



# Community Webcast: CA Spectrum 10.3

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September 2018

# Agenda

- 1 OVERVIEW
- 2 MARQUEE FEATURES AND VALUE PROPOSITION
- 3 Q&A

# CA Spectrum Release 10.3

- Integrations
- CSP Enhancements
- Container Support
- Reporting Enhancements
- Device Certifications
- Additional New Capabilities

# Integrations

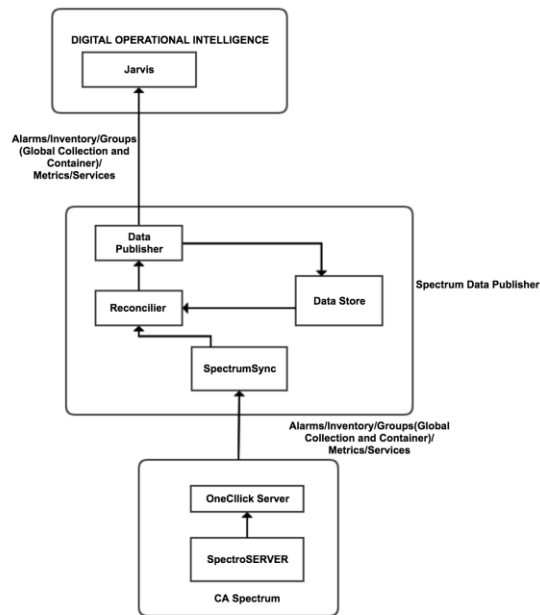


# CA Spectrum-CA DOI (Digital Operational Intelligence) Integration

## Spectrum Data Publisher Enhancements

Along with Inventory and Alarms, Spectrum is now sending the following data to Analytics Platform.

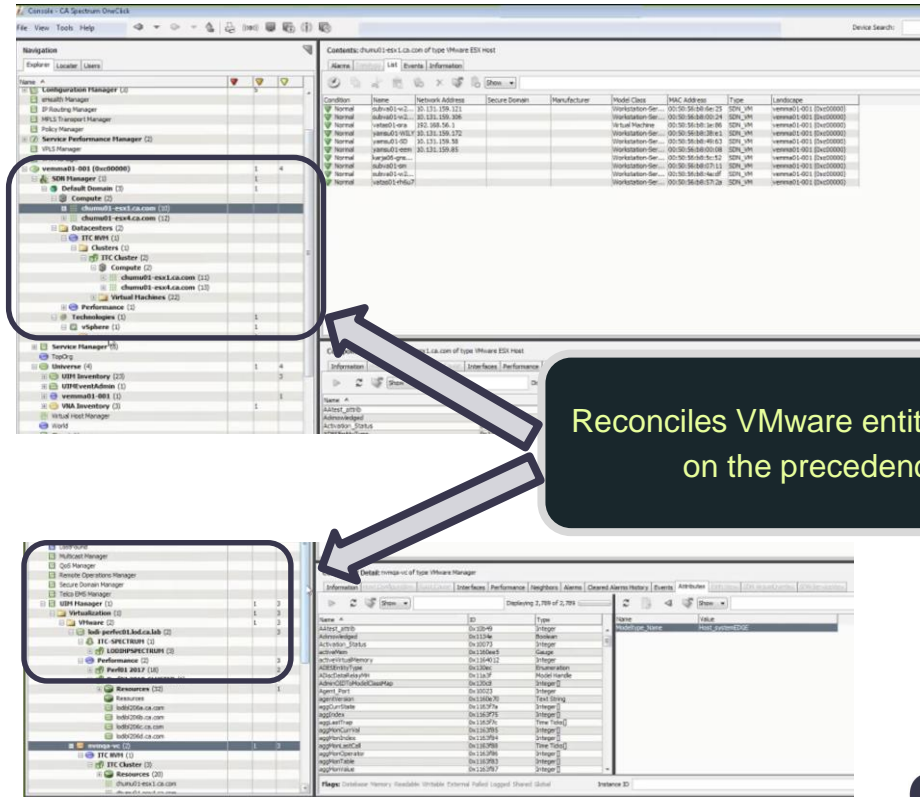
- Spectrum Groups [Global Collections, Containers]
  - Spectrum Metrics - Device count and Availability
  - Spectrum Services
- Alarms link for in-context launches from Digital OI
- Remove elastic search dependency for fetching existing data and reconciliation



# Co-existence of VNA and UIM Integration for VMWare Entities

**Problem Statement:** In cases where Customer has both Spectrum, UIM and VNA integration in-place, where both products models and monitors VMWare entities in their environment for getting different/common metrics. There are cases where duplicates entities are getting created into Spectrum for VMWare environment

- CA Spectrum reconciles VMWare entities coming from both UIM and VNA Host Servers
- Fault Correlation between UIM and VNA alarms
- OneClick Views for reconciled Events & Alarms
- VNA would be single source of truth as it has granular, consistent and robust data than UIM



# Spectrum-UIM Integration

- Synchronize OS details of UIM models [hosts and virtual machines] to Spectrum
- Webserver logs captures list of servers failed to synchronized from UIM to Spectrum

OS details of UIM models in Spectrum

Name	ID	Type
EntityOperatingSystem	0x1134e	Boolean
EntityOperatingSystemDesc	0x10073	Integer
EntityOperatingSystemType	0x130ec	Enumeration
EntityOperatingSystemVersion	0x130c8	Integer[]
EntityDisplayAlias	0x11ace	Boolean
EntityPrimaryRole	0x129ee	Boolean
EntityProcessorType	0x130bd	Boolean
	0x11979	Boolean
	0x12a19	Text String
	0x1111e	Integer

## Logs specifying list of servers failed to synchronized

```
Aug 02, 2018 11:07:07.084 (pool-44-thread-1) (NimsoftIntegrationServlet) - Nimsoft Virtualization manager, delete Spectrum relationships started 0
Aug 02, 2018 11:07:07.084 (pool-44-thread-1) (NimsoftIntegrationServlet) - Nimsoft Virtualization manager, delete Spectrum relationships end
Aug 02, 2018 11:07:07.084 (pool-44-thread-1) (NimsoftIntegrationServlet) - Nimsoft Virtualization manager, processing completed
Aug 02, 2018 11:07:07.084 (pool-44-thread-1) (NimsoftIntegrationServlet) - Virtualization Sync time 0 min, 0 sec
Aug 02, 2018 11:33:20.432 (pool-46-thread-1) (NimsoftIntegrationServlet) - Processing Host entities.
Aug 02, 2018 11:33:20.463 (pool-46-thread-1) (NimsoftIntegrationServlet) - ----Failed Server models list Start-----
Number of models failed : 1
CS ID : , CS NAME : ITCSIMREPO3, IP Address : 10.131.159.148 --> Reason : Model Creation failed
-----Failed Server models list End-----
```

# Modelling Gateway Enhancements

## ➤ Export and Import for World and Top Org Views

Export for World and Top Org Views

Import for World and Top Org Views

```

C:\win32app\Spectrum\SS
BADHA01-w16v02@spectrum@badha01-w16v02 /c:/win32app/Spectrum
$ cd SS
BADHA01-w16v02@spectrum@badha01-w16v02 /c:/win32app/Spectrum/SS
$ ../SS-Tools/modelinggateway.bat -nm badha01-w16v02 -e denoWorld
Modeling Gateway export started. Wed, Jul 25, 2018, at 06:25:15 AM PDT
Exporting 1 User models...
Exporting 4 User associations...
Exporting 7 Schedule models...
Modeling Gateway export finished successfully. Wed, Jul 25, 2018, at 06:25:16 AM PDT

BADHA01-w16v02@spectrum@badha01-w16v02 /c:/win32app/Spectrum/SS
$ ../SS-Tools/modelinggateway.bat -nm badha01-w16v02 -e denoTopOrg
Modeling Gateway export started. Wed, Jul 25, 2018, at 06:25:30 AM PDT
Exporting 1 User models...
Exporting 4 User associations...
Exporting 7 Schedule models...
Modeling Gateway export finished successfully. Wed, Jul 25, 2018, at 06:25:39 AM PDT

```

```

/c:/win32app/Spectrum/SS
BADHA01-w12v01@spectrum@badha01-w12v01 /c:/win32app/Spectrum/SS
$
BADHA01-w12v01@spectrum@badha01-w12v01 /c:/win32app/Spectrum/SS
$ ../SS-Tools/modelinggateway.bat -nm badha01-w12v01 -i denoTopOrg.xml
Modeling Gateway import started. Wed, Jul 25, 2018, at 06:27:11 AM PDT
Parsing import file denoTopOrg.xml
Start importing file denoTopOrg.xml
Importing GenericView section.
Creating 1 device models...
Model creation complete. waiting for activation...
Number of device models created: 1
Identifying device ports...
Importing Schedule section.
Updating 14 models...
Number of models created: 3
Modeling Gateway import finished successfully. Wed, Jul 25, 2018, at 06:27:21 AM PDT
BADHA01-w12v01@spectrum@badha01-w12v01 /c:/win32app/Spectrum/SS
$

```





# API Performance enhancement

Along with High performance API, Spectrum is enhanced to improve:

- Uptime
- Availability
- Reliability
- Functional correctness
- Responsiveness
- Reduce Cost

# SCOM 2016 Support

- Extracting alerts from System Center Operations Manager and creating alarms on the appropriate system models in CA Spectrum.
- Supporting drilldown from CA Spectrum alarms. You can configure CA Spectrum alarms to display a URL that calls up the appropriate alert in the SCOM web console.
- Bidirectional alert/alarm clearing.
- Bidirectional alert/alarm acknowledgment.

# CSP Enhancements



# Extreme High Port Count Support/Filtering Interfaces

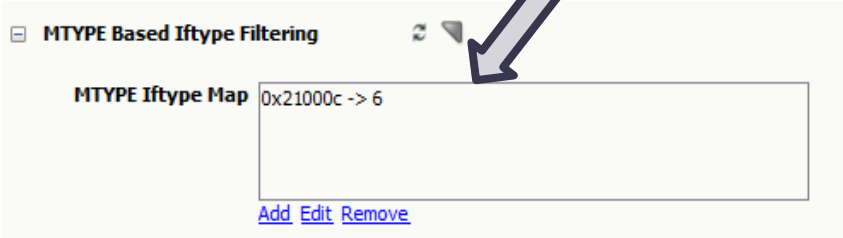
Filter interfaces of a device model which are not required to model and monitor in CA Spectrum by specifying the Mtype Value and IfType values

## Example:

Specify the model type (MType) of the device model.

For example: Rtr\_Cisco Mtype value is 0x21000c

Option to MType of the device model which you want to filter



MType Based Iftype Filtering

MType Iftype Map
0x21000c -> 6

[Add](#) [Edit](#) [Remove](#)

# DHCP Support in CA Spectrum

## Problem Statement:

Earlier If device was assigned with an Incorrect/Changed IP address due to DHCP lease.

Spectrum was not capable of detecting the changes and raise an alarm to inform the administrator for discrepancies

- CA Spectrum is now capable of monitoring devices when their IP address is getting changed dynamically (due to expiration of there DHCP lease)
- CA Spectrum runs DNS Lookup to resolve the original IP address of the devices in DHCP environment and helps in resolving IP address in the following three situations:
  - Device Contact Lost
  - Device IP swap (Schedule DNS Lookup)
  - Management Agent Lost

# Container Support

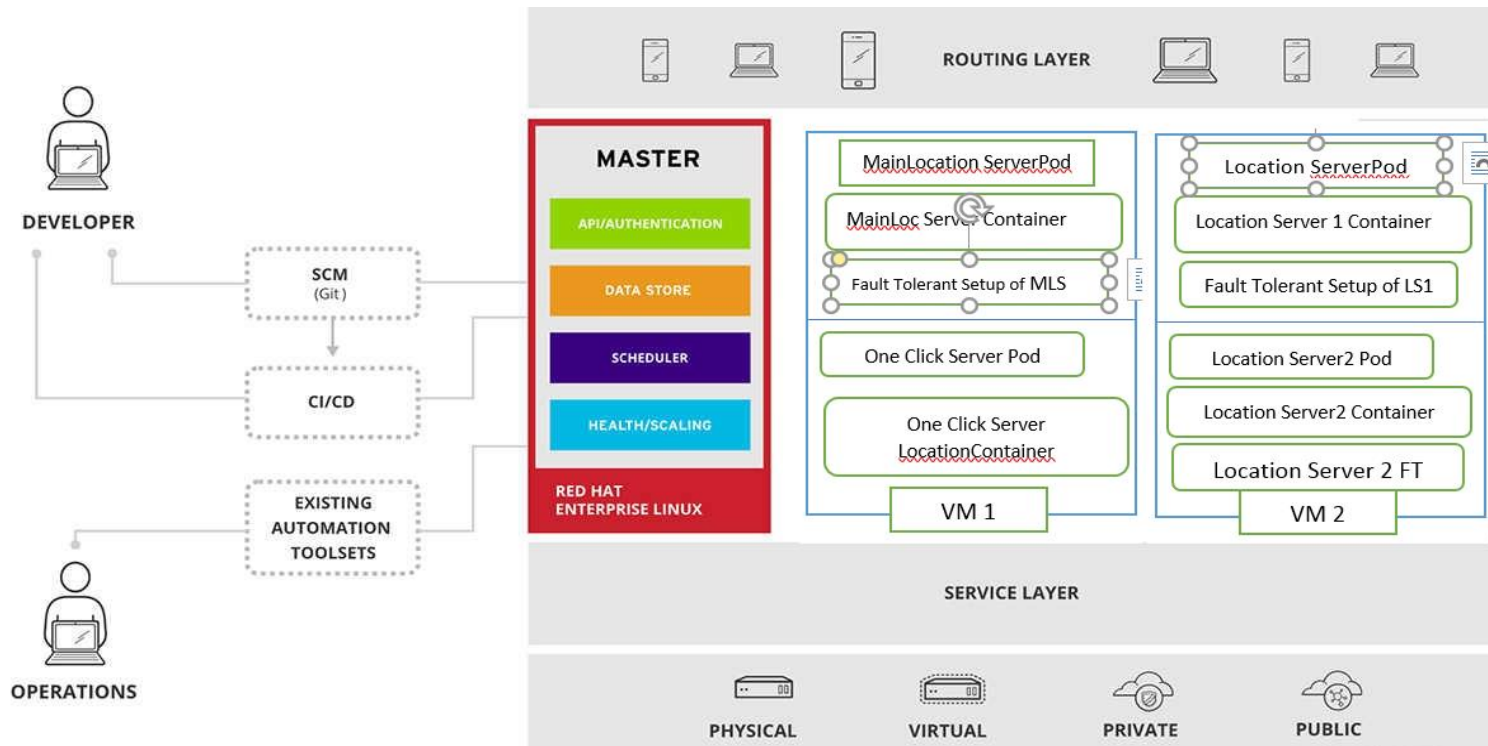


## Spectrum Dockerization & Orchestration using OpenShift: Value proposition

- ✓ Self Healing on failure.
- ✓ Auto scaling up/down of Spectrum Instances.
- ✓ Load balancing of OneClick Servers.
- ✓ Fault Tolerant Spectrum Setup.
- ✓ Version Controlling.
- ✓ Continuous Deployment.
- ✓ Easy to install takes 5-7 min per Image



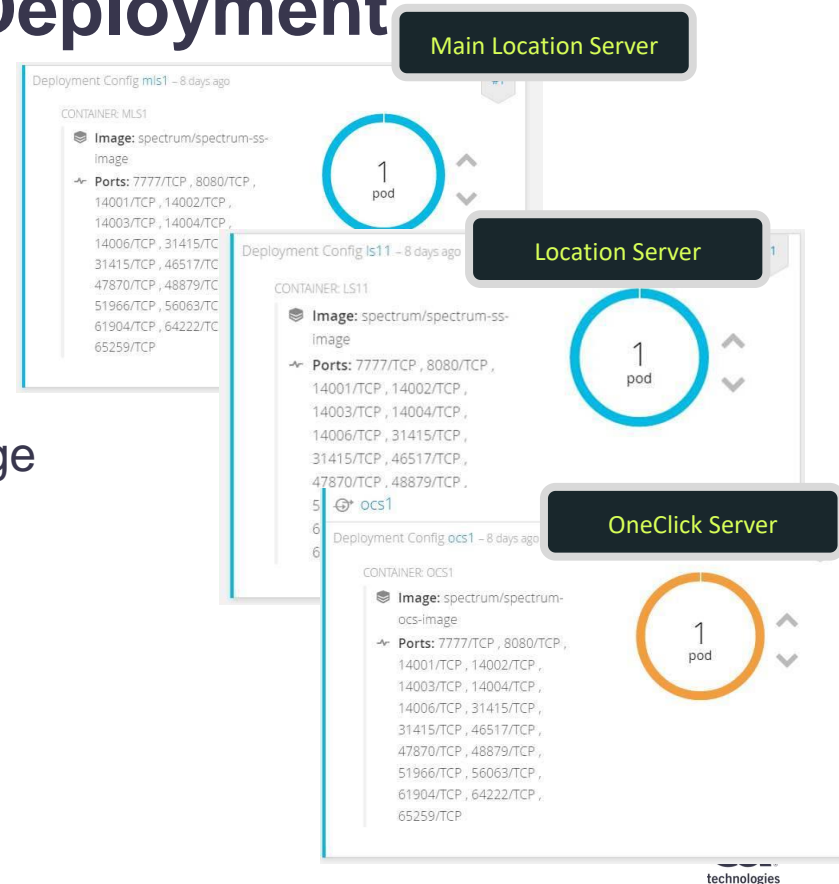
# Spectrum Dockerization Architecture Diagram





# Spectrum Dockerization Deployment

- Setup OpenShift Environment and Pull SS/OCS/SDC Images onto OpenShift Registry.
- Deploy new pods using deployment config by selecting the appropriate Image and environment variables.
- Once the MainLocationServer, Location Server and OneClickServer are up, access the Distributed Spectrum Environment, using OneClick Console.



# Reporting Enhancements

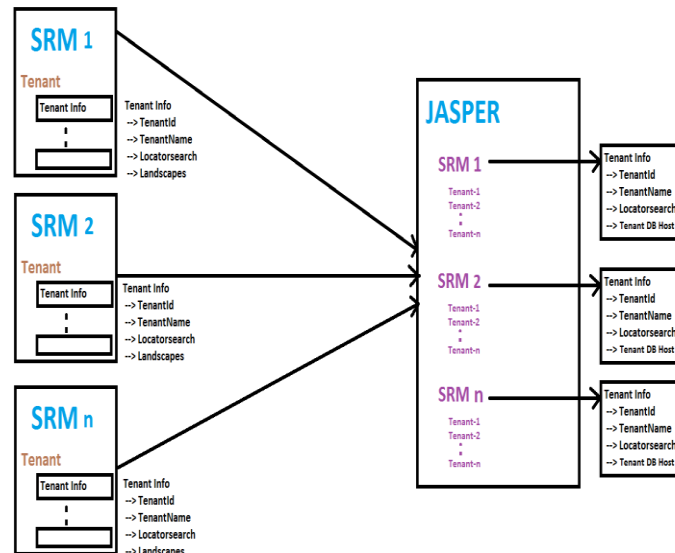


# Multi-Tenant/SRM with JasperSoft

**Problem Statement:** Steve is a network engineer with XYZ Corp, which is large MSP and been using Spectrum for monitoring and managing their huge network systems. They have multiple Spectro-Server to monitor different sites and have Multiple SRMs for reporting. One of the biggest challenge Steve facing is to create create Tenant specific reports and share it with all the user's from different Organizations.

## ❖ Spectrum 10.3 has been enhanced to provide the following capabilities:

- Multi-Tenant JasperSoft helps in reduces the number of CABI (JasperSoft) Servers to accommodate reporting needs of multiple OneClick Server. One CABI server can integrate with multiple OneClick server without impacting others.
- Reports/Content data is shared and available across all the Organization's users and placed at the common `/root/Public/ca/Spectrum/` folder.



# Syslog Monitoring

- **Problem Statement:** When hostname is received as part of syslog trap, CA Spectrum uses DNS look to resolve hostname to IP or uses /etc/host to get the IP address, functionality is not working when customer is NOT having DNSlookup or don't want to use DNS for resolution.
  - CA Spectrum uses DNSlookup to resolve hostname to an IP address
  - In situations where DNSlookup is not enabled, a new 'PreventDNSlookup' Boolean attribute (id 0x13396) is introduced to search directly from the database for model names that match with the host names of syslog trap.

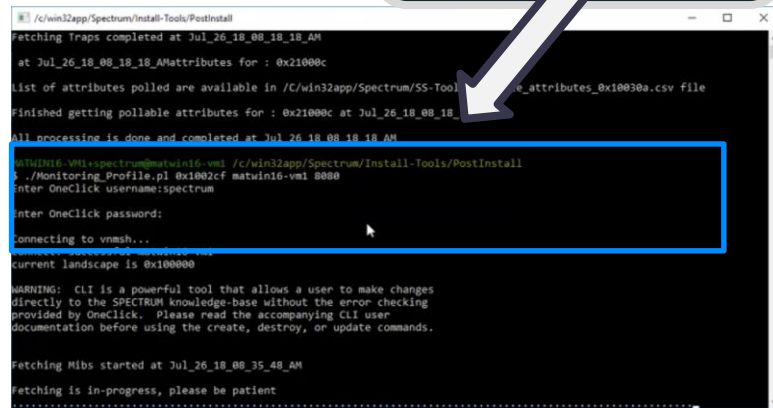
# Monitoring profile

**Problem Statement:** As new and new devices are coming into the market, it's a challenge for the customers to know what all MIBs are needed for a device to populate all the information in Spectrum.

CA Spectrum introduces a new “Monitoring\_Profile.pl” Script which will enables customer to fetch the following information of a selected device:

- List of MIBs
- Trap details
- Pollable Attributes

OOB script helps to fetch  
MIBs, Trap and Pollable  
attributes of a device



```
c:\win32app\Spectrum\Install-Tools\PostInstall
Fetching Traps completed at Jul_26_18_08_18_AM
at Jul_26_18_08_18_AM attributes for : 0x21000c
List of attributes polled are available in /C/win32app/Spectrum/SS-Tools/Attributes_0x10030a.csv file
Finished getting pollable attributes for : 0x21000c at Jul_26_18_08_18_AM
All processing is done and completed at Jul_26_18_08_18_AM

matwin16-vm1@spectrum:~$ /c/win32app/Spectrum/Install-Tools/PostInstall
> ./Monitoring_Profile.pl 0x1002cf matwin16-vm1 8080
Enter OneClick username:spectrum
Enter OneClick password:
Connecting to vmsh...
current landscape is 0x100000

WARNING: CLI is a powerful tool that allows a user to make changes
directly to the SPECTRUM knowledge-base without the error checking
provided by OneClick. Please read the accompanying CLI user
documentation before using the create, destroy, or update commands.

Fetching Mibs started at Jul_26_18_08_35_48_AM
Fetching is in-progress, please be patient
```

# DDMDB Performance Improvements

## Problem Statement:

In Spectrum, DDMDB database uses MyISAM engine for data storage and some cases due to landscape data consolidation with Spectrum 10.x, DDMDB database is getting HUGE resulting slow data retrieval in event tab and some time hangs OneClick console /Archive manager

- CA Spectrum added a new capability to convert all the DB tables from MyISAM to InnoDB Engine to improve the performance
- CA Spectrum supports partitioning the events table to improve the performance for event retrieval.



# Device Certifications



# Support for Cisco IOS v15.X

## Problem Statement:

Earlier Spectrum was not able to discover 'Cisco IP Routing Table's information if devices are running on version IOS 15.X.

- Certified Cisco IOS v15.X and their related MIBs
- Populate 'Cisco IP Routing Table's information using ipRouteTable or ipCidrRouteTable.

Populating 'Cisco IP Routing Table's information

The screenshot displays the Cisco Spectrum GUI for a component named 'Sim31627:3850-E6.8-CENTRAL-AEAT of type Cat3800Stack'. The 'IP Routing Table CDR' view is active, showing a table with columns: Destination Address, Route Mask, Service, Next Hop Address, Interface, Type, Protocol, Route Age, Info, Next Hop AS, Metric 1, Metric 2, Metric 3, Metric 4, and Metric 5. Below this, the 'Cisco IP Routing Table' view is also shown, with columns: Destination Address, Next Hop Address, VRF Name, Interface, IP Description, Route Age, Primary Metric, Route Metric 2, Network Mask, Route Use, Parallel Routes, and Routing Type.

Destination Address	Route Mask	Service	Next Hop Address	Interface	Type	Protocol	Route Age	Info	Next Hop AS	Metric 1	Metric 2	Metric 3	Metric 4	Metric 5
0.0.0.0	0.0.0.0	0	10.30.192.1	0	4	3	285269	0.0	0	0	-1	-1	-1	-1
10.1.32.0	255.255.255.128	0	0.0.0.0	45	3	2	285269	0.0	0	0	-1	-1	-1	-1
10.1.32.125	255.255.255.255	0	0.0.0.0	45	3	2	285269	0.0	0	0	-1	-1	-1	-1
10.1.32.128	255.255.255.128	0	0.0.0.0	43	3	2	285269	0.0	0	0	-1	-1	-1	-1
10.1.32.130	255.255.255.255	0	0.0.0.0	43	3	2	285269	0.0	0	0	-1	-1	-1	-1

Destination Address	Next Hop Address	VRF Name	Interface	IP Description	Route Age	Primary Metric	Route Metric 2	Network Mask	Route Use	Parallel Routes	Routing Type
0.0.0.0	10.30.192.1		0	285269	0	-1	255.255.255.128	0	1		local
10.1.32.0	0.0.0.0		45	Vlan15	285269	0	255.255.255.255	0	1		local
10.1.32.125	0.0.0.0		45	Vlan15	285269	0	255.255.255.255	0	1		local
10.1.32.128	0.0.0.0		43	Vlan3	285269	0	255.255.255.128	0	1		local
10.1.32.130	0.0.0.0		43	Vlan3	285269	0	255.255.255.255	0	1		local
10.1.32.0	0.0.0.0		44	Vlan7	285269	0	255.255.255.192	0	1		local

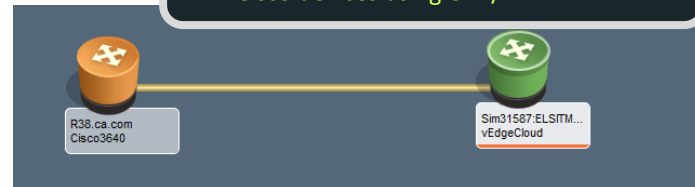


## Enhanced CDP & LLDPv2 Discoveries

Ability to discover connection between Cisco and Non-Cisco devices using

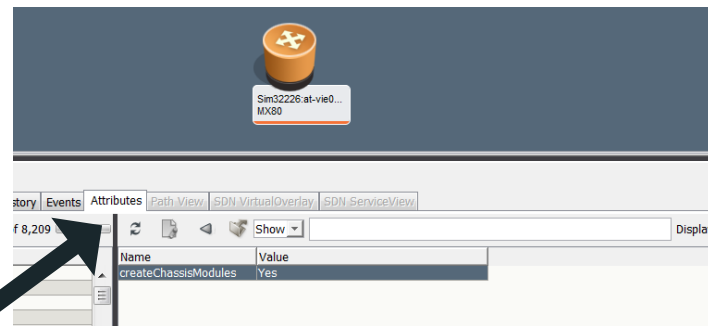
- CDP (Cisco Discovery Protocol) & LLDPv2 MIB Information

Connectivity formed between Cisco and Non-Cisco devices using CDP/LLDPv2 MIB



## Configuration Option to Delete Juniper Chassis Modules

- Option to not model chassis modules in juniper devices

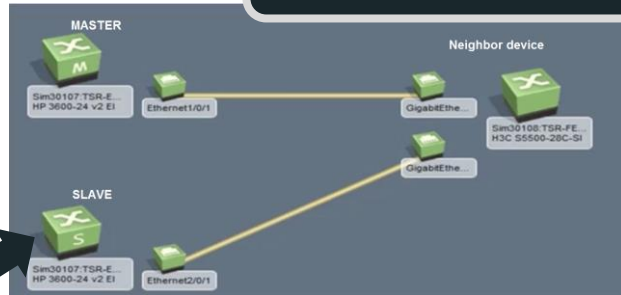


'createChassisModule' attribute to model chassis modules (By default: Yes)

# HP-IRF Support

HP-Intelligent Resilient Framework (IRF) is a proprietary software virtualization technology which helps to connect multiple network devices through physical IRF ports and perform necessary configurations, and then these devices are virtualized into a distributed device.

- ✓ Spectrum Identifies IRF stack and its neighbor device
- ✓ Discovers Master and Slave IRF devices within the IRF Stack
- ✓ Interfaces Naming Convention to identify Master and Slave




Connectivity between Master and neighbor devices

Easy identification of Master and Slave (via Serial number)

Component Detail: Sim30107:TSR-EXT5 of type HP 3600-24 v2 EI

Information	Host Configuration	Root Cause	Interfaces	Performance	Neighbors	Alarms	Cleared Alarms History	Events	Attri
Search By Name:									
Nodes: 4									
Sim30107:TSR-EXT5									
Sim30107:TSR-EXT5_3600V2-EL_C125F620K1	Normal								Slave
Sim30107:TSR-EXT5_3600V2-EL_C145F62052	Normal								Master
Sim30107:TSR-EXT5_bridge-Aggregation1	Normal								
Sim30107:TSR-EXT5_NULL0	Normal								
Sim30107:TSR-EXT5_Vlan-interface350	Normal								
Sim30107:TSR-EXT5_Vlan-interface503	Normal								

A man with a beard and a black cap is wearing large headphones and working at a desk. He is wearing a colorful, multi-colored striped sweater. His hands are on a keyboard, and he is looking at a computer monitor. A glass of beer is on the desk in front of him. The background is a bright, out-of-focus window. A dark blue rectangular overlay is on the right side of the image, containing white text.

Additional New  
Capabilities

# "Communication Link Down" Alarm View Enhancements

- New OC view for Communication Link Down Alarms, showing all the interfaces that are affected due to the alarm.
- Capability to add or remove unwanted interfaces from the discovered devices.

Console - CA Spectrum OneClick

Navigation: Explorer, Locator, Users

Contents: My Spectrum

Alarms: Location, List, Events, Information

Filtered By: Severity

Severity	Date/Time	Name	Network Address	Secure Domain	Type	Alarm Title	Location
Major	Aug 31, 2018 9:38:59 PM	badh01-rh74vm1	10.241.1.207		VMM	CONTACT LOST TO NEIGH...	badh01-rh74vm1 (bdc000000)
Major	Aug 1, 2018 4:38:42 PM	badh01-rh74vm1	10.241.249.173	Directly Mana...	CPD10726	HIGH AGGREGATE CPU U...	badh01-rh74vm1 (bdc000000)
Major	Aug 1, 2018 4:47:30 PM	badh01-rh74vm1	10.241.249.130	Directly Mana...	CPD10726	HIGH AGGREGATE CPU U...	badh01-rh74vm1 (bdc000000)
Minor	Aug 1, 2018 2:53:52 PM	badh01-rh74vm1	10.241.1.207		VMM	THRESHOLD EXCEEDED	badh01-rh74vm1 (bdc000000)
Minor	Aug 1, 2018 4:48:10 PM	Fasttron_10.241.205.7	10.241.205.7	Directly Mana...	FE324025w	THE COMMUNICATION LINK IS DOWN	badh01-rh74vm1 (bdc000000)

Component Detail: Fasttron\_10.241.205.7 of type FE324025w

Alarm Details: Information, Host Configuration, Impact, Test Cause, Interfaces, Performance, Alarm History, Neighbors, Events, Troubleshooting, Troubleshooting

Trouble Ticket ID: [Link]

Assignment: Landscape: badh01-rh74vm1 (bdc000000)

Status: [Link]

Web Context URL: Source: SPECTRUM

Change Owner: SPECTRUM

Alarm Modified Time

UM Alarm Id

UM User Tag 1

UM User Tag 2

UM Custom 1

UM Custom 2

UM Custom 3

UM Custom 4

UM Custom 5

ACT NEMID

LAST UPDATE TIME

Link Down Interfaces: Fasttron\_10.241.205.2\_ethernet10, Fasttron\_10.241.205.7\_ethernet10, Fasttron\_10.241.205.7\_ethernet12

Refresh, Remove

Communication link down alarms

List down all the link down interfaces

# Platform/Third Party Software/Localization Updates

## Third Party Software

- MySQL - 5.7.22
- Tomcat - 9.0.8
- JDK\JRE – 1.8.0\_172
- CXF - 3.2.4
- Cygwin - 2.10
- Support for CABI Jaspersoft 6.4.2 and 6.4.3
- Stopped shipping SNMP plugin, use the native APM SNMP action.

## Localization

- All the EventFormat, Pcause and properties have been localized for supported version of CA Spectrum 10.3

## Platforms

- Added Windows 2016 Support
- Added SCOM 2016 Support
- Dropped Windows 2008 and Solaris Support



# Thank You.