Release Notes for Cisco WAE 7.6.2

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Introduction

This document provides information regarding Cisco WAN Automation Engine (Cisco WAE) Release 7.6.2.

Cisco WAE provides the tools to create and maintain a model of the current network through the continual monitoring and analysis of the network and the traffic demands that are placed on it. This network model contains all relevant information about a network at a given time, including topology, configuration, and traffic information. You can use this information as a basis for analyzing the impact on the network due to changes in traffic demands, paths, node and link failures, network optimizations, or other changes.

The Cisco WAE platform is an open, programmable framework that interconnects software modules, communicates with the network, and provides APIs to interface with external applications.

What's New in Cisco WAE, Release 7.6.2

Cisco is continuously enhancing the product with every release and this section covers a brief description of a key feature added in Cisco WAE 7.6.2.

Feature	Description
Increased visibility into demand latency under failure conditions	The following options are added to the Simulation Analysis tool to capture the latencies of each demand for each failure case included in Simulation Analysis: • **Record failures causing demand latency within _ % of worst case**—Records failures causing demand latency within the specified percentage range of the worst-case latency. Default is 0. If you enter 0, only the worst case latency failures are recorded. • **Record up to _ failure scenarios on Demand Latency**—Maximum number of failure scenarios to record per demand. Default is 1. **Note:** Ensure that the **Calculate demand worst-case Latency check box** is checked. Otherwise, the demand worst case latency is not calculated, and the above options are automatically ignored. For example, if you record failures causing demand latency within 10% of the worst case, and if the worst-case latency for a demand is 100 ms, then Cisco WAE Design records failure scenarios which have the latency of 90 ms or higher (100-(100/10)) on this demand. In this same scenario, if you record 5 failure scenarios per demand latency, and if there are failures that could cause latency of 92 ms, 95 ms, 98 ms, and 80 ms for a demand, Cisco WAE Design does not record the failure causing 80 ms demand latency. The results are updated in the Demands table and you can selectively view each failure scenario that causes the worst-case latency for a demand. To do this, right click the desired demand, choose **Fail to WC Latency**, and then choose the failure scenario of interest. The network plot changes to show this particular failure scenario.

Cisco WAE Bugs

Resolved Bugs

The following table lists the bugs resolved in the Cisco WAE 7.6.2 release:

Table 1: Resolved Bugs

Bug ID	Description
CSCwd66171	NetFlow not working on RHEL 8.6 due to cap_net_bind_service check failure
CSCwe04837	sfn sfi tools throwing warning wrong SNMPV3 credential information. Msg OID: .1.3.6.1.6.3.15.1.1.2.0

Bug ID	Description
CSCwe08642	WAE assumes each OSPF router ID as separate node while running topo-igp NIMO For more information, see Prerequisites for Collection with Multiple OSPF Instances with Different Router IDs, on page 4.
CSCwe13671	TI-LFA to consider FlexAlgo nodes during Fast Reroute (FRR) convergence
CSCwe14543	wae_upgrade showing error after RHEL upgrade to 8.6
CSCwe31265	Set the association of Demands to LSPs via tags

Open Bug

The following table lists the open bug in Cisco WAE 7.6.2 release:

Table 2: Open Bug

Bug ID	Description
CSCwf10917	LSPPathRouteRecord varies with interchanged CircuitKey's interface key

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.

Procedure

Step 1 Go to the http://tools.cisco.com/bugsearch.

Step 2 Enter your registered Cisco.com username and password, and click **Log In**.

The Bug Search page opens.

Note If you do not have a Cisco.com username and password, you can http://tools.cisco.com/RPF/register/register.do.

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, such as a problem description, a feature, or a product name, in the Search For field.
- To search for bugs based on products, enter or select a product from the Product list. For example, if you enter “WAE”, you get 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 in the Releases field.

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

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

Other Important Information

Supported Devices and Software Versions

The following table lists the supported devices and software versions for Cisco WAE 7.6.2.

Table 3: Supported Devices and Software Versions

Feature	Product	Tested with version	Notes
SRTM	IOS-XR	7.7.2 7.9.1	
Netconf LSP	IOS-XR	7.7.2 7.9.1	NED Version: ncs-5.4.2-cisco-iosxr-7.30.1
	IOS	15.3	NED Version: ncs-5.4.2-cisco-ios-6.66.1
	Juniper Junos Mx960	18.1R1.9	NED Version: ncs-5.4.2-juniper-junos-4.6.17
RT Apps, Multi XTC, Reactive polling.	IOS-XR	7.7.2 7.9.1	
Multilayer	NCS2K	12.3, 12.2, 11.1.2	
	EPNM	7.0	

Windows and MacOS Support

Cisco WAE Design discontinued support for Windows and MacOS platforms. For more information, see End-of-Life and End-of-Support for the Cisco WAE Design Windows and MacOS Platforms.

Prerequisites for Collection with Multiple OSPF Instances with Different Router IDs

Make a note of the following points if your network has multiple OSPF instances configured with different OSPF router-ids for each instances:

- Network access should have an entry for all router-id IP addresses with management IP of that router.
- Under **waeinstall/etc/**, ensure that the **routerIdMapping.txt** file is present, with all OSPF router-ids in a router mapped to a single IP which will be shown in the Nodes table.

Example:

```
[wae-user@wae-xtc-rhel etc]$ more routerldMapping.txt
<OspfRouterldToManagement>
OSPFRouterld     IPAddress
1.1.105.1        1.1.5.1
1.1.115.1        1.1.5.1
1.1.106.1        1.1.6.1
1.1.116.1        1.1.6.1
1.1.107.1        1.1.7.1
1.1.117.1        1.1.7.1
1.1.108.1        1.1.8.1
1.1.118.1        1.1.8.1
```

Note IP addresses are Tab separated in the **routerldMapping.txt** file.

Known Limitations

This section describes known limitations and restrictions for Cisco WAE:

License Check Failures on Newer Linux Distributions

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

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).

NIMO Consolidation

The aggregator uses DARE to consolidate NIMOs into one network model. If you update the topo-igp-nimo node-filter configuration, or if a node goes down after running the initial DARE configuration, you must do the following:

1. Update the topo-igp-nimo exclusion or inclusion list.
2. Run collection on the topo-igp-nimo.
3. Run the WAE CLI tool to resync DARE with the updated NIMO node information:

```
wae@wae# wae components aggregators aggregator <aggregator_network_name> resync aggregator
 net
```

WAE Collection

- LDP data collection can only be performed by executing CLI tools using the external-executable-nimo.
- NetFlow collection is not supported on Alcatel-Lucent devices.
- Due to vendor MIB limitations, WAE 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, demands for every class

of service estimated through Demand Deduction are less accurate. Estimates of traffic totals over all classes of services, however, are not affected.

- Collection of interface egress shaping rate for Alcatel-Lucent devices does not support LAG interfaces.
- Juniper MIBs do not support P2MP LSPs.
- WAE cannot associate a GRE tunnel with the physical interface it uses to reach the tunnel destination because the IP-Tunnel MIB lacks this information.
- For Juniper routers, the signaled standby LSP option is not available from the standard MPLS-TE MIB. Only the active path option name is collected.
- For Cisco IOS XR routers:
  - IGP topology collected through topo-igp-nimo module:
    - 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.
  - MAC accounting is not supported (although you can collect MAC traffic through an external NIMO).
  - The lsp-snmp-nimo module does not set the Standby value in the <LSPPaths> table for signaled backup paths or collect named affinities configured with affinity-maps.
- BGP peers:
  - The topo-bgp-nimo module does not build BGP pseudo-nodes among internal ASNs.
  - The topo-bgp-nimo module does not collect BGP peers under PE-CE VRFs.
- 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.
- With segment routing, concurrent RSVP-TE and SR-TE paths are not supported on the same LSP.

High Availability

Cisco WAE does not support netflow workflow, layout-nimo, and RT apps under HA.

WAE Multilayer Collection

- Multilayer collection for Cisco devices is supported only on the following platforms:
  - Cisco Network Convergence System (NCS) 2000 platforms running versions 12.3, 12.2, and 11.1.2 are supported when using the Cisco Evolved Programmable Network Manager optical agent (EPNM optical agent).

    - Cisco Aggregation Services Routers (ASR) 9000, Cisco Carrier Routing System (CRS), and Cisco NCS 5500 platforms running IOS-XR for L3 devices.

- Multilayer collection is limited to the collection of unprotected circuits.
- Collection of WSON and SSON circuits are supported.
- Collection of non-WSON circuits is only supported when using the EPN-M optical agent.
- L3-L1 mapping by LMP is supported only if the controller interface name is the same as the actual L3 interface name or of the form "dwdmx/x/x/x" where the "x/x/x/x" subscript matches that of the corresponding L3 interface.
- Central Frequency ID mapping is currently supported only for circuit paths but not for path hops.

FlexLM License Server

You cannot run the floating license server on a setup (Linux VM or actual host) that uses bonded virtual interfaces (that is, a setup with multiple interfaces that have the same MAC address but different IP addresses within a VM). If the WAE Design client tries to check out a license from a setup that uses bonded virtual interfaces, the license checkout fails with the error "No license found."

As a workaround, run the floating license server in a standard Linux VM or host.

EPNM Notification

The configured constraints are not modelled during notification. Run collection must be used to collect/delete the configured constraints.

EPNM Multi Agent Notification

Cisco WAE does not support simultaneous notification events in case of dual agents. It is recommended to schedule full collection in case of dual agents.

Python API

When using WAE OPM python API and WAE Design API for python, the following warning might be seen:

```
warning: unknown property: `Ice.Default.Timeout'
```

This warning does not have any impact on the functionality and can be ignored.

Multiple OSPF and ISIS Instance Collection

The following collections have not been verified:

- Multiple OSPF instances collection from ALU routers
- Multiple ISIS instances collection from ALU routers
- ISIS process ID collection from ALU routers

WAE Live Network Creation

In WAE Live, when creating a new network (with a default network already present), the following error is displayed in the `catalina.out` log file:

```
[ERROR] com.cariden.nextmap.impl.MLMapSnapshotCache: encountered error while updating
snapshot cache
org.sqlite.SQLiteException: [SQLITE_BUSY]  The database file is locked (database is locked)
```

This is a known functionality of SQL and it does not affect the WAE Live functionality. The newly created network updates the database again after sometime with new network configuration.

Documentation

To find descriptions of all related Cisco WAE documentation, see Documentation Roadmap.

Note We sometimes update the documentation after original publication. Therefore, you should always review the documentation on Cisco.com for any updates.

Filing a Cisco WAE Bug

While filing CDETS for Cisco WAE, make sure the following information is captured:

- WAE configuration: supervisord configuration, aggregator configuration and the nimo configuration of concerned network and its source-network, if any.
- `<run-dir>/logs/ directory`
- Plan file(s) for the network(s) of concern
- `<run-dir>/data/stats/` for system stability and resource usage related issues
- `<run-dir>/work/dare/` for aggregation related issues.
- `<run-dir>/data/networks/*.db` for issues related to networks configured as ‘native’ and the corresponding aggregator (final-network).
- CDB dump of the networks of concern for networks of ‘yang’ format.
- Configuration corresponding to the component of concern. Eg: WMD, archive etc.
- For collection issues, record file(s) if the nimo supports record-playback.
- `~/.cariden/logs/` for designapid related issues.
- Log files from Cisco WAE Diagnotics Tool. For more information, see *Cisco WAE User Guide*.

Communications, Services, and Additional Information

- To receive timely, relevant information from Cisco, sign up at Cisco Profile Manager.
- To get the business impact you’re looking for with the technologies that matter, visit Cisco Services.
- To submit a service request, visit Cisco Support.
- To discover and browse secure, validated enterprise-class apps, products, solutions and services, visit Cisco Marketplace.
- To obtain general networking, training, and certification titles, visit Cisco Press.

- To find warranty information for a specific product or product family, access Cisco Warranty Finder.

Cisco Bug Search Tool

Cisco Bug Search Tool (BST) is a web-based tool that acts as a gateway to the Cisco bug tracking system that maintains a comprehensive list of defects and vulnerabilities in Cisco products and software. BST provides you with detailed defect information about your products and software.