

Connection

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ARTICLES

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Hidden Gems - Part One

Best Practices for Asset Management with Novell ZENworks

by Ken Baker

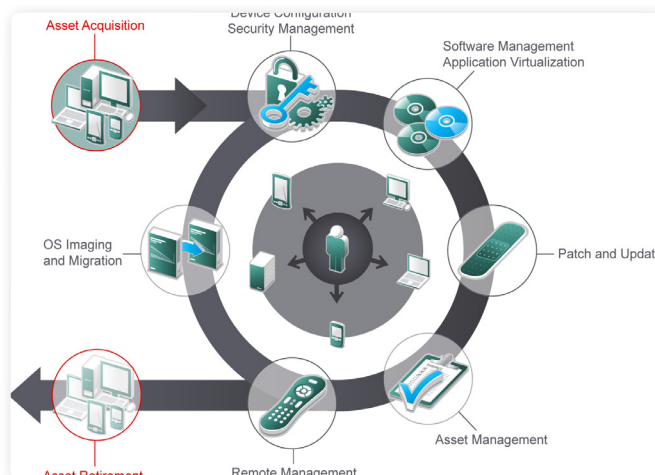
The key to successful asset management lies largely in the processes you undertake. At Novell BrainShare 2010, the session entitled “Best Practices for IT Asset Management” discussed how Novell ZENworks Configuration Management and Novell ZENworks Asset Management can support, streamline and automate asset management best practices to reduce costs and simplify your management efforts.

> Pre-Deployment Management

If you're at all familiar with the ZENworks product line, you know that both [ZENworks Configuration Management](#) and [ZENworks Asset Management](#) can help you manage hardware throughout its different lifecycle stages. (See [Figure 1](#).) However, what you might not know is how the products can help you in the acquisition stage—before you've even had a chance to deploy the ZENworks agent on your devices.

Presenter Christina Chamberlain, a Novell Technology Specialist, referred to this capability as a hidden gem that lets you add a list of devices into the ZENworks database by importing .CSV files. To take advantage of this import function, you need to know the serial number and hostnames of your devices. These values are used to reconcile the device to the record when the ZENworks agent is deployed. Depending on your procurement system, the serial number information might be available to you at time of purchase. If not, it might be available at time of receipt as part of a bill of lading or through the bar codes on the device packaging, which can allow the information to be scanned into a flat file before it's ever removed from the pallet on the receiving room floor.

Within the .CSV file device list, you'll also need a field column that contains the value WS_1.0. This value is case sensitive and is required for the import to work properly. Also, the field order for your file needs to be the value WS_1.0, the hostname of the device being imported, and then the device's serial number.



Asset management lifecycle

Figure 1: Novell ZENworks Configuration Management and ZENworks Asset Management can help you manage hardware devices throughout their different lifecycle stages.

Once you have your .CSV file ready, you'll want to complete the following three steps in order to intelligently manage the import process:

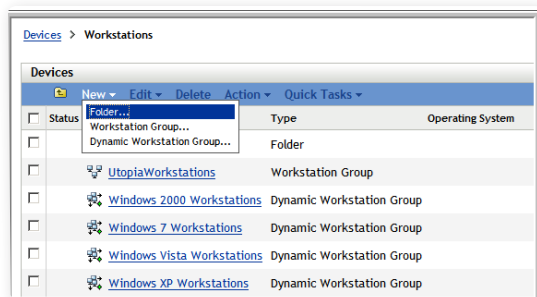
1. Create an Import Folder
2. Create a Registration Key
3. Add the Devices

> Create an Import Folder

While you can import your new devices into any folder in the ZENworks database, management is simplified if you create a folder specifically for the imported devices. (See Figure 2.) This allows you to quickly see all your imported devices in one location. Also, if you create a rule to move the device to its appropriate site, group or department folder as soon as it has the ZENworks agent deployed on it, you only have to look inside your import folder to see which of your imported devices don't yet have an agent installed.

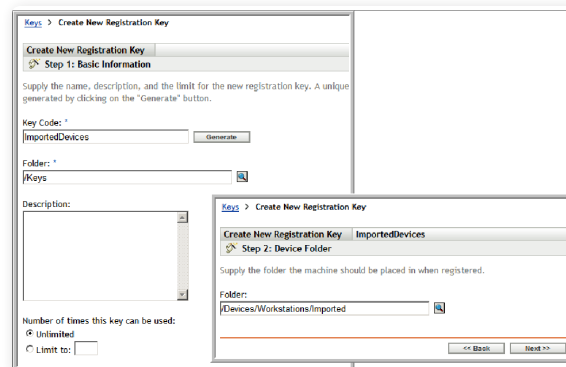
> Create a Registration Key

The registration key is essentially a way of specifying what you want to do with each device record that is created when you import your device file list. For example, you can add it to a specific group, department or cost center. The registration key will also be used to tell the system what folder to move the record to, such as the import folder you created in step 1. (See Figure 3.)



New folder dialog

Figure 2: Management of your imported devices is simplified if you create a folder specifically for those devices.



Registration key creation

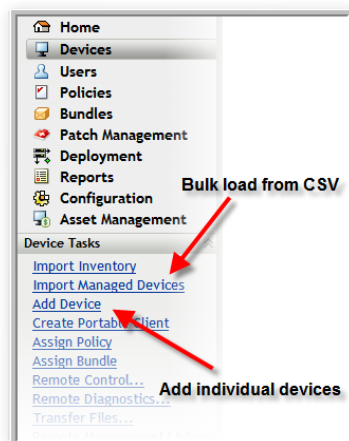
Figure 3: Creation of the registration key lets you specify what you want to do with each device record that is created when you bulk load import a device file list.

> Add the Devices

On the left side of the ZENworks Control Center interface there are a number of powerful, yet often overlooked, task options. (See Figure 4.) One of these is the Import Managed Devices option, which enables you to import multiple devices using your device list file. (Note: There is also an Add

Device option that allows you to manually enter individual devices one at a time.) Once you have both your registration key and device list file correctly created, use the Import Managed Devices option to import your devices.

After you click this option, the interface will let you select your registration key and browse to your .CSV device list file. When importing is complete, you'll see all the new devices listed in the import folder you created. You can drill down into individual devices to see their unique hostnames and serial numbers. As mentioned before, this unique detail will enable you to automatically reconcile the imported device record with the actual device once it has the ZENworks agents installed.



Bulk load from CSV

Figure 4: The ability to bulk load import non-deployed devices into the ZENworks database is just one of a number of powerful task options available in ZENworks Configuration Management.

> Tracking Device Life Changes

Once your devices are in the ZENworks database and deployed, you need to be able to keep track of their movement through your organization. Has a workstation moved from one location to another? Has it moved from one user to another? Has its internal hardware changed over time? Have changes been made to its software configuration? [ZENworks Configuration Management](#) and [ZENworks Asset Management](#) can help you track all of these types of changes.

Keeping track of a device's current user can be one of the biggest challenges you'll face. While some organizations rely on user input to keep this information up to date, you'll want to avoid relying on users for any inventory data entry. Even though ZENworks can simplify this process with the deployment of Collection Data Forms, the potential for human error often results in

Whether it's the end of life, the beginning or somewhere in between, ZENworks Configuration Management provides the tools you need to manage your hardware assets throughout their entire life-cycle.

too much time wasted by IT personnel having to scrub and clean that data. To avoid excessive data scrubbing, some organizations hire IT temps to perform regular inventory updates, but this still consumes valuable IT time and budget. A better option is to rely on the LDAP integration in both ZENworks Configuration Management and ZENworks Asset Management.

Within the ZENworks Control Center, you can create an LDAP Import Task that automatically and regularly imports demographic information (including device usernames) for all your devices from either a Novell eDirectory or Microsoft Active Directory user source. To set up the LDAP Import Task, you select the Asset Inventory tab from the Configuration menu and then click New to launch the New LDAP Import Task Wizard. The wizard will ask you to specify an LDAP source that you have already defined as a user source in your Management Zone. It will also ask you to select and map the fields you want imported into the ZENworks database, as well as create the schedule that determines when and how often the task will be executed.

The “Retired” status in ZENworks Configuration Management or ZENworks Asset Management can help you address your beyond end-of-life management requirements.

Just as you can schedule LDAP Import Tasks, you can also schedule regular inventory scans to determine the current status of your devices, such as Deployed, In Service or Retired. Inventory scans will report on changes within the device hardware, including internal memory, total disk space, free disk space and BIOS versions. Inventory scans can also report certain device software changes as they relate to anti-virus/anti-malware definition files, new applications, deleted applications, undesirable software and any deviations from your defined software standards. While all of these functions are available in ZENworks Configuration Management, you can obtain a greater breadth and depth of software reporting by taking advantage of ZENworks Asset Management.

From these inventory scans, the ZENworks product line provides a broad array of reports that can play a critical role in planning and budgeting. Both ZENworks Configuration Management and ZENworks Asset Management provide system readiness reports that can tell you which devices meet the performance hardware requirements for OS migrations or applications upgrades. ZENworks Asset Management is also able to report on trends and application usage. (Read part 2 for more on this subject.)

It’s important to note that both ZENworks Configuration Management and ZENwork Asset Management, as well as ZENworks Patch Management, leverage the ZENworks Control Center as a common management console. Additionally, ZENworks Asset Management is included in the Enterprise Edition of ZENworks Configuration Management.

> **End of Life and Beyond**

New regulatory requirements have made end-of-life tracking and reporting more important than ever. In certain industries, you are responsible for every bit of data on a machine, even after its useful lifespan within your organization. So even if you have sold, donated or thrown away your retired machines, you might need to be able to certify that all the data (or the hard drive where the data resided) has been destroyed.

Novell ZENworks Configuration Management and Novell ZENworks Asset Management can support, streamline and automate asset management best practices to reduce costs and simplify your management efforts.

The “Retired” status in ZENworks Configuration Management or ZENworks Asset Management can help you address your beyond end-of-life management requirements. With this in mind, you need to be aware that if you delete a device in the ZENworks Control Center, it completely removes the device and all its associated data from the ZENworks database. However, if you simply retire a device in the ZENworks Control Center, all of its associated information will remain accessible from the database, giving you reporting capabilities that can support compliance efforts. Another benefit of retiring a device is that all software applications associated with the retired device are excluded from software compliance reporting.

Whether it’s the end of life, the beginning or somewhere in between, ZENworks Configuration Management provides the tools you need to manage your hardware assets throughout their entire lifecycle. And by adding ZENworks Asset Management into the mix, you can better manage your software assets as well. To learn more about how ZENworks Asset Management supports the software-based asset management best practices discussed at BrainShare 2010, read part two of this article (Hidden Gems – Part 2; Best Practices for Asset Management with Novell ZENworks Asset Management), which will be available later this month.

Online Resources // Novell Connection Magazine

Learn More about Novell ZENworks

- [Novell ZENworks Asset Management](#)
- [Novell ZENworks Configuration Management](#)
- [Reviewer’s Guide](#)

Hidden Gems - Part Two

Best Practices for Asset Management with Novell ZENworks

by Ken Baker

When it comes to software asset management, one of the biggest challenges is figuring out where to start. The BrainShare 2010 session on “Best Practices for IT Asset Management” answered this question and revealed best practices that can help organizations manage their software licenses in a way that reduces overall effort, better uses their existing software assets and saves money.

> Where To Start

The first step in software asset management is determining what software assets you have. But when you have hundreds or thousands of applications, a standard inventory report containing a consolidated view of your software data can be overwhelming. On a typical workstation, you might have four or five applications that require license tracking, but standard inventory reports show the application view of all installed applications—even those that don't requiring tracking. You might have a variety of browsers, messaging clients, readers and more—as well as different instances of .NET and Java that your applications require. Standard inventory reports typically provide more of a technical view into your software assets, one that is geared towards the needs of a helpdesk rather than software license management. As a result, you end up having to plow through a lot of data just to figure out where you stand in terms of license compliance.

The software license view in Novell ZENworks Asset Management can often reduce the number of applications that you have to assess and track by fifty percent.

Designed to simplify license compliance, [Novell ZENworks Asset Management](#) filters inventory data in a way that significantly reduces the number of applications you view when building your license definitions. It does this through its software license view, which acts as both a filter and an extension of the application view. It also facilitates processes and reporting needs specific to the asset management discipline. The software license view excludes applications that don't have license implications, ignores individual suite components and rolls up different versions of the same software. As a result, the software license view in Novell ZENworks Asset Management can often reduce the number of applications that you have to assess and track by fifty percent. This is the critical first step in software asset management: knowing exactly which applications need to be tracked for license compliance. (See the White Paper “[Novell ZENworks: Next-generation Inventory](#)” for detailed information on Novell recognition technology.)

> Getting Proof of Ownership

Once you've narrowed down which applications you need to track, you need to import your proof-of-ownership information into ZENworks Asset Management, which might come from sources such as purchase records and license certificates. This process can be greatly simplified if you have a central purchasing system that tracks and organizes this data for you. But even if you're using a customized database, spreadsheet, vendor purchase reports or even hard copy records, ZENworks Asset Management facilitates entering this information into its database.

Novell ZENworks Asset Management makes it easy to track multiple license scenarios for your applications, even multiple license models per application.

The following represent the two main vehicles for mass-importing your proof-of-ownership information into ZENworks Asset Management:

- **Reseller Connectors** – ZENworks Asset Management can import purchase records from certain reseller import files, including CompuCom Software Compliance Reports, Softchoice Product History Reports, Insight ZENworks Asset Management Reseller Connector Reports, SHI License Compliance Reports and KMD Asset Reports.
- **Purchase Record Import Template** – For purchase record data from other sources (i.e., different databases, other resellers and paper sources), this template will help you create a properly formatted tab-delimited ASCII text file that can be imported into the ZENworks Asset Management database. (See [TID # 2972845](#).)

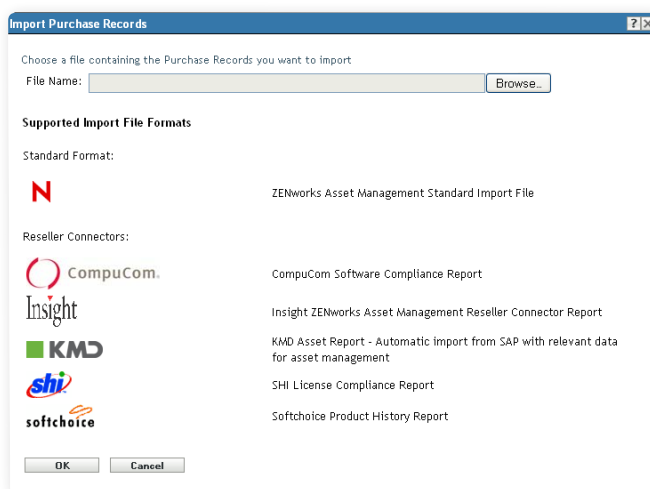
Regardless of which method you use, when importing a large number of records, it's best to import the purchasing data in batches. For example, you might want to separate the batches by manufacturer, maintaining your original purchasing data in a spreadsheet with a worksheet for each manufacturer. This can help you better track the records you have imported, as you save a copy of each worksheet into the proper tab-delimited text file in preparation for import.

Also, don't succumb to the temptation to delete records, prior to import, for purchases that are not related to licensing. This unnecessarily creates more work for you. Rather than deleting these records, it's best to filter them out using the Exclude function in ZENworks Asset Management after you import the records. Also, don't change the naming conventions of your product fields prior to import. If you do, it can result in the accidental importing of duplicate data. If you accidentally re-import such a file, the records will be seen as new rather than duplicates, and will not be skipped during import.

When your files are ready for import, do the following to import them into the ZENworks database:

1. From within the ZENworks Control Center, click the Asset Management tab and select Purchase Records from the License Management page.
2. Click Start Import from the Action menu.
3. When the Import Purchase Records dialog box displays, browse to the location where you've stored the file to be imported and select it. (See [Figure 1.](#))
4. Click OK to start the import.

From within the Import Status tab you can see the progress of the import, as well as a record of previous imports. When the import finishes, the new purchase records will be stored in the ZENworks database and associated with a catalog product, which represents a unique purchase record line item. When you're done importing, you should review the complete list of catalog products to determine if there are any that should be excluded. This can be done by performing a filter search in the Product Type and Name fields for keywords such as Media, CD and doc. Next, mark the products you want to exclude and select Exclude from the Action menu.



Import Purchase Records dialog box

Figure 1: Novell ZENworks Asset Management makes it easy to mass-import your proof-of-ownership information into the ZENworks database.

> License Model Maze

Once you've loaded all of your proof-of-ownership data, you next need to navigate the license model maze. You might have CAL licenses, per-CPU licenses, OEM based licenses, per-install licenses, named user licenses or site licenses. In addition, was the license purchased under maintenance? Is it a term or perpetual license? Do you have upgrade or downgrade rights? The list goes on and on. So, how do you make sure you have the right license model associated with each individual application? And how do you avoid repeating that analysis process every year when it's time to renew?

[ZENworks Asset Management](#) makes it easy to track multiple license scenarios for your applications, even multiple license models per application. This is possible because each license model is tracked as an entitlement, which in turn is linked to a licensed product.

Still, as you use Novell ZENworks Asset Management to associate the appropriate license models with your cataloged products (a process referred to as creating licensed products), it's best to start with the most basic license models before dealing with the more complex models. This allows you to become more comfortable with the interface and how the process works before you move on to more complex license models that require more refined definitions.

When creating your licensed products, ZENworks Asset Management lets you batch create multiple licensed products using its Auto-Reconcile Wizard. When using auto-reconcile, it's still best to focus on a specific group of applications. ZENworks Asset Management lets you do this by filtering your discovered product list by different fields, such as manufacturer or product type.

The whole point of these reports—and Novell ZENworks Asset Management as a whole—is to give you greater visibility and control of your software assets so you can stay in compliance, better optimize usage, plan for the future and save money

When you use the Auto-Reconcile Wizard to create licensed products, the process will allow you to do the following:

- Create one or more entitlements
- Add catalog products to the entitlements
- Add discovered products to the entitlements
- Specify the users or devices covered by the entitlements

Since auto-reconcile only allows you to work on one license model at a time (i.e., per installation, OEM, CPU), you'll need to repeat the auto-reconcile process for each license model.

To create your licensed products with the Auto-Reconcile Wizard, do the following:

1. Select the License Management page from the Asset Management tab and then click Licensed Products.
2. From the Licensed Products panel under the Action menu, click Auto-Reconcile: Create Licensed Products
3. When the Auto-Reconcile Wizard launches, use the Manufacturer and Product fields to filter the applications you want to define as licensed products.
4. Select the licensed products to be created.
5. Select the destination folder for the new licensed products.
6. Enter a description for the license entitlements, which will serve as a name for the entitlement and identify it in the licensed products entitlement list. The description can reflect the

product name and version, the license model, the license type or any other applicable information. When creating multiple entitlements, you might want to enter the license model type as the description.

7. Confirm the creation of the licensed products.

While the above summarizes how to create licensed products for basic license models, ZENworks Asset Management, as mentioned earlier, also allows you to handle more complex models. For example, you can bring the different versions of an application into individual entitlements under a single licensed product by using the Merge Licensed Products task from the Action menu. To address downgrade/upgrade rights, you can also use the Merge task or you can simply edit a licensed product and add the versions covered by the license under the Coverage tab. (See [Figure 2](#).)

Description	Type	License Period	Term License Status	License Model	License Quantity	Quantity Available	Versions Covered
Microsoft Visio Professional 2002	Full License	Perpetual	Active	Per-Installation	3	3	2002 (Windows), 2000 (Windows)
Microsoft Visio Professional 2000	Full License	Perpetual	Active	Per-Installation	3	3	2000 (Windows)
Microsoft Visio Professional 2003	Full License	Perpetual	Active	Per-Installation	0	0	2002 (Windows), 2000 (Windows), 2003 (Windows)

License entitlements

Figure 2: Novell ZENworks Asset Management lets you track multiple license scenarios for your applications, such as upgrade/downgrade rights.

Once you finish the auto-reconcile and any additional refinements to your entitlements and licensed products, you'll have access to a software license view of all your software assets. The only remaining steps will be to link your proof-of-ownership information to license entitlements, and—if desired—add purchase summary information, link your license contracts and maintenance agreements to your entitlements, add additional supporting documentation to the entitlement (i.e., original license purchase, license certificates), add demographic data to your devices, and allocate licenses based on device or demographics. Completion of these additional steps can make it easier for you to manage your overall software compliance.

> Greater Visibility and Control

Now that you have imported, reconciled and configured all your licensing and entitlement information for your software applications, you can take advantage of the significant time and cost savings provided by the array of reports in [Novell ZENworks Asset Management](#). While you can also create and customize your own reports in ZENworks Asset Management, there are three standard reports

that you can take advantage of from the ZENworks Control Center:

- **License Management Reports** – Allow you to analyze your license compliance and license allocation data, displaying detailed and summary compliance status, products not associated with a license, detailed and summary purchase information, inventory comparisons and more.
- **Contract Management Reports** – Let you analyze contract data from different perspectives such as key financial information, service level agreements, lease details, vendor information, parent/child contract relationships, renewal dates and more.
- **Software Usage Reports** – Enable you to analyze the usage of local applications, served applications and Web applications on the devices in your organization. These reports let you easily discover underutilized applications so you can reallocate them to other users or renegotiate your vendor license agreement—and consequently reduce software license fees.

Manufacturer	Product	Version	Status	Consumption	License	Installed	Consumed	Over-Licensed	Under-Licensed	Active Usage	Unused Installations	More
				Data Source	Quantity	Quantity	Licenses	Quantity	Quantity	Quantity	Quantity	Recent Recak.
Microsoft	FrontPage 2000	2000	Inventory	4	5	5	0	1	1	4	0	
Microsoft	Microsoft Streets & Trips 2004	11.0	Inventory	1	1	0	1	0	1	1	0	
Microsoft	Office 2000 Premium	2000	Inventory	4	3	0	4	0	1	2		
Microsoft	Office 2004	11.0	Inventory	3	5	0	3	0	0	5		
Microsoft	Office XP Professional	10.0	Inventory	45	33	33	13	1	22	11		
Microsoft	Project 2000	2000	Inventory	2	5	2	5	5	2	3		
Microsoft	SQL Server 2000	2000	Inventory	6	4	4	2	0	1	3		
Microsoft	Visio Professional	2002	Inventory	6	3	1	5	0	1	2		
Microsoft	Visual Basic .NET Standard 2003	2003	Inventory	1	1	0	1	0	0	1		

Software Compliance report

Figure 3: Novell ZENworks Asset Management reports give you greater visibility and control of your software assets to help you stay in compliance.

The ZENworks Reporting Server also lets you take advantage of some additional predefined reports on license allocation, purchases, software compliance and software suites. The whole point of these reports—and ZENworks Asset Management as a whole—is to give you greater visibility and control of your software assets so you can stay in compliance, better optimize usage, plan for the future and save money. (See Figure 3.) To learn more about what ZENworks Asset Management can do for you, visit www.novell.com/products/zenworks/assetmanagement. Or if you are already a ZENworks Configuration Management customer, you can evaluate ZENworks Asset Management for free for thirty days. So, why not give it a try? Who knows what additional hidden gems you'll find?

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- [Novell ZENworks Configuration Management](#)
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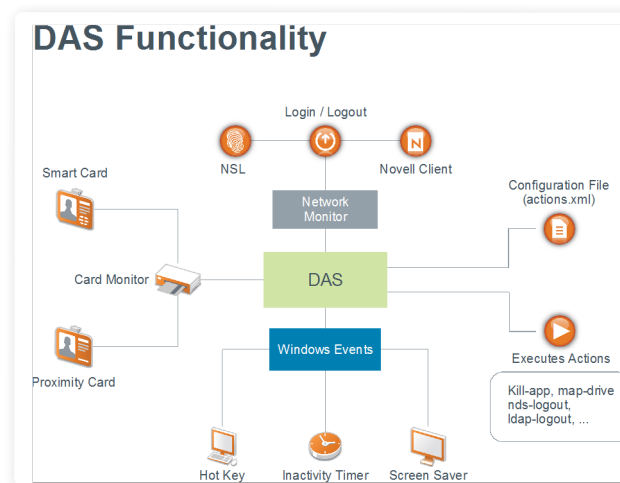
Secure Shared Workstations and Fast User Switching with Novell SecureLogin

by Ken Baker

Whether you work in health care, education, retail, manufacturing, financial, or government environments, securing shared workstations can be a significant challenge. When users don't close their applications or simply leave the workstation without logging off, it can expose sensitive data to unauthorized users. On top of the security concerns, the fast-paced nature of many of these environments demands quick login and access to the applications within a shared workspace. This article provides answers to those challenges as presented in the Securing Shared Workstations with Novell SecureLogin session at BrainShare 2010 in Salt Lake City.

> Fast and Secure

[Novell SecureLogin](#) is primarily known for allowing users to access network resources using a single set of credentials. Once users log in to a computer on the network, they are automatically authenticated to all of their single sign-on-enabled applications, databases and operating systems. Novell SecureLogin also lets you control access to applications and content based on time of day and URL. Kevin Prior, Novell Technology Specialist, pointed out during the BrainShare session that combining these features with the added Desktop Automation Services (DAS) in Novell SecureLogin creates the perfect formula for addressing your shared workstation challenges.



DAS functionality

Figure 1: Novell SecureLogin can test for specific conditions and trigger pre-defined actions in workstation behavior in order to enable custom, secure, fast user switching and login.

Previously a stand-alone component and once known as the Application Runner Shell (ARS), Desktop Automation Services (DAS) now ships with Novell SecureLogin 7. DAS runs as a local executable on a client workstation to specifically handle unique use cases associated with shared workstations or kiosks. DAS is able to execute selective and configurable lists of script-based user

operations, such as mapping a drive, testing for or establishing an authenticated connection to a directory, and running or shutting down an application. The ability of Novell SecureLogin and DAD to test for specific conditions and trigger predefined actions gives you the flexibility to change the behavior of a shared workstation according to the unique needs of your environment. (See [Figure 1](#).)

Thom Kerby, Senior Architect of Eos Systems, a Novell Platinum Partner participant in the BrainShare presentation, discussed how they were able to use DAS and the fast user switching in Novell SecureLogin to address the shared workstation needs of their customers in the health care industry. “Our customers might have three to five users accessing a single clinical workstation in an environment with patients and customers nearby,” Kerby said. “They needed a login that was between five to ten seconds, and an automatic logoff after a certain amount of inactivity to make sure no one could see or access any information.”

Eos Systems addressed this customer need using a setup similar to what Prior demonstrated during the BrainShare session. Using Novell SecureLogin and DAS they configured their customer’s shared workstations to log into a locked-down generic user account. Then when users presented a proximity card to the workstation’s card reader, Novell SecureLogin would execute a series of actions, including the following:

- Associate the user’s proximity card ID with an eDirectory user and then use that user’s universal password for authentication
- Make the appropriate applications available to the user based on Novell ZENworks policies
- Authenticate the user to the applications using single sign-on and load them
- Shut down the applications and log the user out upon a specified period of inactivity or logout

While all the above happens, the workstation remains logged in to Windows as the generic user, but Novell SecureLogin creates a single sign-on environment that uses identity-based services to differentiate each user’s Windows session based on either user attributes, the current location of the workstation or workstation attributes. As a result, the kiosk or shared workstation user will still have a login screen, but they’re logging into single sign-on instead of having to do a full Windows authentication each time. By doing this, Novell SecureLogin makes sure that when users authenticate to shared workstations it can quickly log them in and set up their prescribed desktop environments, while securing those environments with the appropriate controls and access rights.

The ability of Novell SecureLogin and DAD to test for specific conditions and trigger predefined actions gives you the flexibility to change the behavior of a shared workstation according to the unique needs of your environment.

> Flexible Actions

To create this controlled environment with fast user switching and fast user login, a [Novell Secure-Login](#) DAS process runs on the workstation to monitor certain trigger events, test for conditions and then act in a prescribed manner as scripted in an actions.xml file. Some of the more commonly used trigger events and actions include the following:

DAS Actions

- Execute a user specific action
- Run an application
- Close an application or all applications
- Map drives
- Check if the user is logged in to the directory
- Log the user out of the directory
- Hide the desktop
- Show the desktop
- Turn on the screen saver and lock the workstation
- Display a message box

DAS Triggers

- User logs in to eDirectory
- User logs into a LDAP directory
- User presses a predefined hot-key sequence
- Workstation goes into screen-saver mode
- Removal of a smart card is detected
- Workstation goes inactive for a specified period of time
- Removal of a pcProx card is detected

The following represents a sample action.xml that shows some of the basic functionality of a few of the Novell SecureLogin actions and triggers:

```
Sample actions.xml
<?xml version="1.0"?>
<application-runner-script>
<action name="hidedesk">
<nds-logout />
<hide-desktop />
</action>
<action name="showdesk">
<unhide-desktop />
</action>
</application-runner-script>
```

In this example, the hide-desktop action hides the desktop, its icons and other programs after a user logs out of the directory and before a new user logs in to the directory. When a new user logs in to the directory, the unhide-desktop action can be used to display the desktop and its hidden icons and programs. It's the behavior of these actions that facilitates fast user switching and logon for kiosks or shared workstations. Even though the workstation remains logged in as a generic workstation user, the desktop can remain hidden and locked until an actual user authenticates.

Novell SecureLogin makes sure that when users authenticate to shared workstations it can quickly log them in and set up their prescribed desktop environments, while securing those environments with the appropriate controls and access rights.

Depending on your needs, you can create a very basic or elaborate action.xml file. While you can create the file by hand, Novell SecureLogin provides a wizard that can help you construct the appropriate event triggers and actions for your shared workstations. When you launch the wizard, it allows you to select from a set of predefined actions and then customize them to address your specific needs. Likewise, it makes it easy to specify triggers for those actions.

When creating a sample action file that provides a quick login and logout for users, you might have to first test to see if the user has authenticated to a Novell eDirectory tree. If the user is not logged in, Novell SecureLogin can then hide the Windows desktop and launch Novell Client32 to allow the user to authenticate. When Novell SecureLogin detects that the user had logged into eDirectory, the script can initiate a new single sign-on session for that user, map drives and automatically launch several applications. When the user logs off, the action file can unmap the drives, shutdown the applications, end the user's single sign-on session, and hide the desktop again. (See [Figure 2.](#))

```
<action name="loggedin">
  <!-- Provide eDirectory network authentication tree name -->
  <test-logged-in tree="UTOPIASW">
    <!-- true -->
    <run-action name="hide-desktop">
      <run-application application="slproto.exe">
        <!-- true -->
        <run-application application="slproto.exe" parameters="//forceshutdown" serial="true" interval="500" />
        <pause interval="100" />
        <!-- false -->
      </run-application />
      <!-- test-logged-in -->
      <!-- Pause interval of 1 second to allow NSL to fully launch before another application starts for 330 -->
      <run-application application="slproto.exe" parameters="" serial="true" interval="1000" />
      <!-- add additional apps to autolaunch on login here -->
    </if-true />
  </test-logged-in />
</test-logged-in />
</action>
<!-- Call this logoff action to provide quick user logout and shutdown open applications. Also called by ctrl-I hot-key -->
<action name="logoff">
  <!-- message-box caption="Logoff action has begun." window-name="LogOff D32"/>
  <run-application application="slproto.exe" parameters="//forceshutdown" serial="true" interval="500" />
  <!-- All applications open during the user session will be killed except those listed below -->
  <!-- Looking to shutdown NSL and NSL have many icons in system tray -->
  <kill-all-apps exclude-apps="slproto.exe;slwinso.exe;slbroker.exe;explorer.exe;notepad.exe" />
  <hide-desktop />
  <end-logout />
  <test-app-running application="loginw32.exe">
    <!-- true -->
    <!-- message-box caption="loginw32.exe is running" window-name="restartc32"/>
    </if-true />
    <!-- false -->
    <!-- message-box caption="loginw32.exe is NOT running" window-name="restartc32"/>
    <run-application application="loginw32.exe" parameters="//NS /NB" on-exit-action="restartc32" serial="true" interval="100" />
  </if-false />
</test-app-running />
</action>
```

Action.xml

Figure 2: You can create a very basic or elaborate action.xml script file to address your unique shared-workstation and kiosk needs.

> **Complex Challenges, A Simple Answer**

Even though every customer situation is a little bit different, Novell SecureLogin and DAS provide you the flexibility to adapt the actions and triggers to fit a variety of scenarios. One of the most typical use-case scenarios is the need to ensure that the previous user of a shared workstation is logged out, all the user's applications are closed, and the workstation is ready for the next users without having to restart Windows or cause the new users to wait a significant amount of time for authentication. The bottom-line for this scenario is the need for fast user login or fast user switching, which Novell SecureLogin provides.

With one set of authentication credentials and fast user switching, Novell Secure Login can address the core IT challenges in your shared-workstation

A common scenario in the healthcare industry would be that whenever nurses walk up to a workstation, they need to be able to log in quickly and be automatically authenticated to a certain set of applications. However, addressing the needs of the doctors might require you to handle things a bit differently, perhaps loading and authenticating a different set of applications. And since you want to make things as easy as possible for your doctors, you might create some custom shortcuts with big, easy-to-find icons that will quickly log them off or perform some other action.

To help ensure that sensitive information can't be viewed or accessed by unauthorized individuals, you might use something like a pcProx sonar detector that can detect when logged in users walk away from their workstations. When that happens, it can trigger an action in Novell SecureLogin that starts the Windows screen-saver program and locks the workstation. After a pre-defined time interval of inactivity, you might have Novell SecureLogin automatically close down the user's applications and log the user out. You can also configure it so if the user returns before the predefined interval, the screen saver will turn off and the user's desktop will be displayed in its previously undisturbed state.

The flexibility in how you can employ the various event triggers and actions in Novell SecureLogin really make it easy to address a wide variety of shared-workstation and kiosk scenarios. In addition to the flexibility, [Novell SecureLogin](#) delivers the following key differentiating features:

- Shared credentials for Web single sign-on, enterprise single sign-on, and provisioning
- Automatic provisioning of single sign-on credentials through integration with the identity management system
- No additional hardware investment requirements, minimized administrative overhead, simplified user management, improved fault tolerance and increased enterprise interoperability through the ability to leverage existing directory infrastructures
- Support of multiple multi-factor devices
- Centralized management
- Minimal impact on workstations with Windows and Novell-workstation compatibility, a small client footprint, integration with Novell ZENworks and no modifications to the GINA

Share the Love // Novell Connection Magazine

Still, the overriding message of the BrainShare session was a simple one. With one set of authentication credentials and fast user switching, Novell Secure Login can address the core IT challenges in your shared-workstation environment.

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Learn More about Novell SecureLogin

- [Novell SecureLogin](#)
 - [Podcast with Thomas Manley](#)
 - [Podcast with Nick Ivon](#)
 - [Podcast with Baber Amin](#)
 - [Simplifying SSO with Novell SecureLogin](#)
-

Extend Your Reach

Enhancements in Novell File Management Suite Deliver Even More Control over Your Storage Resources

by Ken Baker

To help you deal with the file system challenge caused by the rapid and ongoing proliferation of user data, Novell released Novell File Management Suite earlier this year (see [Controlling the Chaos](#)). Comprised of Novell File Reporter, Novell Storage Manager and Novell Dynamic File Services, the individual products in Novell File Management Suite work together to turn file system chaos into organized efficiency. Supporting file storage infrastructures in both Novell eDirectory and Microsoft Active Directory environments, Novell File Management Suite brings intelligence to file storage management. It works at the file level to let you better manage the growth of storage, allocate and control storage based on identity, and save money in the administration and procurement of storage resources. (See [Not Your Typical Storage Management](#).)

Due to its ability to dramatically improve the efficiency, effectiveness and manageability of file storage in both Novell Open Enterprise Server and Windows Server environments, customers have welcomed the new offering with much excitement. So much so that they quickly began asking Novell to broaden the solution's reach across their file storage infrastructures too. In response to those requests, Novell made the development of an updated version of [Novell File Management Suite](#) a high priority —and released the product just weeks ago.

> Intelligent NAS Management

[Novell Storage Manager](#) leverages identity, policy, and directory service events to automate the full lifecycle management of your file-level user and group storage. As changes occur in the directory service (Novell eDirectory or Microsoft Active Directory) that affect a user's storage needs or user storage policy (i.e., user creations, user deletions, group assignments, moves, and renames), Novell Storage Manager automatically makes the necessary changes at the file system level to address them.

Supporting file storage infrastructures in both Novell eDirectory and Microsoft Active Directory environments, Novell File Management Suite brings intelligence to file storage management.

Novell Storage Manager implements these changes using an extensible combination of local agents and proxy agents. A single Novell Storage Manager proxy agent has the ability to manage and effect these changes on multiple servers, eliminating the need to deploy a local agent on every server. These proxy agent characteristics are also what give Novell Storage Manager the ability to manage data on network-attached storage (NAS), such as an EMC Celerra device. Once installed on a Windows Server, a Novell Storage Manager proxy agent can act in an efficient manner as the Novell Storage Manager agent for multiple NAS appliances.

When Novell File Management Suite shipped earlier this year, EMC Celerra customers appreciated the ability to automate the file-based storage management of their devices. However, customers of other NAS devices wanted this same capability. A number of customers with NetApp filer devices in particular requested this support. Novell listened and as a result it addressed this demand by adding proxy support for NetApp filer devices in Novell Storage Manager as well.

As customers recognized the power and versatility that proxy agents delivered in Novell Storage Manager, they wanted to see similar benefits from the suite's Novell File Reporter component.

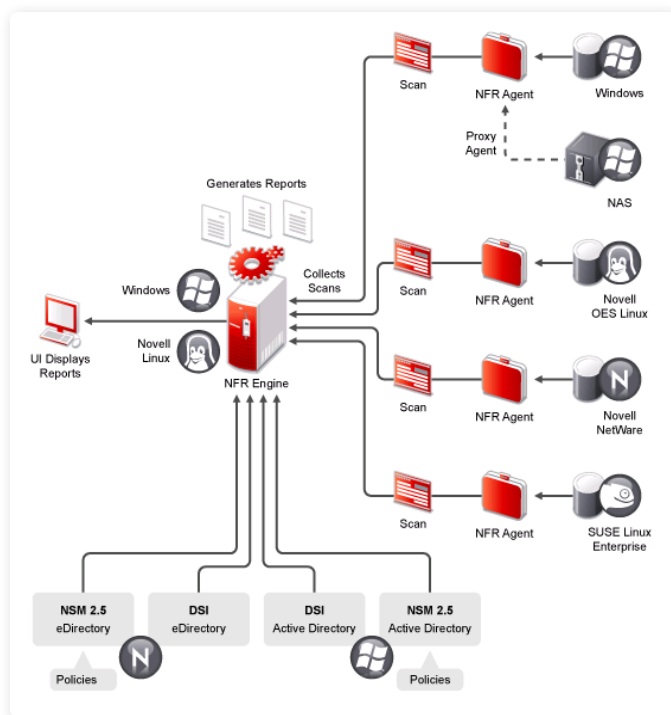
> Intelligent NAS Reporting

Demand didn't end with expanded management of NAS devices on Novell Storage Manager. As customers recognized the power and versatility that proxy agents delivered in Novell Storage Manager, they wanted to see similar benefits from the suite's [Novell File Reporter](#) component.

Novell File Reporter gives you file-level visibility into your organization's storage usage resources so you can make more informed storage management decisions. It makes periodic scans of the file systems of your storage resources. These scans serve as the basis for a collection of detailed and summary reports that give you an accurate assessment of your unstructured data, let you better plan for and deploy an efficient storage infrastructure, and execute on compliance and governance requirements.

Storage resources to be scanned and reported on by Novell File Reporter can include server volumes, Windows shares, Novell Storage Manager policies, network folder paths and Linux mount points. These scans provide comprehensive information on your storage content, such as file types, file size, duplicate files, file owners, when files were created or last modified, and much more. Each scan is indexed and compressed so it can be stored at a fraction of its actual size. These scans have the ability to examine and report on billions of files and hundreds of millions of folders and subfolders scattered across your network. To efficiently scale to this level of reporting, Novell File Reporter distributes its workload between a reporting engine and multiple agents. One of the key and differentiating benefits of this ability to scale is that Novell File Reporter can provide you a single aggregated report on all your storage resources in all of your different locations, even in very large environments.

This release of Novell File Management Suite enables the use of proxy agents—in addition to local agents—in Novell File Reporter, giving it the capability to now scan and report on file based storage on NAS devices in Active Directory managed networks. Specifically, this support extends to both EMC Celerra and NetApp filer devices. (See [Figure 1.](#))



NFR agents

Figure 1: Novell File Reporter can now scan and report on file based storage on EMC Celerra and NetApp filer NAS devices by taking advantage of proxy agents.

In addition to adding support for NAS devices, proxy agents in general let you report on storage in locations in both Novell eDirectory and Microsoft Active Directory Environments where agents can't typically run. Proxy agents also reduce the number of Novell File Reporter local agents that you have to deploy in order to service your other traditional storage servers in eDirectory and Active Directory environments. Since you don't have to deploy as many agents, it significantly reduces your deployment and configuration time. This also makes it easier to try the evaluation version of Novell File Reporter to do a quick assessment of your storage infrastructure.

Pro Tip // Novell Connection Magazine

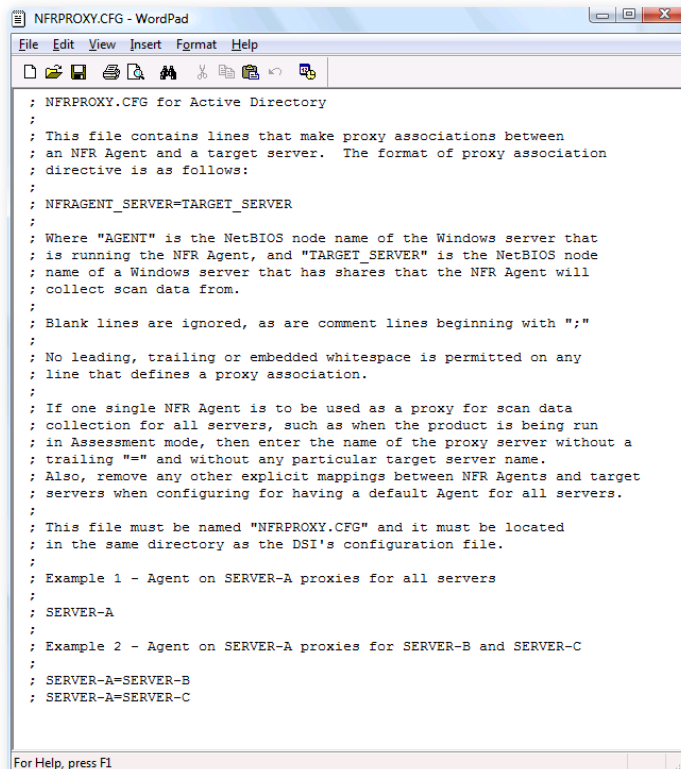
Not Your Typical Storage Management

On the surface it might appear that traditional Storage Resource Management (SRM) solutions provide many of the same capabilities as Novell File Management Suite. A closer look shows there are big differences—one of the main ones being that SRM solutions have no awareness of the relationship between users in the directory and their storage. For example, SRMs can use policies to provision the physical storage that a server needs, but it takes the identity awareness in Novell File Management Suite to provision storage based on the individual needs of users and groups.

However, you need to be aware that reducing the number of local agents you deploy can create performance consequences. Since proxy agents take remote scans of your storage resources across the network, scans will take longer than those performed by local agents. Even so, Novell File Reporter gives you the ability to schedule your scans to run at the most efficient times for the individual devices being scanned. Scan schedules can also be staggered by having one proxy agent be responsible for scanning multiple storage resources. This can help ensure that an agent is not proxy scanning an excessive number of storage resources at the same time.

> Creating Proxy Associations

For a NAS appliance to be scanned and reported on by a Novell File Reporter proxy agent, the appliance must be a member of an Active Directory domain where Novell File Reporter has been installed. You also need to configure the proxy agent via an `nfrproxy.cfg` configuration file. (See [Figure 2](#).) If you have installed Novell Storage Manager, this file will likely be located on your Active Directory server in the path `C:\Novell\Storage Manager\Engine`. If Novell Storage Manager is not installed, the configuration file will be located where the Directory Service Interface (DSI) was installed on your Active Directory server as part of the Novell File Reporter installation. On Windows Server 2003, the path will likely be `C:\Documents and Settings\All Users\AppData\Novell\File Reporter\DSI-AD\config`. On Windows Server 2008, it will be `C:\ProgramData\Novell\File Reporter\DSI-AD\config`.



```
; NFRPROXY.CFG for Active Directory
;
; This file contains lines that make proxy associations between
; an NFR Agent and a target server. The format of proxy association
; directive is as follows:
;
; NFRAGENT_SERVER=TARGET_SERVER
;
; Where "AGENT" is the NetBIOS node name of the Windows server that
; is running the NFR Agent, and "TARGET_SERVER" is the NetBIOS node
; name of a Windows server that has shares that the NFR Agent will
; collect scan data from.
;
; Blank lines are ignored, as are comment lines beginning with ";"
;
; No leading, trailing or embedded whitespace is permitted on any
; line that defines a proxy association.
;
; If one single NFR Agent is to be used as a proxy for scan data
; collection for all servers, such as when the product is being run
; in Assessment mode, then enter the name of the proxy server without a
; trailing "=" and without any particular target server name.
; Also, remove any other explicit mappings between NFR Agents and target
; servers when configuring for having a default Agent for all servers.
;
; This file must be named "NFRPROXY.CFG" and it must be located
; in the same directory as the DSI's configuration file.
;
; Example 1 - Agent on SERVER-A proxies for all servers
;
; SERVER-A
;
; Example 2 - Agent on SERVER-A proxies for SERVER-B and SERVER-C
;
; SERVER-A=SERVER-B
; SERVER-A=SERVER-C
```

Configuration file

Figure 2: Proxy associations for reporting on and managing NAS devices are easily set up in the `nfrproxy.cfg` configuration file.

The nfrproxy.cfg configuration file will contain commented information on how to set up your proxy associations, but the basic steps are as follows:

1. Append the proxy associations in the nfrproxy.cfg file using the format “servername where NFR Agent is installed=NAS device name”, using a new line for each proxy association.
2. Save the updated nfrproxy.cfg file.
3. If you have installed Novell Storage Manager, restart the Novell Storage Manager engine, otherwise restart the DSI-AD service.
4. Launch NFRAdmin.
5. Click Scan Collection and in the right pane, select Rebuild Storage Resource List from the Storage Resources menu option.
6. Upon notification that the rebuild is in progress, click OK.
7. To view the new NAS devices listed as storage resources available for scanning, click Refresh in the right pane.

To allow Novell File Reporter to report on the contents of shares on a NAS device, you must use the Active Directory administrative tools to add specific permissions for those shares. To do this, in the Active Directory container where the NAS device is located you'll give share permissions to a user/group you'll create called either NSMProxyRights (for environments with both Novell File Reporter and Novell Storage Manager) or NFRProxyRights (for environments with only Novell File Reporter). NFRProxyRights will need Allow Read permission and NSMProxyRights will need Allow Full Control permission.

The added ability to scan and report on clusters also derives from the new support for proxy agents in Novell File Reporter.

In addition, to allow Novell File Reporter to display NAS devices as storage resources, each NAS device must grant a certain set of Local Security Authority Privileges (LSA Privs) to the Novell File Reporter proxy agent servicing the appliance. These LSA Privs must be granted on the storage resources where the actual Novell File Reporter proxy agent is installed. The easiest way to grant these privileges is to make the NFRProxyRights or NSMProxyRights group a member of the LOCAL Administrators group of each NAS device.

> Intelligence, Even for Clusters

Another enhancement in Novell File Management Suite is the ability for Novell File Reporter to scan and report on cluster volumes. This includes support of both Windows Server clusters in Active Directory managed networks, as well as Novell server clusters in eDirectory managed networks. For eDirectory environments, this version of Novell File Reporter requires that Novell Storage Manager be installed.

Pro Tip // Novell Connection Magazine

Unified Reporting of Enterprise Storage

While some Storage Resource Management (SRM) solutions have strong reporting and quota management capabilities, in many instances they have problems reporting across multiple servers or storage infrastructures. Additionally, they lack the ability to report along a line of business within an organization. In contrast, Novell File Management Suite provides comprehensive management and in-depth reporting that unifies control of all the storage resources across your enterprise.

The added ability to scan and report on clusters also derives from the new support for proxy agents in Novell File Reporter. To take advantage of this capability in an eDirectory environment, you'll need to configure the nfrproxy.cfg configuration file similarly to the way you configured it for NAS device support in Active Directory environments. Detailed instructions for configuring this support in both Active Directory and eDirectory environments can be found in the Novell documentation at www.novell.com/documentation/filereporter10/.

> Even More Intelligent Control

This latest release of Novell File Management Suite also addresses a few minor product issues, but its main emphasis is on enhancing and augmenting support for storage appliances and clusters. These enhancements give you even more intelligent control over your unstructured data. These capabilities expand your ability to address the pains associated with growing data storage costs and file system chaos. To learn more about how Novell File Management Suite can help you get a handle on the unchecked proliferation of your data, as well as drive down infrastructure cost, visit www.novell.com/products/file-management-suite.

Run Book Orchestration

Automate Any Data Center IT Workflow with PlateSpin Orchestrate

by Adam Spiers, Till Frank and Bill Tobey

First, a brief disclaimer; this is not exactly an article about run book automation. Within Novell and the industry at large, that term has taken on the sense of workflow-driven IT automation in a management environment that includes centralized process definition, monitoring and compliance. Today, we'll be talking about automation in the data center, but at a lower level, using the workflow execution and job scripting features of [PlateSpin Orchestrate](#). It's an approach that can be very powerful and flexible for anyone who has a specific problem to solve and is comfortable with a little scripting. It can be ideal for consultants, and can provide the first step in an incremental approach to more complete process automation and governance functions.

Our main purpose here is to show off the automation features of PlateSpin Orchestrate that tend to be overlooked as we emphasize its capabilities as a virtual machine manager within a larger solution for intelligent workload management.

> The Run Book: A Coping Mechanism for Data Center Complexity

For the uninitiated, a run book is an IT staff's hard copy collection of system management cheat sheets. Data centers, of course, are like snowflakes—no two alike. Massive diversity of platforms, hardware and applications is the norm, as is some degree of specialization in the IT staff that manages systems, storage, network and front-line operations. Knowledge management is a chronic problem. How do you document dozens or hundreds of sequence-sensitive, dependency-ridden procedures for startup, maintenance, problem diagnosis and recovery so each instance can be executed successfully?

The traditional answer is the run book, a hard-copy collection of rough workflows, hints, approximations and warnings—invariably incomplete, with gaps guaranteed to occur at the most critical location. Today's version is more apt to be a wiki repository than a loose-leaf binder, but the core challenges are unchanged. Run books are hard to write, hard to maintain and usually even harder to read.

> The Answer Is Automation

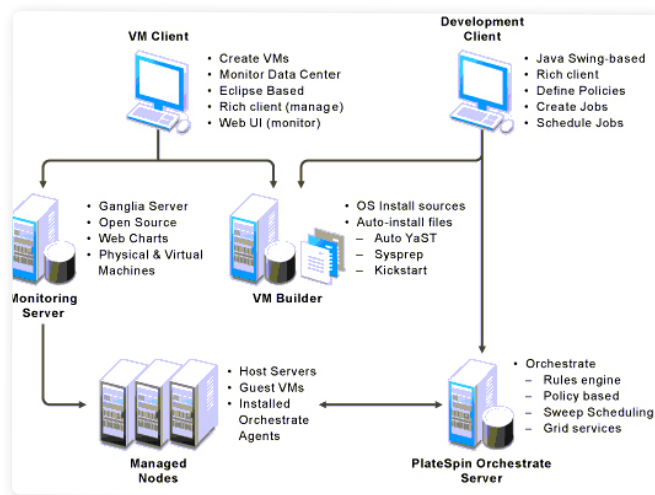
One obvious option is to automate as many procedures as is feasible and sensible. Given the choice between reading a lengthy instruction set of questionable reliability or running a script, most of us will instantly choose the latter, usually with better results. Automation can improve productivity, cut reaction times and reduce errors in many areas of IT operations. Various analysts have called out data center automation as an important strategy for meeting SLA commitments within tightening budgets and headcount constraints. IT decision makers have been advised to look for run book automation, process automation and orchestration tools that can be implemented incrementally, with the caveat that such tools must support all the diverse elements of the typically heterogeneous data center—physical and virtual machines, network devices, middleware, applications and data bases. They must also integrate with all the existing management tools and processes already in place.

> Orchestrate to Automate

[PlateSpin Orchestrate](#) makes an ideal candidate for these types of automation applications, wherever in the data center they occur. Sometimes perceived as a virtual machine manager chiefly notable for its hypervisor-agnostic backend, PlateSpin Orchestrate is actually an advanced data center management product that originated in the high-performance computing space as a grid management tool. (See [Figure 1.](#)) It's a Java-based, multi-platform, distributed automation tool designed to manage all network resources in environments that scale from tens to thousands of physical or virtual resources.

PlateSpin Orchestrate provides front-end integration through a Java API, and automation through an embedded Python engine. It manages any physical resource with a JVM, and virtual resources running under any of the leading hypervisors, including VMware ESX, VMware ESXi, Xen and Microsoft Hyper-V. It uses constraints and rule-based execution policies to manage resource allocation dynamically, and integrates with identity management solutions to provide authentication and policy-based authorization.

In short, PlateSpin Orchestrate is a general-purpose IT workflow automation product whose applications are in no way limited to run book automation. But run book offers an appealing entry-level automation target with short implementation cycles, fast ROI, limited integration complexity and the opportunity to incrementally address workload optimization and other more complex implementations.



PlateSpin Orchestrate architecture

Figure 1: PlateSpin Orchestrate from Novell is an advanced data center management solution designed to manage all network resources.

> Many Existing Successes

The combination of a highly capable tool set and a long list of low-hanging automation opportunities with significant ROI hasn't gone unnoticed. The list of successful PlateSpin Orchestrate-based run book automation projects is already long and growing quickly. A few examples:

SAP Business Intelligence Accelerator failover – A German company with SAP BIA installations for disaster recovery located in two cities had a failover process so complex the run book ran to 40 pages of step-by-step instructions, with dependencies on both sides. Some

steps had to be run on one server, others on up to 16. Using PlateSpin Orchestrate as the workflow engine, a group of Novell and HP engineers needed just two days to produce a proof-of-concept that automates the more complex steps on the infrastructure side, including storage system failover, SAP cleanup and restart.

Administrator password reset – When a system administrator leaves an organization it is standard practice to change the passwords on all systems, including some legacy resources that may only be powered up intermittently. PlateSpin Orchestrate is able to run predefined jobs on resources as they join the grid, including password resets. For one organization, this function alone justified the capital costs of PlateSpin Orchestrate deployment.

Service desk ticket enrichment – PlateSpin Orchestrate has been used to automate initial intelligence gathering on trouble tickets. When a new incident is reported, the ticketing system triggers a PlateSpin Orchestrate job to identify all systems associated with that service, run a support script on those services and append the results to the ticket. This is an example of an application in which the job script can acquire additional intelligence over time. It's also an application that can benefit from the availability of a configuration management database.

Check system health – PlateSpin Orchestrate has been used in various applications to check specific measures of system health, and to automatically initiate remedial responses. Examples include checks for full file systems, and checks on various application and system processes.

Public key handling – PlateSpin Orchestrate has been used to automate the management of SSL/TLS keys for servers. A regularly scheduled job checks all systems for certificate validity, generates new certificate signing requests for those that are expiring, collects the CSRs and distributes new certificates. A similar process is used with SSH keys to automatically update known host and authorized key lists.

Orchestrate isn't just a hypervisor-agnostic VM manager. It originated in high-performance computing as an advanced grid management tool.

> A Simple Job Script Sample: Baseline

Let's take a look at a very simple example of the type of JDL script used to automate a workflow in PlateSpin Orchestrate. This illustration (See [Figure 2.](#)) is a basic configuration file management task you might use to ensure that a certain configuration file remains identical across a number of machines. This job can have two modes of operation. It can either do a check, which compares the file contents on all designated resources with a baseline version and reports all discovered differences for subsequent action. It can also take a more aggressive approach and simply overwrite any versions that have diverged from the baseline.

Baseline JDL code

Figure 2: Job Definition Language script code for the baseline config file management job.

Configuration baseline job to compare config files on many hosts.
Uses datagrid to get baseline file and compare to client files.

Parameters:

```
filename  full path of file to be compared
baseline  resource id of baseline host
mode     'put' or 'diff'
"""
```

```
class baselineJob(Job):
    def job_started_event(self):
        self.setFact("job.autoterminate",False)
        self.setFact("job.cacheresourcematces.ttl",-1)
        self.baseline = self.getFact("jobargs.baseline")
        self.filename = self.getFact("jobargs.filename")
        self.mode = self.getFact("jobargs.mode")

        # Run 'get' on the baseline resource to copy to the grid. Upon
        # completion, baselineGetJoblet will send a
        # baseline_retrieved_event back, at which point we do the diff
        # or put action specified by jobargs.mode.
        sp = ScheduleSpec()
        eq = EqConstraint()
        eq.setFact("resource.id")
        eq.setValue(self.baseline)
        sp.setJobletClass(baselineGetJoblet)
        sp.setConstraint(eq)

        sp.setJobletArgs({ "baseline" : self.baseline,
                           "filename" : self.filename,
                           "mode" : "get" })
        print "Running baselineGetJoblet on", self.baseline
        self.scheduleSweep(sp)
        if sp.getCount() != 1:
            raise "Found more than one resource with resource.id == %s ?!" \
                % self.baseline

    def baseline_retrieved_event(self,params):
        print "got baseline %s from %s" % (params["baseline"],
                                           params["id"])
        self.setFact("job.autoterminate",True)
        sp = ScheduleSpec()
        ne = NeConstraint() # exclude baseline resource
        ne.setFact("resource.id")
        ne.setValue(params["id"])
        sp.setJobletClass(baselineJoblet)
        sp.setConstraint(ne)
        sp.setJobletArgs({ "baseline" : self.baseline,
                           "filename" : self.filename,
                           "mode" : self.mode })
        self.scheduleSweep(sp)
```

```
class baselineGetJoblet(Joblet):

    def joblet_started_event(self):
        id = self.getFact("resource.id")
        print "===== JOBLET getbaseline on %s =====" % id
        dg = DataGrid()
        mode = self.getFact("jobletargs.mode")
        filename = self.getFact("jobletargs.filename")
        baseline = self.getFact("jobletargs.baseline")
        if mode == "get":
            dg.copy(filename, "grid:/// ^/%s" % filename)
            print "sending baseline_retrieved_event for %s to parent job" % id
            self.sendEvent("baseline_retrieved_event",
                {"id": id, "baseline": baseline})

class baselineJoblet(Joblet):

    def joblet_started_event(self):
        print "===== JOBLET baseline ====="
        dg = DataGrid()
        mode = self.getFact("jobletargs.mode")
        filename = self.getFact("jobletargs.filename")
        baseline = self.getFact("jobletargs.baseline")
        resid = self.getFact("resource.id")

        if mode == "put":
            dg.copy("grid:/// ^/%s" % filename, filename)
            print "Reset %s to baseline" % filename
        elif mode == "diff":
            baseline = filename.split("/").pop()
            dg.copy("grid:/// ^/%s" % filename, baseline)
            cmd = "diff -u '%s' '%s'" % (filename, baseline)
            difffile = "%s.%s.diff" % (baseline, resid)
            print "Running", cmd
            e = Exec()
            e.setCommand(cmd)
            e.setStdoutFile(difffile)
            e.execute()
            dg.copy(difffile, "grid:/// ^/" )
            print "Copied results to grid:/// ^ baseline/" + difffile
```

This job does three things:

1. Job code running on the PlateSpin Orchestrate server retrieves the authoritative baseline file and copies it to the data grid, where it can be seen by all other resources.
2. Joblets running on the targeted resources compare their own configuration files with the authoritative file contents (jobargs.mode == "put")
3. If necessary, the joblets remediate any unwanted differences by replacing the divergent file with the authoritative version from the master server.

Run book automation offers an appealing entry-level automation target with short implementation cycles, fast ROI, limited integration complexity, and the opportunity to incrementally address workload optimization and other more complex implementations.

Now obviously, a simple script like this one will never threaten the livelihood of any entrenched configuration management tool. But if you harness this type of automation in a management environment where additional information about resource state, health, workload and events can be leveraged along with rules, policies and constraints, the possibilities for improving operational efficiency, reducing costs and enhancing service level performance become hard to ignore.

> Find Out More

For more information on PlateSpin Orchestrate and its various applications in data center automation and virtual machine management, visit www.novell.com/products/orchestrate/ or contact product manager Jo De Baer at JDeBaer@novell.com.

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Learn More about PlateSpin Orchestrate

- [PlateSpin Orchestrate](#)

Smartphone Wars

The Battle for Smartphone Supremacy is Heating Up

by Eric Harper and Todd Swenson

How many of you remember hearing something like this from your parents? “You are so lucky to be living in a time of such exciting technology.” To them, “technology” meant the space shuttle, more than one television in the house, and the dawn of the personal computer. Twenty-five years ago, they couldn’t have imagined iPods, tablet computers and ubiquitous cell phones. (But then again, we were supposed to have flying cars by now, so maybe it’s a wash.)

“There’s a war out there, old friend, a world war. And it’s not about who’s got the most bullets, it’s about who controls the information. What we see and hear, how we work, what we think, it’s all about the information!”
--Cosmo to Martin Bishop, from the movie Sneakers (1992)

Of course, now the trend is toward technology consolidation. Most of us want our MP3 player, e-mail client, Web browser, camera and cell phone all in the same handset. Not only does it mean carrying fewer things in your pocket or bag, but these consolidated devices, called smartphones, are changing the way we all look at staying connected, informed and entertained. All of the different smartphone developers are scrambling for market share. Some industry heavyweights aren’t looking so strong right now. And some newcomers are making a big splash. But who’s winning this war? And just as importantly, who’s losing?

> Following Smartphone Trends

A lot of people never really gave smartphones a thought until the release of the iPhone, but Apple was actually quite late to the game. Although no industry-standard definition exists, most consider a smartphone to be more of a miniature computer that also has phone capabilities. The first attempt in this category came from IBM way back in 1993 with the release of the Simon Personal Communicator. It wouldn’t be considered a smartphone by today’s standards. The address book, Web browsing and e-mail capabilities that made it a smartphone back in the 1990’s are available on nearly any plain old cell phone model you can buy today. But it was way ahead of its time.

Over the next ten years, cell phone manufacturers like Nokia and Ericsson made their own smartphones. And in 2002, Handspring released the Treo 180 smartphone built on the Palm OS. Because of the already mature third-party application support for the Palm OS, users of the Treo quickly took advantage of the additional features outside developers could provide. When Handspring subsequently merged with Palm, the Treo line continued until it was replaced in 2009 with the Palm Pre.

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RIM also released their smartphone, the BlackBerry, in 2002. Optimized for e-mail, the BlackBerry enjoyed a fairly loyal customer base. (They don't call them "CrackBerries" for nothing.) And Microsoft introduced the Windows CE Pocket PC OS at nearly the same time.

In April 2007, Apple made a big splash with the all touch-screen iPhone. Industry analysts immediately called it a "game-changer" and, given the product's immediate success and the way many phone manufacturers have copied the iPhone's design, it apparently was.

In 2008, Google got into the mix with the cross-platform Android OS. Leaving the hardware side to manufacturers like HTC and Motorola, Android is an open source operating system based on a Linux kernel.

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> Extending Smartphone Capabilities

While smartphones may set the status of everyone from junior high students to CEOs, the business productivity potential of these tools is widely varied. Sometimes only including a PDA, a Web browser and e-mail, the real utility smartphones provide is largely dependent on add-on applications. These applications can give users access to social networks, standard office applications, vertical market tools and even custom-made software. But how those applications get from the minds of designers to handsets can vary from one vendor to another.

The first iPhone didn't even allow third-party applications until nearly a year after it was released when Apple launched the App Store. It's still a fairly closed distribution model. Other platforms allow users to download applications from various Web sites. However, citing usability, stability and security concerns, Apple pretty much thumbed its nose at this approach and decided that users could only install iPhone applications through their own App Store. Oh and, by the way, Apple has to approve every application that sits in that store.

This rigid tactic has irked a whole slew of power-users who would rather hack (or "jailbreak") their iPhones than play by Apple's rules. Ironically, some of the most popular features of jailbroken iPhones—multitasking, app folders, custom backgrounds—have made their way to iPhone OS 4.0, set to be released this summer.

Google, on the other hand, went for the open-source model. The Android OS allows third-party developers to create unlimited applications, utilities and extensions. And, because you can't have an open OS and a closed app market, developers can distribute their wares however they wish. It's true, most Android users find applications through Android Market, the over-the-air application installation tool, but that's not the only way. Other sellers like Handango, SlideME and

AndAppStore provide alternative installation points. This antithetical approach from Apple may end up being what makes Android a game-changer. Only time will tell.

> **Other Smartphone Battles**

Meanwhile, other smartphone suppliers are trying to make their marks. The Palm Pre is enjoying some success, but not as much as investors had hoped. Windows Mobile is currently at v6.5, but Microsoft announced at the Mobile World Congress 2010 in Barcelona that there won't be a Windows Mobile 7. Instead, they're developing a new OS to be called Windows Phone 7 with an interface that is said to be similar to the Zune HD. No one knows yet how many developers will jump on board. And, although pressure continues to come from a number of competitive forces, Research In Motion will no doubt work to maintain its position as one of the smartphone market's enterprise leaders.

> **Winning the War**

Your parents were right. It is a good time to be alive. While space shuttles and televisions are certainly exciting in their own right, smartphone advancements are right up there. And new products that live in the space between smartphones and notebooks, like Apple's iPad, Microsoft's (still semi-secret) Courier, and HP's Slate—may turn out to be smartphone market disrupters. Will the iPhone continue to ride the popularity rocket? Will Android attract more developers, more applica-

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tions and, consequently, more users? Will Palm and Nokia rebound? This war is far from over, and the fights we've seen so far have just been battles. But with all this competition, this drive to win, this innovation, the real winners of the smartphone wars are us. The users.

Now, about that flying car . . .

Cheers

Pernod Ricard Pacific

Working with AkurIT, Pernod Ricard Pacific consolidated its server infrastructure to virtual SUSE Linux Enterprise Server environments, and implemented PlateSpin Orchestrate to manage the new virtual infrastructure. A PlateSpin Forge appliance provides a dedicated disaster recovery option for up to 25 virtual servers.

> Overview

Pernod Ricard Pacific (PRP), the regional entity of Pernod Ricard in the Pacific region, is a leading wine and spirits company employing over 2,000 people and generating a turnover of approximately AUD \$1,2 billion. Influenced by a strong Australian and New Zealand wine heritage, Pernod Ricard Pacific has a dual role: brand owner with responsibility for winemaking, viticulture and marketing of four wine strategic brands and a large portfolio of local brands; distributor in the Pacific region for the entire wines and spirits portfolio of the Group.

> Challenge

The new city-center office in Adelaide offered much less space for the data center. In the previous location, an entire office floor had been available, whereas the new location had only 30m² of space and a maximum power input of 32kW. The company uses several business-critical ERP, business intelligence and CRM solutions, running on both Linux and Microsoft Windows. These solutions have stringent governance requirements for high availability and disaster recovery, and there is also significant pressure on the IT function to provide test environments at short notice.

“We were facing greater demands from the business, and we needed to consider the constraints on power, space and cooling in the new data center,” said Chris Rixon, Governance Manager for Business Information Services at Pernod Ricard Pacific. “We calculated that the additional servers required would push our power requirements to 58kW—almost double what was available.”

> Solution

Working with its IT services provider, AkurIT, PRP opted to move to a new virtualized infrastructure on IBM BladeCenter hardware, running [SUSE Linux Enterprise Server](#) with built-in Xen virtualization. The Xen environment hosts guest instances of SUSE Linux Enterprise Server and Microsoft Windows Server.

PRP and AkurIT deployed PlateSpin Orchestrate from Novell to manage the new virtualized infrastructure.

“PlateSpin Orchestrate offered all the functionality we needed, in a mature and cost-effective product,” said Rixon. “This data center runs all the systems we depend on to bring in revenue or push out product—so reliability is absolutely vital. With Xen virtualization on SUSE Linux Enterprise Server, managed by PlateSpin Orchestrate, we have a compact, flexible, efficient infrastructure that we can rely on.”

[PlateSpin Orchestrate](#) manages the virtual server resources and controls how they are matched to the available physical computing resources. PRP is introducing policies to automatically move virtual workloads based on business rules. The solution will focus resources on transactional work-

loads during the day; at night, the transactional servers will automatically shrink, enabling virtual servers running backup and batch processing jobs to use more of the physical resources.

“PlateSpin Orchestrate presents the physical resources as a pool of computing power that we can parcel out as required to suit changing business requirements,” said Rixon. “It was extremely difficult in the past to manage all the requests for test environments for the ERP, CRM and BI systems. With PlateSpin Orchestrate, the business users place their own requests, and the software automatically provisions new environments based on the available resources.”

To protect business-critical virtual servers, PRP implemented PlateSpin Forge, a hardware appliance that provides out-of-the-box protection for up to 25 physical or virtual server workloads. PRP has set up its PlateSpin Forge to protect 22 virtual servers, and plans to set up automated failover in the event of unplanned downtime.

> Results

By migrating existing physical servers to virtual machines on Xen, and provisioning new virtual servers instead of buying new hardware, PRP has eliminated or avoided buying a total of 50 servers. Instead of the projected 58kW, the company is operating all existing and new services inside the 32kW limit imposed by the new data center—and still has room for growth in terms of floor-space, power and cooling.

“The 50 servers that we’ve dropped or avoided buying represent about 25 percent of the total fleet in Australia: Xen virtualization on SUSE Linux Enterprise Server has had a really major positive impact,” said Rixon. “This is one of the best decisions we’ve made in IT: significantly cutting our costs while enabling greater efficiency and flexibility. Availability is also better, because we can temporarily move live services to a different server if we need to perform maintenance.”

In addition to reducing hardware acquisition and maintenance costs, PRP has avoided the need to add an estimated two new employees to manage the equivalent physical infrastructure. Moreover, the increased utilization of the hardware resources means that the company can accomplish more useful work within a smaller power envelope—reducing operational costs and cutting the carbon footprint.

“With Xen virtualization on SUSE Linux Enterprise Server, we are saving 625 tons of CO2 emissions—equivalent to planting 2,250 trees,” said Rixon.

Learn More about the Offerings Featured in This Success Story

- [SUSE Linux Enterprise Server](#)
- [PlateSpin Orchestrate](#)

Open Education: Not Just for Universities Anymore

With Its OpenCourseWare Site, Novell is a Leader in the Industry

By Eric Huntsman

In 2000, the Massachusetts Institute of Technology, one of the nation's premier private research institutions, did something unheard of in the upper echelons of higher education: it began making some of its educational materials available online—free of charge. To provide these materials to anyone, anywhere with an Internet connection, MIT began posting course syllabi, documents, podcasts, and even videos of lectures on YouTube, iTunes and its own Web site. Other prominent institutions followed suit, and as [The New York Times](#) noted, the Open Education Movement was born.

In 2007, Novell became the first corporate, for-profit software company to join the Open Education Movement, posting 10 of its training courses online—also free of charge. This year, Novell has added more courses and added important features to its [OpenCourseWare](#) Web site, reenergizing its commitment to Open Education and once again proving itself an industry leader.

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> Meeting the Challenge: OpenCourseWare

[OpenCourseWare](#) (OCW) is the posting of free educational materials on the Internet. Today more than 200 educational institutions such as universities and colleges, have posted more than 13,000 courses online, combining their efforts in [The OpenCourseWare Consortium](#), a non-profit organization sponsored by The William and Flora Hewlett Foundation.

Educational institution members of the consortium agree to post at least 10 courses on the consortium's site. Additionally, corporations, institutions, other business and non-profit entities may join the consortium as affiliate members by agreeing to also publish at least 10 projects or commit resources in support of [consortium goals](#).

According to the consortium, OCW projects must:

- be free and open digital publication of high quality educational materials, organized as courses.
- be available for use and adaptation under an open license.
- typically not provide certification or access to instructors.

The goal of distributing knowledge and skills to a wider audience is evident in the first two criteria. The third criterion, however, reveals why so many education institutions are willing to contribute to the OCW movement—education creates its own market.

One reason why education creates its own market is because simply gaining knowledge through free access to content is not the same as a full educational experience. Generally students need degrees or other credentials to assure potential employers that knowledge has been correctly mastered and understood. Furthermore, skill in using the knowledge is acquired not only from personal interaction with instructors, but also from feedback and involvement with peers in a classroom setting.

In other words, OCW offers an opportunity to gain the knowledge offered, but not necessarily the skills taught, in a classroom experience. According to James D. Yager, senior associate dean for academic affairs at the Bloomberg School of Public Health at Johns Hopkins University, “Students take courses because they want interaction with faculty, they want interaction with one another. Those things are not available on O.C.W.” (Jingying Yang, New York Times [March 30, 2010])

As a result, many of the premier organizations participating in the Open Education Movement see OCW as a compliment, instead of a competition, to their for-pay programs. As the [purpose statement of the Open Yale Courses Web site](#) makes clear, it “does not grant degrees or certificates. Nor does it offer direct access to Yale faculty. Its purpose is not to duplicate a Yale education.”

“Training is not just about the number of seats we fill in a classroom. It is about customer satisfaction and extending our reach.” — David Coughanour

> Proving Itself a Leader: Novell and Open Education

As noted, Novell became one of the very first for-profit software companies to join the Open Education Movement. By joining the OpenCourseWare Consortium as an affiliate member in 2007, Novell committed itself to posting 10 of its training courses for free access.

This year Novell has expanded its commitment to Open Education by adding six more courses to its OpenCourseWare site, with plans to add more. Significantly, one of the new additions is one of our hot new courses, 3101 – SUSE Linux Enterprise 11 Fundamentals.

What's more, we have added a useful new link to our site, the [Learning MarketPlace](#), which is a new concept that brings together in one place a variety of free learning resources for Novell products such as [SUSE Linux Enterprise Desktop](#) and [SUSE Linux Enterprise Server](#). From there you can access e-learning documents, join discussion groups, or download tools and software, all in one place.

Visit our [OpenCourseWare](#) site and get the training that will help you operate Novell products more efficiently.

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