field Name="UInt32" TypeName="opc:UInt32" LengthField="ArrayLength" SwitchField="VariantType"
SwitchValue="7" />
  <opc:Field Name="Int64" TypeName="opc:Int64" LengthField="ArrayLength" SwitchField="VariantType"
SwitchValue="8" />
  <opc:Field Name="UInt64" TypeName="opc:UInt64" LengthField="ArrayLength" SwitchField="VariantType"
SwitchValue="9" />
  <opc:Field Name="Float" TypeName="opc:Float" LengthField="ArrayLength" SwitchField="VariantType"
SwitchValue="10" />
  <opc:Field Name="Double" TypeName="opc:Double" LengthField="ArrayLength" SwitchField="VariantType"
SwitchValue="11" />
  <opc:Field Name="String" TypeName="opc:CharArray" LengthField="ArrayLength"
SwitchField="VariantType" SwitchValue="12" />
  <opc:Field Name="DateTime" TypeName="opc:DateTime" LengthField="ArrayLength"
SwitchField="VariantType" SwitchValue="13" />
  <opc:Field Name="Guid" TypeName="opc:Guid" LengthField="ArrayLength" SwitchField="VariantType"
SwitchValue="14"
 />
  <opc:Field Name="ByteString" TypeName="opc:ByteString" LengthField="ArrayLength"
SwitchField="VariantType" SwitchValue="15" />
  <opc:Field Name="XmlElement" TypeName="ua:XmlElement" LengthField="ArrayLength"
SwitchField="VariantType" SwitchValue="16" />
  <opc:Field Name="NodeId" TypeName="ua:NodeId" LengthField="ArrayLength" SwitchField="VariantType"
SwitchValue="17" />
  <opc:Field Name="ExpandedNodeId" TypeName="ua:ExpandedNodeId" LengthField="ArrayLength"
SwitchField="VariantType" SwitchValue="18" />
  <opc:Field Name="StatusCode" TypeName="ua:StatusCode" LengthField="ArrayLength"
SwitchField="VariantType" SwitchValue="19" />
  <opc:Field Name="QualifiedName" TypeName="ua:QualifiedName" LengthField="ArrayLength"
SwitchField="VariantType" SwitchValue="20" />
  <opc:Field Name="LocalizedText" TypeName="ua:LocalizedText" LengthField="ArrayLength"
SwitchField="VariantType" SwitchValue="21" />
  <opc:Field Name="ExtensionObject" TypeName="ua:ExtensionObject"
 LengthField="ArrayLength" SwitchField="VariantType" SwitchValue="22" />
  <opc:Field Name="DataValue" TypeName="ua:DataValue" LengthField="ArrayLength"
SwitchField="VariantType" SwitchValue="23" />
  <opc:Field Name="Variant" TypeName="ua:Variant" LengthField="ArrayLength" SwitchField="VariantType"
SwitchValue="24" />
  <opc:Field Name="DiagnosticInfo" TypeName="ua:DiagnosticInfo" LengthField="ArrayLength"
SwitchField="VariantType" SwitchValue="25" />
  <opc:Field Name="NoOfArrayDimensions" TypeName="opc:Int32" SwitchField="ArrayDimensionsSpecified"
/>
  <opc:Field Name="ArrayDimensions" TypeName="opc:Int32" LengthField="NoOfArrayDimensions"
SwitchField="ArrayDimensionsSpecified" />
 </opc:StructuredType>
```

```
<opc:EnumeratedType Name="NamingRuleType" LengthInBits="32">
  <opc:EnumeratedValue Name="Mandatory" Value="1" />
  <opc:EnumeratedValue Name="Optional" Value="2" />
  <opc:EnumeratedValue Name="Constraint" Value="3" />
</opc:EnumeratedType>


<opc:OpaqueType
Name="ImageBMP">
  <opc:Documentation>An image encoded in BMP format.</opc:Documentation>
</opc:OpaqueType>

<opc:OpaqueType Name="ImageGIF">
  <opc:Documentation>An image encoded in GIF format.</opc:Documentation>
</opc:OpaqueType>

<opc:OpaqueType Name="ImageJPG">
  <opc:Documentation>An image encoded in JPEG format.</opc:Documentation>
</opc:OpaqueType>

<opc:OpaqueType Name="ImagePNG">
  <opc:Documentation>An image encoded in PNG format.</opc:Documentation>
</opc:OpaqueType>

<opc:OpaqueType Name="AudioDataType">
  <opc:Documentation>An image encoded in PNG format.</opc:Documentation>
</opc:OpaqueType>

<opc:OpaqueType Name="BitFieldMaskDataType">
  <opc:Documentation>A mask of 32 bits that can be updated individually by using the top 32 bits as a
mask.</opc:Documentation>
</opc:OpaqueType>

<opc:StructuredType Name="KeyValuePair" BaseType="ua:ExtensionObject">
  <opc:Field Name="Key" TypeName="ua:QualifiedName" />
  <opc:Field Name="Value"
TypeName="ua:Variant" />
</opc:StructuredType>

<opc:StructuredType Name="EndpointType" BaseType="ua:ExtensionObject">
  <opc:Field Name="EndpointUrl" TypeName="opc:String" />
  <opc:Field Name="SecurityMode" TypeName="tns:MessageSecurityMode" />
  <opc:Field Name="SecurityPolicyUri" TypeName="opc:String" />
  <opc:Field Name="TransportProfileUri" TypeName="opc:String" />
</opc:StructuredType>

<opc:EnumeratedType Name="OpenFileMode" LengthInBits="32">
```

```
  <opc:EnumeratedValue Name="Read" Value="1" />
  <opc:EnumeratedValue Name="Write" Value="2" />
  <opc:EnumeratedValue Name="EraseExisting" Value="4" />
  <opc:EnumeratedValue Name="Append" Value="8" />
</opc:EnumeratedType>

<opc:EnumeratedType Name="IdentityCriteriaType" LengthInBits="32">
  <opc:EnumeratedValue Name="UserName" Value="1" />
  <opc:EnumeratedValue Name="Thumbprint" Value="2" />
  <opc:EnumeratedValue Name="Role" Value="3" />
  <opc:EnumeratedValue Name="GroupId" Value="4" />
  <opc:EnumeratedValue
Name="Anonymous" Value="5" />
  <opc:EnumeratedValue Name="AuthenticatedUser" Value="6" />
</opc:EnumeratedType>

<opc:StructuredType Name="IdentityMappingRuleType" BaseType="ua:ExtensionObject">
  <opc:Field Name="CriteriaType" TypeName="tns:IdentityCriteriaType" />
  <opc:Field Name="Criteria" TypeName="opc:String" />
</opc:StructuredType>

<opc:EnumeratedType Name="TrustListMasks" LengthInBits="32">
  <opc:EnumeratedValue Name="None" Value="0" />
  <opc:EnumeratedValue Name="TrustedCertificates" Value="1" />
  <opc:EnumeratedValue Name="TrustedCrls" Value="2" />
  <opc:EnumeratedValue Name="IssuerCertificates" Value="4" />
  <opc:EnumeratedValue Name="IssuerCrls" Value="8" />
  <opc:EnumeratedValue Name="All" Value="15" />
</opc:EnumeratedType>

<opc:StructuredType Name="TrustListDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="SpecifiedLists" TypeName="opc:UInt32" />
  <opc:Field Name="NoOfTrustedCertificates" TypeName="opc:Int32"
/>
  <opc:Field Name="TrustedCertificates" TypeName="opc:ByteString" LengthField="NoOfTrustedCertificates" />
  <opc:Field Name="NoOfTrustedCrls" TypeName="opc:Int32" />
  <opc:Field Name="TrustedCrls" TypeName="opc:ByteString" LengthField="NoOfTrustedCrls" />
  <opc:Field Name="NoOfIssuerCertificates" TypeName="opc:Int32" />
  <opc:Field Name="IssuerCertificates" TypeName="opc:ByteString" LengthField="NoOfIssuerCertificates" />
  <opc:Field Name="NoOfIssuerCrls" TypeName="opc:Int32" />
  <opc:Field Name="IssuerCrls" TypeName="opc:ByteString" LengthField="NoOfIssuerCrls" />
</opc:StructuredType>

<opc:StructuredType Name="DecimalDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="Scale" TypeName="opc:Int16" />
  <opc:Field Name="Value" TypeName="opc:ByteString" />
</opc:StructuredType>
```

```
 <opc:StructuredType Name="DataTypeSchemaHeader" BaseType="ua:ExtensionObject">
  <opc:Field Name="NoOfNamespaces" TypeName="opc:Int32" />
  <opc:Field
 Name="Namespaces" TypeName="opc:String" LengthField="NoOfNamespaces" />
  <opc:Field Name="NoOfStructureDataTypes" TypeName="opc:Int32" />
  <opc:Field Name="StructureDataTypes" TypeName="tns:StructureDescription"
LengthField="NoOfStructureDataTypes" />
  <opc:Field Name="NoOfEnumDataTypes" TypeName="opc:Int32" />
  <opc:Field Name="EnumDataTypes" TypeName="tns:EnumDescription" LengthField="NoOfEnumDataTypes"
/>
  <opc:Field Name="NoOfSimpleDataTypes" TypeName="opc:Int32" />
  <opc:Field Name="SimpleDataTypes" TypeName="tns:SimpleTypeDescription"
LengthField="NoOfSimpleDataTypes" />
 </opc:StructuredType>

 <opc:StructuredType Name="DataTypeDescription" BaseType="ua:ExtensionObject">
  <opc:Field Name="DataTypeId" TypeName="ua:NodeId" />
  <opc:Field Name="Name" TypeName="ua:QualifiedName" />
 </opc:StructuredType>

 <opc:StructuredType Name="StructureDescription" BaseType="tns:DataTypeDescription">
  <opc:Field Name="DataTypeId" TypeName="ua:NodeId" SourceType="tns:DataTypeDescription"
 />
  <opc:Field Name="Name" TypeName="ua:QualifiedName" SourceType="tns:DataTypeDescription" />
  <opc:Field Name="StructureDefinition" TypeName="tns:StructureDefinition" />
 </opc:StructuredType>

 <opc:StructuredType Name="EnumDescription" BaseType="tns:DataTypeDescription">
  <opc:Field Name="DataTypeId" TypeName="ua:NodeId" SourceType="tns:DataTypeDescription" />
  <opc:Field Name="Name" TypeName="ua:QualifiedName" SourceType="tns:DataTypeDescription" />
  <opc:Field Name="EnumDefinition" TypeName="tns:EnumDefinition" />
  <opc:Field Name="BuiltInType" TypeName="opc:Byte" />
 </opc:StructuredType>

 <opc:StructuredType Name="SimpleTypeDescription" BaseType="tns:DataTypeDescription">
  <opc:Field Name="DataTypeId" TypeName="ua:NodeId" SourceType="tns:DataTypeDescription" />
  <opc:Field Name="Name" TypeName="ua:QualifiedName" SourceType="tns:DataTypeDescription" />
  <opc:Field Name="BaseDataType" TypeName="ua:NodeId" />
  <opc:Field
 Name="BuiltInType" TypeName="opc:Byte" />
 </opc:StructuredType>

 <opc:StructuredType Name="UABinaryFileDataType" BaseType="tns:DataTypeSchemaHeader">
  <opc:Field Name="NoOfNamespaces" TypeName="opc:Int32" />
  <opc:Field Name="Namespaces" TypeName="opc:String" LengthField="NoOfNamespaces" />
  <opc:Field Name="NoOfStructureDataTypes" TypeName="opc:Int32" />
  <opc:Field Name="StructureDataTypes" TypeName="tns:StructureDescription"
LengthField="NoOfStructureDataTypes" />
```

```
  <opc:Field Name="NoOfEnumDataTypes" TypeName="opc:Int32" />
  <opc:Field Name="EnumDataTypes" TypeName="tns:EnumDescription" LengthField="NoOfEnumDataTypes"
/>
  <opc:Field Name="NoOfSimpleDataTypes" TypeName="opc:Int32" />
  <opc:Field Name="SimpleDataTypes" TypeName="tns:SimpleTypeDescription"
LengthField="NoOfSimpleDataTypes" />
  <opc:Field Name="SchemaLocation" TypeName="opc:String" />
  <opc:Field Name="NoOfFileHeader" TypeName="opc:Int32" />
  <opc:Field Name="FileHeader" TypeName="tns:KeyValuePair"
 LengthField="NoOfFileHeader" />
  <opc:Field Name="Body" TypeName="ua:Variant" />
 </opc:StructuredType>

 <opc:EnumeratedType Name="PubSubState" LengthInBits="32">
  <opc:EnumeratedValue Name="Disabled" Value="0" />
  <opc:EnumeratedValue Name="Paused" Value="1" />
  <opc:EnumeratedValue Name="Operational" Value="2" />
  <opc:EnumeratedValue Name="Error" Value="3" />
 </opc:EnumeratedType>

 <opc:StructuredType Name="DataSetMetaDataType" BaseType="tns:DataTypeSchemaHeader">
  <opc:Field Name="NoOfNamespaces" TypeName="opc:Int32" />
  <opc:Field Name="Namespaces" TypeName="opc:String" LengthField="NoOfNamespaces" />
  <opc:Field Name="NoOfStructureDataTypes" TypeName="opc:Int32" />
  <opc:Field Name="StructureDataTypes" TypeName="tns:StructureDescription"
LengthField="NoOfStructureDataTypes" />
  <opc:Field Name="NoOfEnumDataTypes" TypeName="opc:Int32" />
  <opc:Field Name="EnumDataTypes" TypeName="tns:EnumDescription" LengthField="NoOfEnumDataTypes"
 />
  <opc:Field Name="NoOfSimpleDataTypes" TypeName="opc:Int32" />
  <opc:Field Name="SimpleDataTypes" TypeName="tns:SimpleTypeDescription"
LengthField="NoOfSimpleDataTypes" />
  <opc:Field Name="Name" TypeName="opc:String" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" />
  <opc:Field Name="NoOfFields" TypeName="opc:Int32" />
  <opc:Field Name="Fields" TypeName="tns:FieldMetaData" LengthField="NoOfFields" />
  <opc:Field Name="DataSetClassId" TypeName="opc:Guid" />
  <opc:Field Name="ConfigurationVersion" TypeName="tns:ConfigurationVersionDataType" />
 </opc:StructuredType>

 <opc:StructuredType Name="FieldMetaData" BaseType="ua:ExtensionObject">
  <opc:Field Name="Name" TypeName="opc:String" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" />
  <opc:Field Name="FieldFlags" TypeName="tns:DataSetFieldFlags" />
  <opc:Field Name="BuiltInType" TypeName="opc:Byte" />
  <opc:Field Name="DataType" TypeName="ua:NodeId" />
  <opc:Field
```

```
Name="ValueRank" TypeName="opc:Int32" />
  <opc:Field Name="NoOfArrayDimensions" TypeName="opc:Int32" />
  <opc:Field Name="ArrayDimensions" TypeName="opc:UInt32" LengthField="NoOfArrayDimensions" />
  <opc:Field Name="MaxStringLength" TypeName="opc:UInt32" />
  <opc:Field Name="DataSetFieldId" TypeName="opc:Guid" />
  <opc:Field Name="NoOfProperties" TypeName="opc:Int32" />
  <opc:Field Name="Properties" TypeName="tns:KeyValuePair" LengthField="NoOfProperties" />
</opc:StructuredType>

<opc:EnumeratedType Name="DataSetFieldFlags" LengthInBits="16" IsOptionSet="true">
  <opc:EnumeratedValue Name="None" Value="0" />
  <opc:EnumeratedValue Name="PromotedField" Value="1" />
</opc:EnumeratedType>

<opc:StructuredType Name="ConfigurationVersionDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="MajorVersion" TypeName="opc:UInt32" />
  <opc:Field Name="MinorVersion" TypeName="opc:UInt32" />
</opc:StructuredType>

<opc:StructuredType Name="PublishedDataSetDataType"
BaseType="ua:ExtensionObject">
  <opc:Field Name="Name" TypeName="opc:String" />
  <opc:Field Name="NoOfDataSetFolder" TypeName="opc:Int32" />
  <opc:Field Name="DataSetFolder" TypeName="opc:String" LengthField="NoOfDataSetFolder" />
  <opc:Field Name="DataSetMetaData" TypeName="tns:DataSetMetaDataType" />
  <opc:Field Name="NoOfExtensionFields" TypeName="opc:Int32" />
  <opc:Field Name="ExtensionFields" TypeName="tns:KeyValuePair" LengthField="NoOfExtensionFields" />
  <opc:Field Name="DataSetSource" TypeName="ua:ExtensionObject" />
</opc:StructuredType>

<opc:StructuredType Name="PublishedDataSetSourceDataType" BaseType="ua:ExtensionObject">
</opc:StructuredType>

<opc:StructuredType Name="PublishedVariableDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="PublishedVariable" TypeName="ua:NodeId" />
  <opc:Field Name="AttributeId" TypeName="opc:UInt32" />
  <opc:Field Name="SamplingIntervalHint" TypeName="opc:Double" />
  <opc:Field
Name="DeadbandType" TypeName="opc:UInt32" />
  <opc:Field Name="DeadbandValue" TypeName="opc:Double" />
  <opc:Field Name="IndexRange" TypeName="opc:String" />
  <opc:Field Name="SubstituteValue" TypeName="ua:Variant" />
  <opc:Field Name="NoOfMetaDataProperties" TypeName="opc:Int32" />
  <opc:Field Name="MetaDataProperties" TypeName="ua:QualifiedName"
LengthField="NoOfMetaDataProperties" />
</opc:StructuredType>

<opc:StructuredType Name="PublishedDataItemsDataType" BaseType="tns:PublishedDataSetSourceDataType">
```

```
  <opc:Field Name="NoOfPublishedData" TypeName="opc:Int32" />
  <opc:Field Name="PublishedData" TypeName="tns:PublishedVariableDataType"
LengthField="NoOfPublishedData" />
 </opc:StructuredType>

 <opc:StructuredType Name="PublishedEventsDataType" BaseType="tns:PublishedDataSetSourceDataType">
  <opc:Field Name="EventNotifier" TypeName="ua:NodeId" />
  <opc:Field Name="NoOfSelectedFields" TypeName="opc:Int32" />
  <opc:Field Name="SelectedFields"
 TypeName="tns:SimpleAttributeOperand" LengthField="NoOfSelectedFields" />
  <opc:Field Name="Filter" TypeName="tns:ContentFilter" />
 </opc:StructuredType>

 <opc:EnumeratedType Name="DataSetFieldContentMask" LengthInBits="32" IsOptionSet="true">
  <opc:EnumeratedValue Name="None" Value="0" />
  <opc:EnumeratedValue Name="StatusCode" Value="1" />
  <opc:EnumeratedValue Name="SourceTimestamp" Value="2" />
  <opc:EnumeratedValue Name="ServerTimestamp" Value="4" />
  <opc:EnumeratedValue Name="SourcePicoSeconds" Value="8" />
  <opc:EnumeratedValue Name="ServerPicoSeconds" Value="16" />
  <opc:EnumeratedValue Name="RawData" Value="32" />
 </opc:EnumeratedType>

 <opc:StructuredType Name="DataSetWriterDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="Name" TypeName="opc:String" />
  <opc:Field Name="Enabled" TypeName="opc:Boolean" />
  <opc:Field Name="DataSetWriterId" TypeName="opc:UInt16" />
  <opc:Field Name="DataSetFieldContentMask" TypeName="tns:DataSetFieldContentMask"
/>
  <opc:Field Name="KeyFrameCount" TypeName="opc:UInt32" />
  <opc:Field Name="DataSetName" TypeName="opc:String" />
  <opc:Field Name="NoOfDataSetWriterProperties" TypeName="opc:Int32" />
  <opc:Field Name="DataSetWriterProperties" TypeName="tns:KeyValuePair"
LengthField="NoOfDataSetWriterProperties" />
  <opc:Field Name="TransportSettings" TypeName="ua:ExtensionObject" />
  <opc:Field Name="MessageSettings" TypeName="ua:ExtensionObject" />
 </opc:StructuredType>

 <opc:StructuredType Name="DataSetWriterTransportDataType" BaseType="ua:ExtensionObject">
 </opc:StructuredType>

 <opc:StructuredType Name="DataSetWriterMessageDataType" BaseType="ua:ExtensionObject">
 </opc:StructuredType>

 <opc:StructuredType Name="PubSubGroupDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="Name" TypeName="opc:String" />
  <opc:Field Name="Enabled" TypeName="opc:Boolean" />
  <opc:Field Name="SecurityMode" TypeName="tns:MessageSecurityMode"
```

```
/>
  <opc:Field Name="SecurityGroupId" TypeName="opc:String" />
  <opc:Field Name="NoOfSecurityKeyServices" TypeName="opc:Int32" />
  <opc:Field Name="SecurityKeyServices" TypeName="tns:EndpointDescription"
LengthField="NoOfSecurityKeyServices" />
  <opc:Field Name="MaxNetworkMessageSize" TypeName="opc:UInt32" />
  <opc:Field Name="NoOfGroupProperties" TypeName="opc:Int32" />
  <opc:Field Name="GroupProperties" TypeName="tns:KeyValuePair" LengthField="NoOfGroupProperties" />
 </opc:StructuredType>

 <opc:StructuredType Name="WriterGroupDataType" BaseType="tns:PubSubGroupDataType">
  <opc:Field Name="Name" TypeName="opc:String" SourceType="tns:PubSubGroupDataType" />
  <opc:Field Name="Enabled" TypeName="opc:Boolean" SourceType="tns:PubSubGroupDataType" />
  <opc:Field Name="SecurityMode" TypeName="tns:MessageSecurityMode"
SourceType="tns:PubSubGroupDataType" />
  <opc:Field Name="SecurityGroupId" TypeName="opc:String" SourceType="tns:PubSubGroupDataType" />

 <opc:Field Name="NoOfSecurityKeyServices" TypeName="opc:Int32" />
  <opc:Field Name="SecurityKeyServices" TypeName="tns:EndpointDescription"
LengthField="NoOfSecurityKeyServices" />
  <opc:Field Name="MaxNetworkMessageSize" TypeName="opc:UInt32"
SourceType="tns:PubSubGroupDataType" />
  <opc:Field Name="NoOfGroupProperties" TypeName="opc:Int32" />
  <opc:Field Name="GroupProperties" TypeName="tns:KeyValuePair" LengthField="NoOfGroupProperties" />
  <opc:Field Name="WriterGroupId" TypeName="opc:UInt16" />
  <opc:Field Name="PublishingInterval" TypeName="opc:Double" />
  <opc:Field Name="KeepAliveTime" TypeName="opc:Double" />
  <opc:Field Name="Priority" TypeName="opc:Byte" />
  <opc:Field Name="NoOfLocaleIds" TypeName="opc:Int32" />
  <opc:Field Name="LocaleIds" TypeName="opc:String" LengthField="NoOfLocaleIds" />
  <opc:Field Name="HeaderLayoutUri" TypeName="opc:String" />
  <opc:Field Name="TransportSettings" TypeName="ua:ExtensionObject" />
  <opc:Field Name="MessageSettings"
 TypeName="ua:ExtensionObject" />
  <opc:Field Name="NoOfDataSetWriters" TypeName="opc:Int32" />
  <opc:Field Name="DataSetWriters" TypeName="tns:DataSetWriterDataType"
LengthField="NoOfDataSetWriters" />
 </opc:StructuredType>

 <opc:StructuredType Name="WriterGroupTransportDataType" BaseType="ua:ExtensionObject">
 </opc:StructuredType>

 <opc:StructuredType Name="WriterGroupMessageDataType" BaseType="ua:ExtensionObject">
 </opc:StructuredType>

 <opc:StructuredType Name="PubSubConnectionDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="Name" TypeName="opc:String" />
  <opc:Field Name="Enabled" TypeName="opc:Boolean" />
```

```
  <opc:Field Name="PublisherId" TypeName="ua:Variant" />
  <opc:Field Name="TransportProfileUri" TypeName="opc:String" />
  <opc:Field Name="Address" TypeName="ua:ExtensionObject" />
  <opc:Field Name="NoOfConnectionProperties" TypeName="opc:Int32" />
  <opc:Field Name="ConnectionProperties" TypeName="tns:KeyValuePair"
 LengthField="NoOfConnectionProperties" />
  <opc:Field Name="TransportSettings" TypeName="ua:ExtensionObject" />
  <opc:Field Name="NoOfWriterGroups" TypeName="opc:Int32" />
  <opc:Field Name="WriterGroups" TypeName="tns:WriterGroupDataType" LengthField="NoOfWriterGroups" />
  <opc:Field Name="NoOfReaderGroups" TypeName="opc:Int32" />
  <opc:Field Name="ReaderGroups" TypeName="tns:ReaderGroupDataType" LengthField="NoOfReaderGroups"
/>
 </opc:StructuredType>

 <opc:StructuredType Name="ConnectionTransportDataType" BaseType="ua:ExtensionObject">
 </opc:StructuredType>

 <opc:StructuredType Name="NetworkAddressDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="NetworkInterface" TypeName="opc:String" />
 </opc:StructuredType>

 <opc:StructuredType Name="NetworkAddressUrlDataType" BaseType="tns:NetworkAddressDataType">
  <opc:Field Name="NetworkInterface" TypeName="opc:String" SourceType="tns:NetworkAddressDataType" />
  <opc:Field Name="Url" TypeName="opc:String"
 />
 </opc:StructuredType>

 <opc:StructuredType Name="ReaderGroupDataType" BaseType="tns:PubSubGroupDataType">
  <opc:Field Name="Name" TypeName="opc:String" SourceType="tns:PubSubGroupDataType" />
  <opc:Field Name="Enabled" TypeName="opc:Boolean" SourceType="tns:PubSubGroupDataType" />
  <opc:Field Name="SecurityMode" TypeName="tns:MessageSecurityMode"
SourceType="tns:PubSubGroupDataType" />
  <opc:Field Name="SecurityGroupId" TypeName="opc:String" SourceType="tns:PubSubGroupDataType" />
  <opc:Field Name="NoOfSecurityKeyServices" TypeName="opc:Int32" />
  <opc:Field Name="SecurityKeyServices" TypeName="tns:EndpointDescription"
LengthField="NoOfSecurityKeyServices" />
  <opc:Field Name="MaxNetworkMessageSize" TypeName="opc:UInt32"
SourceType="tns:PubSubGroupDataType" />
  <opc:Field Name="NoOfGroupProperties" TypeName="opc:Int32" />
  <opc:Field Name="GroupProperties" TypeName="tns:KeyValuePair" LengthField="NoOfGroupProperties" />
  <opc:Field Name="TransportSettings"
 TypeName="ua:ExtensionObject" />
  <opc:Field Name="MessageSettings" TypeName="ua:ExtensionObject" />
  <opc:Field Name="NoOfDataSetReaders" TypeName="opc:Int32" />
  <opc:Field Name="DataSetReaders" TypeName="tns:DataSetReaderDataType"
LengthField="NoOfDataSetReaders" />
 </opc:StructuredType>
```

```
 <opc:StructuredType Name="ReaderGroupTransportDataType" BaseType="ua:ExtensionObject">
 </opc:StructuredType>

 <opc:StructuredType Name="ReaderGroupMessageDataType" BaseType="ua:ExtensionObject">
 </opc:StructuredType>

 <opc:StructuredType Name="DataSetReaderDataType" BaseType="ua:ExtensionObject">
   <opc:Field Name="Name" TypeName="opc:String" />
   <opc:Field Name="Enabled" TypeName="opc:Boolean" />
   <opc:Field Name="PublisherId" TypeName="ua:Variant" />
   <opc:Field Name="WriterGroupId" TypeName="opc:UInt16" />
   <opc:Field Name="DataSetWriterId" TypeName="opc:UInt16" />
   <opc:Field Name="DataSetMetaData" TypeName="tns:DataSetMetaDataType" />
   <opc:Field
 Name="DataSetFieldContentMask" TypeName="tns:DataSetFieldContentMask" />
   <opc:Field Name="MessageReceiveTimeout" TypeName="opc:Double" />
   <opc:Field Name="KeyFrameCount" TypeName="opc:UInt32" />
   <opc:Field Name="HeaderLayoutUri" TypeName="opc:String" />
   <opc:Field Name="SecurityMode" TypeName="tns:MessageSecurityMode" />
   <opc:Field Name="SecurityGroupId" TypeName="opc:String" />
   <opc:Field Name="NoOfSecurityKeyServices" TypeName="opc:Int32" />
   <opc:Field Name="SecurityKeyServices" TypeName="tns:EndpointDescription"
LengthField="NoOfSecurityKeyServices" />
   <opc:Field Name="NoOfDataSetReaderProperties" TypeName="opc:Int32" />
   <opc:Field Name="DataSetReaderProperties" TypeName="tns:KeyValuePair"
LengthField="NoOfDataSetReaderProperties" />
   <opc:Field Name="TransportSettings" TypeName="ua:ExtensionObject" />
   <opc:Field Name="MessageSettings" TypeName="ua:ExtensionObject" />
   <opc:Field Name="SubscribedDataSet" TypeName="ua:ExtensionObject"
 />
 </opc:StructuredType>

 <opc:StructuredType Name="DataSetReaderTransportDataType" BaseType="ua:ExtensionObject">
 </opc:StructuredType>

 <opc:StructuredType Name="DataSetReaderMessageDataType" BaseType="ua:ExtensionObject">
 </opc:StructuredType>

 <opc:StructuredType Name="SubscribedDataSetDataType" BaseType="ua:ExtensionObject">
 </opc:StructuredType>

 <opc:StructuredType Name="TargetVariablesDataType" BaseType="tns:SubscribedDataSetDataType">
   <opc:Field Name="NoOfTargetVariables" TypeName="opc:Int32" />
   <opc:Field Name="TargetVariables" TypeName="tns:FieldTargetDataType"
LengthField="NoOfTargetVariables" />
 </opc:StructuredType>

 <opc:StructuredType Name="FieldTargetDataType" BaseType="ua:ExtensionObject">
```

```
  <opc:Field Name="DataSetFieldId" TypeName="opc:Guid" />
  <opc:Field Name="ReceiverIndexRange" TypeName="opc:String" />
  <opc:Field Name="TargetNodeId" TypeName="ua:NodeId" />
  <opc:Field Name="AttributeId" TypeName="opc:UInt32" />

 <opc:Field Name="WriteIndexRange" TypeName="opc:String" />
  <opc:Field Name="OverrideValueHandling" TypeName="tns:OverrideValueHandling" />
  <opc:Field Name="OverrideValue" TypeName="ua:Variant" />
 </opc:StructuredType>

 <opc:EnumeratedType Name="OverrideValueHandling" LengthInBits="32">
  <opc:EnumeratedValue Name="Disabled" Value="0" />
  <opc:EnumeratedValue Name="LastUsableValue" Value="1" />
  <opc:EnumeratedValue Name="OverrideValue" Value="2" />
 </opc:EnumeratedType>

 <opc:StructuredType Name="SubscribedDataSetMirrorDataType" BaseType="tns:SubscribedDataSetDataType">
  <opc:Field Name="ParentNodeName" TypeName="opc:String" />
  <opc:Field Name="NoOfRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="RolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfRolePermissions" />
 </opc:StructuredType>

 <opc:StructuredType Name="PubSubConfigurationDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="NoOfPublishedDataSets" TypeName="opc:Int32"
 />
  <opc:Field Name="PublishedDataSets" TypeName="tns:PublishedDataSetDataType"
LengthField="NoOfPublishedDataSets" />
  <opc:Field Name="NoOfConnections" TypeName="opc:Int32" />
  <opc:Field Name="Connections" TypeName="tns:PubSubConnectionDataType"
LengthField="NoOfConnections" />
  <opc:Field Name="Enabled" TypeName="opc:Boolean" />
 </opc:StructuredType>

 <opc:EnumeratedType Name="DataSetOrderingType" LengthInBits="32">
  <opc:EnumeratedValue Name="Undefined" Value="0" />
  <opc:EnumeratedValue Name="AscendingWriterId" Value="1" />
  <opc:EnumeratedValue Name="AscendingWriterIdSingle" Value="2" />
 </opc:EnumeratedType>

 <opc:EnumeratedType Name="UadpNetworkMessageContentMask" LengthInBits="32" IsOptionSet="true">
  <opc:EnumeratedValue Name="None" Value="0" />
  <opc:EnumeratedValue Name="PublisherId" Value="1" />
  <opc:EnumeratedValue Name="GroupHeader" Value="2" />
  <opc:EnumeratedValue Name="WriterGroupId" Value="4" />
  <opc:EnumeratedValue
 Name="GroupVersion" Value="8" />
  <opc:EnumeratedValue Name="NetworkMessageNumber" Value="16" />
```

```
  <opc:EnumeratedValue Name="SequenceNumber" Value="32" />
  <opc:EnumeratedValue Name="PayloadHeader" Value="64" />
  <opc:EnumeratedValue Name="Timestamp" Value="128" />
  <opc:EnumeratedValue Name="PicoSeconds" Value="256" />
  <opc:EnumeratedValue Name="DataSetClassId" Value="512" />
  <opc:EnumeratedValue Name="PromotedFields" Value="1024" />
 </opc:EnumeratedType>

 <opc:StructuredType Name="UadpWriterGroupMessageDataType"
BaseType="tns:WriterGroupMessageDataType">
  <opc:Field Name="GroupVersion" TypeName="opc:UInt32" />
  <opc:Field Name="DataSetOrdering" TypeName="tns:DataSetOrderingType" />
  <opc:Field Name="NetworkMessageContentMask" TypeName="tns:UadpNetworkMessageContentMask" />
  <opc:Field Name="SamplingOffset" TypeName="opc:Double" />
  <opc:Field Name="NoOfPublishingOffset" TypeName="opc:Int32" />
  <opc:Field Name="PublishingOffset"
 TypeName="opc:Double" LengthField="NoOfPublishingOffset" />
 </opc:StructuredType>

 <opc:EnumeratedType Name="UadpDataSetMessageContentMask" LengthInBits="32" IsOptionSet="true">
  <opc:EnumeratedValue Name="None" Value="0" />
  <opc:EnumeratedValue Name="Timestamp" Value="1" />
  <opc:EnumeratedValue Name="PicoSeconds" Value="2" />
  <opc:EnumeratedValue Name="Status" Value="4" />
  <opc:EnumeratedValue Name="MajorVersion" Value="8" />
  <opc:EnumeratedValue Name="MinorVersion" Value="16" />
  <opc:EnumeratedValue Name="SequenceNumber" Value="32" />
 </opc:EnumeratedType>

 <opc:StructuredType Name="UadpDataSetWriterMessageDataType"
BaseType="tns:DataSetWriterMessageDataType">
  <opc:Field Name="DataSetMessageContentMask" TypeName="tns:UadpDataSetMessageContentMask" />
  <opc:Field Name="ConfiguredSize" TypeName="opc:UInt16" />
  <opc:Field Name="NetworkMessageNumber" TypeName="opc:UInt16" />
  <opc:Field Name="DataSetOffset" TypeName="opc:UInt16" />
 </opc:StructuredType>

  <opc:StructuredType Name="UadpDataSetReaderMessageDataType"
BaseType="tns:DataSetReaderMessageDataType">
  <opc:Field Name="GroupVersion" TypeName="opc:UInt32" />
  <opc:Field Name="NetworkMessageNumber" TypeName="opc:UInt16" />
  <opc:Field Name="DataSetOffset" TypeName="opc:UInt16" />
  <opc:Field Name="DataSetClassId" TypeName="opc:Guid" />
  <opc:Field Name="NetworkMessageContentMask" TypeName="tns:UadpNetworkMessageContentMask" />
  <opc:Field Name="DataSetMessageContentMask" TypeName="tns:UadpDataSetMessageContentMask" />
  <opc:Field Name="PublishingInterval" TypeName="opc:Double" />
  <opc:Field Name="ReceiveOffset" TypeName="opc:Double" />
  <opc:Field Name="ProcessingOffset" TypeName="opc:Double" />
```

```
</opc:StructuredType>

<opc:EnumeratedType Name="JsonNetworkMessageContentMask" LengthInBits="32" IsOptionSet="true">
  <opc:EnumeratedValue Name="None" Value="0" />
  <opc:EnumeratedValue Name="NetworkMessageHeader" Value="1" />

  <opc:EnumeratedValue Name="DataSetMessageHeader" Value="2" />
  <opc:EnumeratedValue Name="SingleDataSetMessage" Value="4" />
  <opc:EnumeratedValue Name="PublisherId" Value="8" />
  <opc:EnumeratedValue Name="DataSetClassId" Value="16" />
  <opc:EnumeratedValue Name="ReplyTo" Value="32" />
</opc:EnumeratedType>

<opc:StructuredType Name="JsonWriterGroupMessageDataType"
BaseType="tns:WriterGroupMessageDataType">
  <opc:Field Name="NetworkMessageContentMask" TypeName="tns:JsonNetworkMessageContentMask" />
</opc:StructuredType>

<opc:EnumeratedType Name="JsonDataSetMessageContentMask" LengthInBits="32" IsOptionSet="true">
  <opc:EnumeratedValue Name="None" Value="0" />
  <opc:EnumeratedValue Name="DataSetWriterId" Value="1" />
  <opc:EnumeratedValue Name="MetaDataVersion" Value="2" />
  <opc:EnumeratedValue Name="SequenceNumber" Value="4" />
  <opc:EnumeratedValue Name="Timestamp" Value="8" />
  <opc:EnumeratedValue Name="Status" Value="16" />
</opc:EnumeratedType>

 <opc:StructuredType Name="JsonDataSetWriterMessageDataType"
BaseType="tns:DataSetWriterMessageDataType">
  <opc:Field Name="DataSetMessageContentMask" TypeName="tns:JsonDataSetMessageContentMask" />
</opc:StructuredType>

<opc:StructuredType Name="JsonDataSetReaderMessageDataType"
BaseType="tns:DataSetReaderMessageDataType">
  <opc:Field Name="NetworkMessageContentMask" TypeName="tns:JsonNetworkMessageContentMask" />
  <opc:Field Name="DataSetMessageContentMask" TypeName="tns:JsonDataSetMessageContentMask" />
</opc:StructuredType>

<opc:StructuredType Name="DatagramConnectionTransportDataType"
BaseType="tns:ConnectionTransportDataType">
  <opc:Field Name="DiscoveryAddress" TypeName="ua:ExtensionObject" />
</opc:StructuredType>

<opc:StructuredType Name="DatagramWriterGroupTransportDataType"
BaseType="tns:WriterGroupTransportDataType">
  <opc:Field Name="MessageRepeatCount" TypeName="opc:Byte" />
  <opc:Field Name="MessageRepeatDelay" TypeName="opc:Double"
```

```
/>
</opc:StructuredType>

<opc:StructuredType Name="BrokerConnectionTransportDataType"
BaseType="tns:ConnectionTransportDataType">
  <opc:Field Name="ResourceUri" TypeName="opc:String" />
  <opc:Field Name="AuthenticationProfileUri" TypeName="opc:String" />
</opc:StructuredType>

<opc:EnumeratedType Name="BrokerTransportQualityOfService" LengthInBits="32">
  <opc:EnumeratedValue Name="NotSpecified" Value="0" />
  <opc:EnumeratedValue Name="BestEffort" Value="1" />
  <opc:EnumeratedValue Name="AtLeastOnce" Value="2" />
  <opc:EnumeratedValue Name="AtMostOnce" Value="3" />
  <opc:EnumeratedValue Name="ExactlyOnce" Value="4" />
</opc:EnumeratedType>

<opc:StructuredType Name="BrokerWriterGroupTransportDataType"
BaseType="tns:WriterGroupTransportDataType">
  <opc:Field Name="QueueName" TypeName="opc:String" />
  <opc:Field Name="ResourceUri" TypeName="opc:String" />
  <opc:Field Name="AuthenticationProfileUri" TypeName="opc:String" />
  <opc:Field
Name="RequestedDeliveryGuarantee" TypeName="tns:BrokerTransportQualityOfService" />
</opc:StructuredType>

<opc:StructuredType Name="BrokerDataSetWriterTransportDataType"
BaseType="tns:DataSetWriterTransportDataType">
  <opc:Field Name="QueueName" TypeName="opc:String" />
  <opc:Field Name="ResourceUri" TypeName="opc:String" />
  <opc:Field Name="AuthenticationProfileUri" TypeName="opc:String" />
  <opc:Field Name="RequestedDeliveryGuarantee" TypeName="tns:BrokerTransportQualityOfService" />
  <opc:Field Name="MetaDataQueueName" TypeName="opc:String" />
  <opc:Field Name="MetaDataUpdateTime" TypeName="opc:Double" />
</opc:StructuredType>

<opc:StructuredType Name="BrokerDataSetReaderTransportDataType"
BaseType="tns:DataSetReaderTransportDataType">
  <opc:Field Name="QueueName" TypeName="opc:String" />
  <opc:Field Name="ResourceUri" TypeName="opc:String" />
  <opc:Field Name="AuthenticationProfileUri" TypeName="opc:String" />
  <opc:Field Name="RequestedDeliveryGuarantee"
TypeName="tns:BrokerTransportQualityOfService" />
  <opc:Field Name="MetaDataQueueName" TypeName="opc:String" />
</opc:StructuredType>

<opc:EnumeratedType Name="DiagnosticsLevel" LengthInBits="32">
  <opc:EnumeratedValue Name="Basic" Value="0" />
```

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  <opc:EnumeratedValue Name="Advanced" Value="1" />
  <opc:EnumeratedValue Name="Info" Value="2" />
  <opc:EnumeratedValue Name="Log" Value="3" />
  <opc:EnumeratedValue Name="Debug" Value="4" />
</opc:EnumeratedType>

<opc:EnumeratedType Name="PubSubDiagnosticsCounterClassification" LengthInBits="32">
  <opc:EnumeratedValue Name="Information" Value="0" />
  <opc:EnumeratedValue Name="Error" Value="1" />
</opc:EnumeratedType>

<opc:EnumeratedType Name="IdType" LengthInBits="32">
  <opc:Documentation>The type of identifier used in a node id.</opc:Documentation>
  <opc:EnumeratedValue Name="Numeric" Value="0" />
  <opc:EnumeratedValue Name="String" Value="1" />
  <opc:EnumeratedValue Name="Guid"
Value="2" />
  <opc:EnumeratedValue Name="Opaque" Value="3" />
</opc:EnumeratedType>

<opc:EnumeratedType Name="NodeClass" LengthInBits="32">
  <opc:Documentation>A mask specifying the class of the node.</opc:Documentation>
  <opc:EnumeratedValue Name="Unspecified" Value="0" />
  <opc:EnumeratedValue Name="Object" Value="1" />
  <opc:EnumeratedValue Name="Variable" Value="2" />
  <opc:EnumeratedValue Name="Method" Value="4" />
  <opc:EnumeratedValue Name="ObjectType" Value="8" />
  <opc:EnumeratedValue Name="VariableType" Value="16" />
  <opc:EnumeratedValue Name="ReferenceType" Value="32" />
  <opc:EnumeratedValue Name="DataType" Value="64" />
  <opc:EnumeratedValue Name="View" Value="128" />
</opc:EnumeratedType>

<opc:EnumeratedType Name="PermissionType" LengthInBits="32" IsOptionSet="true">
  <opc:EnumeratedValue Name="None" Value="0" />
  <opc:EnumeratedValue Name="Browse" Value="1" />
  <opc:EnumeratedValue Name="ReadRolePermissions" Value="2"
/>
  <opc:EnumeratedValue Name="WriteAttribute" Value="4" />
  <opc:EnumeratedValue Name="WriteRolePermissions" Value="8" />
  <opc:EnumeratedValue Name="WriteHistorizing" Value="16" />
  <opc:EnumeratedValue Name="Read" Value="32" />
  <opc:EnumeratedValue Name="Write" Value="64" />
  <opc:EnumeratedValue Name="ReadHistory" Value="128" />
  <opc:EnumeratedValue Name="InsertHistory" Value="256" />
  <opc:EnumeratedValue Name="ModifyHistory" Value="512" />
  <opc:EnumeratedValue Name="DeleteHistory" Value="1024" />
  <opc:EnumeratedValue Name="ReceiveEvents" Value="2048" />
```

```
  <opc:EnumeratedValue Name="Call" Value="4096" />
  <opc:EnumeratedValue Name="AddReference" Value="8192" />
  <opc:EnumeratedValue Name="RemoveReference" Value="16384" />
  <opc:EnumeratedValue Name="DeleteNode" Value="32768" />
  <opc:EnumeratedValue Name="AddNode" Value="65536" />
</opc:EnumeratedType>

<opc:EnumeratedType Name="AccessLevelType" LengthInBits="8" IsOptionSet="true">
   <opc:EnumeratedValue Name="None" Value="0" />
  <opc:EnumeratedValue Name="CurrentRead" Value="1" />
  <opc:EnumeratedValue Name="CurrentWrite" Value="2" />
  <opc:EnumeratedValue Name="HistoryRead" Value="4" />
  <opc:EnumeratedValue Name="HistoryWrite" Value="8" />
  <opc:EnumeratedValue Name="SemanticChange" Value="16" />
  <opc:EnumeratedValue Name="StatusWrite" Value="32" />
  <opc:EnumeratedValue Name="TimestampWrite" Value="64" />
</opc:EnumeratedType>

<opc:EnumeratedType Name="AccessLevelExType" LengthInBits="32" IsOptionSet="true">
  <opc:EnumeratedValue Name="None" Value="0" />
  <opc:EnumeratedValue Name="CurrentRead" Value="1" />
  <opc:EnumeratedValue Name="CurrentWrite" Value="2" />
  <opc:EnumeratedValue Name="HistoryRead" Value="4" />
  <opc:EnumeratedValue Name="HistoryWrite" Value="8" />
  <opc:EnumeratedValue Name="SemanticChange" Value="16" />
  <opc:EnumeratedValue Name="StatusWrite" Value="32" />
  <opc:EnumeratedValue
Name="TimestampWrite" Value="64" />
  <opc:EnumeratedValue Name="NonatomicRead" Value="256" />
  <opc:EnumeratedValue Name="NonatomicWrite" Value="512" />
  <opc:EnumeratedValue Name="WriteFullArrayOnly" Value="1024" />
</opc:EnumeratedType>

<opc:EnumeratedType Name="EventNotifierType" LengthInBits="8" IsOptionSet="true">
  <opc:EnumeratedValue Name="None" Value="0" />
  <opc:EnumeratedValue Name="SubscribeToEvents" Value="1" />
  <opc:EnumeratedValue Name="HistoryRead" Value="4" />
  <opc:EnumeratedValue Name="HistoryWrite" Value="8" />
</opc:EnumeratedType>

<opc:StructuredType Name="RolePermissionType" BaseType="ua:ExtensionObject">
  <opc:Field Name="RoleId" TypeName="ua:NodeId" />
  <opc:Field Name="Permissions" TypeName="tns:PermissionType" />
</opc:StructuredType>

<opc:EnumeratedType Name="AccessRestrictionType" LengthInBits="32">
  <opc:EnumeratedValue Name="SigningRequired" Value="0" />
  <opc:EnumeratedValue Name="EncryptionRequired" Value="1"
```

```
/>
  <opc:EnumeratedValue Name="SessionRequired" Value="2" />
 </opc:EnumeratedType>

 <opc:EnumeratedType Name="StructureType" LengthInBits="32">
  <opc:EnumeratedValue Name="Structure" Value="0" />
  <opc:EnumeratedValue Name="StructureWithOptionalFields" Value="1" />
  <opc:EnumeratedValue Name="Union" Value="2" />
 </opc:EnumeratedType>

 <opc:StructuredType Name="StructureField" BaseType="ua:ExtensionObject">
  <opc:Field Name="Name" TypeName="opc:String" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" />
  <opc:Field Name="DataType" TypeName="ua:NodeId" />
  <opc:Field Name="ValueRank" TypeName="opc:Int32" />
  <opc:Field Name="NoOfArrayDimensions" TypeName="opc:Int32" />
  <opc:Field Name="ArrayDimensions" TypeName="opc:UInt32" LengthField="NoOfArrayDimensions" />
  <opc:Field Name="MaxStringLength" TypeName="opc:UInt32" />
  <opc:Field Name="IsOptional" TypeName="opc:Boolean" />
 </opc:StructuredType>

 <opc:StructuredType Name="StructureDefinition"
 BaseType="tns:DataTypeDefinition">
  <opc:Field Name="DefaultEncodingId" TypeName="ua:NodeId" />
  <opc:Field Name="BaseDataType" TypeName="ua:NodeId" />
  <opc:Field Name="StructureType" TypeName="tns:StructureType" />
  <opc:Field Name="NoOfFields" TypeName="opc:Int32" />
  <opc:Field Name="Fields" TypeName="tns:StructureField" LengthField="NoOfFields" />
 </opc:StructuredType>

 <opc:StructuredType Name="EnumDefinition" BaseType="tns:DataTypeDefinition">
  <opc:Field Name="NoOfFields" TypeName="opc:Int32" />
  <opc:Field Name="Fields" TypeName="tns:EnumField" LengthField="NoOfFields" />
 </opc:StructuredType>

 <opc:StructuredType Name="Node" BaseType="ua:ExtensionObject">
  <opc:Documentation>Specifies the attributes which belong to all nodes.</opc:Documentation>
  <opc:Field Name="NodeId" TypeName="ua:NodeId" />
  <opc:Field Name="NodeClass" TypeName="tns:NodeClass" />
  <opc:Field Name="BrowseName" TypeName="ua:QualifiedName" />

 <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" />
  <opc:Field Name="NoOfRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="RolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfRolePermissions" />
```

```
  <opc:Field Name="NoOfUserRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="UserRolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfUserRolePermissions" />
  <opc:Field Name="AccessRestrictions" TypeName="opc:UInt16" />
  <opc:Field Name="NoOfReferences" TypeName="opc:Int32" />
  <opc:Field Name="References" TypeName="tns:ReferenceNode" LengthField="NoOfReferences" />
 </opc:StructuredType>

 <opc:StructuredType Name="InstanceNode" BaseType="tns:Node">
  <opc:Field Name="NodeId" TypeName="ua:NodeId" SourceType="tns:Node" />
  <opc:Field
 Name="NodeClass" TypeName="tns:NodeClass" SourceType="tns:Node" />
  <opc:Field Name="BrowseName" TypeName="ua:QualifiedName" SourceType="tns:Node" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:Node" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:Node" />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:Node" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:Node" />
  <opc:Field Name="NoOfRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="RolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfRolePermissions" />
  <opc:Field Name="NoOfUserRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="UserRolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfUserRolePermissions" />
  <opc:Field Name="AccessRestrictions" TypeName="opc:UInt16" SourceType="tns:Node" />
  <opc:Field Name="NoOfReferences" TypeName="opc:Int32"
 />
  <opc:Field Name="References" TypeName="tns:ReferenceNode" LengthField="NoOfReferences" />
 </opc:StructuredType>

 <opc:StructuredType Name="TypeNode" BaseType="tns:Node">
  <opc:Field Name="NodeId" TypeName="ua:NodeId" SourceType="tns:Node" />
  <opc:Field Name="NodeClass" TypeName="tns:NodeClass" SourceType="tns:Node" />
  <opc:Field Name="BrowseName" TypeName="ua:QualifiedName" SourceType="tns:Node" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:Node" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:Node" />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:Node" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:Node" />
  <opc:Field Name="NoOfRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="RolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfRolePermissions" />
  <opc:Field Name="NoOfUserRolePermissions" TypeName="opc:Int32"
 />
  <opc:Field Name="UserRolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfUserRolePermissions" />
  <opc:Field Name="AccessRestrictions" TypeName="opc:UInt16" SourceType="tns:Node" />
  <opc:Field Name="NoOfReferences" TypeName="opc:Int32" />
  <opc:Field Name="References" TypeName="tns:ReferenceNode" LengthField="NoOfReferences" />
 </opc:StructuredType>
```

```
 <opc:StructuredType Name="ObjectNode" BaseType="tns:InstanceNode">
  <opc:Documentation>Specifies the attributes which belong to object nodes.</opc:Documentation>
  <opc:Field Name="NodeId" TypeName="ua:NodeId" SourceType="tns:Node" />
  <opc:Field Name="NodeClass" TypeName="tns:NodeClass" SourceType="tns:Node" />
  <opc:Field Name="BrowseName" TypeName="ua:QualifiedName" SourceType="tns:Node" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:Node" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:Node" />
  <opc:Field Name="WriteMask"
 TypeName="opc:UInt32" SourceType="tns:Node" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:Node" />
  <opc:Field Name="NoOfRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="RolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfRolePermissions" />
  <opc:Field Name="NoOfUserRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="UserRolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfUserRolePermissions" />
  <opc:Field Name="AccessRestrictions" TypeName="opc:UInt16" SourceType="tns:Node" />
  <opc:Field Name="NoOfReferences" TypeName="opc:Int32" />
  <opc:Field Name="References" TypeName="tns:ReferenceNode" LengthField="NoOfReferences" />
  <opc:Field Name="EventNotifier" TypeName="opc:Byte" />
 </opc:StructuredType>

 <opc:StructuredType Name="ObjectTypeNode" BaseType="tns:TypeNode">
  <opc:Documentation>Specifies the attributes which belong to object type nodes.</opc:Documentation>
   <opc:Field Name="NodeId" TypeName="ua:NodeId" SourceType="tns:Node" />
  <opc:Field Name="NodeClass" TypeName="tns:NodeClass" SourceType="tns:Node" />
  <opc:Field Name="BrowseName" TypeName="ua:QualifiedName" SourceType="tns:Node" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:Node" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:Node" />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:Node" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:Node" />
  <opc:Field Name="NoOfRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="RolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfRolePermissions" />
  <opc:Field Name="NoOfUserRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="UserRolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfUserRolePermissions" />
  <opc:Field Name="AccessRestrictions" TypeName="opc:UInt16"
 SourceType="tns:Node" />
  <opc:Field Name="NoOfReferences" TypeName="opc:Int32" />
  <opc:Field Name="References" TypeName="tns:ReferenceNode" LengthField="NoOfReferences" />
  <opc:Field Name="IsAbstract" TypeName="opc:Boolean" />
 </opc:StructuredType>

 <opc:StructuredType Name="VariableNode" BaseType="tns:InstanceNode">
  <opc:Documentation>Specifies the attributes which belong to variable nodes.</opc:Documentation>
  <opc:Field Name="NodeId" TypeName="ua:NodeId" SourceType="tns:Node" />
```

```
  <opc:Field Name="NodeClass" TypeName="tns:NodeClass" SourceType="tns:Node" />
  <opc:Field Name="BrowseName" TypeName="ua:QualifiedName" SourceType="tns:Node" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:Node" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:Node" />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:Node" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:Node"
/>
  <opc:Field Name="NoOfRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="RolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfRolePermissions" />
  <opc:Field Name="NoOfUserRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="UserRolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfUserRolePermissions" />
  <opc:Field Name="AccessRestrictions" TypeName="opc:UInt16" SourceType="tns:Node" />
  <opc:Field Name="NoOfReferences" TypeName="opc:Int32" />
  <opc:Field Name="References" TypeName="tns:ReferenceNode" LengthField="NoOfReferences" />
  <opc:Field Name="Value" TypeName="ua:Variant" />
  <opc:Field Name="DataType" TypeName="ua:NodeId" />
  <opc:Field Name="ValueRank" TypeName="opc:Int32" />
  <opc:Field Name="NoOfArrayDimensions" TypeName="opc:Int32" />
  <opc:Field Name="ArrayDimensions" TypeName="opc:UInt32" LengthField="NoOfArrayDimensions" />
  <opc:Field Name="AccessLevel" TypeName="opc:Byte"
/>
  <opc:Field Name="UserAccessLevel" TypeName="opc:Byte" />
  <opc:Field Name="MinimumSamplingInterval" TypeName="opc:Double" />
  <opc:Field Name="Historizing" TypeName="opc:Boolean" />
  <opc:Field Name="AccessLevelEx" TypeName="opc:UInt32" />
 </opc:StructuredType>

 <opc:StructuredType Name="VariableTypeNode" BaseType="tns:TypeNode">
  <opc:Documentation>Specifies the attributes which belong to variable type nodes.</opc:Documentation>
  <opc:Field Name="NodeId" TypeName="ua:NodeId" SourceType="tns:Node" />
  <opc:Field Name="NodeClass" TypeName="tns:NodeClass" SourceType="tns:Node" />
  <opc:Field Name="BrowseName" TypeName="ua:QualifiedName" SourceType="tns:Node" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:Node" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:Node" />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:Node" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32"
 SourceType="tns:Node" />
  <opc:Field Name="NoOfRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="RolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfRolePermissions" />
  <opc:Field Name="NoOfUserRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="UserRolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfUserRolePermissions" />
  <opc:Field Name="AccessRestrictions" TypeName="opc:UInt16" SourceType="tns:Node" />
  <opc:Field Name="NoOfReferences" TypeName="opc:Int32" />
  <opc:Field Name="References" TypeName="tns:ReferenceNode" LengthField="NoOfReferences" />
```

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  <opc:Field Name="Value" TypeName="ua:Variant" />
  <opc:Field Name="DataType" TypeName="ua:NodeId" />
  <opc:Field Name="ValueRank" TypeName="opc:Int32" />
  <opc:Field Name="NoOfArrayDimensions" TypeName="opc:Int32" />
  <opc:Field Name="ArrayDimensions" TypeName="opc:UInt32" LengthField="NoOfArrayDimensions" />
  <opc:Field Name="IsAbstract"
 TypeName="opc:Boolean" />
 </opc:StructuredType>

 <opc:StructuredType Name="ReferenceTypeNode" BaseType="tns:TypeNode">
  <opc:Documentation>Specifies the attributes which belong to reference type nodes.</opc:Documentation>
  <opc:Field Name="NodeId" TypeName="ua:NodeId" SourceType="tns:Node" />
  <opc:Field Name="NodeClass" TypeName="tns:NodeClass" SourceType="tns:Node" />
  <opc:Field Name="BrowseName" TypeName="ua:QualifiedName" SourceType="tns:Node" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:Node" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:Node" />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:Node" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:Node" />
  <opc:Field Name="NoOfRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="RolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfRolePermissions" />
  <opc:Field
 Name="NoOfUserRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="UserRolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfUserRolePermissions" />
  <opc:Field Name="AccessRestrictions" TypeName="opc:UInt16" SourceType="tns:Node" />
  <opc:Field Name="NoOfReferences" TypeName="opc:Int32" />
  <opc:Field Name="References" TypeName="tns:ReferenceNode" LengthField="NoOfReferences" />
  <opc:Field Name="IsAbstract" TypeName="opc:Boolean" />
  <opc:Field Name="Symmetric" TypeName="opc:Boolean" />
  <opc:Field Name="InverseName" TypeName="ua:LocalizedText" />
 </opc:StructuredType>

 <opc:StructuredType Name="MethodNode" BaseType="tns:InstanceNode">
  <opc:Documentation>Specifies the attributes which belong to method nodes.</opc:Documentation>
  <opc:Field Name="NodeId" TypeName="ua:NodeId" SourceType="tns:Node" />
  <opc:Field Name="NodeClass" TypeName="tns:NodeClass" SourceType="tns:Node" />
  <opc:Field Name="BrowseName" TypeName="ua:QualifiedName"
 SourceType="tns:Node" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:Node" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:Node" />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:Node" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:Node" />
  <opc:Field Name="NoOfRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="RolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfRolePermissions" />
  <opc:Field Name="NoOfUserRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="UserRolePermissions" TypeName="tns:RolePermissionType"
```

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LengthField="NoOfUserRolePermissions" />
  <opc:Field Name="AccessRestrictions" TypeName="opc:UInt16" SourceType="tns:Node" />
  <opc:Field Name="NoOfReferences" TypeName="opc:Int32" />
  <opc:Field Name="References" TypeName="tns:ReferenceNode" LengthField="NoOfReferences" />
  <opc:Field Name="Executable"
 TypeName="opc:Boolean" />
  <opc:Field Name="UserExecutable" TypeName="opc:Boolean" />
 </opc:StructuredType>

 <opc:StructuredType Name="ViewNode" BaseType="tns:InstanceNode">
  <opc:Field Name="NodeId" TypeName="ua:NodeId" SourceType="tns:Node" />
  <opc:Field Name="NodeClass" TypeName="tns:NodeClass" SourceType="tns:Node" />
  <opc:Field Name="BrowseName" TypeName="ua:QualifiedName" SourceType="tns:Node" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:Node" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:Node" />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:Node" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:Node" />
  <opc:Field Name="NoOfRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="RolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfRolePermissions" />
  <opc:Field Name="NoOfUserRolePermissions" TypeName="opc:Int32"
/>
  <opc:Field Name="UserRolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfUserRolePermissions" />
  <opc:Field Name="AccessRestrictions" TypeName="opc:UInt16" SourceType="tns:Node" />
  <opc:Field Name="NoOfReferences" TypeName="opc:Int32" />
  <opc:Field Name="References" TypeName="tns:ReferenceNode" LengthField="NoOfReferences" />
  <opc:Field Name="ContainsNoLoops" TypeName="opc:Boolean" />
  <opc:Field Name="EventNotifier" TypeName="opc:Byte" />
 </opc:StructuredType>

 <opc:StructuredType Name="DataTypeNode" BaseType="tns:TypeNode">
  <opc:Field Name="NodeId" TypeName="ua:NodeId" SourceType="tns:Node" />
  <opc:Field Name="NodeClass" TypeName="tns:NodeClass" SourceType="tns:Node" />
  <opc:Field Name="BrowseName" TypeName="ua:QualifiedName" SourceType="tns:Node" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:Node" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:Node"
/>
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:Node" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:Node" />
  <opc:Field Name="NoOfRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="RolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfRolePermissions" />
  <opc:Field Name="NoOfUserRolePermissions" TypeName="opc:Int32" />
  <opc:Field Name="UserRolePermissions" TypeName="tns:RolePermissionType"
LengthField="NoOfUserRolePermissions" />
  <opc:Field Name="AccessRestrictions" TypeName="opc:UInt16" SourceType="tns:Node" />
  <opc:Field Name="NoOfReferences" TypeName="opc:Int32" />
```

```
  <opc:Field Name="References" TypeName="tns:ReferenceNode" LengthField="NoOfReferences" />
  <opc:Field Name="IsAbstract" TypeName="opc:Boolean" />
  <opc:Field Name="DataTypeDefinition" TypeName="ua:ExtensionObject" />
 </opc:StructuredType>

 <opc:StructuredType Name="ReferenceNode" BaseType="ua:ExtensionObject">
   <opc:Documentation>Specifies a reference which belongs to a node.</opc:Documentation>
  <opc:Field Name="ReferenceTypeId" TypeName="ua:NodeId" />
  <opc:Field Name="IsInverse" TypeName="opc:Boolean" />
  <opc:Field Name="TargetId" TypeName="ua:ExpandedNodeId" />
 </opc:StructuredType>

 <opc:StructuredType Name="Argument" BaseType="ua:ExtensionObject">
  <opc:Documentation>An argument for a method.</opc:Documentation>
  <opc:Field Name="Name" TypeName="opc:String" />
  <opc:Field Name="DataType" TypeName="ua:NodeId" />
  <opc:Field Name="ValueRank" TypeName="opc:Int32" />
  <opc:Field Name="NoOfArrayDimensions" TypeName="opc:Int32" />
  <opc:Field Name="ArrayDimensions" TypeName="opc:UInt32" LengthField="NoOfArrayDimensions" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" />
 </opc:StructuredType>

 <opc:StructuredType Name="EnumValueType" BaseType="ua:ExtensionObject">
  <opc:Documentation>A mapping between a value of an enumerated type
 and a name and description.</opc:Documentation>
  <opc:Field Name="Value" TypeName="opc:Int64" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" />
 </opc:StructuredType>

 <opc:StructuredType Name="EnumField" BaseType="tns:EnumValueType">
  <opc:Field Name="Value" TypeName="opc:Int64" SourceType="tns:EnumValueType" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:EnumValueType" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:EnumValueType" />
  <opc:Field Name="Name" TypeName="opc:String" />
 </opc:StructuredType>

 <opc:StructuredType Name="OptionSet" BaseType="ua:ExtensionObject">
  <opc:Documentation>This abstract Structured DataType is the base DataType for all DataTypes representing a bit
mask.</opc:Documentation>
  <opc:Field Name="Value" TypeName="opc:ByteString" />
  <opc:Field Name="ValidBits" TypeName="opc:ByteString"
 />
 </opc:StructuredType>

 <opc:StructuredType Name="Union" BaseType="ua:ExtensionObject">
  <opc:Documentation>This abstract DataType is the base DataType for all union
DataTypes.</opc:Documentation>
```

```
</opc:StructuredType>

<opc:OpaqueType Name="NormalizedString">
  <opc:Documentation>A string normalized based on the rules in the unicode specification.</opc:Documentation>
</opc:OpaqueType>

<opc:OpaqueType Name="DecimalString">
  <opc:Documentation>An arbitraty numeric value.</opc:Documentation>
</opc:OpaqueType>

<opc:OpaqueType Name="DurationString">
  <opc:Documentation>A period of time formatted as defined in ISO 8601-2000.</opc:Documentation>
</opc:OpaqueType>

<opc:OpaqueType Name="TimeString">
  <opc:Documentation>A time formatted as defined in ISO 8601-2000.</opc:Documentation>
</opc:OpaqueType>

<opc:OpaqueType Name="DateString">
  <opc:Documentation>A date formatted as defined in ISO 8601-2000.</opc:Documentation>
</opc:OpaqueType>

<opc:OpaqueType
Name="Duration">
  <opc:Documentation>A period of time measured in milliseconds.</opc:Documentation>
</opc:OpaqueType>

<opc:OpaqueType Name="UtcTime">
  <opc:Documentation>A date/time value specified in Universal Coordinated Time (UTC).</opc:Documentation>
</opc:OpaqueType>

<opc:OpaqueType Name="LocaleId">
  <opc:Documentation>An identifier for a user locale.</opc:Documentation>
</opc:OpaqueType>

<opc:StructuredType Name="TimeZoneDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="Offset" TypeName="opc:Int16" />
  <opc:Field Name="DaylightSavingInOffset" TypeName="opc:Boolean" />
</opc:StructuredType>

<opc:OpaqueType Name="Index">
  <opc:Documentation>This primitive data type is a UInt32 that identifies an element of an
array.</opc:Documentation>
</opc:OpaqueType>

<opc:OpaqueType Name="IntegerId">
  <opc:Documentation>A numeric identifier for an object.</opc:Documentation>
</opc:OpaqueType>
```

```
<opc:EnumeratedType Name="ApplicationType"
LengthInBits="32">
  <opc:Documentation>The types of applications.</opc:Documentation>
  <opc:EnumeratedValue Name="Server" Value="0" />
  <opc:EnumeratedValue Name="Client" Value="1" />
  <opc:EnumeratedValue Name="ClientAndServer" Value="2" />
  <opc:EnumeratedValue Name="DiscoveryServer" Value="3" />
</opc:EnumeratedType>

<opc:StructuredType Name="ApplicationDescription" BaseType="ua:ExtensionObject">
  <opc:Documentation>Describes an application and how to find it.</opc:Documentation>
  <opc:Field Name="ApplicationUri" TypeName="opc:String" />
  <opc:Field Name="ProductUri" TypeName="opc:String" />
  <opc:Field Name="ApplicationName" TypeName="ua:LocalizedText" />
  <opc:Field Name="ApplicationType" TypeName="tns:ApplicationType" />
  <opc:Field Name="GatewayServerUri" TypeName="opc:String" />
  <opc:Field Name="DiscoveryProfileUri" TypeName="opc:String" />
  <opc:Field Name="NoOfDiscoveryUrls" TypeName="opc:Int32" />
  <opc:Field Name="DiscoveryUrls"
TypeName="opc:String" LengthField="NoOfDiscoveryUrls" />
</opc:StructuredType>

<opc:StructuredType Name="RequestHeader" BaseType="ua:ExtensionObject">
  <opc:Documentation>The header passed with every server request.</opc:Documentation>
  <opc:Field Name="AuthenticationToken" TypeName="ua:NodeId" />
  <opc:Field Name="Timestamp" TypeName="opc:DateTime" />
  <opc:Field Name="RequestHandle" TypeName="opc:UInt32" />
  <opc:Field Name="ReturnDiagnostics" TypeName="opc:UInt32" />
  <opc:Field Name="AuditEntryId" TypeName="opc:String" />
  <opc:Field Name="TimeoutHint" TypeName="opc:UInt32" />
  <opc:Field Name="AdditionalHeader" TypeName="ua:ExtensionObject" />
</opc:StructuredType>

<opc:StructuredType Name="ResponseHeader" BaseType="ua:ExtensionObject">
  <opc:Documentation>The header passed with every server response.</opc:Documentation>
  <opc:Field Name="Timestamp" TypeName="opc:DateTime" />
  <opc:Field Name="RequestHandle" TypeName="opc:UInt32"
/>
  <opc:Field Name="ServiceResult" TypeName="ua:StatusCode" />
  <opc:Field Name="ServiceDiagnostics" TypeName="ua:DiagnosticInfo" />
  <opc:Field Name="NoOfStringTable" TypeName="opc:Int32" />
  <opc:Field Name="StringTable" TypeName="opc:String" LengthField="NoOfStringTable" />
  <opc:Field Name="AdditionalHeader" TypeName="ua:ExtensionObject" />
</opc:StructuredType>

<opc:OpaqueType Name="VersionTime">
</opc:OpaqueType>
```

```
<opc:StructuredType Name="ServiceFault" BaseType="ua:ExtensionObject">
  <opc:Documentation>The response returned by all services when there is a service level
error.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
</opc:StructuredType>

<opc:StructuredType Name="SessionlessInvokeRequestType" BaseType="ua:ExtensionObject">
  <opc:Field Name="NoOfUrisVersion" TypeName="opc:Int32" />
  <opc:Field Name="UrisVersion" TypeName="opc:UInt32" LengthField="NoOfUrisVersion" />
  <opc:Field Name="NoOfNamespaceUris"
TypeName="opc:Int32" />
  <opc:Field Name="NamespaceUris" TypeName="opc:String" LengthField="NoOfNamespaceUris" />
  <opc:Field Name="NoOfServerUris" TypeName="opc:Int32" />
  <opc:Field Name="ServerUris" TypeName="opc:String" LengthField="NoOfServerUris" />
  <opc:Field Name="NoOfLocaleIds" TypeName="opc:Int32" />
  <opc:Field Name="LocaleIds" TypeName="opc:String" LengthField="NoOfLocaleIds" />
  <opc:Field Name="ServiceId" TypeName="opc:UInt32" />
</opc:StructuredType>

<opc:StructuredType Name="SessionlessInvokeResponseType" BaseType="ua:ExtensionObject">
  <opc:Field Name="NoOfNamespaceUris" TypeName="opc:Int32" />
  <opc:Field Name="NamespaceUris" TypeName="opc:String" LengthField="NoOfNamespaceUris" />
  <opc:Field Name="NoOfServerUris" TypeName="opc:Int32" />
  <opc:Field Name="ServerUris" TypeName="opc:String" LengthField="NoOfServerUris" />
  <opc:Field Name="ServiceId" TypeName="opc:UInt32" />
</opc:StructuredType>

<opc:StructuredType
Name="FindServersRequest" BaseType="ua:ExtensionObject">
  <opc:Documentation>Finds the servers known to the discovery server.</opc:Documentation>
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="EndpointUrl" TypeName="opc:String" />
  <opc:Field Name="NoOfLocaleIds" TypeName="opc:Int32" />
  <opc:Field Name="LocaleIds" TypeName="opc:String" LengthField="NoOfLocaleIds" />
  <opc:Field Name="NoOfServerUris" TypeName="opc:Int32" />
  <opc:Field Name="ServerUris" TypeName="opc:String" LengthField="NoOfServerUris" />
</opc:StructuredType>

<opc:StructuredType Name="FindServersResponse" BaseType="ua:ExtensionObject">
  <opc:Documentation>Finds the servers known to the discovery server.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfServers" TypeName="opc:Int32" />
  <opc:Field Name="Servers" TypeName="tns:ApplicationDescription" LengthField="NoOfServers"
/>
</opc:StructuredType>

<opc:StructuredType Name="ServerOnNetwork" BaseType="ua:ExtensionObject">
```

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  <opc:Field Name="RecordId" TypeName="opc:UInt32" />
  <opc:Field Name="ServerName" TypeName="opc:String" />
  <opc:Field Name="DiscoveryUrl" TypeName="opc:String" />
  <opc:Field Name="NoOfServerCapabilities" TypeName="opc:Int32" />
  <opc:Field Name="ServerCapabilities" TypeName="opc:String" LengthField="NoOfServerCapabilities" />
 </opc:StructuredType>

 <opc:StructuredType Name="FindServersOnNetworkRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="StartingRecordId" TypeName="opc:UInt32" />
  <opc:Field Name="MaxRecordsToReturn" TypeName="opc:UInt32" />
  <opc:Field Name="NoOfServerCapabilityFilter" TypeName="opc:Int32" />
  <opc:Field Name="ServerCapabilityFilter" TypeName="opc:String" LengthField="NoOfServerCapabilityFilter"
/>
 </opc:StructuredType>

 <opc:StructuredType Name="FindServersOnNetworkResponse"
 BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="LastCounterResetTime" TypeName="opc:DateTime" />
  <opc:Field Name="NoOfServers" TypeName="opc:Int32" />
  <opc:Field Name="Servers" TypeName="tns:ServerOnNetwork" LengthField="NoOfServers" />
 </opc:StructuredType>

 <opc:OpaqueType Name="ApplicationInstanceCertificate">
  <opc:Documentation>A certificate for an instance of an application.</opc:Documentation>
 </opc:OpaqueType>

 <opc:EnumeratedType Name="MessageSecurityMode" LengthInBits="32">
  <opc:Documentation>The type of security to use on a message.</opc:Documentation>
  <opc:EnumeratedValue Name="Invalid" Value="0" />
  <opc:EnumeratedValue Name="None" Value="1" />
  <opc:EnumeratedValue Name="Sign" Value="2" />
  <opc:EnumeratedValue Name="SignAndEncrypt" Value="3" />
 </opc:EnumeratedType>

 <opc:EnumeratedType Name="UserTokenType" LengthInBits="32">

 <opc:Documentation>The possible user token types.</opc:Documentation>
  <opc:EnumeratedValue Name="Anonymous" Value="0" />
  <opc:EnumeratedValue Name="UserName" Value="1" />
  <opc:EnumeratedValue Name="Certificate" Value="2" />
  <opc:EnumeratedValue Name="IssuedToken" Value="3" />
 </opc:EnumeratedType>

 <opc:StructuredType Name="UserTokenPolicy" BaseType="ua:ExtensionObject">
  <opc:Documentation>Describes a user token that can be used with a server.</opc:Documentation>
  <opc:Field Name="PolicyId" TypeName="opc:String" />
```

```
  <opc:Field Name="TokenType" TypeName="tns:UserTokenType" />
  <opc:Field Name="IssuedTokenType" TypeName="opc:String" />
  <opc:Field Name="IssuerEndpointUrl" TypeName="opc:String" />
  <opc:Field Name="SecurityPolicyUri" TypeName="opc:String" />
 </opc:StructuredType>

 <opc:StructuredType Name="EndpointDescription" BaseType="ua:ExtensionObject">
  <opc:Documentation>The description of a endpoint that can be used to access a server.</opc:Documentation>
   <opc:Field Name="EndpointUrl" TypeName="opc:String" />
  <opc:Field Name="Server" TypeName="tns:ApplicationDescription" />
  <opc:Field Name="ServerCertificate" TypeName="opc:ByteString" />
  <opc:Field Name="SecurityMode" TypeName="tns:MessageSecurityMode" />
  <opc:Field Name="SecurityPolicyUri" TypeName="opc:String" />
  <opc:Field Name="NoOfUserIdentityTokens" TypeName="opc:Int32" />
  <opc:Field Name="UserIdentityTokens" TypeName="tns:UserTokenPolicy"
LengthField="NoOfUserIdentityTokens" />
  <opc:Field Name="TransportProfileUri" TypeName="opc:String" />
  <opc:Field Name="SecurityLevel" TypeName="opc:Byte" />
 </opc:StructuredType>

 <opc:StructuredType Name="GetEndpointsRequest" BaseType="ua:ExtensionObject">
  <opc:Documentation>Gets the endpoints used by the server.</opc:Documentation>
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="EndpointUrl" TypeName="opc:String" />
  <opc:Field Name="NoOfLocaleIds"
 TypeName="opc:Int32" />
  <opc:Field Name="LocaleIds" TypeName="opc:String" LengthField="NoOfLocaleIds" />
  <opc:Field Name="NoOfProfileUris" TypeName="opc:Int32" />
  <opc:Field Name="ProfileUris" TypeName="opc:String" LengthField="NoOfProfileUris" />
 </opc:StructuredType>

 <opc:StructuredType Name="GetEndpointsResponse" BaseType="ua:ExtensionObject">
  <opc:Documentation>Gets the endpoints used by the server.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfEndpoints" TypeName="opc:Int32" />
  <opc:Field Name="Endpoints" TypeName="tns:EndpointDescription" LengthField="NoOfEndpoints" />
 </opc:StructuredType>

 <opc:StructuredType Name="RegisteredServer" BaseType="ua:ExtensionObject">
  <opc:Documentation>The information required to register a server with a discovery server.</opc:Documentation>
  <opc:Field Name="ServerUri" TypeName="opc:String" />
  <opc:Field Name="ProductUri" TypeName="opc:String"
 />
  <opc:Field Name="NoOfServerNames" TypeName="opc:Int32" />
  <opc:Field Name="ServerNames" TypeName="ua:LocalizedText" LengthField="NoOfServerNames" />
  <opc:Field Name="ServerType" TypeName="tns:ApplicationType" />
  <opc:Field Name="GatewayServerUri" TypeName="opc:String" />
  <opc:Field Name="NoOfDiscoveryUrls" TypeName="opc:Int32" />
```

```
  <opc:Field Name="DiscoveryUrls" TypeName="opc:String" LengthField="NoOfDiscoveryUrls" />
  <opc:Field Name="SemaphoreFilePath" TypeName="opc:String" />
  <opc:Field Name="IsOnline" TypeName="opc:Boolean" />
 </opc:StructuredType>

 <opc:StructuredType Name="RegisterServerRequest" BaseType="ua:ExtensionObject">
  <opc:Documentation>Registers a server with the discovery server.</opc:Documentation>
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="Server" TypeName="tns:RegisteredServer" />
 </opc:StructuredType>

 <opc:StructuredType Name="RegisterServerResponse" BaseType="ua:ExtensionObject">
   <opc:Documentation>Registers a server with the discovery server.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
 </opc:StructuredType>

 <opc:StructuredType Name="DiscoveryConfiguration" BaseType="ua:ExtensionObject">
  <opc:Documentation>A base type for discovery configuration information.</opc:Documentation>
 </opc:StructuredType>

 <opc:StructuredType Name="MdnsDiscoveryConfiguration" BaseType="tns:DiscoveryConfiguration">
  <opc:Documentation>The discovery information needed for mDNS registration.</opc:Documentation>
  <opc:Field Name="MdnsServerName" TypeName="opc:String" />
  <opc:Field Name="NoOfServerCapabilities" TypeName="opc:Int32" />
  <opc:Field Name="ServerCapabilities" TypeName="opc:String" LengthField="NoOfServerCapabilities" />
 </opc:StructuredType>

 <opc:StructuredType Name="RegisterServer2Request" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader"
 />
  <opc:Field Name="Server" TypeName="tns:RegisteredServer" />
  <opc:Field Name="NoOfDiscoveryConfiguration" TypeName="opc:Int32" />
  <opc:Field Name="DiscoveryConfiguration" TypeName="ua:ExtensionObject"
LengthField="NoOfDiscoveryConfiguration" />
 </opc:StructuredType>

 <opc:StructuredType Name="RegisterServer2Response" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfConfigurationResults" TypeName="opc:Int32" />
  <opc:Field Name="ConfigurationResults" TypeName="ua:StatusCode"
LengthField="NoOfConfigurationResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
 </opc:StructuredType>

 <opc:EnumeratedType Name="SecurityTokenRequestType" LengthInBits="32">
  <opc:Documentation>Indicates whether a token if being created or renewed.</opc:Documentation>
```

```
 <opc:EnumeratedValue Name="Issue" Value="0" />
  <opc:EnumeratedValue Name="Renew" Value="1" />
</opc:EnumeratedType>

<opc:StructuredType Name="ChannelSecurityToken" BaseType="ua:ExtensionObject">
  <opc:Documentation>The token that identifies a set of keys for an active secure channel.</opc:Documentation>
  <opc:Field Name="ChannelId" TypeName="opc:UInt32" />
  <opc:Field Name="TokenId" TypeName="opc:UInt32" />
  <opc:Field Name="CreatedAt" TypeName="opc:DateTime" />
  <opc:Field Name="RevisedLifetime" TypeName="opc:UInt32" />
</opc:StructuredType>

<opc:StructuredType Name="OpenSecureChannelRequest" BaseType="ua:ExtensionObject">
  <opc:Documentation>Creates a secure channel with a server.</opc:Documentation>
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="ClientProtocolVersion" TypeName="opc:UInt32" />
  <opc:Field Name="RequestType" TypeName="tns:SecurityTokenRequestType" />
  <opc:Field Name="SecurityMode" TypeName="tns:MessageSecurityMode"
/>
  <opc:Field Name="ClientNonce" TypeName="opc:ByteString" />
  <opc:Field Name="RequestedLifetime" TypeName="opc:UInt32" />
</opc:StructuredType>

<opc:StructuredType Name="OpenSecureChannelResponse" BaseType="ua:ExtensionObject">
  <opc:Documentation>Creates a secure channel with a server.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="ServerProtocolVersion" TypeName="opc:UInt32" />
  <opc:Field Name="SecurityToken" TypeName="tns:ChannelSecurityToken" />
  <opc:Field Name="ServerNonce" TypeName="opc:ByteString" />
</opc:StructuredType>

<opc:StructuredType Name="CloseSecureChannelRequest" BaseType="ua:ExtensionObject">
  <opc:Documentation>Closes a secure channel.</opc:Documentation>
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
</opc:StructuredType>

<opc:StructuredType Name="CloseSecureChannelResponse" BaseType="ua:ExtensionObject">
  <opc:Documentation>Closes
a secure channel.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
</opc:StructuredType>

<opc:StructuredType Name="SignedSoftwareCertificate" BaseType="ua:ExtensionObject">
  <opc:Documentation>A software certificate with a digital signature.</opc:Documentation>
  <opc:Field Name="CertificateData" TypeName="opc:ByteString" />
  <opc:Field Name="Signature" TypeName="opc:ByteString" />
</opc:StructuredType>
```

```
 <opc:OpaqueType Name="SessionAuthenticationToken">
  <opc:Documentation>A unique identifier for a session used to authenticate requests.</opc:Documentation>
 </opc:OpaqueType>

 <opc:StructuredType Name="SignatureData" BaseType="ua:ExtensionObject">
  <opc:Documentation>A digital signature.</opc:Documentation>
  <opc:Field Name="Algorithm" TypeName="opc:String" />
  <opc:Field Name="Signature" TypeName="opc:ByteString" />
 </opc:StructuredType>

 <opc:StructuredType Name="CreateSessionRequest" BaseType="ua:ExtensionObject">
   <opc:Documentation>Creates a new session with the server.</opc:Documentation>
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="ClientDescription" TypeName="tns:ApplicationDescription" />
  <opc:Field Name="ServerUri" TypeName="opc:String" />
  <opc:Field Name="EndpointUrl" TypeName="opc:String" />
  <opc:Field Name="SessionName" TypeName="opc:String" />
  <opc:Field Name="ClientNonce" TypeName="opc:ByteString" />
  <opc:Field Name="ClientCertificate" TypeName="opc:ByteString" />
  <opc:Field Name="RequestedSessionTimeout" TypeName="opc:Double" />
  <opc:Field Name="MaxResponseMessageSize" TypeName="opc:UInt32" />
 </opc:StructuredType>

 <opc:StructuredType Name="CreateSessionResponse" BaseType="ua:ExtensionObject">
  <opc:Documentation>Creates a new session with the server.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="SessionId" TypeName="ua:NodeId"
 />
  <opc:Field Name="AuthenticationToken" TypeName="ua:NodeId" />
  <opc:Field Name="RevisedSessionTimeout" TypeName="opc:Double" />
  <opc:Field Name="ServerNonce" TypeName="opc:ByteString" />
  <opc:Field Name="ServerCertificate" TypeName="opc:ByteString" />
  <opc:Field Name="NoOfServerEndpoints" TypeName="opc:Int32" />
  <opc:Field Name="ServerEndpoints" TypeName="tns:EndpointDescription"
 LengthField="NoOfServerEndpoints" />
  <opc:Field Name="NoOfServerSoftwareCertificates" TypeName="opc:Int32" />
  <opc:Field Name="ServerSoftwareCertificates" TypeName="tns:SignedSoftwareCertificate"
 LengthField="NoOfServerSoftwareCertificates" />
  <opc:Field Name="ServerSignature" TypeName="tns:SignatureData" />
  <opc:Field Name="MaxRequestMessageSize" TypeName="opc:UInt32" />
 </opc:StructuredType>

 <opc:StructuredType Name="UserIdentityToken" BaseType="ua:ExtensionObject">
  <opc:Documentation>A base type for a user identity token.</opc:Documentation>
   <opc:Field Name="PolicyId" TypeName="opc:String" />
 </opc:StructuredType>

 <opc:StructuredType Name="AnonymousIdentityToken" BaseType="tns:UserIdentityToken">
```

```
  <opc:Documentation>A token representing an anonymous user.</opc:Documentation>
  <opc:Field Name="PolicyId" TypeName="opc:String" SourceType="tns:UserIdentityToken" />
</opc:StructuredType>

<opc:StructuredType Name="UserNameIdentityToken" BaseType="tns:UserIdentityToken">
  <opc:Documentation>A token representing a user identified by a user name and password.</opc:Documentation>
  <opc:Field Name="PolicyId" TypeName="opc:String" SourceType="tns:UserIdentityToken" />
  <opc:Field Name="UserName" TypeName="opc:String" />
  <opc:Field Name="Password" TypeName="opc:ByteString" />
  <opc:Field Name="EncryptionAlgorithm" TypeName="opc:String" />
</opc:StructuredType>

<opc:StructuredType Name="X509IdentityToken" BaseType="tns:UserIdentityToken">
  <opc:Documentation>A token representing a user identified
by an X509 certificate.</opc:Documentation>
  <opc:Field Name="PolicyId" TypeName="opc:String" SourceType="tns:UserIdentityToken" />
  <opc:Field Name="CertificateData" TypeName="opc:ByteString" />
</opc:StructuredType>

<opc:StructuredType Name="IssuedIdentityToken" BaseType="tns:UserIdentityToken">
  <opc:Documentation>A token representing a user identified by a WS-Security XML token.</opc:Documentation>
  <opc:Field Name="PolicyId" TypeName="opc:String" SourceType="tns:UserIdentityToken" />
  <opc:Field Name="TokenData" TypeName="opc:ByteString" />
  <opc:Field Name="EncryptionAlgorithm" TypeName="opc:String" />
</opc:StructuredType>

<opc:OpaqueType Name="RsaEncryptedSecret">
</opc:OpaqueType>

<opc:StructuredType Name="ActivateSessionRequest" BaseType="ua:ExtensionObject">
  <opc:Documentation>Activates a session with the server.</opc:Documentation>
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="ClientSignature"
TypeName="tns:SignatureData" />
  <opc:Field Name="NoOfClientSoftwareCertificates" TypeName="opc:Int32" />
  <opc:Field Name="ClientSoftwareCertificates" TypeName="tns:SignedSoftwareCertificate"
LengthField="NoOfClientSoftwareCertificates" />
  <opc:Field Name="NoOfLocaleIds" TypeName="opc:Int32" />
  <opc:Field Name="LocaleIds" TypeName="opc:String" LengthField="NoOfLocaleIds" />
  <opc:Field Name="UserIdentityToken" TypeName="ua:ExtensionObject" />
  <opc:Field Name="UserTokenSignature" TypeName="tns:SignatureData" />
</opc:StructuredType>

<opc:StructuredType Name="ActivateSessionResponse" BaseType="ua:ExtensionObject">
  <opc:Documentation>Activates a session with the server.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="ServerNonce" TypeName="opc:ByteString" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
```

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  <opc:Field Name="Results" TypeName="ua:StatusCode" LengthField="NoOfResults"
/>
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
</opc:StructuredType>

<opc:StructuredType Name="CloseSessionRequest" BaseType="ua:ExtensionObject">
  <opc:Documentation>Closes a session with the server.</opc:Documentation>
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="DeleteSubscriptions" TypeName="opc:Boolean" />
</opc:StructuredType>

<opc:StructuredType Name="CloseSessionResponse" BaseType="ua:ExtensionObject">
  <opc:Documentation>Closes a session with the server.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
</opc:StructuredType>

<opc:StructuredType Name="CancelRequest" BaseType="ua:ExtensionObject">
  <opc:Documentation>Cancels an outstanding request.</opc:Documentation>
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field
Name="RequestHandle" TypeName="opc:UInt32" />
</opc:StructuredType>

<opc:StructuredType Name="CancelResponse" BaseType="ua:ExtensionObject">
  <opc:Documentation>Cancels an outstanding request.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="CancelCount" TypeName="opc:UInt32" />
</opc:StructuredType>

<opc:EnumeratedType Name="NodeAttributesMask" LengthInBits="32">
  <opc:Documentation>The bits used to specify default attributes for a new node.</opc:Documentation>
  <opc:EnumeratedValue Name="None" Value="0" />
  <opc:EnumeratedValue Name="AccessLevel" Value="1" />
  <opc:EnumeratedValue Name="ArrayDimensions" Value="2" />
  <opc:EnumeratedValue Name="BrowseName" Value="4" />
  <opc:EnumeratedValue Name="ContainsNoLoops" Value="8" />
  <opc:EnumeratedValue Name="DataType" Value="16" />
  <opc:EnumeratedValue Name="Description" Value="32" />
  <opc:EnumeratedValue Name="DisplayName" Value="64"
/>
  <opc:EnumeratedValue Name="EventNotifier" Value="128" />
  <opc:EnumeratedValue Name="Executable" Value="256" />
  <opc:EnumeratedValue Name="Historizing" Value="512" />
  <opc:EnumeratedValue Name="InverseName" Value="1024" />
  <opc:EnumeratedValue Name="IsAbstract" Value="2048" />
  <opc:EnumeratedValue Name="MinimumSamplingInterval" Value="4096" />
  <opc:EnumeratedValue Name="NodeClass" Value="8192" />
```

```
  <opc:EnumeratedValue Name="NodeId" Value="16384" />
  <opc:EnumeratedValue Name="Symmetric" Value="32768" />
  <opc:EnumeratedValue Name="UserAccessLevel" Value="65536" />
  <opc:EnumeratedValue Name="UserExecutable" Value="131072" />
  <opc:EnumeratedValue Name="UserWriteMask" Value="262144" />
  <opc:EnumeratedValue Name="ValueRank" Value="524288" />
  <opc:EnumeratedValue Name="WriteMask" Value="1048576" />
  <opc:EnumeratedValue Name="Value" Value="2097152" />
  <opc:EnumeratedValue Name="DataTypeDefinition" Value="4194304" />
  <opc:EnumeratedValue
Name="RolePermissions" Value="8388608" />
  <opc:EnumeratedValue Name="AccessRestrictions" Value="16777216" />
  <opc:EnumeratedValue Name="All" Value="33554431" />
  <opc:EnumeratedValue Name="BaseNode" Value="26501220" />
  <opc:EnumeratedValue Name="Object" Value="26501348" />
  <opc:EnumeratedValue Name="ObjectType" Value="26503268" />
  <opc:EnumeratedValue Name="Variable" Value="26571383" />
  <opc:EnumeratedValue Name="VariableType" Value="28600438" />
  <opc:EnumeratedValue Name="Method" Value="26632548" />
  <opc:EnumeratedValue Name="ReferenceType" Value="26537060" />
  <opc:EnumeratedValue Name="View" Value="26501356" />
</opc:EnumeratedType>

<opc:StructuredType Name="NodeAttributes" BaseType="ua:ExtensionObject">
  <opc:Documentation>The base attributes for all nodes.</opc:Documentation>
  <opc:Field Name="SpecifiedAttributes" TypeName="opc:UInt32" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" />
  <opc:Field
Name="Description" TypeName="ua:LocalizedText" />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" />
</opc:StructuredType>

<opc:StructuredType Name="ObjectAttributes" BaseType="tns:NodeAttributes">
  <opc:Documentation>The attributes for an object node.</opc:Documentation>
  <opc:Field Name="SpecifiedAttributes" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:NodeAttributes" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:NodeAttributes" />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="EventNotifier" TypeName="opc:Byte" />
</opc:StructuredType>

<opc:StructuredType Name="VariableAttributes" BaseType="tns:NodeAttributes">
  <opc:Documentation>The
attributes for a variable node.</opc:Documentation>
  <opc:Field Name="SpecifiedAttributes" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:NodeAttributes" />
```

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  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:NodeAttributes" />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="Value" TypeName="ua:Variant" />
  <opc:Field Name="DataType" TypeName="ua:NodeId" />
  <opc:Field Name="ValueRank" TypeName="opc:Int32" />
  <opc:Field Name="NoOfArrayDimensions" TypeName="opc:Int32" />
  <opc:Field Name="ArrayDimensions" TypeName="opc:UInt32" LengthField="NoOfArrayDimensions" />
  <opc:Field Name="AccessLevel" TypeName="opc:Byte" />
  <opc:Field Name="UserAccessLevel" TypeName="opc:Byte" />
  <opc:Field
Name="MinimumSamplingInterval" TypeName="opc:Double" />
  <opc:Field Name="Historizing" TypeName="opc:Boolean" />
</opc:StructuredType>

<opc:StructuredType Name="MethodAttributes" BaseType="tns:NodeAttributes">
  <opc:Documentation>The attributes for a method node.</opc:Documentation>
  <opc:Field Name="SpecifiedAttributes" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:NodeAttributes" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:NodeAttributes" />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="Executable" TypeName="opc:Boolean" />
  <opc:Field Name="UserExecutable" TypeName="opc:Boolean" />
</opc:StructuredType>

<opc:StructuredType Name="ObjectTypeAttributes" BaseType="tns:NodeAttributes">
   <opc:Documentation>The attributes for an object type node.</opc:Documentation>
  <opc:Field Name="SpecifiedAttributes" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:NodeAttributes" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:NodeAttributes" />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="IsAbstract" TypeName="opc:Boolean" />
</opc:StructuredType>

<opc:StructuredType Name="VariableTypeAttributes" BaseType="tns:NodeAttributes">
  <opc:Documentation>The attributes for a variable type node.</opc:Documentation>
  <opc:Field Name="SpecifiedAttributes" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:NodeAttributes"
/>
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:NodeAttributes" />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="Value" TypeName="ua:Variant" />
  <opc:Field Name="DataType" TypeName="ua:NodeId" />
  <opc:Field Name="ValueRank" TypeName="opc:Int32" />
  <opc:Field Name="NoOfArrayDimensions" TypeName="opc:Int32" />
```

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  <opc:Field Name="ArrayDimensions" TypeName="opc:UInt32" LengthField="NoOfArrayDimensions" />
  <opc:Field Name="IsAbstract" TypeName="opc:Boolean" />
</opc:StructuredType>

<opc:StructuredType Name="ReferenceTypeAttributes" BaseType="tns:NodeAttributes">
  <opc:Documentation>The attributes for a reference type node.</opc:Documentation>
  <opc:Field Name="SpecifiedAttributes" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText"
SourceType="tns:NodeAttributes" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:NodeAttributes" />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="IsAbstract" TypeName="opc:Boolean" />
  <opc:Field Name="Symmetric" TypeName="opc:Boolean" />
  <opc:Field Name="InverseName" TypeName="ua:LocalizedText" />
</opc:StructuredType>

<opc:StructuredType Name="DataTypeAttributes" BaseType="tns:NodeAttributes">
  <opc:Documentation>The attributes for a data type node.</opc:Documentation>
  <opc:Field Name="SpecifiedAttributes" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:NodeAttributes" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:NodeAttributes" />

  <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="IsAbstract" TypeName="opc:Boolean" />
</opc:StructuredType>

<opc:StructuredType Name="ViewAttributes" BaseType="tns:NodeAttributes">
  <opc:Documentation>The attributes for a view node.</opc:Documentation>
  <opc:Field Name="SpecifiedAttributes" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:NodeAttributes" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:NodeAttributes" />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="ContainsNoLoops" TypeName="opc:Boolean" />
  <opc:Field Name="EventNotifier" TypeName="opc:Byte"
/>
</opc:StructuredType>

<opc:StructuredType Name="GenericAttributeValue" BaseType="ua:ExtensionObject">
  <opc:Field Name="AttributeId" TypeName="opc:UInt32" />
  <opc:Field Name="Value" TypeName="ua:Variant" />
</opc:StructuredType>

<opc:StructuredType Name="GenericAttributes" BaseType="tns:NodeAttributes">
  <opc:Field Name="SpecifiedAttributes" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" SourceType="tns:NodeAttributes" />
```

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  <opc:Field Name="Description" TypeName="ua:LocalizedText" SourceType="tns:NodeAttributes" />
  <opc:Field Name="WriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="UserWriteMask" TypeName="opc:UInt32" SourceType="tns:NodeAttributes" />
  <opc:Field Name="NoOfAttributeValues" TypeName="opc:Int32" />
  <opc:Field Name="AttributeValues" TypeName="tns:GenericAttributeValue"
LengthField="NoOfAttributeValues" />
 </opc:StructuredType>

 <opc:StructuredType Name="AddNodesItem" BaseType="ua:ExtensionObject">
  <opc:Documentation>A request to add a node to the server address space.</opc:Documentation>
  <opc:Field Name="ParentNodeId" TypeName="ua:ExpandedNodeId" />
  <opc:Field Name="ReferenceTypeId" TypeName="ua:NodeId" />
  <opc:Field Name="RequestedNewNodeId" TypeName="ua:ExpandedNodeId" />
  <opc:Field Name="BrowseName" TypeName="ua:QualifiedName" />
  <opc:Field Name="NodeClass" TypeName="tns:NodeClass" />
  <opc:Field Name="NodeAttributes" TypeName="ua:ExtensionObject" />
  <opc:Field Name="TypeDefinition" TypeName="ua:ExpandedNodeId" />
 </opc:StructuredType>

 <opc:StructuredType Name="AddNodesResult" BaseType="ua:ExtensionObject">
  <opc:Documentation>A result of an add node operation.</opc:Documentation>
  <opc:Field Name="StatusCode" TypeName="ua:StatusCode" />
  <opc:Field Name="AddedNodeId" TypeName="ua:NodeId" />
 </opc:StructuredType>

 <opc:StructuredType Name="AddNodesRequest"
 BaseType="ua:ExtensionObject">
  <opc:Documentation>Adds one or more nodes to the server address space.</opc:Documentation>
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="NoOfNodesToAdd" TypeName="opc:Int32" />
  <opc:Field Name="NodesToAdd" TypeName="tns:AddNodesItem" LengthField="NoOfNodesToAdd" />
 </opc:StructuredType>

 <opc:StructuredType Name="AddNodesResponse" BaseType="ua:ExtensionObject">
  <opc:Documentation>Adds one or more nodes to the server address space.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="tns:AddNodesResult" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
 </opc:StructuredType>

 <opc:StructuredType Name="AddReferencesItem"
 BaseType="ua:ExtensionObject">
  <opc:Documentation>A request to add a reference to the server address space.</opc:Documentation>
  <opc:Field Name="SourceNodeId" TypeName="ua:NodeId" />
  <opc:Field Name="ReferenceTypeId" TypeName="ua:NodeId" />
  <opc:Field Name="IsForward" TypeName="opc:Boolean" />
```

```
  <opc:Field Name="TargetServerUri" TypeName="opc:String" />
  <opc:Field Name="TargetNodeId" TypeName="ua:ExpandedNodeId" />
  <opc:Field Name="TargetNodeClass" TypeName="tns:NodeClass" />
 </opc:StructuredType>

 <opc:StructuredType Name="AddReferencesRequest" BaseType="ua:ExtensionObject">
  <opc:Documentation>Adds one or more references to the server address space.</opc:Documentation>
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="NoOfReferencesToAdd" TypeName="opc:Int32" />
  <opc:Field Name="ReferencesToAdd" TypeName="tns:AddReferencesItem"
LengthField="NoOfReferencesToAdd" />
 </opc:StructuredType>

 <opc:StructuredType
 Name="AddReferencesResponse" BaseType="ua:ExtensionObject">
  <opc:Documentation>Adds one or more references to the server address space.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="ua:StatusCode" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
 </opc:StructuredType>

 <opc:StructuredType Name="DeleteNodesItem" BaseType="ua:ExtensionObject">
  <opc:Documentation>A request to delete a node to the server address space.</opc:Documentation>
  <opc:Field Name="NodeId" TypeName="ua:NodeId" />
  <opc:Field Name="DeleteTargetReferences" TypeName="opc:Boolean" />
 </opc:StructuredType>

 <opc:StructuredType Name="DeleteNodesRequest" BaseType="ua:ExtensionObject">
  <opc:Documentation>Delete
 one or more nodes from the server address space.</opc:Documentation>
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="NoOfNodesToDelete" TypeName="opc:Int32" />
  <opc:Field Name="NodesToDelete" TypeName="tns:DeleteNodesItem" LengthField="NoOfNodesToDelete" />
 </opc:StructuredType>

 <opc:StructuredType Name="DeleteNodesResponse" BaseType="ua:ExtensionObject">
  <opc:Documentation>Delete one or more nodes from the server address space.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="ua:StatusCode" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
 </opc:StructuredType>

 <opc:StructuredType Name="DeleteReferencesItem" BaseType="ua:ExtensionObject">
```

```
   <opc:Documentation>A request to delete a node from the server address space.</opc:Documentation>
  <opc:Field Name="SourceNodeId" TypeName="ua:NodeId" />
  <opc:Field Name="ReferenceTypeId" TypeName="ua:NodeId" />
  <opc:Field Name="IsForward" TypeName="opc:Boolean" />
  <opc:Field Name="TargetNodeId" TypeName="ua:ExpandedNodeId" />
  <opc:Field Name="DeleteBidirectional" TypeName="opc:Boolean" />
 </opc:StructuredType>

 <opc:StructuredType Name="DeleteReferencesRequest" BaseType="ua:ExtensionObject">
  <opc:Documentation>Delete one or more references from the server address space.</opc:Documentation>
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="NoOfReferencesToDelete" TypeName="opc:Int32" />
  <opc:Field Name="ReferencesToDelete" TypeName="tns:DeleteReferencesItem"
LengthField="NoOfReferencesToDelete" />
 </opc:StructuredType>

 <opc:StructuredType Name="DeleteReferencesResponse" BaseType="ua:ExtensionObject">
   <opc:Documentation>Delete one or more references from the server address space.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="ua:StatusCode" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
 </opc:StructuredType>

 <opc:EnumeratedType Name="AttributeWriteMask" LengthInBits="32" IsOptionSet="true">
  <opc:Documentation>Define bits used to indicate which attributes are writable.</opc:Documentation>
  <opc:EnumeratedValue Name="None" Value="0" />
  <opc:EnumeratedValue Name="AccessLevel" Value="1" />
  <opc:EnumeratedValue Name="ArrayDimensions" Value="2" />
  <opc:EnumeratedValue Name="BrowseName" Value="4" />
  <opc:EnumeratedValue Name="ContainsNoLoops" Value="8" />
  <opc:EnumeratedValue
 Name="DataType" Value="16" />
  <opc:EnumeratedValue Name="Description" Value="32" />
  <opc:EnumeratedValue Name="DisplayName" Value="64" />
  <opc:EnumeratedValue Name="EventNotifier" Value="128" />
  <opc:EnumeratedValue Name="Executable" Value="256" />
  <opc:EnumeratedValue Name="Historizing" Value="512" />
  <opc:EnumeratedValue Name="InverseName" Value="1024" />
  <opc:EnumeratedValue Name="IsAbstract" Value="2048" />
  <opc:EnumeratedValue Name="MinimumSamplingInterval" Value="4096" />
  <opc:EnumeratedValue Name="NodeClass" Value="8192" />
  <opc:EnumeratedValue Name="NodeId" Value="16384" />
  <opc:EnumeratedValue Name="Symmetric" Value="32768" />
  <opc:EnumeratedValue Name="UserAccessLevel" Value="65536" />
  <opc:EnumeratedValue Name="UserExecutable" Value="131072" />
  <opc:EnumeratedValue Name="UserWriteMask" Value="262144" />
```

```
  <opc:EnumeratedValue Name="ValueRank" Value="524288" />
  <opc:EnumeratedValue Name="WriteMask"
 Value="1048576" />
  <opc:EnumeratedValue Name="ValueForVariableType" Value="2097152" />
  <opc:EnumeratedValue Name="DataTypeDefinition" Value="4194304" />
  <opc:EnumeratedValue Name="RolePermissions" Value="8388608" />
  <opc:EnumeratedValue Name="AccessRestrictions" Value="16777216" />
  <opc:EnumeratedValue Name="AccessLevelEx" Value="33554432" />
 </opc:EnumeratedType>

 <opc:EnumeratedType Name="BrowseDirection" LengthInBits="32">
  <opc:Documentation>The directions of the references to return.</opc:Documentation>
  <opc:EnumeratedValue Name="Forward" Value="0" />
  <opc:EnumeratedValue Name="Inverse" Value="1" />
  <opc:EnumeratedValue Name="Both" Value="2" />
  <opc:EnumeratedValue Name="Invalid" Value="3" />
 </opc:EnumeratedType>

 <opc:StructuredType Name="ViewDescription" BaseType="ua:ExtensionObject">
  <opc:Documentation>The view to browse.</opc:Documentation>
  <opc:Field Name="ViewId" TypeName="ua:NodeId" />
  <opc:Field Name="Timestamp" TypeName="opc:DateTime"
 />
  <opc:Field Name="ViewVersion" TypeName="opc:UInt32" />
 </opc:StructuredType>

 <opc:StructuredType Name="BrowseDescription" BaseType="ua:ExtensionObject">
  <opc:Documentation>A request to browse the the references from a node.</opc:Documentation>
  <opc:Field Name="NodeId" TypeName="ua:NodeId" />
  <opc:Field Name="BrowseDirection" TypeName="tns:BrowseDirection" />
  <opc:Field Name="ReferenceTypeId" TypeName="ua:NodeId" />
  <opc:Field Name="IncludeSubtypes" TypeName="opc:Boolean" />
  <opc:Field Name="NodeClassMask" TypeName="opc:UInt32" />
  <opc:Field Name="ResultMask" TypeName="opc:UInt32" />
 </opc:StructuredType>

 <opc:EnumeratedType Name="BrowseResultMask" LengthInBits="32">
  <opc:Documentation>A bit mask which specifies what should be returned in a browse
response.</opc:Documentation>
  <opc:EnumeratedValue Name="None" Value="0" />
  <opc:EnumeratedValue Name="ReferenceTypeId" Value="1" />
  <opc:EnumeratedValue Name="IsForward"
 Value="2" />
  <opc:EnumeratedValue Name="NodeClass" Value="4" />
  <opc:EnumeratedValue Name="BrowseName" Value="8" />
  <opc:EnumeratedValue Name="DisplayName" Value="16" />
  <opc:EnumeratedValue Name="TypeDefinition" Value="32" />
  <opc:EnumeratedValue Name="All" Value="63" />
```

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  <opc:EnumeratedValue Name="ReferenceTypeInfo" Value="3" />
  <opc:EnumeratedValue Name="TargetInfo" Value="60" />
 </opc:EnumeratedType>

 <opc:StructuredType Name="ReferenceDescription" BaseType="ua:ExtensionObject">
  <opc:Documentation>The description of a reference.</opc:Documentation>
  <opc:Field Name="ReferenceTypeId" TypeName="ua:NodeId" />
  <opc:Field Name="IsForward" TypeName="opc:Boolean" />
  <opc:Field Name="NodeId" TypeName="ua:ExpandedNodeId" />
  <opc:Field Name="BrowseName" TypeName="ua:QualifiedName" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" />
  <opc:Field Name="NodeClass" TypeName="tns:NodeClass" />
  <opc:Field Name="TypeDefinition"
 TypeName="ua:ExpandedNodeId" />
 </opc:StructuredType>

 <opc:OpaqueType Name="ContinuationPoint">
  <opc:Documentation>An identifier for a suspended query or browse operation.</opc:Documentation>
 </opc:OpaqueType>

 <opc:StructuredType Name="BrowseResult" BaseType="ua:ExtensionObject">
  <opc:Documentation>The result of a browse operation.</opc:Documentation>
  <opc:Field Name="StatusCode" TypeName="ua:StatusCode" />
  <opc:Field Name="ContinuationPoint" TypeName="opc:ByteString" />
  <opc:Field Name="NoOfReferences" TypeName="opc:Int32" />
  <opc:Field Name="References" TypeName="tns:ReferenceDescription" LengthField="NoOfReferences" />
 </opc:StructuredType>

 <opc:StructuredType Name="BrowseRequest" BaseType="ua:ExtensionObject">
  <opc:Documentation>Browse the references for one or more nodes from the server address
space.</opc:Documentation>
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="View" TypeName="tns:ViewDescription"
 />
  <opc:Field Name="RequestedMaxReferencesPerNode" TypeName="opc:UInt32" />
  <opc:Field Name="NoOfNodesToBrowse" TypeName="opc:Int32" />
  <opc:Field Name="NodesToBrowse" TypeName="tns:BrowseDescription" LengthField="NoOfNodesToBrowse"
/>
 </opc:StructuredType>

 <opc:StructuredType Name="BrowseResponse" BaseType="ua:ExtensionObject">
  <opc:Documentation>Browse the references for one or more nodes from the server address
space.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="tns:BrowseResult" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
```

```
</opc:StructuredType>

<opc:StructuredType Name="BrowseNextRequest" BaseType="ua:ExtensionObject">
  <opc:Documentation>Continues
one or more browse operations.</opc:Documentation>
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="ReleaseContinuationPoints" TypeName="opc:Boolean" />
  <opc:Field Name="NoOfContinuationPoints" TypeName="opc:Int32" />
  <opc:Field Name="ContinuationPoints" TypeName="opc:ByteString" LengthField="NoOfContinuationPoints" />
</opc:StructuredType>

<opc:StructuredType Name="BrowseNextResponse" BaseType="ua:ExtensionObject">
  <opc:Documentation>Continues one or more browse operations.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="tns:BrowseResult" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
</opc:StructuredType>

<opc:StructuredType Name="RelativePathElement"
BaseType="ua:ExtensionObject">
  <opc:Documentation>An element in a relative path.</opc:Documentation>
  <opc:Field Name="ReferenceTypeId" TypeName="ua:NodeId" />
  <opc:Field Name="IsInverse" TypeName="opc:Boolean" />
  <opc:Field Name="IncludeSubtypes" TypeName="opc:Boolean" />
  <opc:Field Name="TargetName" TypeName="ua:QualifiedName" />
</opc:StructuredType>

<opc:StructuredType Name="RelativePath" BaseType="ua:ExtensionObject">
  <opc:Documentation>A relative path constructed from reference types and browse names.</opc:Documentation>
  <opc:Field Name="NoOfElements" TypeName="opc:Int32" />
  <opc:Field Name="Elements" TypeName="tns:RelativePathElement" LengthField="NoOfElements" />
</opc:StructuredType>

<opc:StructuredType Name="BrowsePath" BaseType="ua:ExtensionObject">
  <opc:Documentation>A request to translate a path into a node id.</opc:Documentation>
  <opc:Field Name="StartingNode" TypeName="ua:NodeId" />
  <opc:Field Name="RelativePath"
TypeName="tns:RelativePath" />
</opc:StructuredType>

<opc:StructuredType Name="BrowsePathTarget" BaseType="ua:ExtensionObject">
  <opc:Documentation>The target of the translated path.</opc:Documentation>
  <opc:Field Name="TargetId" TypeName="ua:ExpandedNodeId" />
  <opc:Field Name="RemainingPathIndex" TypeName="opc:UInt32" />
</opc:StructuredType>
```

```
<opc:StructuredType Name="BrowsePathResult" BaseType="ua:ExtensionObject">
  <opc:Documentation>The result of a translate opearation.</opc:Documentation>
  <opc:Field Name="StatusCode" TypeName="ua:StatusCode" />
  <opc:Field Name="NoOfTargets" TypeName="opc:Int32" />
  <opc:Field Name="Targets" TypeName="tns:BrowsePathTarget" LengthField="NoOfTargets" />
</opc:StructuredType>

<opc:StructuredType Name="TranslateBrowsePathsToNodeIdsRequest" BaseType="ua:ExtensionObject">
  <opc:Documentation>Translates one or more paths in the server address space.</opc:Documentation>
  <opc:Field Name="RequestHeader"
TypeName="tns:RequestHeader" />
  <opc:Field Name="NoOfBrowsePaths" TypeName="opc:Int32" />
  <opc:Field Name="BrowsePaths" TypeName="tns:BrowsePath" LengthField="NoOfBrowsePaths" />
</opc:StructuredType>

<opc:StructuredType Name="TranslateBrowsePathsToNodeIdsResponse" BaseType="ua:ExtensionObject">
  <opc:Documentation>Translates one or more paths in the server address space.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="tns:BrowsePathResult" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
</opc:StructuredType>

<opc:StructuredType Name="RegisterNodesRequest" BaseType="ua:ExtensionObject">
  <opc:Documentation>Registers one or more nodes for repeated use within a session.</opc:Documentation>
   <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="NoOfNodesToRegister" TypeName="opc:Int32" />
  <opc:Field Name="NodesToRegister" TypeName="ua:NodeId" LengthField="NoOfNodesToRegister" />
</opc:StructuredType>

<opc:StructuredType Name="RegisterNodesResponse" BaseType="ua:ExtensionObject">
  <opc:Documentation>Registers one or more nodes for repeated use within a session.</opc:Documentation>
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfRegisteredNodeIds" TypeName="opc:Int32" />
  <opc:Field Name="RegisteredNodeIds" TypeName="ua:NodeId" LengthField="NoOfRegisteredNodeIds" />
</opc:StructuredType>

<opc:StructuredType Name="UnregisterNodesRequest" BaseType="ua:ExtensionObject">
  <opc:Documentation>Unregisters one or more previously registered nodes.</opc:Documentation>
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="NoOfNodesToUnregister"
TypeName="opc:Int32" />
  <opc:Field Name="NodesToUnregister" TypeName="ua:NodeId" LengthField="NoOfNodesToUnregister" />
</opc:StructuredType>

<opc:StructuredType Name="UnregisterNodesResponse" BaseType="ua:ExtensionObject">
  <opc:Documentation>Unregisters one or more previously registered nodes.</opc:Documentation>
```

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  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
 </opc:StructuredType>

 <opc:OpaqueType Name="Counter">
  <opc:Documentation>A monotonically increasing value.</opc:Documentation>
 </opc:OpaqueType>

 <opc:OpaqueType Name="NumericRange">
  <opc:Documentation>Specifies a range of array indexes.</opc:Documentation>
 </opc:OpaqueType>

 <opc:OpaqueType Name="Time">
  <opc:Documentation>A time value specified as HH:MM:SS.SSS.</opc:Documentation>
 </opc:OpaqueType>

 <opc:OpaqueType Name="Date">
  <opc:Documentation>A date value.</opc:Documentation>
 </opc:OpaqueType>

 <opc:StructuredType Name="EndpointConfiguration"
 BaseType="ua:ExtensionObject">
  <opc:Field Name="OperationTimeout" TypeName="opc:Int32" />
  <opc:Field Name="UseBinaryEncoding" TypeName="opc:Boolean" />
  <opc:Field Name="MaxStringLength" TypeName="opc:Int32" />
  <opc:Field Name="MaxByteStringLength" TypeName="opc:Int32" />
  <opc:Field Name="MaxArrayLength" TypeName="opc:Int32" />
  <opc:Field Name="MaxMessageSize" TypeName="opc:Int32" />
  <opc:Field Name="MaxBufferSize" TypeName="opc:Int32" />
  <opc:Field Name="ChannelLifetime" TypeName="opc:Int32" />
  <opc:Field Name="SecurityTokenLifetime" TypeName="opc:Int32" />
 </opc:StructuredType>

 <opc:StructuredType Name="QueryDataDescription" BaseType="ua:ExtensionObject">
  <opc:Field Name="RelativePath" TypeName="tns:RelativePath" />
  <opc:Field Name="AttributeId" TypeName="opc:UInt32" />
  <opc:Field Name="IndexRange" TypeName="opc:String" />
 </opc:StructuredType>

 <opc:StructuredType Name="NodeTypeDescription" BaseType="ua:ExtensionObject">
   <opc:Field Name="TypeDefinitionNode" TypeName="ua:ExpandedNodeId" />
  <opc:Field Name="IncludeSubTypes" TypeName="opc:Boolean" />
  <opc:Field Name="NoOfDataToReturn" TypeName="opc:Int32" />
  <opc:Field Name="DataToReturn" TypeName="tns:QueryDataDescription" LengthField="NoOfDataToReturn"
/>
 </opc:StructuredType>

 <opc:EnumeratedType Name="FilterOperator" LengthInBits="32">
  <opc:EnumeratedValue Name="Equals" Value="0" />
```

```
  <opc:EnumeratedValue Name="IsNull" Value="1" />
  <opc:EnumeratedValue Name="GreaterThan" Value="2" />
  <opc:EnumeratedValue Name="LessThan" Value="3" />
  <opc:EnumeratedValue Name="GreaterThanOrEqual" Value="4" />
  <opc:EnumeratedValue Name="LessThanOrEqual" Value="5" />
  <opc:EnumeratedValue Name="Like" Value="6" />
  <opc:EnumeratedValue Name="Not" Value="7" />
  <opc:EnumeratedValue Name="Between" Value="8" />
  <opc:EnumeratedValue Name="InList" Value="9" />
  <opc:EnumeratedValue Name="And" Value="10" />
  <opc:EnumeratedValue
Name="Or" Value="11" />
  <opc:EnumeratedValue Name="Cast" Value="12" />
  <opc:EnumeratedValue Name="InView" Value="13" />
  <opc:EnumeratedValue Name="OfType" Value="14" />
  <opc:EnumeratedValue Name="RelatedTo" Value="15" />
  <opc:EnumeratedValue Name="BitwiseAnd" Value="16" />
  <opc:EnumeratedValue Name="BitwiseOr" Value="17" />
</opc:EnumeratedType>

<opc:StructuredType Name="QueryDataSet" BaseType="ua:ExtensionObject">
  <opc:Field Name="NodeId" TypeName="ua:ExpandedNodeId" />
  <opc:Field Name="TypeDefinitionNode" TypeName="ua:ExpandedNodeId" />
  <opc:Field Name="NoOfValues" TypeName="opc:Int32" />
  <opc:Field Name="Values" TypeName="ua:Variant" LengthField="NoOfValues" />
</opc:StructuredType>

<opc:StructuredType Name="NodeReference" BaseType="ua:ExtensionObject">
  <opc:Field Name="NodeId" TypeName="ua:NodeId" />
  <opc:Field Name="ReferenceTypeId" TypeName="ua:NodeId" />
  <opc:Field Name="IsForward" TypeName="opc:Boolean"
/>
  <opc:Field Name="NoOfReferencedNodeIds" TypeName="opc:Int32" />
  <opc:Field Name="ReferencedNodeIds" TypeName="ua:NodeId" LengthField="NoOfReferencedNodeIds" />
</opc:StructuredType>

<opc:StructuredType Name="ContentFilterElement" BaseType="ua:ExtensionObject">
  <opc:Field Name="FilterOperator" TypeName="tns:FilterOperator" />
  <opc:Field Name="NoOfFilterOperands" TypeName="opc:Int32" />
  <opc:Field Name="FilterOperands" TypeName="ua:ExtensionObject" LengthField="NoOfFilterOperands" />
</opc:StructuredType>

<opc:StructuredType Name="ContentFilter" BaseType="ua:ExtensionObject">
  <opc:Field Name="NoOfElements" TypeName="opc:Int32" />
  <opc:Field Name="Elements" TypeName="tns:ContentFilterElement" LengthField="NoOfElements" />
</opc:StructuredType>

<opc:StructuredType Name="FilterOperand" BaseType="ua:ExtensionObject">
```

```
 </opc:StructuredType>

 <opc:StructuredType Name="ElementOperand" BaseType="tns:FilterOperand">
  <opc:Field Name="Index" TypeName="opc:UInt32"
/>
 </opc:StructuredType>

 <opc:StructuredType Name="LiteralOperand" BaseType="tns:FilterOperand">
  <opc:Field Name="Value" TypeName="ua:Variant" />
 </opc:StructuredType>

 <opc:StructuredType Name="AttributeOperand" BaseType="tns:FilterOperand">
  <opc:Field Name="NodeId" TypeName="ua:NodeId" />
  <opc:Field Name="Alias" TypeName="opc:String" />
  <opc:Field Name="BrowsePath" TypeName="tns:RelativePath" />
  <opc:Field Name="AttributeId" TypeName="opc:UInt32" />
  <opc:Field Name="IndexRange" TypeName="opc:String" />
 </opc:StructuredType>

 <opc:StructuredType Name="SimpleAttributeOperand" BaseType="tns:FilterOperand">
  <opc:Field Name="TypeDefinitionId" TypeName="ua:NodeId" />
  <opc:Field Name="NoOfBrowsePath" TypeName="opc:Int32" />
  <opc:Field Name="BrowsePath" TypeName="ua:QualifiedName" LengthField="NoOfBrowsePath" />
  <opc:Field Name="AttributeId" TypeName="opc:UInt32" />
  <opc:Field Name="IndexRange" TypeName="opc:String"
/>
 </opc:StructuredType>

 <opc:StructuredType Name="ContentFilterElementResult" BaseType="ua:ExtensionObject">
  <opc:Field Name="StatusCode" TypeName="ua:StatusCode" />
  <opc:Field Name="NoOfOperandStatusCodes" TypeName="opc:Int32" />
  <opc:Field Name="OperandStatusCodes" TypeName="ua:StatusCode" LengthField="NoOfOperandStatusCodes"
/>
  <opc:Field Name="NoOfOperandDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="OperandDiagnosticInfos" TypeName="ua:DiagnosticInfo"
LengthField="NoOfOperandDiagnosticInfos" />
 </opc:StructuredType>

 <opc:StructuredType Name="ContentFilterResult" BaseType="ua:ExtensionObject">
  <opc:Field Name="NoOfElementResults" TypeName="opc:Int32" />
  <opc:Field Name="ElementResults" TypeName="tns:ContentFilterElementResult"
LengthField="NoOfElementResults" />
  <opc:Field Name="NoOfElementDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="ElementDiagnosticInfos" TypeName="ua:DiagnosticInfo"
LengthField="NoOfElementDiagnosticInfos"
 />
 </opc:StructuredType>
```

```
 <opc:StructuredType Name="ParsingResult" BaseType="ua:ExtensionObject">
  <opc:Field Name="StatusCode" TypeName="ua:StatusCode" />
  <opc:Field Name="NoOfDataStatusCodes" TypeName="opc:Int32" />
  <opc:Field Name="DataStatusCodes" TypeName="ua:StatusCode" LengthField="NoOfDataStatusCodes" />
  <opc:Field Name="NoOfDataDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DataDiagnosticInfos" TypeName="ua:DiagnosticInfo"
LengthField="NoOfDataDiagnosticInfos" />
 </opc:StructuredType>

 <opc:StructuredType Name="QueryFirstRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="View" TypeName="tns:ViewDescription" />
  <opc:Field Name="NoOfNodeTypes" TypeName="opc:Int32" />
  <opc:Field Name="NodeTypes" TypeName="tns:NodeTypeDescription" LengthField="NoOfNodeTypes" />
  <opc:Field Name="Filter" TypeName="tns:ContentFilter" />
  <opc:Field Name="MaxDataSetsToReturn"
TypeName="opc:UInt32" />
  <opc:Field Name="MaxReferencesToReturn" TypeName="opc:UInt32" />
 </opc:StructuredType>

 <opc:StructuredType Name="QueryFirstResponse" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfQueryDataSets" TypeName="opc:Int32" />
  <opc:Field Name="QueryDataSets" TypeName="tns:QueryDataSet" LengthField="NoOfQueryDataSets" />
  <opc:Field Name="ContinuationPoint" TypeName="opc:ByteString" />
  <opc:Field Name="NoOfParsingResults" TypeName="opc:Int32" />
  <opc:Field Name="ParsingResults" TypeName="tns:ParsingResult" LengthField="NoOfParsingResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
  <opc:Field Name="FilterResult" TypeName="tns:ContentFilterResult" />
 </opc:StructuredType>

 <opc:StructuredType Name="QueryNextRequest"
BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="ReleaseContinuationPoint" TypeName="opc:Boolean" />
  <opc:Field Name="ContinuationPoint" TypeName="opc:ByteString" />
 </opc:StructuredType>

 <opc:StructuredType Name="QueryNextResponse" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfQueryDataSets" TypeName="opc:Int32" />
  <opc:Field Name="QueryDataSets" TypeName="tns:QueryDataSet" LengthField="NoOfQueryDataSets" />
  <opc:Field Name="RevisedContinuationPoint" TypeName="opc:ByteString" />
 </opc:StructuredType>

 <opc:EnumeratedType Name="TimestampsToReturn" LengthInBits="32">
  <opc:EnumeratedValue Name="Source" Value="0" />
```

```
  <opc:EnumeratedValue Name="Server" Value="1" />
  <opc:EnumeratedValue Name="Both" Value="2" />
  <opc:EnumeratedValue Name="Neither" Value="3" />
  <opc:EnumeratedValue Name="Invalid" Value="4"
/>
</opc:EnumeratedType>

<opc:StructuredType Name="ReadValueId" BaseType="ua:ExtensionObject">
  <opc:Field Name="NodeId" TypeName="ua:NodeId" />
  <opc:Field Name="AttributeId" TypeName="opc:UInt32" />
  <opc:Field Name="IndexRange" TypeName="opc:String" />
  <opc:Field Name="DataEncoding" TypeName="ua:QualifiedName" />
</opc:StructuredType>

<opc:StructuredType Name="ReadRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="MaxAge" TypeName="opc:Double" />
  <opc:Field Name="TimestampsToReturn" TypeName="tns:TimestampsToReturn" />
  <opc:Field Name="NoOfNodesToRead" TypeName="opc:Int32" />
  <opc:Field Name="NodesToRead" TypeName="tns:ReadValueId" LengthField="NoOfNodesToRead" />
</opc:StructuredType>

<opc:StructuredType Name="ReadResponse" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32"
/>
  <opc:Field Name="Results" TypeName="ua:DataValue" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
</opc:StructuredType>

<opc:StructuredType Name="HistoryReadValueId" BaseType="ua:ExtensionObject">
  <opc:Field Name="NodeId" TypeName="ua:NodeId" />
  <opc:Field Name="IndexRange" TypeName="opc:String" />
  <opc:Field Name="DataEncoding" TypeName="ua:QualifiedName" />
  <opc:Field Name="ContinuationPoint" TypeName="opc:ByteString" />
</opc:StructuredType>

<opc:StructuredType Name="HistoryReadResult" BaseType="ua:ExtensionObject">
  <opc:Field Name="StatusCode" TypeName="ua:StatusCode" />
  <opc:Field Name="ContinuationPoint" TypeName="opc:ByteString" />
  <opc:Field Name="HistoryData" TypeName="ua:ExtensionObject" />
</opc:StructuredType>

<opc:StructuredType Name="HistoryReadDetails" BaseType="ua:ExtensionObject">
 </opc:StructuredType>

<opc:StructuredType Name="ReadEventDetails" BaseType="tns:HistoryReadDetails">
```

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  <opc:Field Name="NumValuesPerNode" TypeName="opc:UInt32" />
  <opc:Field Name="StartTime" TypeName="opc:DateTime" />
  <opc:Field Name="EndTime" TypeName="opc:DateTime" />
  <opc:Field Name="Filter" TypeName="tns:EventFilter" />
 </opc:StructuredType>

 <opc:StructuredType Name="ReadRawModifiedDetails" BaseType="tns:HistoryReadDetails">
  <opc:Field Name="IsReadModified" TypeName="opc:Boolean" />
  <opc:Field Name="StartTime" TypeName="opc:DateTime" />
  <opc:Field Name="EndTime" TypeName="opc:DateTime" />
  <opc:Field Name="NumValuesPerNode" TypeName="opc:UInt32" />
  <opc:Field Name="ReturnBounds" TypeName="opc:Boolean" />
 </opc:StructuredType>

 <opc:StructuredType Name="ReadProcessedDetails" BaseType="tns:HistoryReadDetails">
  <opc:Field Name="StartTime" TypeName="opc:DateTime" />
  <opc:Field Name="EndTime" TypeName="opc:DateTime"
 />
  <opc:Field Name="ProcessingInterval" TypeName="opc:Double" />
  <opc:Field Name="NoOfAggregateType" TypeName="opc:Int32" />
  <opc:Field Name="AggregateType" TypeName="ua:NodeId" LengthField="NoOfAggregateType" />
  <opc:Field Name="AggregateConfiguration" TypeName="tns:AggregateConfiguration" />
 </opc:StructuredType>

 <opc:StructuredType Name="ReadAtTimeDetails" BaseType="tns:HistoryReadDetails">
  <opc:Field Name="NoOfReqTimes" TypeName="opc:Int32" />
  <opc:Field Name="ReqTimes" TypeName="opc:DateTime" LengthField="NoOfReqTimes" />
  <opc:Field Name="UseSimpleBounds" TypeName="opc:Boolean" />
 </opc:StructuredType>

 <opc:StructuredType Name="HistoryData" BaseType="ua:ExtensionObject">
  <opc:Field Name="NoOfDataValues" TypeName="opc:Int32" />
  <opc:Field Name="DataValues" TypeName="ua:DataValue" LengthField="NoOfDataValues" />
 </opc:StructuredType>

 <opc:StructuredType Name="ModificationInfo" BaseType="ua:ExtensionObject">
  <opc:Field Name="ModificationTime"
 TypeName="opc:DateTime" />
  <opc:Field Name="UpdateType" TypeName="tns:HistoryUpdateType" />
  <opc:Field Name="UserName" TypeName="opc:String" />
 </opc:StructuredType>

 <opc:StructuredType Name="HistoryModifiedData" BaseType="tns:HistoryData">
  <opc:Field Name="NoOfDataValues" TypeName="opc:Int32" />
  <opc:Field Name="DataValues" TypeName="ua:DataValue" LengthField="NoOfDataValues" />
  <opc:Field Name="NoOfModificationInfos" TypeName="opc:Int32" />
  <opc:Field Name="ModificationInfos" TypeName="tns:ModificationInfo"
LengthField="NoOfModificationInfos" />
```

```
</opc:StructuredType>

<opc:StructuredType Name="HistoryEvent" BaseType="ua:ExtensionObject">
  <opc:Field Name="NoOfEvents" TypeName="opc:Int32" />
  <opc:Field Name="Events" TypeName="tns:HistoryEventFieldList" LengthField="NoOfEvents" />
</opc:StructuredType>

<opc:StructuredType Name="HistoryReadRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader"
/>
  <opc:Field Name="HistoryReadDetails" TypeName="ua:ExtensionObject" />
  <opc:Field Name="TimestampsToReturn" TypeName="tns:TimestampsToReturn" />
  <opc:Field Name="ReleaseContinuationPoints" TypeName="opc:Boolean" />
  <opc:Field Name="NoOfNodesToRead" TypeName="opc:Int32" />
  <opc:Field Name="NodesToRead" TypeName="tns:HistoryReadValueId" LengthField="NoOfNodesToRead" />
</opc:StructuredType>

<opc:StructuredType Name="HistoryReadResponse" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="tns:HistoryReadResult" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
</opc:StructuredType>

<opc:StructuredType Name="WriteValue" BaseType="ua:ExtensionObject">
   <opc:Field Name="NodeId" TypeName="ua:NodeId" />
  <opc:Field Name="AttributeId" TypeName="opc:UInt32" />
  <opc:Field Name="IndexRange" TypeName="opc:String" />
  <opc:Field Name="Value" TypeName="ua:DataValue" />
</opc:StructuredType>

<opc:StructuredType Name="WriteRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="NoOfNodesToWrite" TypeName="opc:Int32" />
  <opc:Field Name="NodesToWrite" TypeName="tns:WriteValue" LengthField="NoOfNodesToWrite" />
</opc:StructuredType>

<opc:StructuredType Name="WriteResponse" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="ua:StatusCode" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo"
LengthField="NoOfDiagnosticInfos" />
</opc:StructuredType>

<opc:StructuredType Name="HistoryUpdateDetails" BaseType="ua:ExtensionObject">
```

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  <opc:Field Name="NodeId" TypeName="ua:NodeId" />
</opc:StructuredType>

<opc:EnumeratedType Name="HistoryUpdateType" LengthInBits="32">
  <opc:EnumeratedValue Name="Insert" Value="1" />
  <opc:EnumeratedValue Name="Replace" Value="2" />
  <opc:EnumeratedValue Name="Update" Value="3" />
  <opc:EnumeratedValue Name="Delete" Value="4" />
</opc:EnumeratedType>

<opc:EnumeratedType Name="PerformUpdateType" LengthInBits="32">
  <opc:EnumeratedValue Name="Insert" Value="1" />
  <opc:EnumeratedValue Name="Replace" Value="2" />
  <opc:EnumeratedValue Name="Update" Value="3" />
  <opc:EnumeratedValue Name="Remove" Value="4" />
</opc:EnumeratedType>

<opc:StructuredType Name="UpdateDataDetails" BaseType="tns:HistoryUpdateDetails">
  <opc:Field Name="NodeId" TypeName="ua:NodeId" SourceType="tns:HistoryUpdateDetails" />

<opc:Field Name="PerformInsertReplace" TypeName="tns:PerformUpdateType" />
  <opc:Field Name="NoOfUpdateValues" TypeName="opc:Int32" />
  <opc:Field Name="UpdateValues" TypeName="ua:DataValue" LengthField="NoOfUpdateValues" />
</opc:StructuredType>

<opc:StructuredType Name="UpdateStructureDataDetails" BaseType="tns:HistoryUpdateDetails">
  <opc:Field Name="NodeId" TypeName="ua:NodeId" SourceType="tns:HistoryUpdateDetails" />
  <opc:Field Name="PerformInsertReplace" TypeName="tns:PerformUpdateType" />
  <opc:Field Name="NoOfUpdateValues" TypeName="opc:Int32" />
  <opc:Field Name="UpdateValues" TypeName="ua:DataValue" LengthField="NoOfUpdateValues" />
</opc:StructuredType>

<opc:StructuredType Name="UpdateEventDetails" BaseType="tns:HistoryUpdateDetails">
  <opc:Field Name="NodeId" TypeName="ua:NodeId" SourceType="tns:HistoryUpdateDetails" />
  <opc:Field Name="PerformInsertReplace" TypeName="tns:PerformUpdateType" />
  <opc:Field Name="Filter" TypeName="tns:EventFilter"
/>
  <opc:Field Name="NoOfEventData" TypeName="opc:Int32" />
  <opc:Field Name="EventData" TypeName="tns:HistoryEventFieldList" LengthField="NoOfEventData" />
</opc:StructuredType>

<opc:StructuredType Name="DeleteRawModifiedDetails" BaseType="tns:HistoryUpdateDetails">
  <opc:Field Name="NodeId" TypeName="ua:NodeId" SourceType="tns:HistoryUpdateDetails" />
  <opc:Field Name="IsDeleteModified" TypeName="opc:Boolean" />
  <opc:Field Name="StartTime" TypeName="opc:DateTime" />
  <opc:Field Name="EndTime" TypeName="opc:DateTime" />
</opc:StructuredType>
```

```
 <opc:StructuredType Name="DeleteAtTimeDetails" BaseType="tns:HistoryUpdateDetails">
  <opc:Field Name="NodeId" TypeName="ua:NodeId" SourceType="tns:HistoryUpdateDetails" />
  <opc:Field Name="NoOfReqTimes" TypeName="opc:Int32" />
  <opc:Field Name="ReqTimes" TypeName="opc:DateTime" LengthField="NoOfReqTimes" />
 </opc:StructuredType>

 <opc:StructuredType Name="DeleteEventDetails" BaseType="tns:HistoryUpdateDetails">
   <opc:Field Name="NodeId" TypeName="ua:NodeId" SourceType="tns:HistoryUpdateDetails" />
  <opc:Field Name="NoOfEventIds" TypeName="opc:Int32" />
  <opc:Field Name="EventIds" TypeName="opc:ByteString" LengthField="NoOfEventIds" />
 </opc:StructuredType>

 <opc:StructuredType Name="HistoryUpdateResult" BaseType="ua:ExtensionObject">
  <opc:Field Name="StatusCode" TypeName="ua:StatusCode" />
  <opc:Field Name="NoOfOperationResults" TypeName="opc:Int32" />
  <opc:Field Name="OperationResults" TypeName="ua:StatusCode" LengthField="NoOfOperationResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
 </opc:StructuredType>

 <opc:StructuredType Name="HistoryUpdateRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="NoOfHistoryUpdateDetails" TypeName="opc:Int32"
 />
  <opc:Field Name="HistoryUpdateDetails" TypeName="ua:ExtensionObject"
LengthField="NoOfHistoryUpdateDetails" />
 </opc:StructuredType>

 <opc:StructuredType Name="HistoryUpdateResponse" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="tns:HistoryUpdateResult" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
 </opc:StructuredType>

 <opc:StructuredType Name="CallMethodRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="ObjectId" TypeName="ua:NodeId" />
  <opc:Field Name="MethodId" TypeName="ua:NodeId" />
  <opc:Field Name="NoOfInputArguments" TypeName="opc:Int32" />
  <opc:Field Name="InputArguments" TypeName="ua:Variant" LengthField="NoOfInputArguments" />
 </opc:StructuredType>

  <opc:StructuredType Name="CallMethodResult" BaseType="ua:ExtensionObject">
  <opc:Field Name="StatusCode" TypeName="ua:StatusCode" />
  <opc:Field Name="NoOfInputArgumentResults" TypeName="opc:Int32" />
  <opc:Field Name="InputArgumentResults" TypeName="ua:StatusCode"
LengthField="NoOfInputArgumentResults" />
```

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  <opc:Field Name="NoOfInputArgumentDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="InputArgumentDiagnosticInfos" TypeName="ua:DiagnosticInfo"
LengthField="NoOfInputArgumentDiagnosticInfos" />
  <opc:Field Name="NoOfOutputArguments" TypeName="opc:Int32" />
  <opc:Field Name="OutputArguments" TypeName="ua:Variant" LengthField="NoOfOutputArguments" />
 </opc:StructuredType>

 <opc:StructuredType Name="CallRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="NoOfMethodsToCall" TypeName="opc:Int32" />
  <opc:Field Name="MethodsToCall" TypeName="tns:CallMethodRequest"
 LengthField="NoOfMethodsToCall" />
 </opc:StructuredType>

 <opc:StructuredType Name="CallResponse" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="tns:CallMethodResult" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
 </opc:StructuredType>

 <opc:EnumeratedType Name="MonitoringMode" LengthInBits="32">
  <opc:EnumeratedValue Name="Disabled" Value="0" />
  <opc:EnumeratedValue Name="Sampling" Value="1" />
  <opc:EnumeratedValue Name="Reporting" Value="2" />
 </opc:EnumeratedType>

 <opc:EnumeratedType Name="DataChangeTrigger" LengthInBits="32">
  <opc:EnumeratedValue Name="Status" Value="0" />
  <opc:EnumeratedValue Name="StatusValue" Value="1" />
  <opc:EnumeratedValue
 Name="StatusValueTimestamp" Value="2" />
 </opc:EnumeratedType>

 <opc:EnumeratedType Name="DeadbandType" LengthInBits="32">
  <opc:EnumeratedValue Name="None" Value="0" />
  <opc:EnumeratedValue Name="Absolute" Value="1" />
  <opc:EnumeratedValue Name="Percent" Value="2" />
 </opc:EnumeratedType>

 <opc:StructuredType Name="MonitoringFilter" BaseType="ua:ExtensionObject">
 </opc:StructuredType>

 <opc:StructuredType Name="DataChangeFilter" BaseType="tns:MonitoringFilter">
  <opc:Field Name="Trigger" TypeName="tns:DataChangeTrigger" />
  <opc:Field Name="DeadbandType" TypeName="opc:UInt32" />
  <opc:Field Name="DeadbandValue" TypeName="opc:Double" />
```

```
 </opc:StructuredType>

 <opc:StructuredType Name="EventFilter" BaseType="tns:MonitoringFilter">
  <opc:Field Name="NoOfSelectClauses" TypeName="opc:Int32" />
  <opc:Field Name="SelectClauses" TypeName="tns:SimpleAttributeOperand" LengthField="NoOfSelectClauses"
/>
  <opc:Field Name="WhereClause" TypeName="tns:ContentFilter"
 />
 </opc:StructuredType>

 <opc:StructuredType Name="AggregateConfiguration" BaseType="ua:ExtensionObject">
  <opc:Field Name="UseServerCapabilitiesDefaults" TypeName="opc:Boolean" />
  <opc:Field Name="TreatUncertainAsBad" TypeName="opc:Boolean" />
  <opc:Field Name="PercentDataBad" TypeName="opc:Byte" />
  <opc:Field Name="PercentDataGood" TypeName="opc:Byte" />
  <opc:Field Name="UseSlopedExtrapolation" TypeName="opc:Boolean" />
 </opc:StructuredType>

 <opc:StructuredType Name="AggregateFilter" BaseType="tns:MonitoringFilter">
  <opc:Field Name="StartTime" TypeName="opc:DateTime" />
  <opc:Field Name="AggregateType" TypeName="ua:NodeId" />
  <opc:Field Name="ProcessingInterval" TypeName="opc:Double" />
  <opc:Field Name="AggregateConfiguration" TypeName="tns:AggregateConfiguration" />
 </opc:StructuredType>

 <opc:StructuredType Name="MonitoringFilterResult" BaseType="ua:ExtensionObject">
 </opc:StructuredType>

 <opc:StructuredType Name="EventFilterResult"
 BaseType="tns:MonitoringFilterResult">
  <opc:Field Name="NoOfSelectClauseResults" TypeName="opc:Int32" />
  <opc:Field Name="SelectClauseResults" TypeName="ua:StatusCode" LengthField="NoOfSelectClauseResults"
/>
  <opc:Field Name="NoOfSelectClauseDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="SelectClauseDiagnosticInfos" TypeName="ua:DiagnosticInfo"
LengthField="NoOfSelectClauseDiagnosticInfos" />
  <opc:Field Name="WhereClauseResult" TypeName="tns:ContentFilterResult" />
 </opc:StructuredType>

 <opc:StructuredType Name="AggregateFilterResult" BaseType="tns:MonitoringFilterResult">
  <opc:Field Name="RevisedStartTime" TypeName="opc:DateTime" />
  <opc:Field Name="RevisedProcessingInterval" TypeName="opc:Double" />
  <opc:Field Name="RevisedAggregateConfiguration" TypeName="tns:AggregateConfiguration" />
 </opc:StructuredType>

 <opc:StructuredType Name="MonitoringParameters" BaseType="ua:ExtensionObject">
  <opc:Field Name="ClientHandle"
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TypeName="opc:UInt32" />
  <opc:Field Name="SamplingInterval" TypeName="opc:Double" />
  <opc:Field Name="Filter" TypeName="ua:ExtensionObject" />
  <opc:Field Name="QueueSize" TypeName="opc:UInt32" />
  <opc:Field Name="DiscardOldest" TypeName="opc:Boolean" />
</opc:StructuredType>

<opc:StructuredType Name="MonitoredItemCreateRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="ItemToMonitor" TypeName="tns:ReadValueId" />
  <opc:Field Name="MonitoringMode" TypeName="tns:MonitoringMode" />
  <opc:Field Name="RequestedParameters" TypeName="tns:MonitoringParameters" />
</opc:StructuredType>

<opc:StructuredType Name="MonitoredItemCreateResult" BaseType="ua:ExtensionObject">
  <opc:Field Name="StatusCode" TypeName="ua:StatusCode" />
  <opc:Field Name="MonitoredItemId" TypeName="opc:UInt32" />
  <opc:Field Name="RevisedSamplingInterval" TypeName="opc:Double" />
  <opc:Field Name="RevisedQueueSize" TypeName="opc:UInt32" />
  <opc:Field Name="FilterResult"
TypeName="ua:ExtensionObject" />
</opc:StructuredType>

<opc:StructuredType Name="CreateMonitoredItemsRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="SubscriptionId" TypeName="opc:UInt32" />
  <opc:Field Name="TimestampsToReturn" TypeName="tns:TimestampsToReturn" />
  <opc:Field Name="NoOfItemsToCreate" TypeName="opc:Int32" />
  <opc:Field Name="ItemsToCreate" TypeName="tns:MonitoredItemCreateRequest"
LengthField="NoOfItemsToCreate" />
</opc:StructuredType>

<opc:StructuredType Name="CreateMonitoredItemsResponse" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="tns:MonitoredItemCreateResult" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo"
LengthField="NoOfDiagnosticInfos" />
</opc:StructuredType>

<opc:StructuredType Name="MonitoredItemModifyRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="MonitoredItemId" TypeName="opc:UInt32" />
  <opc:Field Name="RequestedParameters" TypeName="tns:MonitoringParameters" />
</opc:StructuredType>

<opc:StructuredType Name="MonitoredItemModifyResult" BaseType="ua:ExtensionObject">
  <opc:Field Name="StatusCode" TypeName="ua:StatusCode" />
  <opc:Field Name="RevisedSamplingInterval" TypeName="opc:Double" />
```

```
  <opc:Field Name="RevisedQueueSize" TypeName="opc:UInt32" />
  <opc:Field Name="FilterResult" TypeName="ua:ExtensionObject" />
 </opc:StructuredType>

 <opc:StructuredType Name="ModifyMonitoredItemsRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="SubscriptionId" TypeName="opc:UInt32" />
  <opc:Field Name="TimestampsToReturn" TypeName="tns:TimestampsToReturn"
 />
  <opc:Field Name="NoOfItemsToModify" TypeName="opc:Int32" />
  <opc:Field Name="ItemsToModify" TypeName="tns:MonitoredItemModifyRequest"
LengthField="NoOfItemsToModify" />
 </opc:StructuredType>

 <opc:StructuredType Name="ModifyMonitoredItemsResponse" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="tns:MonitoredItemModifyResult" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
 </opc:StructuredType>

 <opc:StructuredType Name="SetMonitoringModeRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="SubscriptionId" TypeName="opc:UInt32" />
  <opc:Field Name="MonitoringMode" TypeName="tns:MonitoringMode"
 />
  <opc:Field Name="NoOfMonitoredItemIds" TypeName="opc:Int32" />
  <opc:Field Name="MonitoredItemIds" TypeName="opc:UInt32" LengthField="NoOfMonitoredItemIds" />
 </opc:StructuredType>

 <opc:StructuredType Name="SetMonitoringModeResponse" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="ua:StatusCode" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
 </opc:StructuredType>

 <opc:StructuredType Name="SetTriggeringRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="SubscriptionId" TypeName="opc:UInt32" />
  <opc:Field Name="TriggeringItemId" TypeName="opc:UInt32" />
  <opc:Field Name="NoOfLinksToAdd"
 TypeName="opc:Int32" />
  <opc:Field Name="LinksToAdd" TypeName="opc:UInt32" LengthField="NoOfLinksToAdd" />
  <opc:Field Name="NoOfLinksToRemove" TypeName="opc:Int32" />
  <opc:Field Name="LinksToRemove" TypeName="opc:UInt32" LengthField="NoOfLinksToRemove" />
```

```
</opc:StructuredType>

<opc:StructuredType Name="SetTriggeringResponse" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfAddResults" TypeName="opc:Int32" />
  <opc:Field Name="AddResults" TypeName="ua:StatusCode" LengthField="NoOfAddResults" />
  <opc:Field Name="NoOfAddDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="AddDiagnosticInfos" TypeName="ua:DiagnosticInfo"
LengthField="NoOfAddDiagnosticInfos" />
  <opc:Field Name="NoOfRemoveResults" TypeName="opc:Int32" />
  <opc:Field Name="RemoveResults" TypeName="ua:StatusCode" LengthField="NoOfRemoveResults" />
  <opc:Field Name="NoOfRemoveDiagnosticInfos" TypeName="opc:Int32"
/>
  <opc:Field Name="RemoveDiagnosticInfos" TypeName="ua:DiagnosticInfo"
LengthField="NoOfRemoveDiagnosticInfos" />
</opc:StructuredType>

<opc:StructuredType Name="DeleteMonitoredItemsRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="SubscriptionId" TypeName="opc:UInt32" />
  <opc:Field Name="NoOfMonitoredItemIds" TypeName="opc:Int32" />
  <opc:Field Name="MonitoredItemIds" TypeName="opc:UInt32" LengthField="NoOfMonitoredItemIds" />
</opc:StructuredType>

<opc:StructuredType Name="DeleteMonitoredItemsResponse" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="ua:StatusCode" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos"
/>
</opc:StructuredType>

<opc:StructuredType Name="CreateSubscriptionRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="RequestedPublishingInterval" TypeName="opc:Double" />
  <opc:Field Name="RequestedLifetimeCount" TypeName="opc:UInt32" />
  <opc:Field Name="RequestedMaxKeepAliveCount" TypeName="opc:UInt32" />
  <opc:Field Name="MaxNotificationsPerPublish" TypeName="opc:UInt32" />
  <opc:Field Name="PublishingEnabled" TypeName="opc:Boolean" />
  <opc:Field Name="Priority" TypeName="opc:Byte" />
</opc:StructuredType>

<opc:StructuredType Name="CreateSubscriptionResponse" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="SubscriptionId" TypeName="opc:UInt32" />
  <opc:Field Name="RevisedPublishingInterval" TypeName="opc:Double" />
  <opc:Field Name="RevisedLifetimeCount" TypeName="opc:UInt32"
```

```
/>
  <opc:Field Name="RevisedMaxKeepAliveCount" TypeName="opc:UInt32" />
</opc:StructuredType>

<opc:StructuredType Name="ModifySubscriptionRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="SubscriptionId" TypeName="opc:UInt32" />
  <opc:Field Name="RequestedPublishingInterval" TypeName="opc:Double" />
  <opc:Field Name="RequestedLifetimeCount" TypeName="opc:UInt32" />
  <opc:Field Name="RequestedMaxKeepAliveCount" TypeName="opc:UInt32" />
  <opc:Field Name="MaxNotificationsPerPublish" TypeName="opc:UInt32" />
  <opc:Field Name="Priority" TypeName="opc:Byte" />
</opc:StructuredType>

<opc:StructuredType Name="ModifySubscriptionResponse" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="RevisedPublishingInterval" TypeName="opc:Double" />
  <opc:Field Name="RevisedLifetimeCount" TypeName="opc:UInt32" />
  <opc:Field
Name="RevisedMaxKeepAliveCount" TypeName="opc:UInt32" />
</opc:StructuredType>

<opc:StructuredType Name="SetPublishingModeRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="PublishingEnabled" TypeName="opc:Boolean" />
  <opc:Field Name="NoOfSubscriptionIds" TypeName="opc:Int32" />
  <opc:Field Name="SubscriptionIds" TypeName="opc:UInt32" LengthField="NoOfSubscriptionIds" />
</opc:StructuredType>

<opc:StructuredType Name="SetPublishingModeResponse" BaseType="ua:ExtensionObject">
  <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="ua:StatusCode" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
</opc:StructuredType>

<opc:StructuredType
Name="NotificationMessage" BaseType="ua:ExtensionObject">
  <opc:Field Name="SequenceNumber" TypeName="opc:UInt32" />
  <opc:Field Name="PublishTime" TypeName="opc:DateTime" />
  <opc:Field Name="NoOfNotificationData" TypeName="opc:Int32" />
  <opc:Field Name="NotificationData" TypeName="ua:ExtensionObject" LengthField="NoOfNotificationData" />
</opc:StructuredType>

<opc:StructuredType Name="NotificationData" BaseType="ua:ExtensionObject">
</opc:StructuredType>
```

```
 <opc:StructuredType Name="DataChangeNotification" BaseType="tns:NotificationData">
  <opc:Field Name="NoOfMonitoredItems" TypeName="opc:Int32" />
  <opc:Field Name="MonitoredItems" TypeName="tns:MonitoredItemNotification"
LengthField="NoOfMonitoredItems" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
 </opc:StructuredType>

 <opc:StructuredType Name="MonitoredItemNotification"
 BaseType="ua:ExtensionObject">
  <opc:Field Name="ClientHandle" TypeName="opc:UInt32" />
  <opc:Field Name="Value" TypeName="ua:DataValue" />
 </opc:StructuredType>

 <opc:StructuredType Name="EventNotificationList" BaseType="tns:NotificationData">
  <opc:Field Name="NoOfEvents" TypeName="opc:Int32" />
  <opc:Field Name="Events" TypeName="tns:EventFieldList" LengthField="NoOfEvents" />
 </opc:StructuredType>

 <opc:StructuredType Name="EventFieldList" BaseType="ua:ExtensionObject">
  <opc:Field Name="ClientHandle" TypeName="opc:UInt32" />
  <opc:Field Name="NoOfEventFields" TypeName="opc:Int32" />
  <opc:Field Name="EventFields" TypeName="ua:Variant" LengthField="NoOfEventFields" />
 </opc:StructuredType>

 <opc:StructuredType Name="HistoryEventFieldList" BaseType="ua:ExtensionObject">
  <opc:Field Name="NoOfEventFields" TypeName="opc:Int32" />
  <opc:Field Name="EventFields" TypeName="ua:Variant" LengthField="NoOfEventFields" />
 </opc:StructuredType>


 <opc:StructuredType Name="StatusChangeNotification" BaseType="tns:NotificationData">
  <opc:Field Name="Status" TypeName="ua:StatusCode" />
  <opc:Field Name="DiagnosticInfo" TypeName="ua:DiagnosticInfo" />
 </opc:StructuredType>

 <opc:StructuredType Name="SubscriptionAcknowledgement" BaseType="ua:ExtensionObject">
  <opc:Field Name="SubscriptionId" TypeName="opc:UInt32" />
  <opc:Field Name="SequenceNumber" TypeName="opc:UInt32" />
 </opc:StructuredType>

 <opc:StructuredType Name="PublishRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="NoOfSubscriptionAcknowledgements" TypeName="opc:Int32" />
  <opc:Field Name="SubscriptionAcknowledgements" TypeName="tns:SubscriptionAcknowledgement"
LengthField="NoOfSubscriptionAcknowledgements" />
 </opc:StructuredType>
```

```
 <opc:StructuredType Name="PublishResponse" BaseType="ua:ExtensionObject">
   <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader"
 />
   <opc:Field Name="SubscriptionId" TypeName="opc:UInt32" />
   <opc:Field Name="NoOfAvailableSequenceNumbers" TypeName="opc:Int32" />
   <opc:Field Name="AvailableSequenceNumbers" TypeName="opc:UInt32"
LengthField="NoOfAvailableSequenceNumbers" />
   <opc:Field Name="MoreNotifications" TypeName="opc:Boolean" />
   <opc:Field Name="NotificationMessage" TypeName="tns:NotificationMessage" />
   <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
   <opc:Field Name="Results" TypeName="ua:StatusCode" LengthField="NoOfResults" />
   <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
   <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
 </opc:StructuredType>

 <opc:StructuredType Name="RepublishRequest" BaseType="ua:ExtensionObject">
   <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
   <opc:Field Name="SubscriptionId" TypeName="opc:UInt32" />
   <opc:Field Name="RetransmitSequenceNumber" TypeName="opc:UInt32"
 />
 </opc:StructuredType>

 <opc:StructuredType Name="RepublishResponse" BaseType="ua:ExtensionObject">
   <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
   <opc:Field Name="NotificationMessage" TypeName="tns:NotificationMessage" />
 </opc:StructuredType>

 <opc:StructuredType Name="TransferResult" BaseType="ua:ExtensionObject">
   <opc:Field Name="StatusCode" TypeName="ua:StatusCode" />
   <opc:Field Name="NoOfAvailableSequenceNumbers" TypeName="opc:Int32" />
   <opc:Field Name="AvailableSequenceNumbers" TypeName="opc:UInt32"
LengthField="NoOfAvailableSequenceNumbers" />
 </opc:StructuredType>

 <opc:StructuredType Name="TransferSubscriptionsRequest" BaseType="ua:ExtensionObject">
   <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
   <opc:Field Name="NoOfSubscriptionIds" TypeName="opc:Int32" />
   <opc:Field Name="SubscriptionIds" TypeName="opc:UInt32" LengthField="NoOfSubscriptionIds" />
   <opc:Field Name="SendInitialValues"
 TypeName="opc:Boolean" />
 </opc:StructuredType>

 <opc:StructuredType Name="TransferSubscriptionsResponse" BaseType="ua:ExtensionObject">
   <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
   <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
   <opc:Field Name="Results" TypeName="tns:TransferResult" LengthField="NoOfResults" />
   <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
   <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
```

```
</opc:StructuredType>

<opc:StructuredType Name="DeleteSubscriptionsRequest" BaseType="ua:ExtensionObject">
  <opc:Field Name="RequestHeader" TypeName="tns:RequestHeader" />
  <opc:Field Name="NoOfSubscriptionIds" TypeName="opc:Int32" />
  <opc:Field Name="SubscriptionIds" TypeName="opc:UInt32" LengthField="NoOfSubscriptionIds" />
</opc:StructuredType>

<opc:StructuredType Name="DeleteSubscriptionsResponse" BaseType="ua:ExtensionObject">

 <opc:Field Name="ResponseHeader" TypeName="tns:ResponseHeader" />
  <opc:Field Name="NoOfResults" TypeName="opc:Int32" />
  <opc:Field Name="Results" TypeName="ua:StatusCode" LengthField="NoOfResults" />
  <opc:Field Name="NoOfDiagnosticInfos" TypeName="opc:Int32" />
  <opc:Field Name="DiagnosticInfos" TypeName="ua:DiagnosticInfo" LengthField="NoOfDiagnosticInfos" />
</opc:StructuredType>

<opc:StructuredType Name="BuildInfo" BaseType="ua:ExtensionObject">
  <opc:Field Name="ProductUri" TypeName="opc:String" />
  <opc:Field Name="ManufacturerName" TypeName="opc:String" />
  <opc:Field Name="ProductName" TypeName="opc:String" />
  <opc:Field Name="SoftwareVersion" TypeName="opc:String" />
  <opc:Field Name="BuildNumber" TypeName="opc:String" />
  <opc:Field Name="BuildDate" TypeName="opc:DateTime" />
</opc:StructuredType>

<opc:EnumeratedType Name="RedundancySupport" LengthInBits="32">
  <opc:EnumeratedValue Name="None" Value="0" />
  <opc:EnumeratedValue
Name="Cold" Value="1" />
  <opc:EnumeratedValue Name="Warm" Value="2" />
  <opc:EnumeratedValue Name="Hot" Value="3" />
  <opc:EnumeratedValue Name="Transparent" Value="4" />
  <opc:EnumeratedValue Name="HotAndMirrored" Value="5" />
</opc:EnumeratedType>

<opc:EnumeratedType Name="ServerState" LengthInBits="32">
  <opc:EnumeratedValue Name="Running" Value="0" />
  <opc:EnumeratedValue Name="Failed" Value="1" />
  <opc:EnumeratedValue Name="NoConfiguration" Value="2" />
  <opc:EnumeratedValue Name="Suspended" Value="3" />
  <opc:EnumeratedValue Name="Shutdown" Value="4" />
  <opc:EnumeratedValue Name="Test" Value="5" />
  <opc:EnumeratedValue Name="CommunicationFault" Value="6" />
  <opc:EnumeratedValue Name="Unknown" Value="7" />
</opc:EnumeratedType>

<opc:StructuredType Name="RedundantServerDataType" BaseType="ua:ExtensionObject">
```

```
  <opc:Field Name="ServerId" TypeName="opc:String" />
  <opc:Field Name="ServiceLevel" TypeName="opc:Byte" />
  <opc:Field
 Name="ServerState" TypeName="tns:ServerState" />
 </opc:StructuredType>

 <opc:StructuredType Name="EndpointUrlListDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="NoOfEndpointUrlList" TypeName="opc:Int32" />
  <opc:Field Name="EndpointUrlList" TypeName="opc:String" LengthField="NoOfEndpointUrlList" />
 </opc:StructuredType>

 <opc:StructuredType Name="NetworkGroupDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="ServerUri" TypeName="opc:String" />
  <opc:Field Name="NoOfNetworkPaths" TypeName="opc:Int32" />
  <opc:Field Name="NetworkPaths" TypeName="tns:EndpointUrlListDataType"
LengthField="NoOfNetworkPaths" />
 </opc:StructuredType>

 <opc:StructuredType Name="SamplingIntervalDiagnosticsDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="SamplingInterval" TypeName="opc:Double" />
  <opc:Field Name="MonitoredItemCount" TypeName="opc:UInt32" />
  <opc:Field Name="MaxMonitoredItemCount" TypeName="opc:UInt32" />
  <opc:Field Name="DisabledMonitoredItemCount"
 TypeName="opc:UInt32" />
 </opc:StructuredType>

 <opc:StructuredType Name="ServerDiagnosticsSummaryDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="ServerViewCount" TypeName="opc:UInt32" />
  <opc:Field Name="CurrentSessionCount" TypeName="opc:UInt32" />
  <opc:Field Name="CumulatedSessionCount" TypeName="opc:UInt32" />
  <opc:Field Name="SecurityRejectedSessionCount" TypeName="opc:UInt32" />
  <opc:Field Name="RejectedSessionCount" TypeName="opc:UInt32" />
  <opc:Field Name="SessionTimeoutCount" TypeName="opc:UInt32" />
  <opc:Field Name="SessionAbortCount" TypeName="opc:UInt32" />
  <opc:Field Name="CurrentSubscriptionCount" TypeName="opc:UInt32" />
  <opc:Field Name="CumulatedSubscriptionCount" TypeName="opc:UInt32" />
  <opc:Field Name="PublishingIntervalCount" TypeName="opc:UInt32" />
  <opc:Field Name="SecurityRejectedRequestsCount" TypeName="opc:UInt32" />
  <opc:Field Name="RejectedRequestsCount" TypeName="opc:UInt32"
 />
 </opc:StructuredType>

 <opc:StructuredType Name="ServerStatusDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="StartTime" TypeName="opc:DateTime" />
  <opc:Field Name="CurrentTime" TypeName="opc:DateTime" />
  <opc:Field Name="State" TypeName="tns:ServerState" />
  <opc:Field Name="BuildInfo" TypeName="tns:BuildInfo" />
  <opc:Field Name="SecondsTillShutdown" TypeName="opc:UInt32" />
```

```
  <opc:Field Name="ShutdownReason" TypeName="ua:LocalizedText" />
</opc:StructuredType>

<opc:StructuredType Name="SessionDiagnosticsDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="SessionId" TypeName="ua:NodeId" />
  <opc:Field Name="SessionName" TypeName="opc:String" />
  <opc:Field Name="ClientDescription" TypeName="tns:ApplicationDescription" />
  <opc:Field Name="ServerUri" TypeName="opc:String" />
  <opc:Field Name="EndpointUrl" TypeName="opc:String" />
  <opc:Field Name="NoOfLocaleIds" TypeName="opc:Int32" />
  <opc:Field Name="LocaleIds"
TypeName="opc:String" LengthField="NoOfLocaleIds" />
  <opc:Field Name="ActualSessionTimeout" TypeName="opc:Double" />
  <opc:Field Name="MaxResponseMessageSize" TypeName="opc:UInt32" />
  <opc:Field Name="ClientConnectionTime" TypeName="opc:DateTime" />
  <opc:Field Name="ClientLastContactTime" TypeName="opc:DateTime" />
  <opc:Field Name="CurrentSubscriptionsCount" TypeName="opc:UInt32" />
  <opc:Field Name="CurrentMonitoredItemsCount" TypeName="opc:UInt32" />
  <opc:Field Name="CurrentPublishRequestsInQueue" TypeName="opc:UInt32" />
  <opc:Field Name="TotalRequestCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="UnauthorizedRequestCount" TypeName="opc:UInt32" />
  <opc:Field Name="ReadCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="HistoryReadCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="WriteCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="HistoryUpdateCount" TypeName="tns:ServiceCounterDataType"
/>
  <opc:Field Name="CallCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="CreateMonitoredItemsCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="ModifyMonitoredItemsCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="SetMonitoringModeCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="SetTriggeringCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="DeleteMonitoredItemsCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="CreateSubscriptionCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="ModifySubscriptionCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="SetPublishingModeCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="PublishCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="RepublishCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="TransferSubscriptionsCount" TypeName="tns:ServiceCounterDataType"
/>
  <opc:Field Name="DeleteSubscriptionsCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="AddNodesCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="AddReferencesCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="DeleteNodesCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="DeleteReferencesCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="BrowseCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="BrowseNextCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="TranslateBrowsePathsToNodeIdsCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="QueryFirstCount" TypeName="tns:ServiceCounterDataType" />
```

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  <opc:Field Name="QueryNextCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="RegisterNodesCount" TypeName="tns:ServiceCounterDataType" />
  <opc:Field Name="UnregisterNodesCount" TypeName="tns:ServiceCounterDataType"
/>
</opc:StructuredType>

<opc:StructuredType Name="SessionSecurityDiagnosticsDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="SessionId" TypeName="ua:NodeId" />
  <opc:Field Name="ClientUserIdOfSession" TypeName="opc:String" />
  <opc:Field Name="NoOfClientUserIdHistory" TypeName="opc:Int32" />
  <opc:Field Name="ClientUserIdHistory" TypeName="opc:String" LengthField="NoOfClientUserIdHistory" />
  <opc:Field Name="AuthenticationMechanism" TypeName="opc:String" />
  <opc:Field Name="Encoding" TypeName="opc:String" />
  <opc:Field Name="TransportProtocol" TypeName="opc:String" />
  <opc:Field Name="SecurityMode" TypeName="tns:MessageSecurityMode" />
  <opc:Field Name="SecurityPolicyUri" TypeName="opc:String" />
  <opc:Field Name="ClientCertificate" TypeName="opc:ByteString" />
</opc:StructuredType>

<opc:StructuredType Name="ServiceCounterDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="TotalCount" TypeName="opc:UInt32"
/>
  <opc:Field Name="ErrorCount" TypeName="opc:UInt32" />
</opc:StructuredType>

<opc:StructuredType Name="StatusResult" BaseType="ua:ExtensionObject">
  <opc:Field Name="StatusCode" TypeName="ua:StatusCode" />
  <opc:Field Name="DiagnosticInfo" TypeName="ua:DiagnosticInfo" />
</opc:StructuredType>

<opc:StructuredType Name="SubscriptionDiagnosticsDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="SessionId" TypeName="ua:NodeId" />
  <opc:Field Name="SubscriptionId" TypeName="opc:UInt32" />
  <opc:Field Name="Priority" TypeName="opc:Byte" />
  <opc:Field Name="PublishingInterval" TypeName="opc:Double" />
  <opc:Field Name="MaxKeepAliveCount" TypeName="opc:UInt32" />
  <opc:Field Name="MaxLifetimeCount" TypeName="opc:UInt32" />
  <opc:Field Name="MaxNotificationsPerPublish" TypeName="opc:UInt32" />
  <opc:Field Name="PublishingEnabled" TypeName="opc:Boolean" />
  <opc:Field Name="ModifyCount" TypeName="opc:UInt32" />
  <opc:Field Name="EnableCount"
TypeName="opc:UInt32" />
  <opc:Field Name="DisableCount" TypeName="opc:UInt32" />
  <opc:Field Name="RepublishRequestCount" TypeName="opc:UInt32" />
  <opc:Field Name="RepublishMessageRequestCount" TypeName="opc:UInt32" />
  <opc:Field Name="RepublishMessageCount" TypeName="opc:UInt32" />
  <opc:Field Name="TransferRequestCount" TypeName="opc:UInt32" />
  <opc:Field Name="TransferredToAltClientCount" TypeName="opc:UInt32" />
```

```
  <opc:Field Name="TransferredToSameClientCount" TypeName="opc:UInt32" />
  <opc:Field Name="PublishRequestCount" TypeName="opc:UInt32" />
  <opc:Field Name="DataChangeNotificationsCount" TypeName="opc:UInt32" />
  <opc:Field Name="EventNotificationsCount" TypeName="opc:UInt32" />
  <opc:Field Name="NotificationsCount" TypeName="opc:UInt32" />
  <opc:Field Name="LatePublishRequestCount" TypeName="opc:UInt32" />
  <opc:Field Name="CurrentKeepAliveCount" TypeName="opc:UInt32" />
  <opc:Field Name="CurrentLifetimeCount" TypeName="opc:UInt32"
/>
  <opc:Field Name="UnacknowledgedMessageCount" TypeName="opc:UInt32" />
  <opc:Field Name="DiscardedMessageCount" TypeName="opc:UInt32" />
  <opc:Field Name="MonitoredItemCount" TypeName="opc:UInt32" />
  <opc:Field Name="DisabledMonitoredItemCount" TypeName="opc:UInt32" />
  <opc:Field Name="MonitoringQueueOverflowCount" TypeName="opc:UInt32" />
  <opc:Field Name="NextSequenceNumber" TypeName="opc:UInt32" />
  <opc:Field Name="EventQueueOverFlowCount" TypeName="opc:UInt32" />
</opc:StructuredType>

<opc:EnumeratedType Name="ModelChangeStructureVerbMask" LengthInBits="32">
  <opc:EnumeratedValue Name="NodeAdded" Value="1" />
  <opc:EnumeratedValue Name="NodeDeleted" Value="2" />
  <opc:EnumeratedValue Name="ReferenceAdded" Value="4" />
  <opc:EnumeratedValue Name="ReferenceDeleted" Value="8" />
  <opc:EnumeratedValue Name="DataTypeChanged" Value="16" />
</opc:EnumeratedType>

<opc:StructuredType Name="ModelChangeStructureDataType" BaseType="ua:ExtensionObject">
   <opc:Field Name="Affected" TypeName="ua:NodeId" />
  <opc:Field Name="AffectedType" TypeName="ua:NodeId" />
  <opc:Field Name="Verb" TypeName="opc:Byte" />
</opc:StructuredType>

<opc:StructuredType Name="SemanticChangeStructureDataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="Affected" TypeName="ua:NodeId" />
  <opc:Field Name="AffectedType" TypeName="ua:NodeId" />
</opc:StructuredType>

<opc:StructuredType Name="Range" BaseType="ua:ExtensionObject">
  <opc:Field Name="Low" TypeName="opc:Double" />
  <opc:Field Name="High" TypeName="opc:Double" />
</opc:StructuredType>

<opc:StructuredType Name="EUInformation" BaseType="ua:ExtensionObject">
  <opc:Field Name="NamespaceUri" TypeName="opc:String" />
  <opc:Field Name="UnitId" TypeName="opc:Int32" />
  <opc:Field Name="DisplayName" TypeName="ua:LocalizedText" />
  <opc:Field Name="Description" TypeName="ua:LocalizedText" />
</opc:StructuredType>
```

```
 <opc:EnumeratedType
 Name="AxisScaleEnumeration" LengthInBits="32">
   <opc:EnumeratedValue Name="Linear" Value="0" />
   <opc:EnumeratedValue Name="Log" Value="1" />
   <opc:EnumeratedValue Name="Ln" Value="2" />
 </opc:EnumeratedType>

 <opc:StructuredType Name="ComplexNumberType" BaseType="ua:ExtensionObject">
   <opc:Field Name="Real" TypeName="opc:Float" />
   <opc:Field Name="Imaginary" TypeName="opc:Float" />
 </opc:StructuredType>

 <opc:StructuredType Name="DoubleComplexNumberType" BaseType="ua:ExtensionObject">
   <opc:Field Name="Real" TypeName="opc:Double" />
   <opc:Field Name="Imaginary" TypeName="opc:Double" />
 </opc:StructuredType>

 <opc:StructuredType Name="AxisInformation" BaseType="ua:ExtensionObject">
   <opc:Field Name="EngineeringUnits" TypeName="tns:EUInformation" />
   <opc:Field Name="EURange" TypeName="tns:Range" />
   <opc:Field Name="Title" TypeName="ua:LocalizedText" />
   <opc:Field Name="AxisScaleType" TypeName="tns:AxisScaleEnumeration" />
   <opc:Field
 Name="NoOfAxisSteps" TypeName="opc:Int32" />
   <opc:Field Name="AxisSteps" TypeName="opc:Double" LengthField="NoOfAxisSteps" />
 </opc:StructuredType>

 <opc:StructuredType Name="XVType" BaseType="ua:ExtensionObject">
   <opc:Field Name="X" TypeName="opc:Double" />
   <opc:Field Name="Value" TypeName="opc:Float" />
 </opc:StructuredType>

 <opc:StructuredType Name="ProgramDiagnosticDataType" BaseType="ua:ExtensionObject">
   <opc:Field Name="CreateSessionId" TypeName="ua:NodeId" />
   <opc:Field Name="CreateClientName" TypeName="opc:String" />
   <opc:Field Name="InvocationCreationTime" TypeName="opc:DateTime" />
   <opc:Field Name="LastTransitionTime" TypeName="opc:DateTime" />
   <opc:Field Name="LastMethodCall" TypeName="opc:String" />
   <opc:Field Name="LastMethodSessionId" TypeName="ua:NodeId" />
   <opc:Field Name="NoOfLastMethodInputArguments" TypeName="opc:Int32" />
   <opc:Field Name="LastMethodInputArguments" TypeName="tns:Argument"
 LengthField="NoOfLastMethodInputArguments"
 />
   <opc:Field Name="NoOfLastMethodOutputArguments" TypeName="opc:Int32" />
   <opc:Field Name="LastMethodOutputArguments" TypeName="tns:Argument"
 LengthField="NoOfLastMethodOutputArguments" />
   <opc:Field Name="LastMethodCallTime" TypeName="opc:DateTime" />
```

```
  <opc:Field Name="LastMethodReturnStatus" TypeName="tns:StatusResult" />
 </opc:StructuredType>

 <opc:StructuredType Name="ProgramDiagnostic2DataType" BaseType="ua:ExtensionObject">
  <opc:Field Name="CreateSessionId" TypeName="ua:NodeId" />
  <opc:Field Name="CreateClientName" TypeName="opc:String" />
  <opc:Field Name="InvocationCreationTime" TypeName="opc:DateTime" />
  <opc:Field Name="LastTransitionTime" TypeName="opc:DateTime" />
  <opc:Field Name="LastMethodCall" TypeName="opc:String" />
  <opc:Field Name="LastMethodSessionId" TypeName="ua:NodeId" />
  <opc:Field Name="NoOfLastMethodInputArguments" TypeName="opc:Int32" />
  <opc:Field Name="LastMethodInputArguments" TypeName="tns:Argument"
 LengthField="NoOfLastMethodInputArguments" />
  <opc:Field Name="NoOfLastMethodOutputArguments" TypeName="opc:Int32" />
  <opc:Field Name="LastMethodOutputArguments" TypeName="tns:Argument"
LengthField="NoOfLastMethodOutputArguments" />
  <opc:Field Name="NoOfLastMethodInputValues" TypeName="opc:Int32" />
  <opc:Field Name="LastMethodInputValues" TypeName="ua:Variant"
LengthField="NoOfLastMethodInputValues" />
  <opc:Field Name="NoOfLastMethodOutputValues" TypeName="opc:Int32" />
  <opc:Field Name="LastMethodOutputValues" TypeName="ua:Variant"
LengthField="NoOfLastMethodOutputValues" />
  <opc:Field Name="LastMethodCallTime" TypeName="opc:DateTime" />
  <opc:Field Name="LastMethodReturnStatus" TypeName="tns:StatusResult" />
 </opc:StructuredType>

 <opc:StructuredType Name="Annotation" BaseType="ua:ExtensionObject">
  <opc:Field Name="Message" TypeName="opc:String" />
  <opc:Field Name="UserName" TypeName="opc:String" />
  <opc:Field Name="AnnotationTime"
 TypeName="opc:DateTime" />
 </opc:StructuredType>

 <opc:EnumeratedType Name="ExceptionDeviationFormat" LengthInBits="32">
  <opc:EnumeratedValue Name="AbsoluteValue" Value="0" />
  <opc:EnumeratedValue Name="PercentOfValue" Value="1" />
  <opc:EnumeratedValue Name="PercentOfRange" Value="2" />
  <opc:EnumeratedValue Name="PercentOfEURange" Value="3" />
  <opc:EnumeratedValue Name="Unknown" Value="4" />
 </opc:EnumeratedType>

</opc:TypeDictionary>
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```

```
*/
<?xml version="1.0" encoding="utf-8" ?>
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-->

<opc:TypeDictionary
 xmlns:opc="http://opcfoundation.org/BinarySchema/"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
 xmlns:ua="http://opcfoundation.org/UA/"
 xmlns:tns="http://yourorganisation.org/test/"
 DefaultByteOrder="LittleEndian"
 TargetNamespace="http://yourorganisation.org/test/"
>
 <opc:Import Namespace="http://opcfoundation.org/UA/" Location="Opc.Ua.BinarySchema.bsd"/>

 <opc:StructuredType Name="Point" BaseType="ua:ExtensionObject">
   <opc:Field Name="x" TypeName="opc:Double" />
   <opc:Field Name="y" TypeName="opc:Double" />
 </opc:StructuredType>

 <opc:StructuredType Name="NestedPoint" BaseType="ua:ExtensionObject">
```

```
   <opc:Field Name="x" TypeName="opc:Double" />
  <opc:Field Name="y" TypeName="opc:Double" />
  <opc:Field Name="point1" TypeName="tns:Point" />
 </opc:StructuredType>

 <opc:StructuredType Name="PointWithArray" BaseType="ua:ExtensionObject">
  <opc:Field Name="x" TypeName="opc:Double" />
  <opc:Field Name="y" TypeName="opc:Double" />
  <opc:Field Name="z" TypeName="opc:Double" />
  <opc:Field Name="NoOfArrayDimensions" TypeName="opc:Int32" />
  <opc:Field Name="array1" TypeName="opc:Double" LengthField="NoOfArrayDimensions" />
 </opc:StructuredType>

 <opc:StructuredType Name="PointWithPointArray" BaseType="ua:ExtensionObject">
  <opc:Field Name="x" TypeName="opc:Double" />
  <opc:Field Name="y" TypeName="opc:Double" />
  <opc:Field Name="z" TypeName="opc:Double" />
  <opc:Field Name="NoOfArrayDimensions" TypeName="opc:Int32" />
  <opc:Field Name="array1" TypeName="tns:Point" LengthField="NoOfArrayDimensions" />
 </opc:StructuredType>

</opc:TypeDictionary>
```

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