

HP Universal CMDB

for the Windows and Solaris operating systems

Software Version: 8.03

HP Universal CMDB-HP Network Node Manager i (NNMi) Integration Guide

Document Release Date: September 2009

Software Release Date: September 2009



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Network Node Manager i (NNMi) Integration with HP Universal CMDB

This chapter explains how to integrate Network Node Manager (NNMi) with HP Universal CMDB (UCMDB).

This chapter includes:

Concepts

- ▶ NNMi Integration – Overview on page 7

Tasks

- ▶ Run NNMi/UCMDB Integration on page 8
- ▶ Perform Change Management and Impact Analysis on page 12

Reference

- ▶ NNMi Protocol Connection Parameters on page 13

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NNMi Integration – Overview

You integrate NNMi with UCMDB using the Discovery and Dependency Mapping (DDM) application.

When you activate the **Integration – NNM Layer2** module, DDM retrieves Layer 2 network topology data from NNMi and saves the data to the UCMDB database. Users can then perform change management and impact analysis through the UCMDB correlation engine.

Note: DDM version 8.00 or later includes a module for discovering NNMi. No additional deployment is necessary.

Use Cases

This document is based on the following use cases:

- ▶ A UCMDDB user wants to view the Layer 2 network topology supporting servers and applications. The requirement is to use NNMi as the authoritative source for that information with access through the UCMDDB application.
- ▶ An NNMi operator wants to view the impact of a network access switch infrastructure failure where the impact data is available in UCMDDB. The NNMi operator selects an incident or a node in NNMi and then enters a request for impacted CIs.

Run NNMi/UCMDDB Integration

This task includes the steps to run the NNMi/UCMDDB integration jobs.

Important: To avoid conflict, do not run the UCMDDB Layer 2 discovery jobs when running the NNMi Layer 2 integration discovery.

This task includes the following steps:

- ▶ “Prerequisites” on page 9
- ▶ “Set up the NNMi Protocol” on page 9
- ▶ “Activate the Discovery Jobs” on page 9

- “Check Messages for Successful Job Execution” on page 10
- “Topology Map” on page 11

1 Prerequisites

Verify that the following CIs have been discovered before running the NNMi discovery:

- The **IP** CI of the NNMi server (through the ICMP jobs)
- The **Host** CI of the NNMi server (through the Host Connection jobs)
- The **Process** CI of the NNMi Host (through the Host Resource jobs)

For details on activating a job, see “Discovery Modules Pane” in *Discovery and Dependency Mapping Guide*. For an explanation of a discovery job, see “Jobs” in *Discovery and Dependency Mapping Guide*.

2 Set up the NNMi Protocol

In UCMDB, add an NNMi protocol entry.

For details on the NNMi protocol, see “NNMi Protocol Connection Parameters” on page 13. For details on setting up a protocol, see “Domain Credential References” in *Discovery and Dependency Mapping Guide*.

3 Activate the Discovery Jobs

The NNMi jobs are included in the **Integration – NNM Layer 2** module.

- a** In UCMDB, activate the **Layer 2 by NNM** job. This job connects to the NNMi Web service and retrieves NNMi discovered nodes, IPs, networks, interfaces, and layer 2 connection information to create a Layer 2 topology in UCMDB.

The job is activated against the **IP** CI of the NNMi server (discovered in the “Prerequisites” step above).

Note: Due to the large volume of data discovered by this discovery job, it may take a while for the Probe to send the data back to the server. If there are more than 20,000 CIs, the Probe returns data in chunks of 20,000 objects at a time.

- b** Activate the **Update Ids in NNM** job. This job updates the nodes in the NNMi topology with the UCMDB IDs of the corresponding nodes in UCMDB.

Note: This job retrieves the UCMDB IDs of the NNMi hosts from the UCMDB server using the UCMDB Web Services API. The job then updates the **CustomAttribute** attribute on the corresponding node object on the NNMi Server using the NNMi Web service. Because the NNMi Web service enables updating of only one node at a time, this process might take a while, depending on the number of nodes involved. Check **probeMgr-patternsDebug.log** for the update status.

For details on activating a job, see “Discovery Modules Pane” in *Discovery and Dependency Mapping Guide*.

4 Check Messages for Successful Job Execution

The following example shows typical successful job execution messages for the **Layer 2 by NNM** job:

```
- The Job 'NNM Layer 2' started invocation (on 1 destinations)
- Starting NNM_Integration_Utils:mainFunction
- Server: it2tst10.cnd.hp.com, Port: 80, Username: system, MaxPerCall: 2500,
MaxObjects: 50000
- Service URL:
http://it2tst10.cnd.hp.com:80/IPv4AddressBeanService/IPv4AddressBean
- Service URL: http://it2tst10.cnd.hp.com:80/NodeBeanService/NodeBean
- Service URL: http://it2tst10.cnd.hp.com:80/IPv4SubnetBeanService/IPv4SubnetBean
- Service URL: http://it2tst10.cnd.hp.com:80/InterfaceBeanService/InterfaceBean
- Service URL:
http://it2tst10.cnd.hp.com:80/L2ConnectionBeanService/L2ConnectionBean
- OSHVector contains 45426 objects.
- The probe is now going to send back 45426 objects.
- This transfer may take more time than normal due to the large amount of data being
sent to the server.
```

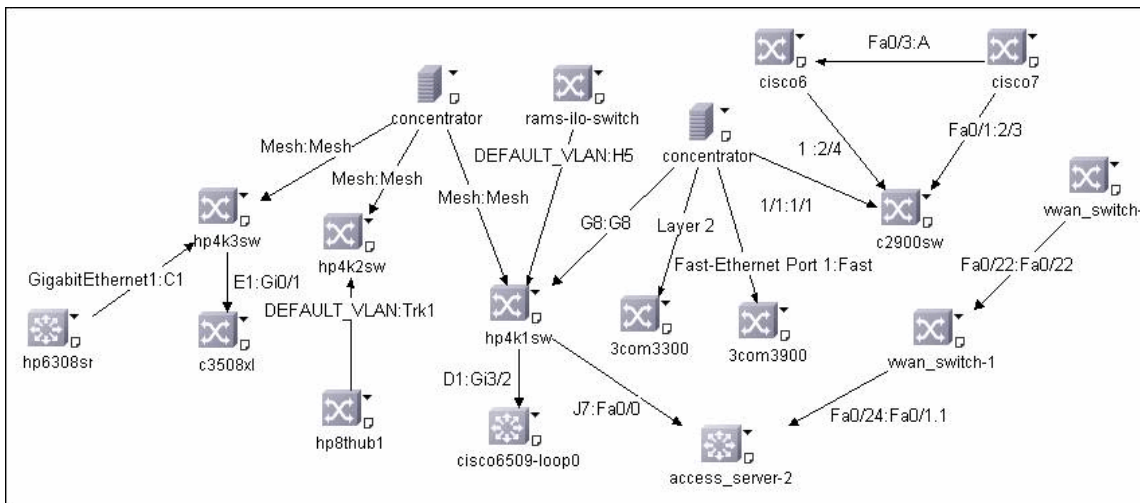
The following example shows typical successful job execution messages for the **Update Ids in NNM** job:

- The Job 'NNM Update IDs' started invocation (on 1 destinations)
- UCMDB Server: ucmdb75.fkam.cup.hp.com, UCMDB Port: 8080, UCMDB Username: admin, UCMDB Protocol: http, UCMDB Context: /axis2/services/UcmdbService
- NNM Server: it2tst10.cnd.hp.com, NNM Port: 80, NNM Username: system
- Getting ready to update Custom Attribute UCMDB_ID on 8161 NNM nodes in NNM
- This process may take a while since the UCMDB_ID custom attribute in NNM can only be updated one node at a time. Check probeMgr-patternsDebug.log for status update.

You can monitor the **wrapperProbeGw.log** file for job invocation, execution (and possible error) messages. For further debugging information, check the **probeMgr-patternsDebug.log** file.

5 Topology Map

The following diagram illustrates a typical NNMi Layer 2 view:



6 Troubleshooting and Limitations

Problem. The user does not have OS credentials for the NNMi server.

Solution.

- ▶ Remove the existing trigger TQL (**ip_of_nnm**). DDM creates this TQL following the discovery of the prerequisite jobs (for details, see “Prerequisites” on page 9).
- ▶ Add an **ip** TQL (of the NNMi server) that enables you to activate the job on the IP CI of the NNMi server. For details on adding a trigger CI, see “Choose CIs to Add Dialog Box” in *Discovery and Dependency Mapping Guide*.

Perform Change Management and Impact Analysis

You run impact analysis on a node in NNMi. Use the UCMDB Web Services API to call the NNMi correlations in the **NNM_Integration.zip** package:

- ▶ `NNM_Application_impacts_Application`
- ▶ `NNM_Host_impacts_Application`
- ▶ `NNM_Switch_Router_impacts_Host`

For details on running impact analysis, refer to the NNMi documentation. For details on the UCMDB Web Services API, see “The HP Universal CMDB Web Service API” in *HP Universal CMDB Integrations*. For details on correlation, see “Correlation Manager” in *Model Management*.

NNMi Protocol Connection Parameters

The following tables list the connection parameters from UCMDB to NNMi.

Parameter	Description
Connection Timeout	Time-out in milliseconds after which the Probe stops trying to connect to the NNM server.
NNM Password	The password for the NNM Web service (for example, Openview).
NNM User name	The user name of the NNM Web service (for example, system).
NNM Webservice Port	The Web service port number of the NNM server (for example, 80).
NNM Webservice Protocol	The protocol for the NNMi Web service (the default is http).
UMCBD Password	The password for the UCMDB Web service (the default is admin).
UCMDB Username	The user name of the UCMDB Web service (the default is admin).
UCMDB Webservice Port	The UCMDB Web service port number (the default is 8080).
UCMDB Webservice Protocol	The protocol for the UCMDB Web service (the default is http).

Troubleshooting and Recommendations

- ▶ If the NNMi Web service responds with a **cannot interrogate model** message, this usually indicates that the Web service request made to the NNMi server is incorrect or too complex to process. Check the NNMi JBoss logs for details.
- ▶ The volume of data retrieved from the NNMi server might be large. The recommended memory requirements for the DDM Probe process is 1024 MB. The NNMi Web service enables updating the individual nodes, one at a time. If an excessive number of nodes are to be updated with the same UCMDB ID, it may take a while for the update pattern to complete.