Release Notes for Cisco WAE 7.4.0

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What's New in Cisco WAE, Release 7.4.0

Cisco is continuously enhancing the product with every release and this section covers a brief description of key features and enhancements. It also includes links to detailed documentation, where available.

Feature	Description
SR-TE Bandwidth Optimization Enhancements	• The SR-TE Bandwidth Optimization Tool can now be used to specify utilization threshold values for individual interfaces. A new field called **Utilization Threshold Tables file** allows you to upload a .txt file containing threshold values for specific interfaces in the form of a table. SR-TE Bandwidth Optimization Tool uses these details to reduce utilization on the link to the specified threshold value. • Users can now know if they have enough capacity in their network for congestion to be mitigated under different failure scenarios. The SR-TE Bandwidth Optimization Tool in WAE Design is enhanced to include **Congestion proximity** constraint. This constraint specifies that the new SR LSP source/destination nodes may differ from the demand source/destination nodes and the Source/Destination nodes closer to congestion points are selected. For more information, see "Segment Routing Optimization" chapter ("SR-TE Bandwidth Optimization" topic) in the Cisco WAE Design 7.4.0 User Guide.
Private Demand/LSP Enhancements	A new attribute called **Require LSP** is added to Demands properties table. When this attribute is set to True for a demand, the WAE Design simulation uses only LSPs to route this demand in both steady-state and under failures. If this is not possible, the demand is not routed. For more information, see "Traffic Demand Modeling" chapter ("Demands" topic) in the Cisco WAE Design 7.4.0 User Guide.
User specified online map support	WAE Design now allows you to connect to a map server using proxy. You can now connect to a map sever of your choice using the URL of the map server. For more information, see "User Interface" chapter ("Configuring Preferences" topic) in the Cisco WAE Design 7.4.0 User Guide.
Enhancements to SRLG collection via SR-PCE	SRLG related tables namely `SRLGs`, `SRLGCircuits` and `NodeConfiguredSRLGs` are now updated if SRLG value is defined in SR-PCE output.

Feature	Description
A separate node filter for QOS collection is added	You can now create a QOS node filter and set the topology NIMO to use this filter. When topology collection is run, the filter is then applied to determine the set of nodes for which QOS must be collected.
One-step upgrade from WAE 7.x to WAE 7.4.0 is introduced	An -upgrade option is introduced in the WAE script that reduces the multi-step WAE upgrades from WAE 7.x to WAE 7.4.0 to a simple one-step process. For more information, see Cisco WAE 7.4.0 Installation Guide.
RHEL 8.1 support	WAE 7.4.0 is now qualified on Red Hat Enterprise Linux 8.1. For more information, see Cisco WAE 7.4.0 Installation Guide.
IOS-XR 7.3.1 support	WAE 7.4.0 now supports IOS-XR 7.3.1 nodes. For more information, see Cisco WAE 7.4.0 Installation Guide.
REST API support deprecation	REST API support has been deprecated since WAE 7.2.2 release and is removed in WAE 7.4.0. Customers using REST API must migrate to RESTCONF/NETCONF instead.

Caveats

Resolved Caveats

The following are descriptions of the resolved caveats in Cisco WAE Release 7.4.0:

Table 1: Resolved Caveats

Bug ID	Description
CSCvx13886	During LSP Paths data collection for Juniper devices using cfg-parse-nimo, an error occurs while parsing p2mp data, and LSP data is dropped.
CSCvx56278	When parsing config files for Juniper devices, the pc_log shows parsing error for some of the config files.
CSCvx65157	NetFlow temporary directory hosts large number of files resulting in almost 350GB of storage usage.

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 Node Versions

The following table lists the supported node versions for Cisco WAE 7.4.0

Table 2: Supported Node Versions for Cisco WAE 7.4.0

Feature	Product	Tested with version	Notes
SRTM	IOS-XR	7.3.1	

Feature	Product	Tested with version	Notes
Netconf LSP	IOS-XR	7.3.1	NED Version: ncs-5.3.1-cisco-iosxr-7.23
	IOS	15.3	NED Version: ncs-5.3.1-cisco-ios-6.47
	Juniper Junos Mx960	18.1R1.9	NED Version: ncs-5.3.1-juniper-junos-4.5.23
RT Apps, Multi XTC, Reactive polling.	IOS-XR	7.3.1	
Multilayer	NCS2K	11.1, 12.0.1	
	EPNM	5.1.1	

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 11.0, and 11.1 are supported when using the Cisco Evolved Programmable Network Manager optical agent (EPN-M 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 beeen verified:

- Multiple OSPF instances collection from ALU router.

- Multiple ISIS instances collection from ALU router

- ISIS process ID collection from ALU router.

WAE Live Network Creation

In WAE Live, when creating a new network (with a default network already present), the following error is displayed in `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*.