HP Software & Solutions

Global Enablement

2009

Student Exercise Book – HP UCMDB 8.0 Essentials

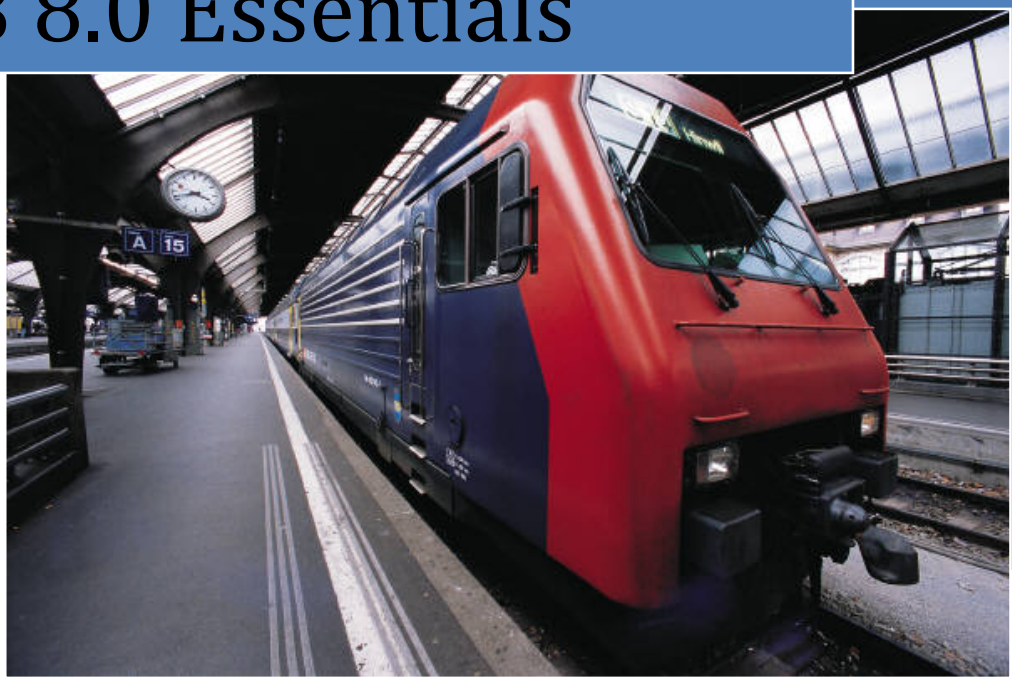


Table Of Contents

Configuration Management System - 4 -
Part I: Planning for the level of configuration item management - 4 -
Part II: Defining a configuration item type for host - 5 -
Part III: Defining a configuration item type to represent business unit. - 6 -
UCMDB Introduction - 8 -
Part I: Starting the and logging in to HP UCMDB - 9 -
Part I: Starting the and logging in to HP UCMDB - 9 -
Part II: Exploring a Topology View application - 10 -
Part III: Generating and Exporting an Asset and UCMDB Utilization Report - 15 -
Part IV: Exploring the Admin area - 17 -
IT Universe Manager - 18 -
Part I: View a Topology Map, Change a CI Label, and Update an Attribute - 19 -
Part II: Set View Parameters - 22 -
Part III: View Related CIs and Create an on-the-fly Topology Map - 25 -
Part IV: Add a new CI and update its attributes. - 29 -
CI Type Manager - 31 -
Part I: Exploring the CI Type Interface - 32 -
Part II: Investigating CIT Attributes - 34 -
Part III: Editing a CIT - 34 -
Part IV: Investigating Default Labels - 37 -
Part V: Adding a New Configuration Item Type (Optional) - 37 -
Introduction to TQL - 39 -
Part I: Creating a TQL in Query Manager - 40 -
Part II: Creating a view TQL in View Manager. - 45 -
Part III: Creating a TQL with Element ID constraints - 47 -
Part IV: Creating a TQL without Subtypes - 49 -
Part V: Creating a TQL that returns Windows XP hosts with antivirus. - 50 -
View Manager - 51 -
Part I: Creating a Host Resources View with Grouping and Folding - 52 -
Part II: Creating a Web Servers View with Grouping and Folding - 54 -
Part III: Creating an HTTP/HTTPs connections View - 55 -
Part IV: Creating a parameterized View - 56 -
Part V: Using the Visible property - 58 -
Modeling Studio - 59 -
Part I: View Creation - 59 -
Part II: MODEL creation using the Reveal option - 60 -
Part III: Custom Perspective Creation - 63 -
Topology Report Manager - 66 -
Part I: Creating a Gold Master Report - 67 -
Part II: Creating Topology Reports - 68 -
Reporting Applications - 70 -
Part I: Generating a Gold Master Report - 70 -

Part II: Comparing Snapshots - 71 -
Part III: Comparing Configuration Files - 72 -
Part IV: Generating an Asset Report - 73 -
Part V: Overview Reports - 74 -
Part VI: Viewing Topology Reports - 75 -
Part VII: Creating Favorite Filters - 76 -
Introduction to Correlation and Impact Analysis - 77 -
Part I: Running Correlation - 78 -
Part II: Running Show Impact - 78 -
Correlation Manager - 80 -
Part I: Creating a Correlation rule on SQL Databases Failure - 81 -
Part II: Creating a Correlation rule on the Impact of Network interface Failure - 84 -
Part III: Creating a Correlation rule to address Change - 87 -
Enrichment Manager - 90 -
Part I: Creating and Running an Update Enrichment - 91 -
Part II: Creating and Running an Update Enrichment - 94 -
Part III: Creating and Running an Add Link Enrichment - 96 -
Part IV: Creating a Double Hosts Enrichment - 98 -
DDM - 99 -
Part I: Understand the Environment on which to run Discovery - 100 -
Part II: Install and Configure the DDM Probe - 101 -
Part III: Complete setting up the scope of the Discovery - 103 -
Part VI: Run Discovery for Host Resources - 104 -

Configuration Management System

In this pencil and paper exercise, you are asked to consider what level of asset information you will manage in your CMDB. You will also develop a definition for a configuration item type for host and business unit.

Part I: Planning for the level of configuration item management
Part II: Defining a configuration item for host
Part III: Defining a configuration item for business unit

PART I: PLANNING FOR THE LEVEL OF CONFIGURATION ITEM MANAGEMENT

When implementing a CMDB strategy, consideration is given to the level of information that will be stored and managed in the CMDB. For infrastructure assets, it involves determining what will and what will not be managed from a configuration management and change management perspective.

- Given the list of assets below, select the ones you will manage in the CMDB:

  _____Siebel Sales (supporting sales revenue accounting)

  _____Servers supporting the email system

  _____HTML Editor used by the web development team

  _____Servers hosting the customer facing web site (hardware)

  _____Web servers (software)

  _____Office applications (such as Microsoft Excel)

_____Network printers

_____Desktop printers

- What criteria did you use to determine if an asset would or would not be included in the CMDB?

_____

_____

PART II: DEFINING A CONFIGURATION ITEM TYPE FOR HOST

In this exercise, you will define a configuration item type to represent a host. A host is any device that is able to communicate across the internet. A computer, a network printer, and a switch are examples of hosts.

- List three assets that quality as hosts in your organization

_____

- What attributes will be associated with a host? List the name of the attribute and brief description in the table below.

Host Configuration Item Type	
Attribute Name	Attribute Description

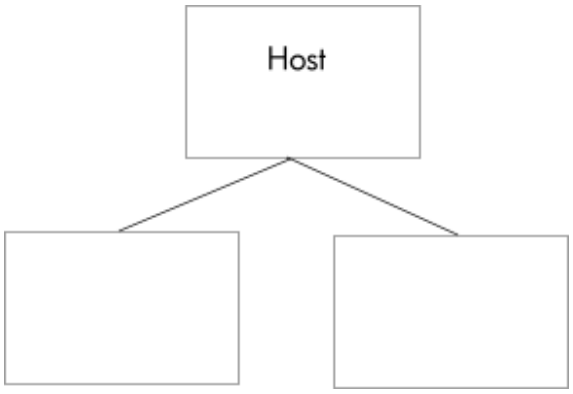
- Of the attributes listed, what attribute or combination of attributes can be used to identify a unique instance of a host in the CMDB?

  _____

- List 3 other types of IT assets that are related to the host configuration item type.

  _____

- Use the diagram below to list two subtypes of host?



PART III: DEFINING A CONFIGURATION ITEM TYPE TO REPRESENT BUSINESS UNIT.

In this exercise, you will define a configuration item type to represent a business unit. A Business Unit is a segment of the business which has its own plans, metrics, income and costs. Each Business Unit owns assets and uses these to create value for customers in the form of goods and services.

- List two business units in your organization

  _____

- What attributes will be associated with the business unit CI type?

Business Unit Configuration Item Type	
Attribute Name	Attribute Description

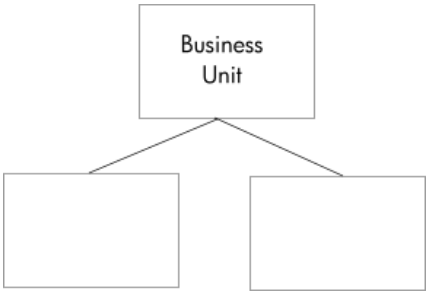
- Of the attributes listed, what attribute or combination of attributes can be used to identify a unique instance of a business unit?

  _____

- List some of the IT assets that support the business unit.

  _____

- Use the diagram to list two other CI Types that are subtypes of the business unit.



UCMDB Introduction

HP Universal CMDB has been setup in your training environment with a set of views and reports that allow you to investigate some of the basic features and navigation of the Application and Administration areas.

This exercise steps you through logging into HP UCMDB and navigating through the Topology View application, generating an Asset and CMDB Utilization Report, and navigating the Administration Interface.

Part I: Logging in to HP UCMDB
Part II: Exploring the Topology View application
Part III: Generating and Exporting a Report
Part IV: Exploring the Administration Interface

PART I: STARTING THE AND LOGGING IN TO HP UCMDB

1. Verify the UCMDB server state by selecting Start->All Programs -> HP UCMDB -> UCMDB Server Status

2. If the UCMDB server status is shown as NOT READY, proceed to start the server process. Otherwise, skip to step 4.

3. Start the UCMDB server process by selecting Start->All Programs -> HP UCMDB ->Start UCMDB Server or double-clicking the UCMDB Server desktop icon. Allow 1-2 minutes for all server processes to start and for the server to be fully available. Check again with the server status page to make sure that the UCMDB application is available.

4. Open Microsoft Internet Explorer and navigate to http://localhost:8080/ucmdb

Substitute "localhost" for the specific server name where the UICMDB server is installed, if not running the application locally.

5. Login with the default username and password for a brand new installation:
   Username: admin
   Password: admin

6. Validate that the browsers opens the UCMDB application GUI in a new window and correctly displays the application GUI elements. This step ensures that you are running the correct Java Plug-In and browser versions.

PART II: EXPLORING A TOPOLOGY VIEW APPLICATION

Selecting a topology map for viewing:

1. Use the **Application** menu to navigate to the Application (end-user) area.

2. If not already inside the Topology View, then navigate to the **Topology View** application by selecting the Topology View tab.

3. From the **View** drop-down menu inside the CI Selector pane, select the **hosts by network** topology map (view).

- How many layers of information are in this topology map?

  _____

- List two ways to navigate from one level to another in the topology map.

  _____

  _____

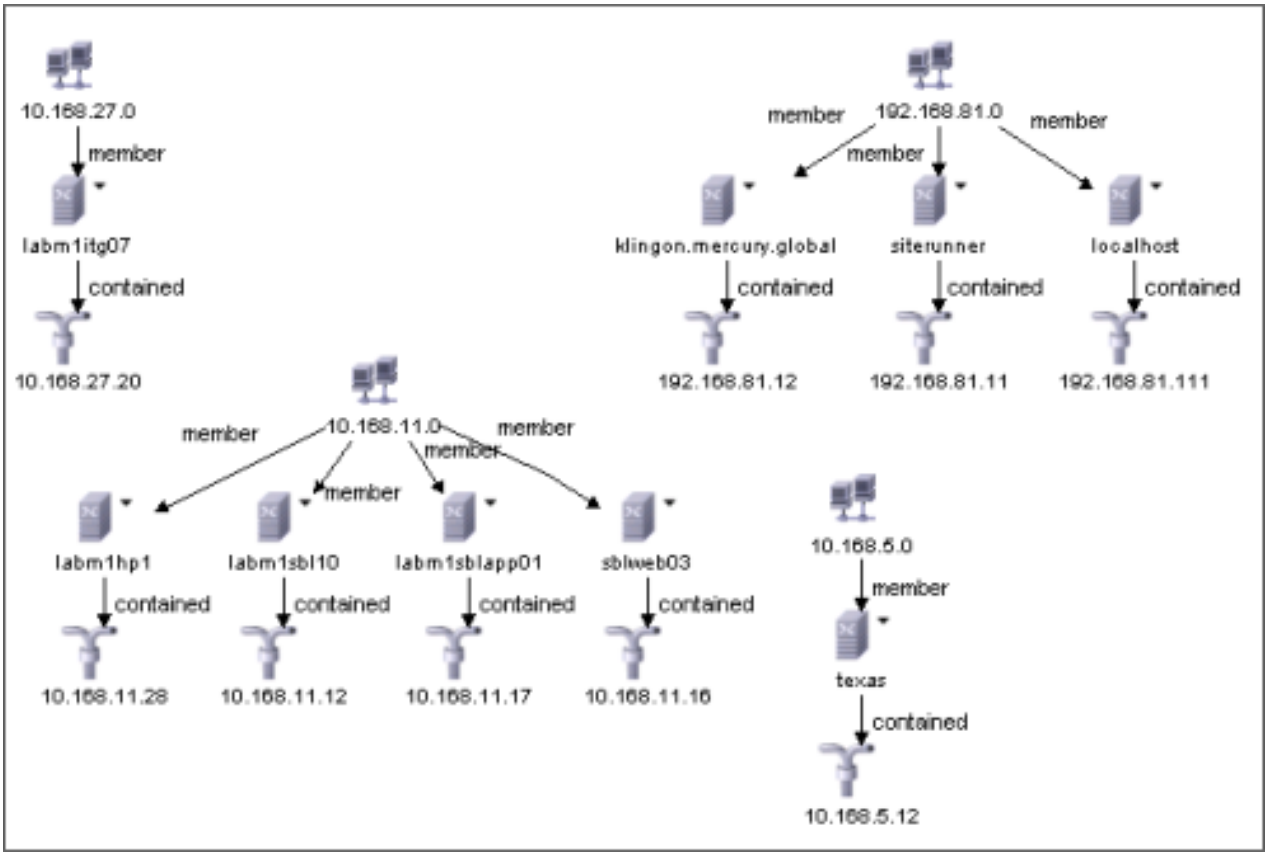
4. In the Topology View (**hosts by network**) pane, select the **Text Mode** tab and view all CIs. Display only the CIs of type Host using the **Show CI instances of** drop-down.

Exploring Topology Map Layout Options

Navigating to labm1sbl10 in the topology map (if not able to locate this host visually, search the view using the Find functionality at the bottom of the CI Selector area):

1. In the **hosts by network** topology map, select the CI named **labm1sbl10**.

The following topology map should be visible in the map pane:



Investigating different topology map layout options:

1. Select each of the following layouts below from the **Layout** menu and observe the topology map:

   Hierarchical Layout Circular Layout
   Symmetric Layout Orthogonal Layout

2. Complete the following table based on your observations.

Layout Description	Layout Name
Layout particularly suited to visualizing ring or start network topologies.	
Layout which emphasizes dependencies by placing the nodes at different levels.	
Layout that routes relationships horizontally and vertically.	
Layout that represents the symmetries that may occur in a graph.	

Exporting a topology map to an image (.jpg) file:

1. From the **Operations** menu, export the topology map to the desktop as a .jpg file selecting the Export Map to Image.

- Was the entire topology map exported? How were you able to determine this?

  _____

  _____

  _____

Investigating CI properties for the host labm1sbl10:

2. Select the **labm1sbl10** CI in the topology map then navigate to the **Properties** page.

3. Right mouse-click or examine the Properties tab of the Information Pane below the Topology View

4. Investigate the Properties of **labm1sbl10** to answer the following questions.

- What is the CI Type? _____

- By what method was the CI last updated?

  _____

  _____

- What is the value of the host_key? _____

- What does the host_key represent? (Hint: use description button at bottom of page):

  _____

  _____

5. Review the View options under the Mode: dropdown on the toolbar of Topology View toolbar. Experiment with Zoom, Drag, and Select to interactively explore the **hosts by network** view

6. Selecting the Host CI labeled **10.168.11.0** and using the **Show** drop-down, view the **Related in View** and **Related in DB** results.

7. Using the appropriate Layout selections, perform the following:
   a. Hide all panels other than the hosts by network panel
   b. Hide all relationships
   c. Hide all node labels
   d. Restore the original layout

PART III: GENERATING AND EXPORTING AN ASSET AND UCMDB UTILIZATION REPORT

Configuring and generating a report:

1. Navigate to the **Asset Report** in the **Reports** tab.

2. Click the **Selected View** link and select **Unix host resources** from the view tree. This view is located in the Boot Camp folder.

3. Select the **View** radio button if it is not already selected.

4. Generate the report by clicking on the **Generate** button.

 In what formats can the report data be exported?

 _____

5. Using the Format button, select the **Printer Friendly** option.

 How many servers are in the Asset report? 4

6. Close the Printer Friendly browser.

7. Can you find an easier way to generate an Asset Report without leaving the Topology View application?

 _____

 _____

Navigating to the UCMDB Utilization report:

1. Navigate to the **CMDB Utilization** report in the **Overview Reports**.

- How might this report be useful to your organization?

_____

_____

_____

_____

PART IV: EXPLORING THE ADMIN AREA

Navigating to the Administration area:

1. Use the **Admin** menu to navigate to the Administration area.

2. Investigate each of the **Modeling**, **Discovery**, and **Settings** tabs/main pages to review the types of applications available in each tab.

3. Based on step 2, complete the table: specify the tab and application that best fits the activity.

Activity Description	**Which Admin tab and application?**
Manage UCMDB Users and Groups.	
Create a new Topology Map for the end user community.	
View the status of active Discovery Jobs along with their scheduling information.	
View the definitions of a CIT along with its related CITs.	

Logging out of the UCMDB:

1. Use the **LOGOUT** link to logout of the UCMDB.

2. Close all open browsers.

IT Universe Manager

HP Universal CMDB has been setup in your training environment with a set of views to allow you to investigate some of the basic features and navigation in IT Universe Manager.

This set of exercises steps you through some of the tasks accomplished in IT Universe Manager: selecting and viewing a topology map, changing a CI label, updating CI attributes, setting a view parameter, creating an on-the-fly topology map, adding a new CI, searching for the new CI.

Part I: View a Topology Map, Change a CI Label and Update an Attribute
Part II: Set View Parameters
Part III: View Related CIs and Create an on-the-fly Topology Map
Part IV: Add a New CI

PART I: VIEW A TOPOLOGY MAP, CHANGE A CI LABEL, AND UPDATE AN ATTRIBUTE

Navigating to IT Universe Manager and open the **unix host resources** view:

1. Login into UCMDB and navigate to **IT Universe Manager** in the UCMDB Administration area.

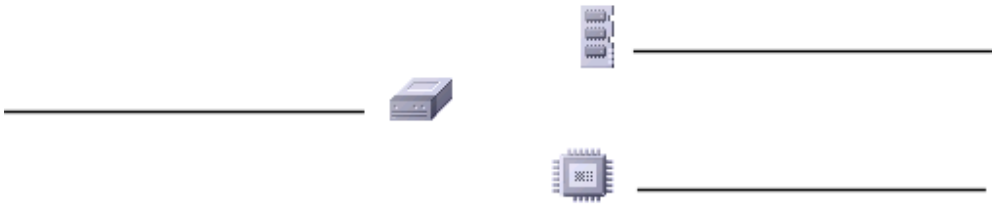
2. In View Explorer, select the **unix host resources** view from the **View** list.

Investigate host resources of the host: **labm1hp1**:

1. In the View Explorer, locate **labm1hp1** and click the **+** next to it to view the child CIs.

2. Select one of the child CIs to view the layer.

3. Investigate the layer using the "tooltip on hover" capabilities to learn the types of objects the host resource icons represent. List their types below.



Investigating the host resources of **labm1sbl10**:

1. Select **labm1sbl10** in View Explorer then select **View Sublayer** from the right-click context menu.

2. Take a look at the expanded layer in the Topology View pane. How many CPUs does **labm1sbl10**
   have?_____
   _____
   _____

3. Close the sub-layer by clicking on the **-** sign in the upper left corner.

Change the label of the **localhost** CI to **my discovered computer**:

1. In the map pane, select the host CI with the display label **localhost**.

2. Select **Label > Edit Label** from the right-click context menu.

3. Change the label to **my discovered computer**.

4. Click the **Refresh** button from the CI Selector toolbar to refresh the view and take notice of the changed label.

5. Once the label changes in the map pane, go to the next step.

Reset the label to its original value:

1. In the Explorer tree select **my discovered computer**.

2. Reset the label to its original value using the Reset option.

3. Refresh the view to observe the change in the label.

Edit the User Label attribute for **localhost**:

1. Select **localhost** then navigate to the **Properties** page.

2. Add the user label: **my discovered computer**.

3. Return to the map pane and refresh to observe the impact of the change.

 What observations can you make about user labels and display labels?

_____

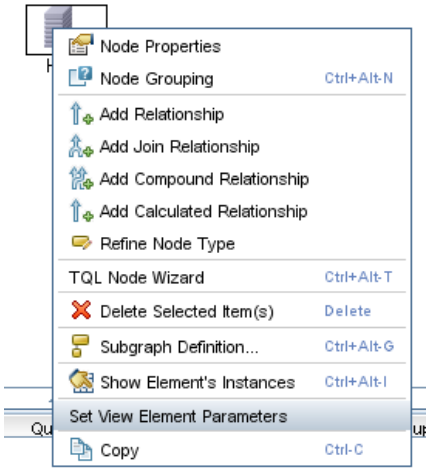
_____

PART II: SET VIEW PARAMETERS

Open the **all hosts with parameter** View Parameter:

1. Navigate to the **all hosts with parameter** view.

2. Right click a node in the editing pane and select **Set View Parameters** button.

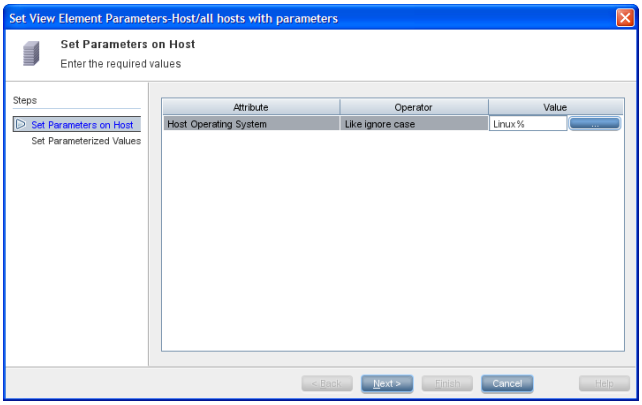


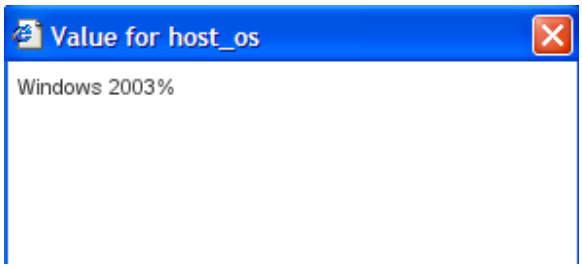
- What is the Element Type for the parameter? _____

- To which of the attributes is the parameter applied? _____

- Based on the information in the **Set View Parameters** dialog, what types of hosts are currently contained the view? _____

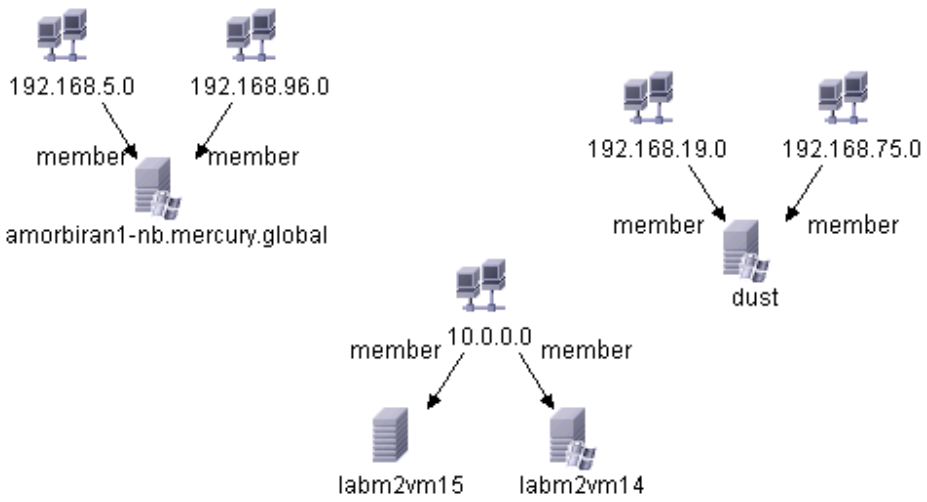
Set the View Parameter for Windows 2003 servers:

1. In the **Set View Parameters** dialog, click on **Linux%** to activate the column then click on the browse button. 

2. In the edit dialog, change the parameter value to **Windows 2003%** then click **OK**. 

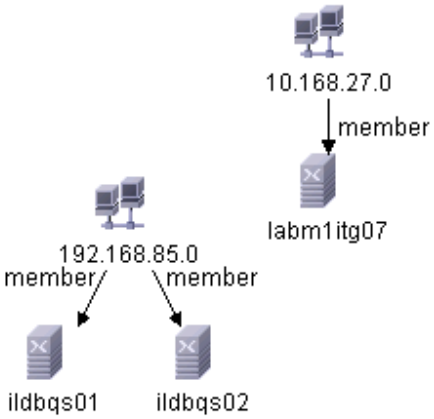
3. Click the **OK** button on the **Set View Parameters** dialog.

4. Refresh the view and check it against the view shown below. If your view does is not similar to this one, notify your instructor.



5. Open the **Set View Parameters** dialog and change the value to **Linux%**.

6. Refresh the view then check it against the view shown below. If your view is not similar to this one, notify your instructor.



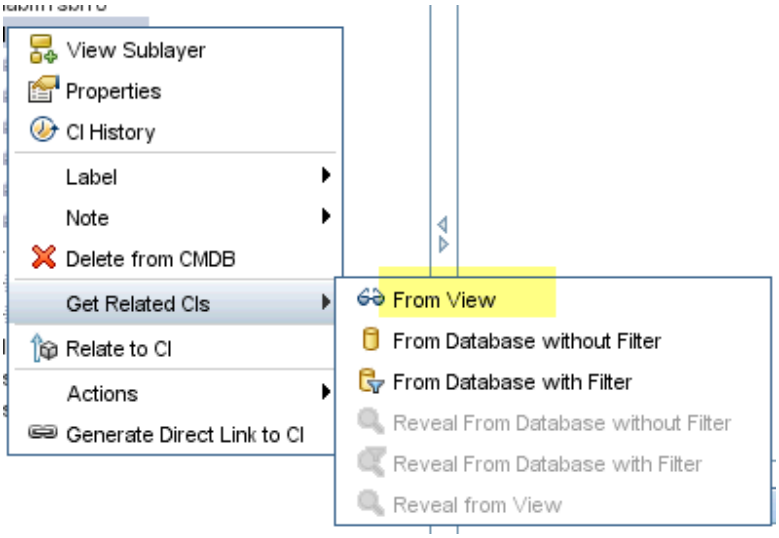
PART III: VIEW RELATED CIS AND CREATE AN ON-THE-FLY TOPOLOGY MAP

Open the **unix host resources** view and navigate to Related CIs.

1. Open the **unix host resources** view.

2. Select **labm1sb1app01** in the Explorer tree.

3. Right-click and select the **Get Related CIs - > From View** sub-menu.



Ensure that the 'Related CIs in View' window appears and view the related CIs for **labm1sblapp01**.

Close the 'Related CIs in View' window and focus on the Topology View.

1. Select **labm1sb1app01** in the Topology View and explore the "Show" options on the toolbar.

2. View using the **Related in View** option. Observe the topology map.

3. Select the **Related in DB** option. Observe the topology map.

- What happened when you attempted to view all the CIs in the CMDB related to labm1sb10? Why?

  _____

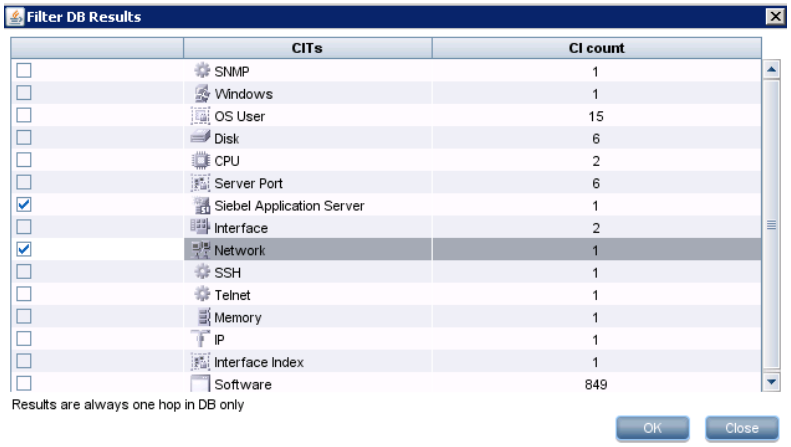
  _____

4. Select the labm1sb10 host in the View explorer, right-click, and select **Get Related CIs -> From Database with Filter** to bring up the filter dialog.

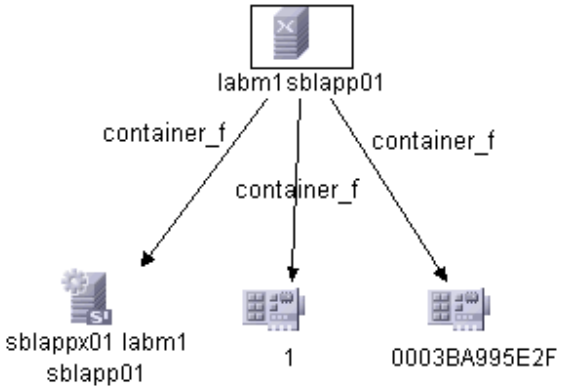
- Based on the information in the filter dialog, what type of CI was the main contributor to the previous error? _____

Discover the Siebel applications.

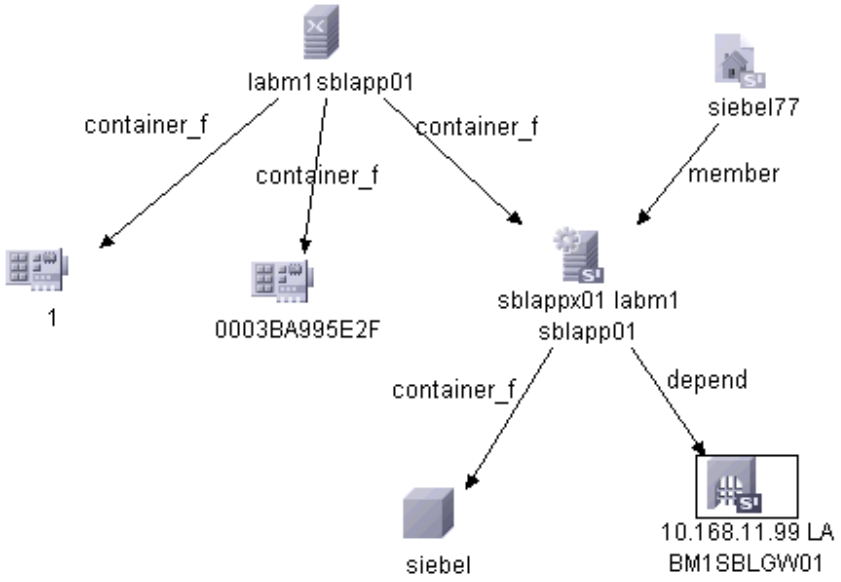
1. Continuing from where you left off in the previous step, in the filter dialog, select the **Siebel Application Server** and **network** CIT (if available). Click **OK**.



2. Select the **Siebel Application server** in the **floating window** (Related CIs from Database with Filter) representing the filtered topology map. Use the tooltips and hover over the CIs to identify more easily the application server.

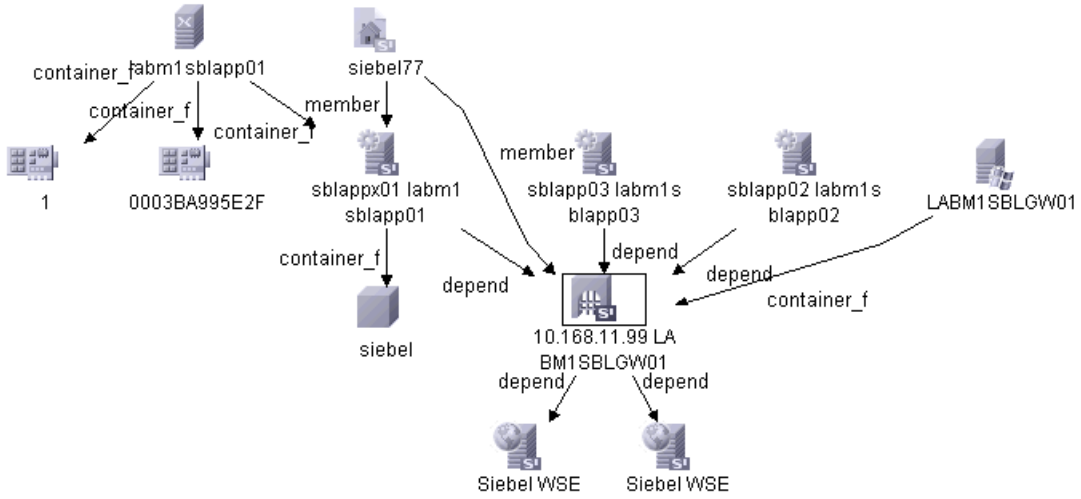


3. Still in the floating window, select **Get Related CIs -> Reveal from Database Without Filter** in the right-click context menu for the Siebel Application server.



4. In the topology map, locate the Siebel Gateway and select it.

5. Still in the floating window, use the right-click context menu to select **Get Related CIs -> Reveal from Database Without Filter**. Your topology map should be similar to the one shown below.



- How many Siebel Application servers talk to the Siebel Gateway? _____

- What is the name of the box that runs the Siebel Gateway? _____

6. Use the skills learned in this section to identify the computers on which the 3 Siebel Applications and gateway run. Then complete fill in the table below. Note: you will want to use the context menu to bring up the CI properties rather than navigating away from the related view to avoid losing the topology map.

Siebel Application Component	Host Name	Host Operating System Type
Siebel Gateway: 10.168.11.99		
Siebel Application 01: sblppx01		
Siebel Application 02: sblapp02		
Siebel Application 03: sblapp03		

PART IV: ADD A NEW CI AND UPDATE ITS ATTRIBUTES.

Create a new application CI named myNewLOB:

1. Click on the **Insert CI**  button in the map pane toolbar.

2. Make sure that "All CI Types" radio button is selected.

3. Expand the Business type in the tree and select **LOB**.

4. Enter the following General Properties:

   Name: myNewLOB

   Created by: Admin

   Country: USA

   State: Georgia

   Allow CI Update: True

5. Click **Save**.

6. Click **Close**.

Find myNewLOB in the CMDB

1. In the **View Explorer (CI Selector)**, switch from **View Browser** to **CMDB Search** from the drop-down.

2. Enter the name of your new CI in the **Search For**: field.

3. Set the search scope (CI Type) to **Business**.

4. Click the Search button to find **myNewLOB**.

- Did your search find the new CI? _____

- If the search scope is changed to Host (the default) will it find your new CI? Explain.

  _____

  _____

5. Right-click on **myNewLOB**, select **Generate Direct Link to CI**, and **test** the new URL. (A successful test will result in opening a new window representing the newly created CI in the IT Universe application).

If not already in the IT Universe Manager, navigate to the Modeling main page.

1. Set the mode to **View Browser** again by selecting VIEW BROWSER from the mode drop-down menu.
2. Practice navigating and exploring the application. Click on the "Go to View Definition" button to switch to the View Manager, then go back to IT Universe by selecting the "Go to IT Universe" button on the toolbar.

CI Type Manager

The UCMDB has been setup in your training environment with a set of data to allow you to investigate the CI Type model.

This exercise steps you through navigating the CI Type Manager, editing a CI Type, and observing how changes to the model affect CI behaviors.

Part I: Exploring the CI Type Interface
Part II: Investigating CIT Attributes
Part III: Editing a CIT
Part IV: Investigating Default Labels
Part V: Adding a New CIT (Optional)

PART I: EXPLORING THE CI TYPE INTERFACE

Navigate to the CI Type Manager:

1. From the Modeling main page in the UCMDB Administration area, navigate to **CI Type Manager**.

Explore the CI Type Manager:

1. In the **View Explorer**, expand the **System** CI Type.

   How many CIs are stored in the CMDB? How many are of type Host? How many are Business Service View items?

   _____

   _____

2. Expand the **Hosts** CI Type, select **Computer**, and then select **Unix**.

3. From the right-click context menu, select **Show CIT Instances** to bring up the **CI Instances <Unix>** dialog.

- Explain the difference between a Unix CIT and a Unix CI instance

_____

_____

_____

_____

How many of the Unix CIs have Hewlett Packard as a Host Vendor? On what date were the instances created? How did you find out?

_____

_____

4. Close the **CIT Instances <Unix>** dialog.

5. Investigate the **Windows** CIT, the **Host** CIT and the **Host Resources** CIT to answer the following questions.

- What type of relationship is allowed between Host and Host Resources?

  _____

- What type of relationship is allowed between Host Resource and File system?

  _____

- Can a Host be related to a Disk? Explain.

  _____

  _____

PART II: INVESTIGATING CIT ATTRIBUTES

Investigate the Windows CIT:

1. Select the **Windows** CIT in the **Explorer** tree.

2. Click on the **Attributes** tab.

- What is the key attribute? What does the key indicate in the first column of the attributes grid?

  _____

  _____

  _____

  Will the host model of a CI of type Windows be visible in the Properties Page? Will it be editable? Explain.

  _____

  _____

  _____

- What is the significance of attributes shown in blue versus attributes shown in black?

  _____

  _____

PART III: EDITING A CIT

Open the Edit dialog for Net Printer:

1. Select the **Net Printer** CIT in the Explorer tree: System > Host > Net Device > Net Printer.

2. Click on the **Attributes** tab.

Edit the default value, icon and default name:

1. Locate the **City** attribute in the **Attributes** tab. Double-click to open the **Edit Attribute** dialog.

2. Add "Chicago" as the default to the City and click **OK**.

3. Examine the **Icon** tab and set up the icon to change to **printq**, whenever the **Admin State** attribute has a value of **Disabled.**

4. Select the **Default Label** tab. Edit the default label so it will contain the current label plus the city value.

- Write the format string for the new default label below. (hint: to preserve the current label, place a set of () around it before adding the city):

  _____

5. Click the **Save** icon to apply the changes.

Add a new Net Printer to test the changes:

1. Navigate to **IT Universe Manager**.

2. Click the **New CI** button on the map pane menu bar to bring up the **New CI Wizard**.

3. In the wizard, select **Net Printer** for the CI Type.

4. Under **Properties inherited from class IT Universe**, enter TestChanges in the **Name** field.

5. Under **Properties inherited from class Host**, enter myNetPrinter in the **HostName** field.

6. Under **Key Properties** enter testHostKey.

7. Click the **Save** button.

8. Click the **Close** button.

9. Return to **CI Type Manager**.

Observe the changes in the CI Instances grid:

1. Select **Net Printer** from the Explorer tree then select **Show CIT Instances** from the right-click context menu.

- Did the new printer show up in the Instances grid?

  _____

  _____

  Were the changes to the CIT translated to the new CI? To all existing CIs? Explain.

  _____

  _____

  _____

  _____

2. Close the **Show CIT Instances** dialog.

3. Navigate to the **Modeling** main page.

PART IV: INVESTIGATING DEFAULT LABELS

1. Complete the following table with the formatting string for the described default label.

Default Label Description	Format String
Choose the dns_name if it is available otherwise select the host_key	
Choose the dns_name and the host_key	
The label will contain the host_key followed by the phrase WinSvr	

PART V: ADDING A NEW CONFIGURATION ITEM TYPE (OPTIONAL)

Windows 2003 New CIT Requirements:

The new CI Type will be a subtype of the Windows CIT. It will have the name win2003server and the display name Windows 2003. It will have one additional attribute, server_owner and this attribute will be a required attribute with a default value of "unknown." The default label will be the same as the Windows CIT except it will start with phrase "Win2003".

1. In CI Type Manager, select the **Windows** CI Type from the CI Types tree. From the right-click context menu, select **New**.

2. Follow the steps of the **Create Configuration Item Type** Wizard to add the CI Type based on the requirements above.

- When you created the new CIT, it was to be a subtype of the Windows CIT. What step ensured this would be the case?

  _____

  _____

  _____

3. Add a new Windows 2003 CI to test the new CIT. Verify the correctness of the following: display label, required attribute, default value of the server_owner attribute, and icon.

4. Once testing is finished, navigate to the **Modeling** main page.

Introduction to TQL

The UCMDB has been setup in your training environment with a set of data to allow you to create TQL queries.

In this set of exercise you will create TQL queries in Query Manager and in View Manager. In addition, you will learn about some of the tools available for debugging a query.

Part I: Creating a View TQL in Query Manager
Part II: Creating a View TQL in View Manager
Part III: Creating a TQL with Element ID constraints
Part IV: Creating a TQL without Subtypes
Part V: Creating a TQL that returns Windows CIs without Antivirus

PART I: CREATING A TQL IN QUERY MANAGER

Planning: This TQL will return all Unix Hosts with their CPUs and IP Addresses from the CMDB.

- What CITs will you need for this TQL? _____

Creating a Folder in Query Manager:

2. From the Modeling main page in the UCMDB Administration area, navigate to **Query Manager**.

3. In Query Manager, select the Explorer tree (Queries tree) and select the **Root** folder.

4. If not already there, add a new folder named *Boot Camp*.

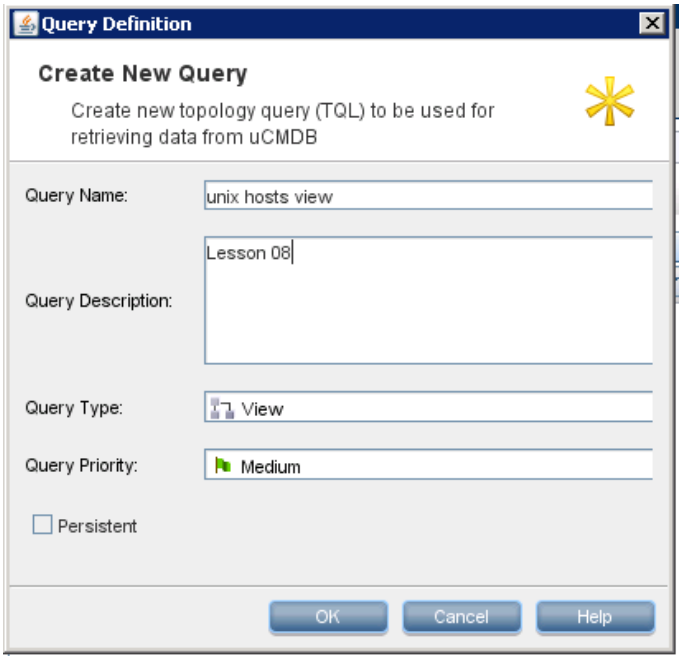
Creating a basic Unix TQL:

1. In the *Boot Camp* folder, create a new TQL definition by selecting the **New** icon.

- What types of TQLs can be created in Query Manager?

_____

2. Enter the following information for your new definition.



3. From the CI Type pane, select the Unix CIT and drag it into the Editing pane.

The Calculate  button is used to calculate the number of CIs that will be returned in the TQL result.

- How many Unix hosts will be returned by your TQL? _____

Adding IP CIT and a relationship to the TQL:

1. Add the IP address CIT to the TQL by dragging it into the Editing pane.

2. Add a relationship between the IP address and Unix CIT. Use the contained link.

- How many Unix and IP CIs will be returned in the result now?

  Unix _____ IP _____

- Why does this number of Unix CIs differ from the previous count?

_____

_____

_____

_____

Editing a Cardinality condition on the Unix CIT:

1. From the right-click context menu for the Unix host, select **Node Properties**.

2. In the Cardinality tab, select the Container (Unix, IP) condition.

3. Edit the cardinality condition so that all Unix hosts are returned no matter if they have IP addresses associated with them or not.

- How many Unix hosts are being returned now? What cardinality condition was used?

  _____

Adding a CPU to the TQL:

1. From the CI Types pane, add the CPU CIT to the TQL.

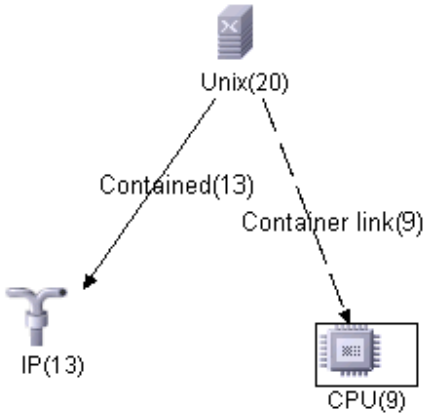
2. Add a relationship between Unix and CPU.

- How many CIs will be returned in the result?

Unix ____ IP Address _____ CPU _____

3. Adjust the cardinality condition again so that all Unix hosts are returned.

4. Debug your TQL as necessary. It should look like the TQL below and contain all the Unix hosts in the system. (Exact CIT counts may differ from the picture).



5. Save your TQL (Resources Menu ->Save).

- In Query Manager, why did you have to wait to save the view TQL until it was completely built and verified?

  _____

  _____

- What two ways are there to go about editing the TQL after it has been saved.

  _____

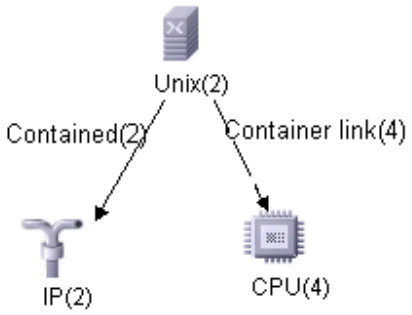
  _____

Creating a second view TQL for Unix hosts with 2 or more CPUs:

1. From the right-click context menu for unix hosts view, select **Save-As** and save the TQL as unix hosts view B.

2. Modify the TQL so that it returns all Unix hosts with 2 or more CPUs.

3. Save the TQL when you are finished. Your TQL after calculation should match the TQL below.



3. Return to the Modeling main page.

PART II: CREATING A VIEW TQL IN VIEW MANAGER.

Add an Essentials Class folder in View Manager:

1. Navigate to View Manager.

2. Create an Essentials Class folder if it does not already exist.

Planning for TQL creation:

- This TQL will return all Windows 2003 servers with Databases and their networks.

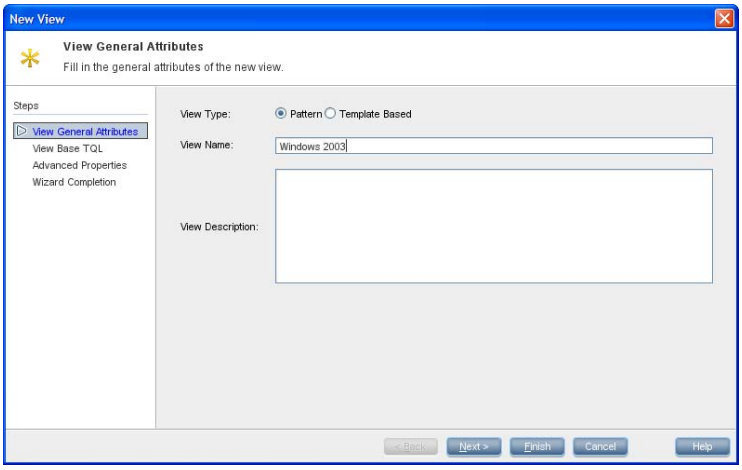
- How will you ensure only Windows 2003 servers are returned? (Ignore the one you created previously if you completed the optional exercise for the CI Type lesson)

  _____

  _____

Creating a Windows 2003 TQL:

1. Create a new TQL definition as follows and add the information below.



2. Add a Windows CIT to the editing pane.

3. View the CI Instances to determine the attribute on which to base the condition. When finished, close the dialog.

- What attribute will you use in your attribute condition? _____

Adding an Attribute condition:

1. Right click on the **Windows** host and select **Node Properties** from the menu.

2. In the **Attribute** tab in the **Node Properties** dialog, add a new attribute condition to restrict the servers to Windows 2003.

3. Verify that only windows 2003 servers are being returned to the TQL. Debug as necessary.

Planning for TQL creation:

- What other CITs are required to build the designated TQL?

_____

Creating the TQL

1. Finish creating your TQL based on the planning information above.

2. Save your TQL and verify with Calculate and Show Instances. Debug as necessary.

3. Preview the TQL results

PART III: CREATING A TQL WITH ELEMENT ID CONSTRAINTS

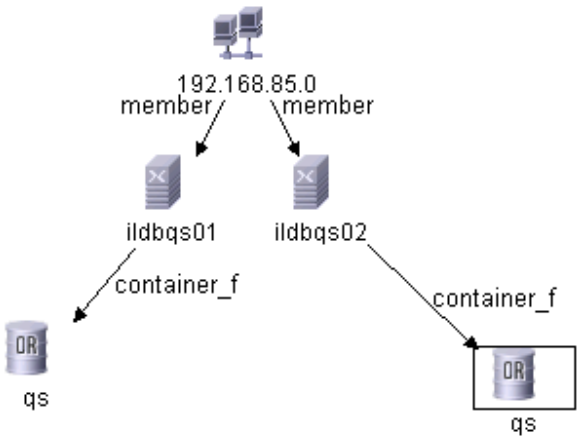
1. Create a new TQL where the Windows 2003 CIT is replaced by a Unix CIT. View CIT instances (Show element instances) to confirm that your query only returns non-Windows hosts.

2. Add an Identity constraint to restrict the network to 192.168.85.0

3. Save your TQL as Unix host view.

View Manager allows you to preview the results of your query in the Preview pane. To do that, click on the **Generate Preview** button in the View Explorer.

4. Click on the preview pane to preview your TQL results. It should look similar the result below.



5. Debug your TQL as necessary. If the query returns no results, try using all Hosts, not just Unix, and set the identity constraint to 16.59.34.0

PART IV: CREATING A TQL WITHOUT SUBTYPES

1. Create a new TQL called "web servers view A" to address the requirement below:

TQL Requirement: the TQL should query the UCMDB for hosts with web servers. The hosts should not be classified into any Subtype. When you are finished there should be 11 hosts and 12 web servers.

- How will you restrict the results so no host with a subtype classification was returned?

  _____

  _____

2. Create the TQL that satisfies the restrictions above. Save and debug as necessary.

3. Remove the restriction so all hosts with web servers will be returned. Save the TQL

PART V: CREATING A TQL THAT RETURNS WINDOWS XP HOSTS WITH ANTIVIRUS.

1. Create a new TQL to answer the following question. Name it Windows XP view A.

TQL Requirement: the TQL should query the CMDB for Windows XP hosts that do not have Symantec Antivirus software installed. (Hint: look for the software Element CIT under the Host Resource CIT).

2. Create the TQL that satisfies the description above. Save and debug as necessary.

- What conditions did you use to ensure the correct windows XP hosts were returned?

_____

_____

_____

_____

View Manager

The UCMDB has been setup in your training environment with a set of data to allow you to create topology maps in View Manager.

In this set of exercises you will create and preview topology maps in View Manager.

Part I: Creating a Host Resources View with Grouping and Folding

Part II: Creating a Web Servers View with Grouping and Folding

Part III: Creating an HTTP/HTTPs connections View

Part IV: Creating a parameterized View

Part V: Using the Visible property

PART I: CREATING A HOST RESOURCES VIEW WITH GROUPING AND FOLDING

View requirements: the view will show hosts on the 10.168.11.0 network with the following host resources: CPU, Memory and Disks/File Systems. All hosts on the network will be visible in the first layer of the view and their resources, if they have them, on the next layer.

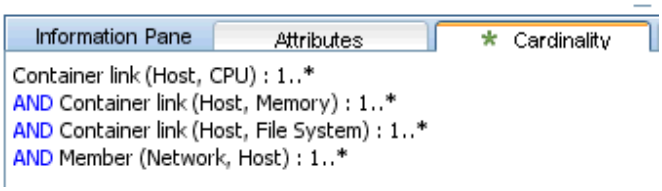
4. Navigate to **View Manager**.

5. From the Boot Camp folder, create a new view definition. Select the "Pattern" radio button when choosing the View Type. Name the view **host resources view A**

6. Base the view on new TQL. In Advanced Properties, make sure that the view is assigned to IT Universe. Leave the Viewing options unchecked.

7. After leaving the Wizard, create the View TQL that contains a host, CPU, Memory and File System CIT where the hosts reside on the 10.168.11.0 network. Suggestion: create the hosts on the network first and debug, then add the host resources.

- Once the CITs and relationships are added to the TQL, the following cardinality conditions are added by default. Fix the cardinality conditions below to satisfy the requirements of the view. Then correct the cardinality in your TQL, if necessary.



8. Preview the view.

Grouping and Folding

1. Select the host CIT and from the right-click context menu select **Node Grouping**.

2. Group the hosts by CI Type.

3. Preview your view.

4. Fold the host resources under the parent host for each resource. (Hint: Use Relationship Folding Rules)

5. Preview your view.

- List two grouping or folding solutions that will remove all the links from the first layer or organize them so there is one link to each group. Hint: Group the relationships by TQL Node or fold the hosts under the network.

6. Implement the one that will leave the groups on the same level as the network.

- What grouping or folding rule did you use?

  _____

  _____

  Hint: Use grouping to leave groups on the same level as the network.

7. Save your view and preview it. Debug as necessary.

PART II: CREATING A WEB SERVERS VIEW WITH GROUPING AND FOLDING

View requirements: this view will show all hosts that have web servers, broken down by type of web server.

Creating the View

4. Create a new View named Web Servers View A.

5. Create the TQL for your view.

6. Add grouping and folding rules for your view to satisfy the view requirements.

7. Save and debug as necessary.

PART III: CREATING AN HTTP/HTTPS CONNECTIONS VIEW

View requirements: this view will show all HTTP/HTTPs connections between hosts. You may want to consult the Servers Connectivity out-of-the-box view during your planning. It is located under the Network folder. Standard HTTP/HTTPs ports numbers are 80, 81, and 443. Consult your instructor if you have questions.

Creating the View

1. Create a new View named HTTP Connect A.

2. Create the TQL with the appropriate node conditions and cardinality.

3. Add grouping and folding to build an organized view.

4. Save and debug as necessary.

PART IV: CREATING A PARAMETERIZED VIEW

View requirements: In this view you will parameterize the Host CITs by operating system.

1. Open host resources view A. Save it as host resources view B.

2. Use the Show Element Instances to view the host operating systems for the hosts.

- List the host operating systems:

_____

_____

3. Open the **Node Properties** dialog for the Host CIT and create a new Attribute Condition.

4. Select the host operating system attribute. Set the operator to %Like ignore case%

- Why use this operator?

_____

_____

5. Select the "Parameterized Value" option from the drop-down to parameterize the host operating system.

6. Add %2003% as the default value in the value field.

7. Save and preview.

Checking the view in IT Universe Manager

1. Navigate to IT Universe Manager and open the parameterized view: host resources view B.

2. Set the value for a couple of the other operating systems by Setting the Parameters for the view.

3. Use the results of your checking to answer the following questions.

- How many SunOS hosts were there? _____

- How many HP-UX hosts were there? _____

PART V: USING THE VISIBLE PROPERTY

View requirements: create a view with Windows hosts with memory, CPU, and disks/file systems if they have them. Restrict the view to the 10.168.11.0 network. The network should not appear in the view. The host resources should be folded beneath the hosts using relationship folding rules on the view.

1. Create a new view named windows resources view A.

2. Add the CITs and relationships to satisfy the requirements above.

3. From the view, select Relationship Folding rules. Create one rule only that will fold the memory, CPU and disks/file systems beneath their hosts.

- List your node 1, node 2 and rule below:

_____

_____

4. Set the property so that the network is not visible.

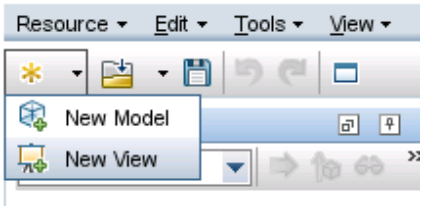
5. Save and debug as necessary.

Modeling Studio

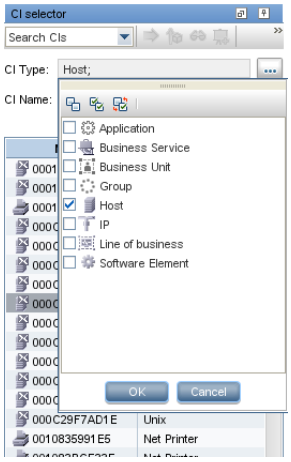
The UCMDB has been setup in your training environment with a set of data to allow you to create Models, Views and Perspectives in Modeling Studio.

PART I: VIEW CREATION

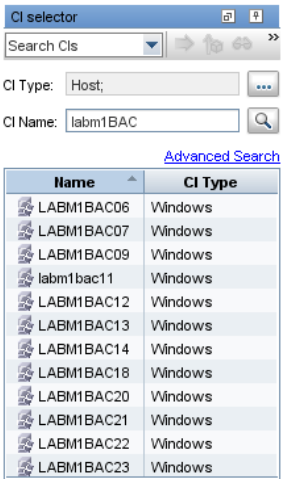
1. Go to Start->Program->HP UCMDB->Start the HP UCMDB Server.
2. Login with admin/admin credentials.
3. Go to Admin→Modeling→Modeling Studio; Click the NEW button and select the 'New View' option.



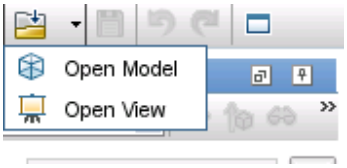
4. Go to CI Selector and browse to 'Search CIs' and search for all Host CIs in the CMDB.



5. Select the following hosts instances; labm1BAC06, labm1BAC07, labm1sbl10 and labm1sblapp01 and by right click option add them to the Content pane. (search by CI Name might help you)



6. From the Perspective choice box, select Content only Perspective (default) and review the results in the lower pane.
7. Save your view and give it a meaningful name myHosts<YourName>.
8. Go to IT Universe Manager, select your view and review the view results.
9. Go back to Admin→Modeling→Modeling Studio; Click the OPEN button and select the 'Open View' option.

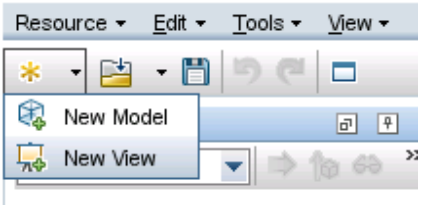


10. Select your view. The view you created can be easily modified; from the 'CI Selector expend your CIT list and search also IPs CIs.

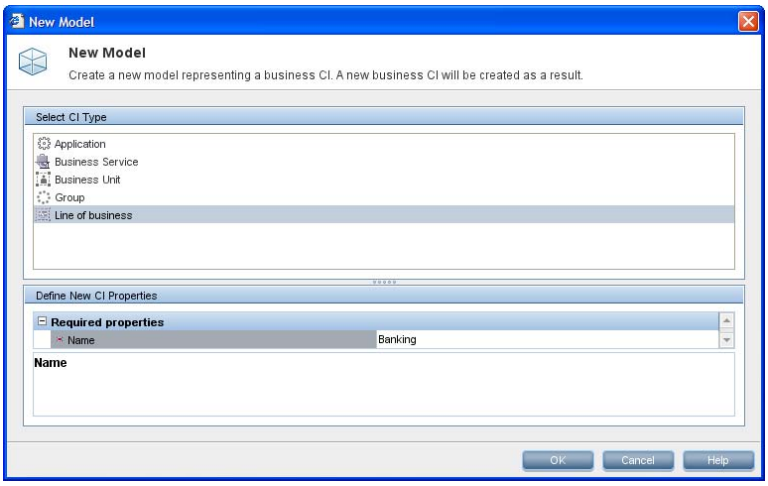
Its needs to be clear that this view is basically a CI Collection with no hierarchy defined which we apply a Perspective on to view the results. More on Perspectives will be covered later in the lab

PART II: MODEL CREATION USING THE REVEAL OPTION

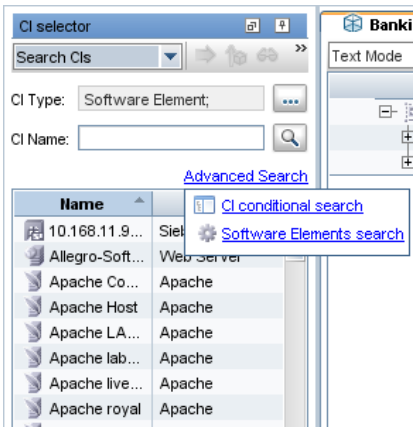
1. Go to Admin→Modeling→Modeling Studio; Click the NEW button and select the 'New Model' option.



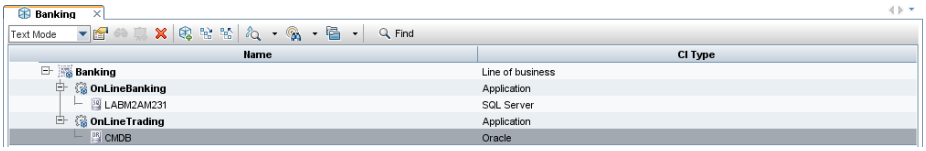
2. Choose the Line of Business CIT and call it Banking.



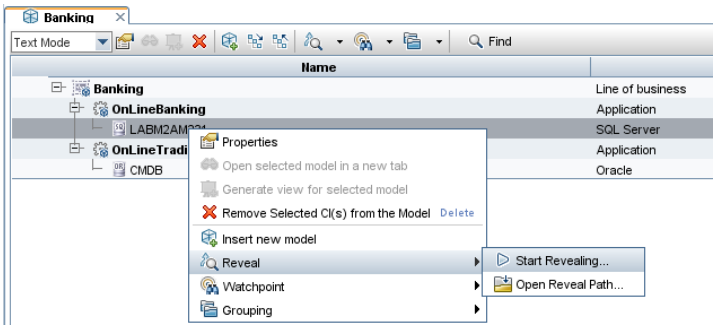
3. Right Click the Banking and choose Insert New Model.
4. Create two applications under Banking; one called OnLineBanking and one called OnLineTrading.
5. Go to the CI selector and search for Software Elements CIs. Use the Software Elements search in Advanced Search to filter your search to MSSQL DB.



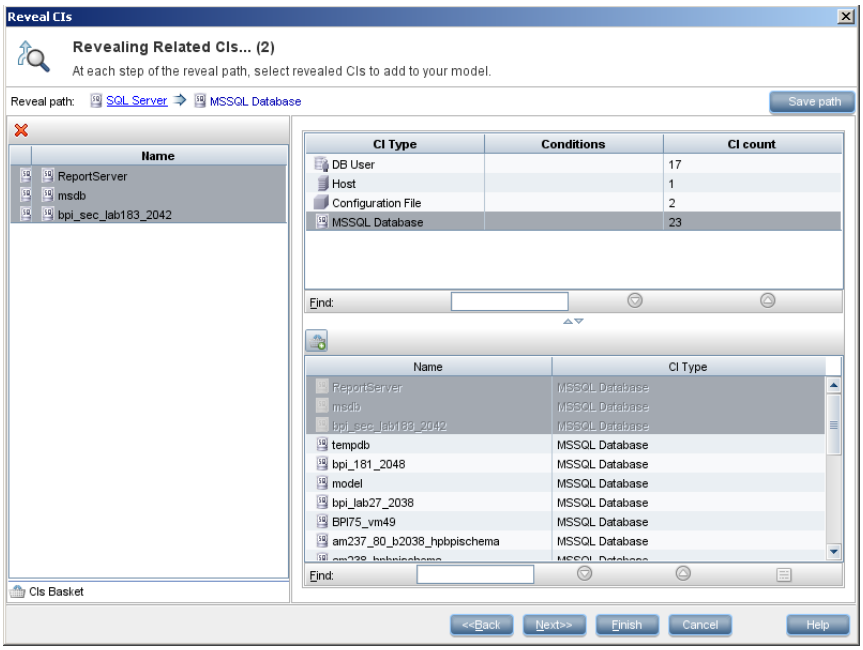
6. Drag 1 MS SQL database instance - labm2am231- into OnLineBanking and 1 Oracle database into OnLineTrading.



7. Right click on the MS SQL instance and choose Reveal->Start Revealing.

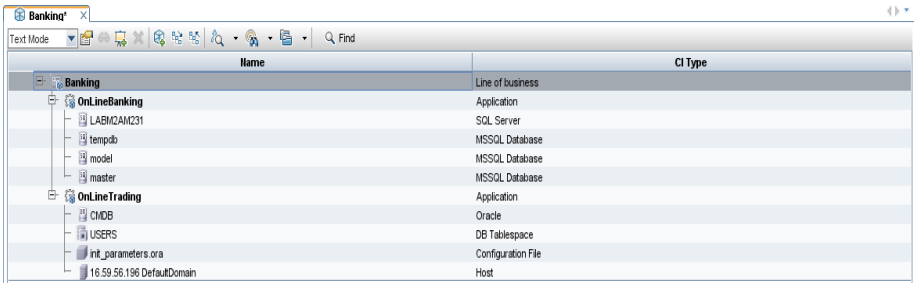


8. Select 3 MSSQL instances (tempdb, model and master) and add them to the application.

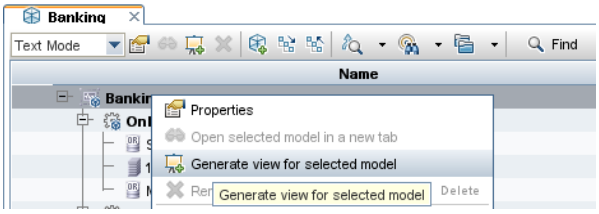


9. Repeat these steps for OnLineTrading application; right click the Oracle instance and choose Reveal->Start Revealing. Add to the application the Host CI, USERS tablespace and a configuration file (if any).

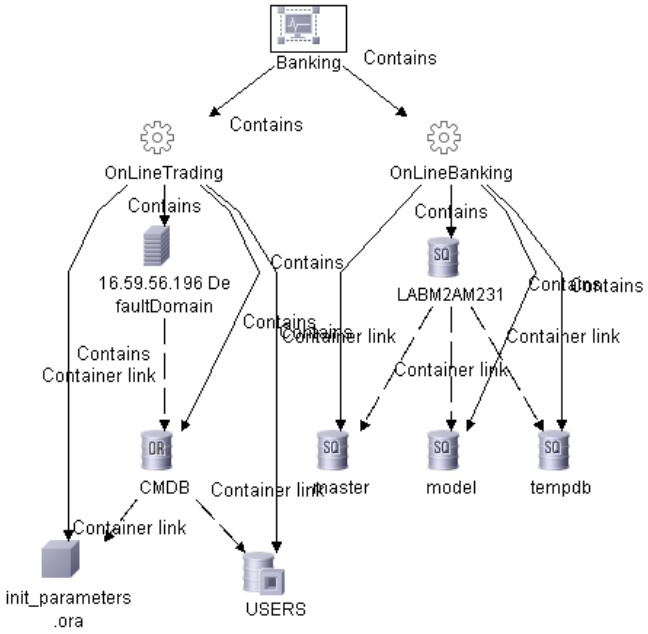
10. Make sure your Model looks similar to the following:



11. Right click on Banking LOB and choose 'Generate view for selected Model'. In the Perspective window select 'Content only including links'.



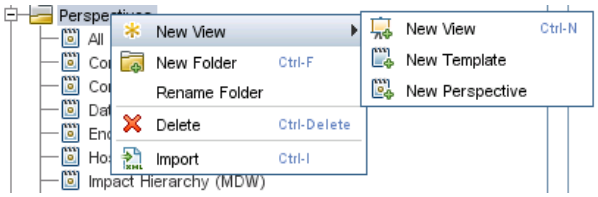
12. Save the view and name it 'Banking LOB View'. Review your view in the lower pane and in IT Universe Manager.



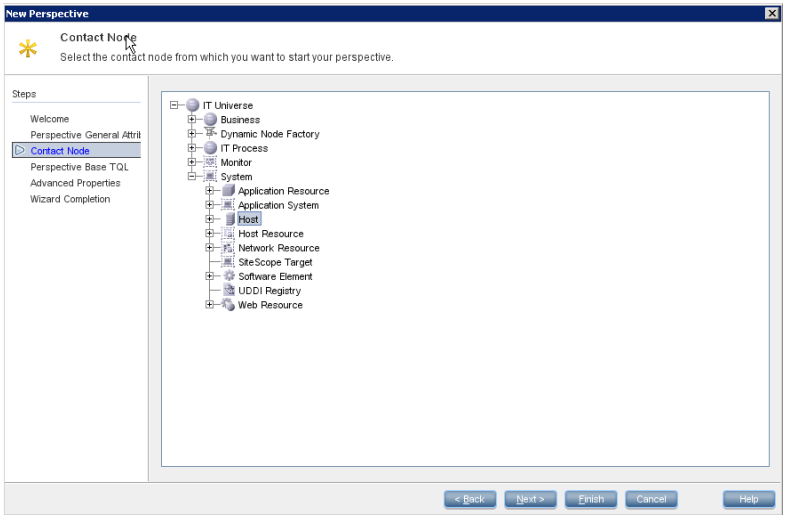
PART III: CUSTOM PERSPECTIVE CREATION

We understood that the Perspectives are a way for us to filter/fetch the relevant data we want to have in our View from the UCMDB and in order to do that we apply them to either a Model or a CI Collection.

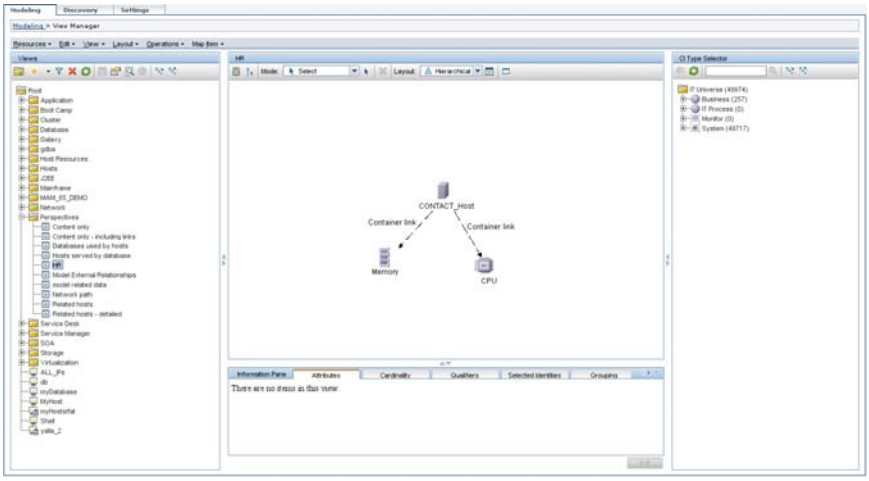
1. Go to Admin→ UCMDB→ View Manager.
2. Go to Perspective directory and you will see all OOTB perspectives in UCMDB.
3. Create new Perspective – Host Resources Perspective; select the perspective directory, right click it and select New View->New Perspective option.



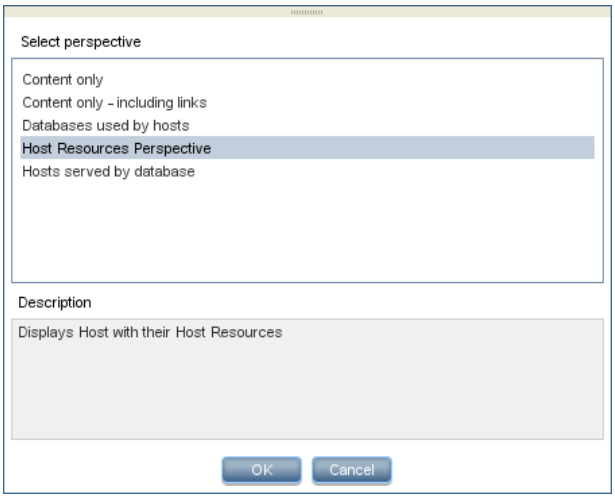
4. We are going to create a perspective of Host with Host Resources; The wizard will pop up and guide you through each step; give your perspective a name, choose Host for the Contact Node of your perspective and continue with the defaults in all other pages in the wizard.



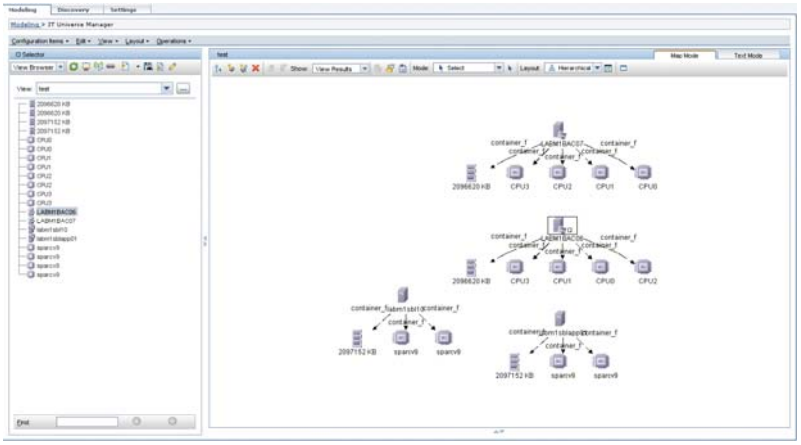
5. In the perspective editor create the following query and save the perspective.



6. Go back to Admin→Modeling→Modeling Studio; open the view you created before.
7. Apply the new perspective you created - Host Resources Perspective to the view and view the results in the lower panel.



8. Save the view and go back to IT Universe Manager to view the view results. As you can see the results changed to include only host CIs and their related host resources.
9. Verify that your view is similar to this:



As we have seen, the perspective we define will affect the output received in the view.

Topology Report Manager

The UCMDB has been setup in your training environment with a set of data to allow you to create topology and Gold Master reports in Topology Report Manager.

In this set of exercises you will create and view a set of reports.

Part I: Creating a Gold Master Report
Part II: Creating Topology Reports

PART I: CREATING A GOLD MASTER REPORT

1. Navigate to Topology Report Manager.

2. Create a Boot Camp folder on the Report tree root if it does not already exist.

3. Create a new Gold Master Report and name it GM01

4. The Gold Master CI will be LABM1SAP01.

5. Select 3 other SAP machines: LABM1SAP03-05 for the compared CIs.

6. Once completed, save and generate your report. Debug as necessary. You will use your report in the next lesson.

PART II: CREATING TOPOLOGY REPORTS

Creating Report 1

Requirements: Report will be of all hosts on the network 192.168.81.0. The report will include the Host name, operating system and OS version.

1. Create a new topology report in the Boot Camp folder and name it Host Report.

2. Create the report TQL.

3. Select the Host node and from the right-click context menu select Report Node definition.

4. Click the + to add the node attributes. Add host name, operating system and OS version.

5. Generate and debug as necessary.

Creating Report 2

Requirements: Report of all hosts on the 192.168.81.0 network with agent software element. Include the network address, the Host name, application IP, application name.

1. Create a report and name it Agents Report. Add a report title and subtitle.

2. Create the report TQL.

3. Add the report nodes.

4. Add a node order so the Host name appears first, then the network address and last the agent software.

5. Ensure the software is indented in the report for readability.

6. Generate your report and debug as necessary. Your report will be used in the next lesson.

Reporting Applications

The UCMDB has been setup in your training environment with a set of data to allow you to investigate the Reporting Applications.
In this set of exercises you will create and view a set of reports from the various applications.

Part I: Compliance: Generating a Gold Master Report, Comparing Snapshots, and Comparing Configuration Files.
Part II: Generating an Asset and Host Dependency Report
Part III: Viewing a Changed Applications Report, Host O/s Breakdown, and Network Device Breakdown report
Part IV: Viewing Topology Reports
Part IIV: Creating Favorite Filters

PART I: GENERATING A GOLD MASTER REPORT

1. Navigate to the Compliance application in the Applications area of the UCMDB.

2. Navigate to the Gold Master Report area.

3. Select the Gold Master report you created in the previous lesson.

4. Select the Printer Friendly option from the print menu and review the report.

- What is the name of the Gold Master CI?

- For LABM1SAP04, what attribute values are different in this CI than the Gold Master CI?

5. Close the Printer Friendly version of the Gold Master report and navigate back to the Compliance main page.

PART II: COMPARING SNAPSHOTS

Creating a Snapshot

1. Navigate to Topology View application and open the IIS Topology View.

2. Select the "Save Snapshot" button in the CI Selector toolbar to take a snapshot.

3. In the Save Snapshot dialog, give the snapshot a description.

Changing an Attribute Value for Comparison

1. Navigate to IT Universe Manager and open IIS Topology View.

2. Select any one of the IIS web servers in the view.

- Host name for the web server:

3. In CI properties change the Application listening port to 8080 or 8081, so long as it is different from the existing application listening port.

4. Apply the change.

Compare the Snapshot to the Current

1. Navigate back to the Compliance application and select Compare Snapshot.

2. Select the IIS Topology View.

3. Select your snapshot and the current view for comparison.

4. Navigate the Tree to identify your change.

- What must be true of the attribute for the change to show up in the report?

5. Navigate back to the Compliance main page.

PART III: COMPARING CONFIGURATION FILES

1. Navigate to Compare CIs.

2. Select the first CI by clicking the link and then navigate to Search CI in the CI selector; Select CI type SQL server.

3. Select any one of the SQL server instances.

4. Select the second CI by clicking the second link and navigate to Search CI in the CI selector; Select CI type SQL server again.

5. Select any of the SQL server instances other than the one you selected for the first CI.

6. Identify the differences in the configuration.

7. Navigate to the Compliance main page.

PART IV: GENERATING AN ASSET REPORT

1. Navigate to the Reports application and select Asset Report.

2. Select host resources view A, the view you created in the Exercises for Lesson 09.

3. Generate the report for the View.

- Describe the difference in the Asset report when Views is selected and when CMDB is selected:

4. Navigate back to the Reports main page.

Host Dependency Report

1. Select the Host Dependency report.

2. Select the IIS Topology View and the based on View option. Generate the report.

3. What information does this report display?

PART V: OVERVIEW REPORTS

1. Navigate to the Overview Reports

2. Select the Changed Applications report.

- How many applications were changed in the last day? 1

- What change does this represent?

2. Select the Host O/S breakdown report.

3. Find the HP-UX OS and drill down to the Instances Report.

4. Navigate to the Network Device Breakdown Report.

1. What types of network devices are listed in the CMDB?

5. Navigate back to the Reports main page.

PART VI: VIEWING TOPOLOGY REPORTS

1. Navigate to the Topology Reports in Reports.

2. Investigate the two topology reports you built in the previous lesson.

- List one or two topology reports that may need to be created for your organization.

PART VII: CREATING FAVORITE FILTERS

1. Navigate to the Report Manager in Reports.

2. Select New Favorite Filter option.

3. Follow the wizard and create new filter report; select the report type, give the filter name and description.

4. Verify that your filter is displayed in the reports list.

Introduction to Correlation and Impact Analysis

HP Universal CMDB has been setup in your training environment with a set of correlation rules that allow you to investigate some of the basic correlation features in the Topology View application.

This exercise steps you through running correlation, show impact, and root cause in the Topology View application.

Part I: Running Correlation
Part II: Running Show Impact
Part III: Running Root Cause

PART I: RUNNING CORRELATION

Building a Unix Network View

1. In View Manager, build a view that displays all Unix hosts along with their IP addresses and networks. Name your view Unix Network Correlation.

Running correlation on the Unix Network Correlation

1. Navigate to Topology View application in the UCMDB Applications area.

2. Select the Unix Network Correlation view

3. Select 4 IP addresses, right-click and select Run Correlation.

4. Set the State to Operation and the Severity to Major(8).

5. Run the correlation in the view.

   Note: you have to activate the correlation rule

- In the resulting view, what is the indicator for a trigger node? How many trigger nodes do you see in your view?
- Run the correlation against the same trigger nodes with the same severity and select Show Map.

What correlation rules were used?

- If the number of trigger nodes is greater than 4, explain why.

6. Close the Correlation Rules window.

PART II: RUNNING SHOW IMPACT

Run correlation on the NetworkTopology view

5. Open the NetworkTopology view.

6. Select several IP addresses.

7. Run correlation with operation state and severity level major(7)

8. The Network CI should show a status other than Normal.

Run Show Analysis on the Network

1. Select one of the IP addresses, right click and select Show Impact.

- Interpret the meaning of your impact analysis. _____

2. Close the impact analysis window.

3. Select the Network CI and run a Show Root Cause on it.

- List the trigger nodes that were the root cause of the network issue.

4. Close the Root Cause window.

5. Clear the Correlation results.

Correlation Manager

HP UCMDB has been setup in your training environment to allow you to explore correlation rules in Correlation Manager.

This exercises step you through creating a set of correlation rules.

Part I: Creating a Correlation rule on Databases Failure

Part II: Creating a Correlation rule on the Impact of Network interface Failure

Part III: Creating a Correlation rule to address Change

PART I: CREATING A CORRELATION RULE ON SQL DATABASES FAILURE

Setting up the environment

2. Navigate to **Correlation Manager** in the **Modeling** tab of the UCMDB Administration area.

3. In the **Correlation Rules** tree, navigate to the Boot Camp Setup folder.

4. For each of the rules in the Boot Camp folder: open the **Correlation Rule Properties** dialog, remove the check in the **Correlation Rule Groups** step, and save the rule.

Requirements for creating a SQL Database correlation rule:

Causal relationships:
SQL Database is compromised → SQL Database Server is compromised
SQL Server is compromised → Host will reflect the status

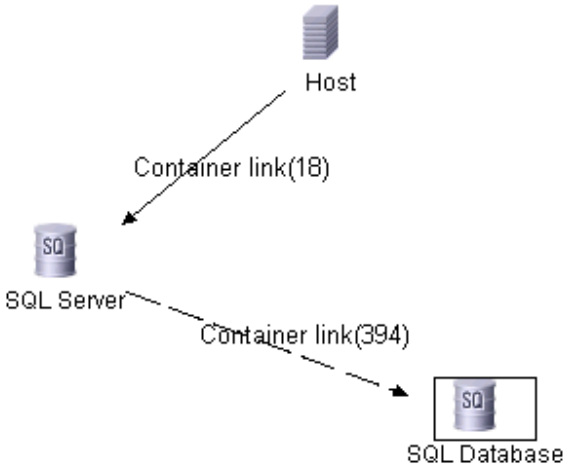
Building the Correlation TQL:

7. Create a new correlation and name it **SQL Database Correlation**.

Note: Make sure that Correlation Rule Groups UCMDB: check box is enablesd as it allows you to run a Correlation rule in the Topology View Application tab.

8. Create the correlation TQL in the Editing pane by inserting the SQL Database, SQL Server, and Host CITs. Build the query so that only hosts with SQL databases should be included in the query result.

Note: The TQL should look very similar to the TQL below, however please note that the current CIT for Microsoft SQL Database is MSSQL Database:



Creating the first correlation rule:

- List the trigger node and affected node for the first causal relationship: SQL Database is compromised → Database Server is compromised.

  Trigger: _____ Affected: _____

1. Select the Trigger CIT.

2. From the right-click context menu select **Define Affected**.

3. In the **Affected Nodes** dialog, select the affected CIT , then click **Next**.

4. In the **Details** dialog, click **Add** to add a new rule.

5. Enter the following phrase in the **Correlation description** field: SQL Database Down.

6. In the Conditions, set the state to operations greater than Minor (6).

7. Set the **Scope** to **Any**.

8. Set the **Severity relative to the trigger severity** to 75%.

9. Click **OK**, then click **Finish** in the Details dialog.

Creating the second correlation rule:

- List the trigger node and affected node for the second causal relationship: SQL Server is compromised → Host will reflect the status.

  Trigger: _____ Affected: _____

1. Select the trigger CIT and from the right-click context menu, select **Define Affected**.

2. Continue adding the second rule. Use a following information:

   Description: SQL Server Down
   Condition: Operation greater than warning (2)
   Scope: Any
   Severity: Severity relative to trigger severity at 100%

3. Finish adding the rule and save the correlation.

Verifying the rule is working as intended:

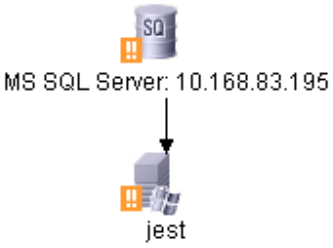
1. Navigate to the **Topology View** application and open the **MS SQL Topology** view.

2. Send a Major (8) operation event to one of the SQL databases and select the **Show in Map** option.

Hint: Expand the tree view to locate any database CI. Send the event by right-mouse clicking and selecting the Run Correlation option.

3. Clear the correlations.

4. Send an event at level Major (8) to one of the SQL servers and view the results. The result should be similar to the one to the right.



- Why did this event not impact the SQL databases?

_____

_____

5. Continue testing your correlation rule.

6. Debug as necessary.

PART II: CREATING A CORRELATION RULE ON THE IMPACT OF NETWORK INTERFACE FAILURE

Create a rule to answer the following question: If a network interface fails on a host, what host and what networks are impacted.

Specifically, if less than ¼th of the network interfaces are in a critical state, the host should show a minor status. If ¼ or more of the network interfaces are in a

critical state, the host should show a major status. The network will have a state at 50% of that of the affected host.

Planning for correlation

- What operational state indicates a failure on the network interface?

  _____

- What are the causal relationships that are implied in the question?

  _____

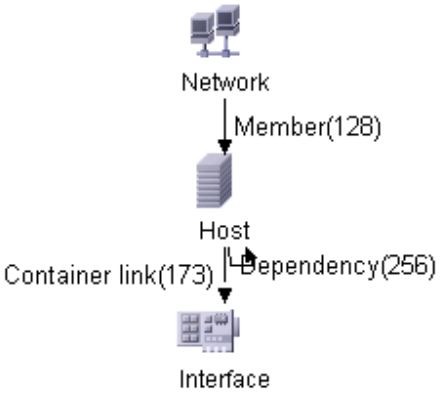
  _____

- What CITs are required to create the correlation TQL?

  _____

Creating the correlation TQL:

1. In **Correlation Manager**, create new correlation and name it NIC Failure.
2. In the **editing pane**, create the TQL for the correlation.



Adding the correlation rule:

- How many rules do you need to satisfy the requirements for a network interface failure compromising the host? _____

1. Create the correlation rules for the first causal relationship: Network interface failure → Host compromised.

- What condition, scope, and severity did you use in your rules?

  First rule – Condition: _____ equals _____, Scope: _____

  Severity: _____

  Second rule – Condition: _____ equals _____, Scope: _____

  Severity: _____

- If there are 10 hosts, each with 2 network interfaces, how many must fail for the host state to be set to a severity of major?

  _____

  _____

  _____

3. Add the correlation rules from the host to the network.

4. Save the correlation.

Testing the Correlation rule:

1. Navigate to View Manager and create a View TQL to test your correlation rule. Place the network interfaces on the topmost layer.

   _____

   _____

   _____

2. Navigate to the Topology View application and test the correlation rule.

3. Debug as necessary.

PART III: CREATING A CORRELATION RULE TO ADDRESS CHANGE

Create a rule that addresses change state as follows: When a software element is added to the system, it has a change state of New. If a host has any New software elements, it should indicate the change. If any of its software changes to any other state, the host should indicate the change. Further, if the host has at least one new software element, then the MS Domain will indicate the change based on the host.

- List the change states: _____
- Which state indicates new software: _____
- Which state indicates nothing has changed with a software element CI? _____

Planning for correlation

- Write a causal statement for each condition that will be added to the correlation based on the requirements above.

  _____

  _____

  _____

  _____

- What CITs are required to create the correlation TQL?

  _____

Creating the Correlation rule:

1. In the Editing pane in Correlation Manager, create the TQL for the correlation.

2. Add the correlation rules to the TQL based on your causal statements.

3. Save the correlation as **New Software Element**.

- For each rule, what Operation, Scope, and Severity did you use?

  Causal Relationship:

  Software New → Host New

  Condition: _____

  Scope = _____

  Severity: _____

  Software in <a state> → Host in <a state>

  Condition: _____

  Scope = _____

  Severity: _____

  Host is New → MS Domain is New

  Condition: _____

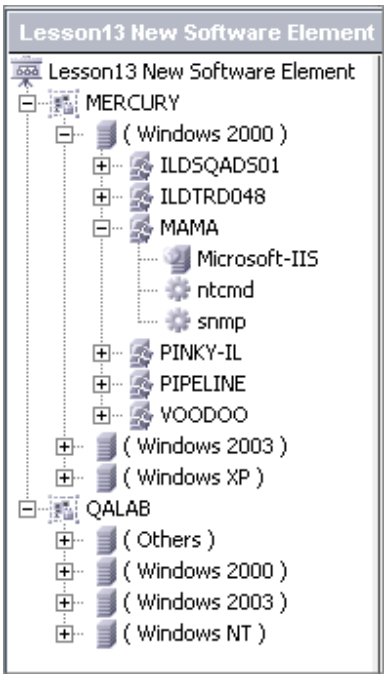
  Scope = _____

  Severity: _____

Creating a view to test the correlation rule:

View Requirements: The view will contain hosts, with software elements, on an MS Domain. All software will be folded beneath its host. Host will be grouped by operating system. The topmost layer of the view will be the MS domains.

1. Navigate to **View Manager** and create a view named **New Software View**.
2. Add the CITs and relationships for the View TQL.
3. Group the Hosts by operating system.
4. Fold the hosts beneath the MS domain and the software beneath the hosts.
5. Save and preview your view. The CI panes should resemble the one to the left.



Testing the correlation rule:

1. Navigate to the **Topology View Application** and select the New Software View.
2. Test your correlation. Debug as necessary.
3. When the correlation rule satisfies all the requirements, navigate to the modeling main page.

Enrichment Manager

HP Universal CMDB has been setup in your training environment of data to allow you to investigate enrichment.

This exercise steps you through creating and running enrichment rules.

Part I: Creating and Running an Service Pack Update Enrichment
Part II: Creating and Running a Location Update Enrichment
Part III: Creating and Running an Add Link Enrichment
Part IV: Creating a Double Hosts Enrichment

PART I: CREATING AND RUNNING AN UPDATE ENRICHMENT

Enrichment requirement: the enrichment will update the Windows Service Pack attribute to 4.0 on Windows 2000 hosts. Specifically:

- update only hosts that can be identified as Windows 2000 hosts
- update only when the Service Pack attribute is null and the Service Pack 4.0 software can be found on the host

Planning for Enrichment:

- What Windows host attribute indicates that a Windows host CI is running on Windows 2000?

  _____

- What Host Resource > Software attribute identifies a software instance as Service Pack 4.0?

  _____

Building the TQL

1. Build a View TQL to identify Windows 2000 hosts as candidates for the update. Name it Update SP4 View

- How many hosts did the View TQL identify?

- Which node is the target for update?

2. From Query Manager, save the View TQL as an Enrichment TQL and name it Update SP4 enrichment.

Adding the Enrichment Operation

1. Navigate to Enrichment Manager.

2. Create a new Enrichment rule. Name it Update SP4 and use the enrichment query you saved in Query Manager.

3. Switch to Enrichment Mode (This the default if building a rule based on existing TQL).

4. Right-click on the target node and select Update Relationship/Node.

5. In the resulting dialog, select the Windows Service Pack attribute to be updated.

6. In the Value field enter the Simple value: 4 and save.
7. Click OK to exit the Node Definition dialog.

Running the Enrichment:

1. From the Explorer tree, select Update SP4. Right click and select Properties.

2. If the Enrichment is not already active, activate it and close the properties window.

3. Click the Save button to save the changes and activate the Enrichment.

4. Use the calculate button and show instances to determine if the enrichment run successfully.

5. If necessary, troubleshoot the Enrichment.

6. Once the update is successful, deactivate the Enrichment.

PART II: CREATING AND RUNNING AN UPDATE ENRICHMENT

Requirement: to update asset records to indicate a physical location as noted in the table below. (Hint: this may require more than one enrichment rule)

10.168.11.0	Miami
192.168.89.0	New Orleans
10.168.5.0	Dallas

Plan for Enrichment

- In the CI Type Manager, investigate the attributes of the Host CIT. What Host attribute will need to be updated to represent the location as noted in the table above?

  _____

Building the TQL

1. From the Enrichment Manager, define a new Enrichment and give it a meaningful name.

2. Make sure that you are in TQL Mode.

3. Build the Enrichment TQL to isolate the Hosts which will be updated.

4. Use the calculate button, view the CI Instances, or build a View TQL to confirm the correct hosts have been identified for the enrichment.

Adding the Enrichment Operations and Running

1. From the Enrichment Manager, select Enrichment from the map pane list.

2. Select the node to be updated, right click and select Update Relationship/Node.

3. Build the enrichment rule to update the host location attribute.

4. Activate, save, and execute the Enrichment.

5. Repeat the process or debug as necessary.

View the Enrichment Nodes:

1. Create a System report with the hosts for these networks, their Host name, location, and IP addresses.

2. Verify the enrichment was successful.

3. Deactivate the Enrichment.

PART III: CREATING AND RUNNING AN ADD LINK ENRICHMENT

Requirement: Create a link directly from a Host to its MSSQL Databases.

Plan for Enrichment: Use the CI Type Manager to understand how a MSSQL database is related to its host.

- What CITs will be navigated to get from the database to the host?

  _____

- What type of relationship link will be used for the relationship between the database and the host on which the database resides?

  _____

Building the Enrichment:

1. In Enrichment Manager, build the TQL which maps the path from the database to the host.

2. Ensure the map pane list is on Enrichment Mode.

3. Select the MSSQL Database and Host nodes.

4. Right click and select Add Relationship from the context menu.

- What indicates that this link will be added during the enrichment run?

  _____

5. Activate and save the Enrichment

Testing the new links:

1. Build a view to show all hosts and their MSSQL databases. Use the new relationship and bypass the MSSQL Server.

2. Verify your Enrichment ran successfully.

3. Deactivate the Enrichment.

PART IV: CREATING A DOUBLE HOSTS ENRICHMENT

Planning: Investigate the double-hosts example in your book.

Building the Enrichment

1. Build the TQL to identify double-hosts in the system. Ensure it is bringing back only double-hosts.

2. Add the enrichment rule to remove the extra host and relationship.

3. Run the TQL and verify it removed the double hosts from the system.

- How did you determine if all double hosts were removed?

  _____

DDM

In this Exercise, we will discover IP Addresses, Hosts, and Host Resources in a small environment. The exercise walks you through the discovery steps.

PART I: UNDERSTAND THE ENVIRONMENT ON WHICH TO RUN DISCOVERY

The virtual environment for this class consists of 2 tiers:

Tier One is the Access VM on which you will install the probe.

Tier Two is the UCMDB Server which you can access via browser or RDP.

Task: From the command prompt, find the IP addresses of the both machines

⇒ From the Start Menu, select Run

⇒ Type cmd in the Open edit field and click OK

⇒ From the command prompt, type ipconfig /all and then click the enter button

⇒ List the IP Address shown in the command window below

IP Address of the Tier One student machine:

_____

PART II: INSTALL AND CONFIGURE THE DDM PROBE

If you are using the Fort Collins environment please SKIP this part since the probe is already installed on the UCMDB machine.

1. Open the HP UCMDB 8.0 Essentials folder located on the Desktop and double-click on DiscoveryProbe_v80.exe to start installing the DDM Probe.

2. Accept the license terms.

3. Accept the default installation path

4. Select HP Universal CMDB as "Application to report to"

5. Enter your VM image IP address or host name as the "Application Server address"

6. Enter your virtual machine host name the as the "Discovery Probe Address"

7. Enter UCMDB-80-GE as the probe "Discovery Probe Identifier"

8. Accept the defaults for domain name and installation mode and complete the installation process.

9. Optional, for better performance. In order to have a better overall performance, you may want to limit the amount of memory the running probe consumes by specifying 128 and 256 for Discovery Probe minimum heap and Discovery Probe maximum heap at the Probe Memory Size step.

Activity: Probe Validation and Configuration

1. Make sure that the UCMDB Server is up and running. Select the DDM Probe menu item from Start Menu - > HP DDM. This command activates the probe. Check for exceptions and run-time errors in the command screen to ensure that the probe is started and connected to the UCMDB server.

2. Navigate to Setup Discovery Probes in the Admin area of the application under the Discovery tab. Have a look at the domains, probes, and protocols that are listed. Make sure that the UCMDB-80-GE probe just installed is listed.

3. Click on "UCMDB-80-GE" and enter the IP range given by the instructor. (Should be a range including the local host).

Note: You may need to delete the pre-existing ranges.

Subsequent step refer to protocols residing under the "Credentials" folder:

4. Click on "WMI Protocol" under Protocols and follow the dialog prompts to enter Administrator user name and password

5. Click on "NTCMD Protocol" under Credentials and follow the dialog prompts to enter Administrator user name and password

6. Under Network basic – activate the Ranges IPs by ICMP

7. Under Network Basic – activate Host by WMI

8. Activate host resources – NTCMD jobs

9. Activate host resources – WMI jobs

Given the environment configuration just performed, on what IP ranges will you run discovery?

_____

Given the environment information above, what discovery Modules (jobs) will you use to discover IP Addresses, Hosts, and Host Resources?
What protocols will be used to run the Jobs listed above?

_____

⇒ Select the Module for one of your tasks listed above and review the available Discovery Modules (jobs).

What Discovery Job will you run first? Does it have a trigger and if so, what is that trigger?

_____

What Discovery Job will you run second? Does it have a trigger and if so, what is that trigger?

_____

If you were to run the two Discovery Jobs in the wrong order, what would you expect to happen and why?

_____

In what order will you kick off the remainder of the discovery patterns you will run?

_____

PART III: COMPLETE SETTING UP THE SCOPE OF THE DISCOVERY

⇒ Configure the Probe by adding the following two IP ranges if they have not yet been added. Remove the other IP ranges:

192.168.0.0 – 192.168.0.255
10.254.0.0 – 10.254.0.255

⇒ For each of the following protocols: wmi, ssh, telnet, enter the logon credentials.

⇒ Start Discovery on the Network Basic Module.

List three ways to determine the discovery job is finding objects in the environment (be specific).

⇒ Investigate the Network Basic Module.

What indication do you have that discovery is running successfully?

_____

⇒ In the View Manager, create a folder named Discovery to hold the TQLs built during discovery.

⇒ Build a View to map networks you are discovering with their member IP addresses and name it Network Discovery

⇒ Build a view named Hosts that will map all the hosts discovered.

Are there any duplicate hosts? Why might this happen?

_____

PART VI: RUN DISCOVERY FOR HOST RESOURCES

⇒ In Discovery Modules, select the Host Resources – WMI package and start discovery to discover more host information

⇒ Select the Dependency Map tab.

What information is available through the Dependency Map during discovery?

_____

⇒ In View Manager, modify the Hosts TQL so that it returns all hosts plus any host resources associated with the host

Do all the hosts show resources? If not, what may be the cause?

_____

⇒ In the Discovery Modules under Run Discovery, kick off the Host Resources – SSH/Telnet Module to discover more host information

⇒ Investigate the results of the discovery either by using the Show CIT Instances feature using a filter or by the Hosts View.
⇒ Consult your instructor if you are unable to find any Host Resources for the Linux virtual machine.

Based on the resource instances, what additional CIs do you want to discover or would be reasonable to expect in this environment? Explain.

_____

_____

What information is required to run the discovery task as noted in your answer for the previous question?

_____

Continue to run discovery until you feel you have discovered the available environment.

-