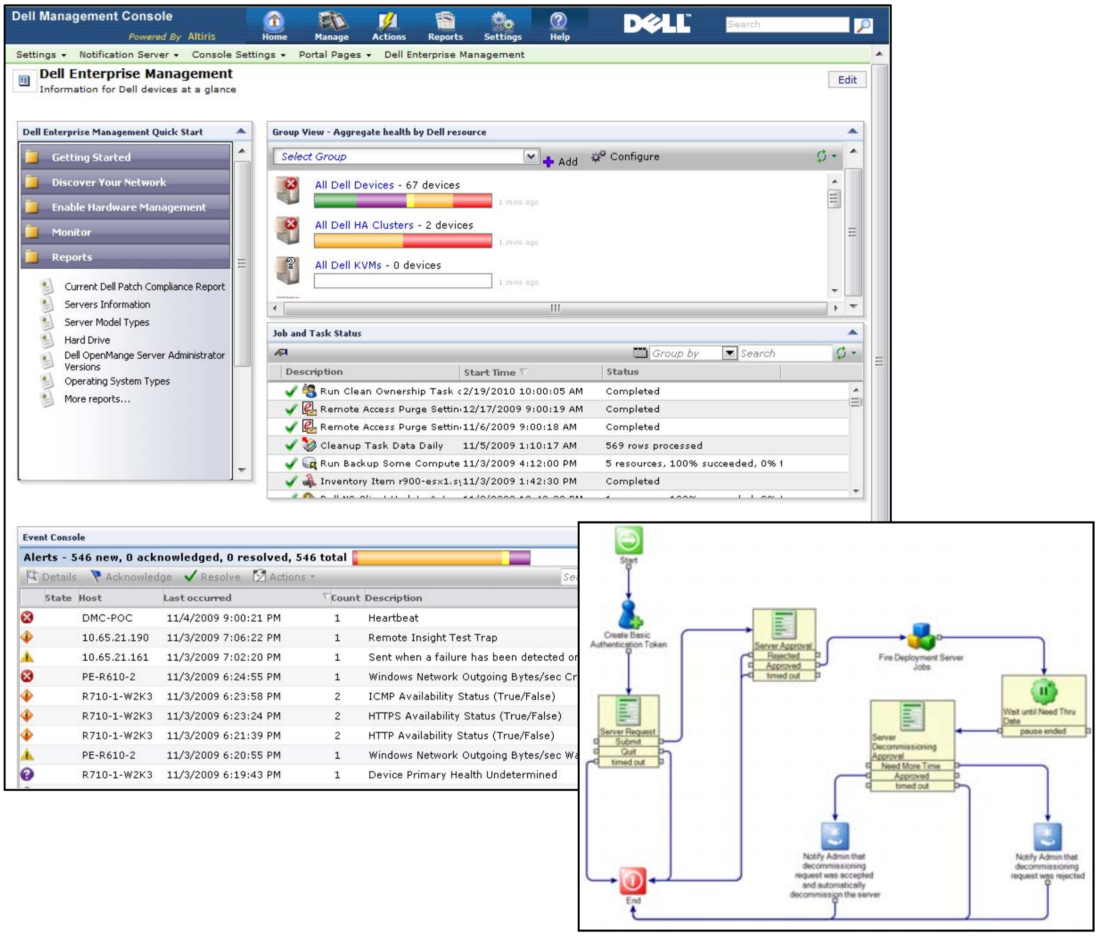
WHITE PAPER: INTEGRATION OPTIONS FOR DELL MANAGEMENT CONSOLE

symantec.

Confidence in a connected world.


Dell Management Console
Powered By Altiris
Home
Manage
Actions
Reports
Settings
Help
DELL
Search
Settings ▾ Notification Server ▾ Console Settings ▾ Portal Pages ▾ Dell Enterprise Management
Edit

Dell Enterprise Management
Information for Dell devices at a glance

Dell Enterprise Management Quick Start

- Getting Started
- Discover Your Network
- Enable Hardware Management
- Monitor
- Reports
  - Current Dell Patch Compliance Report
  - Servers Information
  - Server Model Types
  - Hard Drive
  - Dell OpenMange Server Administrator Versions
  - Operating System Types
  - More reports...

Group View - Aggregate health by Dell resource

All Dell Devices - 67 devices (1 mins ago)
All Dell HA Clusters - 2 devices (1 mins ago)
All Dell KVMs - 0 devices (1 mins ago)

Job and Task Status

Description	Start Time	Status
✓ Run Clean Ownership Task c	2/19/2010 10:00:05 AM	Completed
✓ Remote Access Purge Settin	12/17/2009 9:00:19 AM	Completed
✓ Remote Access Purge Settin	11/6/2009 9:00:18 AM	Completed
✓ Cleanup Task Data Daily	11/5/2009 1:10:17 AM	569 rows processed
✓ Run Backup Some Compute	11/3/2009 4:12:00 PM	5 resources, 100% succeeded, 0% f
✓ Inventory Item r900-esx1.s	11/3/2009 1:42:30 PM	Completed

Event Console

Alerts - 546 new, 0 acknowledged, 0 resolved, 546 total

State	Host	Last occurred	Count	Description
✕	DMC-POC	11/4/2009 9:00:21 PM	1	Heartbeat
◆	10.65.21.190	11/3/2009 7:06:22 PM	1	Remote Insight Test Trap
⚠	10.65.21.161	11/3/2009 7:02:20 PM	1	Sent when a failure has been detected or
✕	PE-R610-2	11/3/2009 6:24:55 PM	1	Windows Network Outgoing Bytes/sec Cr
◆	R710-1-W2K3	11/3/2009 6:23:58 PM	2	ICMP Availability Status (True/False)
◆	R710-1-W2K3	11/3/2009 6:23:24 PM	2	HTTPS Availability Status (True/False)
◆	R710-1-W2K3	11/3/2009 6:21:39 PM	2	HTTP Availability Status (True/False)
⚠	PE-R610-2	11/3/2009 6:20:55 PM	1	Windows Network Outgoing Bytes/sec Wa
?	R710-1-W2K3	11/3/2009 6:19:43 PM	1	Device Primary Health Undetermined

Start
Create Basic Authentication Token
Server Request
Submit
Quit
timed out
Server Approval
Rejected
Approved
timed out
Fire Deployment Server Jobs
Wait until Need Thru Date
pause ended
Server Decommissioning Approval
Need More Time
Approved
timed out
Notify Admin that decommissioning request was accepted and automatically decommission the server
Notify Admin that decommissioning request was rejected
End

White Paper:

Integration Options for Dell Management Console

April 2010

Third-party information brought to you courtesy of Dell.

Contents

Introduction

Dell Management Console offers a variety of integration options making it easy for customers and software vendors to leverage an investment in Dell hardware. Integration can be as simple as linking to another console, or as robust as full API-level integration…with many options in between.

This paper will outline the most commonly used integration methods so customers can understand all the options and pick the one that best suits their needs.

DMC Integration Options

Some organizations spend years and millions of dollars implementing management tools in their environment. Some choose to implement “heavy” frameworks to facilitate comprehensive IT automation projects. Others simply end up building management “islands” via a collection of point tools deployed over time – each having a different console, agent and database. Some don’t use any systems management tools at all. If you are looking for the most in depth management of your Dell hardware, then Dell Management Console will likely become another consideration.

So what integration options exist between Dell Management Console and other tools you may have? And which of those are the best fit for your needs?

Here’s a list of the more common DMC integration points:

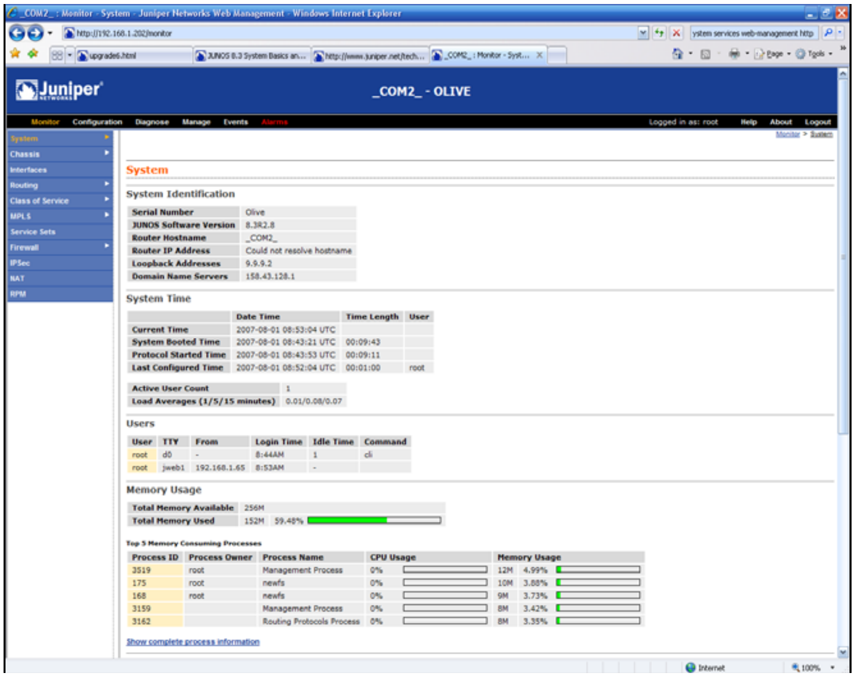
- Link and launch to another console
- Include content tiles (also called “web parts”) from other consoles inside DMC
- Build right-click actions for “in context” linking to 3rd party consoles
- Forwarding SNMP Alerts To/From DMC
- Active Directory Integration
- Import/Export Dell data via DMC’s free Connector Solution module
- Using DMC to call 3rd party command-line interfaces
- Symantec Workflow Solution
- Admin SDK (CLI, COM & Web services)
- Developer SDK (C#)

This paper will provide a brief integration to each of the above options and suggest likely scenarios best suited to each.

Link & Launch a 3rd Party Web Console

Probably the easiest way to integrate DMC with another application is simply to launch a 3rd party console using the DMC menu bar.   In only a few minutes you can create links to web consoles that will display in context with a DMC header at the top.

For example, here's a screenshot of Juniper's J-Web console that manages some of the Juniper hardware available from Dell.



System

System Identification

Serial Number	Olive
JUNOS Software Version	8.3R2.8
Router Hostname	_COM2_
Router IP Address	Could not resolve hostname
Loopback Addresses	9.9.9.2
Domain Name Servers	158.43.128.1

System Time

	Date Time	Time Length	User
Current Time	2007-08-01 08:53:04 UTC		
System Booted Time	2007-08-01 08:43:21 UTC	00:09:43	
Protocol Started Time	2007-08-01 08:43:53 UTC	00:09:11	
Last Configured Time	2007-08-01 08:52:04 UTC	00:01:00	root

Active User Count	1
Load Averages (1/5/15 minutes)	0.01/0.08/0.07

Users

User	TTY	From	Login Time	Idle Time	Command
root	d0	-	8:44AM	1	cli
root	jweb1	192.168.1.65	8:53AM	-	

Memory Usage

Total Memory Available	256M	
Total Memory Used	152M	59.48%

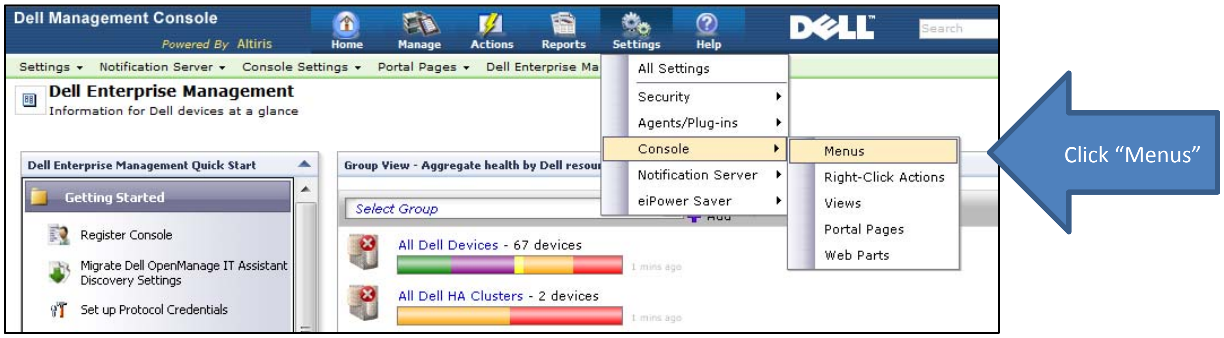
Top 5 Memory Consuming Processes

Process ID	Process Owner	Process Name	CPU Usage	Memory Usage	
3519	root	Management Process	0%	12M	4.99%
175	root	newfs	0%	10M	3.88%
168	root	newfs	0%	9M	3.73%
3159		Management Process	0%	8M	3.42%
3162		Routing Protocols Process	0%	8M	3.35%

Show complete process information

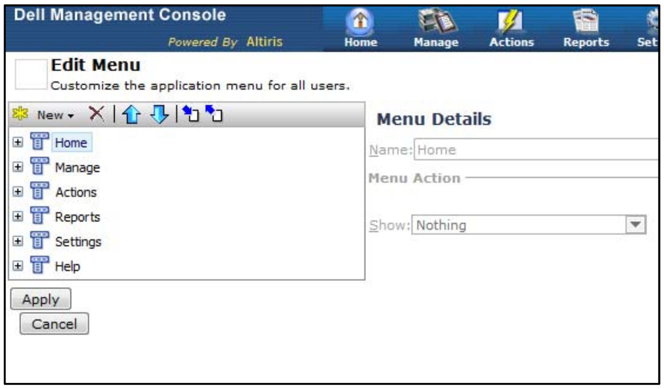
An administrator responsible for both Juniper network devices and Dell servers may want to save time by launching J-Web from within DMC. Setting that up is simple and takes less than 5 minutes.

Step 1: From the DMC Console, click the **Settings** button and select **Menus** from the **Console** category



Click "Menus"

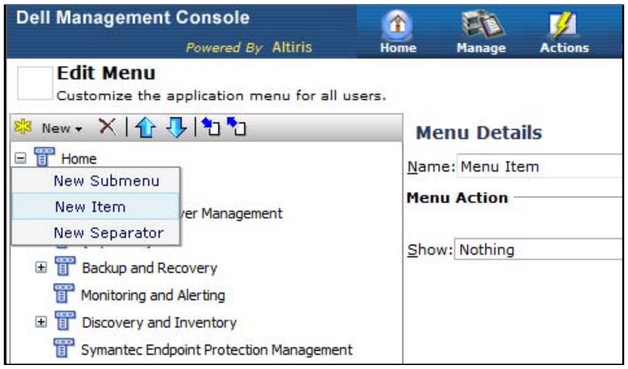
This will open the Edit Menu page as shown below. This page can be used to add, delete, reorder, import and export menu items.



Name: Home

Show: Nothing

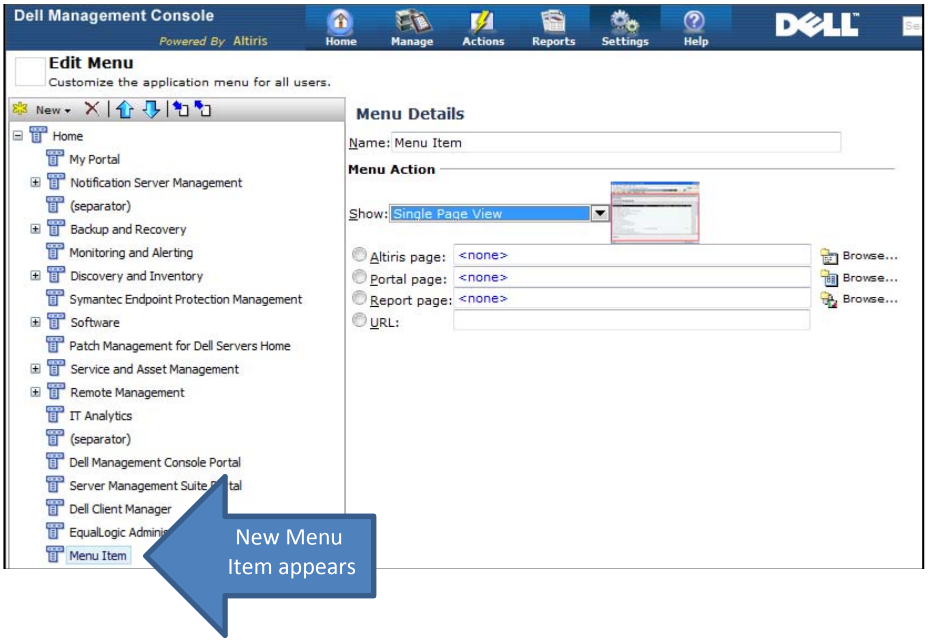
Step 2: Select **Home** and then select **New > New Item** from the toolbar**.**



Name: Menu Item

Show: Nothing

A new Menu Item will appear in the tree. Select it to show available options on the right



Name: Menu Item

Show: Single Page View

○ Altiris page: <none>

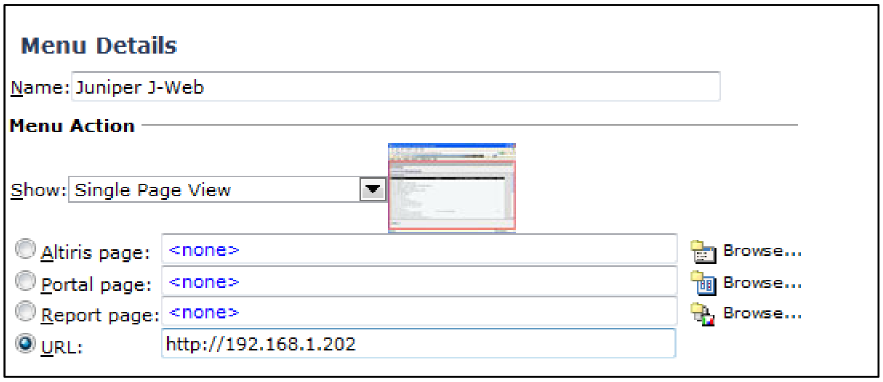
○ Portal page: <none>

○ Report page: <none>

○ URL:

New Menu Item appears

Step 3: Enter Menu details on the right. For our J-Web example you can see the entries below. You can choose to display your console page in different panes and reference any URL.



Menu Details

Name: Juniper J-Web

Menu Action

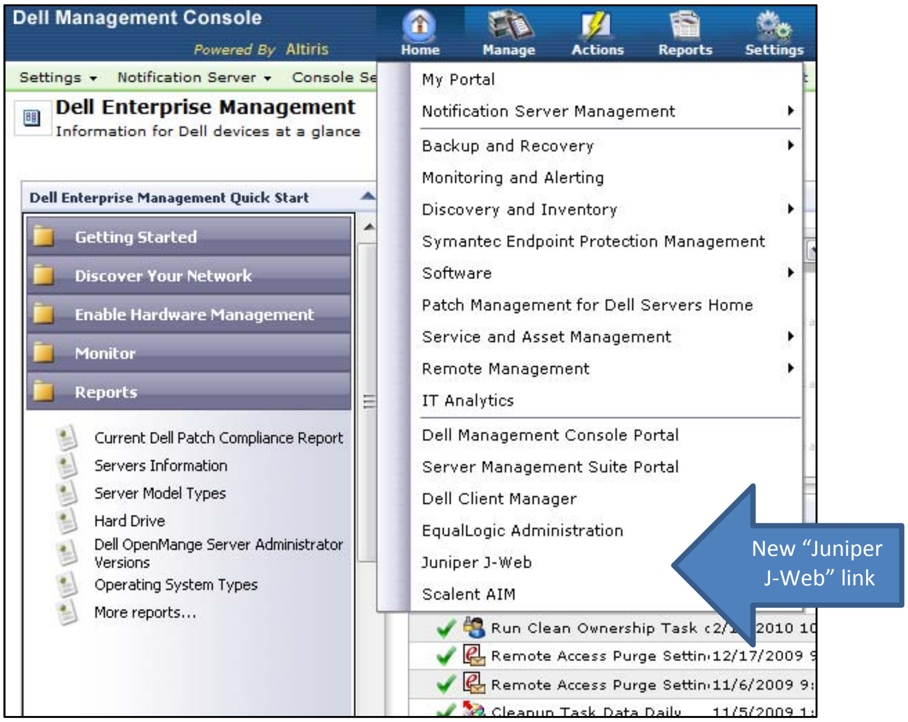
Show: Single Page View

○ Altiris page: <none> Browse...
○ Portal page: <none> Browse...
○ Report page: <none> Browse...
● URL: http://192.168.1.202

Step 4: Click **Apply** to save changes.

You're done.

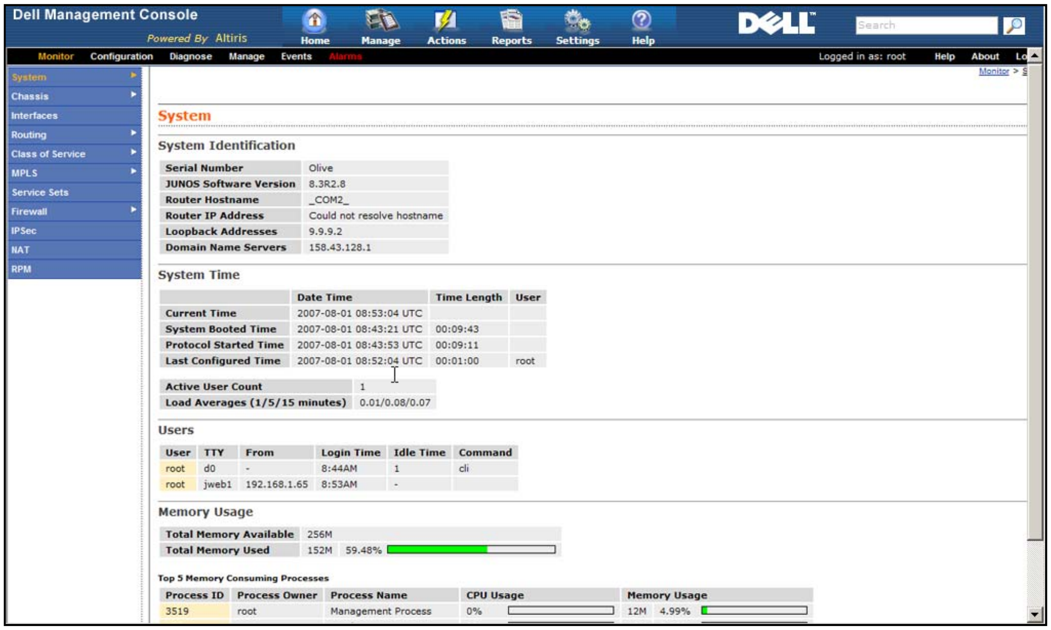
Now, whenever you click the Home button, your Juniper J-Web link will display.



Dell Management Console
Powered By Altiris
Home
Manage
Actions
Reports
Settings
Settings
Notification Server
Console Se
Dell Enterprise Management
Information for Dell devices at a glance
Dell Enterprise Management Quick Start
Getting Started
Discover Your Network
Enable Hardware Management
Monitor
Reports
Current Dell Patch Compliance Report
Servers Information
Server Model Types
Hard Drive
Dell OpenMange Server Administrator Versions
Operating System Types
More reports...
My Portal
Notification Server Management
Backup and Recovery
Monitoring and Alerting
Discovery and Inventory
Symantec Endpoint Protection Management
Software
Patch Management for Dell Servers Home
Service and Asset Management
Remote Management
IT Analytics
Dell Management Console Portal
Server Management Suite Portal
Dell Client Manager
EqualLogic Administration
Juniper J-Web
Scalent AIM
Run Clean Ownership Task c2/1 2010 10
Remote Access Purge Settin 12/17/2009 9
Remote Access Purge Settin 11/6/2009 9:
Cleanup Task Data Daily 11/5/2009 1:

New "Juniper J-Web" link

Selecting the Juniper J-Web link will display the Juniper console while leaving the DMC header bar visible.



System

System Identification

Serial Number	Olive
JUNOS Software Version	8.3R2.8
Router Hostname	_COM2_
Router IP Address	Could not resolve hostname
Loopback Addresses	9.9.9.2
Domain Name Servers	158.43.128.1

System Time

	Date Time	Time Length	User
Current Time	2007-08-01 08:53:04 UTC		
System Booted Time	2007-08-01 08:43:21 UTC	00:09:43	
Protocol Started Time	2007-08-01 08:43:53 UTC	00:09:11	
Last Configured Time	2007-08-01 08:52:04 UTC	00:01:00	root

Active User Count	1
Load Averages (1/5/15 minutes)	0.01/0.08/0.07

Users

User	TTY	From	Login Time	Idle Time	Command
root	d0	-	8:44AM	1	cli
root	jweb1	192.168.1.65	8:53AM	-	

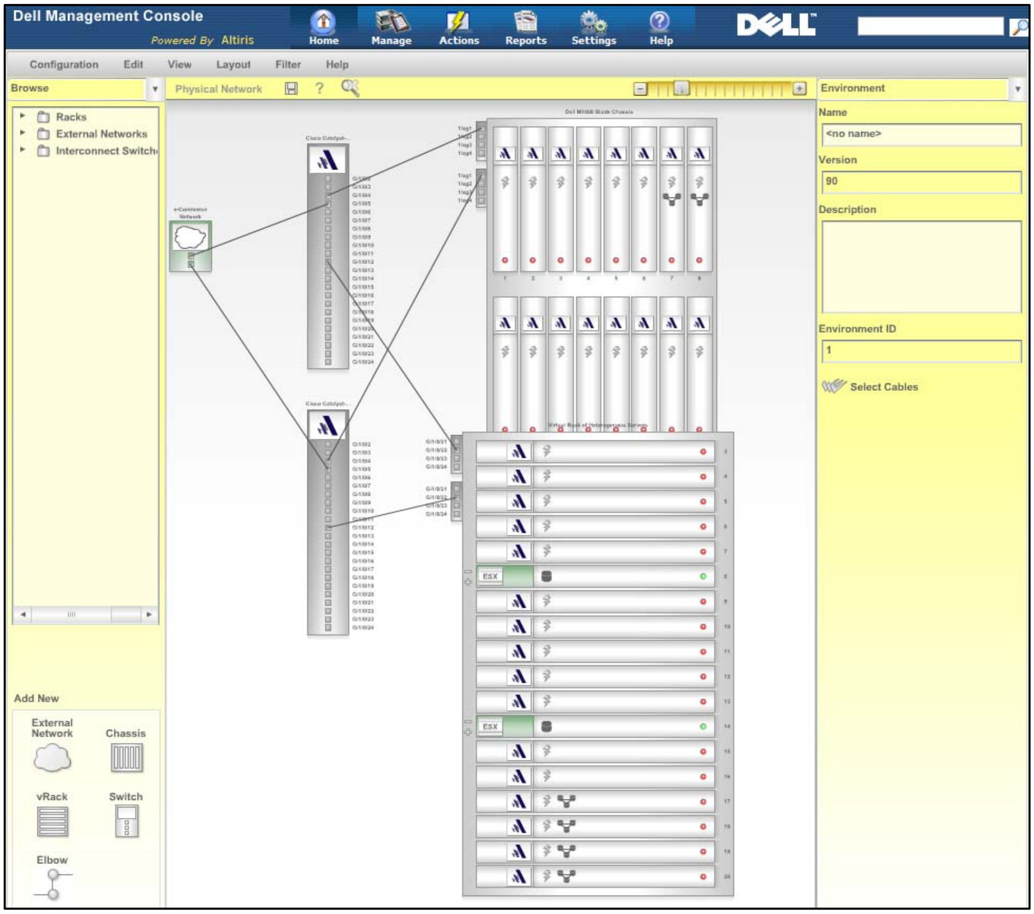
Memory Usage

Total Memory Available	256M	
Total Memory Used	152M	59.48%

Top 5 Memory Consuming Processes

Process ID	Process Owner	Process Name	CPU Usage	Memory Usage
3519	root	Management Process	0%	12M 4.99%

Again, it's very easy to do this with any web console. Here's another example showing DMC launching the Scalent AIM solution.



Name
<no name>

Version
90

Description

Environment ID
1

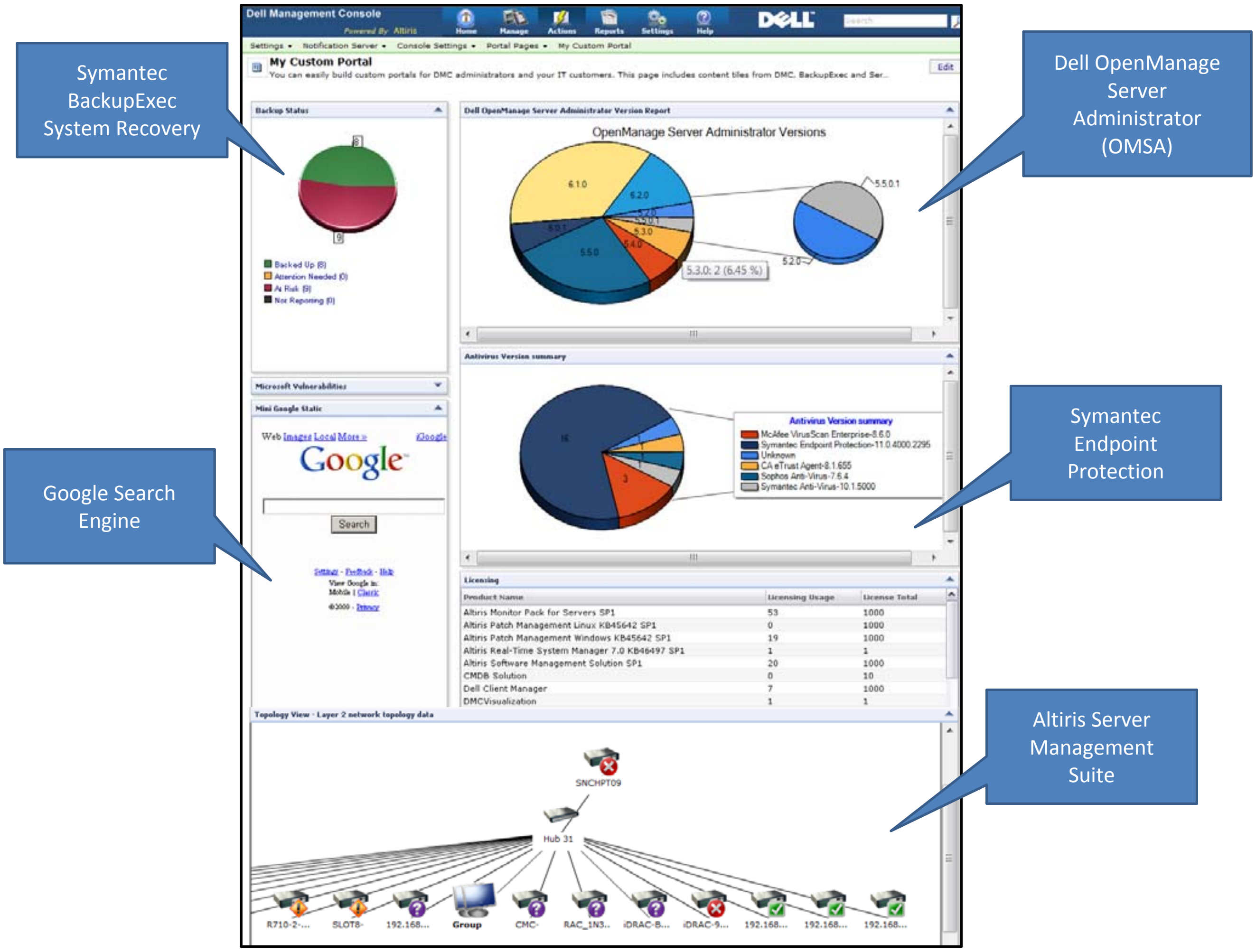
Setting up a link to another web console is fast and easy. For many applications it may be all that you need to make your tools easier to find and access…and maybe even save a few minutes throughout the day.

Include Data Items from 3rd Party Consoles as DMC Content Tiles

DMC admins know that creating custom portal pages from content tiles (also called "web parts") is one of DMC's most powerful features. Administrators can select content tiles from DMC or any of its plug-ins together in one page. This provides for a single page view of the management information you care about most.

These portal pages can be built for IT administrators or IT customers (e.g., dashboards for upper management, links on company intranets, etc.). All portal pages are directly URL addressable and therefore can be saved in the browser favorites of any individuals who regularly need to consume their information (without having to navigate through the DMC console to get to it).

The example below shows content tiles from many different DMC plug-ins pulled into a single view.



Dell Management Console
Powered By Altiris
Home
Manage
Actions
Reports
Settings
Help
DELL
Search
Settings • Notification Server • Console Settings • Portal Pages • My Custom Portal
Edit
Backup Status
8
9
Backed Up (8)
Attention Needed (0)
At Risk (9)
Not Reporting (0)
Dell OpenManage Server Administrator Version Report
OpenManage Server Administrator Versions
6.1.0
6.2.0
6.0.1
5.5.0
5.4.0
5.3.0
5.3.0: 2 (6.45 %)
5.2.0
5.5.0.1
Microsoft Vulnerabilities
Mini Google Static
Web Images Local More »
iGoogle
Google
Search
Settings - Feedback - Help
View Google in: Mobile | Classic
©2009 - Privacy
Antivirus Version summary
Antivirus Version summary
McAfee VirusScan Enterprise-8.6.0
Symantec Endpoint Protection-11.0.4000.2295
Unknown
CA eTrust Agent-8.1.655
Sophos Anti-Virus-7.6.4
Symantec Anti-Virus-10.1.5000
16
3
Licensing
Topology View - Layer 2 network topology data
SNCHPT09
Hub 31
R710-2-...
SLOT8-
192.168...
Group
CMC-
RAC_1N3...
iDRAC-8...
iDRAC-9...
192.168...
192.168...
192.168...
Symantec BackupExec System Recovery
Dell OpenManage Server Administrator (OMSA)
Symantec Endpoint Protection
Google Search Engine
Altiris Server Management Suite

My Custom Portal
You can easily build custom portals for DMC administrators and your IT customers. This page includes content tiles from DMC, BackupExec and Ser...

Product Name	Licensing Usage	License Total
Altiris Monitor Pack for Servers SP1	53	1000
Altiris Patch Management Linux KB45642 SP1	0	1000
Altiris Patch Management Windows KB45642 SP1	19	1000
Altiris Real-Time System Manager 7.0 KB46497 SP1	1	1
Altiris Software Management Solution SP1	20	1000
CMDB Solution	0	10
Dell Client Manager	7	1000
DMCVisualization	1	1

Note that the Google Search Engine content tile above demonstrates the ability for any web accessible page to be referenced as a content tile. Maybe you have a web report or other URL from a 3rd party source that displays information you'd like to integrate into a DMC portal page. It's easy to set that up. Just follow the step-by-step instructions below.

Step 1: Create Your Web Part

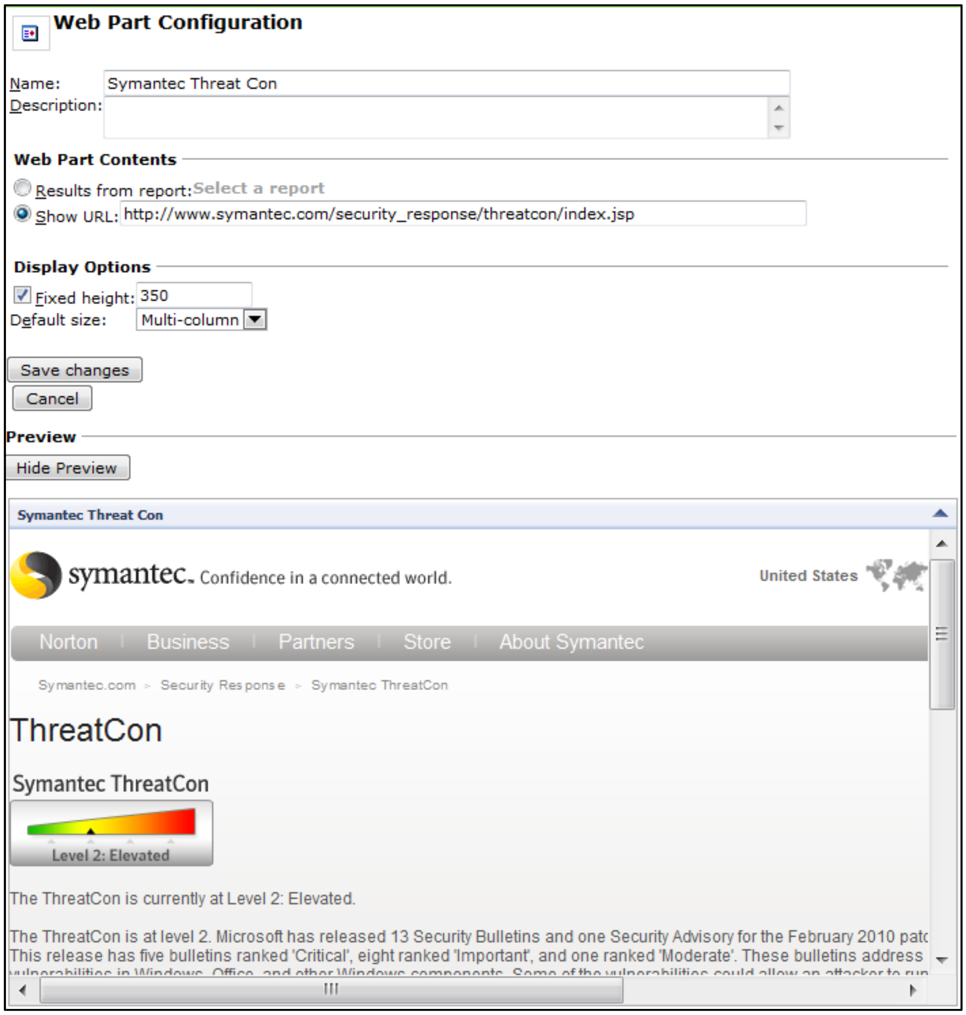
a. In the DMC Console go to **Settings > Console > Web Parts**

b. Right-click **Web Parts** and select **New > Web Part**

c. Select the **New Web Part** node that was created on the navigation tree

d. **Enter details in the right pane**

You can reference any URL for this web part. For our example we'll choose the Symantec Threatcon page. This is a simple web page that displays a measurement of the overall global threat exposure, delivered as part of Symantec DeepSight Threat Management System. Enter a name and the URL as shown below.



Web Part Configuration

Name: Symantec Threat Con

Description:

Web Part Contents

○ Results from report: Select a report

● Show URL: http://www.symantec.com/security_response/threatcon/index.jsp

Display Options

☑ Fixed height: 350

Default size: Multi-column

Preview

Symantec Threat Con

Symantec.com > Security Response > Symantec ThreatCon

ThreatCon

Symantec ThreatCon

Level 2: Elevated

The ThreatCon is currently at Level 2: Elevated.

The ThreatCon is at level 2. Microsoft has released 13 Security Bulletins and one Security Advisory for the February 2010 patc
This release has five bulletins ranked 'Critical', eight ranked 'Important', and one ranked 'Moderate'. These bulletins address
vulnerabilities in Windows, Office, and other Windows components. Some of the vulnerabilities could allow an attacker to run

e. Click the Preview button to preview the display of your web part.

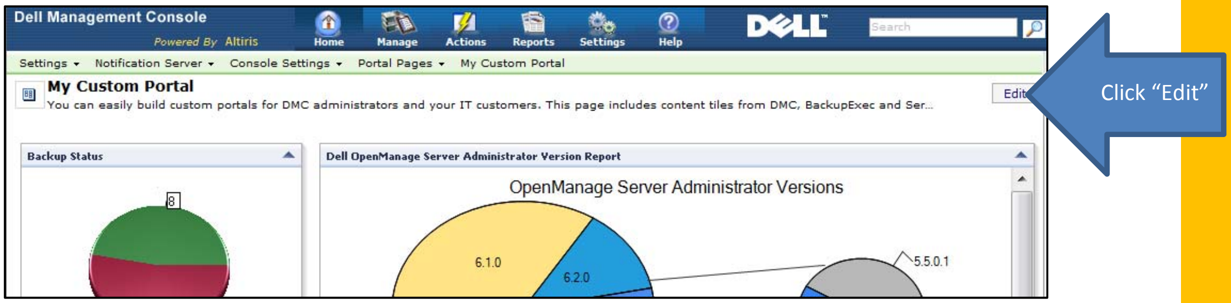
f. Click the **Save changes** button.

Step 2: Add Your Web Part to a Portal page

a. Select any portal page (e.g., Home > My Portal)

   Note: You can create new portal pages by selecting **Settings > Console > Portal Pages**

b. Click the **Edit** button in the upper right

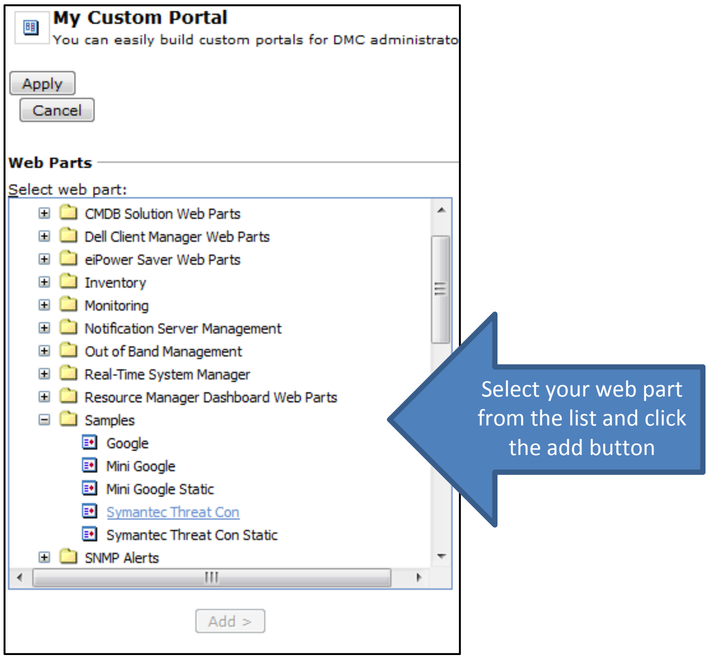


My Custom Portal

You can easily build custom portals for DMC administrators and your IT customers. This page includes content tiles from DMC, BackupExec and Ser...

Click "Edit"

c. Select your web part from the list and click the add button to add your web part to the portal



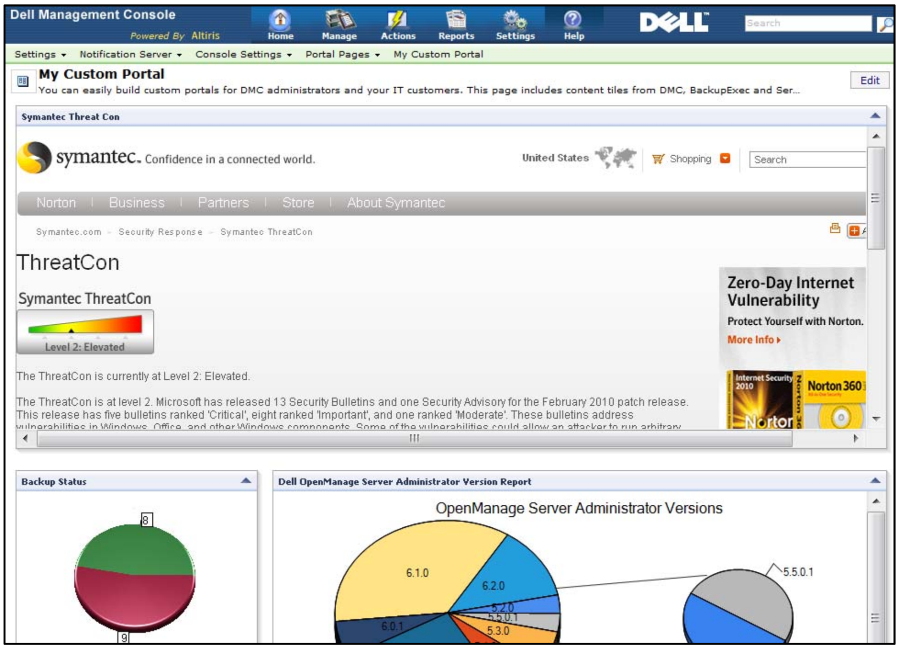
My Custom Portal

You can easily build custom portals for DMC administrato

Select your web part from the list and click the add button

d. Click **Apply** to save the changes.

In our example, the Symantec Threat Con page is now displayed as part of our portal page.



My Custom Portal

You can easily build custom portals for DMC administrators and your IT customers. This page includes content tiles from DMC, BackupExec and Ser...

ThreatCon

Symantec ThreatCon

The ThreatCon is currently at Level 2: Elevated.

The ThreatCon is at level 2. Microsoft has released 13 Security Bulletins and one Security Advisory for the February 2010 patch release. This release has five bulletins ranked 'Critical', eight ranked 'Important', and one ranked 'Moderate'. These bulletins address vulnerabilities in Windows, Office, and other Windows components. Some of the vulnerabilities could allow an attacker to run arbitrary

Again, this type of integration allows a 3rd party console to be referenced as a content tile on a DMC portal page. Administrators can potentially use this feature to pull data from a variety of web consoles into a single view along with DMC content tiles.

Note that when referencing 3rd party screens as a content tile, it is usually better to reference a specific data item or report and not the entire console. Refer to the first section on linking to 3rd party consoles if the entire console is to be integrated with DMC.

Right-click Actions Can Launch Context Sensitive Links to 3rd Party Consoles

DMC has the ability to reference nearly any item in its database as a token that can be used in a database query, command-line call, email notification text, or to build dynamic links into 3rd party tools. The latter example can be particularly helpful because it allows administrators to create context sensitive links. These links can open other consoles directly to a specific content. This can dramatically reduce the number of clicks, logins and consoles that must be navigated to get to desired information.

In this section we'll show how to create a simple DMC Right-click action. For our example, we'll link from DMC to the Dell support website. We'll bypass the main Dell support pages and launch directly to the page for a Dell system in our inventory.

The URL for launching directly to the Dell support page for a Dell system is:

> http://support.dell.com/support/downloads/driverslist.aspx?c=us&l=en&s=pub& **ServiceTag=XXXXXXX**&SystemID=&os=WLH&osl=en&catid=&impid=

Note that the bolded parameter in the URL above passes a Dell Service tag as a globally unique parameter which allows the URL to retrieve the support page for that specific system. Building a Right-click action essentially provides a custom link for every Dell system managed by a DMC installation. The custom link will launch directly to the Dell support page for that system.

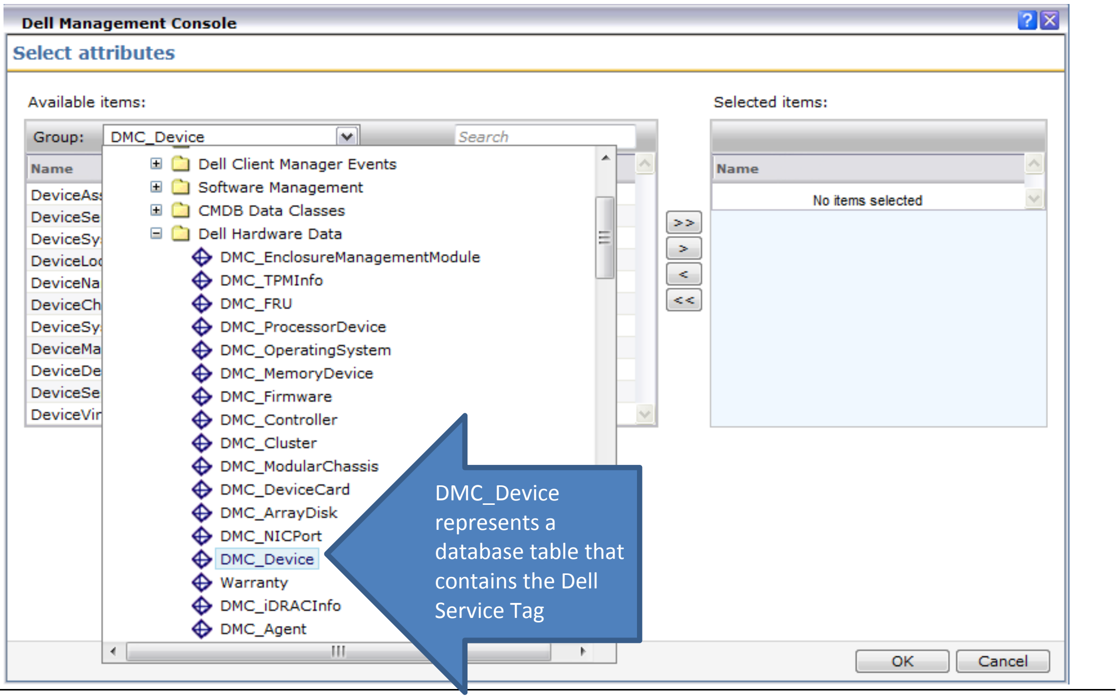
To create a Right-click action follow the steps below:

Step 1: Go to **Settings > Console > Right Click Actions**

Step 2: Right-click **Management Applications** in the left navigation and select **New > Right-Click Action**

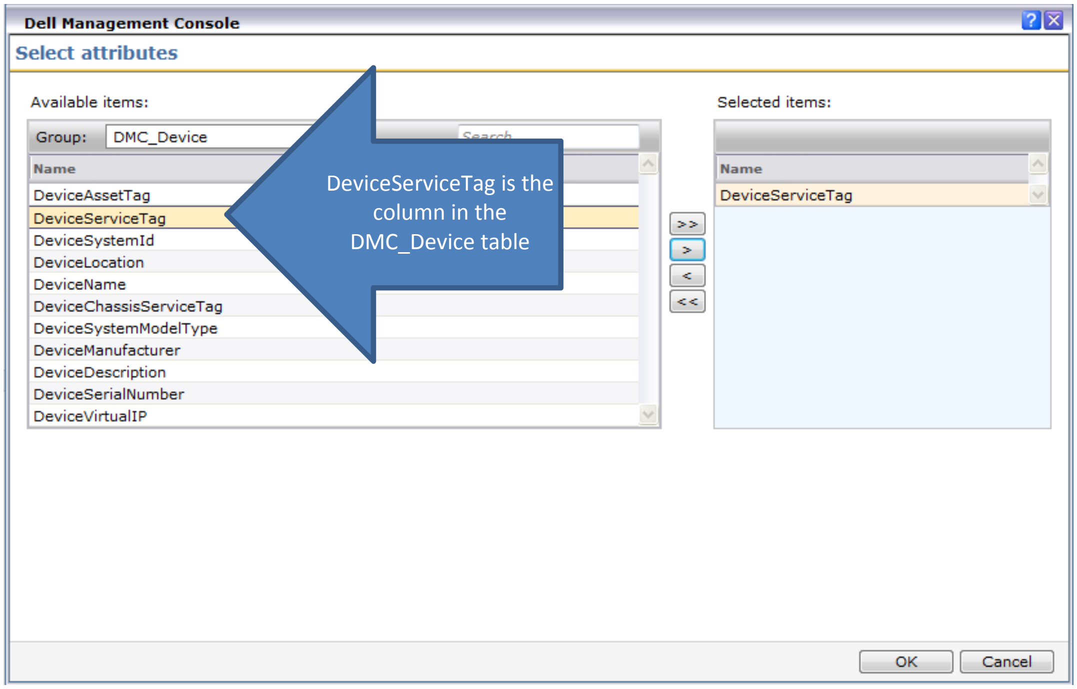
Step 3: Define the Right-Click Action in the right pane

a. Provide a name for the action such as **Dell Support** (just click the field and type a name)
b. Select **Dell Computer** as the Resource Type
c. Paste the URL below into the **Base URL** field:
   http://support.dell.com/support/downloads/driverslist.aspx?c=us&l=en&s=pub&ServiceTag=XXXXXXX&SystemID=&os=WLH&osl=en&catid=&impid=
d. Click **Add** in the Substitution Parameters section
e. Select **Dell Hardware Data > DMC_Device** from the dropdown box



DMC_Device represents a database table that contains the Dell Service Tag

f. Click the **>** button to move the **DeviceServiceTag** data element into the selected field. This simply identifies the data field in the database to be substituted for the token when the Right-click action is generated.



Dell Management Console

Select attributes

Available items:

Group: DMC_Device

Name

DeviceAssetTag
DeviceServiceTag
DeviceSystemId
DeviceLocation
DeviceName
DeviceChassisServiceTag
DeviceSystemModelType
DeviceManufacturer
DeviceDescription
DeviceSerialNumber
DeviceVirtualIP

Selected items:

Name

DeviceServiceTag

DeviceServiceTag is the column in the DMC_Device table

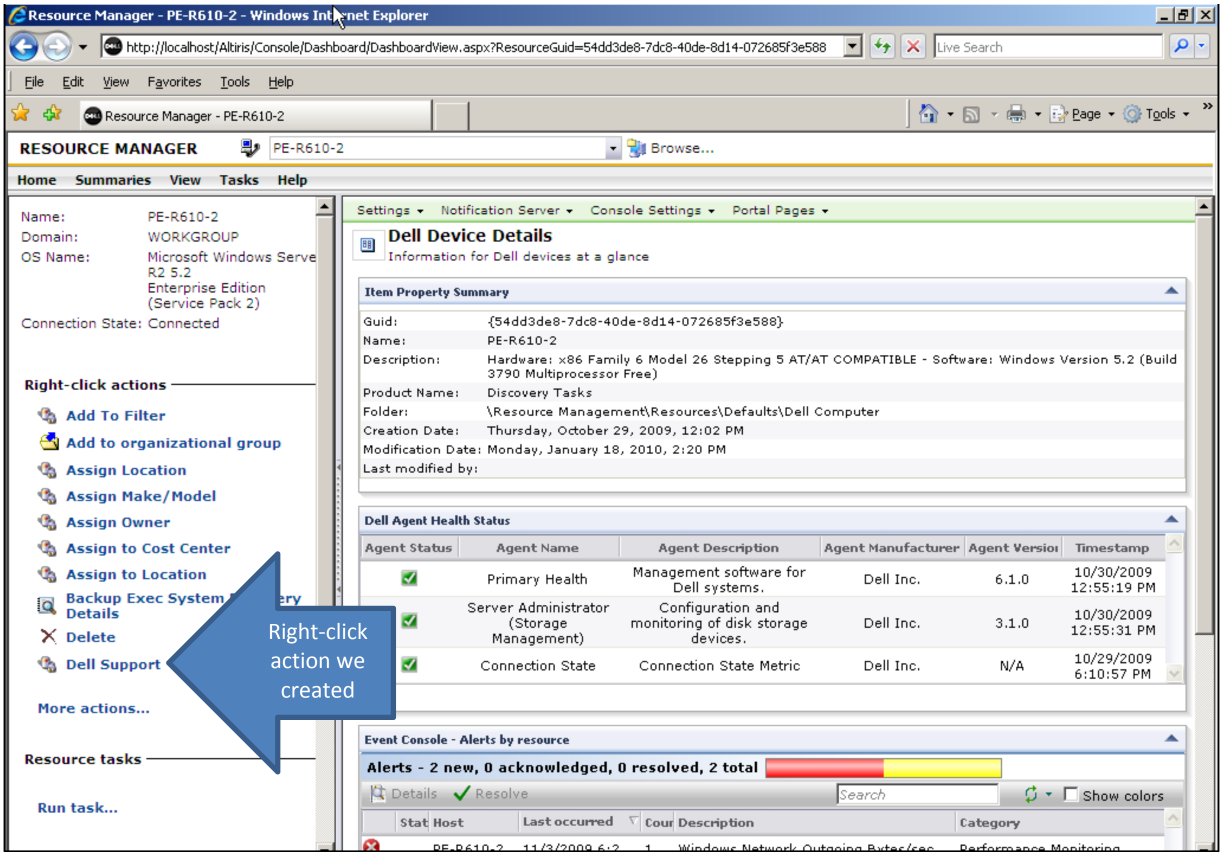
g. Click **OK**

h. In the **Base URL** field, replace **XXXXXXX** with **%DMC_Device.DeviceServiceTag%** so the URL reads as follows:

> http://support.dell.com/support/downloads/driverslist.aspx?c=us&l=en&s=pub&ServiceTag=**%DMC_Device.DeviceServiceTag%**&SystemID=&os=WLH&osl=en&catid=&impid=

i. Click **Save changes**

Now, whenever you right-click on a Dell Computer resource in the console, a menu item will display allowing you to launch directly to the Dell Support page for that particular system.


Resource Manager - PE-R610-2 - Windows Internet Explorer
http://localhost/Altiris/Console/Dashboard/DashboardView.aspx?ResourceGuid=54dd3de8-7dc8-40de-8d14-072685f3e588
Live Search
File Edit View Favorites Tools Help
Resource Manager - PE-R610-2
Page Tools
RESOURCE MANAGER
PE-R610-2
Browse...
Home Summaries View Tasks Help
Settings Notification Server Console Settings Portal Pages

Name: PE-R610-2
Domain: WORKGROUP
OS Name: Microsoft Windows Serve R2 5.2 Enterprise Edition (Service Pack 2)
Connection State: Connected

Right-click actions

Add To Filter
Add to organizational group
Assign Location
Assign Make/Model
Assign Owner
Assign to Cost Center
Assign to Location
Backup Exec System ...ery Details
Delete
Dell Support
More actions...

Resource tasks

Right-click action we created

Dell Device Details

Information for Dell devices at a glance

Item Property Summary

Guid: {54dd3de8-7dc8-40de-8d14-072685f3e588}
Name: PE-R610-2
Description: Hardware: x86 Family 6 Model 26 Stepping 5 AT/AT COMPATIBLE - Software: Windows Version 5.2 (Build 3790 Multiprocessor Free)
Product Name: Discovery Tasks
Folder: \Resource Management\Resources\Defaults\Dell Computer
Creation Date: Thursday, October 29, 2009, 12:02 PM
Modification Date: Monday, January 18, 2010, 2:20 PM
Last modified by:

Dell Agent Health Status

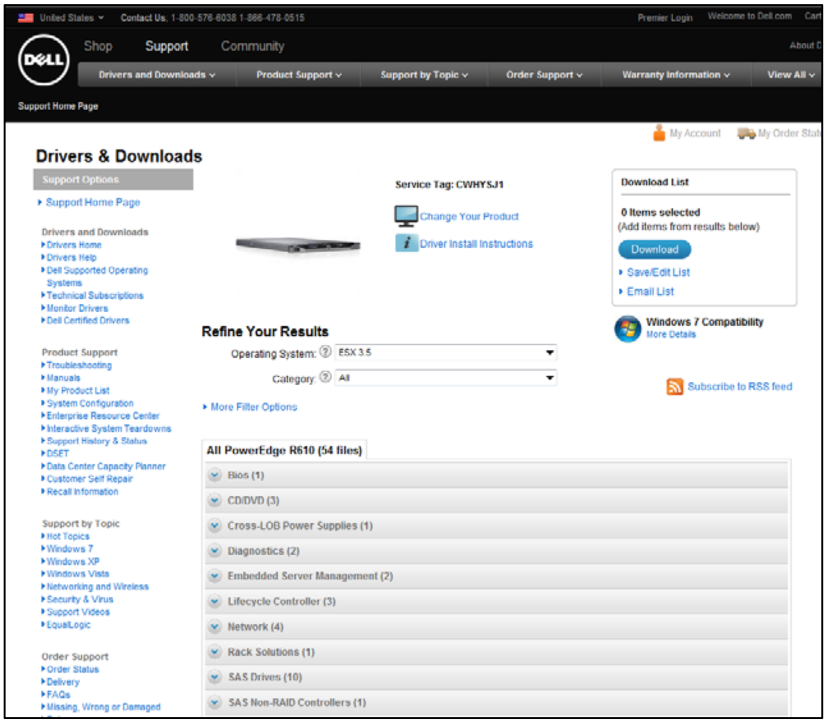
Agent Status	Agent Name	Agent Description	Agent Manufacturer	Agent Versioı	Timestamp
✓	Primary Health	Management software for Dell systems.	Dell Inc.	6.1.0	10/30/2009 12:55:19 PM
✓	Server Administrator (Storage Management)	Configuration and monitoring of disk storage devices.	Dell Inc.	3.1.0	10/30/2009 12:55:31 PM
✓	Connection State	Connection State Metric	Dell Inc.	N/A	10/29/2009 6:10:57 PM

Event Console - Alerts by resource

Alerts - 2 new, 0 acknowledged, 0 resolved, 2 total

Stat	Host	Last occurred	Cour	Description	Category
☒	PE-R610-2	11/3/2009 6:2	1	Windows Network Outgoing Bytes/sec	Performance Monitoring

In this example, clicking the “Dell Support” link above launches directly to the Dell Support site for the Dell system we are viewing (see below).



Drivers & Downloads

Service Tag: CWHYSJ1

Download List

0 Items selected
(Add items from results below)

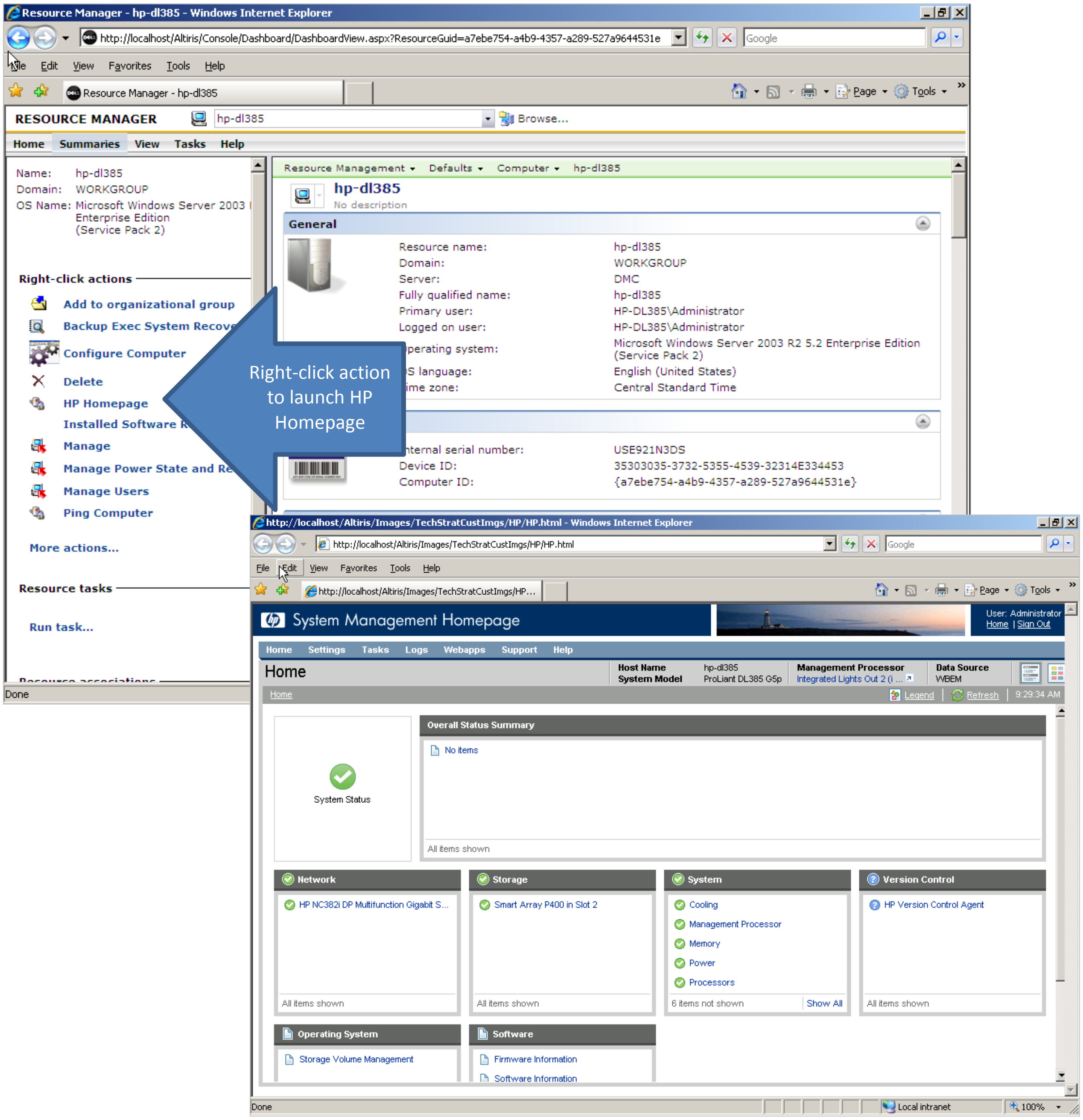
Refine Your Results

Operating System: ESX 3.5
Category: All

All PowerEdge R610 (54 files)

- Bios (1)
- CD/DVD (3)
- Cross-LOB Power Supplies (1)
- Diagnostics (2)
- Embedded Server Management (2)
- Lifecycle Controller (3)
- Network (4)
- Rack Solutions (1)
- SAS Drives (10)
- SAS Non-RAID Controllers (1)

Right-click actions have applications far beyond using Dell Service tags. Right-click actions can be used to launch URL's to the IP address (or any other inventoried data item) of any managed device – Dell or non-Dell. The example below shows a right-click action that uses a server's IP address to launch the HP Home page for that system.



Right-click action to launch HP Homepage

Resource Manager - hp-dl385 - Windows Internet Explorer

http://localhost/Altiris/Console/Dashboard/DashboardView.aspx?ResourceGuid=a7ebe754-a4b9-4357-a289-527a9644531e

RESOURCE MANAGER hp-dl385

Name: hp-dl385
Domain: WORKGROUP
OS Name: Microsoft Windows Server 2003 Enterprise Edition (Service Pack 2)

Right-click actions

- Add to organizational group
- Backup Exec System Recove
- Configure Computer
- Delete
- HP Homepage
- Installed Software R
- Manage
- Manage Power State and Re
- Manage Users
- Ping Computer

More actions...

Resource tasks

Run task...

hp-dl385
No description

General

Resource name:	hp-dl385
Domain:	WORKGROUP
Server:	DMC
Fully qualified name:	hp-dl385
Primary user:	HP-DL385\Administrator
Logged on user:	HP-DL385\Administrator
perating system:	Microsoft Windows Server 2003 R2 5.2 Enterprise Edition (Service Pack 2)
S language:	English (United States)
ime zone:	Central Standard Time
nternal serial number:	USE921N3DS
Device ID:	35303035-3732-5355-4539-32314E334453
Computer ID:	{a7ebe754-a4b9-4357-a289-527a9644531e}

http://localhost/Altiris/Images/TechStratCustImgs/HP/HP.html - Windows Internet Explorer

System Management Homepage

User: Administrator
Home | Sign Out

Home

Host Name	hp-dl385	Management Processor	Data Source
System Model	ProLiant DL385 G5p	Integrated Lights Out 2 (i ...	WBEM

9:29:34 AM

Overall Status Summary: No items. All items shown

System Status

- Network: HP NC382i DP Multifunction Gigabit S... — All items shown
- Storage: Smart Array P400 in Slot 2 — All items shown
- System: Cooling, Management Processor, Memory, Power, Processors — 6 items not shown, Show All
- Version Control: HP Version Control Agent — All items shown
- Operating System: Storage Volume Management
- Software: Firmware Information, Software Information

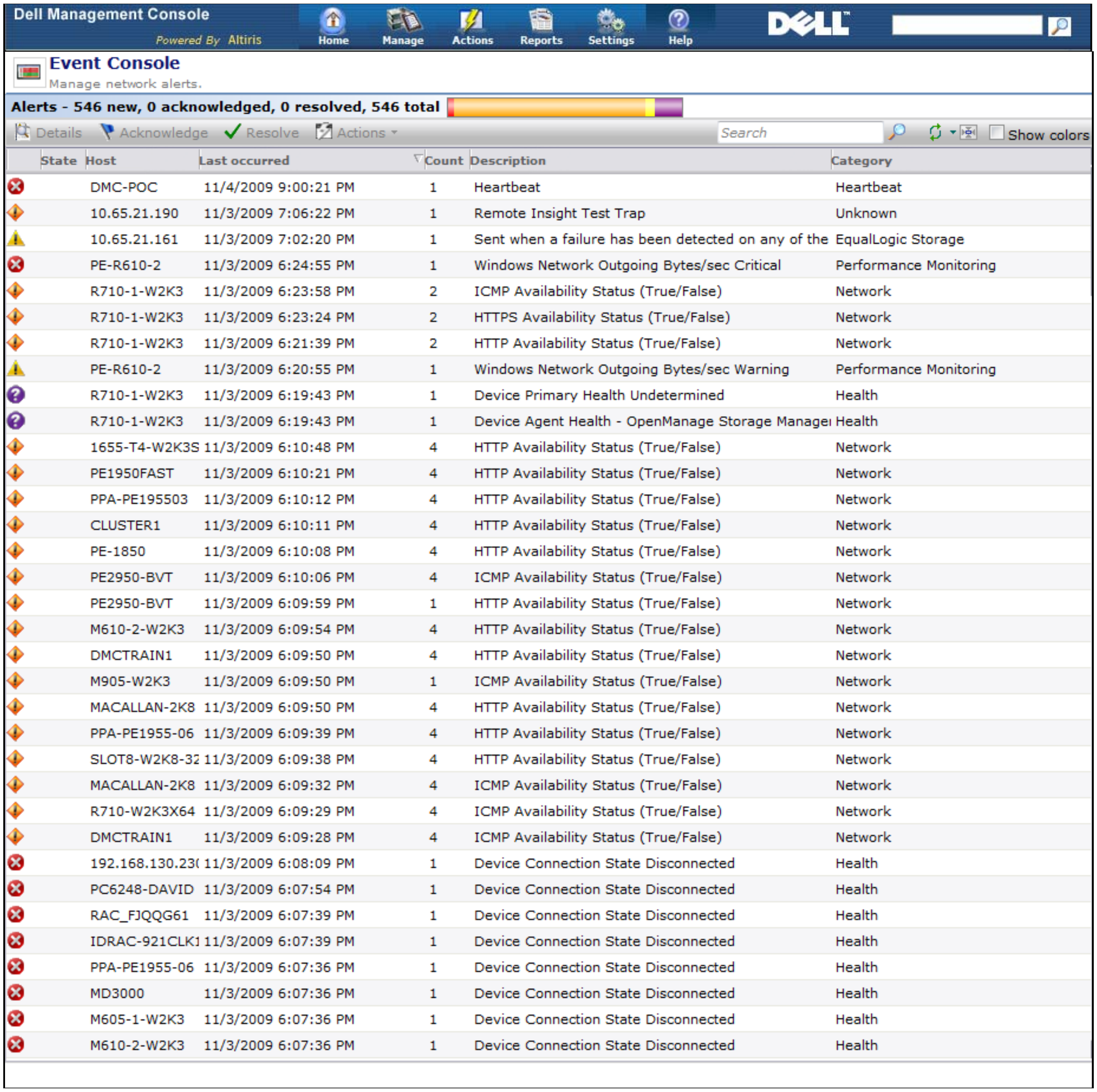
Spending a few minutes to build some common right-click actions for the tools you use can potentially save hours over the life of managing a given system.

Forwarding SNMP Alerts To/From DMC

DMC provides a central event console that can collect and categorize any SNMP trap. Dell MIBs are provided with the default installation, but MIBs for any device can be imported. Rules can be created for:

- Forwarding incoming alerts to other consoles,
- Filtering displayed alerts based on a number of different criteria (time of date, alert count, etc.), or
- Triggering tasks based on incoming alerts (e.g., have failing hardware health on a Dell system trigger a task in another system or in a DMC plug-in like Backup Exec or Symantec Endpoint Protection)

See below for a view of the DMC Event Console.



Event Console

Manage network alerts.

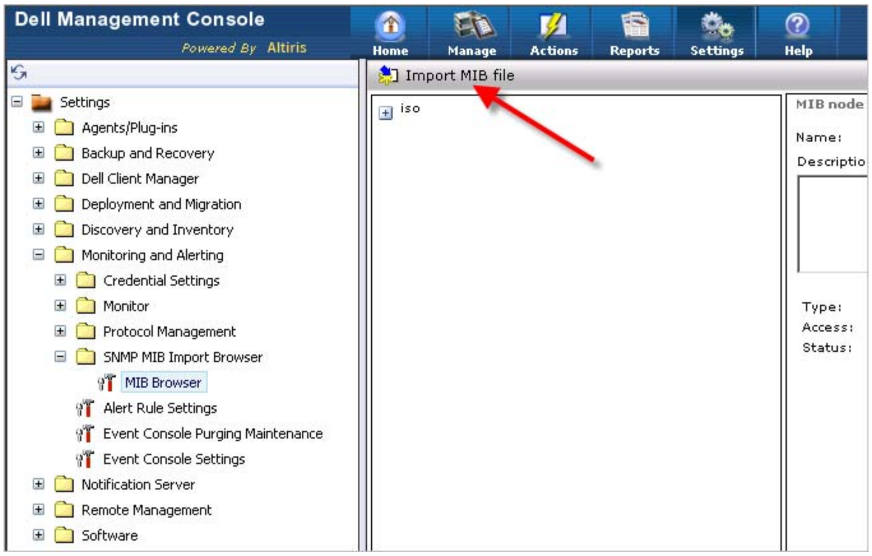
Alerts - 546 new, 0 acknowledged, 0 resolved, 546 total

State	Host	Last occurred	Count	Description	Category
✖	DMC-POC	11/4/2009 9:00:21 PM	1	Heartbeat	Heartbeat
◆	10.65.21.190	11/3/2009 7:06:22 PM	1	Remote Insight Test Trap	Unknown
⚠	10.65.21.161	11/3/2009 7:02:20 PM	1	Sent when a failure has been detected on any of the	EqualLogic Storage
✖	PE-R610-2	11/3/2009 6:24:55 PM	1	Windows Network Outgoing Bytes/sec Critical	Performance Monitoring
◆	R710-1-W2K3	11/3/2009 6:23:58 PM	2	ICMP Availability Status (True/False)	Network
◆	R710-1-W2K3	11/3/2009 6:23:24 PM	2	HTTPS Availability Status (True/False)	Network
◆	R710-1-W2K3	11/3/2009 6:21:39 PM	2	HTTP Availability Status (True/False)	Network
⚠	PE-R610-2	11/3/2009 6:20:55 PM	1	Windows Network Outgoing Bytes/sec Warning	Performance Monitoring
?	R710-1-W2K3	11/3/2009 6:19:43 PM	1	Device Primary Health Undetermined	Health
?	R710-1-W2K3	11/3/2009 6:19:43 PM	1	Device Agent Health - OpenManage Storage Managei	Health
◆	1655-T4-W2K3S	11/3/2009 6:10:48 PM	4	HTTP Availability Status (True/False)	Network
◆	PE1950FAST	11/3/2009 6:10:21 PM	4	HTTP Availability Status (True/False)	Network
◆	PPA-PE195503	11/3/2009 6:10:12 PM	4	HTTP Availability Status (True/False)	Network
◆	CLUSTER1	11/3/2009 6:10:11 PM	4	HTTP Availability Status (True/False)	Network
◆	PE-1850	11/3/2009 6:10:08 PM	4	HTTP Availability Status (True/False)	Network
◆	PE2950-BVT	11/3/2009 6:10:06 PM	4	ICMP Availability Status (True/False)	Network
◆	PE2950-BVT	11/3/2009 6:09:59 PM	1	HTTP Availability Status (True/False)	Network
◆	M610-2-W2K3	11/3/2009 6:09:54 PM	4	HTTP Availability Status (True/False)	Network
◆	DMCTRAIN1	11/3/2009 6:09:50 PM	4	HTTP Availability Status (True/False)	Network
◆	M905-W2K3	11/3/2009 6:09:50 PM	1	ICMP Availability Status (True/False)	Network
◆	MACALLAN-2K8	11/3/2009 6:09:50 PM	4	HTTP Availability Status (True/False)	Network
◆	PPA-PE1955-06	11/3/2009 6:09:39 PM	4	HTTP Availability Status (True/False)	Network
◆	SLOT8-W2K8-32	11/3/2009 6:09:38 PM	4	HTTP Availability Status (True/False)	Network
◆	MACALLAN-2K8	11/3/2009 6:09:32 PM	4	ICMP Availability Status (True/False)	Network
◆	R710-W2K3X64	11/3/2009 6:09:29 PM	4	ICMP Availability Status (True/False)	Network
◆	DMCTRAIN1	11/3/2009 6:09:28 PM	4	ICMP Availability Status (True/False)	Network
✖	192.168.130.23(	11/3/2009 6:08:09 PM	1	Device Connection State Disconnected	Health
✖	PC6248-DAVID	11/3/2009 6:07:54 PM	1	Device Connection State Disconnected	Health
✖	RAC_FJQQG61	11/3/2009 6:07:39 PM	1	Device Connection State Disconnected	Health
✖	IDRAC-921CLK1	11/3/2009 6:07:39 PM	1	Device Connection State Disconnected	Health
✖	PPA-PE1955-06	11/3/2009 6:07:36 PM	1	Device Connection State Disconnected	Health
✖	MD3000	11/3/2009 6:07:36 PM	1	Device Connection State Disconnected	Health
✖	M605-1-W2K3	11/3/2009 6:07:36 PM	1	Device Connection State Disconnected	Health
✖	M610-2-W2K3	11/3/2009 6:07:36 PM	1	Device Connection State Disconnected	Health

If you are forwarding SNMP alerts to DMC for non-Dell devices, you'll need to import the device MIBs into the console first. Use the instructions below:

Step 1: In the DMC Console, navigate to **Settings > All Settings > Monitoring & Alerting > SNMP MIB Import Browser > MIB Browser**

Step 2: Click **Import MIB file**

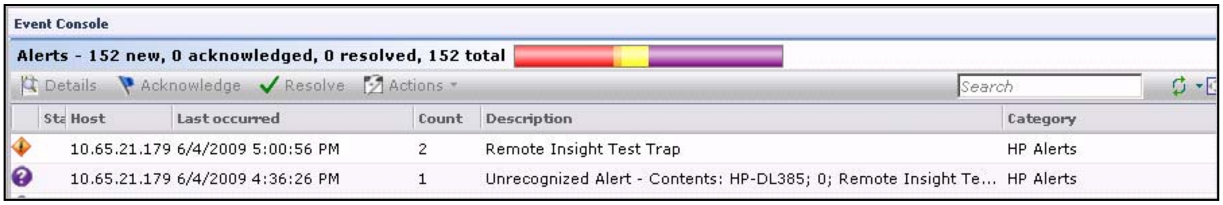


Step 3: **Browse** to the MIB file and click **Apply** to import the MIB

Notes:

- There is a command line utility available for importing multiple MIBs at once.
- Some MIBs have dependencies that require other MIBs to be imported first. For example, (3) key HP MIBs have dependencies (CPQHOST-MIB, CPQSINFO-MIB, CPQHLTH) that require them to be imported in order. If you import them out of order you'll receive an informational dialogue that will display what MIB must be imported first.
- Once imported, you can use the MIB Browser to browse to your imported MIBs. You can change a MIB's default severity simply by clicking the Trap definition and changing the severity from the dropdown box.

See below for an example of some HP alerts inside the DMC console after the HP MIBs had been imported.



Event Console

Alerts - 152 new, 0 acknowledged, 0 resolved, 152 total

Sta	Host	Last occurred	Count	Description	Category
	10.65.21.179	6/4/2009 5:00:56 PM	2	Remote Insight Test Trap	HP Alerts
	10.65.21.179	6/4/2009 4:36:26 PM	1	Unrecognized Alert - Contents: HP-DL385; 0; Remote Insight Te...	HP Alerts

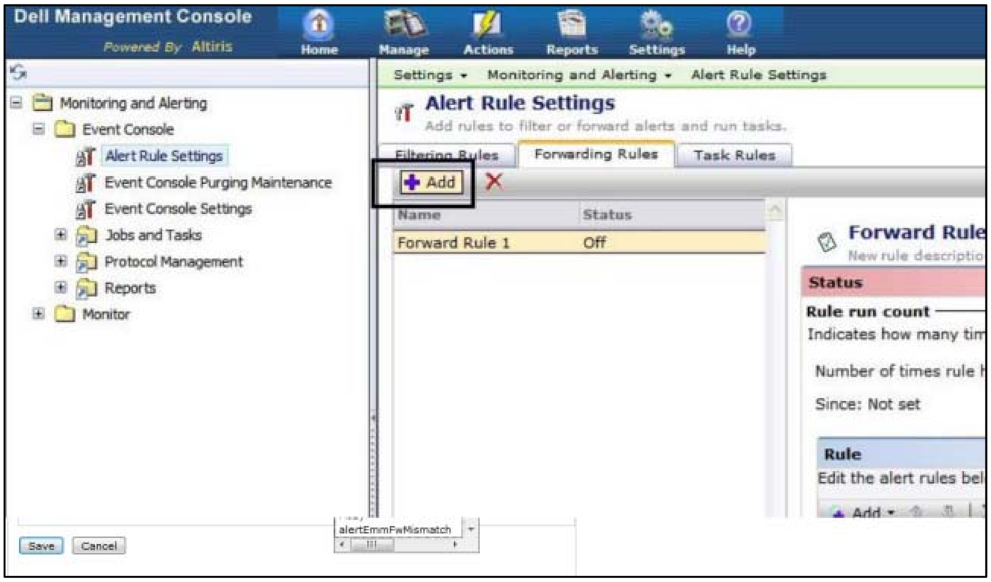
For some applications administrators may need to forward alerts to another DMC installation or a 3rd party console. DMC also be configured to support this scenario using the steps below:

Step 1: In the DMC Console, navigate to **Home > Monitoring & Alerting**

Step 2: Expand **Monitoring and Alerting > Event Console > Alert Rule Settings**

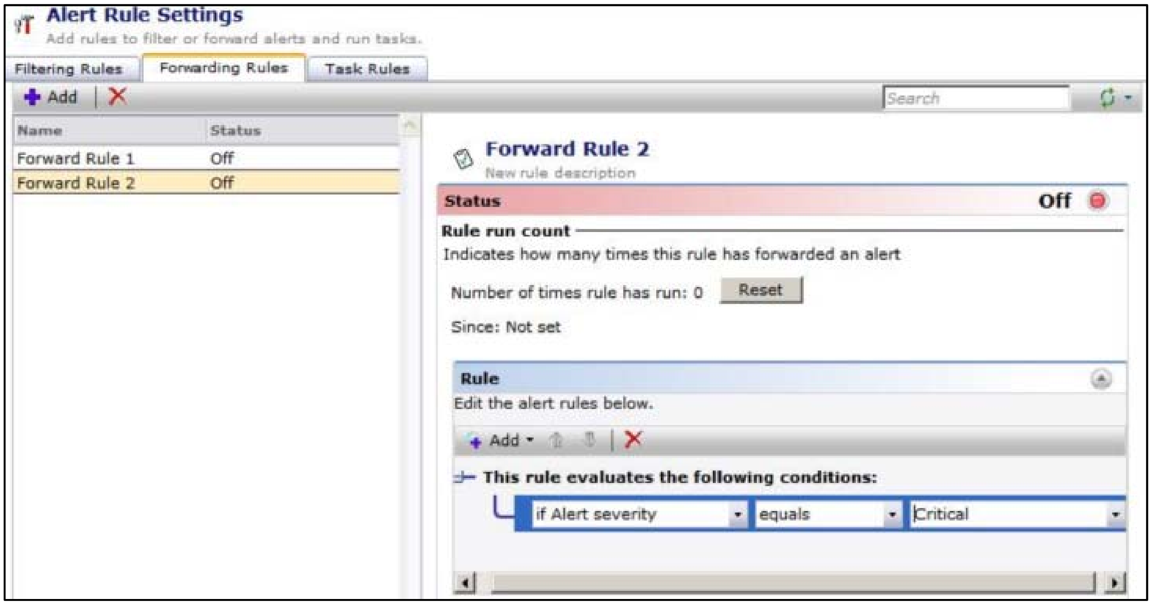
Step 3: In the right pane click on the **Forwarding Rules** tab.

Step 4: In the “Rule” portion in the right frame, click **Add.**



Name	Status
Forward Rule 1	Off

Step 5: Configure **Alert Severity equals Critical** in the last combo boxes



Alert Rule Settings

Add rules to filter or forward alerts and run tasks.

Name	Status
Forward Rule 1	Off
Forward Rule 2	Off

Forward Rule 2

New rule description

Status Off

Rule run count

Indicates how many times this rule has forwarded an alert

Number of times rule has run: 0 Reset

Since: Not set

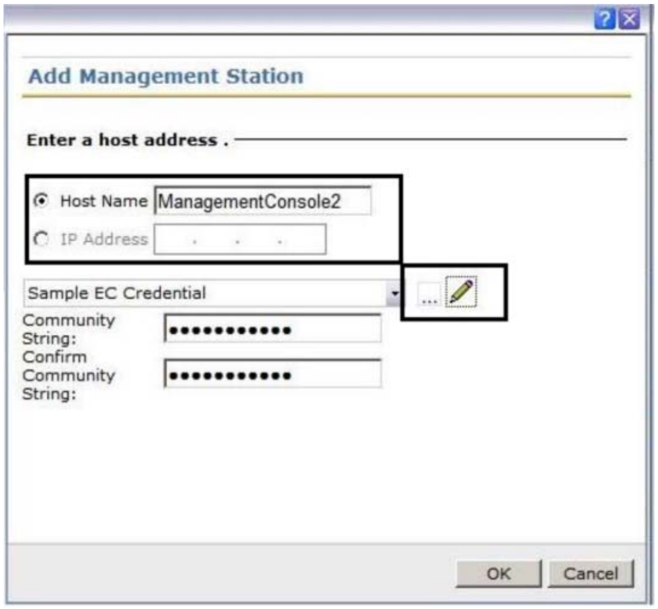
Rule

Edit the alert rules below.

This rule evaluates the following conditions:

if Alert severity | equals | Critical

Step 6: Under Management Stations, click **Add.** Provide **hostname or IP address** of the management station where you want to forward the critical alerts



Add Management Station

Enter a host address .

● Host Name ManagementConsole2

○ IP Address . . .

Sample EC Credential

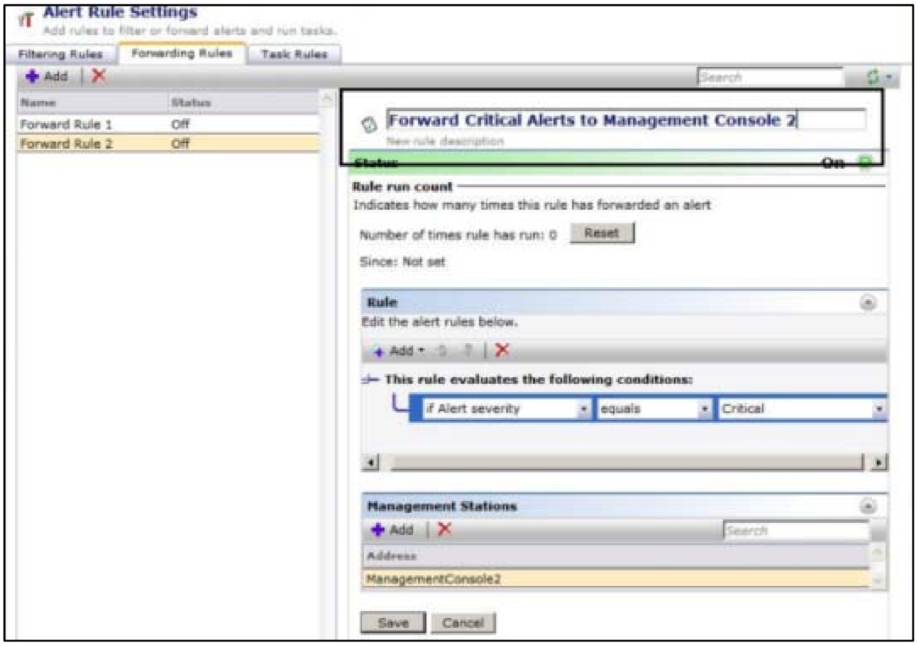
Community String: ••••••••••••

Confirm Community String: ••••••••••••

Step 7: Click on the pencil & **provide the community string** for the target console

Step 8: Click **OK**

Step 9: Change the rule status to **On**, and provide a descriptive name.



Alert Rule Settings

Add rules to filter or forward alerts and run tasks.

Name	Status
Forward Rule 1	Off
Forward Rule 2	Off

Forward Critical Alerts to Management Console 2

New rule description

Status: On

Rule run count

Indicates how many times this rule has forwarded an alert

Number of times rule has run: 0

Since: Not set

Rule

Edit the alert rules below.

This rule evaluates the following conditions:

if Alert severity | equals | Critical

Management Stations

Address
ManagementConsole2

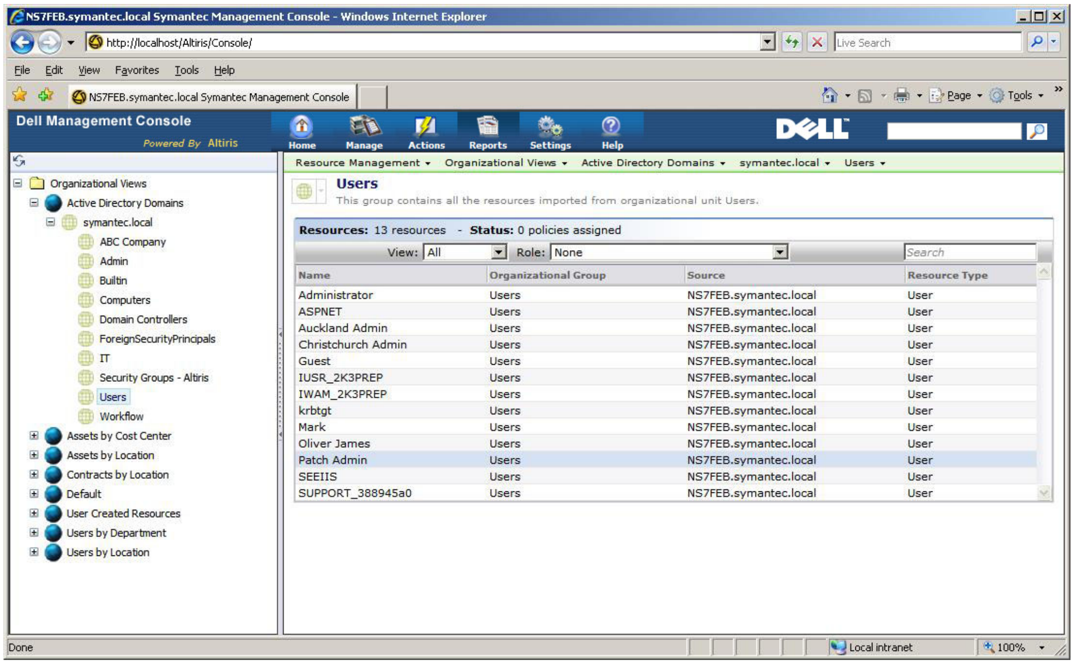
Step 10: Click **Save,** to save changes to the forwarding Rule.

Active Directory Integration

The Microsoft Active Directory Import feature of Dell Management Console lets you import Active Directory objects, such as users, computers, sites, and subnets, into the CMDB. By leveraging what already exists in Active Directory you won't have to re-create it in DMC. You can schedule regular imports to keep your CMDB populated with up-to-date resources, allowing better management of your environment.

Microsoft Active Directory Import uses Lightweight Directory Access Protocol (LDAP) to provide one-way synchronization from Active Directory to the Symantec Management Platform. LDAP is the same protocol used by standard Active Directory administration tools. Microsoft Active Directory Import supports Windows 2000, 2003, and 2008 domains.

To use Microsoft Active Directory Import, you need to define the appropriate resource import rules. You can schedule the resource import rules to run at regular intervals, and you can run them manually at any time. When you run a resource import rule, you can import all of the appropriate data (a full import) or just the data that is new or has changed since the previous import (an update import).



- Organizational Views
  - Active Directory Domains
    - symantec.local
      - ABC Company
      - Admin
      - Builtin
      - Computers
      - Domain Controllers
      - ForeignSecurityPrincipals
      - IT
      - Security Groups - Altiris
      - Users
      - Workflow
  - Assets by Cost Center
  - Assets by Location
  - Contracts by Location
  - Default
  - User Created Resources
  - Users by Department
  - Users by Location

Users

This group contains all the resources imported from organizational unit Users.

Resources: 13 resources - **Status:** 0 policies assigned

View: All Role: None

Name	Organizational Group	Source	Resource Type
Administrator	Users	NS7FEB.symantec.local	User
ASPNET	Users	NS7FEB.symantec.local	User
Auckland Admin	Users	NS7FEB.symantec.local	User
Christchurch Admin	Users	NS7FEB.symantec.local	User
Guest	Users	NS7FEB.symantec.local	User
IUSR_2K3PREP	Users	NS7FEB.symantec.local	User
IWAM_2K3PREP	Users	NS7FEB.symantec.local	User
krbtgt	Users	NS7FEB.symantec.local	User
Mark	Users	NS7FEB.symantec.local	User
Oliver James	Users	NS7FEB.symantec.local	User
Patch Admin	Users	NS7FEB.symantec.local	User
SEEIIS	Users	NS7FEB.symantec.local	User
SUPPORT_388945a0	Users	NS7FEB.symantec.local	User

As part of the import process, you can automatically create filters based on the organizational units, security groups, and distribution groups that are set up in Active Directory. These filters can be used to specify resource targets to which you apply DMC policies and tasks.

During the import process, the computers from Active Directory are matched with managed computers in the CMDB, using the computer name and domain. However, Microsoft Active Directory Import imports all computers that the resource import rules identify, regardless of their Altiris Agent installation status. Importing all computers lets you import new and unmanaged computers and then target those computers for Altiris Agent installation (or you can identify unmanaged machines use the network discovery features included with DMC).

The Symantec Management Platform includes a number of reports that provide information on Microsoft Active Directory Import activities. These reports are stored in the Reports > Notification Server Management > Microsoft Active Directory folder.

Import/Export Dell data via the free Connector Solution Module

Connector Solution is a free module that can be installed with DMC. This module provides for importing and exporting data from the Configuration Management Database (CMDB) in a variety of formats. This solution is completely documented so we'll provide only a brief summary here and refer interested parties to **http://www.altiris.com/upload/dataconnector_user_gde831.pdf** for details. (See also **http://www.altiris.com/Support/Documentation.aspx#c** and scroll to Connector Solution for the 7.0 version)

Administrators commonly use Connector Solution to:

- Export DMC data (usually on scheduled intervals) from a report into a CSV or XML format for import to another system
- Export inventory from one or more assets in the database into a 3rd party system
- Import data from an external data source into the DMC database

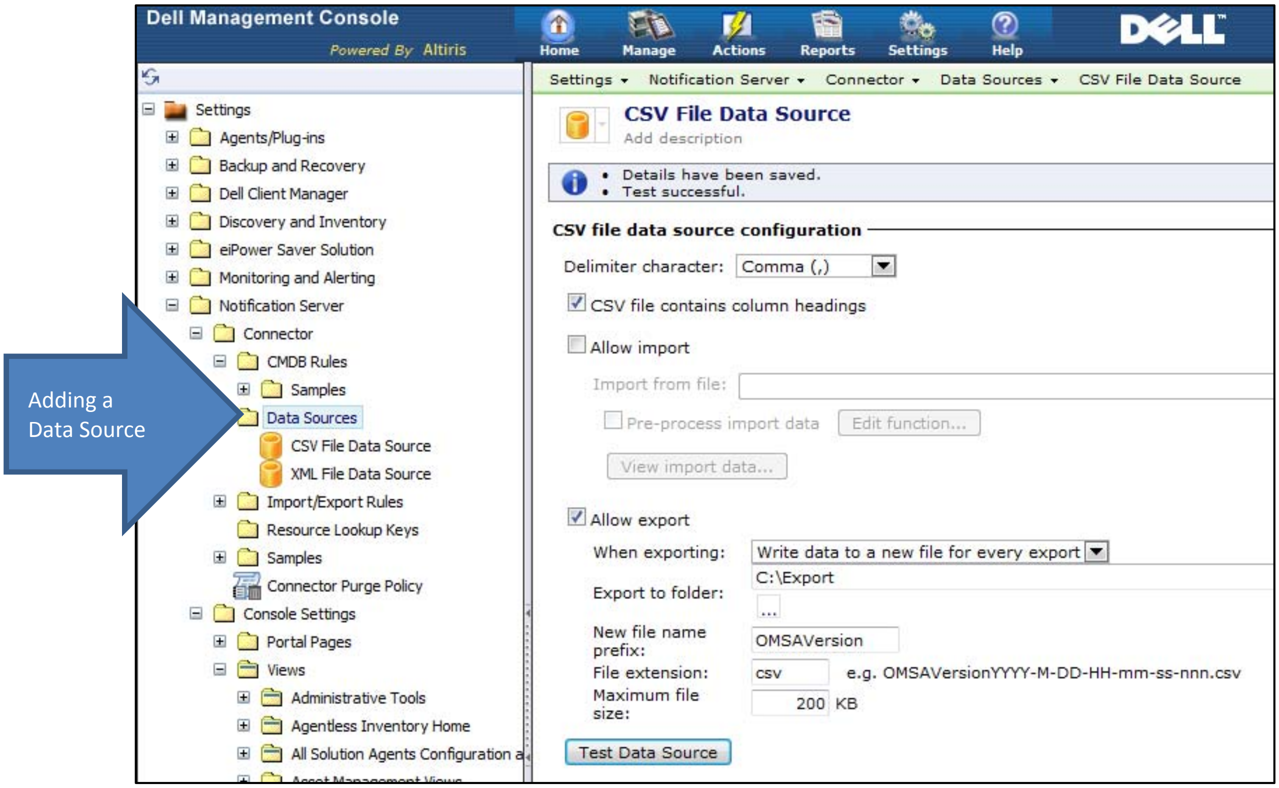
Data sources for importing data with Connector Solution include:

- CSV
- LDAP
- ODBC
- OLEDB (MSAccess, MSExcel, MSSQL Server database, Oracle database, directly enter connection string, etc.)
- XML
- Custom File format

Importing and exporting data is essentially a two-step process.   We'll walk through a simple example for extracting report data into a CSV file.

Step 1: Define a Data Source (a location that data is going to or coming from)

a. In the DMC Console, go to **Settings > Notification Server > Connector > Data Sources**
b. Right-click **Data Sources** and select **New > CSV File Data Source**
c. Select the options for building the CSV file. For our example:
    a. Click in the **title** and replace the default text by typing **CSV Export Data Source** as the new title
    b. Select a **comma** delimiter in the dropdown box
    c. Check **CSV file contains column headings**
    d. Check **Allow export**
    e. Select **Write data to a new file for every export**
    f. Enter **C:\Export** as the folder to export to (create this folder on your C drive first)
    g. Enter **OMSAVersion** as the file name prefix
    h. Enter **csv** as the file extension
    i. Click **Save Changes**



CSV File Data Source

Add description

- Details have been saved.
- Test successful.

CSV file data source configuration

Delimiter character: Comma (,)

☑ CSV file contains column headings

☐ Allow import

Import from file:

☐ Pre-process import data [Edit function...]

[View import data...]

☑ Allow export

When exporting: Write data to a new file for every export

Export to folder: C:\Export [...]

New file name prefix: OMSAVersion

File extension: csv e.g. OMSAVersionYYYY-M-DD-HH-mm-ss-nnn.csv

Maximum file size: 200 KB

[Test Data Source]

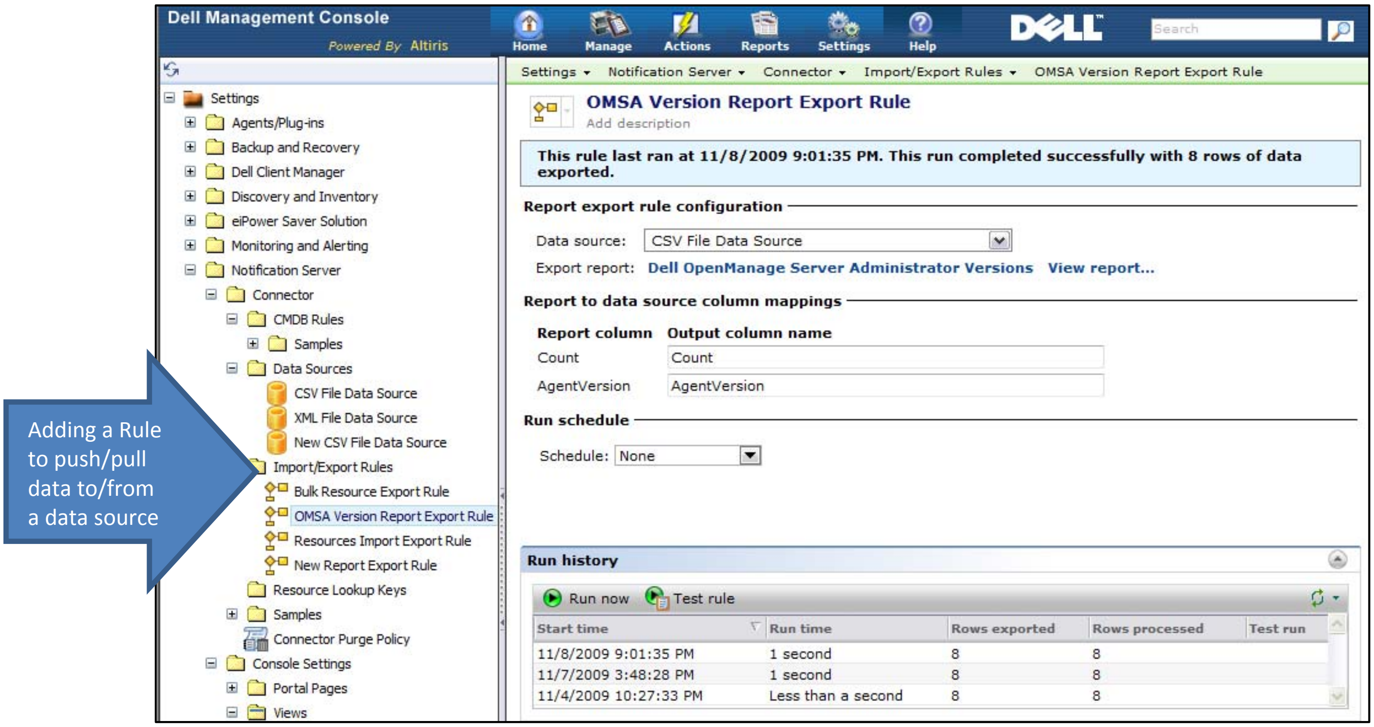
Step 2: Create an Export Rule to push the data to the Source you created in Step 1

a. In the DMC Console, go to **Settings > Notification Server > Connector > Import/Export Rules**

b. Right-click **Data Sources** and select **New > Report Export Rule**

c. Select the options for building the rule. For our example,
    a. Click the title **New Report Export Rule** and replace that text by typing **OMSA Version Report Export Rule**
    b. Select **CSV Export Data Source** in the data source dropdown box
    c. Click **Select a report…**
    d. Select **Dell Reports** from the dropdown box
    e. Select **Dell OpenManage Server Administrator Versions**
    f. Click **OK**

d. Click **Run now** in the **Run history** section to run the rule. (Note you can also create a schedule to execute the rule if necessary.)



OMSA Version Report Export Rule

Add description

This rule last ran at 11/8/2009 9:01:35 PM. This run completed successfully with 8 rows of data exported.

Report export rule configuration

Data source: CSV File Data Source

Export report: Dell OpenManage Server Administrator Versions View report...

Report to data source column mappings

Report column	Output column name
Count	Count
AgentVersion	AgentVersion

Run schedule

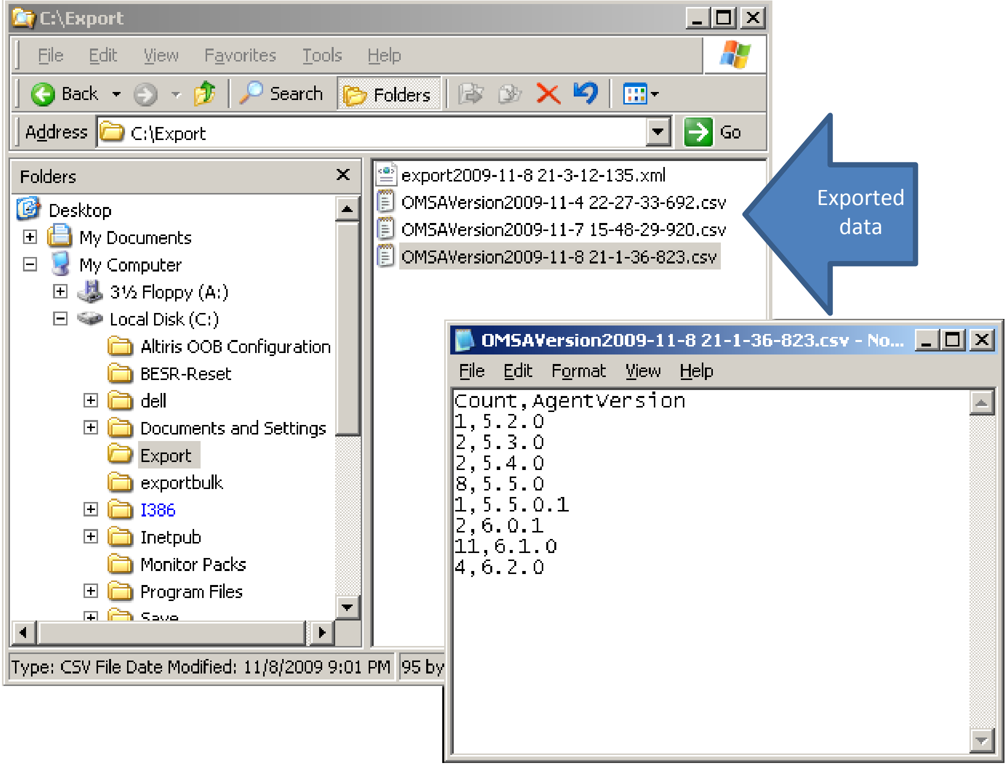
Schedule: None

Run history

Start time	Run time	Rows exported	Rows processed	Test run
11/8/2009 9:01:35 PM	1 second	8	8	
11/7/2009 3:48:28 PM	1 second	8	8	
11/4/2009 10:27:33 PM	Less than a second	8	8	

Adding a Rule to push/pull data to/from a data source

You can now use Windows Explorer to browse to **C:\Export** and view the CSV file contents. The CSV can be imported into Microsoft Excel or another 3rd party application.



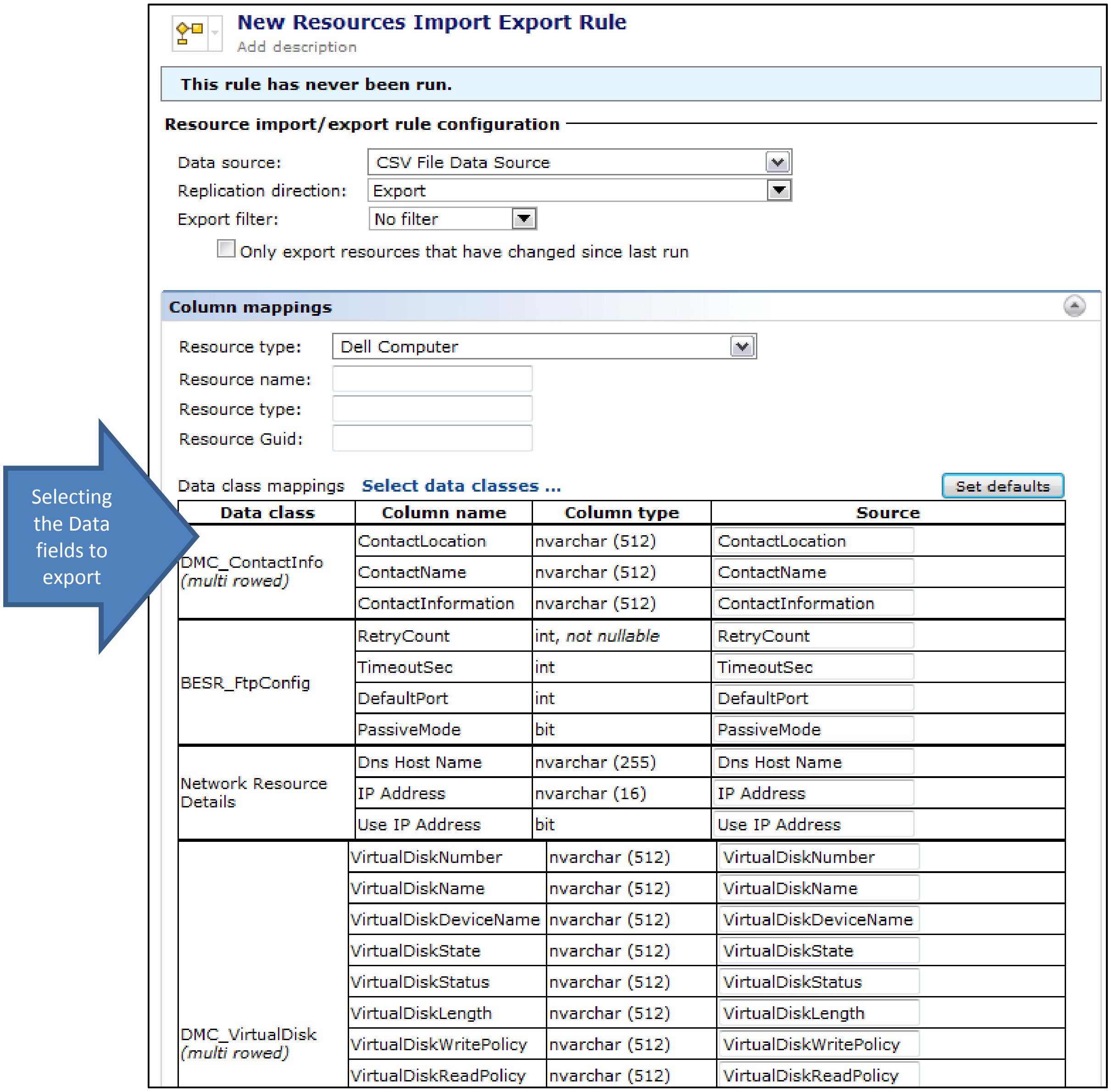
export2009-11-8 21-3-12-135.xml
OMSAVersion2009-11-4 22-27-33-692.csv
OMSAVersion2009-11-7 15-48-29-920.csv
OMSAVersion2009-11-8 21-1-36-823.csv

Type: CSV File Date Modified: 11/8/2009 9:01 PM 95 by

```
Count,AgentVersion
1,5.2.0
2,5.3.0
2,5.4.0
8,5.5.0
1,5.5.0.1
2,6.0.1
11,6.1.0
4,6.2.0
```

Exported data

As mentioned previously, in addition to exporting data from reports you can also export inventory data for one or more machines in the database. See below for an example of an export rule that allows the administrator to select which tables and columns they wish to export data for.



Selecting the Data fields to export

New Resources Import Export Rule

Add description

This rule has never been run.

Resource import/export rule configuration

Data source: CSV File Data Source

Replication direction: Export

Export filter: No filter

□ Only export resources that have changed since last run

Column mappings

Resource type: Dell Computer

Resource name:

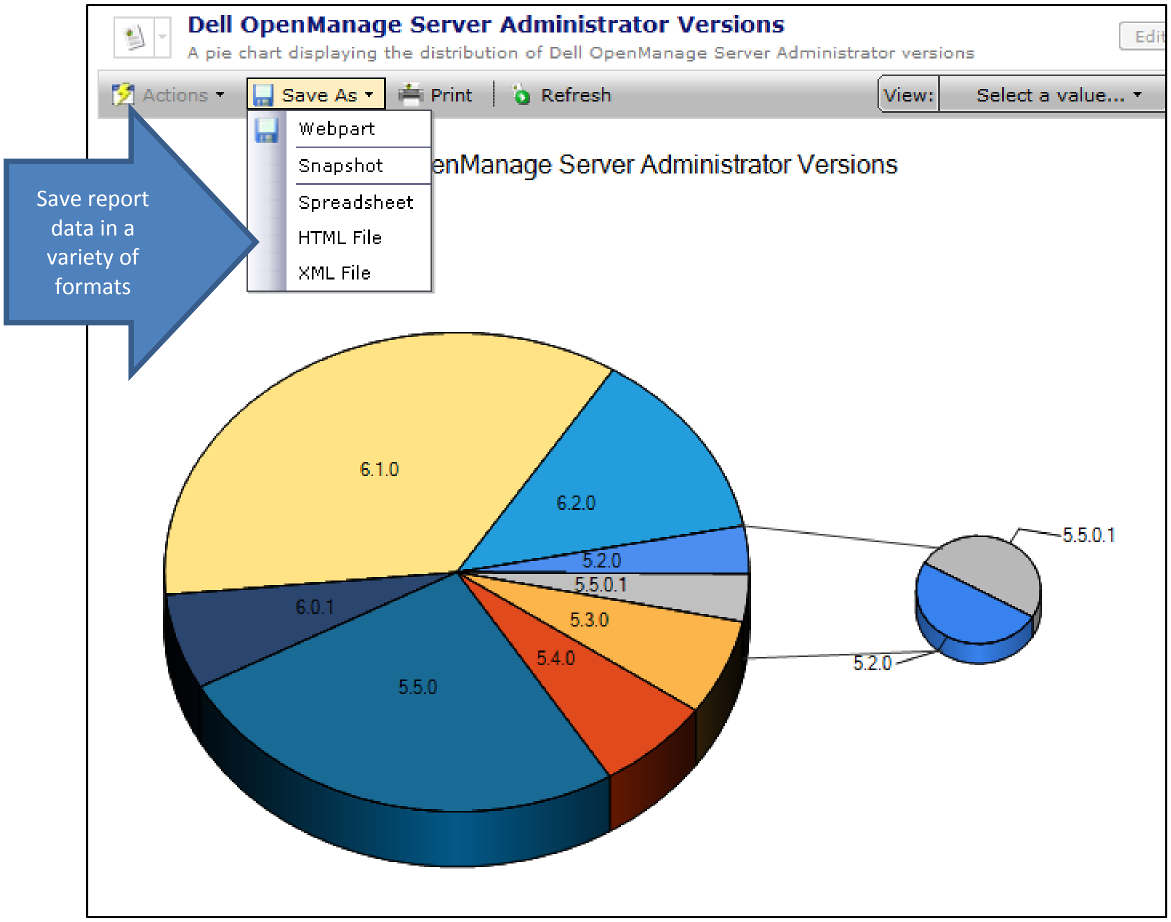
Resource type:

Resource Guid:

Data class mappings **Select data classes ...** Set defaults

Data class	Column name	Column type	Source
DMC_ContactInfo *(multi rowed)*	ContactLocation	nvarchar (512)	ContactLocation
	ContactName	nvarchar (512)	ContactName
	ContactInformation	nvarchar (512)	ContactInformation
BESR_FtpConfig	RetryCount	int, *not nullable*	RetryCount
	TimeoutSec	int	TimeoutSec
	DefaultPort	int	DefaultPort
	PassiveMode	bit	PassiveMode
Network Resource Details	Dns Host Name	nvarchar (255)	Dns Host Name
	IP Address	nvarchar (16)	IP Address
	Use IP Address	bit	Use IP Address
DMC_VirtualDisk *(multi rowed)*	VirtualDiskNumber	nvarchar (512)	VirtualDiskNumber
	VirtualDiskName	nvarchar (512)	VirtualDiskName
	VirtualDiskDeviceName	nvarchar (512)	VirtualDiskDeviceName
	VirtualDiskState	nvarchar (512)	VirtualDiskState
	VirtualDiskStatus	nvarchar (512)	VirtualDiskStatus
	VirtualDiskLength	nvarchar (512)	VirtualDiskLength
	VirtualDiskWritePolicy	nvarchar (512)	VirtualDiskWritePolicy
	VirtualDiskReadPolicy	nvarchar (512)	VirtualDiskReadPolicy

Note that if you just want to do a quick one time export of a report's data, you do not need to set up an export rule. From within any report in the system you can choose to save that report's data to a CSV, HTML or XML file. See the screenshot below for an example.



Dell OpenManage Server Administrator Versions

A pie chart displaying the distribution of Dell OpenManage Server Administrator versions

Save report data in a variety of formats

Lastly, remember that Connector Solution is a free module but note that it does NOT install by default with Dell Management Console. To install it, simply launch the Symantec Installation Manager and select the Connector Solution option then follow the on screen instructions to add it to your configuration.

Using DMC to call 3rd Party Interfaces

DMC's also offers a task engine that has the ability to:

- Execute calls to 3rd party CLI's via DOS command scripts, JavaScript, Perl, PowerShell, Python, UNIX Shell Scripts, VBScript or AppleScript. Calls can be executed on either managed devices or on the DMC server itself.
- Call web service methods on remote computers and return the output
- Run any SQL Queries from the DMC server
- Remotely start, stop and change service configurations

Any DMC task that calls into 3rd party systems can be triggered by any incoming DMC alert. This provides for the ability to have Dell hardware health, status conditions or any other monitored metric drive behavior in another application.

Also, individual tasks can be grouped into jobs. A job is a group of individual tasks that execute sequentially but are triggered as a unit. You can create a single job that will execute a combination of DMC and 3rd party tasks in response to a single incoming alert or on a scheduled interval.

To create a custom task:

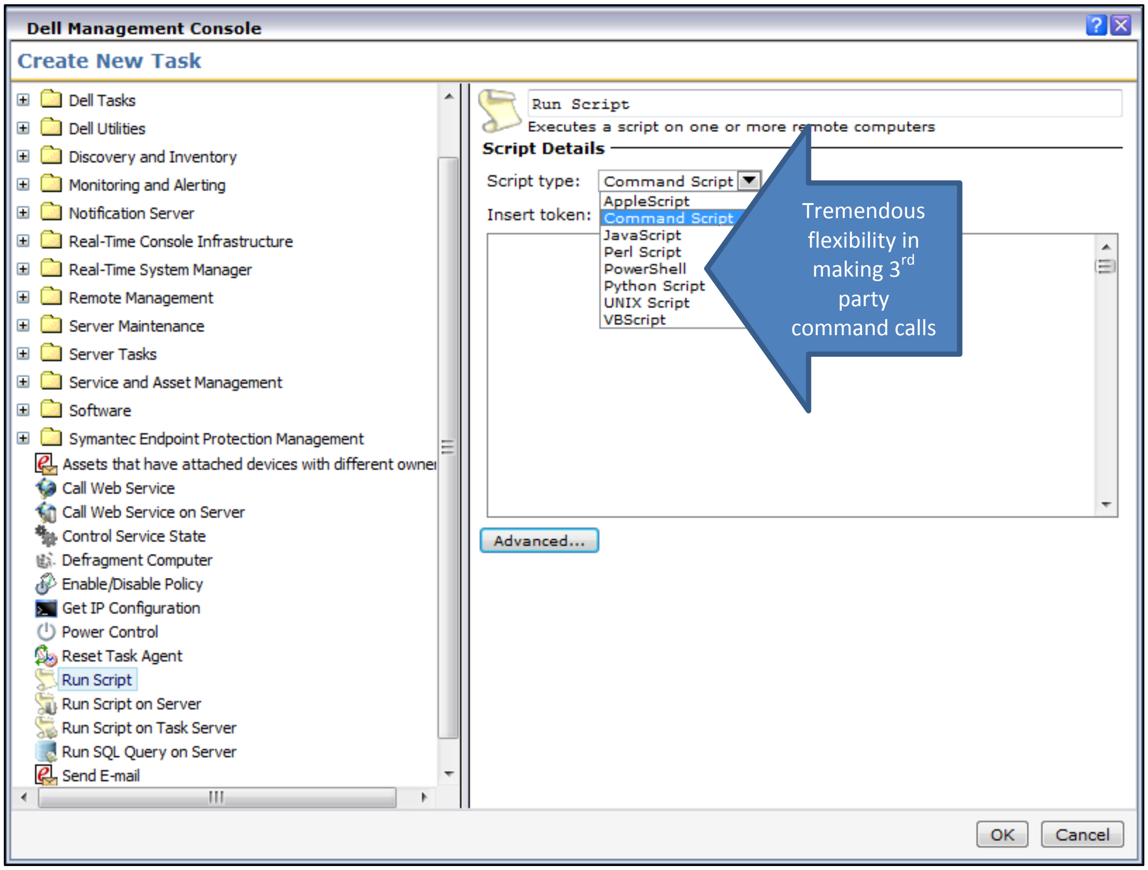
Step 1: From the DMC console, go to **Manage > Jobs & Tasks**

Step 2: Right-click **Jobs and Tasks** in the left navigation menu

Step 3: Select **New > Task** from the popup menu

Step 4: Click the type of task you want to create from the list on the left and provide the appropriate script or other information. Note that tokens can be used in your custom scripts to insert data from the Dell database on the fly at run time.

See the screenshot below for an example of a simple Run Script task.



Run Script

Executes a script on one or more remote computers

Script Details

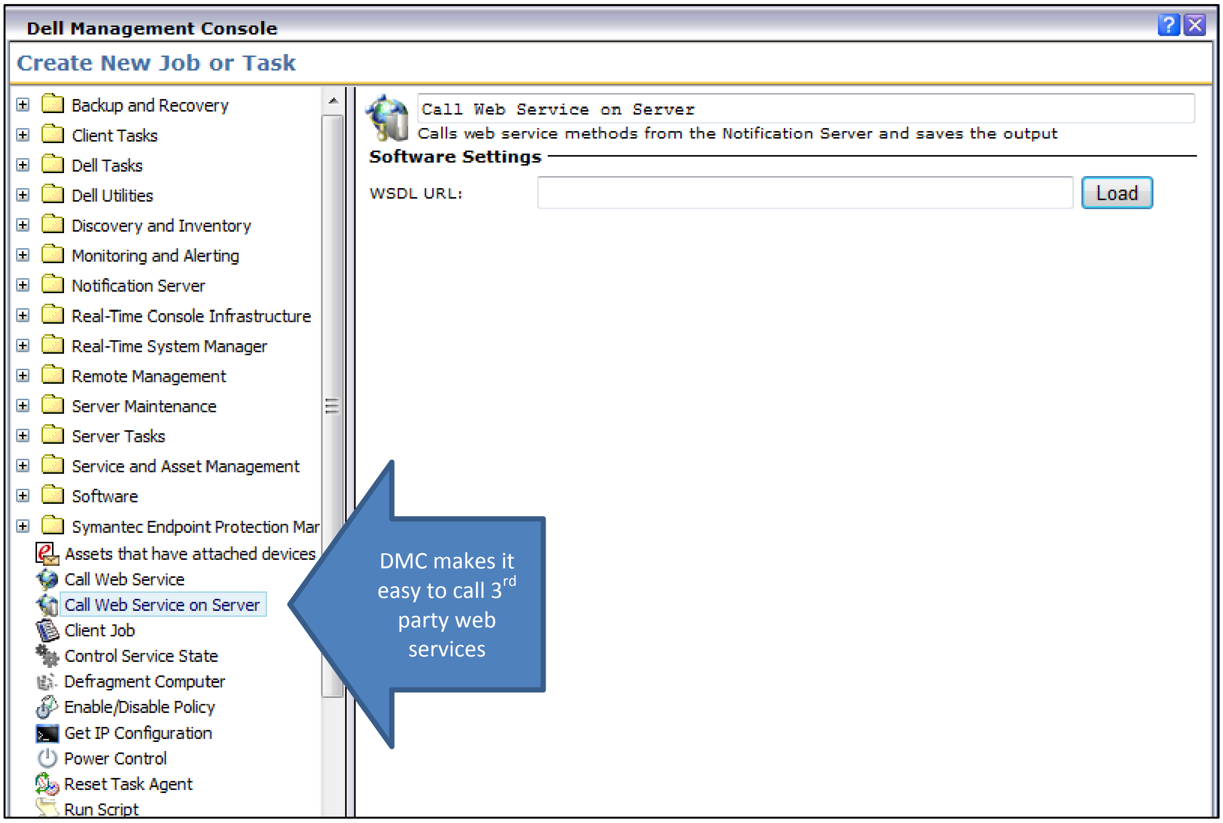
Script type: Command Script

Insert token:

Tremendous flexibility in making 3rd party command calls

Step 5: Click **OK** to save

Calling 3rd party web services is also easy with DMC. Web services interfaces can be called either from the DMC server itself or any managed servers.



Dell Management Console

Create New Job or Task

Call Web Service on Server

Calls web service methods from the Notification Server and saves the output

Software Settings

WSDL URL:

DMC makes it easy to call 3rd party web services

Again, once your task is created it becomes accessible to a variety of other DMC functions. For example, to have your 3rd party CLI task called by an incoming alert simply:

Step 1: Go to **Home > Monitoring and Alerting** (to bring up the Monitoring and Alerting Portal page)

Step 2: In the left navigation tree go to **Monitoring and Alerting > Event Console > Alert Rule Settings**

Step 3: In the right pane, click the **Task Rules** tab

Step 4: Click the **Add** button in the toolbar

Step 5: Configure the rule

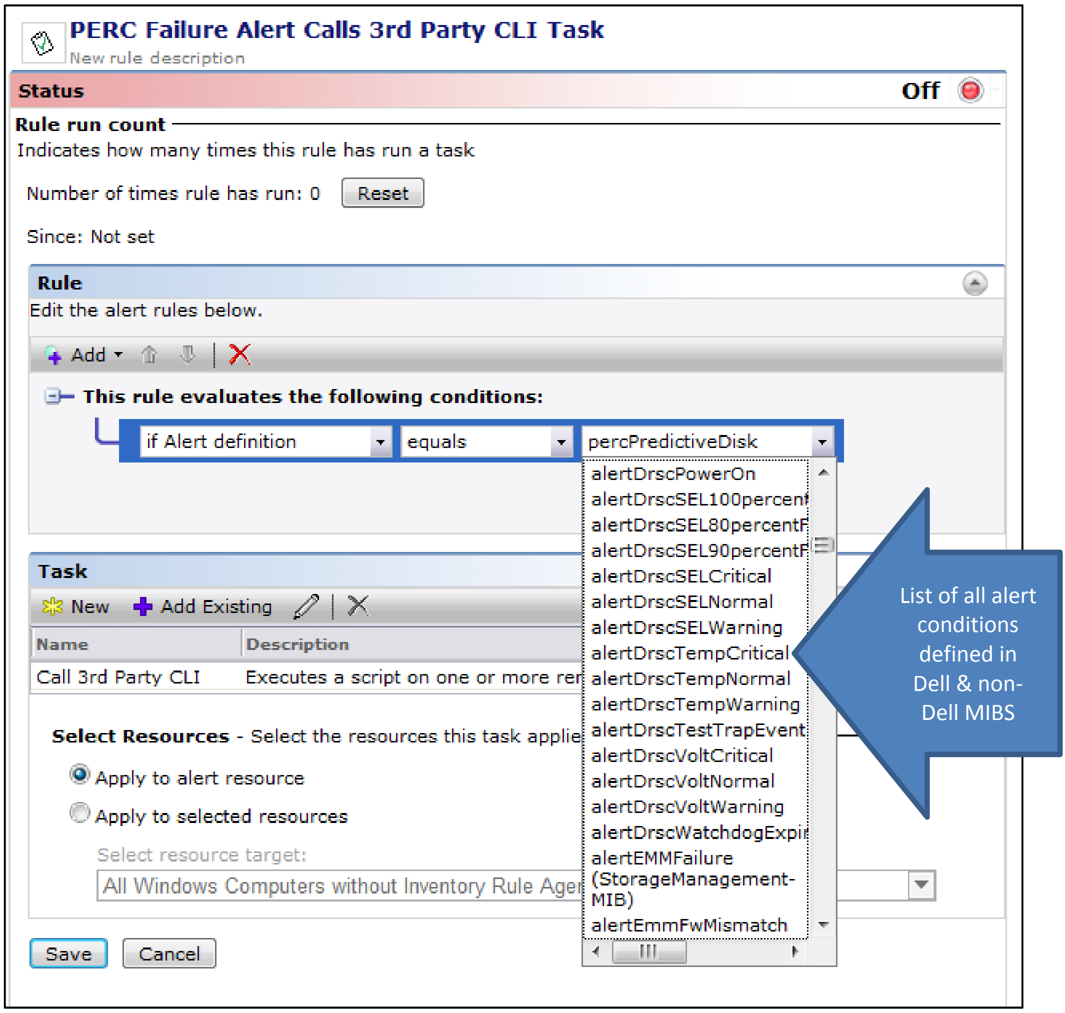
a. Provide a **title**
b. **Define your rule**…usually in the form of:

If Alert definition equals <select condition from the list>

Note: the dropdown box for alert conditions contains a listing of every available alert condition DMC is aware of – including all Dell alerts AND alerts from any MIBs (Dell or non-Dell) that have been imported into the system.

c. In the task section click the **Add Existing** button and select the custom task you built earlier
d. Click **Save**

See below for an example alert calling to a user-defined task that executes a 3rd party CLI call.



PERC Failure Alert Calls 3rd Party CLI Task

New rule description

Status Off

Rule run count

Indicates how many times this rule has run a task

Number of times rule has run: 0 Reset

Since: Not set

Rule

Edit the alert rules below.

This rule evaluates the following conditions:

if Alert definition | equals | percPredictiveDisk

Task

Name	Description
Call 3rd Party CLI	Executes a script on one or more rer

Select Resources - Select the resources this task applie

● Apply to alert resource

○ Apply to selected resources

Select resource target:

All Windows Computers without Inventory Rule Ager

Save Cancel

List of all alert conditions defined in Dell & non-Dell MIBS

The ability to link 3rd party applications into DMC alerts and conditions (Dell and non-Dell) provides powerful extensibility options for IT administrators.

Symantec Workflow Solution

Symantec provides a comprehensive workflow solution that allows IT administrators to quickly and easily create IT workflows using a combination of Symantec products and 3rd party solutions. A Visual Workflow Designer provides Visio-like drag and drop components to tie tools and notification events into complete processes – without writing any code.

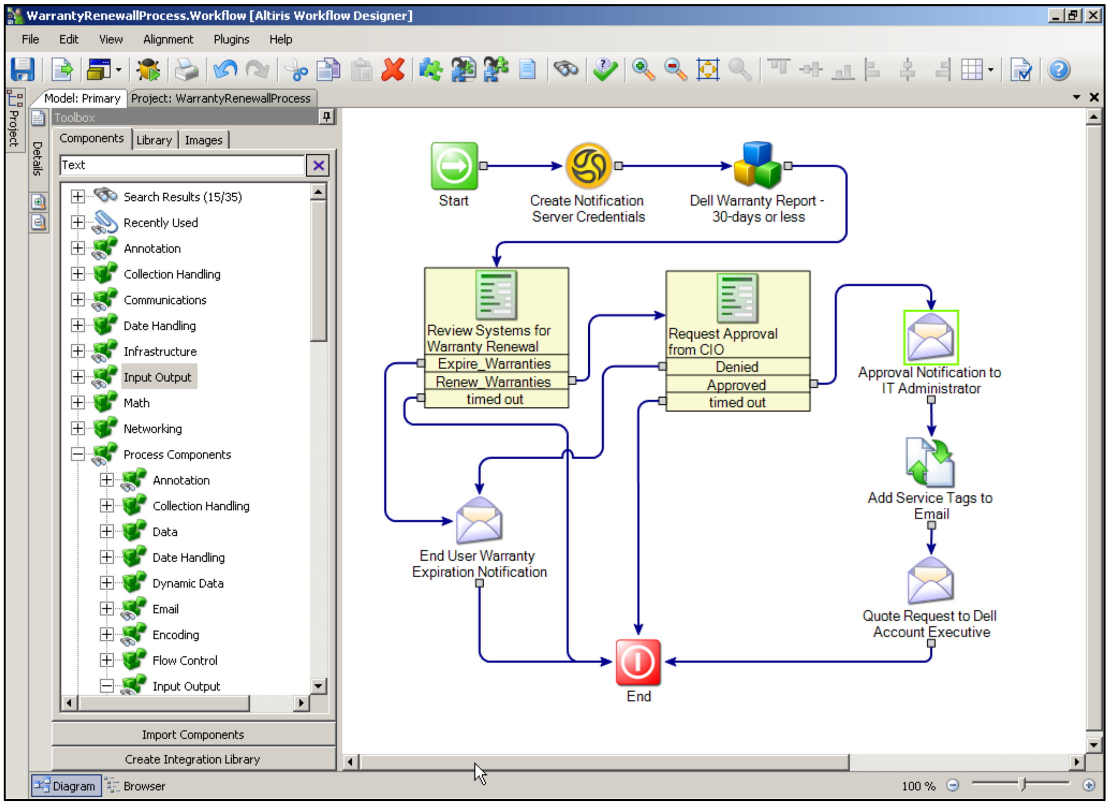
Symantec Workflow Solution is provided **free** with Dell Management Console as long as workflows are limited to functionality contained within DMC.

Administrators who want to integrate DMC with 3rd party systems – such as CRM, ERP, accounting systems, etc. – must purchase Workflow Solution separately (or IT Management Suite which includes many Symantec management products, including Workflow).

Note that Symantec Workflow Solution is included with DMC plug-ins such as Server Management Suite and Client Management Suite – but only for creating workflows across the tools in those solutions. Again, any integration to 3rd party applications will require purchase of the Workflow product.

For a quick example of how Workflow Solution can transition DMC or any management tool into a complete IT process, view the video at:
http://dell.symantec.com/files/3/DMC_Warranty_Workflow_Callouts.avi

This video shows how Workflow Solution can take a simple DMC report like the Warranty Report and transform it into a warranty renewal process any organization would benefit from using.



To learn more about Symantec Workflow Solution, go to:

- http://www.symantec.com/business/workflow-solution
- http://www.workflowswat.com/

Admin SDK (CLI, COM & Web services)

DMC is built on the Symantec Management Platform (SMP). SMP provides a free Admin SDK (ASDK) that can be optionally downloaded from within the Symantec Installation Manager.

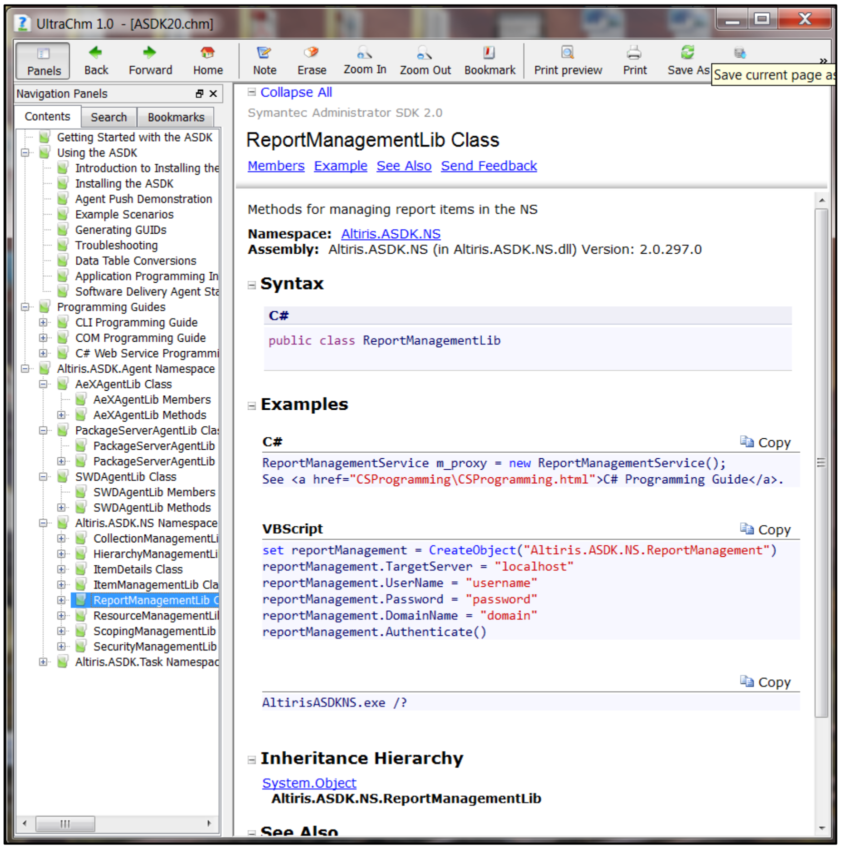
The APIs contained in the ASDK are designed to model common tasks that IT administrator could otherwise perform through Dell Management Console. For example, the ASDK contains APIs for cloning, deleting, and importing items; for running reports; for managing resource items; for managing “scoping” objects; for retrieving and running site server tasks (which include task services and package services); and much more.

The ASDK provides three separate ways to call its APIs:

1. CLI (Command Line Interface)
2. COM objects
3. Web Services

The CLI runs only from a DMC server, however, the COM and web services APIs can be installed on the DMC server or on any computer on which the Microsoft .NET Framework v3.5 has been installed. A common scenario is to install the ASDK on a remote computer and then write scripts (in the VBScript language) that call the ASDK's COM objects. The ASDK methods handle internally the data type conversions necessary to return values and objects that VBScript can then process further.

The ASDK is fully documented SDK as seen in the example below.



Symantec Administrator SDK 2.0

ReportManagementLib Class

Members Example See Also Send Feedback

Methods for managing report items in the NS

Namespace: Altiris.ASDK.NS
Assembly: Altiris.ASDK.NS (in Altiris.ASDK.NS.dll) Version: 2.0.297.0

Syntax

C#

```
public class ReportManagementLib
```

Examples

C#

```
ReportManagementService m_proxy = new ReportManagementService();
See <a href="CSProgramming\CSProgramming.html">C# Programming Guide</a>.
```

VBScript

```
set reportManagement = CreateObject("Altiris.ASDK.NS.ReportManagement")
reportManagement.TargetServer = "localhost"
reportManagement.UserName = "username"
reportManagement.Password = "password"
reportManagement.DomainName = "domain"
reportManagement.Authenticate()
```

```
AltirisASDKNS.exe /?
```

Inheritance Hierarchy

System.Object
Altiris.ASDK.NS.ReportManagementLib

See Also

ASDK web services can be called from C# code or via a URL query string given to any browser. Provided web services are in the Microsoft style written for ASP.Net and hosted in .asmx files. These services are written as .Net functions decorated with the "[WebMethod]" attribute. When deployed, these services are hosted as standard web pages on the web server.

They can be called either:

- Directly from the web browser
  - Navigate to the .asmx file containing the web service or services to be called. This will show the web services as a list of links, one link for each web-exposed method.
  - Click the link for any of these methods to access the .asmx file, this time with the method name in the query string as the “op” parameter.
  - Click the IE-generated “Invoke” button to run the method.
  - Below this test area, the browser shows examples of the data formatting that is needed to properly invoke the method remotely using either SOAP-formatted XML or a POST-type web request (sending the method’s parameters on the request stream). The browser page shows both a sample request and a sample response for each data format (SOAP or POST).

- Using a Simple WebRequest Instance
  - ASP .Net web services can be called in .Net code using the System.Net.WebRequest class. The WebRequest class allows a loose coupling (not compile-time) to the web service. The URL for the web request is the URL for the .asmx file with the name of the method to be called added on. For example, to call the “HelloWorld” method in the “MyWebServices.asmx” file at “http://localhost/MyWeb,” the URL for the web request would be **http://localhost/MyWeb/MyWebServices.asmx/HelloWorld.**
    - The web request must have credentials set properly to access the “MyWeb” virtual directory on the host.
    - It must also have any parameters that should be given to the method being called added to the web request’s request stream.
    - Then the web request can be used to call the web service using the “GetResponse” method (or “BeginGetResponse” for async calling) and the returned WebResponse instance can be used to get the results of the method call.

- Using a Web Reference
  - A web reference is a hard coupling (compile-time) to a web service. Adding a web reference to a web service creates a proxy in the Visual Studio project that will perform the web service call. The proxy exposes the web service as if it were a new class created in the referencing project.
  - Consult Visual Studio documentation for additional information

A few of the web services available through the SMP are shown below:

/Altiris/Reporting/Reporting.asmx

- GetReportResult

/Altiris/NSWebService/ResourceModel.asmx

- CreateNewResource
- DeleteResource
- FormAssociation
- GetAssociatedChildResources
- GetAssociatedParentResources
- GetResource
- SaveResource

/Altiris/NS/Services/LicensingWebService.asmx

- GetLicenseStatus

/Altiris/NS/Services/ItemWebService.asmx

- CountDataDigests
- DeleteItem
- DeleteItemsFromString
- ExportItem
- GetDataDigestResults
- ImportItem
- MoveItem
- StartItemExport

/Altiris/NS/Services/CalendarWebService.asmx

- GetCalendarScheduledItemsByDateRange

Note that ASDK web services are separate and distinct from the web services provided with the Developer SDK (discussed in the next section). Additionally, while some web services are accessible without the ASDK, you'll want to download the ASDK if you intend to heavily leverage this integration option.

In summary, the ASDK allows DMC administrators to customize and automate common tasks. In this regard, it is important to distinguish the role of the ASDK from that of a more "traditional" SDK, such as the Developer SDK discussed later in this document. The Developer SDK contains a number of .NET assemblies and tools that solution developers use to write new solutions to integrate with DMC and the Symantec Management Platform – not necessarily automate management functions. The ASDK is targeted more toward administrators where the SDK is targeted more toward the ISV community. Also, note that while the ASDK is free, the Developer SDK is fee based.

To learn more about the Admin SDK, go to:

- http://www.symantec.com/connect/articles/getting-started-symantec-management-platform-software-development-kits-ssdk-and-asdk

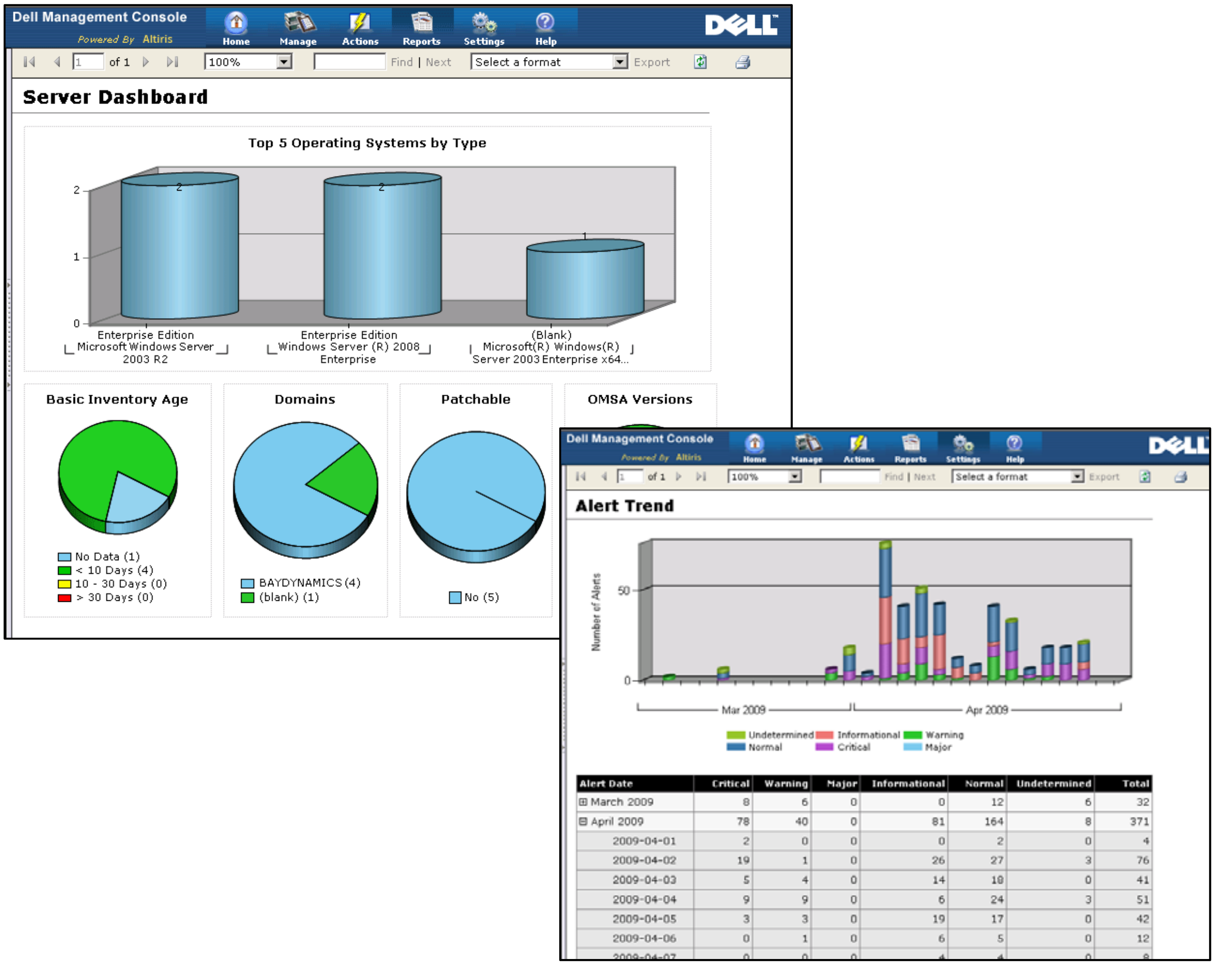
Developer SDK (C#)

In addition to the aforementioned Admin SDK that is commonly used for automation functionality, the Symantec Management Platform also offers a fully documented .NET SDK. This is "Solution" SDK that can be used to build fully integrated, native applications that install on top of the platform and are, therefore, tightly coupled with Dell Management Console.

To obtain the SDK, partners and customers must join the Symantec Developer Program to obtain the necessary support, documentation and testing certifications. There is a nominal fee for the Developer SDK to cover training, support and documentation costs.

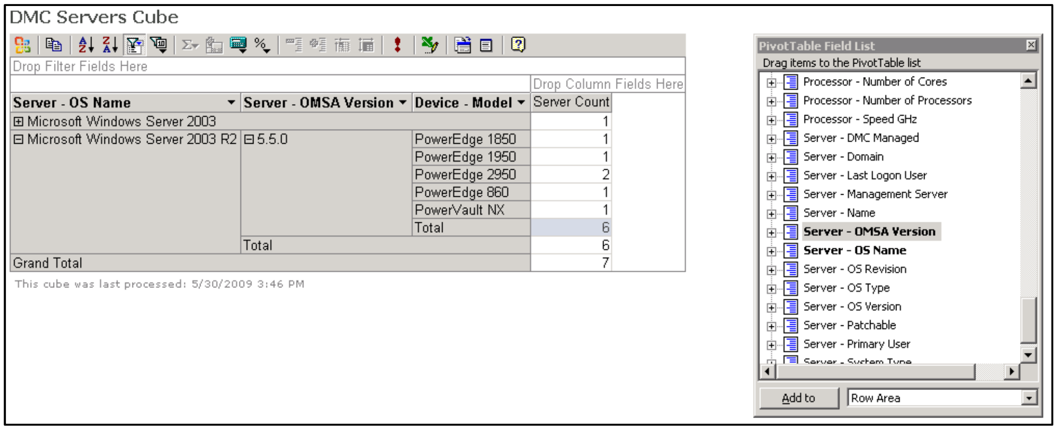
Several partners are actively coding integrated applications that function as Dell Management Console "plug-ins." These are provided as fee based extensions to DMC's feature set.

Bay Dynamics is the first partner to release a native application written expressly for DMC. Their solution provides IT Analytics for Dell data in both DMC and DMC-Client. The screenshots below show how native SDK applications provide the highest level of integration and interoperability with Dell Management Console. They leverage the same console, agent, database, method calls, role & scope security engine, etc.



Alert Date	Critical	Warning	Major	Informational	Normal	Undetermined	Total
⊞ March 2009	8	6	0	0	12	6	32
⊟ April 2009	78	40	0	81	164	8	371
2009-04-01	2	0	0	0	2	0	4
2009-04-02	19	1	0	26	27	3	76
2009-04-03	5	4	0	14	18	0	41
2009-04-04	9	9	0	6	24	3	51
2009-04-05	3	3	0	19	17	0	42
2009-04-06	0	1	0	6	5	0	12
2009-04-07	0	0	0	4	4	0	8

IT Analytics for Dell lets administrator drag and drop data fields for quick views of Dell specific information.



DMC Servers Cube

Drop Filter Fields Here

Drop Column Fields Here

Server - OS Name	Server - OMSA Version	Device - Model	Server Count
⊞ Microsoft Windows Server 2003			1
⊟ Microsoft Windows Server 2003 R2	⊟ 5.5.0	PowerEdge 1850	1
		PowerEdge 1950	1
		PowerEdge 2950	2
		PowerEdge 860	1
		PowerVault NX	1
		Total	6
	Total		6
Grand Total			7

This cube was last processed: 5/30/2009 3:46 PM

PivotTable Field List

Drag items to the PivotTable list

- Processor - Number of Cores
- Processor - Number of Processors
- Processor - Speed GHz
- Server - DMC Managed
- Server - Domain
- Server - Last Logon User
- Server - Management Server
- Server - Name
- **Server - OMSA Version**
- **Server - OS Name**
- Server - OS Revision
- Server - OS Type
- Server - OS Version
- Server - Patchable
- Server - Primary User
- Server - System Type

To learn more about the Symantec Developer Program, go to

- http://www.symantec.com/connect/articles/getting-started-symantec-management-platform-software-development-kits-ssdk-and-asdk
- http://www.symantec.com/partners/theme.jsp?themeid=sdp
- http://www.altiris.com/Partners/DeveloperPartners.aspx

Conclusion

In summary, there are a number of integration options available for working with the Dell Management Console:

- There are quick and simple choices that can save a DMC administrator hours of navigating through many different consoles, and

- There are options for full SDK level integration from Dell & Symantec development partners.

In addition to the provided integration hooks, note that DMC is built on industry standard technologies like .NET, XML, web services, and Microsoft SQL Server. All these options speak to the value of Dell Management Console's open, modular design as the flagship enterprise management console in Dell's OpenManage family of products.

Together, DMC's integration points provide customers tremendous flexibility to "wire" together tools and business processes into single convenient location for managing an entire IT environment. It's one of many ways that Dell Management Console delivers on Dell's objective to simplify IT for its customers.

The information contained in this document, including all instructions, cautions, and regulatory approvals and certifications, is provided by Symantec and has not been independently verified or tested by Dell. Dell cannot be responsible for damage caused as a result of either following or failing to follow these instructions. All statements or claims regarding the properties, capabilities, speeds or qualifications of the part referenced in this document are made by Symantec and not by Dell. Dell specifically disclaims knowledge of the accuracy, completeness or substantiation for any such statements. All questions or comments relating to such statements or claims should be directed to Symantec. Visit www.dell.com for more information.