

Novell Data Synchronizer Mobility Pack Update 1

Readme

Novell®

October 12, 2010

1 Overview

The Novell Data Synchronizer Mobility Pack creates a new Synchronizer system that consists of the Synchronizer services, the GroupWise Connector, and the Mobility Connector on a single server. This Synchronizer system enables you to easily synchronize GroupWise data to mobile devices.

For information about specific mobile devices, see the [Novell Data Synchronizer Mobility Connector Wiki](http://wiki.novell.com/index.php/Data_Synchronizer_Mobility_Connector) (http://wiki.novell.com/index.php/Data_Synchronizer_Mobility_Connector).

For a list of the bugs that have been fixed since the original release of the Data Synchronizer Mobility Pack, see [Section 9, “Mobility Pack Update 1 Bug Fixes,”](#) on page 11.

2 System Requirements

See “Data Synchronizer System Requirements” in the *Novell Data Synchronizer Mobility Pack Installation Guide*.

3 Mobility Pack Update Instructions

If you are installing Novell Data Synchronizer Mobility Pack Update 1 as your initial Synchronizer system, see [Section 4, “Mobility Pack Installation Instructions,”](#) on page 3.

Follow the instructions in this section to update an existing Synchronizer system. If you update from the Novell Customer Center, you can subscribe to receive future updates through the Novell Update channel. Or, if you update from the Novell Download Web site, you must periodically check for future updates.

- [Section 3.1, “Updating from the Novell Customer Center,”](#) on page 1
- [Section 3.2, “Updating from the Novell Downloads Web Site,”](#) on page 2

NOTE: If you need to uninstall and reinstall the Mobility Pack, follow the instructions in “Uninstalling the Mobility Pack” in the *Novell Data Synchronizer Mobility Pack Installation Guide*. See also [Section 5.8, “Thorough Uninstallation Required,”](#) on page 7.

3.1 Updating from the Novell Customer Center

- 1 Log in to the [Novell Customer Center](http://www.novell.com/customercenter) (<http://www.novell.com/customercenter>).
- 2 Obtain the product registration code for the Data Synchronizer Mobility Pack:
 - 2a In the *Select an Organization to Manage* drop-down list, select your organization that is entitled to the Novell Data Synchronizer Mobility Pack.

- 2b Under *My Products*, select *Novell Data Synchronizer*.
 - 2c Make a note of the numbers and letters in the *Code* field.
- 3 Register to receive Mobility Pack updates:
 - 3a In a terminal window on the Synchronizer server, enter the following command:


```
suse_register -a regcode=mobility=registration_code
-a email=email_address -L /
root/.suse_register.log
```

Replace *registration_code* with the Mobility Pack registration code that you obtained from the Novell Customer Center in [Step 2](#). Replace *email_address* with the e-mail address where you want Mobility Pack update notifications to be sent for future updates.
 - 3b Enter the following command to verify that the Novell Update channels for the Mobility Pack have been added on your Synchronizer server:


```
zypper ca
```

This command lists all channels where you are registered to receive updates. The following Mobility Pack update channels should be listed:

Alias	Name
nu_novell_com:Mobility-1.0-Pool	Mobility-1.0-Pool
nu_novell_com:Mobility-1.0-Updates	Mobility-1.0-Updates
- 4 Apply Data Synchronizer Mobility Pack Update 1 to the Synchronizer server:
 - 4a Enter the following command:


```
zypper up -r nu_novell_com:Mobility-1.0-Updates
```

Seven Mobility Pack packages are listed for update through the channel for Update 1.
 - 4b Enter YES to start the update process.
- 5 Restart the Synchronizer services:
 - 5a Stop the Synchronizer services:


```
rcdatasync stop
```
 - 5b Verify that all Synchronizer services have stopped:


```
ps -eaf | grep datasync
```
 - 5c Start the Synchronizer services:


```
rcdatasync start
```
- 6 Repeat [Step 4](#) and [Step 5](#) each time you receive a notification that a Mobility Pack update is available.

3.2 Updating from the Novell Downloads Web Site

- 1 Download the Novell Data Synchronizer Mobility Pack ISO file from [Novell Downloads](#) (<http://download.novell.com>) to a convenient temporary directory on the Synchronizer server:
 - 1a On the Novell Downloads Web site, click *Search Patches* in the gray Patches box on the right.
 - 1b In the *Standard Select* field, select *Data Synchronizer*.

IMPORTANT: If you do not see *Data Synchronizer*, you are looking in the *Product* list, not the *Patch Finder* list. Click *Search Patches* to the right of the *Product* list, then look in the *Patch Finder* list.

- 1c Under *Current Patches*, click the *Novell Data Synchronizer Mobility Pack Update 1 x86-64* link to display information about the download.
- 1d Review the description of Update 1, then click *Proceed to Download*.
- 1e Follow the online instructions to download the Update 1 ISO file to a convenient location.
- 2 Use YaST to update the Mobility Pack repository from the new ISO file:
 - 2a Under *Groups*, click *Software*, then click *Patch CD Update*.
 - 2b Click *Next* to start the update.
 - 2c Select *Local ISO Image*, then click *Next*.
 - 2d In the *Repository Name* field, specify a name for the repository for the Mobility Pack Update 1 software.
 - 2e In the *Path to ISO Image* field, specify the full pathname to the Mobility Pack Update 1 ISO file, then click *Next*.
 - 2f Click *Yes* to accept the License Agreement, then click *Next*.
 - 2g On the Distribution Upgrade Settings page, click *Next*.
 - 2h In the Confirm Update dialog box, click *Start Update*.
 - 2i On the Novell Customer Center Configuration page, select *Configure Later*, then click *Next*.
 - 2j (Conditional) If you receive a warning that no changes were made to the list of registered repositories and offering to let you rerun the registration, click *No, Skip It*.
 - 2k On the Migration Completed page, click *Finish*.
- 3 Restart the Synchronizer services:
 - 3a Stop the Synchronizer services:


```
rcdatasync stop
```
 - 3b Verify that all Synchronizer services have stopped:


```
ps -eaf | grep datasync
```
 - 3c Start the Synchronizer services:


```
rcdatasync start
```
- 4 Check the Novell Downloads Web site periodically for updates.

At any time after your initial installation of the Mobility Pack, you can register to receive automatic notifications when updates are available, as described in [Section 4.2, “Registering to Receive Future Updates through the Novell Update Channel \(Optional\),”](#) on page 5.

4 Mobility Pack Installation Instructions

Follow the instructions in this section if you are installing Novell Data Synchronizer Mobility Pack Update 1 in order to create your initial Synchronizer system. The Update 1 software is available on the Novell Downloads Web site.

After you have installed Update 1, you can register in the Novell Customer Center to receive future updates through the Novell Update channel.

- ♦ Section 4.1, “Obtaining and Installing the Mobility Pack Update 1 Software,” on page 4
- ♦ Section 4.2, “Registering to Receive Future Updates through the Novell Update Channel (Optional),” on page 5

NOTE: If you need to uninstall and reinstall the Mobility Pack, follow the instructions in “Uninstalling the Mobility Pack” in the *Novell Data Synchronizer Mobility Pack Installation Guide*. See also Section 5.8, “Thorough Uninstallation Required,” on page 7.

4.1 Obtaining and Installing the Mobility Pack Update 1 Software

- 1 Make sure that the Linux server where you plan to install the Mobility Pack meets the system requirements.

For system requirements, see “Data Synchronizer System Requirements” in the *Novell Data Synchronizer Mobility Pack Installation Guide*.

For additional planning assistance, see the [Data Synchronizer Mobility Pack Best Practices Wiki](http://wiki.novell.com/index.php/Data_Synchronizer_Mobility_Pack_Best_Practices) (http://wiki.novell.com/index.php/Data_Synchronizer_Mobility_Pack_Best_Practices).

- 2 If a Web server is currently running on the Synchronizer server, stop it, and preferably disable it.
- 3 Download the Novell Data Synchronizer Mobility Pack ISO file to a convenient temporary directory:
 - 3a On the [Novell Downloads Web site](http://download.novell.com) (<http://download.novell.com>), click *Search Patches* in the Patches box.
 - 3b In the *Standard Select* field, select *Data Synchronizer*.

IMPORTANT: If you do not see *Data Synchronizer*, you are looking in the *Product* list, not the *Patch Finder* list. Click *Search Patches* to the right of the *Product* list, then look in the *Patch Finder* list.

- 3c Under *Current Patches*, click the *Novell Data Synchronizer Mobility Pack Update 1 x86-64* link to display information about the download.
 - 3d Review the description of Update 1, then click *Proceed to Download*.
 - 3e Follow the online instructions to download the Update 1 ISO file to a convenient location.
- 4 Use YaST to install the Data Synchronizer Mobility Pack software:
 - 4a Under *Groups*, click *Software*, then click *Add-On Products*.
 - 4b Install the Data Synchronizer Mobility Pack as an add-on product.

Complete installation instructions are available in the *Novell Data Synchronizer Mobility Pack Installation Guide*.

4.2 Registering to Receive Future Updates through the Novell Update Channel (Optional)

After you have installed Mobility Pack Update 1 to create your initial Synchronizer system, you can register to receive future updates through the Novell Update channel, as described in [Section 3.1](#), “Updating from the Novell Customer Center,” on page 1:

- 1 To register for future updates, complete [Step 1](#) through [Step 3](#) in [Section 3.1](#), “Updating from the Novell Customer Center,” on page 1.
- 2 After you receive notification of the next Mobility Pack update, complete [Step 4](#) and [Step 5](#) in [Section 3.1](#), “Updating from the Novell Customer Center,” on page 1

5 Installation Issues

- ♦ [Section 5.1](#), “GroupWise Trusted Application Creation,” on page 5
- ♦ [Section 5.2](#), “YaST Proposal Error,” on page 5
- ♦ [Section 5.3](#), “YaST Hangs When Browsing Files in the Installation Program,” on page 6
- ♦ [Section 5.4](#), “Required Python Package Version,” on page 6
- ♦ [Section 5.5](#), “Mobility Pack Installation Program Fails on a 32-Bit/x86 Processor,” on page 6
- ♦ [Section 5.6](#), “Overhead of Extraneous Users,” on page 6
- ♦ [Section 5.7](#), “Database Password Restriction,” on page 7
- ♦ [Section 5.8](#), “Thorough Uninstallation Required,” on page 7

5.1 GroupWise Trusted Application Creation

Before you run the Mobility Pack Installation program, you must create a GroupWise trusted application so that the GroupWise Connector can log in to a GroupWise Post Office Agent (POA) in order to access GroupWise mailboxes without needing personal user passwords. When you set up the GroupWise Connector as a trusted application, you only need to fill in three fields in the Create Trusted Application dialog box in ConsoleOne: *Name*, *Location for Key File*, and *Name of Key File*. Do not fill in any other fields. If you fill in additional fields, the trusted application does not work correctly with the GroupWise Connector.

![Might be a bug; Jill Boogaard; frequent problem on the forums]

5.2 YaST Proposal Error

When you run the Data Synchronizer Mobility Pack Installation program in YaST, you might see the following error:

The proposal contains an error that must be resolved before continuing

This error indicates that you clicked *Next* without providing the configuration information for your Synchronizer system. Instead of clicking *Next*, click *Change > Mobility Pack Configuration*, then provide the configuration as prompted. After you provide the configuration information, click *Next*.

![576670; Mark Clark; new in Mobility Alpha; permanent]

5.3 YaST Hangs When Browsing Files in the Installation Program

When you run the Data Synchronizer Mobility Pack Installation program on SLES 11 SP1, if you browse to and select a file, the Installation program might hang. This can occur if you try to browse to and select any of the following files during installation:

- ♦ Mobility Pack ISO file
- ♦ GroupWise trusted application key file
- ♦ Certificate file

As a workaround, type the full path and filename for the file instead of browsing to it.

![6141651; Nadeem Nazeer, Monica Serrato, new in Public Beta; permanent until fixed in SLES]

5.4 Required Python Package Version

If you already have Python packages installed on the server where you are installing the Data Synchronizer Mobility Pack, the Data Synchronizer Mobility Pack Installation program needs to update the existing packages, rather than install new packages. This does not happen by default.

When you run the Installation program, you are prompted if packages need to be updated. Enter 1 for Solution 1 to update each package.

![619595; Randall Stauffer, Nadeem Nazeer; new in Public Beta]

5.5 Mobility Pack Installation Program Fails on a 32-Bit/x86 Processor

The Mobility Pack must be installed on a server with a 64-bit/x86 processor. If you try to install it on a server with a 32-bit/x86 processor, the Mobility Pack Installation program does not detect the problem. It tries to run, but it cannot run correctly.

If the behavior of the Mobility Pack Installation program does not match the installation instructions provided in the *Novell Data Synchronizer Mobility Pack Installation Guide*, make sure that you are installing the Mobility Pack on a server that meets the documented system requirements.

There are currently no plans to make the Mobility Pack available in a 32-bit version.

![Technology Preview issue; permanent]

5.6 Overhead of Extraneous Users

When you add users to your Synchronizer system, data is automatically synchronized from GroupWise to the GroupWise Connector before users connect their mobile devices to your Synchronizer system. Do not add users to your Synchronizer system who do not have mobile devices. Extraneous users create unnecessary synchronization traffic in your Synchronizer system.

![Standup; Randall Stauffer; new in FCS; permanent]

5.7 Database Password Restriction

Use only alphanumeric characters in the Synchronizer database password. Do not include special characters. The Sync Engine does not start if the database password includes special characters.

! [612650; Monica Serrato, Jeff Foster; new in Public Beta; if this gets fixed, remove from database planning section in the guide]

5.8 Thorough Uninstallation Required

The standard uninstallation procedures provided in “[Uninstalling the Mobility Pack](#)” in the *Novell Data Synchronizer Mobility Pack Installation Guide* occasionally fail to completely uninstall the Mobility Pack because of various server-specific issues. When the Mobility Pack software is not completely uninstalled, the next installation does not proceed normally. For example, you might encounter problems configuring LDAP access during installation. To ensure that the Mobility Pack software has been completely uninstalled, perform the following checks:

- ♦ In YaST, click *Software > Add-On Products*. The Mobility Pack should not be listed. If it is still listed, select it, then click *Delete*.
- ♦ In YaST, click *Software > Software Repositories*. The Mobility Pack repository should not be listed. If it is still listed, select it, then click *Delete*.

IMPORTANT: If you do not remove the existing Mobility Pack repository, you cannot successfully install the next version of the Mobility Pack software.

- ♦ In YaST, click *Software > Software Management*. In the *Filters* drop-down list, select *Patterns*. Under the *Primary Functions* heading, the Mobility Pack should not be listed. If it is still listed, select it. Review the *Packages* list for any packages that were not successfully uninstalled and uninstall them.
- ♦ In YaST, click *Software > Software Management*. In the *Search* field, specify `datasync`, then click *Search*. The *Packages* list should be empty. If any Data Synchronizer packages are still listed, uninstall them.
- ♦ Log in as `root` in a terminal window, then check for Data Synchronizer RPMs:

```
rpm -qa | grep datasync
```

If any Data Synchronizer RPMs are still installed, uninstall them:

```
rpm -e rpm_name.rpm
```

- ♦ Make sure that none of the following directories still exist on your server:

```
/opt/novell/datasync
/etc/datasync
/etc/init.d/datasync*
/var/lib/datasync
/var/log/datasync
/var/run/datasync
/var/lib/pgsql
```

If any of these directories still exist, delete them.

- ♦ After performing all these checks, reboot the Synchronizer server.
- ♦ Remove the Synchronizer certificate from any workstations where you have run Synchronizer Web Admin. For example, in Firefox, click *Tools > Options > Advanced > Encryption > View Certificates*. Select the certificate named `DataSync Web Admin`, then click *Delete*.

![Beta customer hadn't uninstalled correctly; permanent]

6 Data Synchronizer Issues

- ♦ Section 6.1, “LDAP Server Restart Issue,” on page 8
- ♦ Section 6.2, “Sync Engine Restart Stops All Connectors,” on page 8
- ♦ Section 6.3, “Users and Groups Not Displayed Correctly in Synchronizer Web Admin,” on page 8
- ♦ Section 6.4, “Synchronizer Web Admin Responsiveness,” on page 8
- ♦ Section 6.5, “Usernames with Spaces,” on page 9
- ♦ Section 6.6, “Internet Explorer 8 Compatibility,” on page 9
- ♦ Section 6.7, “GroupWise Mobile Server Compatibility,” on page 9

6.1 LDAP Server Restart Issue

If the LDAP server is restarted while Synchronizer is running, Synchronizer loses its connection to the LDAP server. Occasionally, the connection to the LDAP server is lost for other reasons. To reestablish the connection, restart the Synchronizer services.

![537564, 600308; Randall Stauffer, Ismael Gutierrez, Mukesh Jethwani, Jeff Foster; new in Gradenko Beta; expanded in Tech Preview refresh]

6.2 Sync Engine Restart Stops All Connectors

When the Sync Engine is stopped or restarted, it forces all connectors to stop. After the Sync Engine is restarted, restart the Connector Manager service. After the Connector Manager service is restarted, restart each connector in Synchronizer Web Admin or configure the connectors to start automatically.

![537581; Nadeem Nazeer, Randall Stauffer; new in Gradenko Beta; permanent (bug is marked Fixed, but if you restart all the Synchronizer services, the connectors still need to be started manually)]

6.3 Users and Groups Not Displayed Correctly in Synchronizer Web Admin

When you add or delete a large number of users or groups, the Manage Users page or the Manage Groups page might not correctly display the presence or absence of the users or groups. Refresh the page in your browser to correctly display the users or groups.

![534513; Randall Stauffer; Jeff Foster; new in Public Beta]

6.4 Synchronizer Web Admin Responsiveness

After you add a large number of users to the GroupWise Connector, the responsiveness of Synchronizer Web Admin might diminish each time you restart the GroupWise Connector. For example, it might take longer to log in to Synchronizer Web Admin or you might not be able to

navigate easily between pages while the GroupWise Connector is starting. This occurs because the GroupWise Connector verifies all of the users each time it starts. After the user verification process is completed, Synchronizer Web Admin behaves normally.

![636011; Mukesh Jethwani; new in FCS]

6.5 Usernames with Spaces

If a user's LDAP username includes a space, the user cannot log in to the Data Synchronizer User Options page.

![617176; Ismael Gutierrez; new in Public Beta]

6.6 Internet Explorer 8 Compatibility

If you use Synchronizer Web Admin on Internet Explorer 8, you must enable Compatibility View in order to display the Sync Engine Advanced options on the Engine Settings page.

- 1 In Internet Explorer 8, click *Tools*, then select *Compatibility View*.

Even with Compatibility View enabled, the Maintenance section on the Engine Settings page sometimes disappears when you mouse over it. However, with persistent mousing, it is still possible to click *Clear Cache*.

![630093; Eron Howard, Ismael Gutierrez; new in FCS]

6.7 GroupWise Mobile Server Compatibility

Novell Data Synchronizer is the replacement for GroupWise Mobile Server (GMS). These two synchronization solutions can coexist successfully, as long as users are transitioned from GMS to Synchronizer in a timely manner. An issue with GMS can cause a user whose mobile device is configured to use both synchronization solutions to occasionally receive a large quantity of extraneous items. As you add users to Synchronizer, you should delete them from GMS. You can continue to run GMS indefinitely to support users with older mobile devices that are not supported by Synchronizer.

![E-mail; Tim Draper; new in FCS; permanent]

7 Connector Issues

- ♦ Section 7.1, "General Connector Issues," on page 9
- ♦ Section 7.2, "Connector-Specific Issues," on page 10

7.1 General Connector Issues

- ♦ "User Deletion" on page 10
- ♦ "Connector Does Not Stop" on page 10
- ♦ "Multiple Instances of the Same Connector" on page 10

7.1.1 User Deletion

In order to delete users from a connector, the connector must be running. If the connector is not running, some user event data is not properly deleted.

![[Tim Draper; new in Gradenko Beta; permanent]]

7.1.2 Connector Does Not Stop

When you stop a connector in Synchronizer Web Admin and then start it again immediately, the status might indefinitely remain as *Starting*. This can happen because the connector did not completely stop before you tried to restart it. The connector might have been completing a polling cycle before shutting down, even though Synchronizer Web Admin displayed the status as *Stopped*. When you try to start a connector that is still shutting down, it cannot start normally.

To restart the connector when this situation has occurred:

- 1 Restart the Connector Manager on the command line:

```
rcdatasync-connectors restart
```

This should change the connector status in Synchronizer Web Admin from *Starting* to *Stopped*.

- 2 Start the connector in Synchronizer Web Admin.
- 3 Start any other connectors that stopped as a result of restarting the Connector Manager.

Some connectors restart automatically when the Connector Manager restarts.

If this problem occurs repeatedly, wait a few seconds between the time when you stop the connector and when you start it again to allow the connector to shut down completely before restarting.

![[539801; Tim Stakland, Jeff Foster; permanent]]

7.1.3 Multiple Instances of the Same Connector

Synchronizer Web Admin allows you to manually create multiple instances of the same connector. However, this configuration is not currently supported.

If you have more users than a single connector can service, you can install one or more additional instances of the Mobility Pack until all users are being successfully serviced. Users can be organized on multiple instances of the Mobility Pack based on various schemes such as the location of the users, the location of the synchronized applications, or the desired quality of service (executives vs. regular employees, for example). Instances of the Mobility Pack do not need to mirror the structure of your GroupWise system.

![[609938; Nadeem Nazeer, Tim Stackland; new in Public Beta; permanent until this configuration is supported]]

7.2 Connector-Specific Issues

Refer to the Readme for each connector on the [Novell Data Synchronizer Connectors Documentation Web site](http://www.novell.com/documentation/datasync_connectors1) (http://www.novell.com/documentation/datasync_connectors1).

8 GroupWise 8.0.2 Issues

The Mobility Pack depends on the GroupWise Connector and a GroupWise POA for much of its functionality. GroupWise 8.0.2 is required for use with the Mobility Pack. However, GroupWise 8.0.2 was released with some issues that impact Mobility Pack functionality. Fixes for these issues will be available as hot patches or in the next GroupWise release. For a list of GroupWise 8.0.2 issues, see the [GroupWise Connector Readme](#).

9 Mobility Pack Update 1 Bug Fixes

The following bugs have been fixed in Update 1 of the Mobility Pack:

- ♦ Synchronization performance has been substantially improved.
- ♦ 638990: After initial synchronization, new items promptly synchronize from GroupWise to mobile devices.
- ♦ 633751: Time stamps are correctly set on mobile devices.
- ♦ 601547: Work ZIP codes are synchronized for contacts.
- ♦ 632889: Contacts with categories are not duplicated on mobile devices.
- ♦ 633839: Appointments that lack a time zone setting are successfully synchronized to mobile devices.
- ♦ 640646: When you modify an appointment in GroupWise, the change synchronizes successfully to your mobile device when your device is configured to handle conflict detection.

You can look up the bug numbers in [Bugzilla \(https://bugzilla.novell.com\)](https://bugzilla.novell.com) for more information about each bug.

10 Documentation

Novell Data Synchronizer Mobility Pack documentation is available at the [Novell Data Synchronizer Documentation Web site \(http://www.novell.com/documentation/datasynchronizer1\)](http://www.novell.com/documentation/datasynchronizer1):

- ♦ Novell Data Synchronizer Mobility Pack Readme
- ♦ Novell Data Synchronizer installation and administration guides

Novell Data Synchronizer connector documentation is available at the [Novell Data Synchronizer Connector Documentation Web site \(http://www.novell.com/documentation/datasync_connectors1\)](http://www.novell.com/documentation/datasync_connectors1)

- ♦ Connector Readmes
- ♦ Connector Quick Starts
- ♦ Connector installation and configuration guides

In addition to the Data Synchronizer product documentation, the following resources provide additional information about Data Synchronizer:

- ♦ [Novell Support and Knowledgebase \(http://www.novell.com/support\)](http://www.novell.com/support)
- ♦ [Data Synchronizer Support Forum \(http://forums.novell.com/novell-product-support-forums/data-synchronizer\)](http://forums.novell.com/novell-product-support-forums/data-synchronizer)
- ♦ [Data Synchronization Cool Solutions \(http://www.novell.com/communities/cool solutions/datasynchronizer\)](http://www.novell.com/communities/cool solutions/datasynchronizer)

- ♦ [Data Synchronizer Mobility Pack Best Practices Wiki \(http://wiki.novell.com/index.php/Data_Synchronizer_Mobility_Pack_Best_Practices\)](http://wiki.novell.com/index.php/Data_Synchronizer_Mobility_Pack_Best_Practices)
- ♦ [Data Synchronizer Mobility Connector Wiki \(http://wiki.novell.com/index.php/Data_Synchronizer_Mobility_Connector\)](http://wiki.novell.com/index.php/Data_Synchronizer_Mobility_Connector)

11 Legal Notices

Novell, Inc. makes no representations or warranties with respect to the contents or use of this documentation, and specifically disclaims any express or implied warranties of merchantability or fitness for any particular purpose. Further, Novell, Inc. reserves the right to revise this publication and to make changes to its content, at any time, without obligation to notify any person or entity of such revisions or changes.

Further, Novell, Inc. makes no representations or warranties with respect to any software, and specifically disclaims any express or implied warranties of merchantability or fitness for any particular purpose. Further, Novell, Inc. reserves the right to make changes to any and all parts of Novell software, at any time, without any obligation to notify any person or entity of such changes.

Any products or technical information provided under this Agreement may be subject to U.S. export controls and the trade laws of other countries. You agree to comply with all export control regulations and to obtain any required licenses or classification to export, re-export, or import deliverables. You agree not to export or re-export to entities on the current U.S. export exclusion lists or to any embargoed or terrorist countries as specified in the U.S. export laws. You agree to not use deliverables for prohibited nuclear, missile, or chemical biological weaponry end uses. Please refer to the [Novell International Trade Services Web page \(http://www.novell.com/info/exports/\)](http://www.novell.com/info/exports/) for more information on exporting Novell software. Novell assumes no responsibility for your failure to obtain any necessary export approvals.

Copyright © 2010 Novell, Inc. All rights reserved. No part of this publication may be reproduced, photocopied, stored on a retrieval system, or transmitted without the express written consent of the publisher.

For Novell trademarks, see [the Novell Trademark and Service Mark list \(http://www.novell.com/company/legal/trademarks/tmlist.html\)](http://www.novell.com/company/legal/trademarks/tmlist.html).

All third-party trademarks are the property of their respective owners.