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(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

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If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

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When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a

derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

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a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

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1.5 ngx-cookie-service 1.0.10

1.6 ngx-translate-http-loader 4.0.0

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1.7 avahi 0.7-4ubuntu7.1

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```
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@c End:
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```
import { HttpClientTestingModule, HttpTestingController } from '@angular/common/http/testing';
import { Injector } from '@angular/core';
import { TestBed } from '@angular/core/testing';
```

```
import { ContributorService } from './contributor.service';
import { ContributorGroup } from './contributors.model';
```

```
describe('ContributorService', () => {
```

```
  let injector: Injector;
  let contribService: ContributorService;
  let httpMock: HttpTestingController;
```

```
  beforeEach(() => {
    injector = TestBed.configureTestingModule({
      imports: [HttpClientTestingModule],
      providers: [
        ContributorService
      ]
    });
```

```
    contribService = injector.get<ContributorService>(ContributorService);
    httpMock = injector.get(HttpTestingController);
  });
```

```
  afterEach(() => httpMock.verify());
```

```
  it('should make a single connection to the server', () => {
    const req = httpMock.expectOne({});
    expect(req.request.url).toBe('generated/contributors.json');
  });
```

```
  describe('#contributors', () => {
```

```
    let contribs: ContributorGroup[];
    let testData: any;
```

```
    beforeEach(() => {
      testData = getTestContribs();
      httpMock.expectOne({}).flush(testData);
      contribService.contributors.subscribe(results => contribs = results);
    });
```

```

it('contributors observable should complete', () => {
  let completed = false;
  contribService.contributors.subscribe(undefined, undefined, () => completed = true);
  expect(completed).toBe(true, 'observable completed');
});

it('should reshape the contributor json to expected result', () => {
  const groupNames = contribs.map(g => g.name).join(',');
  expect(groupNames).toEqual('Angular,Collaborators,GDE');
});

it('should have expected "GDE" contribs in order', () => {
  const gde = contribs[2];
  const actualAngularNames = gde.contributors.map(l => l.name).join(',');
  const expectedAngularNames = [testData.gkalpak, testData.kapunahewong].map(l => l.name).join(',');
  expect(actualAngularNames).toEqual(expectedAngularNames);
});

it('should support including a contributor in multiple groups', () => {
  const contributor = testData.gkalpak;
  const matchedGroups = contribs
    .filter(group => group.contributors.includes(contributor))
    .map(group => group.name);

  expect(matchedGroups).toEqual(['Collaborators', 'GDE']);
});

it('should do WHAT(?) if the request fails');

function getTestContribs() {
  return {
    kapunahewong: {
      name: 'Kapunahele Wong',
      picture: 'kapunahewong.jpg',
      website: 'https://github.com/kapunahewong',
      twitter: 'kapunahele',
      bio: 'Kapunahele is a front-end developer and contributor to angular.io',
      groups: ['GDE']
    },
    misko: {
      name: 'Miko Hevery',
      picture: 'misko.jpg',
      twitter: 'mhevery',
      website: 'http://misko.hevery.com',
      bio: 'Miko Hevery is the creator of AngularJS framework.'
    }
  };
}

```

```

    groups: ['Angular']
  },
  igor: {
    name: 'Igor Minar',
    picture: 'igor-minar.jpg',
    twitter: 'IgorMinar',
    website: 'https://google.com/+IgorMinar',
    bio: 'Igor is a software engineer at Angular.',
    groups: ['Angular']
  },
  kara: {
    name: 'Kara Erickson',
    picture: 'kara-erickson.jpg',
    twitter: 'karaforthewin',
    website: 'https://github.com/kara',
    bio: 'Kara is a software engineer on the Angular team at Angular and a co-organizer of the Angular-SF Meetup. ',
    groups: ['Angular']
  },
  jeffcross: {
    name: 'Jeff Cross',
    picture: 'jeff-cross.jpg',
    twitter: 'jeffbcross',
    website: 'https://twitter.com/jeffbcross',
    bio: 'Jeff was one of the earliest core team members on AngularJS.',
    groups: ['Collaborators']
  },
  naomi: {
    name: 'Naomi Black',
    picture: 'naomi.jpg',
    twitter: 'naomitraveller',
    website: 'http://google.com/+NaomiBlack',
    bio: 'Naomi is Angular\'s TPM generalist and jack-of-all-trades.',
    groups: ['Angular']
  },
  gkalpak: {
    name: 'George Kalpakas',
    picture: 'gkalpak.jpg',
    twitter: 'gkalpakas',
    bio: 'George wrote this test, so he gets to have his name included here.',
    groups: ['GDE', 'Collaborators'],
  }
};
}

import { Injectable } from '@angular/core';
import { HttpClient } from '@angular/common/http';

import { ConnectableObservable, Observable } from 'rxjs';
import { map, publishLast } from 'rxjs/operators';

```

```

import { Contributor, ContributorGroup } from './contributors.model';

// TODO(andrewjs): Look into changing this so that we don't import the service just to get the const
import { CONTENT_URL_PREFIX } from 'app/documents/document.service';

const contributorsPath = CONTENT_URL_PREFIX + 'contributors.json';
const knownGroups = ['Angular', 'Collaborators', 'GDE'];

@Injectable()
export class ContributorService {
  contributors: Observable<ContributorGroup[]>;

  constructor(private http: HttpClient) {
    this.contributors = this.getContributors();
  }

  private getContributors() {
    const contributors = this.http.get<{[key: string]: Contributor}>(contributorsPath).pipe(
      // Create group map
      map(contribs => {
        const contribMap: { [name: string]: Contributor[] } = {};
        Object.keys(contribs).forEach(key => {
          const contributor = contribs[key];
          contributor.groups.forEach(group => {
            const contribGroup = contribMap[group] || (contribMap[group] = []);
            contribGroup.push(contributor);
          });
        });

        return contribMap;
      }),

      // Flatten group map into sorted group array of sorted contributors
      map(cmap => {
        return Object.keys(cmap).map(key => {
          const order = knownGroups.indexOf(key);
          return {
            name: key,
            order: order === -1 ? knownGroups.length : order,
            contributors: cmap[key].sort(compareContributors)
          } as ContributorGroup;
        })
        .sort(compareGroups);
      }),

      publishLast(),
    );
  }
}

```

```

    (contributors as ConnectableObservable<ContributorGroup[]>).connect();
    return contributors;
  }
}

function compareContributors(l: Contributor, r: Contributor) {
return l.name.toUpperCase() > r.name.toUpperCase() ? 1 : -1;
}

function compareGroups(l: ContributorGroup, r: ContributorGroup) {
return l.order === r.order ?
  (l.name > r.name ? 1 : -1) :
  l.order > r.order ? 1 : -1;
}

import { Component, Input } from '@angular/core';

import { Contributor } from './contributors.model';
import { CONTENT_URL_PREFIX } from 'app/documents/document.service';

@Component({
  selector: 'aio-contributor',
  template: `
    <div [ngClass]="{ 'flipped': person.isFlipped }" class="contributor-card">

      <div class="card-front" (click)="flipCard(person)">
        <h3>{{person.name}}</h3>

        <div class="contributor-image" [style.background-image]="url('+pictureBase+(person.picture ||
noPicture)+')">
          <div class="contributor-info">
            <a *ngIf="person.bio" mat-button class="info-item">
              View Bio
            </a>
            <a *ngIf="person.twitter" mat-icon-button class="info-item icon"
              href="https://twitter.com/{{person.twitter}}" target="_blank" (click)="$event.stopPropagation()">
              <mat-icon svgIcon="logos:twitter"></mat-icon>
            </a>
            <a *ngIf="person.website" mat-icon-button class="info-item icon"
              href="{{person.website}}" target="_blank" (click)="$event.stopPropagation()">
              <mat-icon class="link-icon">link</mat-icon>
            </a>
          </div>
        </div>
      </div>

      <div class="card-back" *ngIf="person.isFlipped" (click)="flipCard(person)">
        <h3>{{person.name}}</h3>

```

```

        <p class="contributor-bio">{{ person.bio }}</p>
    </div>
</div>
,
))
export class ContributorComponent {
    @Input() person: Contributor;
    noPicture = '_no-one.png';
    pictureBase = CONTENT_URL_PREFIX + 'images/bios/';

    flipCard(person: Contributor) {
        person.isFlipped = !person.isFlipped;
    }
}
import { ReflectiveInjector } from '@angular/core';

import { of } from 'rxjs';

import { ContributorGroup } from './contributors.model';
import { ContributorListComponent } from './contributor-list.component';
import { ContributorService } from './contributor.service';
import { LocationService } from 'app/shared/location.service';

// Testing the component class behaviors, independent of its template
// Let e2e tests verify how it displays.
describe('ContributorListComponent', () => {

    let component: ContributorListComponent;
    let injector: ReflectiveInjector;
    let contributorService: TestContributorService;
    let locationService: TestLocationService;
    let contributorGroups: ContributorGroup[];

    beforeEach(() => {
        injector = ReflectiveInjector.resolveAndCreate([
            ContributorListComponent,
            { provide: ContributorService, useClass: TestContributorService },
            { provide: LocationService, useClass: TestLocationService }
        ]);

        locationService = injector.get(LocationService);
        contributorService = injector.get(ContributorService);
        contributorGroups = contributorService.testContributors;
    });

    it('should select the first group when no query string', () => {
        component = getComponent();
        expect(component.selectedGroup).toBe(contributorGroups[0]);
    });
});

```



```

class TestLocationService {
  searchResult: SearchResult = {};
  search = jasmine.createSpy('search').and.callFake(() => this.searchResult);
  setSearch = jasmine.createSpy('setSearch')
    .and.callFake((label: string, result: SearchResult) => {
      this.searchResult = result;
    });
}

class TestContributorService {
  testContributors = getTestData();
  contributors = of(this.testContributors);
}

function getTestData(): ContributorGroup[] {
  return [
    // Not interested in the contributors data in these tests
    { name: 'Angular', order: 0, contributors: [] },
    { name: 'GDE', order: 1, contributors: [] },
  ];
}

{
  "mhevery": {
    "name": "Miko Hevery",
    "picture": "misko.jpg",
    "twitter": "mhevery",
    "website": "http://misko.hevery.com",
    "bio": "Miko Hevery is the creator of AngularJS framework. He has passion for making complex things simple. He currently works at Google, but has previously worked at Adobe, Sun Microsystems, Intel, and Xerox, where he became an expert in building web applications in web related technologies such as Java, JavaScript, Flex and ActionScript.",
    "groups": ["Angular"],
    "lead": "kara"
  },
  "igorminar": {
    "name": "Igor Minar",
    "picture": "igor-minar.jpg",
    "twitter": "IgorMinar",
    "website": "https://google.com/+IgorMinar",
    "bio": "Igor is a software engineer at Google. He is a lead on the Angular project, practitioner of test driven development, open source enthusiast, hacker. In his free time, Igor enjoys spending time with his wife and two kids, doing outdoor activities (including but not limited to sports, gardening and building retaining walls).",
    "groups": ["Angular"],
    "lead": "bradlygreen"
  },
  "bradlygreen": {

```



```

"name": "Brad Green",
"picture": "brad-green.jpg",
"twitter": "bradlygreen",
"website": "https://plus.google.com/+BradGreen",
"bio": "Brad Green works at Google as an engineering director. Brad manages the Google Sales Platform suite of projects as well as the AngularJS framework. Prior to Google, Brad worked on the early mobile web at AvantGo, founded and sold startups, and spent a few hard years toiling as a caterer. Brad's first job out of school was as lackey to Steve Jobs at NeXT Computer writing demo software and designing his slide presentations. Brad enjoys throwing dinner parties with his wife Heather and putting on plays with his children.",
"groups": ["Angular"]
},
"jelbourn": {
"name": "Jeremy Elbourn",
"picture": "jelbourn.jpg",
"twitter": "jelbourn",
"website": "https://plus.google.com/+JeremyElbourn/",
"bio": "Angular Material Team Lead. FE Engineer @ Google specializing in AngularJS, component design, and the cleanest of code.",
"groups": ["Angular"],
"lead": "igorminar"
},
"petebacondarwin": {
"name": "Pete Bacon Darwin",
"picture": "pete.jpg",
"twitter": "petebd",
"website": "http://www.bacondarwin.com",
"bio": "AngularJS for JS Team Lead. Pete has been working on the core team since 2012 and became the team lead for the AngularJS for JS branch in November 2014. He has co-authored a book on AngularJS and regularly talks about and teaches Angular.",
"groups": ["Angular"],
"lead": "igorminar"
},
"stephenfluin": {
"name": "Stephen Fluin",
"picture": "stephenfluin.jpg",
"twitter": "stephenfluin",
"website": "https://plus.google.com/+stephenfluin",
"bio": "Stephen is a Developer Advocate working on the Angular team. Before joining Google, he was a Google Expert. Stephen loves to help enterprises use technology more effectively.",
"groups": ["Angular"],
"lead": "bradlygreen"
},
"robwormald": {
"name": "Rob Wormald",
"picture": "rob-wormald.jpg",
"twitter": "robwormald",
"website": "http://github.com/robwormald",
"bio": "Rob is a Developer Advocate on the Angular team at Google. He's the Angular team's resident reactive

```

programming geek and founded the Reactive Extensions for Angular project, ngrx.",

```
"groups": ["Angular"],  
"lead": "stephenfluin"  
},
```

```
"rkirov": {
```

```
  "name": "Rado Kirov",  
  "picture": "rado.jpg",  
  "twitter": "radokirov",  
  "website": "https://plus.sandbox.google.com/+RadoslavKirov",
```

"bio": "Rado has been on the Angular Core team since Summer 2014. Before Angular, he worked on the AdSense serving stack, responsible for serving billions of ads daily. Being passionate about open source, he made contributions to Angular as a Google-20% project, before making the fulltime jump. He is a recovering academic; ask him about error-correcting codes from algebraic curves (or don't).",

```
"groups": ["Angular"],  
"lead": "mprobst"
```

```
},
```

```
"alexeagle": {
```

```
  "name": "Alex Eagle",  
  "picture": "alex-eagle.jpg",  
  "twitter": "jakeherringbone",  
  "website": "http://google.com/+alexeagle",
```

"bio": "Alex works on language tooling for JavaScript and TypeScript. Previously Alex spent five years in Google's developer testing tools. He has developed systems including Google's continuous integration service, capturing build&test failures, and explaining them to developers. Before Google, Alex worked at startups including Opower, and consulted for large government IT. In his 20% time, he created the Error-Prone static analysis tool, which detects common Java programming mistakes and reports them as compile errors.",

```
"groups": ["Angular"],  
"lead": "igorminar"
```

```
},
```

```
"kyliau": {
```

```
  "name": "Keen Yee Liao",  
  "groups": ["Angular"],  
  "lead": "alexeagle",  
  "picture": "kyliau.jpg"
```

```
},
```

```
"clydin": {
```

```
  "name": "Charles Lyding",  
  "groups": ["Angular"],  
  "lead": "alexeagle",  
  "picture": "clydin.jpg"
```

```
},
```

```
"alan-agius4": {
```

```
  "name": "Alan Agius",  
  "groups": ["Angular"],  
  "lead": "alexeagle",  
  "picture": "alan-agius4.jpg",
```

"bio": "Angular CLI Member, Loves TypeScript, Build Tools, Food, Beer & Coffee:)"

```
},
```

```

"gregmagolan": {
  "name": "Greg Magolan",
  "groups": ["Angular"],
  "lead": "alexeagle",
  "picture": "gregmagolan.jpg",
  "bio": "Building great software with Angular and Node.js."
},
"mprobst": {
  "name": "Martin Probst",
  "picture": "martin-probst.jpg",
  "twitter": "martin_probst",
  "website": "http://probst.io",
  "bio": "Martin is a software engineer at Google in the AngularJS team. He holds a MSc in Software Engineering from HPI in Potsdam, Germany. Before joining the AngularJS team at Google, he worked at a database startup in the Netherlands, at EMC, at SAP, and as a freelancer. In his free time, he likes to cook and sail, not necessarily at the same time.",
  "groups": ["Angular"],
  "lead": "bradlygreen"
},
"alxhub": {
  "name": "Alex Rickabaugh",
  "picture": "alex-rickabaugh.jpg",
  "twitter": "synalx",
  "website": "https://plus.google.com/+AlexRickabaugh/about",
  "bio": "Core team member working to optimize the Angular platform for the next generation of applications, including mobile. Before joining the Angular team, Alex worked in the Google sales organization where he helped build the first large Angular application within Google.",
  "groups": ["Angular"],
  "lead": "kara"
},
"matsko": {
  "name": "Matias Niemela",
  "picture": "matias.jpg",
  "twitter": "yearofmoo",
  "website": "http://yearofmoo.com",
  "bio": "Matias Niemela is a fullstack web developer who has been programming & building websites for over 10 years, and a core team member of AngularJS for two years. In the spring of 2015 Matias joined Angular full time at Google. In his free time Matias loves to build complex things and is always up for public speaking, travelling and tweaking his current Vim setup.",
  "groups": ["Angular"],
  "lead": "kara"
},
"hansl": {
  "name": "Hans Larsen",
  "picture": "hansl.jpg",
  "twitter": "hanslatwork",
  "website": "http://www.codingatwork.com/",
  "bio": "Hans is a software engineer at Google on the Angular team and was previously at Slack. He works

```

everyday to help make it easier for everyone to create beautiful, consistent web applications using Angular, using Material Design components and the CLI tool.",

```
"groups": ["Angular"],
"lead": "alexeagle"
},
```

```
"kara": {
  "name": "Kara Erickson",
  "picture": "kara-erickson.jpg",
  "twitter": "karaforthewin",
  "website": "https://github.com/kara",
```

"bio": "Kara is a software engineer on the Angular team at Google and a co-organizer of the Angular-SF Meetup. Prior to Google, she helped build UI components in Angular for guest management systems at OpenTable. She enjoys snacking indiscriminately and probably other things too.",

```
"groups": ["Angular"],
"lead": "igorminar"
},
```

```
"vikerman": {
  "name": "Vikram Subramanian",
  "picture": "vikram.jpg",
  "twitter": "vikerman",
```

"bio": "Vikram is a Software Engineer on the Angular team focused on Engineering Productivity. That means he makes sure people on the team can move fast and not break things. Vikram enjoys doing Yoga and going on walks with his daughter.",

```
"groups": ["Angular"],
"lead": "alexeagle"
},
```

```
"pkozlowski-opensource": {
  "name": "Pawel Kozlowski",
  "picture": "pawel.jpg",
  "twitter": "pkozlowski_os",
```

"bio": "Open source hacker, AngularJS book author, AngularUI lead developer. Pawel is an software-development addict who believes in free, open source software. He is a core contributor to the AngularJS framework, AngularUI, Karma-runner and several other projects. He is the co-author of the \"Mastering Web Application Development with AngularJS\" book. When not coding, Pawel can be spotted speaking at various software development conferences.",

```
"groups": ["Angular"],
"lead": "kara"
},
```

```
"devversion": {
  "name": "Paul Gschwendtner",
  "picture": "devversion.jpg",
  "twitter": "DevVersion",
  "website": "https://github.com/DevVersion",
```

"bio": "Paul is a 17-year-old developer living in Germany. While he attends school, Paul works as a core team member on Angular Material. Paul focuses on tooling and building components for Angular.",

```
"groups": ["Angular"],
"lead": "kara"
},
```

```
"EladBezalel": {
```

```

    "name": "Elad Bezalel",
    "picture": "eladbezalel.jpg",
    "website": "https://github.com/EladBezalel",
    "bio": "Elad is a fullstack developer with a very strong love for design. Since 8 years old, he's been designing in Photoshop and later on fell in love with programing. This strong bond between design and computer programming gave birth to a new kind of love. And he is currently doing the combination of both, as a core member of the ngMaterial project.",
    "groups": ["GDE"]
  },
  "marclaval": {
    "name": "Marc Laval",
    "picture": "marclaval.jpg",
    "twitter": "marclaval",
    "website": "https://github.com/mlaval",
    "bio": "Marc is a manager at Amadeus where he leads the team in charge of developing and recommending UI frameworks for the company. He is also an open source developer and a contributor to Angular.",
    "groups": ["Angular"],
    "lead": "kara"
  },
  "wardbell": {
    "name": "Ward Bell",
    "picture": "wardbell.jpg",
    "website": "https://github.com/wardbell",
    "twitter": "wardbell",
    "bio": "Ward is an all-around developer with JavaScript, Node.js, and .net chops. He's a frequent conference speaker and podcaster, trainer, Google Developer Expert for Angular, Microsoft MVP, and PluralSight author. He is also president of IdeaBlade, an enterprise software consulting firm and the makers of breeze.js. He would like to get more sleep and spend more time in the mountains.",
    "groups": ["GDE"]
  },
  "Narretz": {
    "name": "Martin Staffa",
    "picture": "martinstaffa.jpg",
    "twitter": "Narretz",
    "bio": "Martin is an English major turned web developer who loves frontend stuff. He's been part of the AngularJS team since 2014. If you can't find him roaming the Github issue queues, he's probably out with his camera somewhere.",
    "groups": ["Angular"],
    "lead": "petebacondarwin"
  },
  "filipesilva": {
    "name": "Filipe Silva",
    "picture": "filipe-silva.jpg",
    "twitter": "filipematossilv",
    "website": "http://github.com/filipesilva",
    "bio": "Filipe is a passion-driven developer that always strives for the most elegant solution for each problem. He is currently an author for Angular.io, a core contributor for Angular-CLI and senior front end engineer at KonnectAgain. When not busy going through PRs, you can find him scouring reddit for new dinner recipes to cook

```

```

or enjoying a craft beer in Dublin.",
  "groups": ["Angular"],
  "lead": "alexeagle"
},
"andrewseguin": {
  "name": "Andrew Seguin",
  "picture": "andrewseguin.jpg",
  "website": "http://github.com/andrewseguin",
  "bio": "Andrew is an engineer on the Angular Material team working on bringing material components to the
world. When hes not obsessing over pixels and design, he is probably off somewhere having adventures with his
wife and daughters.",
  "groups": ["Angular"],
  "lead": "jelbourn"
},
"crisbeto": {
  "name": "Kristiyan Kostadinov",
  "picture": "crisbeto.jpg",
  "website": "http://crisbeto.com/",
  "bio": "Kristiyan is a front-end developer, passionate open-source contributor and a core team member on Angular
Material.",
  "groups": ["Angular"],
  "lead": "jelbourn"
},
"gkalpak": {
  "name": "Georgios Kalpakas",
  "picture": "gkalpak.jpg",
  "twitter": "gkalpakas",
  "website": "https://github.com/gkalpak",
  "bio": "George is a Software Engineer with a passion for chess, robotics and automating stuff. He has a strong
need to know how things work (so if you already know, he'd love to have a talk with you). He has been a member of
the AngularJS team since 2014. When not doing geeky stuff, he is probably trying to convince his wife and kids to
apply programming principles in real life. (Or is it the other way around?)",
  "groups": ["Angular"],
  "lead": "igorminar"
},
"mmalerba": {
  "name": "Miles Malerba",
  "picture": "mmalerba.jpg",
  "bio": "Miles is a software engineer on the Angular Material team at Google. In addition to Javascripting he enjoys
eating food and ogling cute puppies.",
  "groups": ["Angular"],
  "lead": "jelbourn"
},
"jasonaden": {
  "name": "Jason Aden",
  "picture": "jasonaden.jpg",
  "bio": "Jason is a software engineer at Google on the Angular Core team. He is enthusiastic about Angular and
application development in the modern age. In his free time Jason enjoys spending time with his wife and four

```

```

children and doing outdoor activities (hiking, fishing, snowboarding, etc.).",
  "groups": ["Angular"],
  "lead": "igorminar"
},
"jeffwhelpley": {
  "name": "Jeff Whelpley",
  "picture": "jeffwhelpley.jpg",
  "twitter": "jeffwhelpley",
  "website": "https://medium.com/@jeffwhelpley",
  "bio": "Jeff Whelpley is a Google Developer Expert and the CTO of GetHuman. He is the co-organizer of the Angular Boston meetup group, co-creator of Angular Universal, former host of AngularAir and frequent speaker at Angular events.",
  "groups": ["GDE"]
},
"pascalprecht": {
  "name": "Pascal Precht",
  "picture": "pascalprecht.jpg",
  "website": "https://twitter.com/PascalPrecht",
  "bio": "Pascal is a software engineer, author and Google Developer Expert for the Angular team. He loves contributing to open source and is the creator of the popular angular-translate module. In his spare time hes fiddling with EDM production.",
  "groups": ["GDE"]
},
"deborah": {
  "name": "Deborah Kurata",
  "picture": "deborah.jpg",
  "twitter": "deborahkurata",
  "website": "http://blogs.msmvps.com/deborahk/",
  "bio": "Deborah is a software developer, author, and Google Developer Expert. She is author of several Pluralsight courses including: 'Angular 2: Getting Started' and Angular Routing",
  "groups": ["Collaborators", "GDE"],
  "mentor": "kara"
},
"alyssa": {
  "name": "Alyssa Nicoll",
  "picture": "mickey_mouse.jpg",
  "twitter": "alyssanicoll",
  "website": "alyssa.io",
  "bio": "I am an energetic, ber passionate GDE and Web Dev. I have some Front-End and Angular courses on Egghead.io and Code School. I love to learn new things and share them with others. I Scuba Dive and have a toothless dog named 'Gummy'. My DM is always open, come talk sometime.",
  "groups": ["GDE"]
},
"ralph": {
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enthusiast and he is a passionate advocate of 'Simplicity, Professionalism and Sharing'. In his eighteen years of R&D career, he worked as tester, R&D engineer, project manager, product manager and CTO. He is immersed in the excitement of the arrival of the baby.",

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  "bio": "After more than 10 years working in the tech industry, Jorge is a full stack developer with focus on JavaScript technologies. Today, Jorge is working at Hero Devs using Angular / RxJS / Firebase as well as other technologies. He delivered several courses and talks as well as write some tech articles on these subjects. Because of that, he was recognised as a Google Developer Expert in Angular & web technologies and Nativescript Developer Expert.",
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  "bio": "Owner and trainer at Ultimate Angular. Lives in England, UK. Has a love for teaching, OSS and speaking at conferences. Google Developer Expert for Web Technologies and Angular.",
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  "website": "https://www.DevIntent.com",
  "bio": "Lead for AngularJS Material. Owner and consultant at DevIntent. Ex-Angular GDE. Founder of the Google Developers Group (GDG) community on the Space Coast of Florida, USA.",
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  "bio": "Trainer and Consultant with focus on Angular. Writes for O'Reilly, the German Java Magazine and Heise. Regularly speaks at conferences.",
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  "bio": "Oslo-based web front-end engineer, a Google Developer Expert in Angular, Web technologies and IoT. Active public speaker & trainer for the developer events. Leader of Norways largest meetups dedicated to web front-end and mobile development. Founder of ngVikings and Mobile Era conferences. Progressive Web Apps advocate.",
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of the book 'Switching to Angular', codelyzer, Guess.js, and the Go linter revive. Working for faster and more
reliable software.",
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related technologies in his medium blog, and speaks about these topics in conferences and meetup around the world.
Among his interests are reverse engineering, hardware hacking, building 3d-printed robots and games, playing
music and Salsa dancing.",
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  "bio": "Based in Mexico, Josue has been web developer since the last 10 years, he is part of the Google Developer
Expert Program, passionate about teaching and building communities",
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  "bio": "Sander is a versed developer with over 4 decades of practice under his belt. He is also an Google
Developer Expert for web, specializing in Angular. Organizer of meetups and conferences. Helping out others
wherever he can. When he is not breathing code, he is fiddling around with IOT, photography, science and anything
that might vaguely is gadget-like! Thinks he a master of the grill, but in reality you probably don't get a food-
poisoning ;) Also, and actually the most important thing to him, he is a father of 4, and has the most patient
girlfriend in the universe.",
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performance e-commerce to international clients - most often build in Angular. He runs the local Angular usergroup
- ngAarhus, and gives talks/workshops around and beyond the country of Denmark.",
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projects (ocLazyLoad, ngx-translate), being a panelist at Angular-Air, giving talks or just chatting on Twitter and
Slack. Hes a member of the Angular Core team and works on i18n.",
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them to build high-performance web apps. In his spare time he's usually working on Videogular, involved in local
meetups, speaking at conferences and contributing to open source projects.",
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    "bio": "Developer. Hacker. Community backer. Author and blogger. Console logger.",
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    "website": "https://www.thinktecture.com",
    "bio": "Co-founder and CTO of Thinktecture AG, as well as Google GDE and Microsoft MVP. Since two decades
active as an engaged and passionate speaker on several software conferences and events all over the world. Some

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people call him 'Mr. Cross-Platform'.",
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  "bio": "Teaches Angular at HiRez.io the most entertaining online courses on the web. An experienced developer, consultant and speaker also known for his unusual crazy Angular talks such as ng-wat, ng-show, ng-rap, etc. Shai is also the organizer of the largest JavaScript group in Israel and a professional Improv performer.",
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  "bio": "Dan Wahlin founded Wahlin Consulting which provides consulting and onsite/online training services on Web technologies such as JavaScript, Angular, TypeScript, Node.js, C#, ASP.NET Core, Web API, and Docker. Hes also published many developer courses on Pluralsight.com and Udemy.com. Dan is a Google GDE, Docker Captain, and Microsoft MVP and Regional Director and speaks at conferences and user groups around the world. Dan has written several books on Web technologies, hundreds of technical articles and blog posts (https://blog.codewithdan.com) and runs the 'Code with Dan Web Weekly Newsletter' - a great way to stay up on the latest technologies. Follow Dan on Twitter @DanWahlin.",
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  "bio": "GDE (Google Developer Expert) Angular and Web Technologies, Women Who Code KL Director,
Jecelyn specializes in professional application development with technologies, including Angular, HTML5,
Typescript, JavaScript, CSS, C#, NodeJs, Cloud and ASP.NET.",
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  "bio": "Director of Experience Technology at SapienRazorfish. Consults various brands on their frontend and
mobile web architecture. A speaker at various forums and mentor at Launchpad Accelerator and ngGirls India.
Spends free time playing with Angular, Preact, web-components ",
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  "twitter": "gerardsans",
  "website": "https://medium.com/@gerard.sans",
  "bio": "Gerard is very excited about the future of the Web and JavaScript. Always happy Computer Science
Engineer and humble Google Developer Expert. He loves to share his learnings by giving talks, trainings and
writing about cool technologies. He loves running AngularZone and GraphQL London, mentoring students and
giving back to the community.",
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  "website": "http://ngnir.life/",
  "bio": "Nir is a Principal Frontend Consultant & Head of the Angular department at 500Tech, Google Developer
Expert and community leader. He organizes the largest Angular meetup group in Israel (Angular-IL), talks and
teaches about front-end technologies around the world. He is also the author of two books about Angular and the
founder of the 'Frontend Band'.",

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  "bio": "Alain Chautard is a Google Developer Expert in Web Technologies / Angular. He started working with Angular JS in 2011. Since then he has worked with all Angular versions on a daily basis, both as a developer and as a technical trainer. He is the organizer of the Sacramento Angular Meetup group, co-organizer of the Google Developer Group chapter in Sacramento, California, and published author of the Packt video course 'Getting Started with Angular'",
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  "bio": "Cory is a full time front end web developer. He works full time building responsive web applications and progressive web apps. When not building web apps he is busy teaching Angular and other web technologies in workshops and conferences. He loves the web and is optimistic of the places it can take us.",
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  "website": "https://mhartington.io",
  "bio": "Mike is a Developer Advocate for the Ionic Framework and a GDE in Angular. He spends most of his time making fast PWAs and exploring emerging web standards. When not behind a keyboard, you'll probably find him with a guitar and beer.",
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  "website": "https://juristr.com",
  "bio": "Juri is a software engineer and freelance trainer and consultant currently mostly focusing on the frontend side using JavaScript, TypeScript and Angular. He has a passion for teaching and sharing his knowledge and experiences with others. This mostly happens by writing tech articles for his personal blog, by creating video courses for Egghead.io, during on-site workshops at companies or by speaking at conferences. In his free time he enjoys practicing Yoseikan Budo, a martial art where he currently owns the 3rd DAN black belt.",
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    "bio": "Mashhood is the principal technical consultant at Recurship and a Google Developer Expert. He works with different startups in US and EU to helps them crawl through the technical maze and quickly build amazing products focused around the problems they are trying to solve. He specializes in using the latest web technologies available to execute the best possible solutions.",
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the largest Angular event in Japan (ng-japan). And he is a contributor to Angular by sending patches, writing,
speaking, and localizing resources in Japanese.",
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is obsessed with sharing knowledge about things she loves. She is also trying to support diversity in the community.
She lives with her cat in Athens.",
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    "bio": "Brian is a software engineer and GDE in Angular with a passion for learning, writing, speaking, teaching
and mentoring. Brian has been building web applications for over 20 years and has long been a fanboy of JavaScript.
When not in front of his Macbook Pro Brian is in the Rocky Mountains skiing or hiking.",
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    "bio": "Jeff is an Angular Consultant at nrwl.io where he helps enterprise teams succeed with Angular. Prior to
founding Nrwl, Jeff was one of the earliest members of the Angular Core Team at Google, and contributed to many
of the early state management and performance efforts of AngularJS and Angular.",
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    "bio": "I am Senior Software Development Consultant in ThoughtWorks and GDE in Angular. Graduated in
Computer Science from Federal University of Bahia, I have been worked with software development for more than
11 years. Since 2017, I started with Angular Framework and I went deep into front-end ecosystem and became more
specialized in this area. I participate in a computer science community, Campinas Front-end, that promotes events in
this area. In the end of 2016, I started to do technical talks. The passion for science is the engine that drives me to

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seek answers to the problems that computing aims to solve. Besides that, sharing knowledge and experiences is the path I choose to democratize the technology for all.",

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  "bio": "Software engineer on the NativeScript team at Progress, focused on NativeScript Angular, NativeScript schematics, and integrating webpack in the {N} build system. Co-organizing the Angular Sofia meetup. Speaking about Angular things at conferences here and there.",
  "groups": ["GDE"]
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  "website": "https://medium.com/@sharondio",
  "bio": "Sharon is a mother to four teenagers, wife of a USMC veteran/police officer, and lead front-end engineer for an educational non-profit in Boston. In her spare time, she is the \"Head Instigator\" of the Angular-Boston Meetup and an active member of the Boston meetups community. She occasionally speaks on Angular and related topics at technology conferences across the country. She has a Bachelor of Fine Arts from SMU and a Masters with honors from RTFM.",
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  "bio": "Leonardo is a Senior Software Engineer at Coinbase. He is deeply passionate about web performance and most recently developed Perfume.js to help companies prioritize roadmaps and business, through performance analytics. From 2018, co-organizer of the Angular San Francisco Meetup group and NGRome Conference.",
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"tomastrajan": {
  "name": "Tomas Trajan",
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  "website": "https://medium.com/@tomastrajan",
  "bio": "Tomas is a Senior Software Engineer with passion for frontend and especially Angular. He always strives to provide lots of value and to empower teams he is working with by sharing know-how, introducing best practices and automating mundane task to enable full focus on creating value for the users! He likes to share his Angular know-how by blogging, speaking and recording video content. He is a co-organizer of Angular Meetup Zurich.",
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"bio": "Sam Julien builds software, articles, video courses, and campfires. A developer, speaker, writer, and GDE
in the Pacific Northwest, Sam's favorite thing in the world is changing someone's life by teaching them to code.",
"groups": ["Collaborators", "GDE"],
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"bio": "A programmer with passion, angular/zone.js guy! Web frontend engineer @sylabs"
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@Ninja-Squad co-founder"
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"twitter": "devjoost",
"bio": "Joost is a Software Engineer from the Netherlands with an interest in open source software who likes to
learn something new every day. He works at Bluერიq during the day and contributes to Angular in his spare time, by
working on the Angular compiler and runtime. He may review your PR even if you never asked for it ;)"
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    "bio": "Justin (aka Schwarty) is a Google Developer Expert in Web Technologies and Angular, the host and
maintainer of the weekly AngularAir live video broadcast, educator, writer and content creator. He has Angular
courses available on LinkedIn Learning and Pluralsight and loves passing on years of full stack development
knowledge to help empower others to find their inner awesomeness!",
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    "website": "https://brandonroberts.dev",
    "bio": "Brandon is a developer and technical writer working on guides, tutorials, application development, and
infrastructure for the Angular docs. He is also a maintainer of the NgRx project, building reactive libraries for
Angular.",
    "groups": ["Angular"],
    "lead": "dennispbrown"
  },
  "chembu": {
    "name": "Sreevani Sreejith",
    "picture": "sreevani.jpg",
    "bio": "Sreevani is a tech writer with prior programming experience. She writes documentation for the Angular
framework team. Outside of work, she likes practicing yoga, honing her skills on classical dance forms, and baking
cakes.",
    "groups": ["Angular"],
    "lead": "dennispbrown"
  },
  "dennispbrown": {
    "name": "Denny Brown",
    "picture": "denny.jpg",
    "bio": "Denny is founder of Expert Support, a professional services firm specializing in technical communication,
and leads the Angular technical writing team. His lifelong passion has been to reduce the time and effort required to
understand complex technical information. Early on, he was Associate Chairman of the Computer Science
Department at Stanford, where he taught introductory courses in programming. He also plays old-timers baseball in
local leagues and national tournaments.",
    "groups": ["Angular"],
    "lead": "bradlygreen"
  },
  "jbogarthide": {
    "name": "Judy Bogart",
    "picture": "judy.png",
    "groups": ["Angular"],
    "lead": "dennispbrown"
  },
  "jenniferfell": {
    "name": "Jennifer Fell",

```

```

    "picture": "jennifer.jpg",
    "website": "http://silverpath.org",
    "bio": "Jennifer is a technical content strategist, architect, designer, and writer. As lead of the Angular docs team, she's always interested in learning more about how developers learn and use Angular. Her offline persona is a horsewoman in Idaho.",
    "groups": ["Angular"],
    "lead": "dennispbrown"
  },
  "kapunahewong": {
    "name": "Kapunahewe Wong",
    "picture": "kapunahewe.jpg",
    "twitter": "kapunahewe",
    "bio": "Kapunahewe is a developer and Angular fan who works on the Angular docs writing guides and developing example apps. She also enjoys Native Hawaiian practices, textile arts, and marveling at little, inconspicuous plants growing in forgotten places outdoors.",
    "groups": ["Angular"],
    "lead": "dennispbrown"
  },
  "luixaviles": {
    "name": "Luis Aviles",
    "picture": "luixaviles.jpg",
    "twitter": "luixaviles",
    "website": "https://luixaviles.com",
    "bio": "Luis is an enthusiast of Open Source software and communities, as well as being a public speaker, a technology trainer and an author of courses and technical articles. He is the organizer of the Angular Bolivia community and NG Bolivia conference. When he's not coding, Luis is reading about Astronomy or nerding about outer space, photography or even doing Astrophotography.",
    "groups": ["GDE"]
  },
  "siddajmera": {
    "name": "Siddharth Ajmera",
    "picture": "sidd-ajmera.jpg",
    "twitter": "SiddAjmera",
    "website": "https://webstackup.com/",
    "bio": "Siddharth is a Full Stack JavaScript Developer and a GDE in Angular. He's passionate about sharing his knowledge on Angular, Firebase and the Web in general. He's the organizer of WebStack, a local community of developers focused on Web, Mobile, Voice and Server related technologies in general. WebStack hosts free monthly meetups every 2nd or 3rd Saturday of the month. Siddharth is also an avid photographer and loves traveling. Find him anywhere on the Web with `SiddAjmera`.",
    "groups": ["GDE"]
  },
  "bbrennan": {
    "name": "Bonnie Brennan",
    "twitter": "bonnster75",
    "groups": ["GDE"],
    "picture": "bonnie.jpg",
    "bio": "Bonnie has been specializing in Angular since 2013. She is the founder of ngHouston Angular Meetup and a regular panelist on Angular Air. She is also the very proud parent component of @thelittlestdev!"
  }

```

```

    },
    "globegitter": {
      "name": "Markus Padourek",
      "groups": ["Collaborators"],
      "mentor": "gregmagolan",
      "picture": "globegitter.jpg"
    },
    "ahsanayaz": {
      "name": "Muhammad Ahsan Ayaz",
      "picture": "ahsanayaz.jpg",
      "twitter": "ahsan_ayz",
      "website": "https://medium.com/@ahsan.ayaz",
      "bio": "Muhammad Ahsan Ayaz is Software Architect at Modus Create. He is absolutely passionate about Angular and Web Technologies. Uses Angular daily and talks about it everywhere. Runs NodeSchool Karachi and is a co-organizer of NgPakistan",
      "groups": ["GDE"]
    },
    "andrewkushnir": {
      "name": "Andrew Kushnir",
      "picture": "andrew-kushnir.jpg",
      "bio": "Andrew is a software engineer at Google on the Angular Core team.",
      "groups": ["Angular"],
      "lead": "kara"
    },
    "kamilmysliwec": {
      "name": "Kamil Mysliwec",
      "picture": "kamilmysliwec.jpg",
      "twitter": "kammysliwec",
      "website": "https://github.com/kamilmysliwec",
      "bio": "Kamil Mysliwec is a software engineer truly passionate about Web Technologies. Creator of NestJS, Co-Founder of Trilon.io, speaker, and trainer.",
      "groups": ["GDE"]
    }
  }
}

import { NgModule, Type } from '@angular/core';
import { CommonModule } from '@angular/common';
import { MatIconModule } from '@angular/material/icon';
import { ContributorListComponent } from './contributor-list.component';
import { ContributorService } from './contributor.service';
import { ContributorComponent } from './contributor.component';
import { WithCustomElementComponent } from './element-registry';

@NgModule({
  imports: [ CommonModule, MatIconModule ],
  declarations: [ ContributorListComponent, ContributorComponent ],
  entryComponents: [ ContributorListComponent ],
  providers: [ ContributorService ]
})

```

```

export class ContributorListModule implements WithCustomElementComponent {
  customElementComponent: Type<any> = ContributorListComponent;
}
#!/usr/bin/env node

// Imports
const {existsSync, readFileSync} = require('fs');
const {join, resolve} = require('path');

// Constants
const CONTENT_DIR = resolve(__dirname, '../content');
const IMAGES_DIR = join(CONTENT_DIR, 'images/bios');
const CONTRIBUTORS_PATH = join(CONTENT_DIR, 'marketing/contributors.json');

// Run
_main();

// Functions - Definitions
function _main() {
  const contributors = JSON.parse(readFileSync(CONTRIBUTORS_PATH, 'utf8'));
  const expectedImages = Object.keys(contributors)
    .filter(key => !!contributors[key].picture)
    .map(key => join(IMAGES_DIR, contributors[key].picture));
  const missingImages = expectedImages.filter(path => !existsSync(path));

  if (missingImages.length > 0) {
    throw new Error(
      'The following pictures are referenced in \'contributors.json\' but do not exist:' +
      missingImages.map(path => `\n - ${path}`).join(""));
  }
}

```

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@title

@description

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*/

'use strict';

// THIS CHECK SHOULD BE THE FIRST THING IN THIS FILE

```

// This is to ensure that we catch env issues before we error while requiring other dependencies.
const engines = require('./package.json').engines;
require('./tools/check-environment')({
  requiredNodeVersion: engines.node,
  requiredNpmVersion: engines.npm,
  requiredYarnVersion: engines.yarn
});

const gulp = require('gulp');

// See `tools/gulp-tasks/README.md` for information about task loading.
function loadTask(fileName, taskName) {
  const taskModule = require('./tools/gulp-tasks/' + fileName);
  const task = taskName ? taskModule[taskName] : taskModule;
  return task(gulp);
}

// Check source code for formatting errors in all source files.
gulp.task('format:enforce', loadTask('format', 'enforce'));

// Format all source files.
gulp.task('format:all', loadTask('format', 'format'));

// Format only untracked source code files.
gulp.task('format:untracked', loadTask('format', 'format-untracked'));

// Format only the changed, tracked source code files.
gulp.task('format:diff', loadTask('format', 'format-diff'));

// Format only changed lines based on the diff from the provided --branch
// argument (or `master` by default).
gulp.task('format:changed', ['format:untracked', 'format:diff']);

// Alias for `format:changed` that formerly formatted all files.
gulp.task('format', ['format:changed']);

gulp.task('lint', ['format:enforce', 'validate-commit-messages', 'tslint']);
gulp.task('tslint', ['tools:build'], loadTask('lint'));
gulp.task('validate-commit-messages', loadTask('validate-commit-message'));
gulp.task('source-map-test', loadTask('source-map-test'));
gulp.task('tools:build', loadTask('tools-build'));
gulp.task('check-cycle', loadTask('check-cycle'));
gulp.task('serve', loadTask('serve', 'default'));
gulp.task('changelog', loadTask('changelog'));
gulp.task('check-env', () => { /* this is a noop because the env test ran already above */ });
gulp.task('cldr:extract', loadTask('cldr', 'extract'));
gulp.task('cldr:download', loadTask('cldr', 'download'));
gulp.task('cldr:gen-closure-locale', loadTask('cldr', 'closure'));

```

```

import { Component, OnInit } from '@angular/core';
import { ContributorGroup } from './contributors.model';
import { ContributorService } from './contributor.service';
import { LocationService } from 'app/shared/location.service';

@Component({
  selector: `aio-contributor-list`,
  template: `
<div class="flex-center group-buttons">
  <a *ngFor="let name of groupNames"
    [class.selected]="name == selectedGroup.name"
    class="button mat-button filter-button"
    (click)="selectGroup(name)">{{ name }}</a>
</div>
<section *ngIf="selectedGroup" class="grid-fluid">
  <div class="contributor-group">
    <aio-contributor *ngFor="let person of selectedGroup.contributors" [person]="person"></aio-contributor>
  </div>
</section>`
})
export class ContributorListComponent implements OnInit {
  private groups: ContributorGroup[];
  groupNames: string[];
  selectedGroup: ContributorGroup;

  constructor(
    private contributorService: ContributorService,
    private locationService: LocationService) { }

  ngOnInit() {
    const groupName = this.locationService.search()['group'] || '';
    // no need to unsubscribe because `contributors` completes
    this.contributorService.contributors
      .subscribe(grps => {
        this.groups = grps;
        this.groupNames = grps.map(g => g.name);
        this.selectGroup(groupName);
      });
  }

  selectGroup(name: string) {
    name = name.toLowerCase();
    this.selectedGroup = this.groups.find(g => g.name.toLowerCase() === name) || this.groups[0];
    this.locationService.setSearch("", { group: this.selectedGroup.name });
  }
}
/**
 * @license Angular v0.0.0-PLACEHOLDER

```

```

* (c) 2010-2019 Google LLC. https://angular.io/
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*/
export interface ContributorGroup {
  name: string;
  order: number;
  contributors: Contributor[];
}

export interface Contributor {
  groups: string[];
  name: string;
  picture?: string;
  website?: string;
  twitter?: string;
  bio?: string;
  isFlipped?: boolean;
}
# Produces a GraphViz Dot file from the data in the contributors.json file.
# Documentation for this syntax at https://stedolan.github.io/jq/manual
to_entries
| map(select(
  (.value.groups | index("Angular")) or
  (.value.groups | index("Collaborators"))))
| map(.value |= {
  name: .name,
  lead: (.lead // .mentor // ""),
  fillcolor: (if .groups | index("Collaborators") then "aquamarine" else "beige" end),
})
| map(
  "\(.key|tojson) [ label=\(.value.name|tojson) fillcolor=\(.value.fillcolor|tojson) style=filled ] ",
  (if .value.lead != "" then "\(.key|tojson) -> \(.value.lead|tojson)" else "" end)
)
[]

```

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1.14 json-c 0.13.1+dfsg-7ubuntu0.3

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1.15 libxml 2.9.10+dfsg-5ubuntu0.20.04.3

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1.16 rxjs 6.4.0

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1.17 arctext 1

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 * A jQuery plugin for curved text
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 * Date: Mon Jan 23 2012
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/*!
 * FitText.js 1.0
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 * Date: Thu May 05 14:23:00 2011 -0600
 */
```

Found in path(s):

* /opt/cola/permits/1150274371_1617961412.76/0/arctext-master-zip/Arctext-master/js/jquery.arctext.js

1.18 minizip 1.01

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1.19 font-awesome 4.7.0

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1.20 boost 1.67.0-17ubuntu8

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This is an attempt to acknowledge early contributions to the garbage collector. Later contributions should instead be mentioned in README.changes.

HISTORY -

Early versions of this collector were developed as a part of research projects supported in part by the National Science Foundation and the Defense Advance Research Projects Agency.

The garbage collector originated as part of the run-time system for the Russell programming language implementation. The first version of the garbage collector was written primarily by Al Demers. It was then refined and mostly rewritten, primarily by Hans-J. Boehm, at Cornell U., the University of Washington, Rice University (where it was first used for C and assembly code), Xerox PARC, SGI, and HP Labs. However, significant contributions have also been made by many others.

Some other contributors:

More recent contributors are mentioned in the modification history in README.changes. My apologies for any omissions.

The SPARC specific code was originally contributed by Mark Weiser. The Encore Multimax modifications were supplied by Kevin Kenny (kenny@m.cs.uiuc.edu). The adaptation to the IBM PC/RT is largely due to Vernon Lee, on machines made available to Rice by IBM. Much of the HP specific code and a number of good suggestions for improving the generic code are due to Walter Underwood. Robert Brazile (brazile@diamond.bbn.com) originally supplied the ULTRIX code. Al Dosser (dosser@src.dec.com) and Regis Cridlig (Regis.Cridlig@cl.cam.ac.uk) subsequently provided updates and information on variation between ULTRIX systems. Parag Patel (parag@netcom.com) supplied the A/UX code. Jesper Peterson(jep@mtiame.mtia.oz.au), Michel Schinz, and Martin Tauchmann (martintauchmann@bigfoot.com) supplied the Amiga port. Thomas Funke (thf@zelator.in-berlin.de(?)) and Brian D. Carlstrom (bdc@clark.lcs.mit.edu) supplied the NeXT ports. Douglas Steel (doug@wg.icl.co.uk) provided ICL DRS6000 code. Bill Janssen (janssen@parc.xerox.com) supplied the SunOS dynamic loader specific code. Manuel Serrano (serrano@cornas.inria.fr) supplied linux and Sony News specific code. Al Dosser provided Alpha/OSF/1 code. He and Dave Detlefs(detlefs@src.dec.com) also provided several generic bug fixes. Alistair G. Crooks(agg@uts.amdahl.com) supplied the NetBSD and 386BSD ports. Jeffrey Hsu (hsu@soda.berkeley.edu) provided the FreeBSD port. Brent Benson (brent@jade.ssd.csd.harris.com) ported the collector to a Motorola 88K processor running CX/UX (Harris NightHawk). Ari Huttunen (Ari.Huttunen@hut.fi) generalized the OS/2 port to

nonIBM development environments (a nontrivial task).
Patrick Beard (beard@cs.ucdavis.edu) provided the initial MacOS port.
David Chase, then at Olivetti Research, suggested several improvements.
Scott Schwartz (schwartz@groucho.cse.psu.edu) supplied some of the
code to save and print call stacks for leak detection on a SPARC.
Jesse Hull and John Ellis supplied the C++ interface code.
Zhong Shao performed much of the experimentation that led to the
current typed allocation facility. (His dynamic type inference code hasn't
made it into the released version of the collector, yet.)
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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>
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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>`.

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1.21 libnetconf 0.10

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1.23 net-snmp 5.8+dfsg-2ubuntu2.3

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*

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*

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*

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1.24 bootstrap 4.3.1

1.24.1 Available under license :

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1.25 curl 7.68.0-1ubuntu2.12

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=====

libcurl can be built to use a fair amount of various third party libraries, libraries that are written and provided by other parties that are distributed using their own licenses. Even libcurl itself contains code that may cause problems to some. This document attempts to describe what licenses libcurl and the other libraries use and what possible dilemmas linking and mixing them all can lead to for end users.

I am not a lawyer and this is not legal advice!

One common dilemma is that [GPL](<https://www.gnu.org/licenses/gpl.html>) licensed code is not allowed to be linked with code licensed under the [Original BSD license](<https://spdx.org/licenses/BSD-4-Clause.html>) (with the announcement clause). You may still build your own copies that use them all, but distributing them as binaries would be to violate the GPL license - unless you accompany your license with an [exception](<https://www.gnu.org/licenses/gpl-faq.html#GPLIncompatibleLibs>). This particular problem was addressed when the [Modified BSD license](<https://opensource.org/licenses/BSD-3-Clause>) was created, which does not have the announcement clause that collides with GPL.

libcurl

Uses an [MIT style license](<https://curl.haxx.se/docs/copyright.html>) that is very liberal.

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(May be used for SSL/TLS support) Uses the [LGPL](<https://www.gnu.org/licenses/lgpl.html>) license. If this is a problem for you, consider using another TLS library. Also note that GnuTLS itself depends on and uses other libs (libgcrypt and libgpg-error) and they too are LGPL- or GPL-licensed.

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libressl

(May be used for SSL/TLS support) As an OpenSSL fork, it has the same license as that.

BearSSL

(May be used for SSL/TLS support) Uses an MIT license that is very liberal and imposes no restrictions on any other library or part you may link with.

c-ares

(Used for asynchronous name resolves) Uses an MIT license that is very liberal and imposes no restrictions on any other library or part you may link with.

zlib

(Used for compressed Transfer-Encoding support) Uses an MIT-style license that shouldn't collide with any other library.

MIT Kerberos

(May be used for GSS support) MIT licensed, that shouldn't collide with any other parts.

Heimdal

(May be used for GSS support) Heimdal is Original BSD licensed with the announcement clause.

GNU GSS

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libidn

(Used for IDNA support) Uses the GNU Lesser General Public License [3]. LGPL is a variation of GPL with slightly less aggressive "copyleft". This license requires more requirements to be met when distributing binaries, see the license for details. Also note that if you distribute a binary that includes this library, you must also include the full LGPL license text. Please properly point out what parts of the distributed package that the license addresses.

OpenLDAP

(Used for LDAP support) Uses a Modified BSD-style license. Since libcurl uses OpenLDAP as a shared library only, I have not heard of anyone that ships OpenLDAP linked with libcurl in an app.

```
## libssh2
```

(Used for scp and sftp support) libssh2 uses a Modified BSD-style license.

1.26 zlib 1:1.2.11.dfsg-2ubuntu1.3

1.26.1 Available under license :

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```
/* gzread.c -- zlib functions for reading gzip files
* Copyright (C) 2004, 2005, 2010, 2011, 2012, 2013, 2016 Mark Adler
* For conditions of distribution and use, see copyright notice in zlib.h
*/
```

Found in path(s):

```
* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/gzread.c
```

No license file was found, but licenses were detected in source scan.

```
/*
* gzlog.c
* Copyright (C) 2004, 2008, 2012, 2016 Mark Adler, all rights reserved
* For conditions of distribution and use, see copyright notice in gzlog.h
* version 2.2, 14 Aug 2012
*/
```

Found in path(s):

```
* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/examples/gzlog.c
```

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```
/* Adler32.c -- compute the Adler-32 checksum of a data stream
* Copyright (C) 1995-2011, 2016 Mark Adler
* For conditions of distribution and use, see copyright notice in zlib.h
*/
```

Found in path(s):

```
* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/adler32.c
```

No license file was found, but licenses were detected in source scan.

```
/*
Additional tools for Minizip
Code: Xavier Roche '2004
License: Same as ZLIB (www.gzip.org)
```

*/

Found in path(s):

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/contrib/minizip/mztools.c

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/contrib/minizip/mztools.h

No license file was found, but licenses were detected in source scan.

/* deflate.c -- compress data using the deflation algorithm

* Copyright (C) 1995-2017 Jean-loup Gailly and Mark Adler

* For conditions of distribution and use, see copyright notice in zlib.h

*/

Found in path(s):

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/deflate.c

No license file was found, but licenses were detected in source scan.

/* compress.c -- compress a memory buffer

* Copyright (C) 1995-2005, 2014, 2016 Jean-loup Gailly, Mark Adler

* For conditions of distribution and use, see copyright notice in zlib.h

*/

Found in path(s):

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/compress.c

No license file was found, but licenses were detected in source scan.

/* inftrees.c -- generate Huffman trees for efficient decoding

* Copyright (C) 1995-2017 Mark Adler

* For conditions of distribution and use, see copyright notice in zlib.h

*/

Found in path(s):

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/inftrees.c

No license file was found, but licenses were detected in source scan.

/* infcover.c -- test zlib's inflate routines with full code coverage

* Copyright (C) 2011, 2016 Mark Adler

* For conditions of distribution and use, see copyright notice in zlib.h

*/

Found in path(s):

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/test/infcover.c

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/* inftrees.h -- header to use inftrees.c

* Copyright (C) 1995-2005, 2010 Mark Adler

* For conditions of distribution and use, see copyright notice in zlib.h

*/

Found in path(s):

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/inftrees.h

No license file was found, but licenses were detected in source scan.

/* zconf.h -- configuration of the zlib compression library

* Copyright (C) 1995-2016 Jean-loup Gailly, Mark Adler

* For conditions of distribution and use, see copyright notice in zlib.h

*/

Found in path(s):

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/zconf.h.in

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-

1.2.11.dfsg/zconf.h.cmakein

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/zconf.h

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Found in path(s):

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/zlib.3

No license file was found, but licenses were detected in source scan.

/* zpipe.c: example of proper use of zlib's inflate() and deflate()

Not copyrighted -- provided to the public domain

Version 1.4 11 December 2005 Mark Adler */

Found in path(s):

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-

1.2.11.dfsg/examples/zpipe.c

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/* inffast.h -- header to use inffast.c

* Copyright (C) 1995-2003, 2010 Mark Adler

* For conditions of distribution and use, see copyright notice in zlib.h

*/

Found in path(s):

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/inffast.h

No license file was found, but licenses were detected in source scan.

/* gzwrite.c -- zlib functions for writing gzip files

* Copyright (C) 2004-2017 Mark Adler

* For conditions of distribution and use, see copyright notice in zlib.h

*/

Found in path(s):

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/gzwrite.c

No license file was found, but licenses were detected in source scan.

MiniZip - Copyright (c) 1998-2010 - by Gilles Vollant - version 1.1 64 bits from Mathias Svensson

Introduction

MiniZip 1.1 is built from MiniZip 1.0 by Gilles Vollant (<http://www.winimage.com/zLibDll/minizip.html>)

When adding ZIP64 support into minizip it would result into risk of breaking compatibility with minizip 1.0.
All possible work was done for compatibility.

Background

When adding ZIP64 support Mathias Svensson found that Even Rouault have added ZIP64 support for unzip.c into minizip for a open source project called gdal (<http://www.gdal.org/>)

That was used as a starting point. And after that ZIP64 support was added to zip.c some refactoring and code cleanup was also done.

Changed from MiniZip 1.0 to MiniZip 1.1

- * Added ZIP64 support for unzip (by Even Rouault)
- * Added ZIP64 support for zip (by Mathias Svensson)
- * Reverted some changed that Even Rouault did.
- * Bunch of patches received from Gulles Vollant that he received for MiniZip from various users.
- * Added unzip patch for BZIP Compression method (patch create by Daniel Borca)
- * Added BZIP Compress method for zip
- * Did some refactoring and code cleanup

Credits

Gilles Vollant - Original MiniZip author
Even Rouault - ZIP64 unzip Support
Daniel Borca - BZip Compression method support in unzip
Mathias Svensson - ZIP64 zip support
Mathias Svensson - BZip Compression method support in zip

Resources

ZipLayout <http://result42.com/projects/ZipFileLayout>

Command line tool for Windows that shows the layout and information of the headers in a zip archive.
Used when debugging and validating the creation of zip files using MiniZip64

ZIP App Note <http://www.pkware.com/documents/casestudies/APPNOTE.TXT>
Zip File specification

Notes.

* To be able to use BZip compression method in zip64.c or unzip64.c the BZIP2 lib is needed and HAVE_BZIP2 need to be defined.

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Found in path(s):

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/contrib/minizip/MiniZip64_info.txt

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/* zutil.h -- internal interface and configuration of the compression library

* Copyright (C) 1995-2016 Jean-loup Gailly, Mark Adler

* For conditions of distribution and use, see copyright notice in zlib.h

*/

Found in path(s):

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/zutil.h

No license file was found, but licenses were detected in source scan.


```
/* gzclose.c -- zlib gzclose() function
* Copyright (C) 2004, 2010 Mark Adler
* For conditions of distribution and use, see copyright notice in zlib.h
*/
```

Found in path(s):

```
* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/gzclose.c
No license file was found, but licenses were detected in source scan.
```

```
/* fitblk.c: example of fitting compressed output to a specified size
Not copyrighted -- provided to the public domain
Version 1.1 25 November 2004 Mark Adler */
```

Found in path(s):

```
* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/examples/fitblk.c
No license file was found, but licenses were detected in source scan.
```

```
/* deflate.h -- internal compression state
* Copyright (C) 1995-2016 Jean-loup Gailly
* For conditions of distribution and use, see copyright notice in zlib.h
*/
```

Found in path(s):

```
* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/deflate.h
No license file was found, but licenses were detected in source scan.
```

```
/* gzjoin -- command to join gzip files into one gzip file
```

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version 1.2, 14 Aug 2012

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Mark Adler madler@alumni.caltech.edu

*/

Found in path(s):

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/examples/gzjoin.c

No license file was found, but licenses were detected in source scan.

/* minigzip.c -- simulate gzip using the zlib compression library

* Copyright (C) 1995-2006, 2010, 2011, 2016 Jean-loup Gailly

* For conditions of distribution and use, see copyright notice in zlib.h

*/

Found in path(s):

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/test/minigzip.c

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/* inffast.c -- fast decoding

* Copyright (C) 1995-2017 Mark Adler

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*/

Found in path(s):

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/inffast.c

No license file was found, but licenses were detected in source scan.

Not copyrighted -- provided to the public domain

Found in path(s):

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/examples/zlib_how.html

No license file was found, but licenses were detected in source scan.

/* gzlog.h

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version 2.2, 14 Aug 2012

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Mark Adler madler@alumni.caltech.edu

*/

Found in path(s):

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/examples/gzlog.h

No license file was found, but licenses were detected in source scan.

/* zlib.h -- interface of the 'zlib' general purpose compression library
version 1.2.11, January 15th, 2017

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Jean-loup Gailly

Mark Adler

jloup@gzip.org

madler@alumni.caltech.edu

The data format used by the zlib library is described by RFCs (Request for Comments) 1950 to 1952 in the files <http://tools.ietf.org/html/rfc1950> (zlib format), [rfc1951](http://tools.ietf.org/html/rfc1951) (deflate format) and [rfc1952](http://tools.ietf.org/html/rfc1952) (gzip format).

*/

Found in path(s):

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/zlib.h

No license file was found, but licenses were detected in source scan.

/* unzip.h -- IO for uncompress .zip files using zlib
Version 1.1, February 14h, 2010
part of the MiniZip project - (<http://www.winimage.com/zLibDll/minizip.html>)

Copyright (C) 1998-2010 Gilles Vollant (minizip) (<http://www.winimage.com/zLibDll/minizip.html>)

Modifications of Unzip for Zip64
Copyright (C) 2007-2008 Even Rouault

Modifications for Zip64 support on both zip and unzip
Copyright (C) 2009-2010 Mathias Svensson (<http://result42.com>)

For more info read MiniZip_info.txt

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2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. This notice may not be removed or altered from any source distribution.

Changes

See header of unzip64.c

*/

Found in path(s):

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/contrib/minizip/unzip.h

No license file was found, but licenses were detected in source scan.

/* crc32.c -- compute the CRC-32 of a data stream

* Copyright (C) 1995-2006, 2010, 2011, 2012, 2016 Mark Adler
* For conditions of distribution and use, see copyright notice in zlib.h
*
* Thanks to Rodney Brown <rbrown64@csc.com.au> for his contribution of faster
* CRC methods: exclusive-oring 32 bits of data at a time, and pre-computing
* tables for updating the shift register in one step with three exclusive-ors
* instead of four steps with four exclusive-ors. This results in about a
* factor of two increase in speed on a Power PC G4 (PPC7455) using gcc -O3.
*/

Found in path(s):

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/crc32.c
No license file was found, but licenses were detected in source scan.

/* unzip.c -- IO for uncompress .zip files using zlib
Version 1.1, February 14h, 2010
part of the MiniZip project - (<http://www.winimage.com/zLibDll/minizip.html>)

Copyright (C) 1998-2010 Gilles Vollant (<http://www.winimage.com/zLibDll/minizip.html>)

Modifications of Unzip for Zip64
Copyright (C) 2007-2008 Even Rouault

Modifications for Zip64 support on both zip and unzip
Copyright (C) 2009-2010 Mathias Svensson (<http://result42.com>)

For more info read MiniZip_info.txt

Decryption code comes from crypt.c by Info-ZIP but has been greatly reduced in terms of
compatibility with older software. The following is from the original crypt.c.
Code woven in by Terry Thorsen 1/2003.

Copyright (c) 1990-2000 Info-ZIP. All rights reserved.

See the accompanying file LICENSE, version 2000-Apr-09 or later
(the contents of which are also included in zip.h) for terms of use.
If, for some reason, all these files are missing, the Info-ZIP license
also may be found at: <ftp://ftp.info-zip.org/pub/infozip/license.html>

crypt.c (full version) by Info-ZIP. Last revised: [see crypt.h]

The encryption/decryption parts of this source code (as opposed to the
non-echoing password parts) were originally written in Europe. The
whole source package can be freely distributed, including from the USA.
(Prior to January 2000, re-export from the US was a violation of US law.)

This encryption code is a direct transcription of the algorithm from Roger Schlafly, described by Phil Katz in the file appnote.txt. This file (appnote.txt) is distributed with the PKZIP program (even in the version without encryption capabilities).

Changes in unzip.c

2007-2008 - Even Rouault - Addition of cpl_unzGetCurrentFileZStreamPos
2007-2008 - Even Rouault - Decoration of symbol names unz* -> cpl_unz*
2007-2008 - Even Rouault - Remove old C style function prototypes
2007-2008 - Even Rouault - Add unzip support for ZIP64

Copyright (C) 2007-2008 Even Rouault

Oct-2009 - Mathias Svensson - Removed cpl_* from symbol names (Even Rouault added them but since this is now moved to a new project (minizip64) I renamed them again).

Oct-2009 - Mathias Svensson - Fixed problem if uncompressed size was > 4G and compressed size was <4G should only read the compressed/uncompressed size from the Zip64 format if the size from normal header was 0xFFFFFFFF

Oct-2009 - Mathias Svensson - Applied some bug fixes from patches received from Gilles Vollant

Oct-2009 - Mathias Svensson - Applied support to unzip files with compression method BZIP2 (bzip2 lib is required)

Patch created by Daniel Borca

Jan-2010 - back to unzip and minizip 1.0 name scheme, with compatibility layer

Copyright (C) 1998 - 2010 Gilles Vollant, Even Rouault, Mathias Svensson

*/

Found in path(s):

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/contrib/minizip/unzip.c

No license file was found, but licenses were detected in source scan.

Frequently Asked Questions about zlib

If your question is not there, please check the zlib home page

<http://zlib.net/> which may have more recent information.

The latest zlib FAQ is at http://zlib.net/zlib_faq.html

1. Is zlib Y2K-compliant?

Yes. zlib doesn't handle dates.

2. Where can I get a Windows DLL version?

The zlib sources can be compiled without change to produce a DLL. See the file win32/DLL_FAQ.txt in the zlib distribution. Pointers to the precompiled DLL are found in the zlib web site at <http://zlib.net/>.

3. Where can I get a Visual Basic interface to zlib?

See

- * <http://marknelson.us/1997/01/01/zlib-engine/>
- * win32/DLL_FAQ.txt in the zlib distribution

4. compress() returns Z_BUF_ERROR.

Make sure that before the call of compress(), the length of the compressed buffer is equal to the available size of the compressed buffer and not zero. For Visual Basic, check that this parameter is passed by reference ("as any"), not by value ("as long").

5. deflate() or inflate() returns Z_BUF_ERROR.

Before making the call, make sure that avail_in and avail_out are not zero. When setting the parameter flush equal to Z_FINISH, also make sure that avail_out is big enough to allow processing all pending input. Note that a Z_BUF_ERROR is not fatal--another call to deflate() or inflate() can be made with more input or output space. A Z_BUF_ERROR may in fact be unavoidable depending on how the functions are used, since it is not possible to tell whether or not there is more output pending when strm.avail_out returns with zero. See http://zlib.net/zlib_how.html for a heavily annotated example.

6. Where's the zlib documentation (man pages, etc.)?

It's in zlib.h. Examples of zlib usage are in the files test/example.c and test/minigzip.c, with more in examples/.

7. Why don't you use GNU autoconf or libtool or ...?

Because we would like to keep zlib as a very small and simple package. zlib is rather portable and doesn't need much configuration.

8. I found a bug in zlib.

Most of the time, such problems are due to an incorrect usage of zlib. Please try to reproduce the problem with a small program and send the corresponding source to us at zlib@gzip.org. Do not send multi-megabyte

data files without prior agreement.

9. Why do I get "undefined reference to gzputc"?

If "make test" produces something like

```
example.o(.text+0x154): undefined reference to `gzputc'
```

check that you don't have old files libz.* in /usr/lib, /usr/local/lib or /usr/X11R6/lib. Remove any old versions, then do "make install".

10. I need a Delphi interface to zlib.

See the contrib/delphi directory in the zlib distribution.

11. Can zlib handle .zip archives?

Not by itself, no. See the directory contrib/minizip in the zlib distribution.

12. Can zlib handle .Z files?

No, sorry. You have to spawn an uncompress or gunzip subprocess, or adapt the code of uncompress on your own.

13. How can I make a Unix shared library?

By default a shared (and a static) library is built for Unix. So:

```
make distclean
./configure
make
```

14. How do I install a shared zlib library on Unix?

After the above, then:

```
make install
```

However, many flavors of Unix come with a shared zlib already installed. Before going to the trouble of compiling a shared version of zlib and trying to install it, you may want to check if it's already there! If you can `#include <zlib.h>`, it's there. The `-lz` option will probably link to it. You can check the version at the top of `zlib.h` or with the `ZLIB_VERSION` symbol defined in `zlib.h`.

15. I have a question about OttoPDF.

We are not the authors of OttoPDF. The real author is on the OttoPDF web site: Joel Hainley, jhainley@myndkryme.com.

16. Can zlib decode Flate data in an Adobe PDF file?

Yes. See <http://www.pdflib.com/>. To modify PDF forms, see <http://sourceforge.net/projects/acroformtool/>.

17. Why am I getting this "register_frame_info not found" error on Solaris?

After installing zlib 1.1.4 on Solaris 2.6, running applications using zlib generates an error such as:

```
ld.so.1: rpm: fatal: relocation error: file /usr/local/lib/libz.so:
symbol __register_frame_info: referenced symbol not found
```

The symbol `__register_frame_info` is not part of zlib, it is generated by the C compiler (cc or gcc). You must recompile applications using zlib which have this problem. This problem is specific to Solaris. See <http://www.sunfreeware.com> for Solaris versions of zlib and applications using zlib.

18. Why does gzip give an error on a file I make with compress/deflate?

The compress and deflate functions produce data in the zlib format, which is different and incompatible with the gzip format. The `gz*` functions in zlib on the other hand use the gzip format. Both the zlib and gzip formats use the same compressed data format internally, but have different headers and trailers around the compressed data.

19. Ok, so why are there two different formats?

The gzip format was designed to retain the directory information about a single file, such as the name and last modification date. The zlib format on the other hand was designed for in-memory and communication channel applications, and has a much more compact header and trailer and uses a faster integrity check than gzip.

20. Well that's nice, but how do I make a gzip file in memory?

You can request that deflate write the gzip format instead of the zlib format using `deflateInit2()`. You can also request that inflate decode the gzip format using `inflateInit2()`. Read `zlib.h` for more details.

21. Is zlib thread-safe?

Yes. However any library routines that zlib uses and any application-provided memory allocation routines must also be thread-safe. zlib's `gz*`

functions use stdio library routines, and most of zlib's functions use the library memory allocation routines by default. zlib's *Init* functions allow for the application to provide custom memory allocation routines.

Of course, you should only operate on any given zlib or gzip stream from a single thread at a time.

22. Can I use zlib in my commercial application?

Yes. Please read the license in `zlib.h`.

23. Is zlib under the GNU license?

No. Please read the license in `zlib.h`.

24. The license says that altered source versions must be "plainly marked". So what exactly do I need to do to meet that requirement?

You need to change the `ZLIB_VERSION` and `ZLIB_VERNUM` #defines in `zlib.h`. In particular, the final version number needs to be changed to "f", and an identification string should be appended to `ZLIB_VERSION`. Version numbers `x.x.x.f` are reserved for modifications to zlib by others than the zlib maintainers. For example, if the version of the base zlib you are altering is "1.2.3.4", then in `zlib.h` you should change `ZLIB_VERNUM` to `0x123f`, and `ZLIB_VERSION` to something like "1.2.3.f-zachary-mods-v3". You can also update the version strings in `deflate.c` and `inftrees.c`.

For altered source distributions, you should also note the origin and nature of the changes in `zlib.h`, as well as in `ChangeLog` and `README`, along with the dates of the alterations. The origin should include at least your name (or your company's name), and an email address to contact for help or issues with the library.

Note that distributing a compiled zlib library along with `zlib.h` and `zconf.h` is also a source distribution, and so you should change `ZLIB_VERSION` and `ZLIB_VERNUM` and note the origin and nature of the changes in `zlib.h` as you would for a full source distribution.

25. Will zlib work on a big-endian or little-endian architecture, and can I exchange compressed data between them?

Yes and yes.

26. Will zlib work on a 64-bit machine?

Yes. It has been tested on 64-bit machines, and has no dependence on any data types being limited to 32-bits in length. If you have any difficulties, please provide a complete problem report to zlib@gzip.org

27. Will zlib decompress data from the PKWare Data Compression Library?

No. The PKWare DCL uses a completely different compressed data format than does PKZIP and zlib. However, you can look in zlib's contrib/blast directory for a possible solution to your problem.

28. Can I access data randomly in a compressed stream?

No, not without some preparation. If when compressing you periodically use Z_FULL_FLUSH, carefully write all the pending data at those points, and keep an index of those locations, then you can start decompression at those points. You have to be careful to not use Z_FULL_FLUSH too often, since it can significantly degrade compression. Alternatively, you can scan a deflate stream once to generate an index, and then use that index for random access. See examples/zran.c .

29. Does zlib work on MVS, OS/390, CICS, etc.?

It has in the past, but we have not heard of any recent evidence. There were working ports of zlib 1.1.4 to MVS, but those links no longer work. If you know of recent, successful applications of zlib on these operating systems, please let us know. Thanks.

30. Is there some simpler, easier to read version of inflate I can look at to understand the deflate format?

First off, you should read RFC 1951. Second, yes. Look in zlib's contrib/puff directory.

31. Does zlib infringe on any patents?

As far as we know, no. In fact, that was originally the whole point behind zlib. Look here for some more information:

<http://www.gzip.org/#faq11>

32. Can zlib work with greater than 4 GB of data?

Yes. inflate() and deflate() will process any amount of data correctly. Each call of inflate() or deflate() is limited to input and output chunks of the maximum value that can be stored in the compiler's "unsigned int" type, but there is no limit to the number of chunks. Note however that the strm.total_in and strm_total_out counters may be limited to 4 GB. These counters are provided as a convenience and are not used internally by inflate() or deflate(). The application can easily set up its own counters updated after each call of inflate() or deflate() to count beyond 4 GB. compress() and uncompress() may be limited to 4 GB, since they operate in a

single call. `gzseek()` and `gztell()` may be limited to 4 GB depending on how `zlib` is compiled. See the `zlibCompileFlags()` function in `zlib.h`.

The word "may" appears several times above since there is a 4 GB limit only if the compiler's "long" type is 32 bits. If the compiler's "long" type is 64 bits, then the limit is 16 exabytes.

33. Does `zlib` have any security vulnerabilities?

The only one that we are aware of is potentially in `gzprintf()`. If `zlib` is compiled to use `sprintf()` or `vsprintf()`, then there is no protection against a buffer overflow of an 8K string space (or other value as set by `gzbuffer()`), other than the caller of `gzprintf()` assuring that the output will not exceed 8K. On the other hand, if `zlib` is compiled to use `snprintf()` or `vsnprintf()`, which should normally be the case, then there is no vulnerability. The `./configure` script will display warnings if an insecure variation of `sprintf()` will be used by `gzprintf()`. Also the `zlibCompileFlags()` function will return information on what variant of `sprintf()` is used by `gzprintf()`.

If you don't have `snprintf()` or `vsnprintf()` and would like one, you can find a portable implementation here:

<http://www.ijs.si/software/snprintf/>

Note that you should be using the most recent version of `zlib`. Versions 1.1.3 and before were subject to a double-free vulnerability, and versions 1.2.1 and 1.2.2 were subject to an access exception when decompressing invalid compressed data.

34. Is there a Java version of `zlib`?

Probably what you want is to use `zlib` in Java. `zlib` is already included as part of the Java SDK in the `java.util.zip` package. If you really want a version of `zlib` written in the Java language, look on the `zlib` home page for links: <http://zlib.net/> .

35. I get this or that compiler or source-code scanner warning when I crank it up to maximally-pedantic. Can't you guys write proper code?

Many years ago, we gave up attempting to avoid warnings on every compiler in the universe. It just got to be a waste of time, and some compilers were downright silly as well as contradicted each other. So now, we simply make sure that the code always works.

36. Valgrind (or some similar memory access checker) says that `deflate` is performing a conditional jump that depends on an uninitialized value. Isn't that a bug?

No. That is intentional for performance reasons, and the output of deflate is not affected. This only started showing up recently since zlib 1.2.x uses malloc() by default for allocations, whereas earlier versions used calloc(), which zeros out the allocated memory. Even though the code was correct, versions 1.2.4 and later was changed to not stimulate these checkers.

37. Will zlib read the (insert any ancient or arcane format here) compressed data format?

Probably not. Look in the comp.compression FAQ for pointers to various formats and associated software.

38. How can I encrypt/decrypt zip files with zlib?

zlib doesn't support encryption. The original PKZIP encryption is very weak and can be broken with freely available programs. To get strong encryption, use GnuPG, <http://www.gnupg.org/>, which already includes zlib compression. For PKZIP compatible "encryption", look at <http://www.info-zip.org/>

39. What's the difference between the "gzip" and "deflate" HTTP 1.1 encodings?

"gzip" is the gzip format, and "deflate" is the zlib format. They should probably have called the second one "zlib" instead to avoid confusion with the raw deflate compressed data format. While the HTTP 1.1 RFC 2616 correctly points to the zlib specification in RFC 1950 for the "deflate" transfer encoding, there have been reports of servers and browsers that incorrectly produce or expect raw deflate data per the deflate specification in RFC 1951, most notably Microsoft. So even though the "deflate" transfer encoding using the zlib format would be the more efficient approach (and in fact exactly what the zlib format was designed for), using the "gzip" transfer encoding is probably more reliable due to an unfortunate choice of name on the part of the HTTP 1.1 authors.

Bottom line: use the gzip format for HTTP 1.1 encoding.

40. Does zlib support the new "Deflate64" format introduced by PKWare?

No. PKWare has apparently decided to keep that format proprietary, since they have not documented it as they have previous compression formats. In any case, the compression improvements are so modest compared to other more modern approaches, that it's not worth the effort to implement.

41. I'm having a problem with the zip functions in zlib, can you help?

There are no zip functions in zlib. You are probably using minizip by

Giles Vollant, which is found in the contrib directory of zlib. It is not part of zlib. In fact none of the stuff in contrib is part of zlib. The files in there are not supported by the zlib authors. You need to contact the authors of the respective contribution for help.

42. The match.asm code in contrib is under the GNU General Public License. Since it's part of zlib, doesn't that mean that all of zlib falls under the GNU GPL?

No. The files in contrib are not part of zlib. They were contributed by other authors and are provided as a convenience to the user within the zlib distribution. Each item in contrib has its own license.

43. Is zlib subject to export controls? What is its ECCN?

zlib is not subject to export controls, and so is classified as EAR99.

44. Can you please sign these lengthy legal documents and fax them back to us so that we can use your software in our product?

No. Go away. Shoo.

Found in path(s):

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/FAQ

No license file was found, but licenses were detected in source scan.

/* uncompr.c -- decompress a memory buffer

* Copyright (C) 1995-2003, 2010, 2014, 2016 Jean-loup Gailly, Mark Adler

* For conditions of distribution and use, see copyright notice in zlib.h

*/

Found in path(s):

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/uncompr.c

No license file was found, but licenses were detected in source scan.

/* infback.c -- inflate using a call-back interface

* Copyright (C) 1995-2016 Mark Adler

* For conditions of distribution and use, see copyright notice in zlib.h

*/

Found in path(s):

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/infback.c

No license file was found, but licenses were detected in source scan.

/* inflate.c -- zlib decompression

* Copyright (C) 1995-2016 Mark Adler

* For conditions of distribution and use, see copyright notice in zlib.h

*/

Found in path(s):

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/inflate.c

No license file was found, but licenses were detected in source scan.

/* gzappend -- command to append to a gzip file

Copyright (C) 2003, 2012 Mark Adler, all rights reserved

version 1.2, 11 Oct 2012

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3. This notice may not be removed or altered from any source distribution.

Mark Adler madler@alumni.caltech.edu

*/

Found in path(s):

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/examples/gzappend.c

No license file was found, but licenses were detected in source scan.

/* gzguts.h -- zlib internal header definitions for gz* operations

* Copyright (C) 2004, 2005, 2010, 2011, 2012, 2013, 2016 Mark Adler

* For conditions of distribution and use, see copyright notice in zlib.h

*/

Found in path(s):

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/gzguts.h

No license file was found, but licenses were detected in source scan.

ZLIB DATA COMPRESSION LIBRARY

zlib 1.2.11 is a general purpose data compression library. All the code is thread safe. The data format used by the zlib library is described by RFCs (Request for Comments) 1950 to 1952 in the files

<http://tools.ietf.org/html/rfc1950> (zlib format), [rfc1951](http://tools.ietf.org/html/rfc1951) (deflate format) and [rfc1952](http://tools.ietf.org/html/rfc1952) (gzip format).

All functions of the compression library are documented in the file `zlib.h` (volunteer to write man pages welcome, contact zlib@gzip.org). A usage example of the library is given in the file `test/example.c` which also tests that the library is working correctly. Another example is given in the file `test/minigzip.c`. The compression library itself is composed of all source files in the root directory.

To compile all files and run the test program, follow the instructions given at the top of `Makefile.in`. In short `./configure; make test`, and if that goes well, `make install` should work for most flavors of Unix. For Windows, use one of the special makefiles in `win32/` or `contrib/vstudio/`. For VMS, use `make_vms.com`.

Questions about zlib should be sent to [<zlib@gzip.org>](mailto:zlib@gzip.org), or to Gilles Vollant [<info@winimage.com>](mailto:info@winimage.com) for the Windows DLL version. The zlib home page is <http://zlib.net/>. Before reporting a problem, please check this site to verify that you have the latest version of zlib; otherwise get the latest version and check whether the problem still exists or not.

PLEASE read the zlib FAQ http://zlib.net/zlib_faq.html before asking for help.

Mark Nelson [<markn@ieee.org>](mailto:markn@ieee.org) wrote an article about zlib for the Jan. 1997 issue of Dr. Dobbs's Journal; a copy of the article is available at <http://marknelson.us/1997/01/01/zlib-engine/>.

The changes made in version 1.2.11 are documented in the file `ChangeLog`.

Unsupported third party contributions are provided in directory `contrib/`.

zlib is available in Java using the `java.util.zip` package, documented at <http://java.sun.com/developer/technicalArticles/Programming/compression/>.

A Perl interface to zlib written by Paul Marquess [<pmqs@cpan.org>](mailto:pmqs@cpan.org) is available at CPAN (Comprehensive Perl Archive Network) sites, including <http://search.cpan.org/~pmqs/IO-Compress-Zlib/>.

A Python interface to zlib written by A.M. Kuchling [<amk@amk.ca>](mailto:amk@amk.ca) is available in Python 1.5 and later versions, see <http://docs.python.org/library/zlib.html>.

zlib is built into tcl: <http://wiki.tcl.tk/4610>.

An experimental package to read and write files in `.zip` format, written on top of zlib by Gilles Vollant [<info@winimage.com>](mailto:info@winimage.com), is available in the `contrib/minizip` directory of zlib.

Notes for some targets:

- For Windows DLL versions, please see win32/DLL_FAQ.txt
- For 64-bit Irix, deflate.c must be compiled without any optimization. With -O, one libpng test fails. The test works in 32 bit mode (with the -n32 compiler flag). The compiler bug has been reported to SGI.
- zlib doesn't work with gcc 2.6.3 on a DEC 3000/300LX under OSF/1 2.1 it works when compiled with cc.
- On Digital Unix 4.0D (formely OSF/1) on AlphaServer, the cc option -std1 is necessary to get gzprintf working correctly. This is done by configure.
- zlib doesn't work on HP-UX 9.05 with some versions of /bin/cc. It works with other compilers. Use "make test" to check your compiler.
- gzdopen is not supported on RISCOS or BEOS.
- For PalmOs, see <http://palmzlib.sourceforge.net/>

Acknowledgments:

The deflate format used by zlib was defined by Phil Katz. The deflate and zlib specifications were written by L. Peter Deutsch. Thanks to all the people who reported problems and suggested various improvements in zlib; they are too numerous to cite here.

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Jean-loup Gailly Mark Adler
jloup@gzip.org madler@alumni.caltech.edu

If you use the zlib library in a product, we would appreciate *not* receiving lengthy legal documents to sign. The sources are provided for free but without warranty of any kind. The library has been entirely written by Jean-loup Gailly and Mark Adler; it does not include third-party code.

If you redistribute modified sources, we would appreciate that you include in the file ChangeLog history information documenting your changes. Please read the FAQ for more information on the distribution of modified source versions.

Found in path(s):

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/README
No license file was found, but licenses were detected in source scan.

```
/* zutil.c -- target dependent utility functions for the compression library
* Copyright (C) 1995-2017 Jean-loup Gailly
* For conditions of distribution and use, see copyright notice in zlib.h
*/
```

Found in path(s):

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/zutil.c
No license file was found, but licenses were detected in source scan.

```
/* gzlib.c -- zlib functions common to reading and writing gzip files
* Copyright (C) 2004-2017 Mark Adler
* For conditions of distribution and use, see copyright notice in zlib.h
*/
```

Found in path(s):

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/gzlib.c
No license file was found, but licenses were detected in source scan.

```
/* zip.h -- IO on .zip files using zlib
Version 1.1, February 14h, 2010
part of the MiniZip project - ( http://www.winimage.com/zLibDll/minizip.html )
```

Copyright (C) 1998-2010 Gilles Vollant (minizip) (<http://www.winimage.com/zLibDll/minizip.html>)

Modifications for Zip64 support
Copyright (C) 2009-2010 Mathias Svensson (<http://result42.com>)

For more info read MiniZip_info.txt

Condition of use and distribution are the same than zlib :

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Changes

See header of zip.h

*/

Found in path(s):

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/contrib/minizip/zip.h

No license file was found, but licenses were detected in source scan.

/* inflate.h -- internal inflate state definition

* Copyright (C) 1995-2016 Mark Adler

* For conditions of distribution and use, see copyright notice in zlib.h

*/

Found in path(s):

* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/inflate.h

No license file was found, but licenses were detected in source scan.

/* zran.c -- example of zlib/gzip stream indexing and random access

* Copyright (C) 2005, 2012 Mark Adler

* For conditions of distribution and use, see copyright notice in zlib.h

Version 1.1 29 Sep 2012 Mark Adler */

Found in path(s):

```
* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/examples/zran.c
```

No license file was found, but licenses were detected in source scan.

```
/* gun.c -- simple gunzip to give an example of the use of inflateBack()
* Copyright (C) 2003, 2005, 2008, 2010, 2012 Mark Adler
* For conditions of distribution and use, see copyright notice in zlib.h
  Version 1.7 12 August 2012 Mark Adler */
```

Found in path(s):

```
* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/examples/gun.c
```

No license file was found, but licenses were detected in source scan.

```
/* trees.c -- output deflated data using Huffman coding
* Copyright (C) 1995-2017 Jean-loup Gailly
* detect_data_type() function provided freely by Cosmin Truta, 2006
* For conditions of distribution and use, see copyright notice in zlib.h
*/
```

Found in path(s):

```
* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/trees.c
```

No license file was found, but licenses were detected in source scan.

```
/* example.c -- usage example of the zlib compression library
* Copyright (C) 1995-2006, 2011, 2016 Jean-loup Gailly
* For conditions of distribution and use, see copyright notice in zlib.h
*/
```

Found in path(s):

```
* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/test/example.c
```

No license file was found, but licenses were detected in source scan.

```
# For conditions of distribution and use, see copyright notice in zlib.h
```

Found in path(s):

```
* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/old/os2/Makefile.os2
```

```
* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/old/Makefile.emx
```

```
* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/msdos/Makefile.emx
```

```
* /opt/cola/permits/1359314522_1657249168.7042956/0/zlib-1-2-11-dfsg-orig-2-tar-gz/zlib-1.2.11.dfsg/msdos/Makefile.dj2
```

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