Installation Guide

Novell®
Data Synchronizer 1.2

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www.novell.com

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About This Guide

The *Novell Data Synchronizer Installation Guide* helps you to understand and set up a core Data Synchronizer system by installing the Data Synchronizer services and the GroupWise Connector. The guide is divided into these sections:

After you have set up a core Synchronizer system, you are ready to install one or more additional Data Synchronizer connectors. The documentation for the additional connectors is located in separate *Connector Installation and Configuration Guides*.

IMPORTANT: A core Synchronizer system does not include synchronization to mobile devices.

Audience

This guide is intended for network administrators who install and administer Data Synchronizer to provide data synchronization between GroupWise and other collaboration applications.

Feedback

We want to hear your comments and suggestions about this manual and the other documentation included with this product. Please use the User Comment feature at the bottom of each page of the online documentation.

Additional Documentation

For additional Data Synchronizer documentation, see the following documentation provided at the Novell Data Synchronizer Documentation Web site (http://www.novell.com/documentation/datasynchronizer1).

- Novell Data Synchronizer Readme
- Novell Data Synchronizer Administration Guide

For additional Data Synchronizer connector documentation, see the following documentation provided at the Novell Data Synchronizer Connectors Documentation Web site (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)
- Data Synchronizer Support Forum (http://forums.novell.com/forumdisplay.php?&f=939)
- Data Synchronization Cool Solutions (http://www.novell.com/communities/coolsolutions/datasynchronizer)
- Data Synchronizer Connector Marketplace (http://www.novell.com/products/data-synchronizer/connectors)

Data Synchronizer Product Overview

- Section 1.1, "What Is Data Synchronizer?," on page 9
- Section 1.2, "Data Synchronizer System Requirements," on page 14

1.1 What Is Data Synchronizer?

Novell Data Synchronizer allows personal information management (PIM) data such as e-mail, appointments, tasks, and contacts to synchronize between enterprise e-mail and collaboration applications such as Novell GroupWise and other collaboration applications. It is a bi-directional and many-to-many synchronization solution that can connect multiple collaboration applications, providing real-time, event-driven synchronization.

- Section 1.1.1, "Data Synchronizer Capabilities," on page 9
- Section 1.1.2, "Data Synchronizer Components," on page 10
- Section 1.1.3, "Data Synchronizer Configurations," on page 12

1.1.1 Data Synchronizer Capabilities

A core Data Synchronizer system consists of the Synchronizer services and the GroupWise Connector. After you have created your core Synchronizer system, you can add additional connectors to synchronize GroupWise data with other supported applications, as described in "Connectors" on page 11.
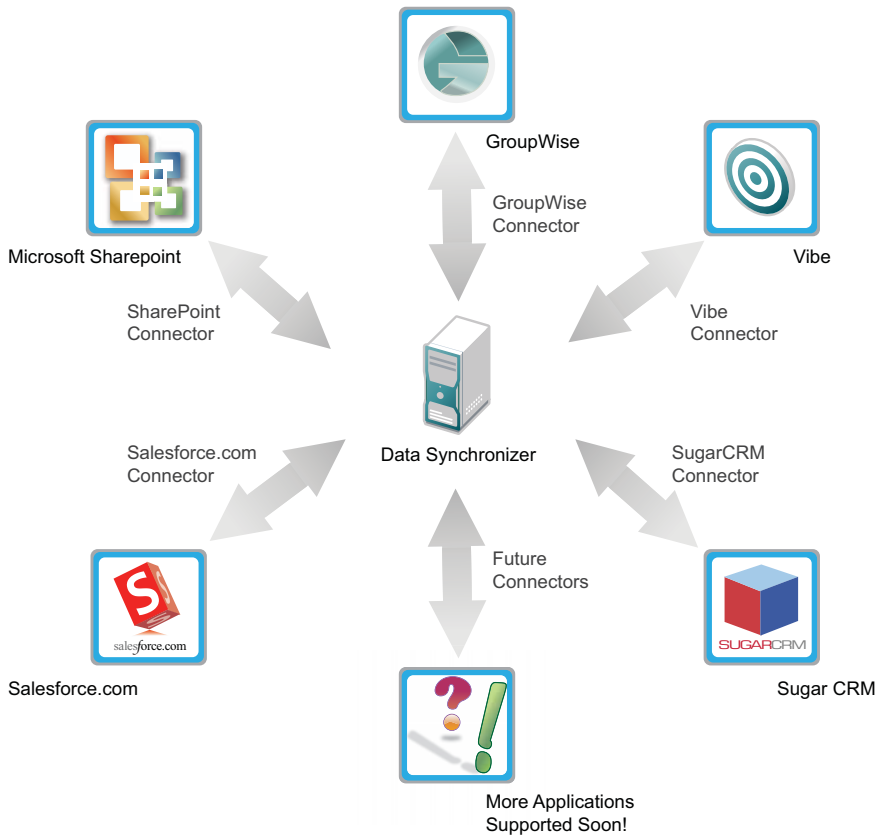
For information about other connectors, visit the Data Synchronizer Connector Marketplace (http://www.novell.com/products/data-synchronizer/connectors).

1.1.2 Data Synchronizer Components

Data Synchronizer consists of several components that are installed together on one server.

- "Synchronization Engine" on page 11
- "Web Administration Service" on page 11
- "Configuration Engine" on page 11
- "Connector Manager" on page 11
- "Connectors" on page 11
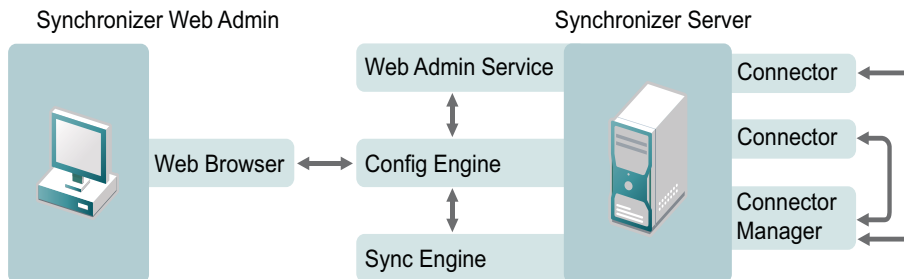
Synchronization Engine

The Synchronizer Sync Engine (`datasync-syncengine`) is a service that provides the hub of data flow between one or more pairs of application-specific connectors. The Sync Engine provides the common ground among various applications, so that data provided to the Sync Engine from one application through its connector can be passed to one or more different applications through their connectors.

Web Administration Service

The Synchronizer Web Administration service (`datasync-webadmin`) provides a Web-based interface called Synchronizer Web Admin for administration and management of your Synchronizer system. Synchronizer Web Admin allows you to add and remove connectors, as well add or remove users for specific connectors and configure their individual synchronization settings.

Users can log in to the Synchronizer Web Admin URL using their personal network login credentials to access the Data Synchronizer User Options page. Here, they can configure and control the synchronization settings for their applications. For more information, see the Quick Start (http://www.novell.com/documentation/datasync_connectors1) for each connector.

Configuration Engine

The Synchronizer Config Engine (`datasync-configengine`) is a service that provides communication between Synchronizer Web Admin and the Sync Engine. The Config Engine passes configuration information from the Sync Engine to Synchronizer Web Admin for viewing, and it passes your configuration changes back to the Sync Engine for implementation.

Connector Manager

The Synchronizer Connector Manager (`datasync-connectors`) is a service that provides communication between the Sync Engine and connectors.

Connectors

Synchronizer Connectors transfer data between two or more applications. Each connector acts as a code converter and data filter to translate information between an application-specific format and an application-neutral format that can be consumed by other application-specific connectors. For example, when you install the Vibe Connector to your core Synchronizer system, your Vibe calendar and task information can be synchronized to your GroupWise Calendar and Tasklist.

Supported Applications

To find out about supported applications, see:

- Data Synchronizer Connectors Documentation Web site (http://www.novell.com/documentation/datasync_connectors1)
- Data Synchronizer Connector Marketplace (http://www.novell.com/products/data-synchronizer/connectors)

Application Items

Each application has its own types of data (often called "items") that would be useful to synchronize with other applications. Some common types of items that can be synchronized between applications include:

- E-mail messages
- Appointments
- Tasks
- Notes
- Address books
- Contacts
- Folders

 Not all connectors support all of the same types of items.

Synchronization Events

Initially, existing items are synchronized between applications. Which items are initially synchronized varies from connector to connector.

As time passes, the following events can affect existing items, and the resulting changes in the items are also synchronized:

- Add
- Modify
- Move
- Delete

Some connectors allow you to select which events you want to synchronize. With other connectors, you cannot customize which events are synchronized.

NOTE: Events and the item data associated with them flows through your Synchronizer system in the form of XML files that are processed by the connectors and the Sync Engine in order to transfer data from one application to another. You do not need this conceptual understanding of connector functionality unless you need to troubleshoot a disruption to synchronization between two applications.

1.1.3 Data Synchronizer Configurations

The Synchronizer services and the GroupWise Connector are installed together on the same server. Any connectors that you add to your core Synchronizer system must be installed on the same server with the Synchronizer services and the GroupWise Connector

- "Synchronizer System Configuration" on page 13
- "Single Synchronizer Server System" on page 13
- "Multiple Synchronizer Server System" on page 14

Synchronizer System Configuration

The Synchronizer server must be able to communicate with other servers on your network.
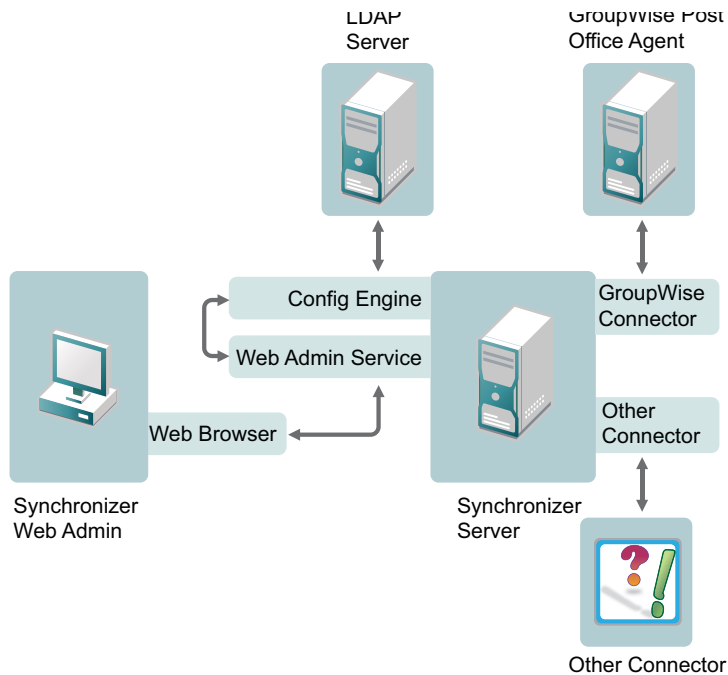
For information about other connectors, visit the Data Synchronizer Connector Marketplace (http://www.novell.com/products/data-synchronizer/connectors).

Component	Required Configuration
Connectors	The Synchronizer server can have one instance of each connector. Multiple instances of the same connector cannot be created on a single Synchronizer server.
LDAP Server	The Synchronizer server must be able to communicate with an LDAP server on your network during installation. If you need the Synchronizer server to communicate with multiple LDAP servers, additional setup is required, as described in LDAP Proxy Server to Multiple Sources (http://www.novell.com/communities/node/8637/ldap-proxy-server-multiple-sources).
Application	The Synchronizer server must be able to communicate with the server where the application to synchronize with is installed. For example, if you are installing the Vibe Connector, the Synchronizer server must be able to communicate with the Vibe server.

Single Synchronizer Server System

The number of users that can be efficiently serviced by a Synchronizer system with a single Synchronizer server varies depending on the specific connectors that are participating in the Synchronizer system. See the "System Requirements" section of each connector's *Installation and Configuration Guide* (http://www.novell.com/documentation/datasync_connectors1) for the recommended number of users for the connectors you are installing in your Synchronizer system.

Multiple Synchronizer Server System

You might need to set up a Synchronizer system that includes multiple Synchronizer servers for the following reasons:

- **Number of Users:** You need to support synchronization for more than the recommended number of users for one or more of the connectors that you are installing.

- **Location of Users:** You need to support users that are located in distant geographical locations where synchronization performance could be adversely affected by the network connections between users and the applications that they want to synchronize data with.

- **Location of Synchronized Applications:** Applications for which data is being synchronized have meaningful organizational segments (for example, GroupWise domains and post offices). Having a Synchronizer server associated with each organizational segment helps balance the synchronization load across all users of the application.

- **Quality of Service:** Certain segments of your user population, such as executives of your organization, might expect and require a higher level of synchronization performance than typical users. This higher quality of service can be accomplished by setting up a small Synchronizer system specifically for such high-profile users.

Connector-specific considerations for implementing a multi-server Synchronizer system are covered in each connector's *Installation and Configuration Guide* (http://www.novell.com/documentation/datasync_connectors1).

1.2 Data Synchronizer System Requirements

You, as a Synchronizer administrator, must ensure that the Synchronizer server meets Synchronizer system requirements, so that your Synchronizer system can function successfully.

- Section 1.2.1, "Data Synchronizer Server Requirements," on page 14
- Section 1.2.2, "Directory Service Requirement," on page 15
- Section 1.2.3, "Web Browser Requirements for Synchronizer Web Admin," on page 15
- Section 1.2.4, "Connector Requirements," on page 15

1.2.1 Data Synchronizer Server Requirements

- Hardware requirements for the Synchronizer server:
  - x86-64 processor
  - 2.2 GHz processor; multi-processor system recommended
  - 8 GB RAM
  - 45 MB of disk space for the Synchronizer software
  - 200 GB of disk space recommended for data storage during system operation

    Data storage disk space varies widely depending on the amount of data being synchronized, the number of users participating in synchronization, the logging level for Synchronizer log files, and other variables specific to your Synchronizer system implementation.

The largest consumers of disk space are the Synchronizer database (`/var/lib/pgsql`) and Synchronizer log files (`/var/log/datasync`). You might want to configure the Synchronizer server so that `/var` is a on separate partition to allow for convenient expansion.

Another large consumer of disk space is attachment storage in the `/var/lib/datasync/syncengine/attachments` directory.

NOTE: The 200 GB recommendation is appropriate for a large Synchronizer system of approximately 500 active users. A Synchronizer system with substantially fewer users requires substantially less disk space.

- ◆ Static IP address
- ◆ SUSE Linux Enterprise Server (SLES) 11, plus the latest Support Pack
- ◆ PostgreSQL

  If PostgreSQL is not already installed on the Synchronizer server, the Data Synchronizer Installation program installs it for you.

- ◆ Time synchronization among servers

  For the most reliable synchronization of time-sensitive items such as appointments, the Synchronizer server and GroupWise servers should have their time synchronized as closely as possible. This is especially important on virtual machines.

1.2.2 Directory Service Requirement

- ◆ Lightweight Directory Access Protocol (LDAP) v3

1.2.3 Web Browser Requirements for Synchronizer Web Admin

Any of the following Web browsers:

- ◆ Mozilla FireFox 3 or later
- ◆ Microsoft Internet Explorer 7 or 8
- ◆ Safari 3

1.2.4 Connector Requirements

The system requirements for each Synchronizer connector are listed in each connector's *Installation and Configuration Guide* (http://www.novell.com/documentation/datasync_connectors1).

Data Synchronizer Installation

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The Novell Data Synchronizer Installation program available in YaST helps you install the Data Synchronizer services and the GroupWise Connector in order to set up your core Synchronizer system.

- Section 2.1, "Planning a Data Synchronizer System," on page 17
- Section 2.2, "Preparing to Install the Data Synchronizer Software," on page 23
- Section 2.3, "Installing and Setting Up a Data Synchronizer System," on page 25
- Section 2.4, "What's Next," on page 29
- Section 2.5, "Data Synchronizer Installation Summary Sheet," on page 30

2.1 Planning a Data Synchronizer System

You can use the Data Synchronizer Installation Summary Sheet to gather the information you need so that you are prepared to provide the information requested by the Data Synchronizer Installation program. The Summary Sheet organizes the information in the order in which you need it during the installation and configuration process.

- Section 2.1.1, "Planning Your Data Synchronizer System Configuration," on page 17
- Section 2.1.2, "Gathering LDAP Information," on page 18
- Section 2.1.3, "Planning How to Add Users," on page 19
- Section 2.1.4, "Gathering GroupWise System Information," on page 20
- Section 2.1.5, "Planning the Data Synchronizer Database," on page 22
- Section 2.1.6, "Establishing Data Synchronizer System Security," on page 22

2.1.1 Planning Your Data Synchronizer System Configuration

A Synchronizer system can consist of a single Synchronizer server or multiple Synchronizer servers. A single Synchronizer server can handle approximately 500 users, depending on the amount of synchronization traffic generated by those users. For planning guidelines, review Section 1.1.3, "Data Synchronizer Configurations," on page 12.

DATA SYNCHRONIZER INSTALLATION SUMMARY SHEET

Print one copy of the Data Synchronizer Installation Summary Sheet for each Synchronizer server that you are planning for your Synchronizer system.

If you plan to install Data Synchronizer on multiple servers, you can proceed through the following planning sections server by server, or you can apply each planning section to all planned servers, then proceed to the next planning section.

IMPORTANT: For best security, plan to install the Data Synchronizer software on servers inside your DMZ.

2.1.2 Gathering LDAP Information

The Data Synchronizer Installation program needs access to an LDAP directory. The LDAP information that you provide during installation provides you with access to Synchronizer Web Admin, the administrative tool used to manage your Synchronizer system after installation.

- ◆ "LDAP Server Network Information" on page 18
- ◆ "LDAP Server Credentials" on page 18
- ◆ "LDAP User and Group Containers" on page 19

LDAP Server Network Information

In order to communicate with your LDAP directory, the Data Synchronizer Installation program needs the IP address or DNS hostname of your LDAP server. It also needs the port number that the LDAP server listens on. The LDAP port number depends on whether the LDAP server requires a secure SSL connection. The default secure port number is 636. The default non-secure LDAP port number is 389.

DATA SYNCHRONIZER INSTALLATION SUMMARY SHEET

Under *LDAP Server Information*, specify the IP address or DNS hostname of your LDAP server, and mark whether a secure SSL connection is required.

If the LDAP server requires a secure connection, additional setup might be required. See "Securing Communication with the LDAP Server" in "Synchronizer System Security" in the *Novell Data Synchronizer System Administration Guide*.

IMPORTANT: If there is a firewall between the Synchronizer server and the LDAP server, be sure to configure the firewall to allow communication on the selected LDAP port.

LDAP Server Credentials

In order to access the LDAP directory, the Data Synchronizer Installation program needs the username and password of an administrator user on the LDAP server who has sufficient rights to access the user and group information stored there. At least Read rights are required. You can use the `admin` LDAP user or an admin-equivalent user. For more information about the required rights for the user you choose, see TID 7006841: LDAP Admin Rights for Data Synchronizer in the Novell Support Knowledgebase (http://www.novell.com/support).

You need to provide the username, along with its context in your LDAP directory tree, in the following format:

`cn=username,ou=organizational_unit,o=organization`

DATA SYNCHRONIZER INSTALLATION SUMMARY SHEET

Under *LDAP Server Credentials*, specify a fully qualified username with sufficient rights to read the user and group information in your LDAP directory, along with the password for that user.

LDAP User and Group Containers

During installation, you must provide a user container and a group container from which Synchronizer Web Admin lists users and groups that you can add to your Synchronizer system. The Installation program lets you browse for the user and group containers. It then displays the containers in the following LDAP format:

`ou=container_name,ou=organizational_unit,o=organization`

DATA SYNCHRONIZER INSTALLATION SUMMARY SHEET

Under *LDAP Containers*, specify a container object and its context in the LDAP directory tree where User objects are located. If Group objects are located in a different container, list that container as well.

When Synchronizer Web Admin generates lists of users and groups, it searches the containers you specify, as well as subcontainers. If you want Synchronizer Web Admin to be able to search multiple, organizationally separate containers for users and groups, you can configure this functionality after you have installed Data Synchronizer, as described in "Searching Multiple LDAP Contexts for Users and Groups" in "Synchronizer System Management" in the *Novell Data Synchronizer System Administration Guide*.

2.1.3 Planning How to Add Users

If you plan to use LDAP authentication, a number of variables affect how you add users to your Synchronizer system:

Using LDAP groups	LDAP groups are a powerful tool for ongoing Synchronizer system management. When you add LDAP groups to your Synchronizer system, you can later add and delete users in the LDAP groups, and the users are automatically added or deleted for all connectors that are configured with those groups. This saves you from the repetitive work of manually adding or deleting users for two or more connectors using Synchronizer Web Admin. When you add or delete the users in the LDAP group, Synchronizer Web Admin automatically adds or deletes the users for all connectors that are configured with the group.
Setting application names	If users' LDAP usernames are not the same as their GroupWise user IDs, you must set users' application names in Synchronizer Web Admin to map from LDAP usernames to GroupWise user IDs. This must be done regardless of whether you add the users during installation or after installation, and it applies to users who are added by being members of LDAP groups. To plan ahead for this process, review "Changing a User's Application Name (Mobility Pack Only)" in "Connector and User Management" in the *Novell Data Synchronizer System Administration Guide*.
Single-server installation	If you are planning a single-server Synchronizer system, you might already have or want to create LDAP groups based on departmental membership, organizational roles, geographic locations, or even the need to participate in data synchronization.
Multi-server installation	If you are planning a multi-server Synchronizer system, you might already have or want to create LDAP groups that would be set up on different Synchronizer servers. You might be planning several Synchronizer servers based on geographic location, so having an LDAP group of users for each geographic location would facilitate adding users to connectors. If you want a separate Synchronizer server for executives, creating an LDAP group of executives would allow you to add them as a group, rather than selecting each executive individually. If you have a very large number of groups with no particular distinguishing characteristics, you might want to create LDAP groups based on the first letter of users' last names or usernames (for example, A-I, J-R, and S-Z).

Regardless of the variables involved in adding users to your Synchronizer system, effective planning can make the process of adding users easier and faster.

DATA SYNCHRONIZER INSTALLATION SUMMARY SHEET

Under *Add Groups*, specify LDAP groups of users to add to your Synchronizer system. If the LDAP groups do not already exist, create them in your LDAP directory before configuring connectors.

Under *Add Users*, specify any individual users that are not part of LDAP groups that you want to add to your Synchronizer system.

IMPORTANT: Be sure to add yourself to the Synchronizer system for testing purposes.

2.1.4 Gathering GroupWise System Information

In order to configure the GroupWise Connector as you run the Data Synchronizer Installation program, you need to gather certain information about the GroupWise system where users want to synchronize data.

- "GroupWise Trusted Application" on page 20
- "GroupWise Post Office Agent" on page 21

GroupWise Trusted Application

A GroupWise trusted application can log into a GroupWise Post Office Agent (POA) in order to access GroupWise mailboxes without needing personal user passwords. The GroupWise Connector requires such mailbox access in order to synchronize GroupWise data with other applications.

Before you install Data Synchronizer, you must use ConsoleOne to configure the GroupWise Connector as a GroupWise trusted application. You might name the trusted application `GroupWiseConnector`.

A trusted application uses a key that consists of a long string of letters and numbers to provide authentication to the GroupWise POA. ConsoleOne creates the key in a file in a specified location that is accessible to ConsoleOne. You need to create only one trusted application key for the GroupWise Connector, regardless of the number of servers where you install Data Synchronizer, and regardless of the number of domains and post offices in your GroupWise system.

NOTE: If your GroupWise system connects to any external GroupWise domains, that external GroupWise system needs its own Data Synchronizer installation on an additional Synchronizer server, along with its own separate trusted application key.

Follow the instructions in "Creating a Trusted Application and Key" in "System" in the *GroupWise 8 Administration Guide* to set up a trusted application and obtain a trusted application key for the GroupWise Connector.

IMPORTANT: Do not use an existing trusted application key that is already in use by another application.

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*
- *Name of Key File*

Do not fill in any other fields.

IMPORTANT: In order for the Data Synchronizer Installation program to access the key file, you might need to copy it to a convenient location on the Synchronizer server. The Installation program automatically transfers the trusted application key from the key file into the configuration of the GroupWise Connector.

DATA SYNCHRONIZER INSTALLATION SUMMARY SHEET

Under *GroupWise Trusted Application*, specify the name of the trusted application that you created in ConsoleOne and the location where the Data Synchronizer Installation program can access the trusted application key file.

GroupWise Post Office Agent

The GroupWise Connector accesses your GroupWise system by communicating with a Post Office Agent (POA). The selected POA must be configured for SOAP, as described in "Supporting SOAP Clients" in "Post Office Agent" in the *GroupWise 8 Administration Guide*.

The selected POA can obtain information about all users in all post offices in your GroupWise system, if your GroupWise system has a GroupWise name server, as described in "Simplifying Client/Server Access with a GroupWise Name Server" in "Post Office Agent" in the *GroupWise 8 Administration Guide*.

The Data Synchronizer Installation program and the GroupWise Connector need the IP address or DNS hostname of the server where the POA is running. In addition, they need the POA SOAP port, which is 7191 by default. Typically, the same port number is used regardless of whether the POA is configured for a secure SSL SOAP connection. The Data Synchronizer Installation program and the GroupWise Connector need to know whether or not the connection is secure, because they use one of the following URLs to communicate with the POA:

Non-Secure SOAP URL:　`http://`*`poa_server_address`*`:`*`soap_port`*`/soap`

Secure SOAP URL:　　　`https://`*`poa_server_address`*`:`*`soap_port`*`/soap`

DATA SYNCHRONIZER INSTALLATION SUMMARY SHEET

Under *GroupWise Post Office Agent*, specify the IP address or DNS hostname of the server where a POA configured for SOAP is running. Specify the SOAP port, and whether or not the POA requires a secure SSL SOAP connection.

IMPORTANT: By default, the GroupWise Connector communicates with the POA using port 4500. If there is a firewall between the Synchronizer server and the POA server, be sure to configure the firewall to allow communication on port 4500. If necessary, you can configure the GroupWise Connector to use a different port number after installation, as described in "Changing the GroupWise Connector Listening Port" in "GroupWise Connector Configuration" in the *Groupwise Connector Installation and Configuration Guide*.

2.1.5 Planning the Data Synchronizer Database

When you run the Data Synchronizer Installation program, it creates a PostgreSQL database that is used to store Synchronizer system configuration information that you see in Synchronizer Web Admin. It also stores pending events when synchronization between the Sync Engine and connectors is interrupted.

The Synchronizer database is named `datasync`, and the user that has access is named `datasync_user`. You must supply the password for the Synchronizer database user.

DATA SYNCHRONIZER INSTALLATION SUMMARY SHEET

Under *Synchronizer Database*, specify the password that you want to use for the Synchronizer database.

Some connectors use a secondary database to store events when synchronization between the connectors is interrupted. Refer to each connector's *Installation and Configuration Guide* (http://www.novell.com/documentation/datasync_connectors1) to determine whether the connector you are installing uses a secondary database. The GroupWise Connector does not use a secondary database.

If you need to change the password on the Synchronizer database after you have installed Data Synchronizer, see "Changing the Synchronizer Database Password" in "Synchronizer System Management" in the *Novell Data Synchronizer System Administration Guide*

If you need to change the password on a connector's secondary database, refer to each connector's *Installation and Configuration Guide* (http://www.novell.com/documentation/datasync_connectors1).

2.1.6 Establishing Data Synchronizer System Security

Configuration and administration of your Synchronizer system is performed through Synchronizer Web Admin. From Synchronizer Web Admin, you can:

- Add connectors to your Synchronizer system
- Add users to connectors
- Start, stop, and configure connectors
- Reconfigure the connection to your LDAP server
- Reconfigure the Sync Engine

To protect your Synchronizer system operation and configuration, you must choose one LDAP administrator user to access Synchronizer Web Admin. This LDAP user becomes the initial Synchronizer administrator. For simplest administration, use the LDAP Admin user or an admin-

equivalent user. If you prefer to establish a Synchronizer administrator user with fewer rights than the LDAP Admin user, make sure the user has sufficient rights to read the User and Group objects that you need to access as you add users to connectors in Synchronizer Web Admin.

Make sure that you know this administrator user's password.

SINGLE-SERVER DATA SYNCHRONIZER INSTALLATION SUMMARY SHEET

Under *Synchronizer Web Admin*, specify the LDAP administrator username and password that you want to grant access to Synchronizer Web Admin.

You can add more users as Synchronizer administrators after installation, as described in "Setting Up Multiple Synchronizer Administrator Users" in "Synchronizer System Management" in the *Novell Data Synchronizer System Administration Guide*.

2.2 Preparing to Install the Data Synchronizer Software

The Data Synchronizer Installation program cannot run successfully unless you have properly prepared the environment where you run it.

- Section 2.2.1, "Preparing the Linux Server," on page 23
- Section 2.2.2, "Preparing the Network," on page 23
- Section 2.2.3, "Disabling an Existing Web Server," on page 24
- Section 2.2.4, "Verifying GroupWise System Availability," on page 25

2.2.1 Preparing the Linux Server

1 For best security, select a Linux server that is inside your DMZ as the location for your Synchronizer system.

2 Make sure that the Linux server where you plan to install Data Synchronizer meets the system requirements listed in Section 1.2, "Data Synchronizer System Requirements," on page 14.

3 Make sure that the Synchronizer server has a static IP address.

4 Make sure that the Linux operating system media is accessible from the Synchronizer server.

The Data Synchronizer Installation program might need to install additional operating system RPMs that are required by Data Synchronizer. The Data Synchronizer Installation program can access the operating system files on a DVD or in a repository that is available from an FTP site or a Web server.

2.2.2 Preparing the Network

1 Make sure that any firewalls between the Synchronizer server and other applications have been configured to allow communication on the following ports:

Port Number	On Server	Description
636/389	LDAP	LDAP server secure or non-secure port

Port Number	On Server	Description
7191	POA	GroupWise Post Office Agent (POA) SOAP port
4500	Synchronizer	GroupWise Connector listening port for event notifications
8120	Synchronizer	Synchronizer Web Admin port
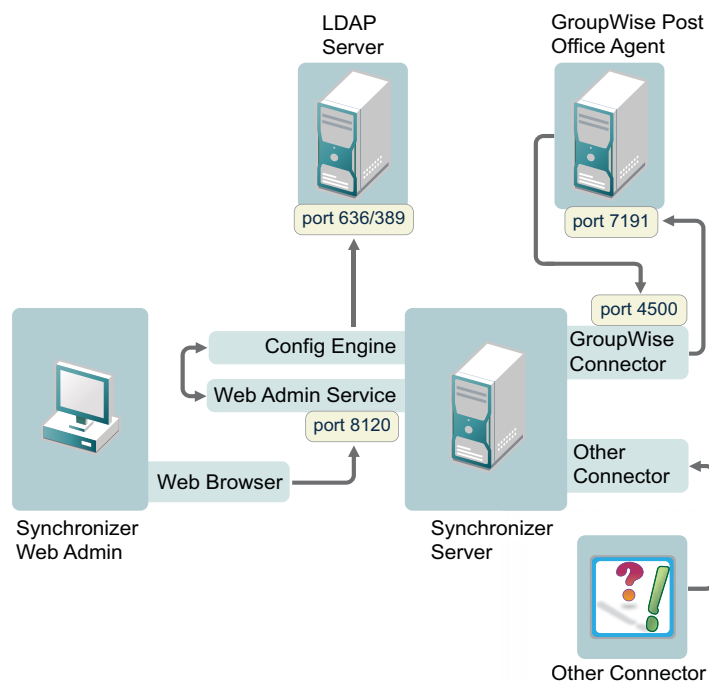
The GroupWise Connector initially communicates with the POA that you specify during Data Synchronizer installation on the SOAP port that you specify. As users synchronize with other applications, the GroupWise Connector determines from the initial POA the IP addresses and port numbers of all POAs where users have their mailboxes. Therefore, the GroupWise Connector can communicate with multiple POAs throughout your GroupWise system.

2.2.3 Disabling an Existing Web Server

If necessary, stop and disable any existing Web server that is currently running on the Synchronizer server.

For example, to stop the Apache Web server and its associated instance of Tomcat:

1 In a terminal window, become `root` by entering `su -` and the root password.

2 Enter the following commands to stop Apache and Tomcat:

```
/etc/init.d/tomcat5 stop
/etc/init.d/apache2 stop
```

3 Enter the following commands to make sure that Apache and Tomcat do not start again when you reboot the Synchronizer server:

```
chkconfig --del apache2
chkconfig --del tomcat5
```

2.2.4 Verifying GroupWise System Availability

1 Make sure that the GroupWise trusted application key for the GroupWise Connector is accessible to the Data Synchronizer Installation program on the Synchronizer server.

For more information, see "GroupWise Trusted Application" on page 20.

2 Make sure that the GroupWise POA that the GroupWise Connector will communicate with is currently running.

2.3 Installing and Setting Up a Data Synchronizer System

You should already have reviewed Chapter 2.1, "Planning a Data Synchronizer System," on page 17 and filled out the Data Synchronizer Installation Summary Sheet.

NOTE: If you are setting up a multi-server Synchronizer system, you should have a Summary Sheet for each Synchronizer server. Each Synchronizer server is independent of other Synchronizer servers, so you can set them up in whatever order is convenient given the overall configuration of your Synchronizer system.

The following sections step you through the process of installing the Data Synchronizer services and the GroupWise Connector, and of configuring a Synchronizer server.

- Section 2.3.1, "Running the Data Synchronizer Installation Program," on page 25
- Section 2.3.2, "Checking the Status of the Data Synchronizer Services," on page 27
- Section 2.3.3, "Starting the GroupWise Connector," on page 28
- Section 2.3.4, "Uninstalling Data Synchronizer," on page 29

2.3.1 Running the Data Synchronizer Installation Program

1 Download the Novell Data Synchronizer ISO file from Novell Downloads (http://download.novell.com) to a convenient temporary directory:

```
novell-data-synchronizer-x86_64-version.iso
```

2 On your Linux desktop, click *Computer > YaST*, then enter the `root` password.

3 Under *Groups*, click *Software*, then click *Add-On Products*.

4 On the Installed Add-On Products page, click *Add*, select *Local ISO Image*, then click *Next*.

Repository Name

Path to ISO Image

Browse...

**5** In the *Repository Name* field, specify a name for the repository that will hold the Data Synchronizer software, such as `Data Synchronizer`.

6 In the *Path to ISO Image* field, specify the complete pathname to the ISO file that you downloaded in Step 1, then click *Next*.

7 Accept the License Agreement, then click *Next*.

8 Under *Primary Functions*, select *Novell Data Synchronize*.
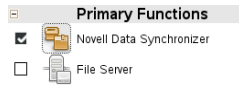
9 Click *Accept* to start the installation.

10 Click *Continue* to acknowledge the automatic changes to other aspects of your system that will be made as the Data Synchronizer software is installed

---
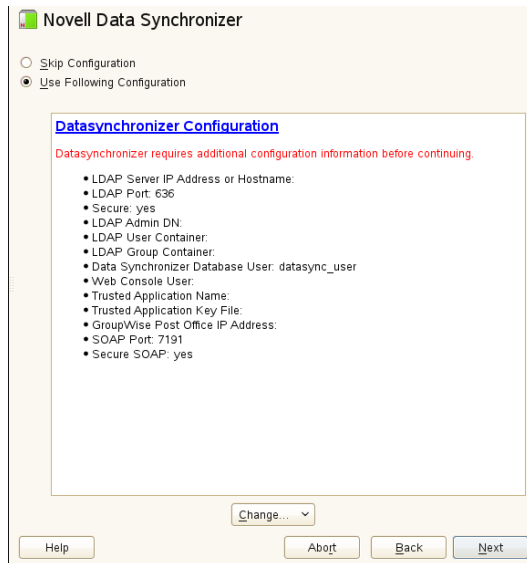
IMPORTANT: Do not click *Next* at this point.

---

11 Click *Change* > *Data Synchronizer Configuration* to configure your Synchronizer system.

12 Use the information that you have gathered on the Data Synchronizer Installation Summary Sheet to provide the information that the Data Synchronizer Installation program prompts you for, clicking *Next* to move from page to page.

LDAP Server Settings:

LDAP Server IP Address or Hostname
LDAP Port
Secure
LDAP Admin DN
LDAP Admin Password

Data Synchronizer Settings:

LDAP User Container

LDAP Group Container
Data Synchronizer Admin DN
Data Synchronizer Database Password

GroupWise Connector Settings:

Trusted Application Name
Trusted Application Key File
GroupWise Post Office Agent IP Address or Hostname
SOAP Port
Secure

13 On the Data Synchronizer Configuration page, click *Next* to save the configuration settings and set up your Synchronizer system.

NOTE: You might experience a pause during the configuring and extending database process.

You see Novell Data Synchronizer listed on the Installed Add-on Products page.

14 Click *OK* to return to the main YaST page.

If you encounter any problems during the installation, check the Data Synchronizer Installation program log file for information about the problem:

```
/var/log/datasync/install.log
```

For additional assistance, see Appendix A, "Data Synchronizer Installation Troubleshooting," on page 35.

The Data Synchronizer Installation program creates the following directories and files:

```
/opt/novell/datasync
/etc/datasync
/etc/init.d/datasync*
/usr/sbin/rcdatasync*
/var/lib/datasync
/var/log/datasync
/var/run/datasync
```

IMPORTANT: Although you use the YaST Add-On Products installer to install Data Synchronizer, you must use the uninstall.sh script to uninstall it. For instructions, see Section 2.3.4, "Uninstalling Data Synchronizer," on page 29. If you do not uninstall Data Synchronizer correctly, you cannot install the next version.

2.3.2 Checking the Status of the Data Synchronizer Services

The Data Synchronizer Installation program should start the Synchronizer services for you.

1 Open a terminal window, then log in as root.

2 Check the status of the Synchronizer services:

rcdatasync status

If the installation proceeded normally, the four Synchronizer services should be running.

Use the following commands as root to manually start and stop all the Synchronizer services:

```
rcdatasync start
rcdatasync restart
rcdatasync stop
```

The Synchronizer services can also be managed independently, as described in "Synchronizer Services" in the *Novell Data Synchronizer System Administration Guide*.

2.3.3 Starting the GroupWise Connector

The Data Synchronizer Installation program starts the Synchronizer services for you, but it does not start the GroupWise Connector. Use Synchronizer Web Admin to start the GroupWise Connector.
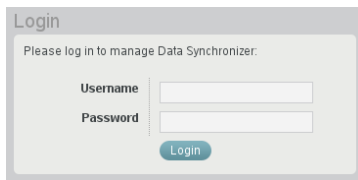
1 In a Web browser, display Synchronizer Web Admin:

```
https://data_synchronizer_server:8120
```

where `data_synchronizer_server` is the IP address or DNS hostname of the server where you installed Data Synchronizer.

Data Synchronizer uses an automatically generated self-signed certificate for the secure HTTPS connection to Synchronizer Web Admin. Your browser prompts you to accept the certificate.

2 Respond as appropriate for your browser in order to accept the self-signed certificate in order to log in to Synchronizer Web Admin.

3 Log in as the Synchronizer administrator that you set up during installation.
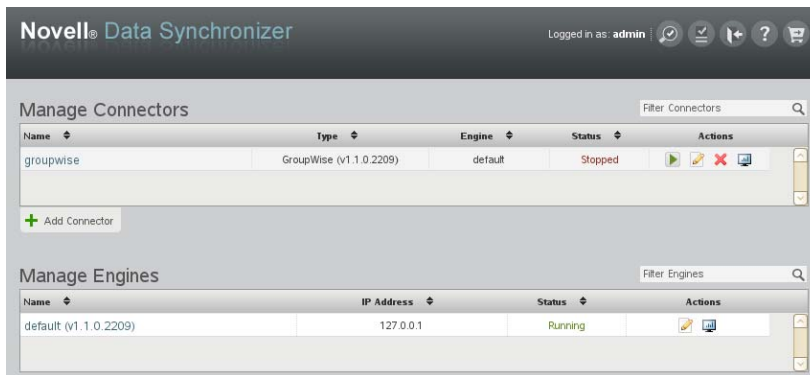
4 Click ▶ to start the GroupWise Connector.

5 (Conditional) If you encounter problems starting the GroupWise Connector, see Appendix A, "Data Synchronizer Installation Troubleshooting," on page 35

6 To customize and expand your Synchronizer system, see Chapter 2.4, "What's Next," on page 29.

2.3.4 Uninstalling Data Synchronizer

1 In a terminal window on the Synchronizer server, become `root` by entering `su -` and the `root` password.

2 Change to the following directory:

`/opt/novell/datasync`

3 Run the Synchronizer Uninstallation script:

`./uninstall.sh`

The Uninstallation script stops the Synchronizer services and the PostgreSQL database server, uninstalls all Synchronizer RPMs and the GroupWise Connector RPM, drops the Synchronizer PostgreSQL databases, and deletes the following directories and files from the Synchronizer server:

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

4 Remove the Data Synchronizer repository from the Linux server:

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

4a In YaST, click *Software > Software Repositories*.

4b Select the Data Synchronizer repository, then click *Delete*.

2.4 What's Next

- Section 2.4.1, "Installing Additional Connectors," on page 29
- Section 2.4.2, "Managing Your Data Synchronizer System," on page 29
- Section 2.4.3, "Managing the GroupWise Connector," on page 30

2.4.1 Installing Additional Connectors

After your core Synchronizer system (the Synchronizer services and the GroupWise Connector) is set up and running, you are ready to install a second connector. Refer to each connector's *Installation and Configuration Guide* (http://www.novell.com/documentation/ datasync_connectors1) for additional setup instructions.

2.4.2 Managing Your Data Synchronizer System

After your Synchronizer system is fully installed and running with at least two connectors, you can refer to sections in the *Novell Data Synchronizer System Administration Guide* for instructions on maintaining your Synchronizer system:

- "Synchronizer Services"
- "Synchronizer Web Admin"

- "Synchronizer System Management"
- "Synchronizer System Security"

Some aspects of connector management are common to all connectors and are covered in "Connector and User Management" in the *Novell Data Synchronizer System Administration Guide*.

- "Managing User Profiles"
- "Managing Users"
- "Managing LDAP Groups"
- "Auditing User Synchronization Activity"
- "Customizing General Connector Configuration Settings"

2.4.3 Managing the GroupWise Connector

After the GroupWise Connector is successfully synchronizing data for the initial set of GroupWise users, you can refer to sections in the *Groupwise Connector Installation and Configuration Guide* for instructions on maintaining and customizing the GroupWise Connector:

- "Adding Users to the GroupWise Connector"
- "Selecting GroupWise Events to Synchronize"
- "Controlling Maximum Attachment Size"
- "Increasing GroupWise Connector Reliability or Performance"
- "Clearing Accumulated GroupWise Events"
- "Blocking/Unblocking Hidden Attachments"
- "Changing the GroupWise Connector Listening Port"
- "Matching GroupWise Configuration Changes"

2.5 Data Synchronizer Installation Summary Sheet

Installation Script Field	Value for Your Synchronizer System	Explanation

LDAP Server Information:
 	
- Hostname or IP address:
- Secure LDAP Port?
  - Yes
    Default port: 636
  - No
    Default port: 389
		See "LDAP Server Network Information" on page 18.

Installation Script Field	Value for Your Synchronizer System	Explanation
LDAP Server Credentials: ◆ LDAP administrator DN: ◆ LDAP administrator password:		See "LDAP Server Credentials" on page 18.
LDAP Containers: ◆ Users: ◆ Groups:		See "LDAP User and Group Containers" on page 19.
Synchronizer Web Admin: ◆ Web Admin login DN: ◆ Web Admin password:		See Section 2.1.6, "Establishing Data Synchronizer System Security," on page 22.
Synchronizer Database: ◆ Database name: datasync ◆ Database user: datasync_user ◆ Database password:		See Section 2.1.5, "Planning the Data Synchronizer Database," on page 22.
GroupWise Trusted Application: ◆ Trusted application name: ◆ Trusted application key file:		See "GroupWise Trusted Application" on page 20.
GroupWise Post Office Agent: ◆ POA hostname or IP address: ◆ POA SOAP port: Default port: 7191 ◆ Secure: Yes / No		See "GroupWise Post Office Agent" on page 21.
Add Users: ◆ ◆ ◆ ◆ ◆		See Section 2.1.3, "Planning How to Add Users," on page 19.
Add Groups: ◆ ◆ ◆ ◆ ◆		See Section 2.1.3, "Planning How to Add Users," on page 19.

Data Synchronizer System Update

3

When you update from Data Synchronizer 1.1.1 to Data Synchronizer 1.2, you obtain the Data Synchronizer 1.2 ISO as part of your updated connector package. Then you use YaST to update your Synchronizer system to Data Synchronizer 1.2.

- ◆ Section 3.1, "Using Patch CD Update in YaST," on page 33
- ◆ Section 3.2, "Running the Data Synchronizer Update Script," on page 33
- ◆ Section 3.3, "Restarting the Synchronizer Services," on page 34

3.1 Using Patch CD Update in YaST

1 Under *Groups*, click *Software*, then click *Patch CD Update*.

2 Click *Next* to start the update.

3 Select *Local ISO Image*, then click *Next*.

4 In the *Repository Name* field, specify a name for the repository for the Data Synchronizer update software.

5 In the *Path to ISO Image* field, specify the full pathname to the Data Synchronizer update ISO file, then click *Next*.

6 Click *Yes* to accept the License Agreement, then click *Next*.

7 On the Distribution Upgrade Settings page, click *Next*.

8 In the Confirm Update dialog box, click *Start Update*.

9 On the Novell Customer Center Configuration page, select *Configure Later*, then click *Next*.

10 (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*.

11 On the Migration Completed page, click *Finish*.

12 Continue with Section 3.2, "Running the Data Synchronizer Update Script," on page 33

3.2 Running the Data Synchronizer Update Script

Running the Update script updates the Synchronizer database (`datasync`) for use with the updated software.

1 Change to the following directory:

```
/opt/novell/datasync
```

2 Make sure that PostgreSQL is running:

```
rcpostgresql status
```

3 Execute the Update script:

```
./update.sh
```

For some version updates, the update process finishes quickly. However, when the version update includes database schema modifications, the update process can be lengthy for a large database.

4 Continue with Restarting the Synchronizer Services.

3.3 Restarting the Synchronizer Services

1 Stop the Synchronizer services:

```
rcdatasync stop
```

2 Verify that all Synchronizer services have stopped:

```
ps -eaf | grep datasync
```

3 Restart PostgreSQL:

```
rcpostgresql restart
```

4 Start the Synchronizer services:

```
rcdatasync start
```

5 Verify that update has been installed:

The version number is displayed at the bottom of the main Synchronizer Web Admin page.

Data Synchronizer Installation Troubleshooting

<div style="text-align: right; font-size: 3em;">A</div>

- "The Data Synchronizer Installation program does not behave as documented." on page 35
- "The Data Synchronizer Installation program cannot communicate with the LDAP server" on page 35
- "The Data Synchronizer Installation program cannot communicate with a needed application." on page 36
- "The Data Synchronizer Installation program cannot communicate with the GroupWise POA" on page 36
- "The Synchronizer services do not start" on page 36

See also:

- "GroupWise Connector Troubleshooting" in the *Groupwise Connector Installation and Configuration Guide*
- "Working with Synchronizer Log Files" in "Synchronizer System Management" in the *Novell Data Synchronizer System Administration Guide*.

The Data Synchronizer Installation program does not behave as documented.

Possible Cause: You are trying to install Data Synchronizer on 32-bit hardware.

Action: Install Data Synchronizer on 64-bit hardware that meets the system requirements described in Section 1.2.1, "Data Synchronizer Server Requirements," on page 14.

Possible Cause: You are installing Data Synchronizer on SLES 11 SP1, and you tried to browse to and select a file, such as the Data Synchronizer ISO or the GroupWise trusted application key file.

Action: Type the full pathname to the file. A problem in SLES 11 SP1 prevents browsing to and selecting files during installation.

The Data Synchronizer Installation program cannot communicate with the LDAP server

Possible Cause: A firewall is blocking communication between the Installation program and the LDAP server.

Action: Make sure that communication through the firewall is allowed on port 636 for a secure LDAP connection or port 389 for a non-secure LDAP connection.

Possible Cause: The LDAP server is not functioning correctly.

Action: Reboot the LDAP server.

Possible Cause: You specified the LDAP server settings incorrectly.

Action: Double-check the LDAP server settings you entered in the Installation program.

The Data Synchronizer Installation program cannot communicate with a needed application.

Possible Cause: The required port number is not open.

Action: Review the list of required port numbers in Section 2.2.2, "Preparing the Network," on page 23.

Action: Use `telnet` to test whether ports are open.

1 Enter the following command in a terminal window:

`telnet application_host port_number`

Replace `application_host` with the IP address or DNS hostname of the server where the application is running. Replace `port_number` with the port number on which the Installation program is attempting to communicate with the application.

2 (Conditional) If the terminal windows blanks, with the cursor in the upper left corner, enter `quit` to exit the telnet session.

The port is open. The Installation program should be able to communicate with the application.

3 (Conditional) If a `Connection failed` message displays, open the port through the firewall to enable the Installation program to communicate with the application.

The Data Synchronizer Installation program cannot communicate with the GroupWise POA

Possible Cause: A firewall is blocking communication between the Installation program and the POA server.

Action: Make sure that communication through the firewall is allowed on port 4500.

Possible Cause: The POA is not running.

Action: Start the POA.

Possible Cause: You specified the POA server settings incorrectly.

Action: Double-check the POA server settings you entered in the Installation program.

Possible Cause: There is a problem with the GroupWise trusted application key file.

Action: Re-create the GroupWise trusted application key file. 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.

The Synchronizer services do not start

Possible Cause: PostgreSQL is not running on the Synchronizer server.

Action: Check the status of PostgreSQL on the Synchronizer server, and start it manually if necessary.

```
rcpostgresql status
rcpostgresql start
```

Documentation Updates

B

This section lists updates to the *Novell Data Synchronizer Installation Guide* that have been made since the initial release of Data Synchronizer. The information helps you to keep current on documentation updates and software updates.

The information is grouped according to the date when the *Novell Data Synchronizer Installation Guide* was republished. Within each dated section, the updates are listed by the section title.

The *Novell Data Synchronizer Installation Guide* has been updated on the following dates:

B.1 August 24, 2011 (Data Synchronizer 1.2

Location	Change
Data Synchronizer Installation	
Section 2.1.1, "Planning Your Data Synchronizer System Configuration," on page 17	Increased the number of supported users on a Synchronizer server to 500.
"GroupWise Trusted Application" on page 20	Clarified that if your GroupWise system connects to an external GroupWise system, the external GroupWise system needs its own separate Synchronizer server.
Chapter 3, "Data Synchronizer System Update," on page 33	Updated instructions for updating from one version of Data Synchronizer to the next.

B.2 March 25, 2011 (Data Synchronizer 1.1.1)

Location	Change
Data Synchronizer Installation	
Chapter 3, "Data Synchronizer System Update," on page 33	Added instructions for updating from Data Synchronizer 1 to Data Synchronizer 1.1.1.