

Asigra Cloud Backup v13.3

Client Software Installation Guide

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1 About this guide

This guide describes how to install and upgrade the client software.

1.1 Intended audience

This guide is intended for anyone who is responsible for installing and upgrading the client software.

1.2 Formatting conventions

The following formatting conventions are used in this guide:

Bold

Bold font identifies components, window and dialog box titles, and item names.

Italic

Italic font identifies references to related documentation.

`Monospace Font`

Monospace font identifies text that you should type or that the computer displays.

NOTE: Notes emphasize information that is useful but not essential, such as tips or alternative methods for performing a task.

IMPORTANT: Important notes emphasize information that is essential to the completion of a task and draw special attention to actions that could adversely affect the operation of the application or result in a loss of data.

2 Installing the DS-Client software

This chapter provides detailed instructions on how to install the DS-Client software.

2.1 Preparing to install the DS-Client software

This section describes the system requirements for installing the DS-Client software.

2.1.1 Hardware requirements

This section describes the minimum hardware requirements for installing the DS-Client software.

Hardware	Details
Processor	2.0 GHz
Memory	4 GB
Hard drive	1 GB free disk space (Windows) 2 GB free disk space (Linux and Mac)

Table 1 Hardware requirements for DS-Client

2.1.2 Software requirements

This section describes the software requirements for installing the DS-Client software. For the latest information, see the *Installation and Support Matrix*.

2.1.2.1 Windows operating system

This section describes the requirements for installing the DS-Client software on a Windows machine.

Operating System	Database
Windows Server 2016 (64-bit) <ul style="list-style-type: none"> Essentials Standard Datacenter 	Microsoft SQL Server <ul style="list-style-type: none"> 2016 or 2016 Express 2008 R2 SP3 or Express R2 SP3 PostgreSQL <ul style="list-style-type: none"> 9.6

Table 2 Software requirements for DS-Client (Windows)

Windows Server 2012 (64-bit) <ul style="list-style-type: none"> Essentials or Essentials R2 Standard or Standard R2 Datacenter or Datacenter R2 	Microsoft SQL Server <ul style="list-style-type: none"> 2016 or 2016 Express 2014 SP1 or 2014 Express SP1 2012 SP2/SP3 or 2012 Express SP2/SP3 2008 SP4 or 2008 Express SP4 2008 R2 SP3 or 2008 Express R2 SP3 2005 SP4 or 2005 Express SP4
Windows 10 (32-bit or 64-bit) <ul style="list-style-type: none"> Pro Enterprise 	
Windows 8 or 8.1 (32-bit or 64-bit) <ul style="list-style-type: none"> Core Pro Enterprise 	
Windows Server 2008 (64-bit) <ul style="list-style-type: none"> Standard SP2 or Standard R2 SP1 Enterprise SP2 or Enterprise R2 SP1 Datacenter SP2 or Datacenter R2 SP1 Small Business Server SP2 	Microsoft SQL Server <ul style="list-style-type: none"> 2014 SP1 or 2014 Express SP1 2012 SP2 or 2012 Express SP2 2008 SP4 or 2008 Express SP4 2008 R2 SP3 or Express R2 SP3 2005 SP4 or 2005 Express SP4
Windows Server 2008 (32-bit) <ul style="list-style-type: none"> Standard SP2 Enterprise SP2 	
Windows SBS 2011 (64-bit) <ul style="list-style-type: none"> Standard 	
Windows 7 (32-bit & 64-bit) <ul style="list-style-type: none"> Professional SP1 Enterprise SP1 Ultimate SP1 	
Windows VISTA (32-bit & 64-bit) <ul style="list-style-type: none"> Home Basic SP2 Home Premium SP2 Business SP2 Enterprise SP2 Ultimate SP2 	

Table 2 Software requirements for DS-Client (Windows)

2.1.2.2 Linux operating system

This section describes the requirements for installing the DS-Client software on a Linux machine.

NOTE: Before installing the software on Linux, it is recommended that you use the **setup_lin.sh** command on the DVD to install the required Linux libraries automatically. The individual RPM packages can be found in the /bin folder.

Operating System	Database
Red Hat Enterprise Linux (64-bit) <ul style="list-style-type: none"> 5.11, 6.8, 6.9, 7.2, 7.3 6.7, 7.1 5.10 or 6.6 	PostgreSQL <ul style="list-style-type: none"> 9.4 (embedded), 9.4, 9.5, 9.6 9.4 (embedded), 9.4, 9.5, 9.1 (embedded), 9.3

Table 3 Software requirements for DS-Client (Linux)

Operating System	Database
CentOS (64-bit) <ul style="list-style-type: none"> • 6.8, 7.2, 7.3 • 6.7, 7.1 • 6.6 	PostgreSQL <ul style="list-style-type: none"> • 9.4 (embedded), 9.4, 9.5, 9.6 • 9.4 (embedded), 9.4, 9.5 • 9.1 (embedded), 9.3
SUSE Linux Enterprise Server (64-bit) <ul style="list-style-type: none"> • 11 SP4 • 11 SP3 	PostgreSQL <ul style="list-style-type: none"> • 9.4 (embedded), 9.4, 9.5, 9.6 • 9.1 (embedded), 9.3
Novell Open Enterprise Server (64-bit) <ul style="list-style-type: none"> • 11 SP2 	PostgreSQL <ul style="list-style-type: none"> • 9.1 (embedded)

Table 3 Software requirements for DS-Client (Linux)

Troubleshooting:

The installation may fail to launch if the target Linux computer has a minimal operating system installation. In this situation, run the following RPM packages:

- bzip2-1.0.6-12.el7.x86_64.rpm
- bzip2-libs-1.0.6-12.el7.x86_64.rpm
- libjpeg-turbo-1.2.90-5.el7.x86_64.rpm

2.1.2.3 Mac operating system

This section describes the requirements for installing the DS-Client software on a Macintosh machine.

Operating System	Database
Mac OS X (64-bit) <ul style="list-style-type: none"> • 10.12 (Sierra) • 10.11 (El Capitan) • 10.10 (Yosemite) • 10.9 (Mavericks) • 10.8 (Mountain Lion) 	PostgreSQL <ul style="list-style-type: none"> • 9.4 (embedded), 9.4, 9.5, 9.6 • 9.4 (embedded), 9.4, 9.5, 9.6 • 9.1 and 9.4(embedded), 9.3, 9.4, 9.5, 9.6 • 9.1 (embedded), 9.3 • 9.1 (embedded)

Table 4 Software requirements for DS-Client (Mac)

2.1.3 Port requirements

The following table lists the ports that are required by the DS-Client software.

Ports	Description
80	DS-Client -> DS-NOC (http)
443	DS-Client -> DS-NOC (https)
4401	DS-Client -> DS-System DS-Mobile Client -> DS-System
4403	DS-User -> DS-Client
4405	DS-Client -> DS-MLR
4407	DS-Client -> Local DS-VDR
4408	DS-Client -> DS-Recovery Tools
4410	DS-Client -> DS-Client (Grid DS-Client)
4411	API Connections -> DS-Client service / daemon

Table 5 Port requirements for DS-Client

For a Grid DS-Client:

- Ensure there is no firewall on the Grid DS-Client LAN which could block communication on port 4410.
- Ensure DS-System is accessible from any DS-Client(s) belonging to the same Grid DS-Client.

NOTE: Port numbers 4400-4406 are IANA-assigned.

2.2 Installing the DS-Client software (Windows)

This section describes how to install the DS-Client software on a Windows machine.

2.2.1 Before you begin

- For Microsoft SQL Server databases (both Express and Full versions), the user account that is logged in to install DS-Client must be added to the Microsoft SQL “Logins” and be given the “sysadmin” server role.
- If you are installing on a fresh machine (with no database instance) and you want the DS-Client installation to install the Microsoft SQL Server database, the user account that installs the database is automatically granted those database rights.

- For Windows SBS editions, the Windows internal databases (MICROSOFT##SSEE and SBSMONITORING) are excluded from selection. **DO NOT** manually type either of these databases for your database instance selection. The Microsoft SQL Server must be configured with a “case-insensitive” sort order.

2.2.2 Installing the DS-Client software

1. Log-in as the Administrator (or a user with equivalent privileges) for the target DS-Client computer.
2. Create a Windows user account for the DS-Client service to use. This account should be a member of the Administrators Group.
3. On the DVD, click **setup.exe**.
4. Select the **Setup Language** and click **OK** to perform a prerequisite check. Once the prerequisite check is complete, click **Next**.

NOTE: If the file *inst_param.txt* exists in the current directory, setup will run the installation based on the specified XML installation template file (if it exists). This will run a simplified installation or a silent mode installation.

5. In the **License Agreement** screen, accept the agreement and click **Next**.
6. In the **Install Options** screen, retain the default location or specify a destination folder for the installation files, select the component you want to install, and click **Next**.
 - **DS-Client Service:** (default) This installs the service application.
 - **Classic DS-User:** (default) This installs the Java DS-User GUI.
 - **DS-User:** This installs a new “look & feel” GUI.

NOTE: You can install only the GUI on a machine that you want to use for remote management of DS-Client(s).

7. In the **Database Information** screen, select **Microsoft SQL Server** or **PostgreSQL** as the type of database server the DS-Client service will use and click **Next**.

If you select **Microsoft SQL Server**, in the next screen, do the following:

- a) Select **Use customized prefix** if you are hosting multiple DS-Client databases on the same server/instance (as a common remote database location). The default setting is **Do not use prefix**, where the name of the database will be *dsclient*.

- b) Select an existing Microsoft SQL Server instance (you can also enter the name of the target computer and instance) or install a new instance on the local computer and click **Next**.
- c) In the **Service Account** screen, enter the credentials for the account that the DS-Client service will use and then click **Next**.
 - **Local System Account:** Select this option if you are installing to a DS-Client using a local database. It will use the Windows “Local System account” instead of a specific user account. This option is intended for laptop users.
 - **This account:** Enter the **Windows User Account** and **Password** the DS-Client service will use in the corresponding fields. The Windows user account must be a member of the Administrator’s group.

Important settings for remote SQL Server instances

- The remote database must be installed on a supported operating system and ensure that the time zone is the same as the one on the DS-Client computer.
- Ensure the SQL Server has rights to dump the DS-Client database in the “\db” sub-folder of the installation folder (as specified in Step 4).
- If there is a firewall enabled between the DS-Client computer and SQL server machine, then ensure the DS-Client can access the remote SQL Server.
- By default, Microsoft SQL Server is installed only with local connection settings. In the SQL Server Configuration Manager change the settings:
 - Enable the TCP/IP under SQL Server Network Configuration > Protocols for SQLEXPRESS.
 - Ensure the SQL Server Browser is running.
- On Windows VISTA: Go to the Windows Control Panel > Administrative Tools > Local Security Setting > Local Policies > Security Options > Network Access: Sharing and security model for local accounts. Set its value to “Classic - Local users authenticate as themselves”.

If you select **PostgreSQL**, in the next screen, do the following:

- a) Select **Use customized prefix** if you are hosting multiple DS-Client databases on the same server/instance (as a common remote database location). The default setting is **Do not use prefix**, where the name of the database will be *dsclient*.
- b) Enter the credentials of the PostgreSQL instance to which the DS-Client service will connect and then click **Next**.

- **Server:** Retain this default local host IP address (127.0.0.1). If required you can use a value in the range 127.0.0.1 to 127.0.0.32.

NOTE: Do not use the IP address of the system where the PostgreSQL instance is running.

- **User Name:** Retain the default **User Name** *postgres*.
- **Password:** Retain the default **Password** *postgres*.
- **Port:** Enter a port available for communication with the database.
- **PostgreSQL Client:** This is the default folder where PostgreSQL will create a dump of database related information.

c) Enter the UNC path details of the database buffer and click **Next**.

- If it is a local database, the installation process creates a default database buffer with read/write permissions. (You can also create the db-buffer.)
- If it is a remote database, you have to first create a db-buffer with read/write permissions. Enter the UNC path details of this db-buffer.

8. In the **Installation Complete** screen, click **Finish** to complete the installation.

2.3 Installing the DS-Client software (Linux)

This section describes how to install the DS-Client software on a Linux machine.

2.3.1 Installing the DS-Client software

1. Log in to the target installation computer as the user **root** and on the DVD, click **setup_lin.sh**.

NOTE: If you install on RedHat Enterprise Linux 7.1 from the installation DVD, you must manually install the required Linux operating system libraries on the target installation computer.

2. Select the **Setup Language** and click **Install**.
3. In the **Software License Agreement** screen, accept the agreement and click **Next** to perform a prerequisite check. Once the prerequisite check is complete, click **Next**.
4. In the **Choose Setup Type and Installation Location** screen, retain the default location or specify a destination folder for the installation files, select a type of installation, click **OK**, and then **Install**.

- **DS-Client Service:** (default) This installs the DS-Client daemon (service) components.
 - **Classic DS-User:** (default) This installs the Java DS-User GUI.
 - **DS-User:** This installs a new “look & feel” GUI.
5. In the **Setup Complete** screen, you can select to start the DS-User and DS-Client upon exiting the installation
- OR
- Select **Start DS-Client at boot time (run-level3)** to automatically start the DS-Client each time the computer starts-up.
6. Click **Done** to complete the installation.

2.3.2 Installing the DS-Client software from a command line

To install DS-Client from the command line, type **setuplinuxclient.bin**. The following installation options are available:

- **i silent:** Installs the application in silent mode (i.e without any interaction from the user's side). Parameters are taken from the same command line, otherwise default values are used. Default values are the ones used for the GUI mode (installation folder is /opt/CloudBackup, both DS-Client and DS-User are installed, and default language is English).
- **DINSTALL_FOLDER=/target/install/folder:** Indicates the desired installation folder; if it does not exist, the folder is created by the installer application.
- **DCHOSEN_FEATURE_LIST="DS-C,DS-U, DS-QU":** Defines the components to be installed. Any combination of one, two or three of the following is possible: "DS-C" (DS-Client service), "DS-U" (Classic DS-User GUI), and "DS-QU" (DS-User GUI). Note there are no spaces after commas between the quotes in this string.
- **DXML=/source/path/config-update.xml:** Instructs the installer application to copy the file with an .xml extension from /source/path to the installation folder in /etc.
- **l de or -l en:** Selects the language (for either Console Mode or GUI Mode installation) to be German (-l en is the default setting).

Examples:

```
#./setuplinuxclient.bin -i silent -l de -DINSTALL_FOLDER=/home/cloudbackup
#./setuplinuxclient.bin -i silent -DCHOSEN_FEATURE_LIST="DS-C"
-DXML=/scripts/xml/config-update.xml
```

2.3.3 Installing the DS-Client software in console mode

The console mode can be used on machines where no GUI is installed.

To install DS-Client in a console mode:

1. Login to the target installation computer as the **root** user.
2. Run the installation package, open the command line and change the directory to the root folder of the installation DVD. Then run the following command: `./setup_lin.sh -console`
3. In the **Installation Center** window, select the language and press **Enter**.
4. Select the product, press **[1]**, then **Enter** to install Linux DS-Client.
5. Select the **Setup Language**.
 - For German: Press **[1]** then **Enter**.
 - For English: Press **[2]** then **Enter**.
 - For Simplified Chinese: Press **[3]** then **Enter**.
6. In the **Software License Agreement** screen, keep pressing **Enter** till you reach the end of the agreement. Press **[Y]** to accept, then press **Enter**.
7. Once the prerequisite check is completed, select the type of setup. By default, **DS-Client** and **Classic DS-User** are selected for installation. After making the required selection, press **Enter** to proceed.
 - Press **[1]** to select only DS-Client.
 - Press **[2]** to select only Classic DS-User.
 - Press **[3]** to select only DS-User.
8. Select the destination directory where DS-Client will be installed. The default folder is: `/opt/CloudBackup/DS-Client`.
 - To specify a different destination folder, type a valid path on the local computer and press **Enter**.
9. In the **Setup Complete** screen, do one of the following:
 - Press **[1]** to start only DS-User.
 - Press **[2]** to start only DS-Client.
 - Press **[3]** to only configure DS-Client to start when the system boots.
 - Press **Enter** to finish the installation.

By default, both DS-User and DS-Client will start upon exiting the Installation. DS-Client is configured to start automatically each time the installation computer boots.

2.4 Installing the DS-Client software (Mac)

This section describes how to install the DS-Client software on a Macintosh machine.

2.4.1 Installing the DS-Client software

1. Log onto the installation computer as the user **root** or a user with administrator rights.
2. Double-click **setup.command** in the following folder on the DVD:

```
\Software\DS-Client\DS-Notebook_Client\MAC_OS_X
```

NOTE: If you are logged in as a user with administrative privileges, Service Manager will require your password.

3. Select the **Setup Language** and click **Install**.
4. In the **Software License Agreement** screen, accept the agreement and click **Next** to perform a prerequisite check. Once the prerequisite check is complete, click **Next**.
5. In the **Choose Setup Type and Installation Location** screen, retain the default location or specify a destination folder for the installation files, select a type of installation, click **OK**, and then click **Install**.
 - **DS-Client:** (default) This installs the DS-Client daemon (service) components.
 - **Classic DS-User:** (default) This installs the Java DS-User GUI.
 - **DS-User:** This installs a new “look & feel” GUI.
6. In the **Setup Complete** screen, you can select to start the DS-User and DS-Client upon exiting the installation and click **Done** to complete the installation.
7. Start the DS-client daemon.

2.4.2 Installing the DS-Client software from a command line

To view the command line options, type **setup.command**. For descriptions of these options, see [Section 2.3.2, “Installing the DS-Client software from a command line”](#).

NOTE: Users must have the rights to create/write into the folder specified for installation.

2.4.3 Installing the DS-Client software in console mode

To install the DS-Client software from the command line without a GUI:

1. Login to the target installation computer as the root user and run the following command:

```
setup.command -i console
```

(If you are logged in as a user with administrator privileges, you will be required to input your password.)

2. Select the **Setup Language**.
 - For German: Press **[1]** then **Enter**.
 - For English: Press **[2]** then **Enter**.
 - For Simplified Chinese: Press **[3]** then **Enter**.
3. In the **Software License Agreement** screen, keep pressing **Enter** till you reach the end of the agreement. Press **[Y]** to accept, then press **Enter**.
4. Once the prerequisite check is completed, the destination directory where DS-Client will be installed, select the type of setup and click **Enter**.
 - Press **[1]** to select only DS-Client.
 - Press **[2]** to select only Classic DS-User.
 - Press **[3]** to select only DS-User.

By default, DS-Client and Classic DS-User are selected for installation.

5. In the **Setup Complete**, do one of the following and click **Enter** to complete the installation.
 - Press **[1]** to start only DS-User.
 - Press **[2]** to start only DS-Client.

By default, both DS-User and DS-Client will start upon exiting the Installation. DS-Client is configured to start automatically each time the installation computer starts-up.

2.5 Installing the Grid DS-Client software

Grid DS-Client is a configuration of several DS-Clients working together with a common set of DS-Client databases to balance the processing load in a high availability environment. From the DS-System perspective, the Grid DS-Client is a single DS-Client with the same registration Information on each node.

2.5.1 Before you begin

- For minimum hardware and software requirements, refer [Section 2.1, “Preparing to install the DS-Client software”](#).
- All DS-Clients that will be part of the Grid DS-Client must be installed on supported Operating Systems. Refer [Section 2.1, “Preparing to install the DS-Client software”](#).
- In a grid, all the systems have the same operating system with the same version.
- Database server is common to all DS-Client nodes in a Grid.
- The same databases (e.g. ‘dsclient’, ‘dsdelta’, ‘dslanfiles’) are used for all DS-Client nodes in a Grid.
- Both Private and Account Encryption keys are the same for all DS-Clients in a Grid.
- The service account is the same for all DS-Clients in a Grid in order to avoid problems with Database connections, Local Storage issues, etc.
- The service account of each node has enough credentials to remotely start/stop the DS-Client service on all other nodes. This is required for the “Auto upgrade” feature.
- All DS-Client computers are members of the same domain.
- Every computer has identical software installations to backup any of the special backup types (e.g. NetWare client, MySQL client, etc.).
- Every computer has the same access permissions to all network resources.
- All nodes (including the database server, if you are using a remote database) are synchronized to the same time server and configured to the same time zone to ensure time-consistency. Otherwise the logs (backup generations) will be subject to unpredictable scenarios due to inaccurate timing and confusing (or even failure) scenarios may occur.
- On each node, perform the following (if applicable):
 - On all Windows platforms: Check if the firewall allows remote control of the DS-Client service between the nodes with the following commands:

```
sc \\[other-node] start|stop ds-client
```

```
taskkill /S \\[other-node] /IM dsclient.exe
```

- On Windows VISTA / Windows 2008 / Windows 7: Go to the Windows Control Panel and navigate to **Administrative Tools > Local Security Settings > Local Policies > Security Options > Network Access: Sharing and security model for local accounts**. Set its value to **Classic - local users authenticate as themselves**.
- On Windows VISTA: Go to the Windows Control Panel and navigate to > **Network and Internet > Network and Sharing Center**: Select **ON** for *File Sharing*.
- On Windows 2008 / Windows 7: Go to the Windows Control Panel and navigate to **Network and Internet > Network and Sharing Center > Change advanced sharing settings**: Select **ON** for *Turn on file and printer sharing*.
- On Windows VISTA / Windows 2008 / Windows 7, configure the firewall setting: Ensure that **File and printer sharing** and **Remote Administration** are in the exception list.
- On Windows VISTA / Windows 2008 / Windows 7: Verify that UAC (User Account Control) is turned off.

NOTE: Replace [other-node] with the IP address or machine name of the target node. If these commands fail, you have a network or configuration problem that you must resolve before you can continue.

- Port 4410 must be opened on all nodes of the Grid DS-Client as it is used for communication between the nodes in a Grid DS-Client.

2.5.2 Installing the Grid DS-Client software

1. Log in to each target DS-Client computer as an Administrator level user.
 - Ensure the conditions in [Section 2.5.1, “Before you begin”](#) have been met.
 - Create a User Account for the DS-Client to use. This account must be a member of the Administrators Group / Domain Administrators Group.
2. Run the DS-Client Installation on the first node and continue till the last node in a grid DS-Client without starting the DS-Client service. Follow the steps in [Section 2.2, “Installing the DS-Client software \(Windows\)”](#).

2.6 Installing the Cloud-to-Cloud DS-Client software (Windows)

The Cloud-to-Cloud DS-Client allows you to backup and restore the following backup sets:

- Backup from the Cloud (G Suite)
- Backup from the Cloud (Microsoft Office 365)
- Backup from the Cloud (Salesforce.com)

The required plug-ins for these backup sets are automatically installed with the Cloud-to-Cloud DS-Client software.

2.6.1 Before you begin

Before installing the Cloud-to-Cloud DS-Client software:

- Uninstall any previous version of the full DS-Client software
- Install PostgreSQL or Microsoft SQL Server to host the DS-Client database.
- Ensure that you have an active Internet connection.

2.6.1.1 Software requirements:

Windows Operating System	Database
Windows 10 (64-bit) <ul style="list-style-type: none">• Education• Pro• Enterprise	<ul style="list-style-type: none">• Microsoft SQL Server 2016• Microsoft SQL Server 2016 Express• PostgreSQL 9.6
Windows 8 & 8.1 (64-bit) <ul style="list-style-type: none">• Core• Pro• Enterprise	

Table 6 Software requirements for Cloud-to-Cloud DS-Client

2.6.2 Installing the Cloud-to-Cloud DS-Client software

1. Log onto the installation computer as a local administrator and on the DVD, click **Setup.exe**.
2. In the **Windows Product Installation Center** screen, select the required language and then click **Cloud-to-Cloud DS-Client**.
3. Select the required language and click **OK**. A prerequisite check is performed.
4. In the **Prerequisites Check** screen, click **Next**.
5. In the **License agreement** screen, read the license agreement carefully, select **I agree to the terms of the license agreement**, and then click **Next**.

6. In the **Install Options** screen, retain the default location or specify a destination folder for the installation files, select the components to install and click **Next**.
7. In the **Database Information** screen, enter the required details for creating a new DS-Client database and click **Next**.
8. In the **Service Account** screen, enter the details for a Windows administrator account that DS-Client will use to log on, when it is started as a Windows service.
9. In the **Database Installation** screen, specify the folder where the installation wizard will create a new database instance and click **Next**. (This screen will appear only if you have selected **Install a new Microsoft SQL Server instance** in the *Database Information* screen.)
10. In the **Installation complete** screen, click **Finish** to complete and exit the installation.

2.7 Installing the VSS Nimble Provider software (Windows)

The VSS Nimble Provider facilitates the integration of Nimble with the backup and restore of Microsoft SQL Server (VSS-aware) backup sets. Windows DS-Client has the ability to perform application consistent snapshots of the Microsoft SQL Server databases. These snapshots are stored on the Nimble Storage Array.

NOTE: Before proceeding with the installation of VSS Nimble Provider, you must install the **Nimble Storage Windows Integration Toolkit** on the same machine where the Microsoft SQL Server database resides.

The VSS Nimble Provider is supported on all operating systems compatible with the Windows DS-Client and all Windows operating systems that are compatible with the Microsoft SQL Server host. The VSS Nimble Provider must be installed on the same machine where the Microsoft SQL Server database resides.

To install the VSS Nimble Provider:

1. Log onto the installation computer as a local administrator and on the DVD, click **Setup.exe**.
2. In the **Windows Product Installation Center** screen, select the required language and then click **VSS Nimble Provider**.
3. In the **Prerequisites Check** screen, click **Next**.
4. In the **License Agreement** screen, accept the agreement and click **Next**.
5. In the **Select Destination Location** screen, retain the default location where the installation files will be copied, or click **Browse** to specify a different folder and click **Next**.
6. Click **Finish** to complete the installation.

The VSS Nimble Provider is installed as a service and starts automatically.

2.8 Upgrading the DS-Client software

This section describes how you can upgrade the DS-Client software.

NOTE: We strongly recommend that you backup your existing DS-Client prior to performing an upgrade.

2.8.1 Performing an automatic or rolling upgrade

If your environment has multiple DS-Clients and you do not want to upgrade them all at the same time, you can upgrade them in a controlled manner by performing an automatic or rolling upgrade. For more information, see the *DS-System User Guide*.

2.8.2 Performing a manual upgrade

Before you perform a manual upgrade, ensure that DS-Client is not running any backup/restore activities.

To upgrade the DS-Client software manually:

1. Stop the DS-Client service/daemon.
2. Run the new DS-Client Release/Service pack installation on the machine where the DS-Client software is installed.
 - The installation will detect the existing DS-Client database and apply the database patches.
 - The installation will detect and upgrade the DS-Client components installed on the DS-Client machine.
3. **For Windows:** When the installation is complete, in the DB folder located in the DS-Client Installation directory, check if any database patch returned an error. The default path for this folder is:
`C:\Program Files\CloudBackup\DS-Client on Windows.`
4. If there are no errors, start the DS-Client service/daemon.
5. Check the connectivity to the DS-Client service using the upgraded version of the DS-User GUI.
 - If connection is successful, check the DS-Client Event Log for errors.
6. Run a **Daily** or **Weekly Admin** to check the connectivity between DS-System and DS-Client.

2.8.3 Upgrading a Grid DS-Client (Windows)

This section describes how you can upgrade the Grid DS-Client.

2.8.3.1 Performing a manual upgrade

To manually upgrade Grid DS-Client:

1. Stop DS-Client services on all the nodes in the Grid DS-Client.
2. Run the Service Pack / Release / Hot Fix package on each node, using the same steps as for stand-alone DS-Client.
3. Start DS-Client services on all the nodes that are part of the Grid DS-Client.

2.8.3.2 Performing an auto-upgrade

Grid DS-Clients can auto-upgrade if their DS-System is configured to allow it.

The first node that downloads a higher version auto-upgrade package from DS-System will stop the DS-Client service on all other nodes. After the first node has finished upgrading, it will restart the DS-Client services on all other nodes.

Once those nodes restart, they will connect to DS-System and download the auto-upgrade package (this time auto-upgrade will only stop the DS-Client service on the local node).

Auto-upgrade is triggered if the following occurs:

- When starting DS-Client service, at least one other node is found to have a higher version (only the node performing upgrading will be stopped for upgrading and restarted automatically).
- When connecting to DS-System, a higher version DS-Client auto-upgrade package is available.

NOTE: If a node's version is lower than the highest version in the Grid DS-Client, it will perform auto-upgrade right after starting the DS-Client service. If auto-upgrade is not allowed or fails to upgrade, a version compatibility check will be performed and nodes that are not compatible will not be allowed to start.

3 Installing the DS-Mobile Client software (Windows)

This chapter provides detailed instructions on how to install the DS-Mobile Client software.

3.1 Preparing to install the DS-Client Mobile software

This section describes the system requirements for installing the DS-Mobile Client software.

3.1.1 Hardware requirements

This section describes the minimum hardware requirements for installing the DS-Mobile Client software.

Hardware	Details
Processor	2.0 GHz
Memory	1 GB RAM for less than 1 million files 2 GB RAM for multiple files > 1 GB
Free disk space for applications and buffer	1 GB

Table 1 Hardware requirements for DS-Mobile Client

3.1.2 Software requirements

This section describes the software requirements for installing the DS-Mobile Client software on a Windows machine. For the latest information, see the *Installation and Support Matrix*.

IMPORTANT: DS-Mobile Client does not support backup or restore of Windows Server Operating Systems.

Operating system	Database
Windows Server 2016 (64-bit) <ul style="list-style-type: none"> Essentials Standard Datacenter 	<ul style="list-style-type: none"> Embedded
Windows Server 2012 Server (64-bit) <ul style="list-style-type: none"> Essentials or Essentials R2 Standard or Standard R2 Datacenter or Datacenter R2 	<ul style="list-style-type: none"> Embedded

Table 2 Software requirements for DS-Mobile Client

Operating system	Database
Windows Server 2008 (32-bit) <ul style="list-style-type: none"> Standard SP2 or Standard R2 SP1 Enterprise SP2 or Enterprise R2 SP1 	<ul style="list-style-type: none"> Embedded
Windows Server 2008 (64-bit) <ul style="list-style-type: none"> Standard SP2 or Standard R2 SP1 Enterprise SP2 or Enterprise R2 SP1 Data Center SP2 or Data Center R2 SP1 	<ul style="list-style-type: none"> Embedded
Windows 10 (32-bit or 64-bit) <ul style="list-style-type: none"> Home Education Pro Enterprise 	<ul style="list-style-type: none"> Embedded
Windows 8 and 8.1 (32-bit or 64-bit) <ul style="list-style-type: none"> Core Pro Enterprise 	<ul style="list-style-type: none"> Embedded
Windows 7 (32-bit or 64-bit) <ul style="list-style-type: none"> Home Basic SP1 Home Premium SP1 Ultimate SP1 Enterprise SP1 Professional SP1 	<ul style="list-style-type: none"> Embedded
Windows Vista (32-bit or 64-bit) <ul style="list-style-type: none"> Home Basic SP2 Home Premium SP2 Ultimate SP2 Business SP2 Enterprise SP2 	<ul style="list-style-type: none"> Embedded

Table 2 Software requirements for DS-Mobile Client

3.2 Installing the DS-Mobile Client software

To install the DS-Mobile Client software:

1. Log onto the installation computer as a local Administrator (or a user with equivalent privileges) and on the DVD click **Setup.exe**.
2. In the **Windows Product Installation Center** screen, select the required language and then click **DS-Mobile Client**.
3. In the **Choose the Setup Language** window, select a setup language and click **Next** to perform a prerequisite check. Once the prerequisite check is complete, click **Next**.
4. In the **License Agreement** screen, accept the agreement and click **Next**.
5. In the **Select Installation Window**, retain the default location or specify a destination folder for the installation files and click **Next**.

6. In the **Specify the DS-Mobile Client Service Logon Account** window, specify the user account and password on the DS-Mobile Client computer that will be used by the service and click **Next**.
 - If you leave the fields empty and skip this page, the *Local System* account will be used for the service.
 - You can specify a user that is a member of the Administrator group of the local computer.
 - If you specify the same user account and password which you used to log onto the Windows computer, *Classic DS-Mobile User* will use those credentials to automatically log into the DS-Mobile Client when it is launched.
7. In the **Completing the Wizard** screen, click **Finish** to complete the installation.

NOTE: Your service provider can provide on their website a simplified “custom wrapped” installation that contains several predefined selections. When installing, you only select the language, agree to the license, select a private encryption key, and enter your email address. Once you have entered the required information, click **Next** to complete the installation.

Installing the DS-Mobile Client software (Windows)

Installing the DS-Mobile Client software

4 Installing the DS-Notebook Client software (Mac)

This chapter provides detailed instructions on how to install the DS-Notebook Client software.

4.1 Preparing to install the DS-Notebook Client software

This section describes the system requirements for installing the DS-Notebook Client software.

4.1.1 Hardware requirements

This section describes the minimum hardware requirements for installing the DS-Notebook Client software.

Hardware	Details
Processor	1.66 GHz
Memory	4 GB
Free disk space for application and buffer	1 GB
Connection to DS-System	LAN, Internet, WAN

Table 1 Hardware requirements for DS-Notebook Client (Mac)

4.1.2 Software requirements

This section describes the software requirements for installing the DS-Notebook Client software on a Macintosh machine. For the latest information, see the *Installation and Support Matrix*.

Operating System	Database
Mac OS X (64-bit) <ul style="list-style-type: none"> 10.12 (Sierra) 10.11 (El Capitan) 10.10 (Yosemite) 10.9 (Mavericks) 10.8 (Mountain Lion) 	PostgreSQL <ul style="list-style-type: none"> 9.4 (Embedded)

Table 2 Software requirements for DS-Notebook Client (Mac)

4.2 Installing the DS-Notebook Client software

To install the DS-Notebook Client software:

1. Log in to the installation computer as the user **root** or a user with administrator rights and on the DVD, click **setup.command** in the following folder:

```
\Software\DS-Client\DS-Notebook_Client\MAC_OS_X
```

- If you are logged in as a user with administrative privileges, Service Manager will require your password.

2. In the **Software License Agreement** screen, accept the agreement and click **Next** to perform a prerequisite check. Once the prerequisite check is complete, click **Next**.
3. In the **Choose Installation Location** screen, retain the default location or specify a destination folder for the installation files, click **OK** and then click **Install**.
4. In the **Setup Complete** screen, click **Done** to finish the installation, then start the DS-Client daemon. You can manually start and stop the DS-Client service (daemon) using the following commands:

```
/Library/StartupItems/DSNClient/DSNClient start
```

```
/Library/StartupItems/DSNClient/DSNClient stop
```

4.3 Installing the DS-Notebook Client software from a command line

To install DS-Client from the command line, type **setuplinuxclient.bin**. The following installation options are available:

- **i silent**: Installs the application in silent mode. Parameters are taken from the same command line, otherwise default values are used. Default values are the ones used for the GUI mode, both DS-Client and DS-User are installed, and default language is English.
- **i console**: Starts the installation in console mode instead of GUI mode. This can be used on machines where no GUI is installed.
- **DINSTALL_FOLDER=/target/install/folder**: Indicates the desired installation folder; if it does not exist, the folder is created by the installer application.
- **DXML=/source/path/config-update.xml**: Instructs the installer application to copy the file with an .xml extension from /source/path to the installation folder in /etc.

5 Installing the DS-Recovery Tools (Windows)

This chapter provides detailed instructions on how to install the DS-Recovery Tools. DS-Recovery Tools consists of the following services:

- **DS-Recovery Tools Service** - Performs the online backup and recovery of Microsoft SharePoint Servers at the individual item level.
- **DS-MLR Service** - Performs the online backup and recovery of email messages at the individual message level (Message Level Restore).

NOTE: Your service provider must enable DS-Recovery Tools in the DS-System. Once enabled, your DS-Client can connect to any running DS-Recovery Tools service or DS-MLR service.

Depending on your selections, the following services are installed:

DS-MLR Service

- DS-MLR Service is for E-Mail messages.
- DS-MLR searches for new E-Mails based on a user defined filter.
- DS-MLR transforms the E-Mail into a data stream and passes this stream to DS-Client for processing in order to back it up to DS-System.
- E-Mails are saved as individual objects on DS-System.

DS-Recovery Tools Service

- DS-Recovery Tools Service is for Microsoft SharePoint.

5.1 Preparing to install the DS-Recovery Tools

This section describes the system requirements for installing the DS-Recovery Tools.

5.1.1 Hardware requirements

This section describes the minimum hardware requirements for installing the DS-Client software.

Hardware	Details
Processor	2.0 GHz
Memory	4 GB
Hard drive	1 GB free disk space (Windows)

Table 1 Hardware requirements for DS-Recovery Tools

5.1.2 Microsoft Exchange Server requirements

This section describes the requirements for using the DS-Recovery Tools service to backup and restore the following versions of Microsoft Exchange Server. For the latest information, see the *Installation and Support Matrix*.

DS-MLR Service must be installed and running on the same machine where the email messages are stored. In addition to email level backup and restore, the DS-MLR Service for Microsoft Exchange Server also supports item-level restore from full Microsoft Exchange Server 2010 or 2013 (VSS aware) backup sets.

Email Server	Operating System
Microsoft Exchange Server (64-bit) • 2016	Windows Server 2016 (64-bit) • Standard • Datacenter
Microsoft Exchange Server (64-bit)* • 2013 • 2010 • 2007	Windows Server 2012 / 2012 R2 (64-bit) • Essentials • Standard • Datacenter
	Windows Server 2008 (64-bit) • Standard SP2 / Standard R2 SP1 • Enterprise SP2 / Enterprise R2 SP1 • Small Business Server SP2 • Datacenter SP2 / Datacenter R2 SP1
	Windows SBS 2011 (64-bit) • Standard

Table 2 Software requirements for Microsoft Exchange Server

* For Exchange 2010 / 2007, you must download the MAPI client from Microsoft and install it on the DSMLR machine / Exchange server.

5.1.3 Microsoft Outlook requirements

This section describes the requirements for using the DS-Recovery Tools service to backup and restore the following versions of Microsoft Outlook. For the latest information, see the *Installation and Support Matrix*.

The DS-MLR Service must be installed and running on the same machine where the email messages are stored. The DS-MLR service account must be a local administrator.

Email Server	Operating System
Microsoft Outlook (32-bit or 64-bit) <ul style="list-style-type: none"> • 2013 • 2010 • 2007 	Windows Server 2012 or 2012 R2 (64-bit) <ul style="list-style-type: none"> • Essentials • Standard • Datacenter
	Windows 10 (32-bit or 64-bit) <ul style="list-style-type: none"> • Pro • Enterprise
	Windows 8 or 8.1 (32-bit or 64-bit) <ul style="list-style-type: none"> • Core • Pro • Enterprise
	Windows Server 2008 (32-bit or 64-bit) <ul style="list-style-type: none"> • Standard SP2 or Standard R2 SP1 • Enterprise SP2 or Enterprise R2 SP1 • Datacenter SP2 or Datacenter R2 SP1
	Windows 7 (32-bit or 64-bit) <ul style="list-style-type: none"> • Ultimate SP1 • Enterprise SP1 • Professional SP1
	Windows Vista (32-bit or 64-bit) <ul style="list-style-type: none"> • Home Basic SP2 • Home Premium SP2 • Ultimate SP2 • Business SP2 • Enterprise SP2

Table 3 Software requirements for Microsoft Outlook

5.1.4 Microsoft SharePoint Server requirements

This section describes the requirements for using the DS-Recovery Tools service to backup and restore the following versions of Microsoft SharePoint. For the latest information, see the *Installation and Support Matrix*.

DS-Recovery Tools must be installed and running on the same machine where the Microsoft SharePoint server is running.

Email Server	Operating System
Microsoft SharePoint Server (64-bit) • 2016	Windows Server 2016 (64-bit) • Standard • Datacenter
	Windows Server 2012 R2 (64-bit) • Standard • Datacenter
Microsoft SharePoint Server (64-bit) • 2013 / 2013 SP1 or Foundation 2013 SP1	• Windows Server 2012 or 2012 R2 (64-bit) • Windows Server 2008 R2 (64-bit)
Microsoft SharePoint Server (64-bit) • 2010 SP1 or Foundation 2010 SP2	Windows Server 2008 (64-bit) • Standard R2 SP1 • Enterprise R2 SP1 • Datacenter R2 SP1 • Small Business Server SP2
• Microsoft SharePoint Server (32-bit or 64-bit) • 2007 (MOSS) SP3 or 2007 (WSS) SP3	Windows Server 2008 • Standard SP2 (32-bit or 64-bit) • Standard R2 SP1 (64-bit) • Enterprise SP2 (32-bit or 64-bit) • Enterprise R2 SP1 (64-bit) • Small Business Server SP2 (32-bit)

Table 4 Software requirements for Microsoft SharePoint Server

5.1.5 IBM Domino and Notes requirements

This section describes the requirements for using the DS-Recovery Tools service to backup and restore the following versions of IBM Domino and Notes. For the latest information, see the *Installation and Support Matrix*.

DS-MLR Service must be installed and running on the same machine where the email messages are stored. The DS-MLR service account must be a local administrator.

Email Server	Operating System
IBM Domino and Notes) (32 -bit or 64-bit) <ul style="list-style-type: none"> • 9.01 • 8.5 • 8 	Windows Server 2012 or 2012 R2 (64-bit) <ul style="list-style-type: none"> • Essentials • Standard • Datacenter
	Windows 8 and 8.1 (64-bit) <ul style="list-style-type: none"> • Core • Pro • Enterprise
	Windows Server 2008 (32-bit or 64-bit) <ul style="list-style-type: none"> • Standard SP2 or Enterprise SP2 (32-bit) • Standard R2 SP1 Enterprise R2 SP1 (64-bit)
	Windows 7 (32 -bit or 64-bit) <ul style="list-style-type: none"> • Professional SP1 • Enterprise SP1 • Ultimate
	Windows Vista (32 -bit or 64-bit) <ul style="list-style-type: none"> • Business SP2 • Enterprise SP2

Table 5 Software requirements for IBM Domino and Notes

Requirements for Lotus Notes Client

- If you configure Lotus Notes Client software with the option *Connect to Domino Server*, the email database will be on the Domino Server side. This feature is not supported. Select either *POP* or *SMTP* to connect to the Domino Server.

Requirements for Lotus Domino Server

- The Lotus Domino Server must have the files *notes.ini* and *user.id* available locally. They can be copied from a Lotus Notes Client computer, or you can install Lotus Notes Client/Administrator on the Lotus Domino Server. If they are copied, you must manually edit *KeyFilename* in the *notes.ini* file to point to the local *user.id* file.
- Copy the following files from the DS-Client computer's installation directory (default location is *C:\Program Files\CloudBackup\DS-Client*) into the folder containing the *notes.ini* and *user.ini* files:

`dslotus_x64.dll, dslotus.dll, lcppn70.dll, lcppn801.dll`

Copy the following files from the DS-Client computer's installation directory (default location is *C:\Program Files\IBM\Lotus\Domino*) to the Lotus Domino Server's installation directory: `nextpwd_x64.dll, nextpwd.dll`

5.1.6 Novell GroupWise requirements

This section describes the requirements for using the DS-Recovery Tools service to backup and restore the following versions of Novell GroupWise. For the latest information, see the *Installation and Support Matrix*.

DS-MLR Service must be installed and running on the same machine where the email messages are stored. The DS-MLR service account must be a local administrator.

Email Server	Operating System
Novell GroupWise (32-bit) • 2012	Windows 8 or 8.1 (32-bit) • Core • Pro • Enterprise
	Windows Server 2008 (32-bit) • Standard SP2 • Enterprise SP2
	Windows 7 (32-bit) • Professional SP1 • Enterprise SP1 • Ultimate SP1
	Windows Vista 32-bit • Business SP2 • Enterprise SP2 • Ultimate SP2

Table 6 Software requirements for Novell GroupWise

Requirements for Novell GroupWise

- Install DS-Recovery Tools (DS-MLR Service) on the computer with GroupWise client. The DS-MLR Service Account must be a local administrator.
- The target DS-MLR computer must have Novell Client (v 4.9.0 SP2 or higher) and GroupWise client (v 7 or higher).
- Copy both Regtapp.exe and GWApp.dll from the DS-Recovery Tools Installation directory to the target DS-MLR Service computer.
- From the Command Prompt, run `Regtapp.exe \\GroupWise_Domain_server\PathToGroupWise_Domain_Folder`. This will return a *Trusted application key*: a number that you must enter during DSMLR Installation (See [GroupWise Settings](#)). (Save this key and use it for all other DS-MLR Service Installations that will backup this GroupWise server.)
- Configure all DS-MLR services with the same *Trusted application key* to backup a GroupWise server with multiple DS-MLR services.
- For GroupWise 2012, create the DS-MLR “Trusted application key” in Novell ConsoleOne > GroupWise System Operations > Trusted Applications > Create on the GroupWise server.

- For GroupWise 2012, on the DS-MLR machine, follow the instructions in the following Novell knowledge base articles to avoid errors in getting the user list during backups:
 - Novell TID 7000312: for Novell Client 4.91
 - Novell TID 7008266: for Novell Client 2

5.1.7 Supported servers (for Backup / Restore)

Email Message Server and Version	Special Requirements
Microsoft Exchange (Clustered and non-Clustered) <ul style="list-style-type: none"> • 2003 (x86) • 2007 (x64) 	** In addition to E-Mail level backup and restore, supports Item-Level restores using DS-Recovery Tools from full Microsoft Exchange 2010 or 2013 backups (made with the VSS-aware backup set type). See Section 5.1.5, "IBM Domino and Notes requirements"
Microsoft Exchange (DAG and Stand-Alone) <ul style="list-style-type: none"> • 2010 (x64) ** • 2013 (x64) ** 	
Microsoft Outlook <ul style="list-style-type: none"> • 2003 • 2007 • 2010 	See Section 5.1.3, "Microsoft Outlook requirements"
Lotus Domino / Lotus Notes (IBM Domino & IBM Notes) <ul style="list-style-type: none"> • 8 • 8.5 • 8.5.2 • 8.5.3 	See Section 5.1.5, "IBM Domino and Notes requirements"
GroupWise <ul style="list-style-type: none"> • 7.0 • 8.0 • 2012 	See Section 5.1.5, "IBM Domino and Notes requirements"
Microsoft Sharepoint Server <ul style="list-style-type: none"> • 2007 • 2010 • 2010 SP1* • 2013* 	* Supports Item-Level restores using DS-Recovery Tools from full SharePoint 2010 SP1 or 2013 backups (made with the VSS-aware backup set type). See Section 5.1.7, "Supported servers (for Backup / Restore)"

Table 7 Supported servers for backup and restore

If the target installation platform is 32-bit, you must install the 32-bit version of DS-Recovery Tools. If the target installation platform is 64-bit, you must install the 64-bit version of DS-Recovery Tools. Do not install the 32-bit version on a 64-bit platform, since the required components will be missing.

5.2 Installing the DS-Recovery Tools

To install the DS-Recovery Tools:

1. Log onto the installation computer as a local administrator and on the DVD, click **Setup.exe**.
2. In the **Windows Product Installation Center** screen, select the required language and then click **DS-Recovery Tools**. Once the prerequisite check is complete, click **Next**.
3. In the **License Agreement** page, click **Accept** and then click **Next**.
4. In the **Select Destination Location** page, retain the default location or specify a destination folder for the installation files, and click **Next**.
5. Select the items to be backed up using DS-Recovery Tools and click **Next**.
 - Microsoft Exchange / Outlook
 - Lotus (the Lotus Notes / Domino Server Settings screen appears)
 - GroupWise (the GroupWise Settings screen appears)
 - Microsoft SharePoint
6. In the **DS-MLR / DS-Recovery Tools Service Logon Account** window, enter the details of the account that will be used for DS-MLR Service and DS-Recovery Tools Service and click **Next**.
 - **Local System Account:** This option will use the Windows *Local System Account* instead of a specific user account.
 - **This account:** Enter the *Windows User Account* and *Password* in the corresponding fields.

Auto Start is selected by default (recommended). Service(s) will start automatically each time the target computer boots. Clear this selection if you do not want the DS-MLR / DS-Recovery Tools Services to start on reboot.

7. Depending on the selection you make in Step 6:
 - For *Microsoft Exchange / Outlook*: Skip to Step 9 - *Start Copying Files*.
 - For *IBM Domino and Notes*: The *IBM Domino and Notes Server Settings* screen appears.
 - For *GroupWise*: The *GroupWise Settings* screen appears.

Lotus Notes / Domino Server Settings

- In this screen select the path to the *Notes.ini* file containing the *User ID* file.
- For installation on a *Lotus Notes Client* machine, you don't have to enter a password because in this mode, DS-MLR backs up emails locally from this Lotus Notes machine. Click **Next**.

- For installation on a Lotus Domino server, enter the password for the *User ID* file (password is in the *Notes.ini* file). This *User ID* file should be for a user with full rights of a *Lotus Administrator*. The default path for this file is - C:\Program Files\lotus\notes. DO NOT USE the *Notes.ini* file generated by the Domino Server (located in C:\Lotus\Domino).

GroupWise Settings

- In this screen, enter the *GroupWise Server IP address*, the *GroupWise server port*, *Trusted application key*, *Novell Account & Password*, and click **Next**. The Novell Account is used to connect to the GroupWise Domain path.
8. In the **Installation Wizard Complete** window, click **Finish** to complete the installation.

5.3 Upgrading the DS-Recovery Tools

This section describes how to upgrade the DS-Recovery Tools.

5.3.1 Performing an automatic upgrade

Auto upgrade can be performed for both the DS-MLR and DS-Recovery Tools services.

The software version number is described in the form v.“N.X.y.z” (for example: v.13.2.1.2), where

- N = Major release (e.g. 13)
- X = Minor release (e.g. 2)
- y = Service Pack number (e.g. 1)
- z = Hot Fix (e.g. 2)

If an upgrade package is required (and available on the DS-System), the DS-Client will download the upgrade package and ‘push’ the installation to the target DS-Recovery Tools or DS-MLR service installation.

DS-Client will push the upgrade in “silent mode” (without the need for customer interaction with the setup GUI).

The corresponding auto upgrade package must be placed in the DS-System’s upgrade folder. The upgrade folder is the same for both upgrade packages:

```
<Backup_Root>\Upgrade\
```

NOTE: For hot fixes to DS-Recovery Tools, you can assign a specific hotfix folder to individual DS-Clients. For more information, refer the *DS-System User Guide*.

The auto-upgrade package filename identifies the version and platform of the DS-Recovery Tools or DS-MLR upgrade.

File Name	Service	Platform & Architecture
app_mlr_ <i>N.X.y.z</i> _inst.win32	DS-MLR	Windows 32-bit
app_mlr_ <i>N.X.y.z</i> _inst.win64	DS-MLR	Windows 64-bit
app_rcv_ <i>N.X.y.z</i> _inst.win32	DS-Recovery Tools	Windows 32-bit
app_rcv_ <i>N.X.y.z</i> _inst.win64	DS-Recovery Tools	Windows 64-bit

Table 8 Auto-upgrade packages

5.3.2 Performing a manual upgrade

1. Ensure the DS-Recovery Tools Service / DS-MLR Service is not running any backup or restore activities.
2. Stop the DS-Recovery Tools Service / DS-MLR Service.
3. Run the DS-Recovery Tools Release / Service Pack installation on the machine where the DS-Recovery Tools Service / DS-MLR Service software is installed.
4. Once the installation is complete, start the DS-Recovery Tools Service / DS-MLR Service.
5. Verify that the DS-Clients can successfully connect to the DS-Recovery Tools Service / DS-MLR Service by triggering a test backup / restore.

6 Installing the Local DS-VDR Tool (Windows)

This chapter provides detailed instructions on how to install the Local DS-VDR Tool. The Local DS-VDR Tool is designed to work with VMware vCenter servers to schedule and provide Virtual Disaster Recovery services for configured Virtual Machines.

- Once the Local DS-VDR service is running, you can configure it to work with any VMware vCenter (or individual ESX host) visible to it.
- The machine running the Local DS-VDR service will assume the load of processing the requests for cloning of Virtual Machines.
- The Local DS-VDR service is configured from the Java DS-User (logged into to a DS-Client).

6.1 Preparing to install the Local DS-VDR Tool

This section describes the system requirements for installing the Local DS-VDR Tool. Before installing the Local DS-VDR Tool, ensure the following:

- The target installation computer is networked with all the target vCenters that will be used.
- The Local DS-VDR server is able to receive connections on Port 4407(default) from DS-Clients via TCP/IP.
- The Local DS-VDR Tool is required to enable the following:
 - Physical to Virtual backup set option.
 - VADP backup set when the Local DS-VDR option is selected.
- The DS-Client has a “Local DS-VDR license count” assigned from their DS-System to configure the Local DS-VDR service to protect virtual machines.
- Each DS-Client must have it's own, dedicated Local DS-VDR Tool. You cannot use a single Local DS-VDR Tool with multiple DS-Clients.

NOTE: For the free version of Microsoft SQL Server, all the drivers are installed automatically. The full version has to be purchased separately.

6.1.1 Hardware requirements

The Local DS-VDR Tool is installed on the DS-Client machine. See [Section 2.1.1, “Hardware requirements”](#).

6.1.2 Software requirements

This section describes the software requirements for installing the Local DS-VDR Tool on a Windows machine. For the latest information, see the *Installation and Support Matrix*.

Operating System	Database
Windows Server 2016 (64-bit) <ul style="list-style-type: none"> Standard Datacenter 	Microsoft SQL Server <ul style="list-style-type: none"> 2016 or 2016 Express 2014 SP1 or 2014 Express SP1 2012 SP2/SP3 or 2012 Express SP2/SP3 2008 R2 SP3 or Express R2 SP3
Windows Server 2012 (64-bit) <ul style="list-style-type: none"> Standard or Standard R2 Datacenter or Datacenter R2 	
Windows Server 2008 (64-bit) <ul style="list-style-type: none"> Standard SP2 or Standard R2 SP1 Enterprise SP2 or Enterprise R2 SP1 	

Table 1 Software requirements for Local DS-VDR Tool

6.2 Installing the Local DS-VDR Tool

This section describes the steps required to install the Local DS-VDR Tool.

To install the Local DS-VDR Tool:

1. Log onto the installation computer as a local administrator and on the DVD, click **Setup.exe**.
2. In the **Windows Product Installation Center** screen, select the required language and then click **Local DS-VDR**. Once the prerequisite check is complete, click **Next**.
3. In the **License Agreement** page, accept the agreement and click **Next**.
4. In the **Destination Folder** screen, retain the default location or select a different location and click **Next**.
5. In the **Ready to install** screen, click **Next**.
6. In the **Microsoft SQL Configuration** screen, select the required option and click **Next**:
 - **Use Local Microsoft SQL Instance**: This option is available if setup detects a compatible SQL Server instance on the target machine. If more than one instance exists, select the one you want to use.
 - **Install a new Microsoft SQL Server Instance**: This is the default option if no SQL Server instance exists on the target machine. It will install the free Microsoft SQL Server Express database. You can configure a different instance name or use the suggested default name (SQLEXPRESS).
7. Once the installation files are copied, click **Finish** to complete the installation. The Local DS-VDR Service will start automatically.

7 Knowledge Base

7.1 Automatic upgrade of Microsoft SQL Server Express

Creation Date: February 19, 2013
Revision Date: September 21, 2017
Product: DS-Client (Windows)

Summary

The DS-Client installation will automatically upgrade the Microsoft SQL Server Express database instance used by a Windows DS-Client.

Automatic Upgrade

An automatic upgrade is a 'silent' upgrade (no user interaction required) that is performed when the DS-Client downloads an upgrade package from the DS-System. The upgrade of the database version proceeds under the following conditions:

1. Microsoft SQL Server Express must have only the following databases:
 - Default databases: master, model, msdb, pubs, Northwind, tempdb
 - DS-Client specific databases: dscslamon, dsclient, dslanfiles, dsdelta (the installation will accept databases if the name starts with a database prefix)
2. The Microsoft SQL Server Express must be on the local machine.

If the above checks do not pass (e.g. if there are more databases than the ones listed above), the installation will continue and apply the required database patches to the DS-Client databases on the existing Microsoft SQL Server Express database instance.

Manual Upgrade

A manual upgrade is performed when the end-user runs the installation or upgrade package executable.

- For manual upgrades, the user is prompted if they want to upgrade the Microsoft SQL Server Express instance.
- If the user chooses to upgrade, no conditions on additional databases apply, and the database will be upgraded.

7.2 Installing DS-Client with Microsoft SQL Server 2012 (Windows)

Creation Date: July 30, 2014
Revision Date: July 30, 2014
Product: DS-Client (Windows)

Summary

Starting with SQL Server 2012, Microsoft has changed some of the internal behavior of SQL Server. Because of those changes, you must make a startup configuration to any SQL Server 2012 instance that you want to use for a Windows DS-Client.

The following link is to a bug opened with Microsoft for this problem.

<https://connect.microsoft.com/SQLServer/feedback/details/739013/failoveror-restart-results-in-reseed-of-identity>

Microsoft has closed the issue as “by Design”, therefore a workaround is necessary for users who want to use a Windows DS-Client with an Microsoft SQL Server 2012 database (and most probably any higher version of Microsoft SQL Server that is released going forward).

Workaround

If the Microsoft SQL Server 2012 Instance is started with **trace flag 272**, the internal behavior described in the Microsoft article will be ‘reverted’ to the same behavior as the previous versions of SQL Server.

Before using Windows DS-Client, configure the Microsoft SQL Server 2012 instance to start with **trace flag 272** as follows:

1. Open the **SQL Server Configuration Manager** and click **SQL Server Services** in the left pane.
2. Right-click on the SQL Server instance name on the right pane and select **Properties**.

Ensure this is the instance used by the Windows DS-Client for its ‘dsclient’ database.
3. Click **Startup Parameters** and in the **Specify a startup parameter** text box, enter the following:

-t272

Note: Use this exact case-sensitive string.
4. Click **Add**, confirm the changes and restart the SQL Server.

7.3 Configuring DS-Client with an external PostgreSQL database (Linux)

Creation Date: December 08, 2011
Revision Date: August 07, 2015
Product: DS-Client (Linux)

Summary

Default installations of Linux DS-Client come with an embedded PostgreSQL database (on the local machine). This article helps you to configure the Linux DS-Client to use an unembedded, external (remote or local) database.

NOTE: The external PostgreSQL database must be the same version or higher than the embedded database (i.e. \geq PostgreSQL 9.4). If it is lower, the DS-Client will only run in standby mode due to incompatible database patches. (This is a PostgreSQL issue).

Install Linux DS-Client and configure it with an external PostgreSQL database

1. Install the DS-Client on the target machine.
2. Follow the GUI to install DS-Client. **Do not start DS-Client Service or DS-User.**
3. Modify the `dsclient.cfg` at `/<installation_path>/etc` to point to the external PostgreSQL.
 - Database Home: This is the directory where you can find "bin/psql".
 - Database Host: IP address or computer_name where the PostgreSQL instance resides.
 - Database Type: PostgreSQL
 - Database User: postgres
 - Database Password: This must be in encrypted format. Use the **asigraenc** application in `/<DS-Client_Installation_Path>/Tools` to generate an encrypted version of your postgres password.
 - Database Port: 5432
4. Then you must create a new, empty external *dsclient* and *ds/anfiles* database using the following commands:

```
psql template1 -Upostgres
create database dsclient template=template0 encoding='UTF8';
create database ds/anfiles template=template0 encoding='UTF8';
```
5. Find the following 2 files in the `/<installation_path>/db/scripts` folder:

```
postgresdsclient.sql  
postgresdslanfiles.sql
```

6. Run these scripts to initialize each database:

```
psql -d dsclient -Upostgres -f <path>/postgresdsclient.sql  
psql -d dslanfiles -Upostgres -f <path>/postgresdslanfiles.sql
```

- If running PostgreSQL Server on the local (DS-Client) computer, <path> is the /<installation_path>/db/scripts (default is usually /opt/CloudBackup/DS-Client/ db/scripts).
- If running PostgreSQL Server on the a remote computer, <path> can be any location. Copy the *postgresdsclient.sql* and *postgresdslanfiles.sql* scripts to the PostgreSQL computer and run the above psql commands.

NOTE: The IP address of the local computer (DS-Client machine) must be added to the pg_hba.conf file located under <Postgres_Installation_Path>/data folder, in order to prevent connection problems between the DS-Client machine and the Postgres server.

7. Start the DS-Client service with the following command:

```
Start DS-Client: /etc/init.d/dsclient start
```

7.4 Connecting to an embedded PostgreSQL database (Linux)

Creation Date: December 22, 2011
Revision Date: December 22, 2011
Product: DS-Client (Linux)

Summary

Default installations of Linux DS-Client come with an embedded PostgreSQL database (on the local machine).

To connect to the embedded database instance that is installed with the Linux DS-Client, do the following:

1. Login as a **root** user.
2. In the command line type:

```
PATH_TO_PSQL/psql -h PATH_TO_EMBEDDED_PGSQL -U dsclient -d  
DATABASE_NAME
```

where:

- PATH_TO_PSQL is the path where psql command can be found. For DS-Client installed with embedded PostgreSQL database instance, by default, this path is:

`/opt/CloudBackup/DS-Client/db/psql/bin`
- PATH_TO_EMBEDDED_PGSQL is the path where the Embedded Database is installed. By default, this path is `/opt/CloudBackup/DS-Client/db/psql`. This path value can be found in the DS-Client installation directory, `/etc/dsclient.cfg` file, in the Database Host value.
- DATABASE_NAME is the database name to connect to, found in the Embedded PostgreSQL database instance.

7.5 Configuring Mac DS-Client with an external PostgreSQL database

Creation Date: December 08, 2011
Revision Date: October 07, 2015
Product: DS-Client (Mac)

Summary

Default installations of Mac DS-Client come with an embedded PostgreSQL database (on the local machine). This article helps you to configure the Mac DS-Client to use an unembedded, external (remote or local) database.

NOTE: The external PostgreSQL database must be the same version or higher than the embedded database (i.e. \geq PostgreSQL 9.4). If it is lower, the DS-Client will only run in standby mode due to incompatible database patches. (This is a PostgreSQL issue.)

Install Mac DS-Client and configure it with an external PostgreSQL database

1. Install the Mac DS-Client on the target machine.
2. Follow the GUI to install DS-Client. Do not start DS-Client Service or DS-User.
3. Modify the dsclient.cfg at `/<installation_path>/etc` to point to the external PostgreSQL.
 - Database Home: This is the directory where you can find "bin/psql".
 - Database Host: IP address or computer_name where the PostgreSQL instance resides.
 - Database Type: PostgreSQL
 - Database User: postgres
 - Database Password: This must be in encrypted format. Use the 'asigraenc' application in `/<DS-Client_Installation_Path>/Tools` to generate an encrypted version of your postgres password. (For example: `./asigraenc mypassword`)
 - Database Port: 5432
4. Then you must create a new, empty external "dsclient" and "dslanfiles" database using the following commands:

```
psql template1 -Upostgres
create database dsclient template=template0
encoding='UTF8';
create database dslanfiles template=template0
encoding='UTF8';
```


5. Find the following 2 files in the /<installation_path>/db folder:

```
postgresdsclient.sql  
postgresdslanfiles.sql
```

6. Run these scripts to initialize each database:

```
psql -d dsclient -Upostgres -f <path>/postgresdsclient.sql  
psql -d dslanfiles -Upostgres -f <path>/  
postgresdslanfiles.sql
```

- If running PostgreSQL Server on the local (DS-Client) computer, <path> is the /<installation_path>/db (default is usually /Library/CloudBackup/DS-Client/db).
- If running PostgreSQL Server on the a remote computer, <path> can be any location. Copy the postgresdsclient.sql and postgresdslanfiles.sql scripts to the PostgreSQL computer and run the above psql commands.

NOTE: The IP address of the local computer (DS-Client machine) must be added to the pg_hba.conf file located under <Postgres_Installation_Path>/data folder, in order to prevent connection problems between the DS-Client machine and the Postgres server.

7. Start the DS-Client service using the following command:

```
Start DS-Client: /Library/StartupItems/DSCClient/DSCClient start
```

7.6 Connecting to an embedded PostgreSQL database (Mac)

Creation Date: December 22, 2011

Revision Date: December 22, 2011

Product: DS-Client (Mac)

Summary

Default installations of Mac DS-Client come with an embedded PostgreSQL database (on the local machine).

To connect to the embedded database instance that is installed with the Mac DS-Client, do the following:

1. Login as a **root** user.
2. In the command line type:

```
PATH_TO_PSQL/psql -h PATH_TO_EMBEDDED_PGSQL -U dsclient -d  
DATABASE_NAME
```

where:

- PATH_TO_PSQL is the path where *psql* command can be found. For DS-Client installed with embedded PostgreSQL database instance, the default path is: */Library/CloudBackup/DS-Client/db/psql/bin*
- PATH_TO_EMBEDDED_PGSQL is the path where the Embedded Database is installed. The default path is */Library/CloudBackup/DS-Client/db/psql*.

This path value can be found in the DS-Client installation directory, */etc/dsclient.cfg* file, in the Database Host value.

- DATABASE_NAME is the database name to connect to, found in the Embedded PostgreSQL database instance.