Cisco WAN Automation Engine Release Notes, Release 6.4.5

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This document describes the features, limitations, and bugs for Cisco WAN Automation Engine (Cisco WAE) Release 6.4.5.

New and Changed Information

The following table describes changes to this document.

Date	Revision
2017-08-02	Added CSCvd47381 to Resolved Bugs, page 2: In an OSPF network, the command **login_find_igp_db** does not work when used with the parameter "-manage-ip-file". In an IS-IS network, the same command and parameter work correctly.
2017-03-20	Initial publication.

Contents

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Introduction

Cisco WAE is a model-driven path visibility and path computation engine that simulates, automates, and optimizes multi-vendor, multi-layer networks by leveraging time-series traffic and flow data. For more information on Cisco WAE, visit www.cisco.com/go/wae.

Open Source

A list of open source software used in Cisco WAE can be found in Open Source Software Used in Cisco WAN Automation Engine.

Open Bugs

The following table lists the open bugs in Cisco WAE 6.4.5. The bug ID links you to the Cisco Bug Search tool.

Bug ID	Description
CSCvc89545	The WAE Live > Settings page does not load. The workaround is to restart the web-service.

Resolved Bugs

The following table lists the resolved bugs in Cisco WAE 6.4.5. The bug ID links you to the Cisco Bug Search tool.

Bug ID	Description
CSCvb61811	On Internet Explorer 11, it takes 12 - 13 minutes to load the MATE Live 6.0.6 Map. The same operation takes only 20 seconds on Chrome.
CSCvb98122	A vulnerability in libssh2 could allow an unauthenticated, remote attacker to cause a denial of service (DoS) condition on a targeted system. The vulnerability is due to insufficient packet range checks while negotiating with a new SSH session. An unauthenticated, remote attacker could exploit this vulnerability by sending a crafted SSH_MSG_KEXINIT packet to the libssh2 client. A successful exploit could read and use the unintended memory portion or could cause the libssh2 clients to crash, leading to a DoS condition. libssh2 has confirmed the issue and released software updates.
CSCvc39670	When upgrading from MATE 5.6.5 to WAE 6.3.6, the memory utilization increases by 100%.

Bug ID	Description

CSCvc71092	The scheduler does not insert plan files. The logs contain the following errors:
	
	`ERROR NetworkDao.getNetworkList() - Unexpected error code:0`
	`ERROR NetworkDao.getNetworkList() - Unexpected exception`
	`java.sql.SQLException: com.mchange.v2.c3p0.ComboPooledDataSource[ identityToken ->`
	`2ta1xt9lccg31u8mgvh|6a06b374, dataSourceName -> 2ta1xt9lccg31u8mgvh|6a06b374 ] has been`
	`closed() -- you can no longer use it.`
	
	`ERROR NetworkService.run() - Cannot return a null connection`
	
	`jobScheduler-5676 ERROR JobRunShell.run() - Error occurred during job execution:  null`
	
	`WebappClassLoader.loadClass() - Illegal access: this web application instance has been`
	`stopped already.  Could not load org.apache.commons.lang3.exception.ExceptionUtils.  The`
	`eventual following stack trace is caused by an error thrown for debugging purposes as well as`
	`to attempt to terminate the thread which caused the illegal access, and has no functional`
	`impact.`
	`java.lang.IllegalStateException`
	
	`jobScheduler-5676 ERROR JobRunShell.run() - error during job clean up, this may result in`
	`memory leak`
	`java.lang.NullPointerException`

CSCvc71629	ml_insert shows pending on failed jobs. After canceling those jobs and restarting the WAE server and mld, ml_insert stops working.
CSCvc91377	The WAE Analysis dmd_deduction process quits prematurely without finishing. As a result, the demands in the network remain unchanged. There is no report generated for demand deduction, which indicates that demand deduction quit without finishing.
CSCvc91618	With route simulation, if you make a circuit inactive and then recompute the route simulation, the results don't reflect the changes to the plan.
CSCvc98439	Interfaces that have a configured capacity greater than 1.0e+06 are not discovered as traffic engineering-enabled. Consequently, when doing a failure analysis, there are no demands that use these links.
CSCvc98659	For the command **ml_insert_ctl -list -size 10**, the running time keeps increasing for jobs with a status of ABORTED or CANCELED but with a stage status of 'running'.
CSCvd00677	WAE mld and scheduler services are running, but plans are not imported into the database.
CSCvd03222	In WAE Live, the Tags column under Explore > Nodes is empty. But in WAE Design, the Nodes table contains data for tags.
CSCvd12342	The WAE 6.4.4 Simulation Analysis tool consumes memory and crashes without completing.
CSCvd29646	If you upload Coordinated Maintenance 1.2.1 in WAE 6.4.5, you must restart the wae-web-server service (which was not required in WAE 6.4.4). Do the following: 1. In the WAE UI, click the **Enable** button for Coordinated Maintenance. WAE extracts the contents of the archive to Tomcat's webapps/ROOT/services directory and copies the applications .war file to the webapps directory. 2. From the CLI, enter: `service wae-web-server restart` The Tomcat automatically deploys the .war files in its webroot directory. 3. Refresh the browser and log back in to the WAE 6.4.5 UI.

Bug ID	Description
CSCvd39587	Some WAE processes create files with root ownership, causing errors.
CSCvd47381	In an OSPF network, the command **login_find_igp_db** does not work when used with the parameter "-manage-ip-file". In an IS-IS network, the same command and parameter work correctly.

Using the Cisco Bug Search Tool

You can use the Cisco Bug Search Tool to search for a specific bug or to search for all bugs in a release.

Step 1 Go to the Cisco Bug Search Tool.

Step 2 Enter your registered Cisco.com username and password, and click **Log In**. The Bug Search page opens.

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Note If you do not have a Cisco.com user name and password, you can register for them.

Step 3 Use any of these options to search for bugs, and then press Enter (Return) to initiate the search:

- To search for a specific bug, enter the bug ID in the Search For field.
- To search for bugs based on specific criteria, enter search criteria in the Search For field, such as a problem description or feature.
- To search for bugs based on products, enter or select the product from the Product list. For example, if you enter "WAE," you have several options from which to choose.
- To search for bugs based on releases, in the Releases list select whether to search for bugs affecting a specific release, bugs that were fixed in a specific release, or both. Then enter one or more release numbers.

Step 4 When the search results are displayed, use the filter tools to narrow the results. You can filter the bugs by status, severity, modified date, and so on.

To export the results to a spreadsheet, click **Export Results to Excel**.

Known Limitations

This section describes the limitations and restrictions for Cisco WAE.

Coordinated Maintenance

If you upload Coordinated Maintenance 1.2.1 in WAE 6.4.5, you must restart the wae-web-server service (which was not required in WAE 6.4.4). Do the following:

1. In the WAE UI, click the **Enable** button for Coordinated Maintenance.

   WAE extracts the contents of the archive to Tomcat's webapps/ROOT/services directory and copies the applications .war file to the webapps directory.

2. From the CLI, enter:

   ```
   service wae-web-server restart
   ```

The Tomcat automatically deploys the .war files in its webroot directory.

3. Refresh the browser and log back in to the WAE 6.4.5 UI.

WAE Design

macOS Sierra 10.12 implements an additional security measure for applications that are not distributed through the App Store, which includes WAE Design.

By default, WAE Design is in a quarantine state as shown by the following command on a terminal:

```
xattr Mate.app
```

The command returns the following for a quarantined application:

```
com.apple.quarantine
```

As a workaround, remove WAE Design from quarantine by entering the following command in the directory where WAE Design is installed:

```
xattr -r -d com.apple.quarantine Mate.app
```

Then, you can run WAE Design 6.4.x on macOS Sierra 10.12.

WAE Collector and WAE Network Interface (NI)

- Due to vendor MIB limitations, Collector cannot represent QoS traffic on interfaces that have more than one VLAN configured. If a network contains such interfaces, their queue traffic statistics are omitted from the collection. The total traffic on these interfaces is still measured. As a result, per class-of-service demands estimated through Demand Deduction are less accurate. Estimates of traffic totals over all classes of services, however, are not affected.

- Due to lack of MIB support, SR tunnel type is not collected for Cisco IOS XR routers through SNMP.

- Collection of interface egress shaping rate for Alcatel-Lucent devices does not support LAG interfaces.

- Shared Risk Link Groups (SRLGs) are not supported in Alcatel-Lucent Service Aware Manager (SAM) collection.

WAE NI

- The interval for continuous LSP discovery in WAE NI cannot be less than 60 seconds.

- LSP's ActualPathHop cannot be resolved when using continuous collection. As a workaround, use interval-based collection.

Collector

- Juniper MIBs do not support P2MP LSPs.

- OSPFv3 and IPv6 IS-IS databases cannot be collected. The workaround is to use a manual snapshot.

- SNMPv3 is not an available option when configuring default credentials.

- snmp_find_interfaces

- – Does not support association of a GRE tunnel with the physical interface it uses to reach the tunnel destination since the IP-Tunnel MIB lacks this information.

- – Does not update LAG port status if LAGs are discovered running both parse_configs and snmp_find_interfaces. The workaround is to run only snmp_find_interfaces.

- Juniper routers: Signaled standby LSP path option is not available from the standard MPLS-TE MIB for Juniper routers. Only the active path option name is collected.

- Cisco IOS XR routers

  - – IGP topology collected through parse_igp and login_find_igp_db

    – IS-IS link-state database with TE extensions contains incorrect interface "admin-weights" (TE metric) on Intel-based routers.

    – IPv6 IS-IS link-state database does not contain IPv6 interface addresses or parallel interfaces. This information is only available when Cisco IOS XR supports IS-IS IPv6 TE extensions. The snmp_find_interfaces tool collects this information.

  - – snmp_find_rsvp does not set the Standby value in the <LSPPaths> table for signaled backup paths or collect named affinities configured with affinity-maps.

- BGP peers

  - – find_bgp does not build BGP pseudo-nodes among internal ASNs.

  - – find_bgp does not collect BGP peers under PE-CE VRFs.

- parse_configs

  - – Does not accurately detect the bandwidth of some Juniper 'ge' interfaces that have a capacity of 10 Gbps.

  - – Collects POS bundles, but has limitations due to unavailability of the port OperStatus property.

- TE Extended Admin Groups (EAGs), also known as extended affinities, are only supported from Juniper and parse_configs.

- There is no support for building port circuits for LAG members that are not within the same IGP (inter-AS circuits)

- It is not possible to distinguish between physically connected and unconnected LAG ports that are down for LAG port matching.

- snmp_find_ospf_db cannot be used when routers have a large number of links that cannot fit into a single PDU.

- find_bgpls does not support multi-area OSPF or multi-level IS-IS, non-TE-enabled interfaces, and pseudo-nodes. The workaround is to use SNMP- or login-based discovery.

- get_inventory does not collect Juniper multi-chassis router hardware inventory.

- Segment routing

  - – SR protected adjacency SIDs are not supported.

  - – Concurrent RSVP-TE and SR-TE paths are not supported on the same LSP.

SAM-OSS Integration with Snapshots

- sam_getplan does not populate the <NodeTraffic> table. This table is derived and populated when sam_getplan and SNMP tools are used together.

- sam_getplan does not populate the NetIntActivePath column in the <LSPs> table.

- If sam_getplan and SNMP tools are used together in the snapshot process for multi-vendor network collection, Alcatel-Lucent traffic measurements cannot be aligned with those collected from other router platforms.

Cisco Open SDN Controller (OSC)

During detailed PCEP tunnel creation or when modifying PCEP tunnels, affinity values are misinterpreted if multiple affinities are specified. This limits you to specifying one affinity for IncludeAffinity, IncludeAnyAffinity, and ExcludeAffinity, and each of these values must be a number within [0,31].

NSO Controller

- LSP affinities are deployed, while interfaces affinities require separate provisioning.

- LSPs that exist in the network by another controller cannot be updated.

- Deployment of each RSVP-TE named-path or SR-TE segment-list is limited to a single LSP.

- Cisco IOS XR: WAE client specifies the XR LSP signaled-name, while NSO service and device use tunnel-id. The workaround is to deploy all Cisco IOS XR LSPs using the tunnel-id and to make sure that existing LSPs are not redeployed.

- NEDs (NSO console)

  - For Cisco IOS XR, there is no option to give the IP address of the LSP directly; you can only specify a loopback address. There is no option to give tunnel affinity values directly; you can only specify an affinity-map name.

  - For Junos, there is no inter-domain keyword, which is used only when an inter-area LSP is created.

WAE System

Installation and Startup

- The WAE NI server and the WAE Core server cannot reside on the same device or on the same VM. Note that the *Cisco WAE Server Installation Guide* assumes that they are on the same device. If needed, contact your support representative for further installation details.

- If the OS is using an old CA certificate to verify the integrity of the EPEL repository, you might see this error from the OS vendor:

```
Error: Cannot retrieve metalink for repository: epel. Please verify its path and try
again.
```

  - One workaround is to perform an offline installation. For instructions, see the "Offline Installation" chapter in the *Cisco WAE Server Installation Guide*.

  - Another workaround is to change *https* to *http*.

> ✎
>
> **Note** This is not a secure solution. For information on how to resolve OS security issues, contact your OS vendor.

  1. In the /etc/yum.repos.d/epel.repo file, change the first instance of *https* to *http*.

```
sudo vim /etc/yum.repos.d/epel.repo
```

Change *https* to *http* in the following line:

```
mirrorlist=[https://mirrors.fedoraproject.org/metalink-repo=epel-6&arch=$basearch]
```

   2. Execute yum to clean up makecache.

```
sudo yum clean all && yum makecache
```

   3. Rerun the installer. For instructions, see the *Cisco WAE Server Installation Guide*.

```
sudo bash wae-k9-<version>.bin
```

- The $CARIDEN_HOME directory is not automatically added to $PATH (only $CARIDEN_HOME/bin is). If not in $CARIDEN_HOME/bin, to start the WAE Design GUI from the command line, you must specify its full path.

```
/opt/cariden/software/mate/current/mate
```

Web Server

The embedded_web_server tool is deprecated. The recommendation is to use the wae-web-server service, which is constantly monitored to be brought up automatically.

By default, this web service starts upon installation completion. Therefore, if you stop the web server using the embedded_web_server tool (embedded_web_server -action stop), the web server does not stop. The workaround is the following:

```
service wae-svcs-mon stop
embedded_web_server -action stop
```

WAE Statistics UI

The WAE Statistics page does not appear in some web browsers if you do not have the correct SSL certificates. To work around this, install the correct SSL certificates (see the "Installing an SSL Web Certificate" section in the *Cisco WAE System Administration Guide*) or do the following:

   1. Click the WAE Statistics link. The URL format is https://<*server_IP*>:8443; for example, https://192.0.2.14:8443.

   2. Copy the URL of the page to another browser window.

   3. In the new browser, change the URL port from 8443 to 8843; for example, https://192.0.2.14:8843.

   4. Follow the browser messages to accept the connection and add it as an exception.

Web User Management

Both the System UI and the WAE Design Archive UI have local user management capabilities. If both are used to configure users, WAE uses the most recently updated information. The recommendation is to use only the System UI to manage local users.

License Check Failures on Newer Linux Distributions

Some newer Linux distributions have started using a new way (via biosdevname) of naming hardware devices, including the network interfaces. This causes some software that depends on the traditional naming (for example, eth0, eth1) to fail on license checks, including MATE.

The workaround is to append biosdevname=0 to the kernel line of the grub configuration file and reboot. (Syntax varies among distributions.)

After reboot, you should be able to use ifconfig to verify that the NICs are named eth0 (or eth1, ...) instead of the biosdevname names (such as p34p1).

Java Memory

Certain tools (such as sam_getplan and parse_configs) might require more memory to start than what is available. The symptom is an error message similar to the following:

```
Error occurred during initialization of VM.
Could not reserve enough space for object heap.
Error: Could not create the Java Virtual Machine.
Error: A fatal exception has occurred. Program will exit.
```

The workaround is to set the maximum memory to a low enough value in the CARIDEN_JAVA_OPTIONS variable before calling the tool. An example setting is as follows:

```
set CARIDEN_JAVA_OPTIONS=-Xmx1000m
```

Accessibility Features

For a list of accessibility features in Cisco WAE, visit Cisco's Voluntary Product Accessibility Template (VPAT) website, or contact accessibility@cisco.com.

All product documents are accessible except for images, graphics and some charts. If you would like to receive the product documentation in audio format, braille, or large print, contact accessibility@cisco.com.

Related Documentation

For related documentation, see the *Cisco WAE 6.4 Documentation Roadmap*.