Cisco UCS Manager Plug-In

For Oracle Enterprise Manager 12c Release 3 and 12c Release 4

User Guide

Jan 21, 2016

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1 Overview

1.1 Unified Computing System (UCS)

UCS is a data center server that unifies network virtualization, storage virtualization and server virtualization, within open industry standard technologies and with the network as the platform.

UCS Manager (Unified Computing System Manager) provides a single point of management for all of the elements of a UCS system.

1.2 Oracle Enterprise Manager (OEM)

Oracle Enterprise Manager provides the most comprehensive management solution for Oracle products. The Oracle Enterprise Manager provides a single tool for monitoring and managing the environment. Apart from providing native support for a wide array of products, it also provides a framework for enabling partners and customers to easily build plug-ins for their components and applications.

1.3 Cisco UCS Manager Plug-In for Oracle Enterprise Manager

Cisco's UCS Manager Plug-In leverages the Enterprise Manager SDK (EMSDK) of the Oracle Enterprise Manager and XML API exposed by Cisco UCS Manager in order to integrate Enterprise Manager with the UCS domains. Users of Oracle Enterprise Manager on UCS servers will be able to make use of the UCS Manager Plug-In for Enterprise Manager to monitor the health, faults and summary information of physical and logical components on the UCS Domains

2 System Requirements

- **Oracle Enterprise Manager**

  This plug-in is supported on Oracle Enterprise Manager 12c R3 and Oracle Enterprise Manager 12c R4.

  For more information, see the following in the Enterprise Manager Cloud Control documentation library:

  - Oracle Enterprise Manager Cloud Control Advanced Installation and Configuration Guide
  - Oracle Enterprise Manager Cloud Control Upgrade Guide
  - Oracle Enterprise Manager Cloud Control Administrator's Guide

  For the latest releases of these and other Oracle documentation, check the Oracle Technology Network at the following URL:

  OEM Resources

  Note: It is important to have ORACLE_OMS variable added to oracle user. The value for this variable has to be "home/oracle/app/oracle/em"

If you do not see value for this variable on linux box on issuing **env** command, you may edit file /home/oracle/.bash_profile and add below entry:

export ORACLE_OMS=/home/oracle/app/oracle/em

After the file .bash_profile has been edited, do **source .bash_profile**

You need to also do agent restart after this.

1) agent_home/bin>./emctl stop agent
   The agent_home is '/home/oracle/app/oracle/em_agent/agent_inst/bin'
2) agent_home/bin>./emctl start agent

- **Cisco UCS Manager**
  This plug-in is compatible with UCS Manager Release 2.1, 2.2 and 3.0. Refer "UCS Manager" for more details.

Note: As of this release, the Cisco UCS Manager Plug-in is tested on Linux x86-64 platform.

3 Install UCS Manager Plug-In

3.1 Importing the OPAR File

1. The Oracle Plug-in Archive (OPAR) file is packaged in a zip file. Extract the contents of the zip file and make the OPAR available to the OMS.
2. At this point it is assumed that the Oracle emcli utility has been properly configured prior to installation.
3. Import the Cisco UCS Manager OPAR file into the Software Library of your OMS. The following is an example of an emcli command (in this example the contents of the downloaded file has been put into /home/oracle_

   ```
   emcli import_update –
   file="/home/oracle/12.1.0.17.0_cisco.ucsm.oem_2000_0.o
   par" -omslocal
   ```

   After a successful import, you will see the following output:

   ```
   Processing update: Plug-in – Cisco UCS Manager.
   Operation completed successfully. Update has been
   uploaded to Enterprise Manager. Please use the Self
   Update Home to manage this update.
   ```

4. Log into EM12c Web UI and navigate to *Setup -> Extensibility -> Self Update.*
   Click the Plug-in folder, enter 'cisco' in the search box provided and hit button.
   Confirm that the Cisco UCS Manager Plug-In has been successfully downloaded to the software repository.

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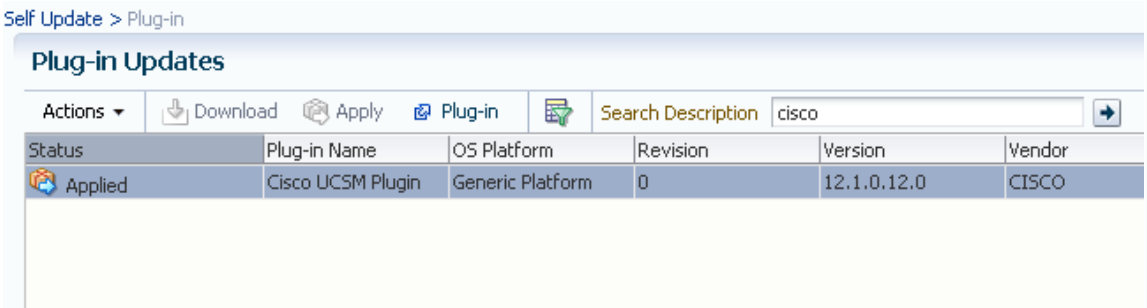

Figure 1: Self-update view after plug-in is imported.

3.2 Deploying the Plug-in:

3.2.1 Deploying the Cisco UCS Manager Plug-In onto an EM12c Management Server (OMS)

1. From the EM12c Web UI, navigate to *Setup -> Extensibility -> Plug-Ins*
2. Highlight the Cisco UCS Manager Plug-In (found in the Servers, Storage, and Network folder), Right-Click and Select **Deploy on Management Server.**

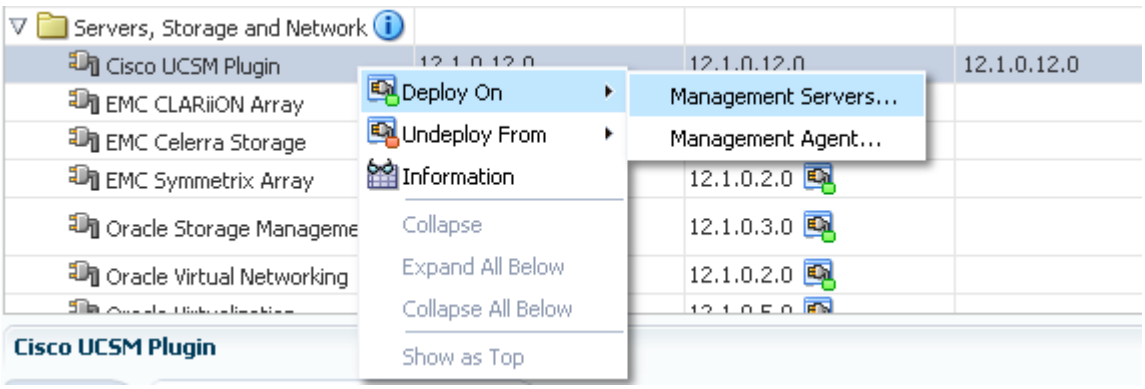

Figure 2: Deploying plugin on management server.

3. The 'Deploy Plug-in on Management Servers Dialog – General' dialog box will appear. Enter the 'Repository SYS Password' and click **Continue.**
4. The 'Deploy Plug-in on Management Servers – Pre-requisite Checks' dialog box will appear. Assuming all the Pre-requisites have been verified, click **Next.**

5. Next the 'Deploy Plug-in on Management Servers – Review' dialog box will appear. Highlight the Management Service on which you want to deploy the plug-in and click **Deploy.**
6. Next the 'Deploy Plug-in on Management Servers –Confirmation dialog box will appear. Note the information on the screen and click **Show Status** to monitor the deployment status or click Close to complete the deployment of the Cisco UCS Manager Plug-In onto an EM12c OMS.
7. In the case where 'Show status' is selected, the Deployment Activities screen will appear and will allow you to monitor the development status of the plug-in to the OMS. It can take a few minutes – – you can refresh this panel using button in top right of screen to see the deployment progress.

3.2.2 Deploying the Cisco UCS Manager Plug-In onto an EM12c Management Server (OMS) - Release 12c R4

8. From the EM12c Web UI, navigate to *Setup -> Extensibility -> Plug-Ins*
9. Highlight the Cisco UCS Manager Plug-In (found in the Servers, Storage, and Network folder), Right-Click and Select **Deploy on Management Server.**

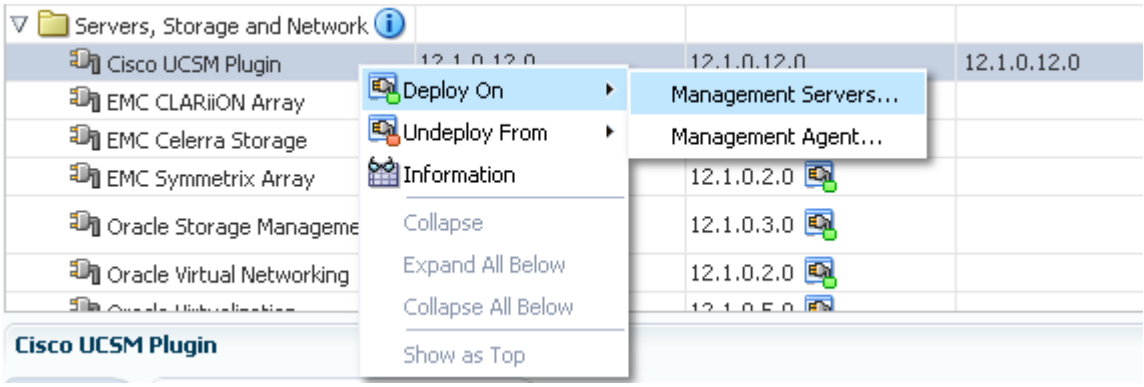

Figure 3: Deploying plugin on management server.

10. The 'Deploy Plug-in on Management Servers Dialog – Plug-ins' dialog box will appear. Do not check the option 'Use Last Successful Prerequisite' if the plugin is being deployed for the first time else we can check the option.

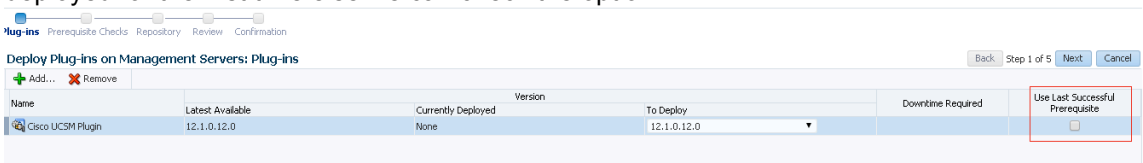

Figure 4: Deploying plugin on management server. Use Last Successful Prerequisite check box.

11. The 'Deploy Plug-in on Management Servers – Pre-requisite Checks' dialog box will appear. Assuming all the Pre-requisites have been verified, click **Next.**
12. Next the 'Deploy Plug-in on Management Servers – Repository' dialog box will appear. Click the New radio button. Enter 'sys' as username and give the password. Click **Next** button.

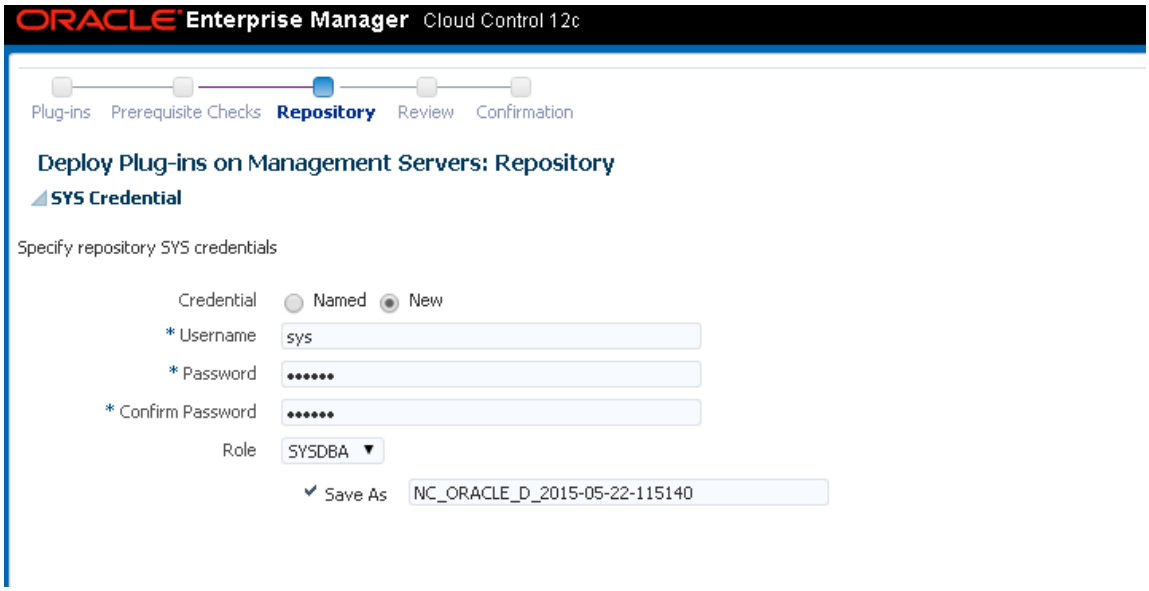

Figure 5: Deploying plugin on management server. Use of New button.

13. Next the 'Deploy Plug-in on Management Servers – Review' dialog box will appear. Highlight the Management Service on which you want to deploy the plug-in and click **Deploy.**
14. Next the 'Deploy Plug-in on Management Servers –Confirmation dialog box will appear. Note the information on the screen and click **Show Status** to monitor the deployment status or click Close to complete the deployment of the Cisco UCS Manager Plug-In onto an EM12c OMS.
15. In the case where 'Show status' is selected, the Deployment Activities screen will appear and will allow you to monitor the development status of the plug-in to the OMS. It can take a few minutes – you can refresh this panel using button in top right of screen to see the deployment progress.

3.2.3 Deploying the Cisco UCS Manager Plug-In onto an EM12c Management Agent (OMA)

1. From the EM12c Web UI, navigate to *Setup -> Extensibility -> Plug-Ins*
2. Highlight the Cisco UCS Manager Plug-In (found in the Servers, Storage, and Network folder), Right-Click and Select **Deploy On Management Agent.**

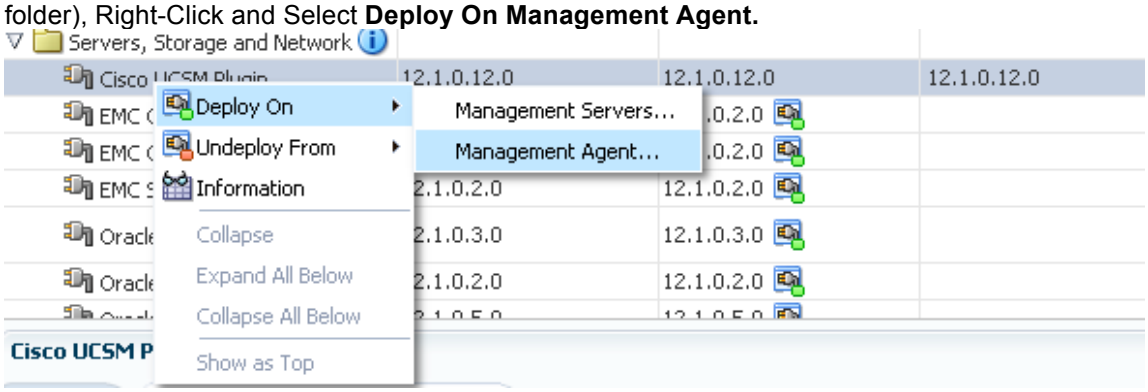

Figure 6: Deploying plugin on management agent.

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3. The ‘Deploy Plug-in on Management Agent dialog box will appear. Click **Continue.**
4. The ‘Deploy Plug-in on Management Agent – Select Management Agents’ dialog appears. Select the Management Agent you wish to un-deploy the Cisco UCSM Plug-In from. Click **Continue**.
5. The ‘Deploy Plug-in on Management Agent – Pre-requisite checks’ dialog box will appear. Assuming all the Pre-requisites have been verified, click **Next.**
6. Next the ‘Deploy Plug-in on Management Agent – Review’ dialog box will appear. Assuming the pre-requisite checks have passed, Click **Deploy.**
7. Next the ‘Deploy Plug-in on Management Agent - Confirmation’ dialog will appear. Note the information on the screen and click either **Show Status** to monitor the deployment status or click **Close** to complete the deployment of Cisco UCS Manager Plug-In onto an EM12c OMA.
8. In the case where ‘Show status’ is selected, the Deployment Activities screen will appear and will allow you to monitor the development status of the plug-in to the OMA. It can take a few minutes – – you can refresh this panel using button in top right of screen to see the deployment progress.

Reference: Importing and deploying the Plug-in Archive into Enterprise Manager

3.3 Stop the OEMService upon upgrade:

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You will need to kill the OEM Service if it is running. You can check that as:

- Login to the agent machine
- Open the terminal and lookup for the OEMService process using
  ps –ef | grep OEMService
- Note the process id of the OEMService and kill the process

4 Configuration of UCS Domain

After successful deployment of the UCS Manager plug-in, user will be required to add/ manage the UCS domains from the Oracle Enterprise Manager. The steps involve the following:

Step 1. Login to the Oracle Enterprise Manager Console
Step 2. Browse to ‘Setup’ -> ‘Add Target’ -> ‘Add Targets Manually’

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Figure 7: Add Targets Manually

Step 3. Choose 'Add Targets Using Guided Process (Also Adds Related Targets)' and select the Target Types as 'Cisco UCSM Target' and click 'Add Using Guided Process…".

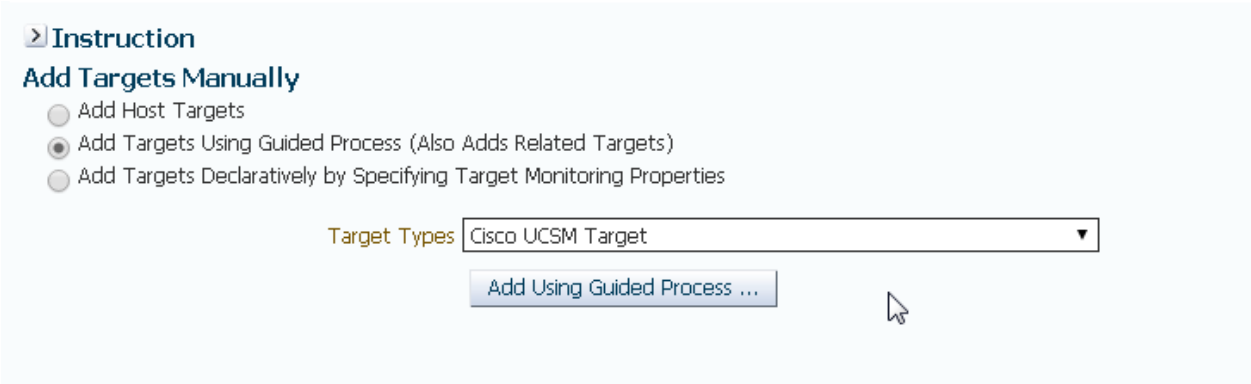

Figure 8: Select 'Cisco UCSM Target' Target Type

Step 4. This will bring up the guided discovery dialog. Select the 'Agent' on which you want to run the guided discovery and click 'Next'

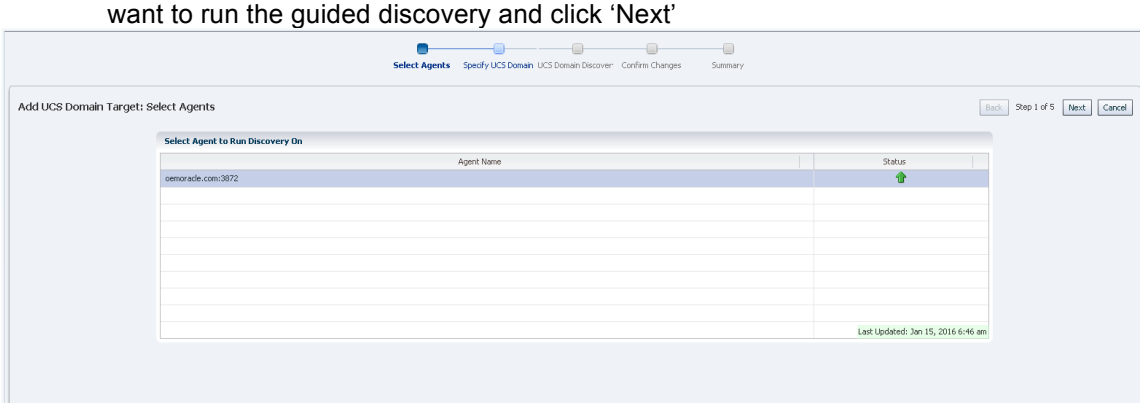

Figure 9: UCSM Dashboard

Step 5. Enter the details of the UCS domain you want to add. No special characters can be entered in "Target Name". Only alphanumeric characters are allowed.

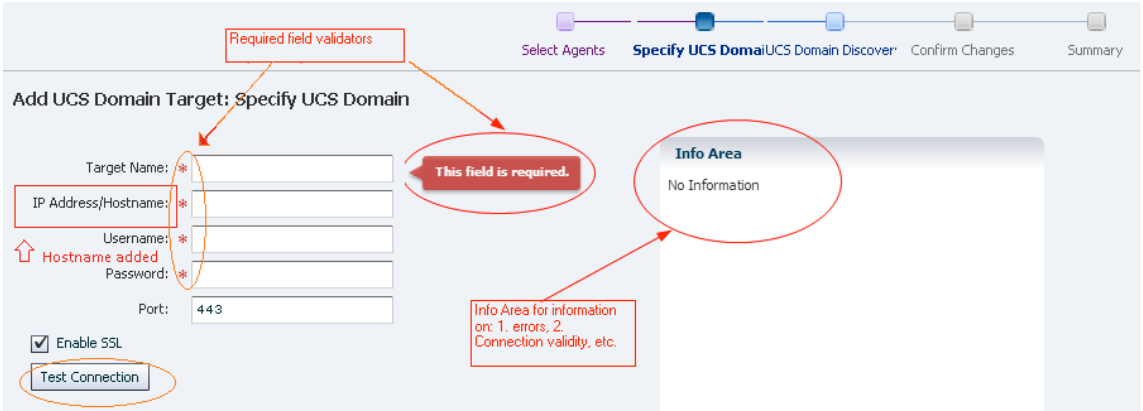

Figure 10: Provide UCS Domain Information

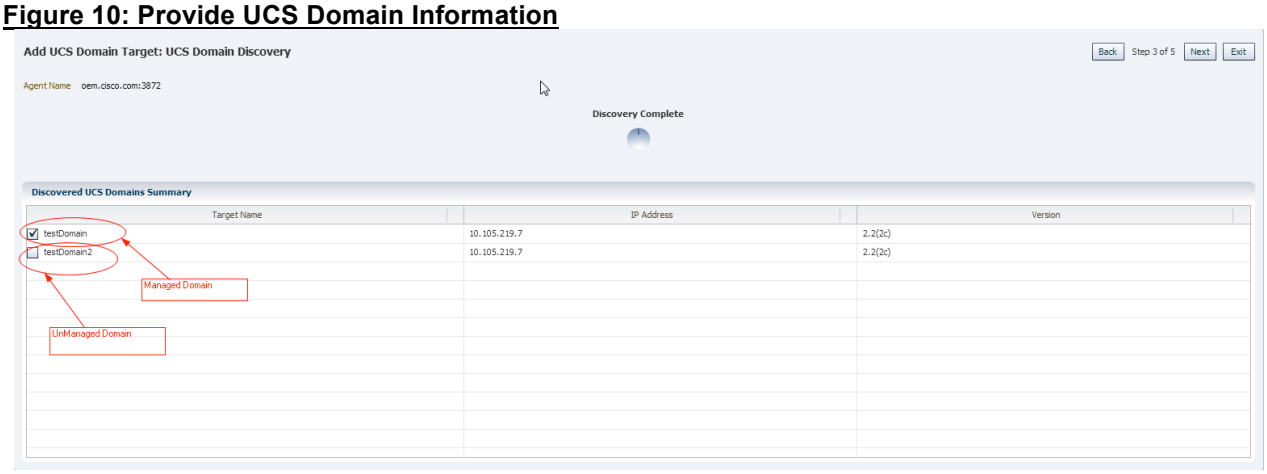

Figure 11: Choose the UCS domain to be managed by Enterprise Manager

Step 6. Click 'Next' and the summary screen is shown. Click 'Next' to update the changes and add the 'domain' and their targets into the OEM.

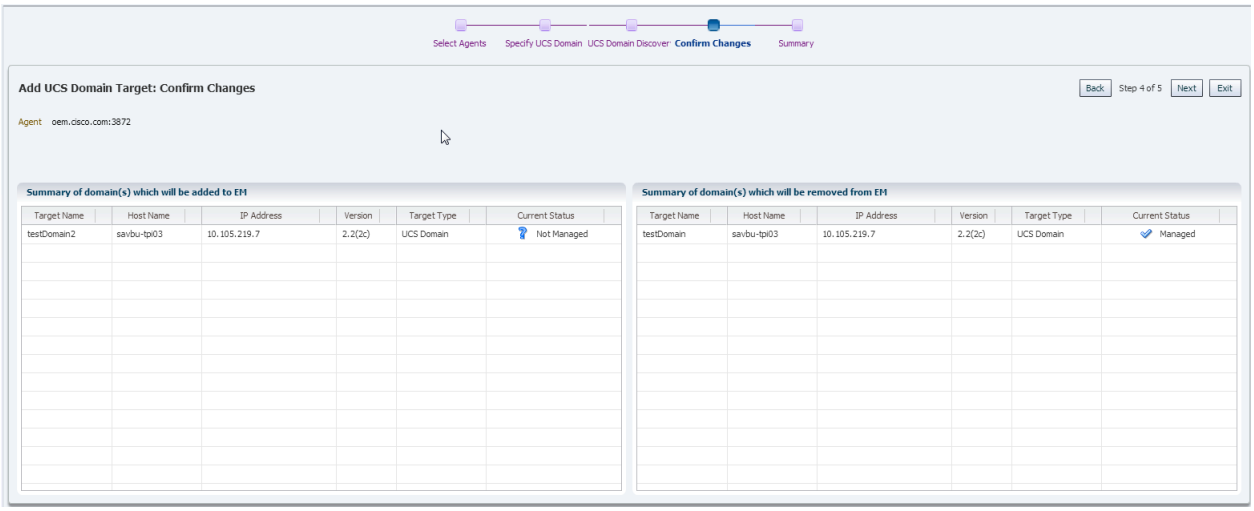

Figure 12: Confirmation Screen

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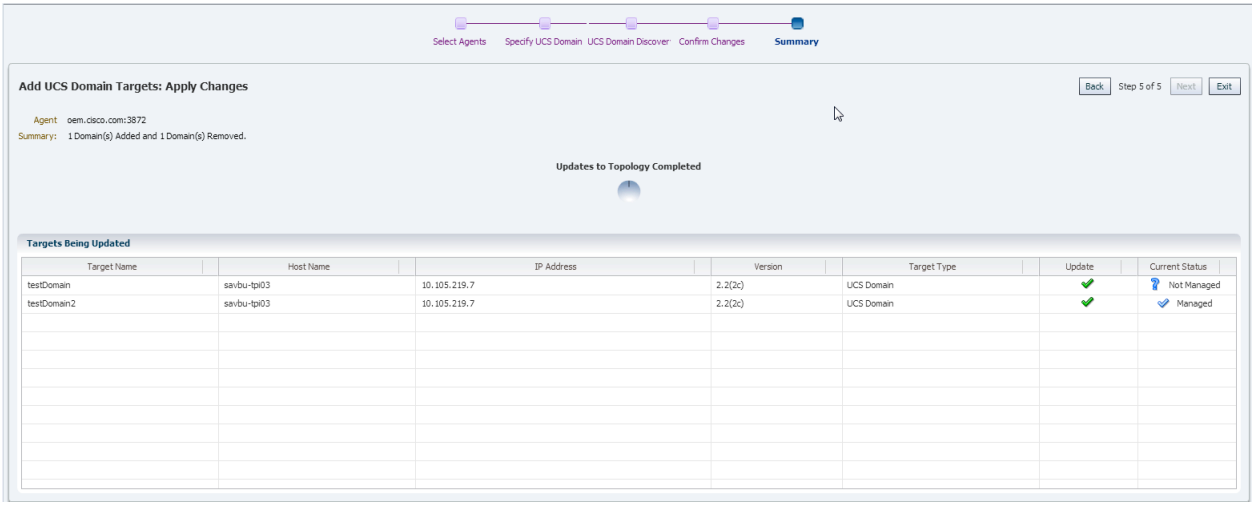

Figure 13: Updates Complete Screen

5 Using UCS Manager Plug-In

After the UCS Manager plug-in is deployed and UCS Domain has been added, the added target shows up under the systems view:

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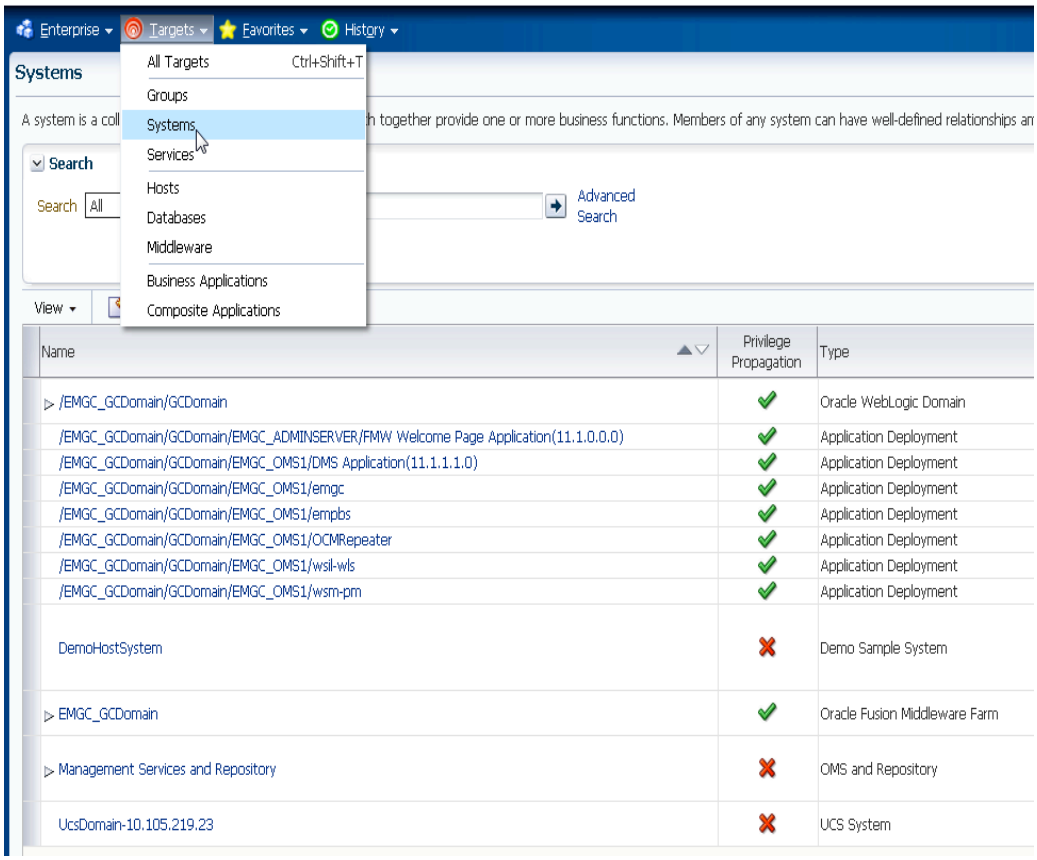

Figure 14:Systems View

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5.1 System Target Home Page

The System target home page shows the Topology View, Summary of Fault events in the UCS Domain and also the cumulative status* of the subcomponents within the system.

Only the faults for a particular target component and its sub-components are shown i.e. for a UCS System, we only show the faults of its sub-components namely, chassis, blades, racks, fab interconnects, FI-IO Modules, IO Module, Service Profile, PSU, Fans and FEX. Also, the FSM faults are not being supported. The faults with severities as Cleared and Info have been filtered out.

*Refer to Appendix A for details

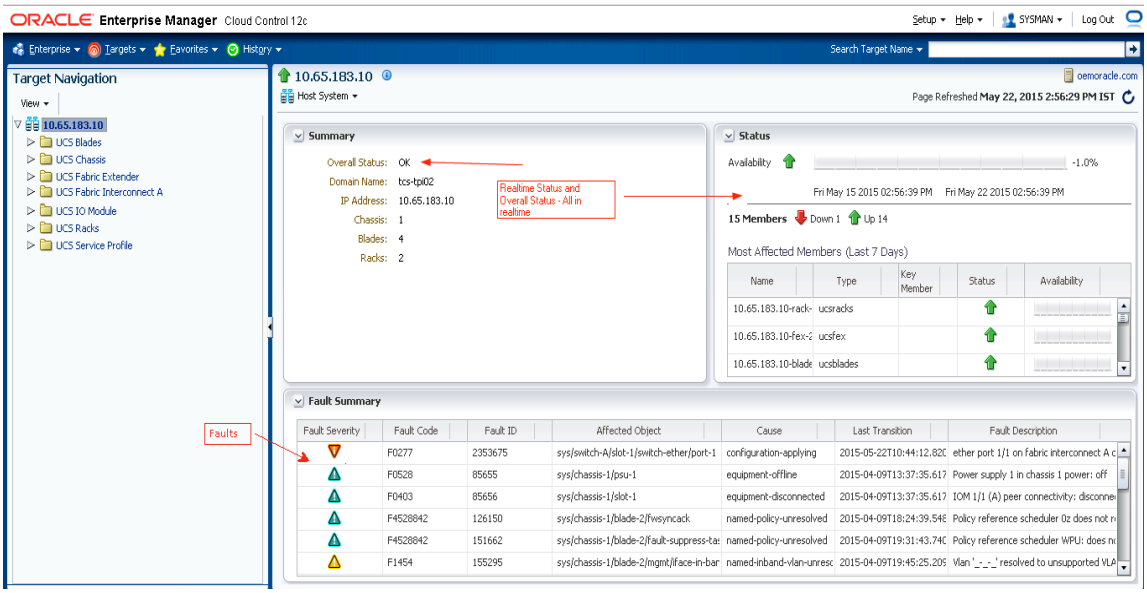

Figure 15: System Home Page

Each sub-component such as Chassis, Fabric-Interconnect, Blade Server or Rack Mount Server, Associated Service Profile, Fabric-Extender, IO Module contains summary configuration information such as 'Serial Number', 'Firmware Version' under the Summary tab, 'Faults' under the Fault Summary tab, Fan metadata under Fan Data tab, PSU metadata under PSUs Data tab, FI-IO metadata under FI-IO Modules tab related to the sub-component, etc.

The fans are contained in **fan modules** for Chassis, Fabric Interconnects and Rack Units, so the Ids that we display for Fans should include the Ids of fan modules along with Ids of fans as well *to distinguish a particular fan* present in one fan module from the one present on another fan module.

For Fabric Extenders, fans are not a part of Fan Module. So, only fan ids will be displayed.

Starting release 12.1.0.12.0,

- FI-IO Modules will be shown as separate sub-target for UCS Mini but for classic UCS no FI-IO Modules sub-target will be shown.

- Icons are shown for faults, fans and PSUs as shown in UCS Manager. This includes property for faults like Severity. Properties for fans like Operability, Performance, Power and Temperature and properties for PSUs like Operability, Performance, Power, Thermal and Voltage.

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- High Availability Details (Ready, State, Leadership and Cluster Link State) and VLAN Port count details (VLAN Port Limit, Access VLAN Port Count, Border VLAN Port Count and Allocation Status) are displayed with fabric interconnect target summary.

Starting release 12.1.0.17.0, performance parameters have been included for:

- Chassis:
  - Input Power, Output Power in Summary.
  - Speed (RPM) in fans.
  - PSU performance parameters.

- Server:
  - Motherboard stats exposed using performance link in the drop-down.
  - PSU performance parameters.
- Fabric Interconnects:
  - Load average, Mem Available average, Mem Cached average included in Summary.
  - PSU performance parameters.
  - Inclusion of graphs.
- FI-IO Modules (For UCS Mini):
  - ASIC Temperature, Ambient Temperature, DIMM Temperature, Processor Temperature
- Fabric Extenders:
  - Speed (RPM) in fans.
  - PSU performance parameters.
- FI Port:
  - Inclusion of graphs.
  - Each port name classifies its type as network, server etc. Example: ucs176-**network**-port-17-54:7F:EE:59:23:38.
- FC Port:
  - Inclusion of graphs.
  - Each port name classifies its type as network, server etc. Example: ucs176-**network**-port-15-20:4F:54:7F:EE:59:23:40.
- Service Profile:
  - Inclusion of graphs.

In all the components where graphs are included, graphs displayed in Fabric Interconnects, FI Ports, Fc ports or Service Profiles, delta stats are calculated after dividing the delta stats by collection interval fetched from Collection Policy.

Please refer to the figures below for clarification for respective components.

5.2 Chassis Home Page

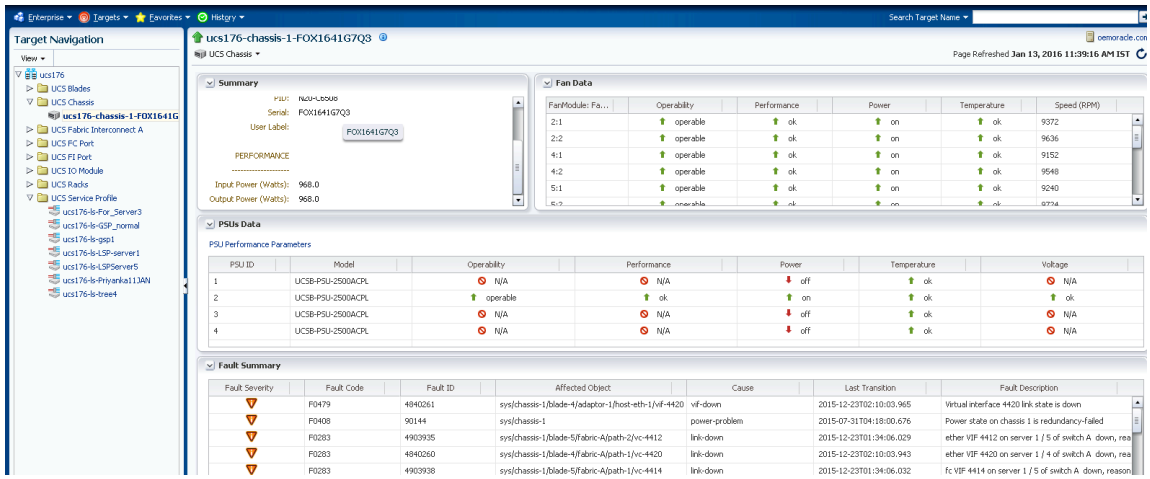

Figure 16: Chassis Home Page with Fans and PSUs data along with icons.

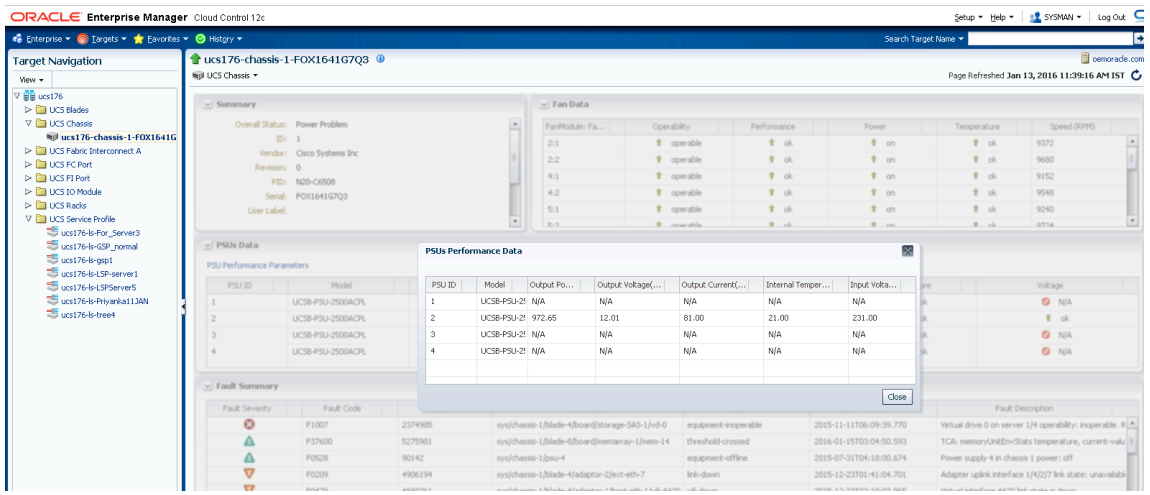

Figure 17: Chassis Home Page with Fans and PSUs Performance Data

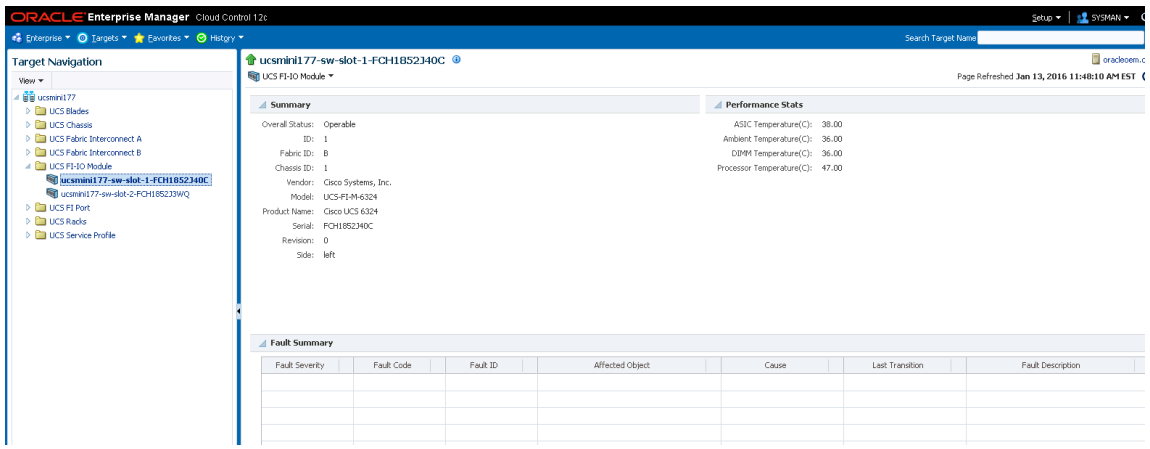

Figure 18: FI-IO Modules sub-target present in case of UCS Mini along with Performance Stats

5.3 Blades Home page

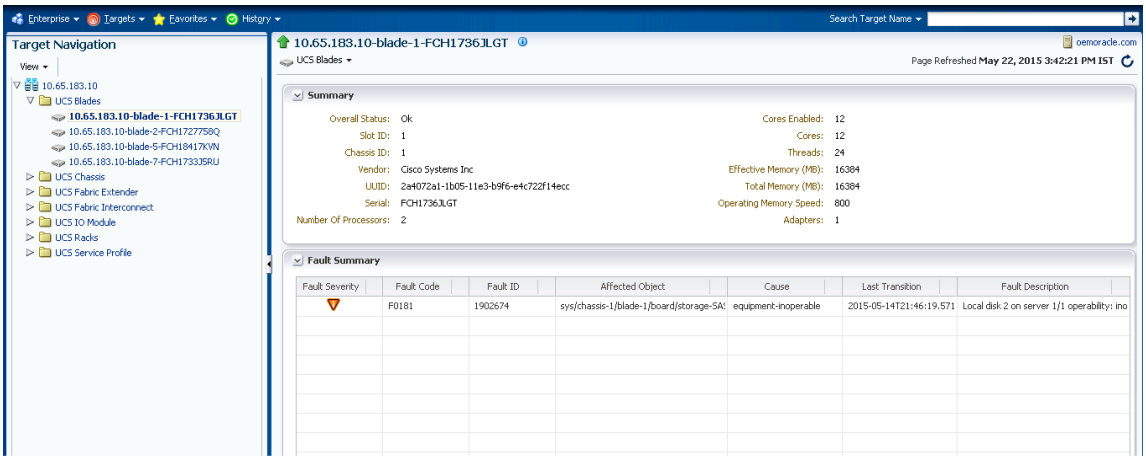

Figure 19: Blades Home Page

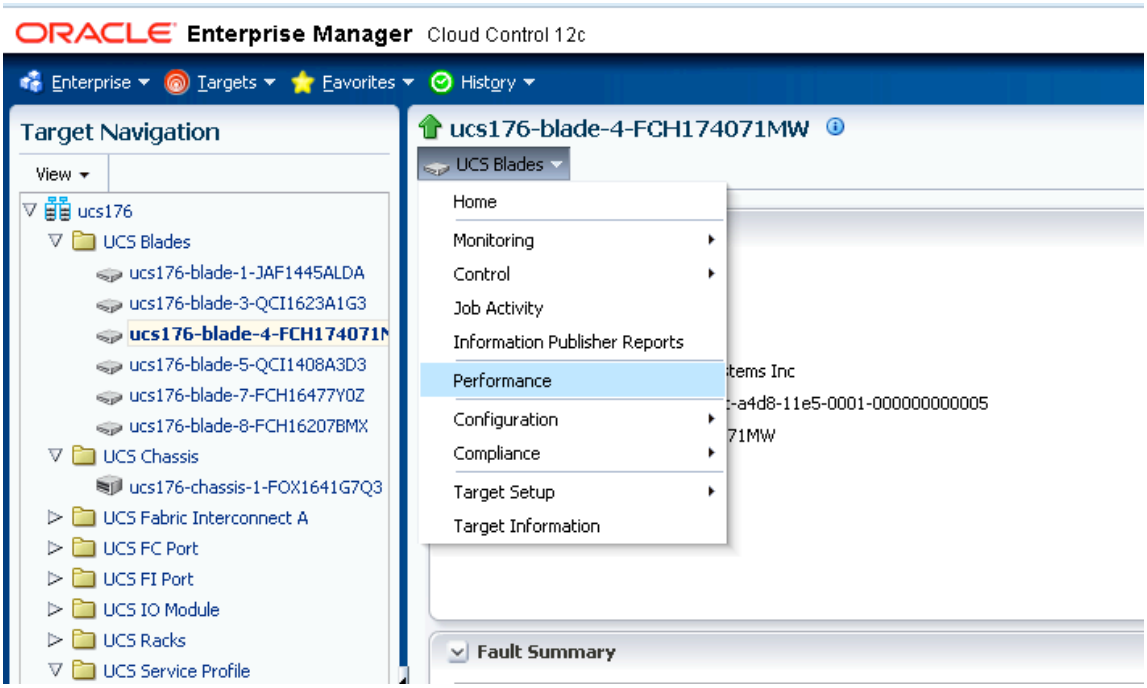

Figure 20: Blades Home Page with Performance option under menu

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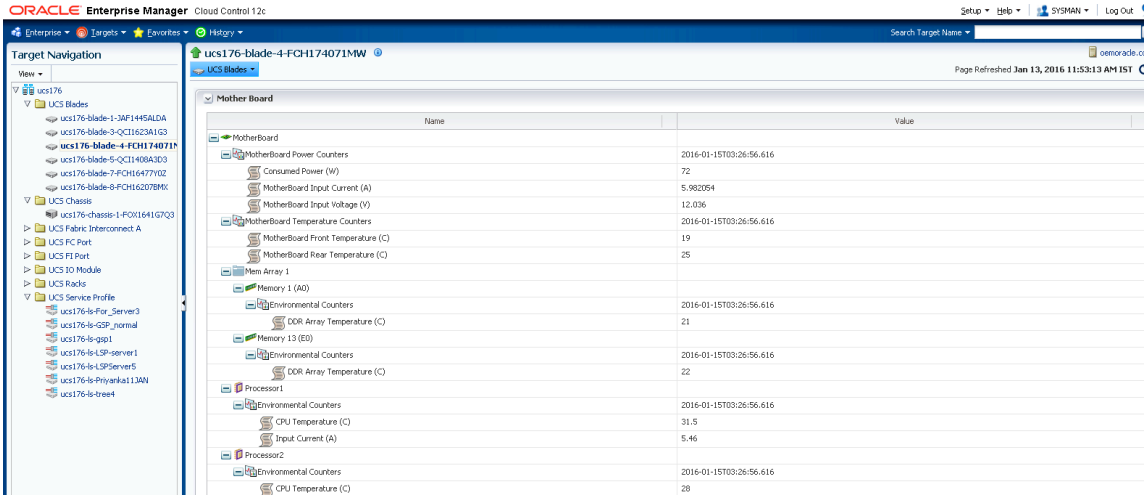

Figure 21: Mother Board Statistics page under Blade Home Page.

5.4 Fabric Interconnect Home Page

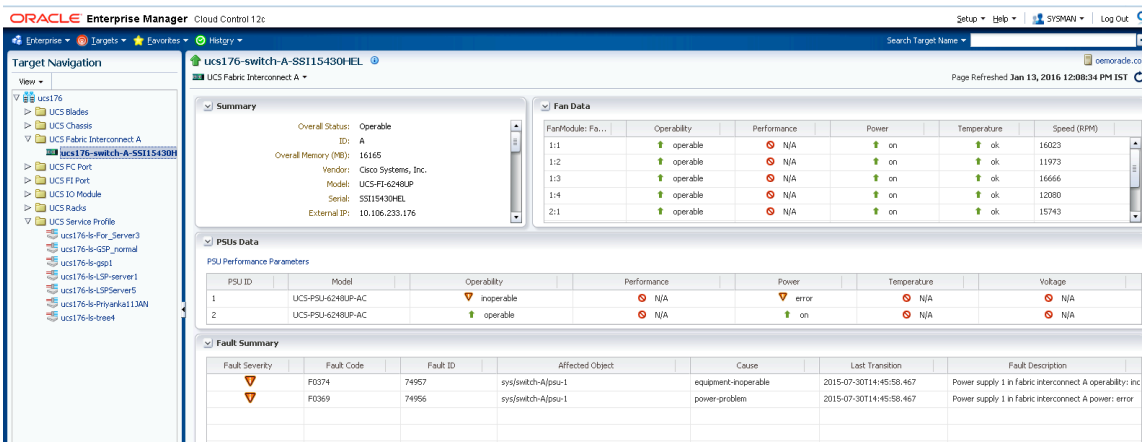

Figure 22: Fabric Interconnect Home Page

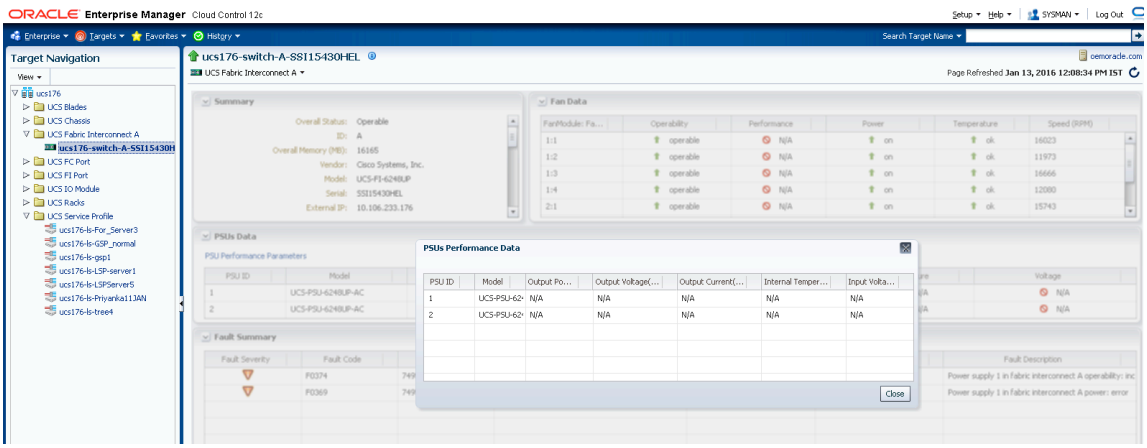

Figure 23: Fabric Interconnect Home Page along with PSUs Performance Data Page.

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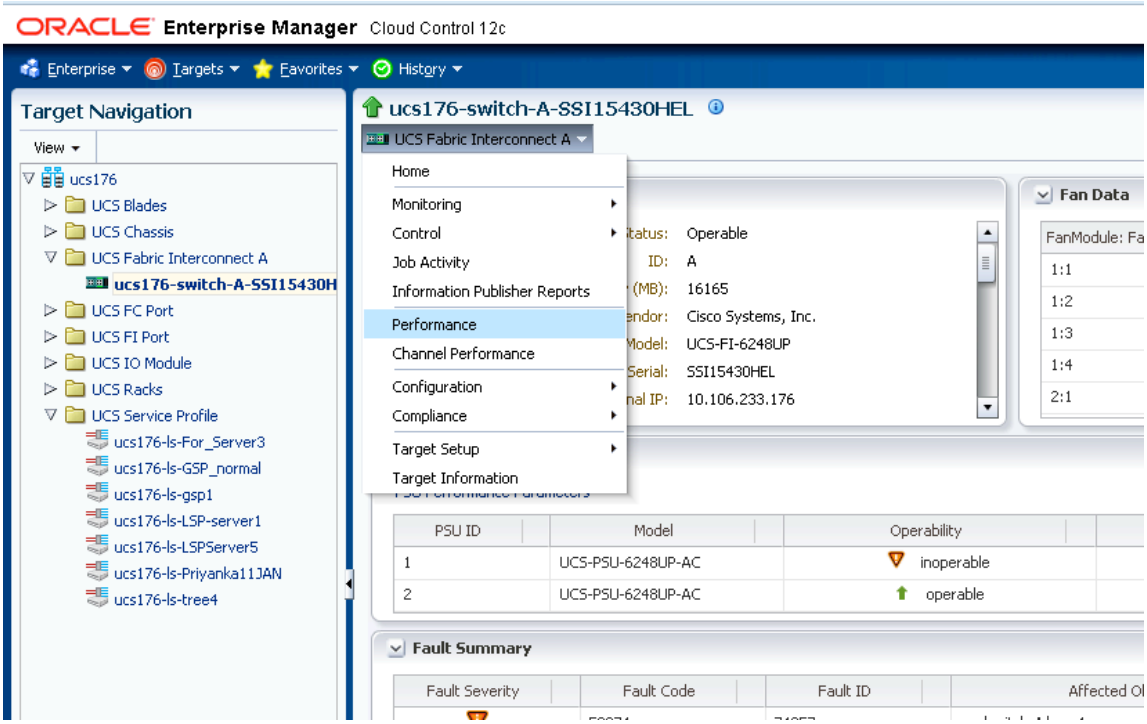

Figure 24: Fabric Interconnect Data Received (Rx) Performance Graphs

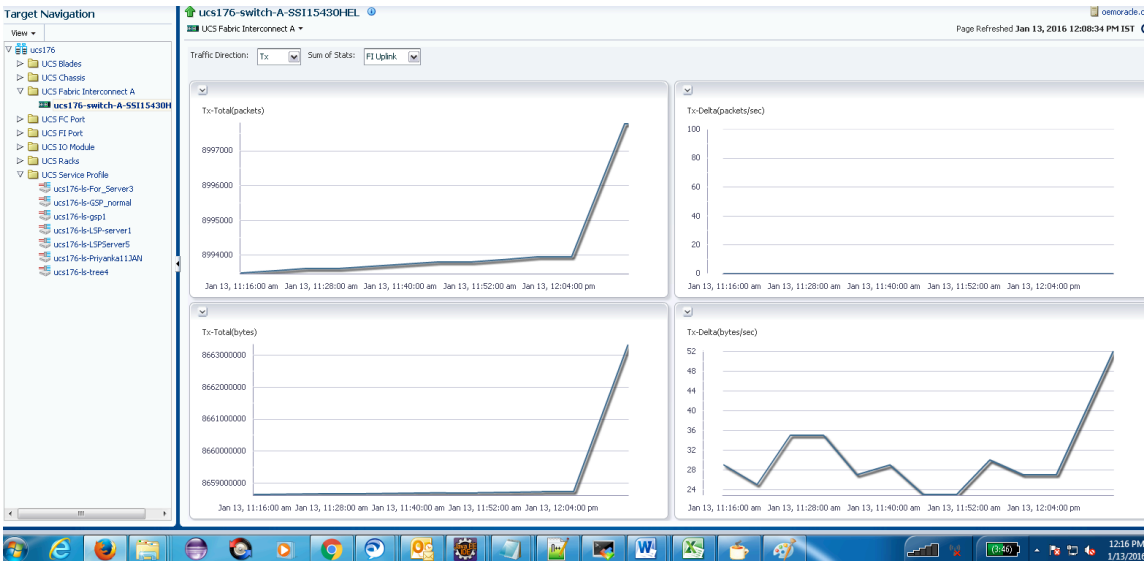

Figure 25: Fabric Interconnect Data Sent(Tx) Performance Graphs

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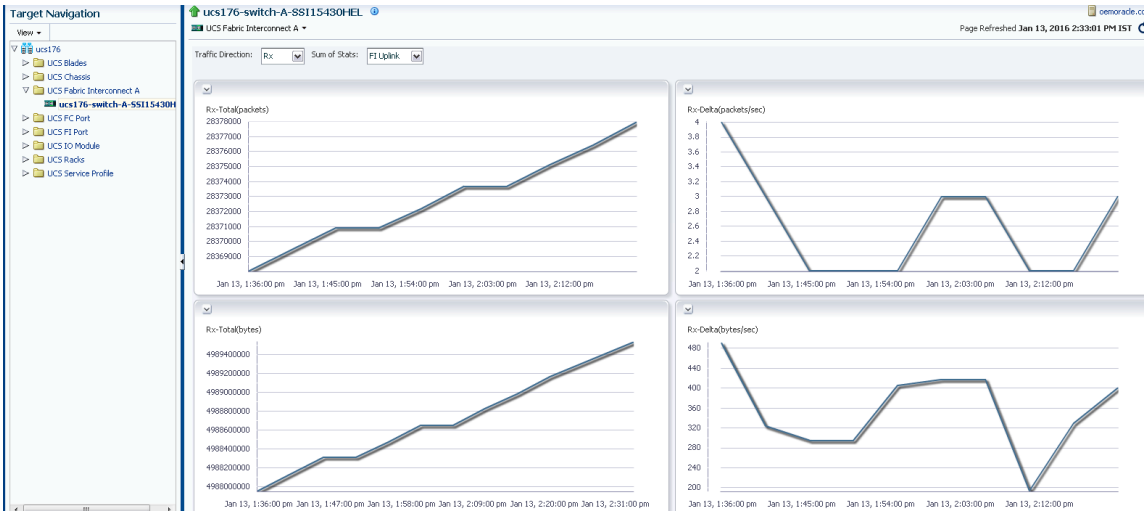

Figure 26: Fabric Interconnect Data Received (Rx) Performance Graphs

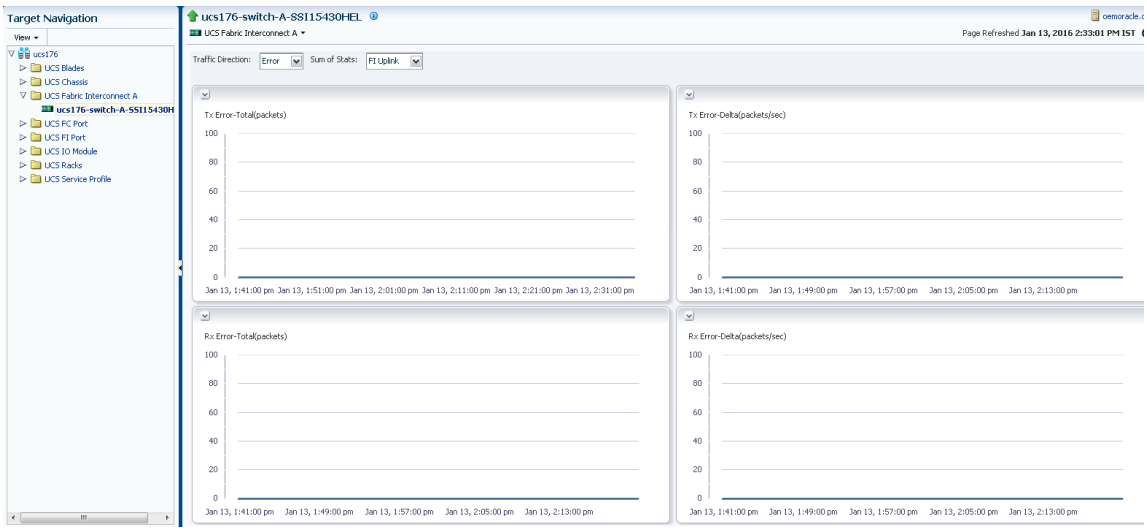

Figure 27: Fabric Interconnect Error Performance Graphs

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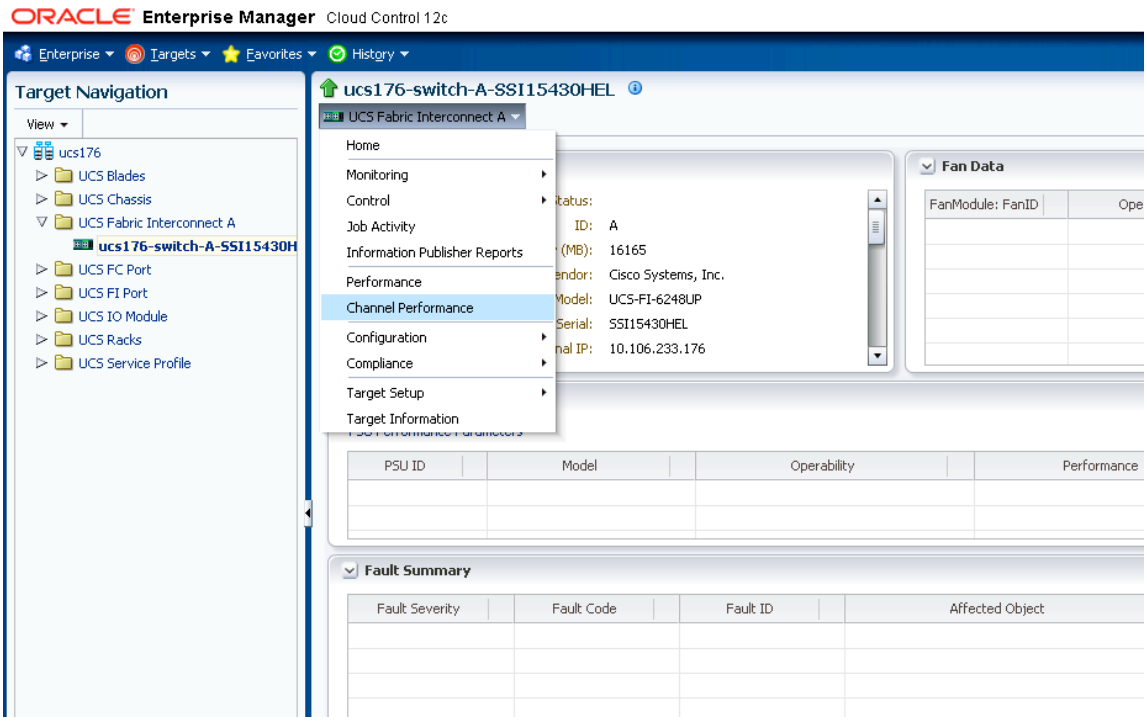

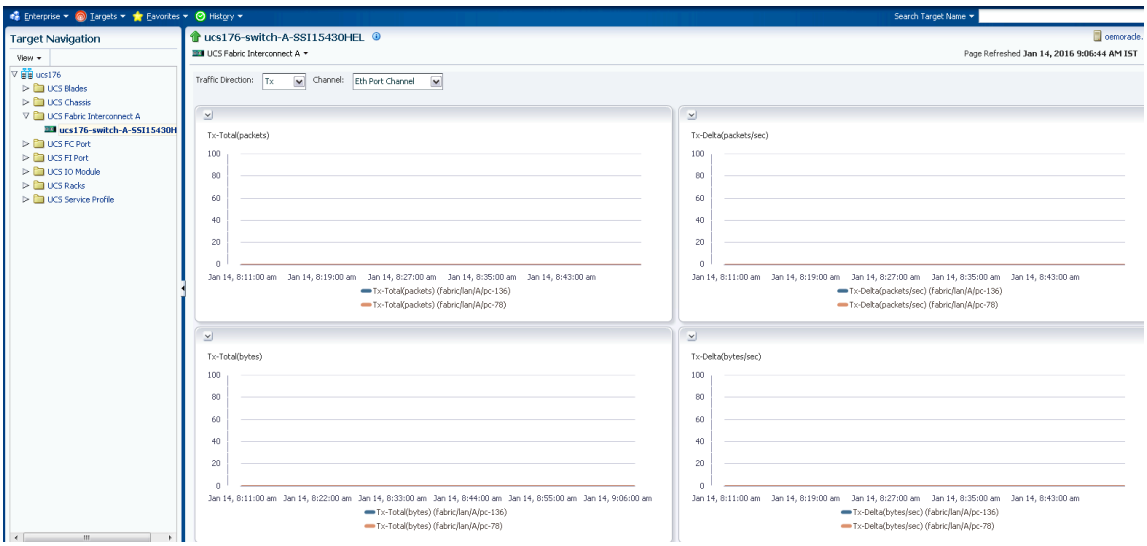

Figure 28: Fabric Interconnect Data Sent (Tx) Performance Graph of Eth Channel Port

Similarly, graphs are shown for fcoe and fc port channels for Tx, Rx and Error.

5.5 Fabric Extender Home Page

For Fabric Extenders, fans are not part of fan module, hence Fan Module Id will not be displayed for Fabric extenders. This is shown below:

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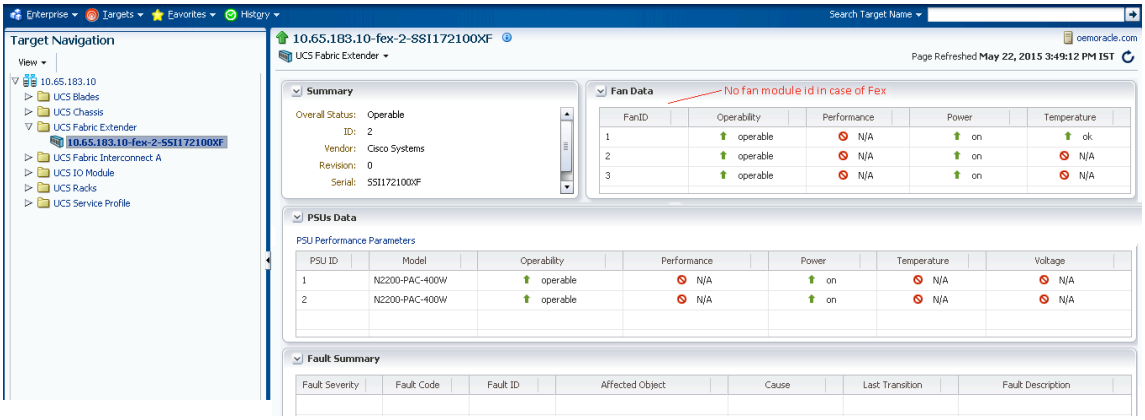


Figure 29: Fabric Extender Home Page

5.6 Service Profile Home Page

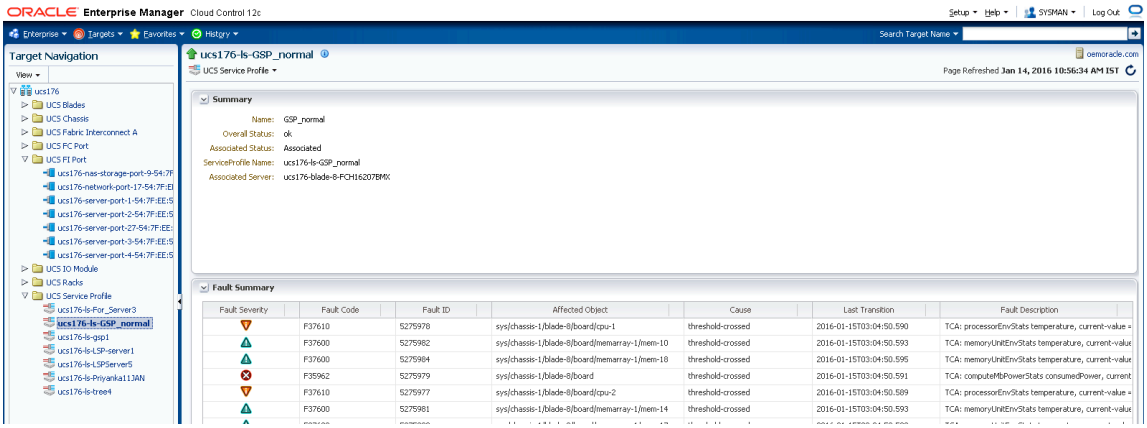


Figure 30: Service Profile Home Page

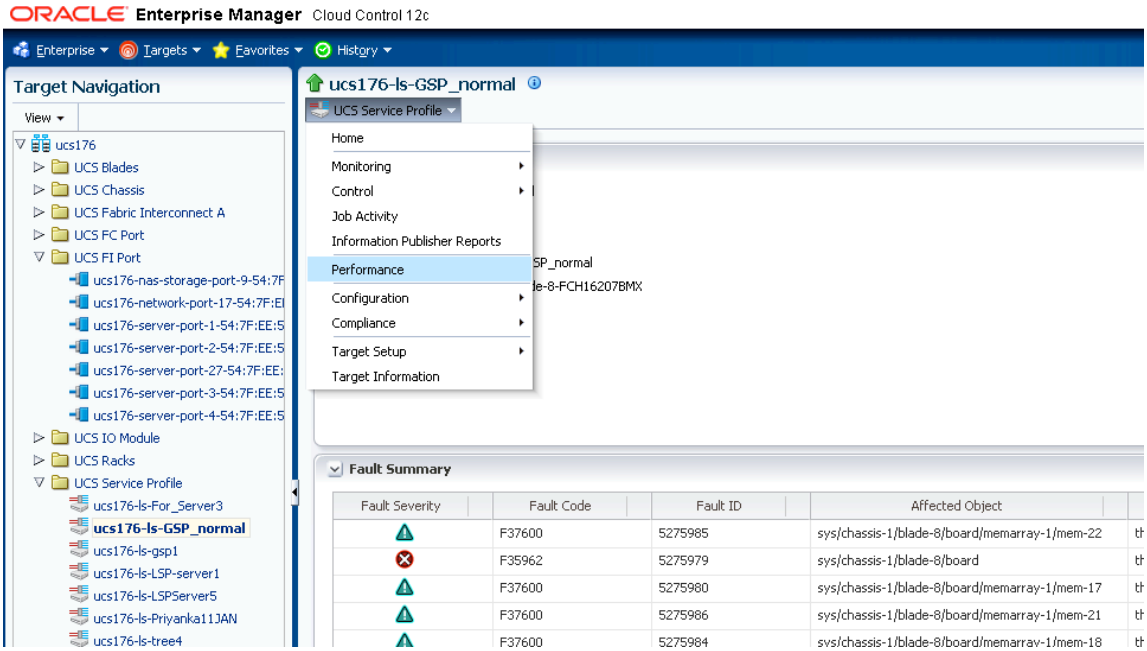


Figure 31: Service Profile Home Page with Performance Option

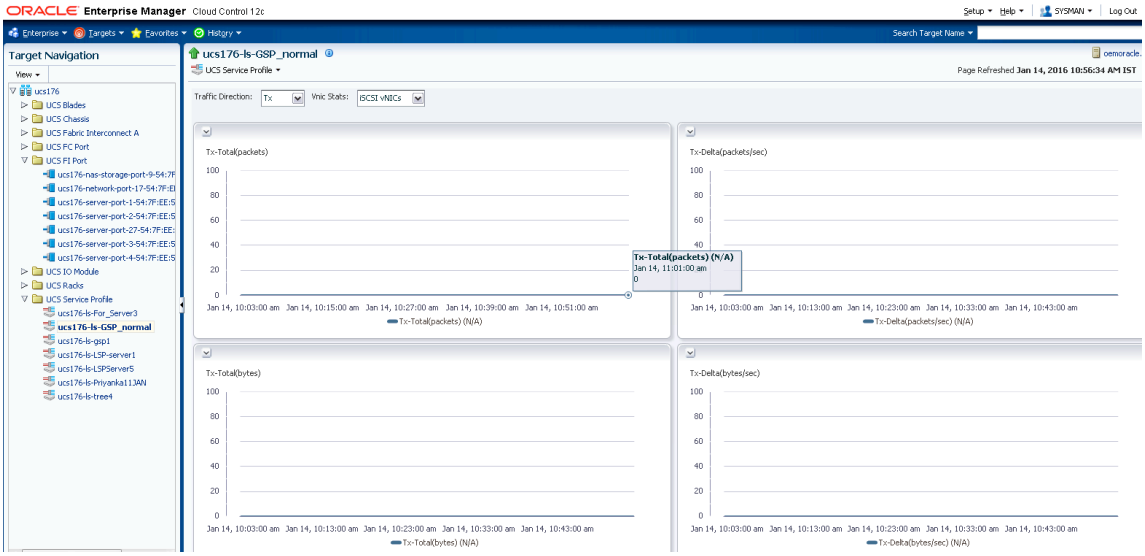


Figure 32: Service Profile Data Sent (Tx) Traffic on vNICs Graph

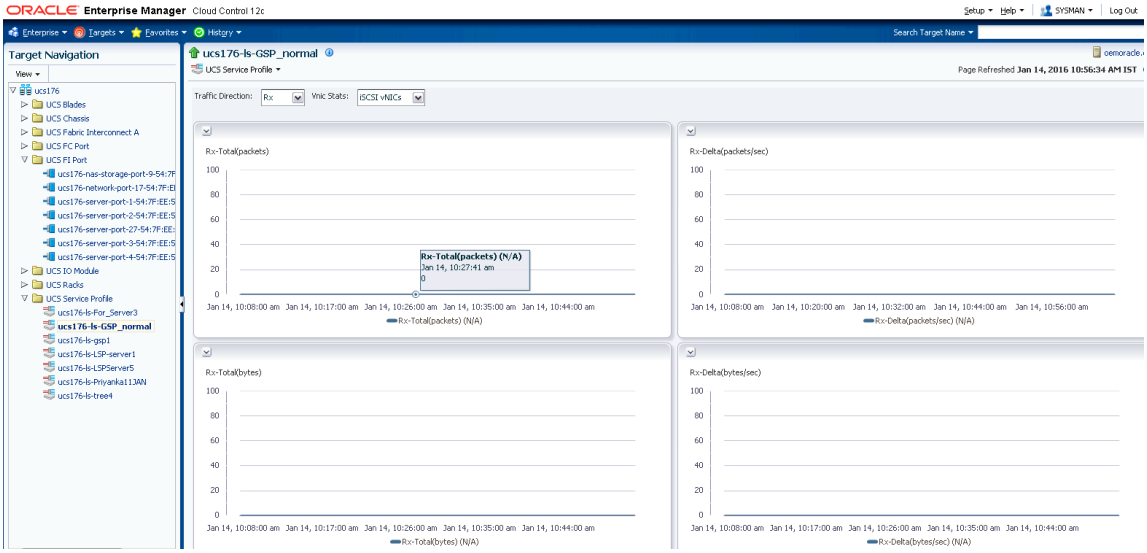


Figure 33: Service Profile Data Received (Rx) Traffic on vNICs Graph

Similarly, graphs for vHBAs and vNICs are shown for Tx, Rx and Error.

Rack Server Home Page

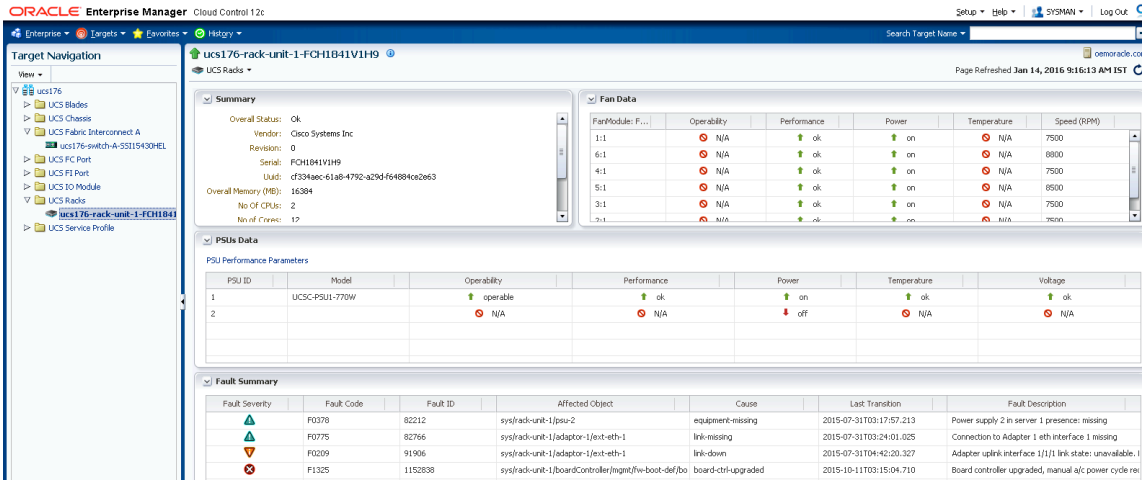


Figure 34: Rack Server Home Page

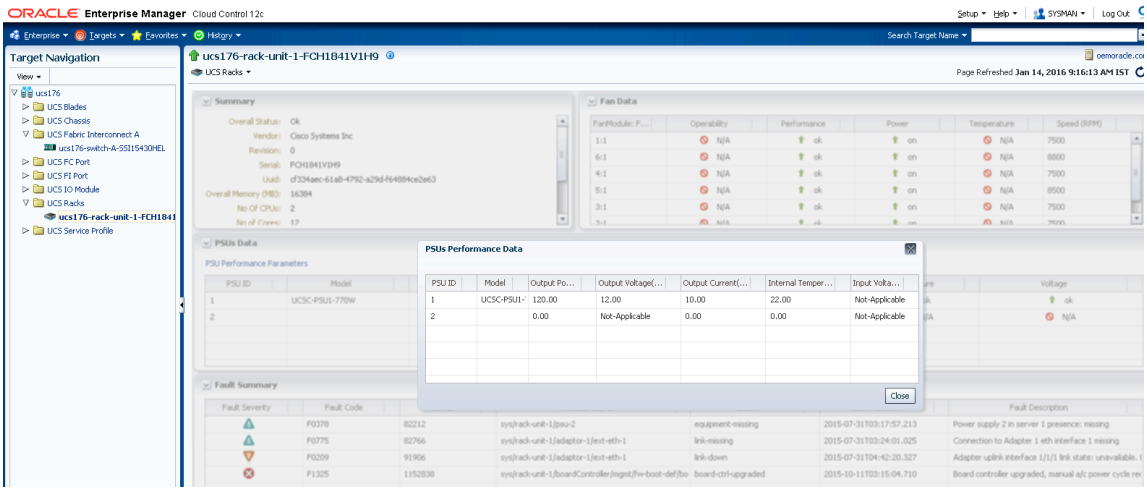


Figure 35: Rack Server Home Page along with PSUs Performance Data

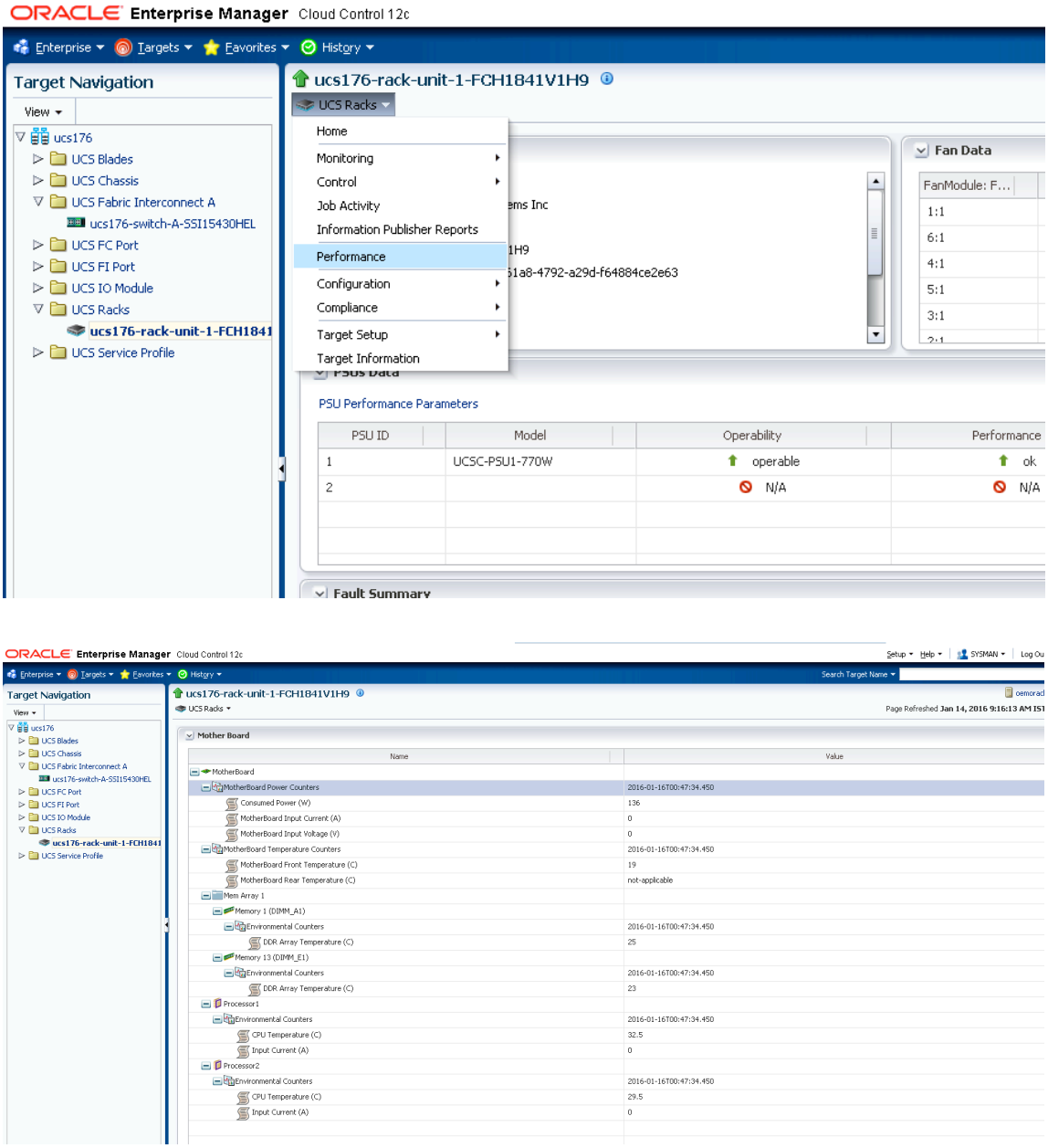


Figure 36: Rack Server Home Page along with Mother Board Statistics Page

5.7 IO Module Home Page

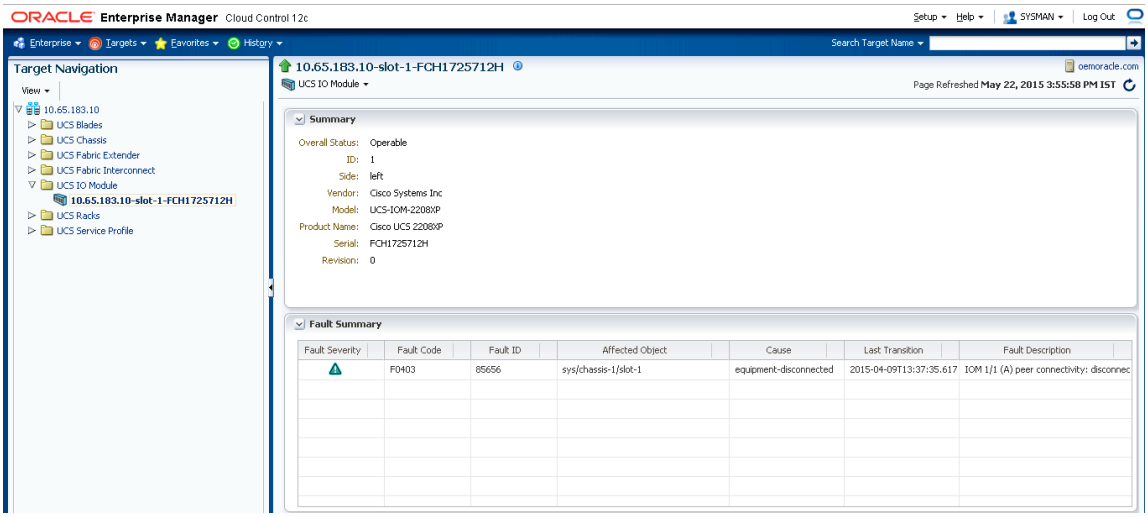


Figure 37: IO Module Home Page

5.8 FI-IO Module Home Page

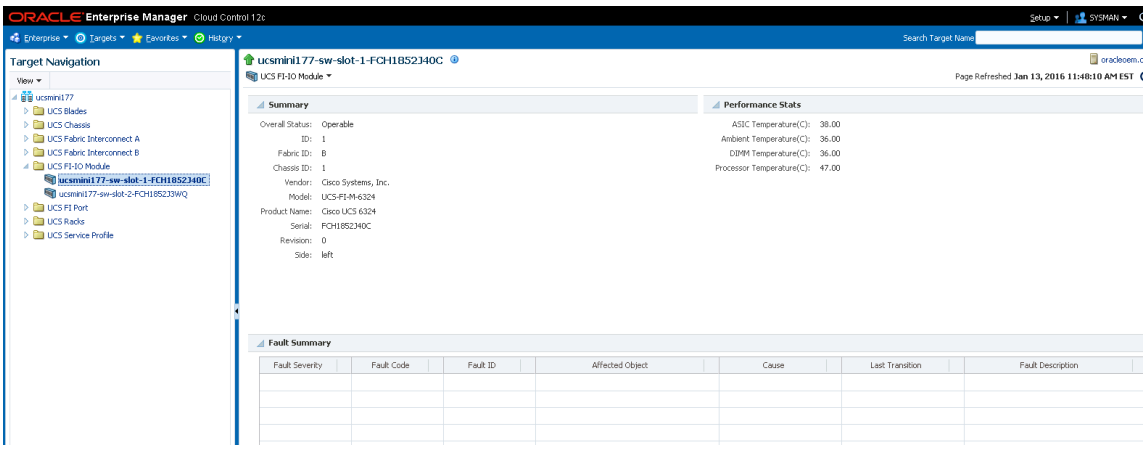


Figure 38: IO Module Home Page along with Performance Stats present in case of UCS-Mini only

5.9 FC Port Home Page

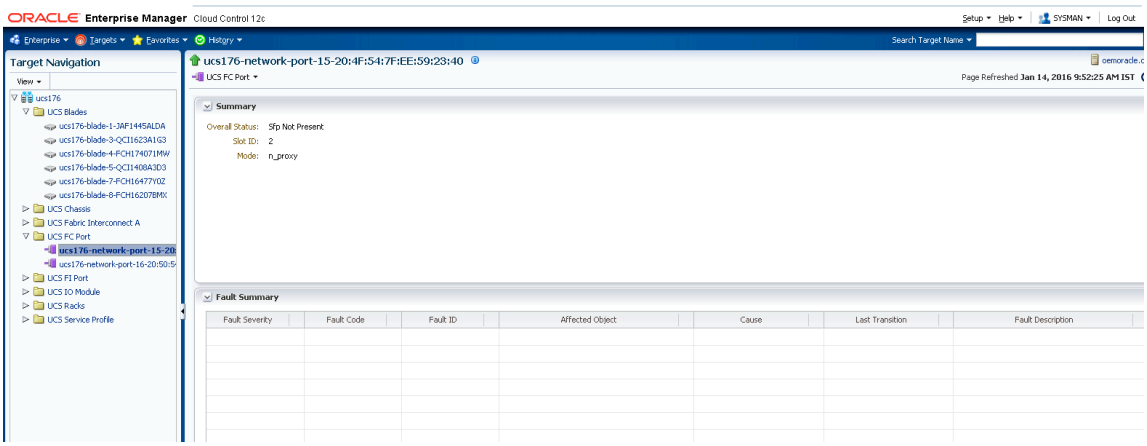
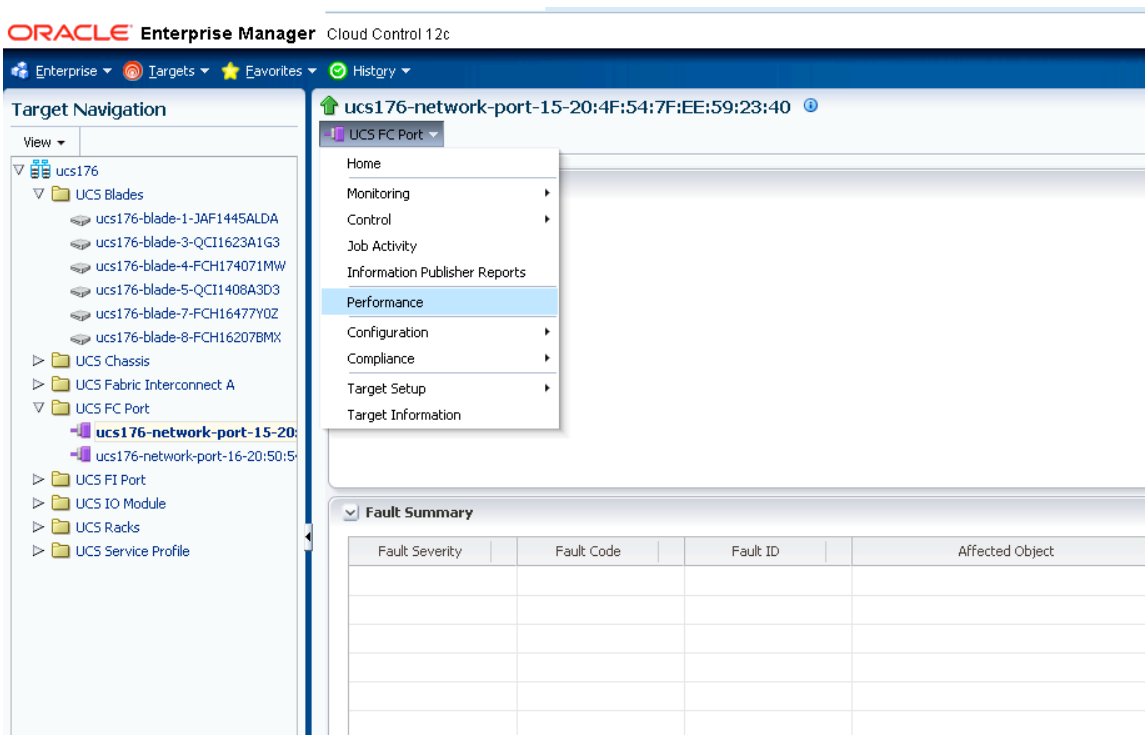


Figure 39: FC Port Home Page



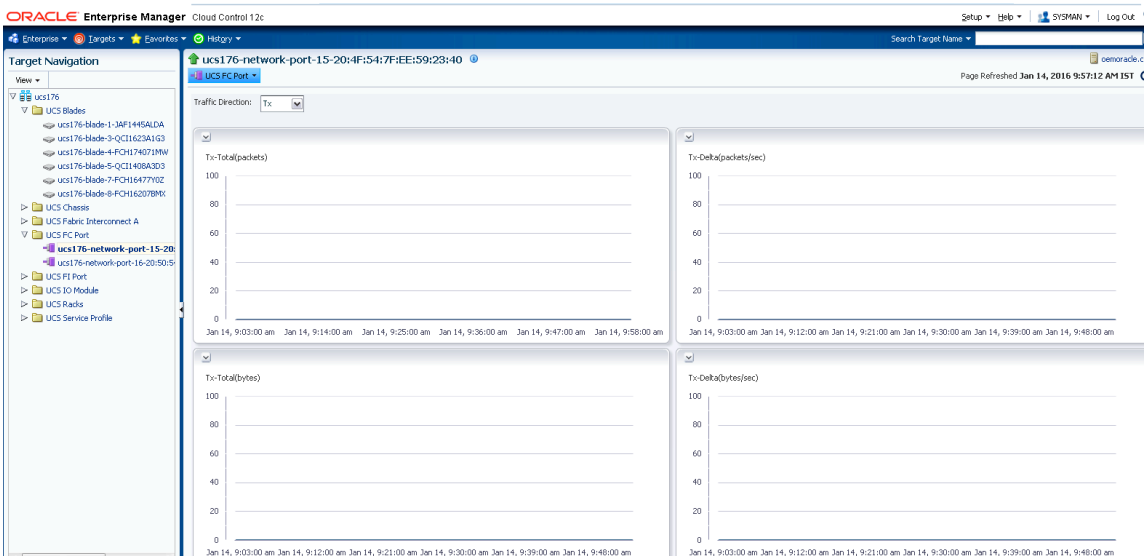


Figure 40: FC Port Data Sent(Tx) Traffic Graph

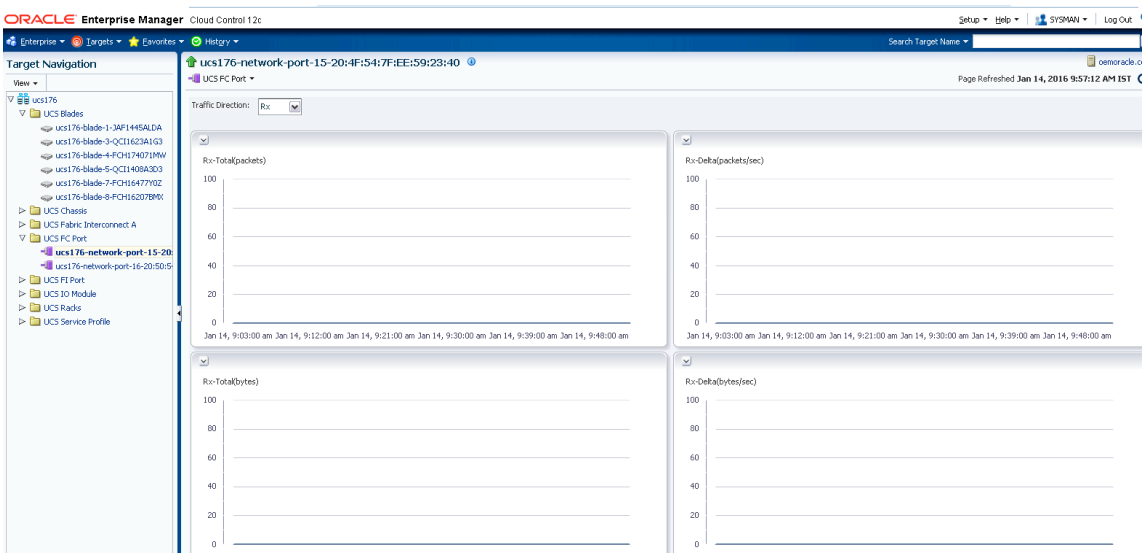


Figure 41: FC Port Data Received (Rx) Traffic Graph

Similarly, the stats for Error are also shown.

5.10 FI Port Home Page

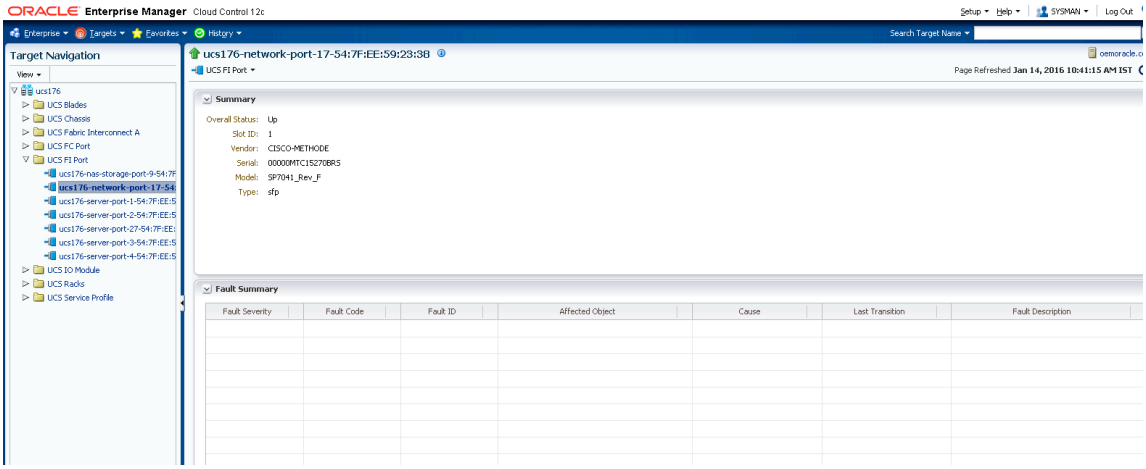


Figure 42: FI Port Home Page

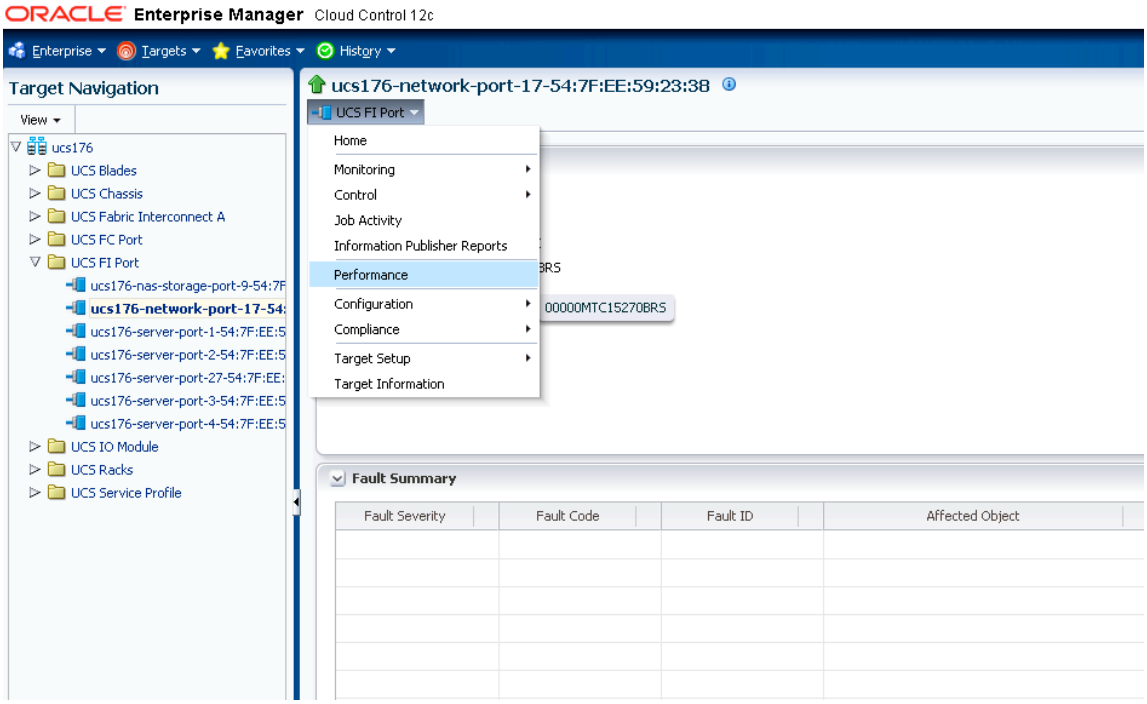


Figure 43: FI Port Performance Graphs Option under FI Port Home Page

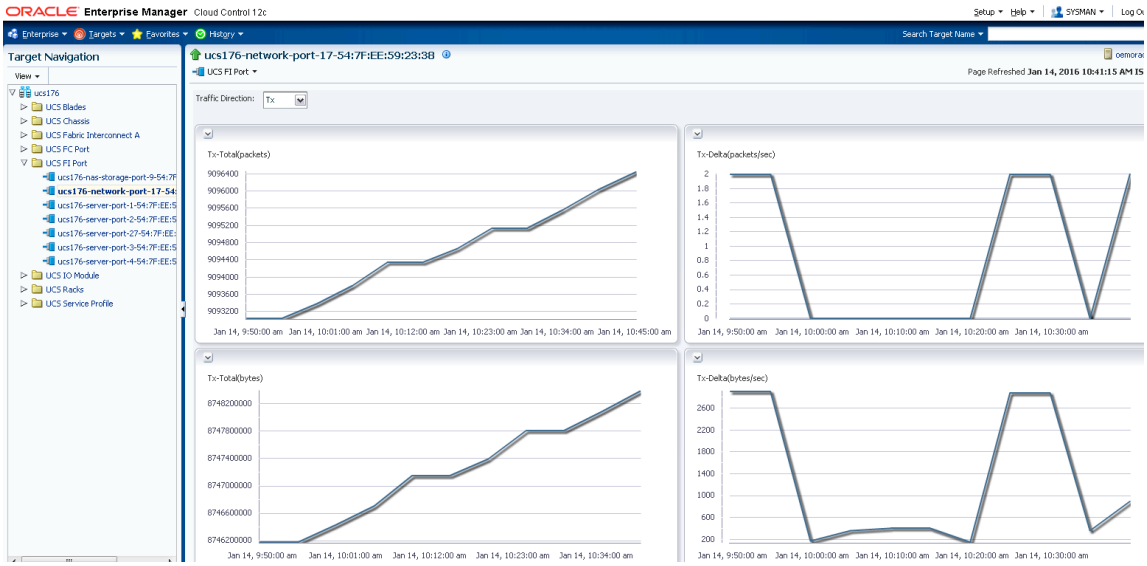


Figure 44: FI Port Data Sent (Tx) Traffic Graph

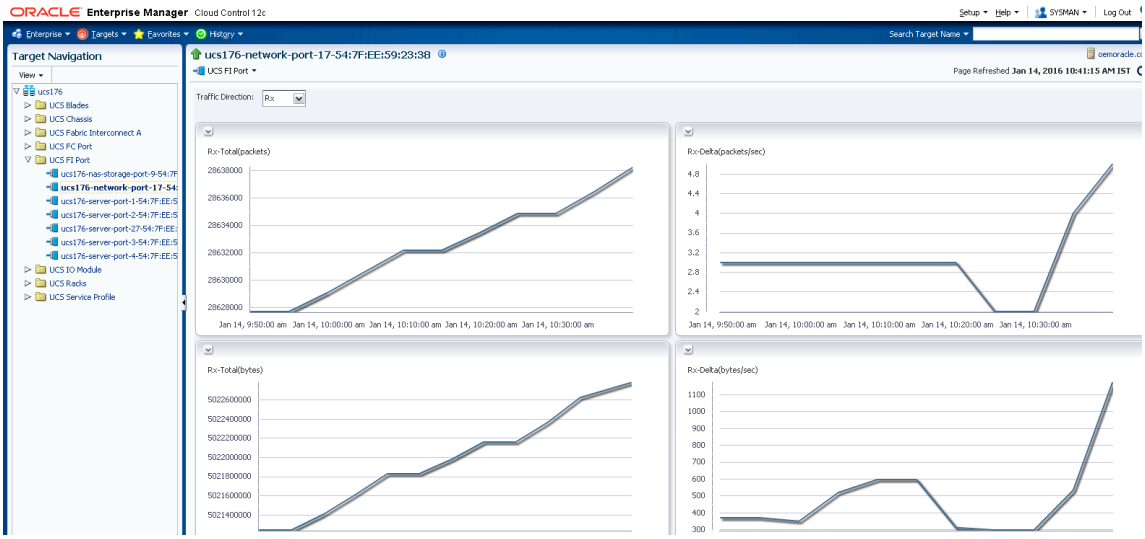


Figure 45: FI Port Data Received (Rx) Traffic Graph

Similarly, graphs are shown for Error.

6 Performance metrics supported

Component Type	Associated Components	Component Type	Statistics Object/ Traffic Direction	Metric Representation in OEM
Fabric Interconnect	Channels	Fcoe Port Channel	Error	Rx Error-Total(packets)
				Rx Error-Delta(packets/sec)

				Tx Error-Total(packets)
				Tx Error-Delta(packets/sec)
			Tx	Tx-Total(bytes)
				Tx-Delta(bytes/sec)
				Tx-Total(packets)
				Tx-Delta(packets/sec)
			Rx	Rx-Total(bytes)
				Rx-Delta(bytes/sec)
				Rx-Total(packets)
				Rx-Delta(packets/sec)
		Fc Port Channel	Error	Rx Error-Total(packets)
				Rx Error-Delta(packets/sec)
				Tx Error-Total(packets)
				Tx Error-Delta(packets/sec)
			Tx	Tx-Total(bytes)
				Tx-Delta(bytes/sec)
				Tx-Total(packets)
				Tx-Delta(packets/sec)
			Rx	Rx-Total(bytes)
				Rx-Delta(bytes/sec)
				Rx-Total(packets)
				Rx-Delta(packets/sec)
		EthPortChannel	Err	Rx Error-Total(packets)
				Rx Error-Delta(packets/sec)
				Tx Error-Total(packets)
				Tx Error-Delta(packets/sec)
			Tx	Tx-Total(bytes)
				Tx-Delta(bytes/sec)
				Tx-Total(packets)
				Tx-Delta(packets/sec)
			Rx	Rx-Total(bytes)
				Rx-Delta(bytes/sec)
				Rx-Total(packets)
				Rx-Delta(packets/sec)

FC Ports	N/A	N/A	Error	Rx Error-Total(packets)
				Rx Error-Delta(packets/sec)
				Tx Error-Total(packets)
				Tx Error-Delta(packets/sec)
			Tx	Tx-Total(bytes)
				Tx-Delta(bytes/sec)
				Tx-Total(packets)
				Tx-Delta(packets/sec)
			Rx	Rx-Total(bytes)
				Rx-Delta(bytes/sec)
				Rx-Total(packets)
				Rx-Delta(packets/sec)
FI Ports	N/A	N/A	Error	Rx Error-Total(packets)
				Rx Error-Delta(packets/sec)
				Tx Error-Total(packets)
				Tx Error-Delta(packets/sec)
			Tx	Tx-Total(bytes)
				Tx-Delta(bytes/sec)
				Tx-Total(packets)
				Tx-Delta(packets/sec)
			Rx	Rx-Total(bytes)
				Rx-Delta(bytes/sec)
				Rx-Total(packets)
				Rx-Delta(packets/sec)
FI	Summing of port data	Network ports	Error	Rx Error-Total(packets)
				Rx Error-Delta(packets/sec)
				Tx Error-Total(packets)
				Tx Error-Delta(packets/sec)
			Tx	Tx-Total(bytes)
				Tx-Delta(bytes/sec)
				Tx-Total(packets)
				Tx-Delta(packets/sec)
			Rx	Rx-Total(bytes)
				Rx-Delta(bytes/sec)
				Rx-Total(packets)

—

				Rx-Delta(packets/sec)
FI	N/A	N/A	Sys stats	Load average(cumulative)
				Mem Available average, cumulative (MB)
				Mem Cached average, cumulative (MB)
Server Motherboard	N/A	N/A	Motherboard Power stats	Input Voltage (Volts)
				Input Current (Amps)
				Consumed Power (Watts)
			Motherboard Temperature stats	Rear Temperature (Celcius)
				Front Temperature (Celcius)
Server Motherboard Memory Unit	N/A	N/A	Memory	DDR Array Temperature (Celcius)
Server Motherboard Processor Unit	N/A	N/A	Processor	CPU Temperature (Celcius)
				Input Current (Amps)
Chassis	N/A	N/A	Power Stats	Output Power (W)
				Input Power(W)
Power State Unit(PSU)	N/A	N/A	PSU	Output Power (W)
				Output Voltage (Volts)
				Output Current (Amps)
				Internal Temperature (Celcius)
				Input Voltage (Volts)
				Power
Equipment Fan	N/A	N/A	Fan module	Speed (RPM)
FI-IO Modules	N/A	N/A	Temperature	ASIC Temperature(C)
				Ambient Temperature(C)
				DIMM Temperature(C)
				Processor Temperature(C)

7 Uninstall UCS Manager Plug-In

To uninstall the plug-in follow the steps in sequence as specified:

7.1 Undeploying the Cisco UCS Manager Plug-In from EM12c Management Agent (OMA)

1. From the EM12c Web UI, navigate to *Setup -> Extensibility -> Plug-Ins*
2. Highlight the Cisco UCS Manager Plug-In (found in the Servers, Storage, and Network folder), Right-Click and select, **Undeploy From -> Management Agent.**

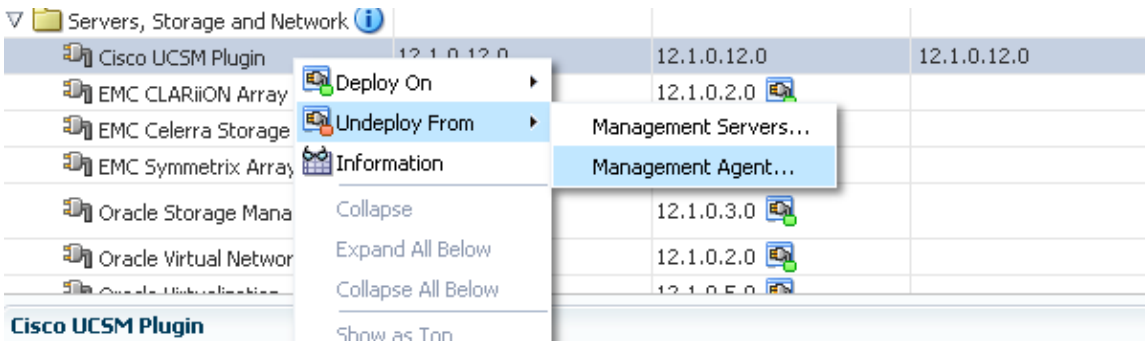


Figure 46: Undeploying plugin from management agent.

3. The 'Undeploy Plug-in from Management Agent Dialog – General' dialog box will appear. Select the Management Agent you wish to undeploy the Cisco Ucsm Plug-In from by clicking add button and click **Continue** once you are done.

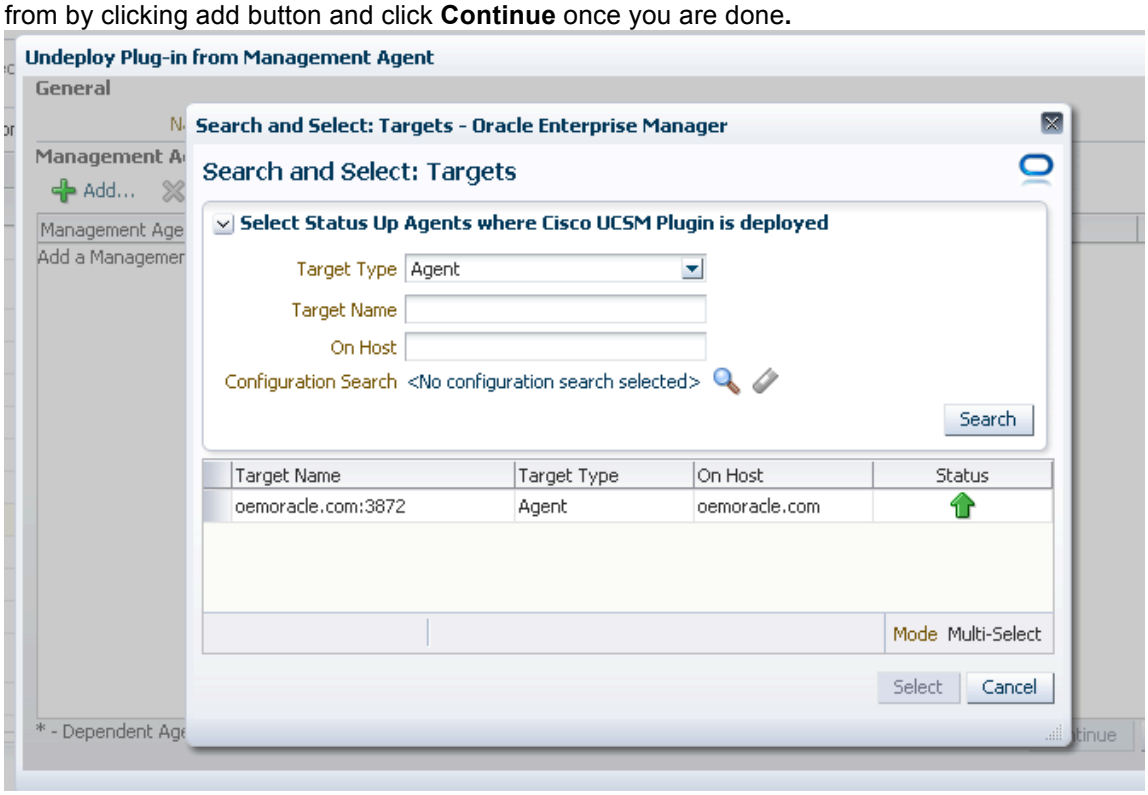


Figure 47: Undeploying plugin from management agent, screen that appears after clicking the Add button.

4. The 'Undeploy Plug-in from Management Agent – Pre-requisite checks' dialog box will appear. Assuming all the Pre-requisites have been verified, click **Next.**
5. Next the 'Undeploy Plug-in on Management Agent – Review' dialog box will appear. Assuming the pre-requisite checks have passed, Click **Undeploy.**
6. Next the 'Undeploy Plug-in on Management Agent - Confirmation' dialog will appear. Note the information on the screen and click either **Show Status** to monitor the deployment status or click **Close** to complete the deployment of Cisco UCS Manager Plug-In onto an EM12c OMA.
7. In the case where 'Show status' is selected, the Deployment Activities screen will appear and will allow you to monitor the un-deployment status of the plug-in from the OMA. It can take a few minutes – you can refresh this panel using button in top right of screen to see the deployment progress.

7.2 Undeploying the Cisco UCS Manager Plug-In from EM12c Management Server (OMS)

1. From the EM12c Web UI, navigate to *Setup -> Extensibility -> Plug-Ins*
2. Highlight the Cisco UCS Manager Plug-In (found in the Servers, Storage, and Network folder), Right-Click and select, **Undeploy From -> Management Servers.**

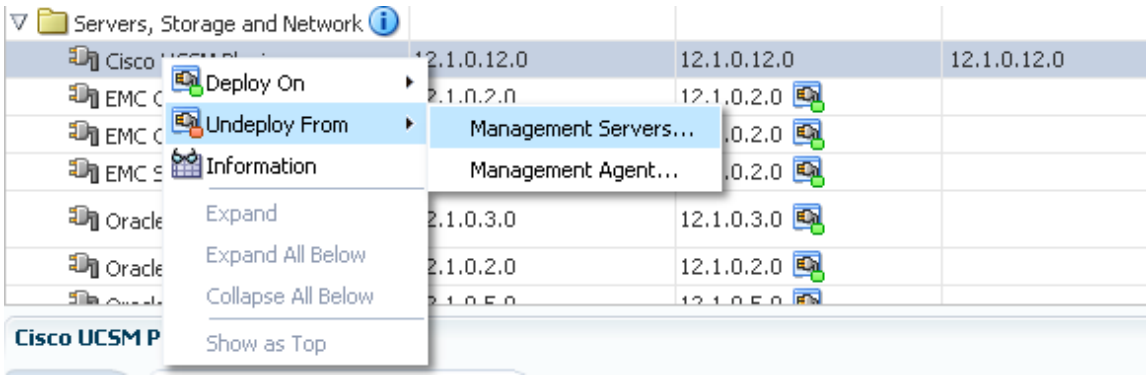


Figure 48: Undeploying plugin from management server.

3. The 'Undeploy Plug-in from Management Servers Dialog – General' dialog box will appear. Enter the 'Repository SYS Password' and click **Continue.**
4. Next the 'Undeploy Plug-in from Management Servers – Review' dialog box will appear. Highlight the Management Service on which you want to deploy the plug-in and click **Undeploy.**
5. Next the 'Undeploy Plug-in from Management Servers –Confirmation dialog box will appear. Note the information on the screen and click **Show Status** to monitor the deployment status or click Close to complete the deployment of the Cisco UCS Manager Plug-In onto an EM12c OMS.
6. In the case where 'Show status' is selected, the Deployment Activities screen will appear and will allow you to monitor the un-deployment status of the plug-in from the OMS. It can take a few minutes – you can refresh this panel using button in top right of screen to see the deployment progress.

7.3 Stop the OEMService:

You will need to kill the OEM Service if it is running. You can check that as:

- Login to the agent machine
- Open the terminal and lookup for the OEMService process using
  ps –ef | grep OEMService
- Note the process id of the OEMService and kill the process

7.4 Removing the plug-in from repository:

The instructions to delete the plug-in are as follows:

- Log into EM12c Web UI and navigate to Setup -> Extensibility -> Self Update.
- Click the Plug-in folder, enter 'cisco' in the search box provided and hit button.
- Now from the 'Actions' tab choose delete.

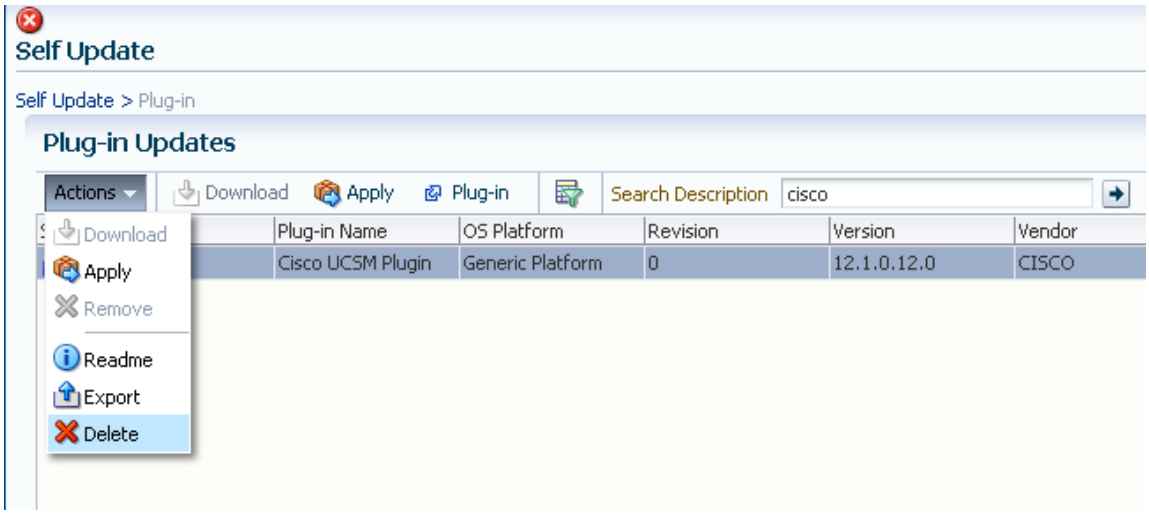


Figure 49: Undeploying plugin from management server, deleting the plug-in using self-update.

8 Logging and Tracing

Apart from the regular log files that come with OEM, additional log files for the Cisco UCS Manager Plug-In can be found:

1. For the Plug-In Service, the logs will be available under /<TMP_DIR >/OEM/OEMService.log
2. For the Discovery Scripts, the logs will be available under /<TMP_DIR >/OEM/OEMDiscovery.log and /<TMP_DIR>/OEM/ OEMMetricCollection.log

9 References

- *UCS Manager XML API Guide*, Explains UCS Manager XML API. UCS Manager exposes an XML API which can be used to Monitor UCS.
- Installation and Configuration Guide for Oracle Enterprise Manager, Explains the OEM installation and configuration tasks

10 Troubleshooting

If Oracle Enterprise Manager environment goes down, your oms may not be running:

You may follow following steps for this to resolve:

1) oms_home/bin>./emctl stop oms –all
   The oms_home is '/home/oracle/app/oracle/em/oms/bin'
2) sqlplus "/ as sysdba"
3) shutdowm immediate – to shutdown the database
4) startup
5) exit and issue lsnrctl start
6) ./emctl start oms

If Agent goes down and shows an icon  with tooltip "Agent Unreacheable":

You may follow following steps for this to resolve:

3) agent_home/bin>./emctl stop agent

The agent_home is ‘/home/oracle/app/oracle/em_agent/agent_inst/bin’

4) agent_home/bin>./emctl start agent

   (Also include workaround for issue faced very frequently :

   After restarting OEM server vm, while accessing the grid console seen this below: "Backend WLS or EM application seems to be down”)

5) After restarting OEM server, while accessing the grid console following error appears sometimes:

   "Backend WLS or EM application seems to be down”.

   Please refer to the link: http://lefterhs.blogspot.in/2012/02/backend-wls-or-em-application-seems-to.html to troubleshoot it.

11 Appendix

The status of the targets Chassis, Blade, Racks, IOModules, FIIO Modules and Fabric Extenders has been mapped to the operState.

The mapping of the target state to the operState property is done as per the table below for Chassis and FIIO Modules:

Target Status	OperState
Status (Down)	inoperable
	powered-off
	removed
	unknown
Status (Up)	operable
	thermal-problem
	power-problem
	voltage-problem
	performance-problem
	accessibility-problem
	identity-unestablishable
	bios-post-timeout
	disabled
	malformed-fru
	fabric-conn-problem
	fabric-unsupported-conn
	config
	equipment-problem
	decomissioning
	chassis-limit-exceeded
	not-supported
	discovery
	discovery-failed
	identify
	post-failure
	upgrade-problem
	peer-comm-problem
	auto-upgrade
	link-activate-blocked
	degraded

The mapping of the target state to the operState property is done as per the table below for Blades and Racks:

Target Status	OperState
Status (Down)	power-off
Status (Up)	ok
	discovery
	config
	unconfig
	restart

	decomissioning
	bios-restore
	cmos-reset
	diagnostics
	pending-reassociation
	pending-reboot
	maintenance
	test
	compute-mismatch
	compute-failed
	degraded
	discovery-failed
	config-failure
	unconfig-failed
	test-failed
	maintenance-failed
	removed
	inaccessible
	thermal-problem
	power-problem
	voltage-problem
	inoperable
	diagnostics-failed
	indeterminate
	disabled
	unassociated

The mapping of the target state to the operState property is done as per the table below for IO Modules and Fabric Extenders:

Target Status	**OperState**
Status (Down)	powered-off
	inoperable
	power-problem
	removed
	voltage-problem
	thermal-problem
	performance-problem
	accessibility-problem
	identity-unestablishable
	bios-post-timeout
	fabric-conn-problem
	fabric-unsupported-conn
	equipment-problem
	discovery-failed
	post-failure
	upgrade-problem
	peer-comm-problem
Status (Up)	operable
	decomissioning
	discovery
	identify
	auto-upgrade
	degraded
	not-supported
	unknown

The mapping of the target state to the operability property is done as per the table below for Fabric Interconnects, FI Ports and FC Ports:

Target Status	Operability
Status (Down)	inoperable
	removed
	Failed
	link-down
Status (Up)	operable
	unknown
	link-up
	Up
	sfp-not-present
	admin-down
	hardware-failure
	udld-aggr-down
	intermediate
	no-license
	software-failure
	operStateDesc
	error-disabled

For the Service profiles, the target status has been mapped to the assocState property. The mapping has been performed as per the table below.

Target Status	AssocState
Status (Down)	Unassociated
Status (Up)	associating
	disassociating
	associated
	Failed

For fans, the following table lists the property, its states and icon mapping:

Property					
Operability	operable	powered-off	inoperable, degraded, power-problem, removed, voltage-problem, thermal-problem, performance-problem, accessibility-problem, identity-unestablishable, bios-post-timeout, disabled, fabric-conn-problem, fabric-unsupported-conn, equipment-	identify, decomissioning, discovery, config, auto-upgrade	not-supported, unknown

			problem, chassis-limit-exceeded, discovery-failed, post-failure, upgrade-problem, peer-comm-problem,		
Performance	Ok	Empty	upper-non-recoverable, upper-critical, upper-non-critical, lower-non-critical, lower-critical, lower-non-recoverable, error		not-supported, unknown
Power	on, online	off, offline, off-duty, power-save	error	Test	not-supported, unknown
Temperature	Ok	Empty	upper-non-recoverable, upper-critical, upper-non-critical, lower-non-critical, lower-critical, lower-non-recoverable, error		not-supported, unknown

For PSUs, the following table lists the property, its states and icon mapping:

Property					
Operability	operable	powered-off	inoperable, degraded, power-problem, removed, voltage-problem, thermal-problem, performance-problem, accessibility-problem, identity-unestablishable, bios-post-timeout, disabled, fabric-conn-problem, fabric-unsupported-conn,	identify, decomissioning, discovery, config, auto-upgrade	not-supported, unknown

			equipment-problem, chassis-limit-exceeded, discovery-failed, post-failure, upgrade-problem, peer-comm-problem,		
Performance	Ok	Empty	upper-non-recoverable, upper-critical, upper-non-critical, lower-non-critical, lower-critical, lower-non-recoverable, error		not-supported, unknown
Power	on, online	off, offline, off-duty, power-save	Error	Test	not-supported, unknown
Temperature	Ok	Empty	upper-non-recoverable, upper-critical, upper-non-critical, lower-non-critical, lower-critical, lower-non-recoverable, error		not-supported, unknown
Voltage	Ok	Empty	upper-non-recoverable, upper-critical, upper-non-critical, lower-non-critical, lower-critical, lower-non-recoverable, error		not-supported, unknown