

Connection

Novell Connection Magazine

October 2008

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PUBLISHED FOR
NOVELL CONNECTION
MAGAZINE.

NOVELL.COM/CONNECTIONMAGAZINE

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Novell.

Seamless Simplicity

Domain Services for Windows Now Supported in Novell Open Enterprise Server 2

This article first appeared in the October 2008 issue of *Novell Connection* magazine.

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Novell Open Enterprise Server 2 Support Pack 1 will include the much anticipated Domain Services for Windows service, another significant element that provides greater simplicity and interoperability. (See Figure 1.) Last year, *Novell Connection* magazine provided an in-depth look at how this new component would deliver seamless cross-authentication between Windows Active Directory environments and Linux eDirectory environments for file and print services. (See [Domain Services for Windows](#).) This article extends that discussion by providing you with guidance on when you should take advantage of this new service.

Since one of the main benefits of Domain Services for Windows is the ability to authenticate to a Novell Open Enterprise Server 2 Linux server without the Novell client, some might wonder how Domain Services for Windows differs from the CIFS protocol support also included in this upcoming support pack. (See [We Are Here For You](#).) The answer is that CIFS aids users who want basic access to the Linux file system using a Windows share without all the overhead of an Active Directory-style presentation. In other words, users don't need the Microsoft Management Console or Windows Group Policy support; they just want to be able to map a drive. (See Figure 2.)

However, Domain Services for Windows is for organizations that want to consistently present their users with a complete Active Directory-style environment, regardless of whether those users need to access Linux servers or Windows servers. In fact, the basic premise behind Domain Services for Windows is the power to enable a Novell Open Enterprise Server 2

Linux server to appear as if it is an Active Directory server. This ability allows users to log in and authenticate to an Active Directory server with a native Windows client using their eDirectory usernames and passwords. In environments with both eDirectory and Active Directory, administrators can create a cross-domain trust between these identity stores that allows cross-forest authentication and authorization. (See Figure 3.)

> Why Should I Use Domain Services for Windows?

For many organizations, the ability to standardize on an Active Directory-style desktop environment can be a significant benefit. By no longer using the Novell client and moving to a completely native Windows desktop environment, you can simplify desktop image management and reduce its related costs. For example, you might have a mixed environment with a set of Novell Open Enterprise Server users, a set of Microsoft Windows Server users, and yet a third set of users leveraging both. If this is the case, you likely have to maintain a separate image library for each set of users at considerable cost and effort.

In this scenario, Domain Services for Windows can dramatically decrease your complexity and maintenance costs by allowing you to standardize on a single Windows desktop image. You would no longer need a separate image for your Novell—or mixed Windows and Novell—environments, because your users could authenticate to either server type using a completely native desktop Windows environment.

In addition to simplifying image library management for administrators, Domain Services for Windows can deliver productivity gains to your users. Since you can use Domain Services for Windows to create a cross-domain trust between Active Directory and eDirectory, your users no longer have to authenticate separately to the different back-end environments. They just authenticate once and can then access files on either their Linux or Windows servers. Some additional benefits of the new functionality of Domain Services for Windows surfaced during beta testing. One benefit involves applications that require an Active Directory domain for authentication. While Novell hasn't fully tested this capability, it appears that certain applications requiring Active Directory authentication can seamlessly authenticate to Domain Services for Windows, thus providing a single sign-on capability for users. When you authenticate to Domain Services for Windows, these applications will recognize the Domain Services for Windows credentials as authentic and automatically log you into the application without prompting you again for your username and password. Novell has verified this

Figure 1: *Novell Domain Services for Windows is installed as a Add-on Product from within the YaST install*

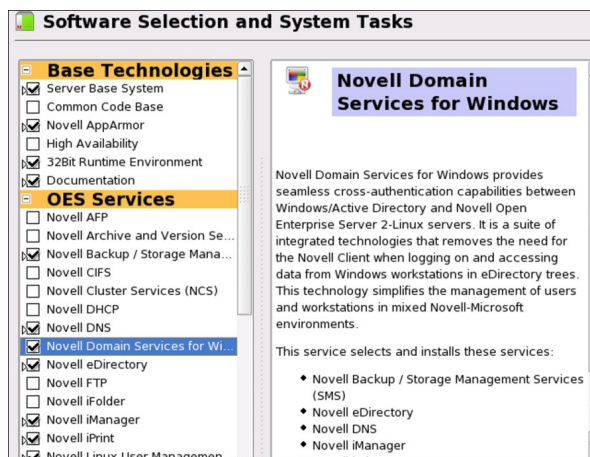
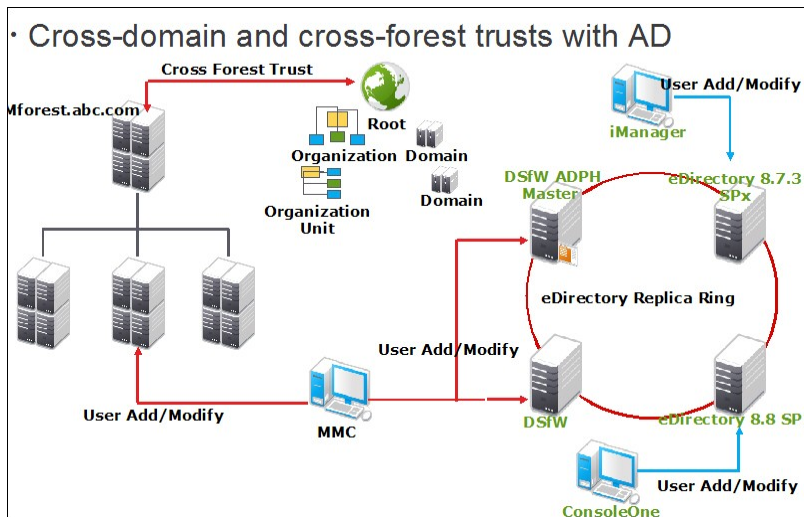


Figure 2: You can manage Novell Domain Services for Windows environments with both Novell iManager and Microsoft Management Console



behavior on both Citrix Presentation Server and a NetApp filer application, and preliminary investigations indicate that similar types of applications may behave this way as well.

> Things to Consider

If your organization wants to present an Active Directory-style authentication for both your Linux and Windows servers, Domain Services for Windows offers very definite benefits. But keep in mind some considerations before taking advantage of its functionality:

The first consideration deals with dependencies on login scripts. When using Domain Services for Windows, you no longer use the Novell client, thus eliminating Novell login scripts. A lack of log-in scripts might not be a problem for your organization, but some users have very elaborate and powerful login scripts that they rely on to set up their user environment just the way they like it. While you can recreate the login script functionality with the Microsoft Group Policy Editor, there is currently no import or export capability to facilitate this process. You would need to recreate these scripts for each user moving to an Active Directory-style login.

Another consideration, although a fairly minor one for most, is that without the client, users cannot use the *purge* and *salvage* commands. *Salvage* has long given users the

ability to view and recover files they've deleted from a Novell Storage Services volume. Of course, even though a clientless user loses the salvage capability, there is nothing to keep an administrator from recovering these lost files for a user. *Purge* is the *salvage* command's lesser-used cousin. It allows users to permanently delete their files. Once again, even though users cannot use this command, administrators can still purge files as needed.

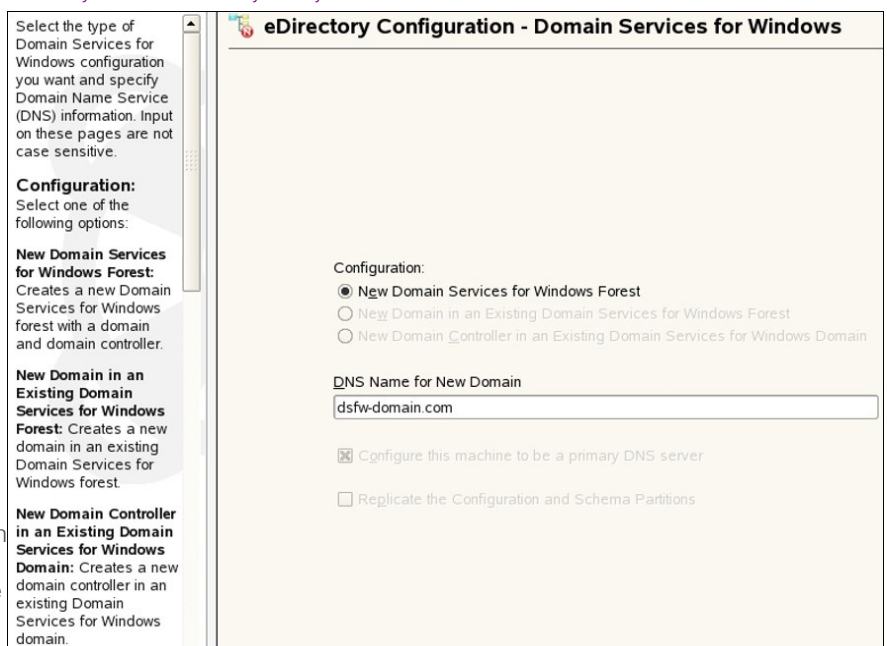
In addition to losing access to the *purge* and *salvage* commands, without the client, users also lose the ability to set the *delete inhibit* and *rename inhibit* Novell Storage Services file system rights. With the *delete inhibit* attribute, a file can be opened, viewed, edited, saved, renamed and copied, but it cannot be deleted. With the *rename inhibit* attribute, a file can be opened, viewed, edited, saved, copied

and deleted, but it cannot be renamed. It should be noted that, if these attributes have already been set, they will still be enforced whether users have the client or not. But without the Novell client, users cannot assign these settings to a file.

Simply put, just determine if your users rely on these commands or attributes as you decide if or how you'll take advantage of Domain Services for Windows.

Another consideration that you should make before deploying Domain Services for Windows is whether or not

Figure 3: With Novell Domain Services for Windows you can create a cross-domain trust between eDirectory and Active Directory identity stores that allows cross-forest authentication and authorization



your users need access to NetWare servers or previous versions of Linux servers running Novell Open Enterprise Server. To access these servers, users will need the Novell client, or the servers will need to be configured with CIFS support.

One final consideration deals with LDAP. When you communicate via LDAP to a server that has been configured as a Domain Services for Windows server, it will communicate back using Active Directory-style LDAP instead of eDirectory-style LDAP. This isn't typically a problem for most simplistic LDAP operations such as authentication, but there are a number of Novell applications, such as GroupWise, that expect eDirectory-style LDAP responses.

However, there are a few ways you can get around this issue. The first way is to simply change the port assignments on the calling application to point to a different port on the Domain Services for Windows server—one that is configured to provide eDirectory-style LDAP responses. Another method is to configure the calling application to communicate instead with a different server

running eDirectory. The third method would be to add a request control to force the Domain Services for Windows server to return eDirectory-style LDAP communications.

> **Tell Us What You Want**

Based on its original design criteria, Domain Services for Windows delivers exactly what it promises: a method to authenticate to a Linux server using standard Windows protocols that carries over to a Windows Active Directory environment. You've seen in this article, the solution also delivers some additional benefits, and as testing and usage of the service continues, more benefits will surface. Even more important, Novell plans to continue to develop and improve the service to better meet your needs. In fact, Novell wants to hear how you would like to see Domain Services for Windows enhanced. Download the open beta at www.novell.com/beta, test drive the service, and then send your ideas to dsfw-feedback@novell.com so you can enjoy the benefits of even greater interoperability and simplicity tailored to your needs. **N**

Subscription Prescription

This article first appeared in the October 2008 issue of *Novell Connection* magazine.

Novell IS&T manages 1,500 SUSE Linux Enterprise Desktop desktop subscriptions with the Subscription Management Tool for SUSE Linux Enterprise

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If you operate a significant Linux environment you already know that managing registrations, subscriptions and software updates can easily eat up time and network bandwidth. It can complicate your firewall policy compliance and even compromise security.

But did you know that a convenient, easy-to-use and fully supported tool for Linux subscription management is now bundled with Service Pack 2—one that's tightly integrated with both Novell Customer Center and Novell Update. The default configurations for new SUSE Linux servers and desktops require regular, direct connections to Novell Customer Center and Novell Update so that each system can register for entitlements and download updates.

The Subscription Management Tool for SUSE Linux Enterprise is a package proxy system that mirrors Novell Customer Center and Novell Update at your site, inside your firewall. It provides a local update repository identical to Novell Update, and a registration target synchronized with Novell Customer Center. By downloading updates once for subsequent distribution over the local network, Subscription Management Tool reduces WAN congestion and enables more restrictive firewall policies. It lets you manage registrations and entitlements and monitor subscription use for all your SUSE Linux Enterprise servers, desktops and point-of-sale devices running Service Pack 2 or subsequent releases, while preserving the familiar Novell Customer Center interface and all of its functionality. (See Figure 1.)

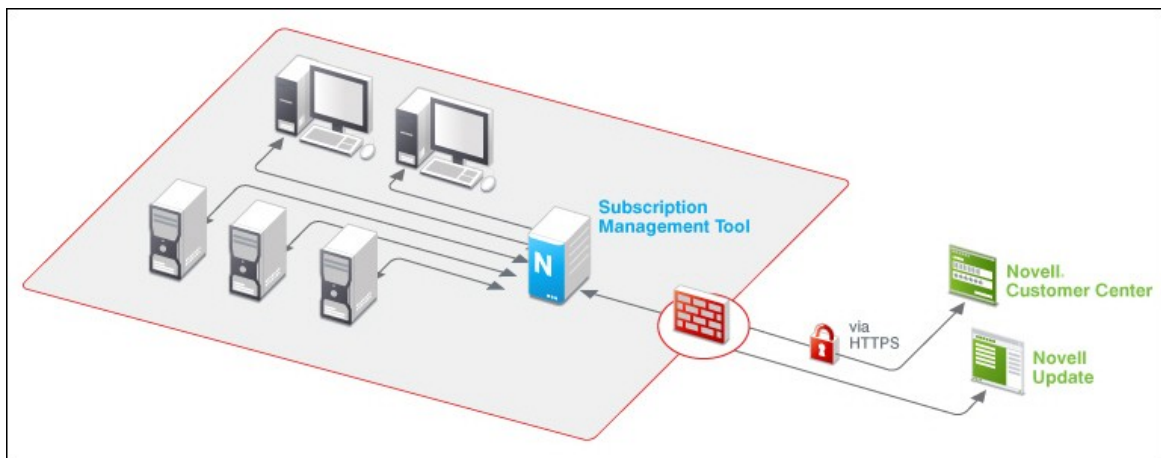
The Subscription Management Tool is in no way a substitute for an enterprise systems management solution such as Novell ZENworks Linux Management. It lacks the granular distribution controls and broader systems management capabilities. But where lightweight rights tracking and update management are the primary objectives, Subscription Management Tool offers a streamlined, cost-effective solution.

> Deploying Subscription Management Tool at Novell

Lightweight subscription management was exactly the challenge facing Novell IS&T, which manages more than 1,500 SUSE Linux Enterprise Desktop systems located in three major campus sites and more than 20 sales offices worldwide. The group's legacy solution, a custom Novell ZENworks Linux Management build, was diverging from the product sold and supported by Novell.

With a largely technical user population, the team didn't need focused desktop management, but did require a new update management solution that would provide staging and testing both for SUSE Linux Enterprise and other Novell applications, including Novell GroupWise, Novell GroupWise Instant Messenger and Novell iFolder. When Subscription Management Tool became part of Service Pack 2, the team gave it a try. Simon Crute, Linux Services Manager, describes the installation process they followed and the customizations they developed for the distributed environment at Novell.

Figure 1: *The Subscription Management Tool for SUSE Linux Enterprise is a proxy server that mirrors Novell Customer Center and Novell Update, providing local registration, subscription management and update distribution services.*

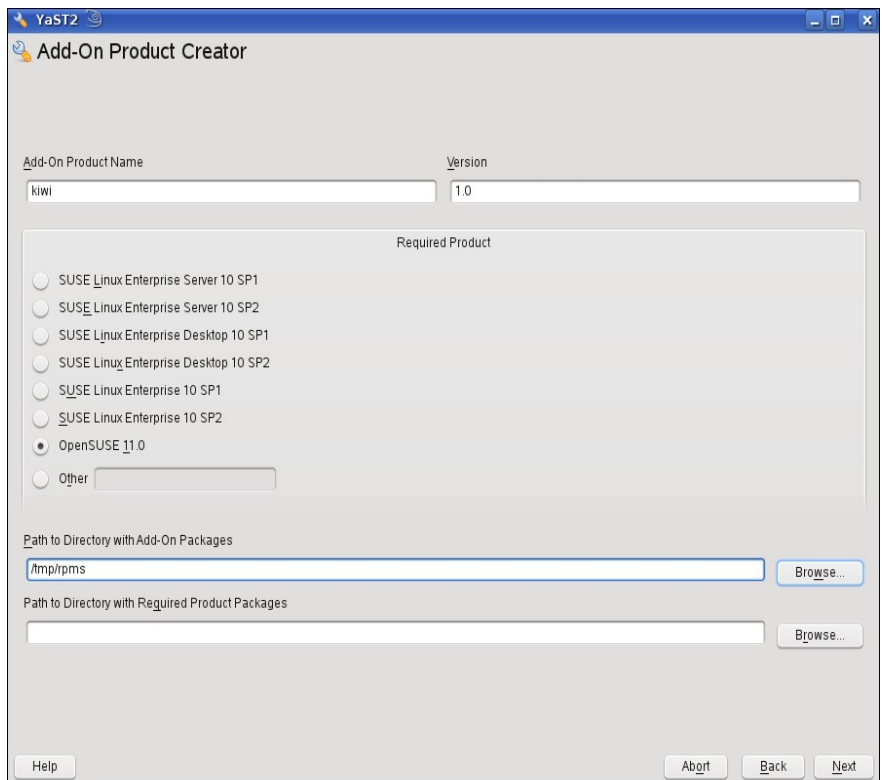


> **Subscription Management Tool Step One: Install and Configure**

“We began by setting up a new SUSE Linux Enterprise server,” Simon explains. “We installed Service Pack 2 on a dual-core Xeon system with 4GB of RAM and 750 GB of disk space. Subscription Management Tool installs as an Add-On Product in YaST. Go to Software and Add-On Product, then select Local Directory and ISO Image and browse to the correct ISO. YaST then offers to install the product and resolve all dependencies for you.” (See Figure 2.)

Once installed, Subscription Management Tool needs to be activated against Novell Customer Center. This requires the acquisition of mirroring credentials from Novell Customer Center through a process described in detail in [TID 3612166](#), which is available [online](#).

Figure 2: *Subscription Management Tool installs as an Add-On Product in YaST.*



> **Step Two: Selecting Which Catalogs to Mirror**

With Subscription Management Tool running and connected to Novell Customer Center, the next step was to decide which update catalogs to mirror locally. Because Service Pack 2 had just been released, IS&T was supporting a mix of SP1 and SP2 desktops and servers. “Several catalogs are available for each product,” Crute said. “There’s an online catalog of packages for migrating older systems to the current service pack, a pool catalog of base packages for the current service pack, and an update catalog containing packages released since the current service pack’s initial release.”

The team elected to carry all three catalogs for SUSE Linux Enterprise Server 10-SP1 and SP2, SUSE Linux Enterprise Desktop 10-SP1 and SP2, for both the i586 and x86-64 architectures. The command that controls catalog mirroring in Subscription Management Tool is **smt-catalogs**. Run by itself, it displays the available catalogs and architectures. The **smt-catalogs | grep sled** command displays all SUSE Linux Enterprise Desktop catalogs, and the **smt-catalogs sled10-sp1** command shows the architectures available for each.

Enabling mirroring for all three SUSE Linux Enterprise Desktop 10-SP2 catalogs required three commands:

```
smt-catalogs sled10-sp2-pool -e
```

```
smt-catalogs sled10-sp2-online -e
smt-catalogs sled10-sp2-updates -e
```

Each command elicits a prompt listing the available architectures.

> **Step Three: Creating Custom Catalogs**

The IS&T team also wanted the new update server to support several internal products and openSUSE RPMs. To do this, they first created a package repository from which to mirror (both YUM and ZYPP work well) using the Add-On Product module in YaST. Then they decided from which SUSE Linux Enterprise products these packages should be available.

“The **smt-list-products** command shows you all the products that Subscription Management Tool knows about,” Crute explained. “Depending on your subscriptions to Novell Customer Center, you’ll see quite a few different versions of SUSE Linux Enterprise Desktop, and you need the product ID to set up a custom catalog. So, for instance, if you’re in a country where VideoLAN is legal, you can instruct Subscription Management Tool to mirror it by entering the following command:

```
smt-setup-custom-catalogs --
productid 431 --name
'VLC_SLED_10_SP1' --exturl \
'http://download.videolan.or
```

```
g/pub/videolan/vlc/SuSE/10.1
' \ --description 'VideoLAN
repository for SLED 10 SP1
do not use in USA or EU
countries'
```

“If you’ve created a custom repository you want to mirror, simply enter the URL. If you’re not sure the IP address will be stable over time, you may want to create a separate Apache vhost on the Subscription Management Tool server and copy the repository contents there from the build location.”

To sign a repository before importing it into Subscription Management Tool, run the following commands from the repository directory:

```
gpg --default-key [keyid] -a
--detach-sign repodata/repomd.xml
gpg -a --export [keyid] > repodata/
repomd.xml.key
```

To get the public key into the client, either import it with a post-install script or modify the installation boot media.

> **Step Four: Creating a Staging Environment**

Like any rational administrator, the Novell team also wanted a staging environment where it could test new packages thoroughly before moving them into production. Subscription Management Tool doesn’t support that capability in its default configuration, but it is easy enough to add with a bit of Apache config file work.

“The idea is to create two vhost definitions,” Crute said. “One for `smt.company.com`, the other for `smt-stage.company.com`. Both are on the same box, but a little [Apache redirection](#) sends the production and staging requests to different directories.

To selectively move tested RPMs into production without disturbing those still under evaluation, or disrupting the physical repositories on disk, the Novell team wrote a script that makes daily backups of the staging catalogs, naming them by date. To minimize the time and disk space required, a link copy is made (see [man cp](#) for details) which, in essence, simply duplicates the inodes or directory information, leaving the actual files unchanged. [Click here to see the complete script code.](#)

Once administrators are satisfied with a set of updates, they simply rename the directories from the backup location into production. A daily e-mail is circulated that summarizes the differences between staging and production. [Click here to see the e-mail creation script.](#)

> **Stage Five: Migrating Existing Systems**

With its Subscription Management Tool server functioning correctly, the Novell team then repointed its client systems to the new source for registration and update services. Several methods are available. For new

installations, the following script can be added at boot time:

```
regurl=https://[servername]/center/regsvc
regcert=done
```

The same script can be easily adopted for PXE-based network installs, and in the physical boot media used in media-based installations. For installations via AutoYaST, [another script fragment](#) can also be used to register new machines. And finally, Subscription Management Tool includes the following script, which can be used to help migrate existing machines:

```
/
usr/share/doc/packages/smt/clientSetup4SM
T.sh https://[servername]/center/regsvc
```

This can be incorporated into existing login scripts, or wrapped and distributed for users to run. If you have an existing update infrastructure in place, you can even create a package around this script that moves users to the new service automatically.

> **Step Six: Transparently Caching Updates at Distributed Locations**

The final decision required in deploying Subscription Management Tool, at least in an installation with multiple locations under management, is how to best provide distributed access to the update service. Deploying separate Subscription Management Tool servers in each location increases the administrative overhead, sacrifices transparency, and reduces bandwidth efficiency, particularly for users who travel between branches.

Instead, the Novell team decided to cache update transfers locally using the Squid caching proxy server. This required configuring a Squid server at each location to accept transparent proxying, then configuring the router at the Subscription Management Tool site to send Subscription Management Tool-bound traffic to the local proxies. On Cisco routers this is known as a policy route. Details for configuring Squid can be found at <http://itdp.org/HOWTO/TransparentProxy.html>.

The Novell team is using [the following aging details](#) for its Squid servers. These are provided as an example only, with no claim of correctness or best practice.

> **Managing 1,500 SUSE Linux Enterprise Desktop Subscriptions with a Free Tool**

Today, Novell IS&T is managing registrations and subscription updates for its 1,500 SUSE Linux Enterprise Desktops with a high degree of automation, using the Subscription Management Tool proxy server that’s included in every copy of SUSE Linux Enterprise 10 Service Pack 2. More than 700 SP1 users have successfully used the service to update their machines to SP2. For more information, see the Subscription Management Tool home page at <http://www.novell.com/linux/smt/>. **N**

Complete Script Files

Script File #1

```
/etc/apache2/vhost.d/smt.conf
<VirtualHost *:80>
ServerAdmin [deleted]
ServerName smt.novell.com
alias /repo/ /srv/www/htdocs/production/repo/
alias /repo /srv/www/htdocs/production/repo
</VirtualHost>
```

```
/etc/apache2/vhsot.d/smt-stage.conf
<VirtualHost *:80>
ServerAdmin [deleted]
ServerName smt-staging.provo.novell.com
alias /repo/ /srv/www/htdocs/repo/
alias /repo /srv/www/htdocs/repo
</VirtualHost>
```

Somewhat confusingly, this means that the default directory where all the Novell-supplied Subscription Management Tool scripts work, and where all the mirrored RPMs end up, is the staging area /srv/www/htdocs/repo. If you think about it, this makes sense. You wouldn't want to change the core Subscription Management Tool scripts, because any updates to Subscription Management Tool might overwrite your own changes. The production area is then actually /srv/www/htdocs/production/repo

Script File #2

```
#!/bin/bash
#
#script to keep multiple copies of the staging catalogue
to enable us to move a
#specific day's staging into production after testing.
#the backups are created as "hard link copies". See the
cp man page and the --link option.

# the number of copies to keep
COPIES=7
#where the staging catalogue are kept
STAGING_LOCATION=/srv/www/htdocs/repo
#where the backup catalogues are kept.
# Must be the same file system as
STGAGING_LOCATION.
# Do not use spaces in name
BACKUP_LOCATION=/srv/www/staging_backups
#the basename of the backup directory
BASENAME=staging-backup

#Test BACKUP_LOCATION
set -- $BACKUP_LOCATION
if [[ $1 != $BACKUP_LOCATION ]] ; then
```

```
echo "BACKUP_LOCATION has bad characters in it,
probably spaces, or IFS is set incorrectly"
echo "Failure to fix this may result in data loss on your
server"
exit
fi
#create new backup name.and check dir does not exist
NEW_NAME=$BACKUP_LOCATION/$BASENAME-$
(date +%F)
if [[ -e $NEW_NAME ]] ; then
echo "$NEW_NAME" already exists. Quitting.
exit
fi
#find out how many backups there are and remove old
ones.
BACKUP_DIRS=$(ls -d $BACKUP_LOCATION/
$BASENAME*)
NO_BACKUP_DIRS=$(ls -d $BACKUP_LOCATION/
$BASENAME* | wc -w)
#if there are more than COPIES, remove the oldest
while [[ $NO_BACKUP_DIRS -gt $COPIES-1 ]] ; do
set -- $BACKUP_DIRS
echo "Removing old backup: $q"
rm -rf $1
BACKUP_DIRS=$(ls -d $BACKUP_LOCATION/
$BASENAME*)
NO_BACKUP_DIRS=$(ls -d $BACKUP_LOCATION/
$BASENAME* | wc -w)
done
export COPIES NO_BACKUP_DIRS
#copy the newest one.
echo "Link-Copying staging to staging backup"
cp --archive --link $STAGING_LOCATION $NEW_NAME
```

Script File #3

```
#!/bin/bash
#
#bash script to show the differences between two
repositories.
#
#
STAGING_LOCATION=/srv/www/htdocs/repo
BACKUP_LOCATION=/srv/www/staging_backups
BASENAME=staging-backup
PRODUCTION=/srv/www/htdocs/production/repo

REPOS[1]="\$RCE/SLED10-SP2-Updates/sled-10-
i586/rpm"
#
echo
"=====
=====
====="
echo "This script will report the differences between
staging and production"
```

```
echo -n "Running at "
date
echo
"=====
=====
====="

for REPO in ${REPOS[*]}; do
echo "Looking at $REPO"
echo "-----"
echo -n "Total new RPMs "
diff -r $PRODUCTION/$REPO $STAGING_LOCATION/
$REPO |cut -f 4 -d " " |grep -v .patch.rpm | grep -v
.delta.rpm | wc -l
echo "RPM list follows"
echo
echo
diff -r $PRODUCTION/$REPO $STAGING_LOCATION/
$REPO |cut -f 4 -d " " |grep -v .patch.rpm | grep -v
.delta.rpm
done
```

Script File #4

```
<customer_center>
<do_registration
config:type="boolean">true</do_registration>
<reg_server>https://
[servername]/center/regsvc</reg_server>
<register_regularly
config:type="boolean">>false</register_regularly>
```

```
<registration_data>
<email>ist_autoyast_installed@novell.com</email>
</registration_data>
<submit_hwdata
config:type="boolean">true</submit_hwdata>
<submit_optional
config:type="boolean">true</submit_optional>
</customer_center>
```

Script File #5

```
refresh_pattern ^ ftp: 1440 20%
10080
refresh_pattern ^ gopher: 1440 0%
1440
refresh_pattern (cgi-bin|\\?) 0 0% 0
#long age on rpms cos an rpm file name should not
change
refresh_pattern -i smt\.foo\.com/. *rpm 4320 100% 43200
reload-into-ims
#much shorter age on repodata cos it does change
refresh_pattern -i smt\.foo\.com/. *repodata 10
20% 60
refresh_pattern -i smt-stage\.foo\.com/. *rpm 4320 100%
43200 reload-i
nto-ims
refresh_pattern -i smt-stage\.foo\.com/. *repodata* 10
20% 60
refresh_pattern . 0 20%
4320
```

Banking on Success

This article first appeared in the October 2008 issue of *Novell Connection* magazine.

UMB provides single sign-on access to 150,000 users with Novell Identity Manager and consolidated servers by 70 percent with SUSE Linux Enterprise Real Time.

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Making it convenient for customers to conduct their business online is a key competitive advantage for financial services companies. With Novell Identity Manager and Novell Access Manager, UMB Financial Corporation can provide its retail and commercial customers with single sign-on access to view and manage their accounts, while reducing overall user administration time by 25 percent.

> Overview

One of the largest independent banks in America, UMB Financial Corporation (UMB) is a multibank holding company headquartered in Kansas City, Mo., offering complete banking, asset management, health spending solutions, and related financial services to both individual and business customers nationwide. The company has 3,500 employees and assets of US\$9.3 billion.

> Challenge

As a diverse financial holding company, UMB wanted to simplify customer access to its many different products and services. The IT staff was managing user identity information across dozens of systems in a complex environment. As a result, customers often had to remember multiple IDs and passwords to access their accounts.

UMB also operates in an extremely regulated industry and needs to ensure the security of confidential customer information. Managing customer information across multiple systems increases the potential for data inaccuracies and poses security risks. Streamlining identity management would help the bank safeguard its data and increase its ability to react quickly to new regulatory requirements.

“Having a Novell identity management solution helps us manage an extremely complex user environment behind the scenes.”

—Kanon Cozad

Senior VP and Director of Application Development
UMB

> Solution

UMB evaluated several single sign-on solutions, including Sun, Microsoft and IBM, before selecting Novell Identity Manager and Novell Access Manager to run on SUSE Linux Enterprise Real Time.

“We needed a single sign-on solution to work across multiple platforms and systems including Microsoft Windows, UNIX and Linux,” said Kanon Cozad, senior vice president and director of Application Development at UMB. “The Novell solution had out-of-box integration with the vast majority of our applications. Novell also supports open standards which fits our business model.”

Using Novell Identity Manager, UMB synchronized user information across multiple systems, replacing silos of user data with a single repository for user identity information. By integrating its customer-facing applications for online banking and online cash management, the bank can provide thousands of retail and commercial customers with a holistic view of their accounts.

“With centralized user identity management, we can present our company in a seamless fashion,” said Cozad. “Customers no longer need to remember multiple IDs and passwords to access their many different services with us. Having a Novell identity management solution helps us manage an extremely complex user environment behind the scenes.”

UMB uses Novell Access Manager to authenticate retail and commercial customers to two primary portals. Novell Access Manager authenticates users based on the user information stored in Novell eDirectory to provide single sign-on access to all portal applications.

With Novell Identity Manager, the IT staff has also created federated identities across many internal systems including HR, accounting, e-mail and the company Intranet, with SAP as the authoritative source for 3,500 employee identities. The IT team can provision new users with same-day access to applications, based on their role in the organization.

“Novell Consulting has been extremely committed to this project, both in the amount of resources they have provided, as well as their expertise,” said Cozad. “Novell technology is well known in the industry for its identity management technology and really knows how to use it best. The caliber of knowledge and support on this project has been excellent.”

Streamlining user management has not only reduced user management time for the IT team, but has also reduced the time spent on audits. The ability to see exactly who is accessing which systems has improved the bank’s ability to comply with Sarbanes-Oxley and a myriad of other regulatory requirements.

“We can do internal audits much faster and we have a much higher level of confidence in the accuracy of our information,” said Cozad.

The bank runs its Novell identity management solution on SUSE Linux Enterprise Real Time for highly efficient performance, and to ensure quality of service with the smallest possible server footprint. UMB has consolidated its servers by 70 percent.

“SUSE Linux Enterprise Real Time provides a sustainable environment that our administrators spend little time managing,” said Cozad. “This Linux platform increases the reliability, predictability and efficiency in running our complex, mission-critical business.”

“Novell is helping us keep a competitive advantage in attracting and retaining our customers. We have the right identity management foundation to keep up with bigger players in our market and stay ahead of smaller ones.”

—Kanon Cozad

**Senior VP and Director of
Application Development
UMB**

> Results

With a Novell identity management solution, UMB has streamlined user identity information for nearly 150,000 users, increasing the level of convenience for retail and commercial customers, as well as employees. Providing single sign-on access for customers and employees has reduced passwords by 75 percent and reduced password-related helpdesk requests by 30 percent.

Centralized user management has greatly improved data accuracy and security, while reducing IT administration time by 25 percent. The bank can complete its audits significantly faster and can react quickly to new regulatory requirements without any business interruption.

“We are always looking for ways to make it more convenient for our customers to do business with us,” said Cozad. “Novell is helping us keep a competitive advantage in attracting and retaining our customers. We have the right identity management foundation to keep up with bigger players in our market and stay ahead of smaller ones.” **N**

Article Summary

Products and Services:

- Novell Identity Manager
- Novell Access Manager
- SUSE Linux Enterprise Real Time
- Novell Consulting

Results:

- Streamlined user management for 150,000 users
- Provided customers and employees with single sign-on access to applications
- Reduced IT administration time by 25 percent
- Consolidated servers by 70 percent