

# Asigra Cloud Backup v14.1 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.

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

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**IMPORTANT:** Important notes emphasize information that is essential to the completion of a task and draw specialJanuary 2019 attention to actions that could adversely affect the operation of the application or result in a loss of data.

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## About this guide

Formatting conventions

## 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 Before you begin

- Ensure that the DS-Client machine and DS-User machine are synchronized with a time server to ensure consistency. You can use UTC (Coordinated Universal Time) via a recognized NTP (Network Time Protocol) server to keep the time synchronized.
- If you are installing the DS-Client software for the first time, set the maximum server memory within acceptable levels, so that the database does not use all the available memory. For more information see, the PostgreSQL documentation.
- If you are installing DS-Client Docker, ensure the following:
  - Ensure that your operating system is up to date with the latest patches.
  - Download and install Docker and Docker Compose onto the machine where you intend to install DS-Client.
  - Ensure that the Docker service and the supported container type are running.

#### 2.1.2 Hardware requirements

The following table lists 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

#### 2.1.3 Port requirements

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

Ports	Description
80	DS-Client to DS-NOC (http)
443	DS-Client to DS-NOC (https)
4401	DS-Client to DS-System
4403	DS-User to DS-Client
4405	DS-Client to DS-MLR
4407	DS-Client to Local DS-VDR
4408	DS-Client to DS-Recovery Tools
4410	DS-Client to DS-Client (Grid DS-Client)
4411	API Connections to DS-Client service / daemon
8090	DS-Client to DS-Client (VM Replication)

Table 2 Port requirements for DS-Client

**NOTE:** Port numbers 4400-4406 are IANA-assigned. Ensure that the required ports are not blocked by a firewall. If you want full control of the DS-Client from DS-User, enable port 4401 (TCP) and port 4403 (TCP and UDP) with transparency.

## 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 Software requirements

The following table lists the requirements for installing the DS-Client software on a Windows machine. For the latest information, see the *Support Matrix*.

**NOTE:** The DS-Client software can be installed only on the 64-bit version of the supported operating system.

Operating System	Database
Windows Server 2016	• PostgreSQL 10 (embedded)
Windows 10	• PostgreSQL 10 (embedded)

Table 3 Software requirements for DS-Client (Windows)



For DS-Client Docker*	
Windows Server 2016	For more information, visit <a href="https://success.docker.com/article/compatibility-matrix">https://success.docker.com/article/compatibility-matrix</a>
Windows 10	

Table 3 Software requirements for DS-Client (Windows)

\* A Windows container is supported only on a Windows operating system.

## 2.2.2 Installing the DS-Client software

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

---

**IMPORTANT:** By default, the Windows DS-Client is installed with an embedded PostgreSQL database. Ensure that there is enough disk space available on the DS-Client machine to accommodate the embedded PostgreSQL database.

---

### To install the DS-Client software:

1. Log on to the target DS-Client computer as an Administrator.
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. On the **Windows Product Installation Center** page, click **DS-Client**.
5. Select the language for the installation, and then click **OK**.

---

**NOTE:** If the *inst\_param.txt* file exists in the current directory, setup will run a simplified installation or a silent mode installation based on the specified XML installation template file.

---

6. On the **License Agreement** page, read the license agreement carefully, click **I agree to the terms of the license agreement**, and then click **Next**.
7. On the **Install Options** page, specify a destination folder for the installation files, select the component you want to install, and then click **Next**.
  - **Classic DS-User:** (default) This installs the DS-User application.
  - **DS-Client Service:** (default) This installs the DS-Client service.
  - **DS-Client Docker:** This installs the DS-Client Service so that it runs in a Docker container.

---

**NOTE:** If you selected DS-Client Docker, proceed to step 12.

---

8. A prerequisite check is performed. Once it is complete, click **Next**.

9. On the **Database Information** page, do the following:
  - a) Select **Standalone DS-Client**.
  - b) In the **TCP Port** box, type the TCP port that will be used by the DS-Client or retain the default value.
  - c) Click **Next**.
10. On the **Service Account** page, 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 want to use the Windows *Local System account* instead of a specific user account.
  - **This account:** Enter the Windows User Account and Password the DS-Client service will use. The Windows user account must be a member of the Administrators group.

For uninterrupted service, ensure that the Service Account is not disabled and the password never expires. For information on how to configure the service account, see the *Microsoft* documentation.

11. On the **Database Buffer** page, specify the folder for the database buffer created on the computer running the DS-Client, and then click **Next**.
12. If you selected **DS-Client Docker**, do the following:
  - a) On the **DS-Client/DS-User Setup** page, type the required information to create the DS-Client Docker container(s).

---

**IMPORTANT:** The *.yaml* file contains all the information for the DS-Client Docker container and the passwords for the DS-Client service. Ensure that the *.yaml* file is secure and not accessible to other users.

---

- b) Once you finished typing all the required information, click **Enter**.
- c) To view the health of the Docker containers you created, open a command prompt window, and then type the following:

```
docker ps -a
```

Before you connect to a DS-Client Docker container using DS-User, ensure that the status of the container is Healthy.

- d) In DS-User, configure the connection settings by adding the IP addresses of the DS-Client Docker containers. For more information, see the *DS-Client User Guide*.

The installation process will create the container(s) and on successful completion automatically starts the Docker service.

13. On the **Installation Complete** page, select the required options, and then click **Finish**.

### 2.2.3 Installing the VSS Nimble Provider software

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 target DS-Client computer as a local administrator.
2. On the DVD, click **Setup.exe**.
3. On the Windows Product Installation Center page, click **VSS Nimble Provider**.
4. On the **Prerequisites Check** page, click **Next**.
5. On the **License Agreement** page, accept the agreement, and then click **Next**.
6. On the **Select Destination Location** page, specify a folder where the installation files will be copied.
7. Click **Finish**.

## 2.3 Installing the DS-Client software (Linux or Mac)

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

### 2.3.1 Software requirements

The following table lists the requirements for installing the DS-Client software on a Linux or Macintosh machine. For the latest information, see the *Support Matrix*.

---

**NOTE:** The DS-Client software can be installed only on the 64-bit version of the supported operating system.

---

## Installing the DS-Client software

### Installing the DS-Client software (Linux or Mac)

Operating System	Database
CentOS 7.3, 7.4, or 7.5	<ul style="list-style-type: none"><li>• PostgreSQL 9.4, 9.5, or 9.6</li><li>• PostgreSQL 10 (embedded)</li></ul>
Red Hat Enterprise Linux 7.3, 7.4, or 7.5	<ul style="list-style-type: none"><li>• PostgreSQL 9.4, 9.5, or 9.6</li><li>• PostgreSQL 10 (embedded)</li></ul>
SUSE Linux Enterprise Server 11 SP4, 12 SP3, or 15	<ul style="list-style-type: none"><li>• PostgreSQL 9.4, 9.5, or 9.6</li><li>• PostgreSQL 10 (embedded)</li></ul>
Mac OS X 10.12 (Sierra) or 10.13 (High Sierra)	<ul style="list-style-type: none"><li>• PostgreSQL 9.4, 9.5, or 9.6</li><li>• PostgreSQL 10 (embedded)</li></ul>
For DS-Client Docker*	
CentOS 7.4	For more information, visit <a href="https://success.docker.com/article/compatibility-matrix">https://success.docker.com/article/compatibility-matrix</a>

Table 4 Software requirements for DS-Client (Linux or Mac)

\*A Linux container is supported only on a Linux operating system.

## 2.3.2 Installing the DS-Client software (Linux)

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

### To install the DS-Client software:

1. Log on to the target installation computer as the user **root**.
2. On the DVD, click **setup\_lin.sh**.

---

**NOTE:** The `setup_lin.sh` command will automatically install the required Linux libraries and launch the installation process.

---

3. Select the setup language, and then click **Install**.
4. On the **Linux Product Installation Center** page, click **DS-Client**.
5. On the **Software License Agreement** page, accept the agreement, and then click **Next**.
6. On the **Choose Setup Type and Installation Location** page, select the component you want to install, specify a destination folder for the installation files, and then click **Next**.

---

**NOTE:** The DS-Client Docker option is available only in a CentOS environment.

---

- **Classic DS-User:** (default) This installs the DS-User application.
- **DS-Client Service:** (default) This installs the DS-Client service.

- **DS-Client Docker:** This installs the DS-Client Service so that it runs in a Docker container.
7. A prerequisite check is performed. Once it is complete, click **Next**.
  8. If you selected **DS-Client Docker**, do the following:
    - a) In the **Terminal** window, type the required information to create the DS-Client Docker container(s).

---

**IMPORTANT:** The `.yml` file contains all the information for the DS-Client Docker container and the passwords for the DS-Client service. Ensure that the `.yml` file is secure and not accessible to other users.

---

- b) Once you finished typing all the required information, click **Enter**.
- c) To view the health of the Docker containers you created, open a command prompt window, and then type `docker ps -a`.

---

**NOTE:** Before you connect to a DS-Client Docker container using DS-User, ensure that the status of the container is Healthy.

---

- d) In DS-User, configure the connection settings by adding the IP addresses of the DS-Client Docker containers. For more information, see the *DS-Client User Guide*.

The installation process will create the container(s) and on successful completion automatically starts the Docker service.

9. On the **Complete Installation** page, select the required option(s), and then click **Done**.

### 2.3.3 Installing the DS-Client software (Mac)

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

#### To install the DS-Client software:

1. Log on to the target installation computer as the user **admin**.
2. Run the setup program from the following location on the DVD:

```
\Software\DS-Client\DS-Client_FullFeatured\MAC_OS_X\setup.comm
```

and
3. Select the setup language, and then click **Install**.
4. On the **Software License Agreement** page, accept the agreement, and then click **Next** to perform a prerequisite check. Once the prerequisite check is complete, click **Next**.

## Installing the DS-Client software

### Installing the DS-Client software (Linux or Mac)

5. On the **Choose Setup Type and Installation Location** page, select the component you want to install, specify a destination folder for the installation files, and then click **Install**.
  - **Classic DS-User:** (default) This installs the DS-User application.
  - **DS-Client Service:** (default) This installs the DS-Client service.
6. On the **Complete Installation** page, select the required option(s), and then click **Done**.

### 2.3.4 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 console mode:

1. Log on to the target installation computer as the user **root**.
2. To proceed with the installation, do one of the following:
  - For Linux: 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
```
  - For Mac: Run the command `setup.command -i console`.
3. Select the **Setup Language**.
  - For German: Press **[1]** then **Enter**.
  - For English: Press **[2]** then **Enter**.
  - For Simplified Chinese: Press **[3]** then **Enter**.
4. Press **[1]** for DS-Client, and then press **Enter**.
5. On the **Software License Agreement** page, read the agreement, press **[Y]** to accept, and then press **Enter**. A prerequisite check is performed.
6. Once the prerequisite check is completed, select the components to setup, and then press **Enter**.
  - Press **[1]** to select DS-Client.
  - Press **[2]** to select Classic DS-User.
  - Press **[3]** to select DS-Client Docker.

---

**NOTE:** You cannot select DS-Client and DS-Client Docker together. You can select only DS-Client Docker or along with Classic DS-User.

---

7. If you are using Linux, select the destination directory where DS-Client will be installed.

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. If you selected **DS-Client Docker**, do the following:
  - a) On the **DS-Client/DS-User Setup** window, type the required information to create the DS-Client Docker container(s).

---

**IMPORTANT:** The `.yml` file contains all the information for the DS-Client Docker container and the passwords for the DS-Client service. Ensure that the `.yml` file is secure and not accessible to other users.

---

- b) Once you finished typing all the required information, click **Enter**.
- c) To view the health of the Docker containers you created, open a command prompt window, and then type the following:

```
docker ps -a
```

Before you connect to a DS-Client Docker container using DS-User, ensure that the status of the container is Healthy.

- d) In DS-User, configure the connection settings by adding the IP addresses of the DS-Client Docker containers. For more information, see the *DS-Client User Guide*.

The installation process will create the container(s) and on successful completion automatically starts the Docker service.

10. On the **Setup Complete** page, select the component(s) you want to launch, and then press **Enter**.

---

**NOTE:** If you are using Linux, press **[3]** to start DS-Client when you restart the system. By default, both DS-User and DS-Client will start upon exiting the Installation.

---

#### 2.3.5 Installing the DS-Client software from a command line

To install DS-Client from the command line, do the following:

- For Linux: type **setuplinuxclient.bin**.
- For Mac: type **setup.command**.

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**: Specifies 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. A combination of the following is possible: "DS-C" (DS-Client service), "DS-U" (Classic 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.
- **I de or -I en**: Selects the language (for either Console Mode or GUI Mode installation) to be German (-I en is the default setting).

---

**NOTE:** Users must have read/write access to the folder specified for installation.

---

#### 2.3.6 Configuring DS-Client to use an external PostgreSQL database

Default installations of the Linux and Mac DS-Client come with an embedded PostgreSQL database.

This section describes how to configure the Linux or Mac DS-Client to use an external database.

---

**NOTE:** The external PostgreSQL database must be the same version or higher than the embedded database.

---



**To configure DS-Client with an external PostgreSQL database:**

1. Install the DS-Client on the target machine.

---

**IMPORTANT:** Do not start the DS-Client service or the DS-User.

---

2. Modify the dsclient.cfg to point to the external PostgreSQL database. The file is located in the following folder:

```
<installation_path>/etc
```

- 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

3. Create new external *dsclient* and *dslanfiles* databases using the following commands:

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

4. Verify that you have the following files in the <installation\_path>/db/scripts folder.

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

5. Run the following scripts to initialize each database:

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

If the PostgreSQL database is on the local DS-Client computer, the path is as follows:

- On Linux:

```
<installation_path>/db/scripts (default is /opt/
CloudBackup/DS-Client/ db/scripts)
```

- On Mac:

```
<installation_path>/db (default is /Library/CloudBackup/
DS-Client/db)
```

If the PostgreSQL database is on a remote computer, the path can be any location.

---

**NOTE:** To prevent connection issues between the DS-Client computer and the PostgreSQL server, the IP address of the local DS-Client computer must be added to the `pg_hba.conf` file located in the `<Postgres_Installation_Path>/data` folder.

---

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

- On Linux:

```
/etc/init.d/dsclient start
```

- On Mac:

```
/Library/StartupItems/DSCClient/DSCClient start
```

## 2.4 Installing a Grid DS-Client (Windows)

Grid DS-Client is a configuration of several DS-Client nodes working together with a common DS-Client database 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. The private and account encryption keys are the same for all DS-Client nodes in a grid.

### 2.4.1 Before you begin

- Ensure that 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.
- Ensure that all nodes are members of the same domain and have the same access permissions to network resources and the source database.
- Ensure that all the nodes have the same operating system with the same version and the database is common to all DS-Client nodes on the grid. The service account is the same for all DS-Clients in a grid to avoid problems with database connections, local storage issues, etc.
- Ensure that all computers on the grid have identical software installations to backup any of the special backup types.
- Ensure that all nodes are synchronized with the same time server and configured to the same time zone to ensure consistency. You can use UTC (Coordinated Universal Time) via a recognized NTP (Network Time Protocol) server to keep the time synchronized.
- On each node, perform the following (if applicable):

- Ensure 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
```

---

**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.

---

- Ensure that port 4410 is open on all the nodes of the Grid DS-Client as it is used for communication between the nodes.
- 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.
- Set the network access: Sharing and security model for local accounts. Set its value to **Classic - local users authenticate as themselves**.
- Turn off UAC (User Account Control).
- Turn on file and printer sharing.
- Ensure that **File and printer sharing** and **Remote Administration** are in the exception list.

## 2.4.2 Installing a Grid DS-Client

To configure a Grid DS-Client, you must first install a standalone DS-Client on the main node in the grid. Subsequent nodes must point to the main node configuration file (dsgridconfig.conf) that was generated by the standalone DS-Client installation.

### To install a Grid DS-Client:

1. Install a Standalone DS-Client on the main node that you want to use for the Grid DS-Client. For more information, see [Section 2.2.2, “Installing the DS-Client software”](#).
2. Run the DS-Client setup program again on the other nodes that will be part of the Grid DS-Client.
3. On the **Database Information** page, do the following:
  - a) Select **Grid DS-Client**.
  - b) Browse to the configuration file (dsgridconfig.conf) that was generated by the standalone DS-Client installation on the main node.
  - c) Click **Next**.

---

**NOTE:** The DS-Client service account and the DS-Client-PostgreSQL service account must have full control permissions for the dsgridconfig.conf file.

---

4. On the **Installation Complete** page, do the following:
  - a) Clear the **Start the DS-Client service** option.
  - b) Select the **Keep existing DS-Client database** option.
  - c) Click **Finish**.

---

**NOTE:** On every grid node, clear the selection for **Start the DS-Client service** option.

---

5. Once DS-Client is installed on all the nodes, start the DS-Client service on any one node, and then connect to that node. You are prompted to run the Initial DS-Client configuration.
6. Enter all the required information, and then click **Save**.

---

**IMPORTANT:** Do not select the **Connect to DS-System and verify information** option.

---

7. Stop the DS-Client service on the node.
8. Run the Grid DS-Client Configuration Tool on any one of the nodes and configure the grid.

Once you have finished adding all the DS-Clients that will belong to the grid, the DS-Client service is started automatically on all the nodes.
9. Connect to the main node and verify or set the following:
  - a) Set the parameter *DSCDBDumpPath* to the UNC path of the PostgreSQL dump location.

If this is not configured, the DS-Client will use the default DS-Client buffer path, which may cause errors during Admin activities.
  - b) Set the parameter *LogArchivePath* to the UNC path of the archived DS-Client logs location.

## 2.5 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 database prior to performing an upgrade.

---

### 2.5.1 Performing an automatic upgrade

By default, the DS-System is configured to upgrade its DS-Clients automatically. Each time a DS-Client connects to the DS-System, the DS-System validates the DS-Client's version number. If the upgrade package on the DS-System is higher than the current DS-Client version, the DS-Client will silently upgrade itself.

When performing an automatic upgrade from a previous version of the Windows DS-Client, the existing Microsoft SQL Server or PostgreSQL database will be automatically migrated to the embedded PostgreSQL database. Users who want to retain their existing Microsoft SQL Server database must perform a manual upgrade.

---

**IMPORTANT:** Before you begin the upgrade process, ensure that there is enough disk space available on the DS-Client machine to accommodate the embedded PostgreSQL database. If the size requirements are not met, the auto-upgrade process will fail and the *AllowAutoUpgrade* parameter will be disabled. The existing DS-Client will continue to run and connect to the updated DS-System.

---

If your environment has multiple DS-Clients and you do not want to upgrade them all at the same time, do one of the following:

- Upgrade each DS-Client in a controlled manner by performing a rolling upgrade. For more information, see the *DS-System User Guide*.
- Disable the **AllowAutoUpgrade** parameter (Setup > Configuration > Advanced tab > Miscellaneous) on each DS-Client that you do not want to upgrade.

---

**NOTE:** If you disable the automatic upgrade feature for DS-Client, you must manually install hotfixes and service packs on the affected DS-Client.

---

## 2.5.2 Performing a manual upgrade

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

- For Windows DS-Clients:
  - If your existing database is PostgreSQL, it is migrated to PostgreSQL (embedded).
  - If your existing database is Microsoft SQL Server (Express Edition), it is automatically migrated to PostgreSQL (embedded).
  - If your existing database is Microsoft SQL Server (Enterprise Edition or Standard Edition), you will have the option of retaining and upgrading it or migrating it to PostgreSQL (embedded).

---

**NOTE:** For a list of supported databases, see the *Support Matrix*.

---

### To upgrade the DS-Client software manually:

1. Stop the DS-Client service/daemon.
2. Run the new installation on the machine where the DS-Client software is installed.
  - The installation will detect the existing DS-Client database and apply any 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\db`
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.

## 2.5.3 Upgrading a Grid DS-Client

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

### 2.5.3.1 Performing an automatic 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 on 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.

---

### 2.5.3.2 Performing a manual upgrade

#### To manually upgrade Grid DS-Client:

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

Start DS-Client services on all the nodes that are part of the Grid DS-Client.

3. If you are hosting multiple DS-Client databases on the same server/instance (as a common remote database location), select **Use customized prefix**. The default setting is **Do not use prefix**, where the name of the database will be *dsclient*.
4. Enter the credentials of the PostgreSQL instance to which the DS-Client service will connect, and then click **Next**.
  - In the **Server** box, type the IP address of the machine where the PostgreSQL database resides. If required you can use a value in the range of 127.0.0.1 to 127.0.0.32.

## Installing the DS-Client software

### Upgrading the DS-Client software

- If the PostgreSQL database is located on the DS-Client machine, retain the default local host IP address (127.0.0.1)

---

**IMPORTANT:** If the PostgreSQL database is located on a remote machine, you must install the PostgreSQL service on the local DS-Client computer, and then disable the PostgreSQL service.

---

- In the **User Name** box, retain the default **User Name** *postgres*.
- In the **Password** box, type the password for the PostgreSQL user.
- In the **Port** box, type a port number available for communication with the database.

In the **PostgreSQL Client** box, retain the default value for the *psql.exe* and *pg\_dump.exe* utilities. This path is automatically detected and displayed by the DS-Client setup.



## 3 Installing the Management Console software

This section describes how to install the Management Console.

The Management Console is a web-based application that simplifies the backup and recovery process by providing a centralized environment to manage DS-Systems, DS-Clients, backup sets, schedules, retention rules, and more.

---

**NOTE:** Ensure that the DS-Client machine and Management Console machine are synchronized with a time server to ensure consistency. You can use UTC (Coordinated Universal Time) via a recognized NTP (Network Time Protocol) server to keep the time synchronized.

---

### 3.1 Software requirements

The following table lists the requirements for installing the Management Console software. For the latest information, see the *Support Matrix*.

---

**NOTE:** The Management Console software can be installed only on the 64-bit version of the supported operating system.

---

Operating System	Database
Windows Server 2016	• PostgreSQL 10 (embedded)
Windows 10	• PostgreSQL 10 (embedded)
CentOS 7.3, 7.4, or 7.5	• PostgreSQL 10 (embedded)
Red Hat Enterprise Linux 7.3, 7.4, or 7.5	• PostgreSQL 10 (embedded)
SUSE Linux Enterprise Server 11 SP4, 12 SP3, or 15	• PostgreSQL 10 (embedded)
Mac OS X 10.12 (Sierra) or 10.13 (High Sierra)	• PostgreSQL 10 (embedded)

Table 1 Software requirements for installing the Management Console software

### 3.2 Installing the Management Console software

This section describes how to install the Management Console software.

#### To install the Management Console software:

- On the installation DVD, do one of the following:
  - Windows:** Click **setup.exe**, and then on the **Windows Product Installation Center** page, click **Management Console**.
  - Linux:** Click **AMCInstall.bin**, and then on the **Linux Product Installation Center** page, click **Management Console**.
  - Mac:** Click **setup\_amc.command**.

## Installing the Management Console software

### Installing the Management Console software

2. On the **License Agreement** page, read the license agreement carefully, click **I accept the terms in the license agreement**, and then click **Next**.
3. On the **Select Installation Folder** page, select the destination folder where you want to copy the installation files, and then click **Install**.
4. On the **Management Console Settings** page, do the following:
  - a) Select **Https port** or **Http port**, and then type a port number.
  - b) If you selected **Https port**, and want to import your SSL certificate, select the **I want to import my SSL certificate** check box, and then do the following:
    - Select a **Key store type** for the certificate.
    - In the **Key alias** box, type a name for the key alias.
    - In the **Password** box, type a password to protect the key.
    - Click **Browse** and select the SSL certificate file.

---

**NOTE:** To change the Management Console settings after installation, on the **Start** menu, click **Configuration Tool** in the Management Console folder.

---

5. To start the Management Console service automatically when you restart the machine, select the **Start Management Console service after reboot** check box, and then click **Next**.
6. On the **Installation Complete** page, select the **Start the Management Console service** check box, if required, and then click **Done**.

---

**NOTE:** To manually start or stop the Management Console service, on the **Start** menu, click **Process Manager** in the Management Console folder.

---

## 4 Installing the DS-Mobile Client software (Windows)

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

### 4.1 Preparing to install the DS-Mobile Client software

This section describes the system requirements for installing the DS-Mobile Client software. DS-Mobile Client does not support backup or restore of Windows Server Operating Systems.

#### 4.1.1 Hardware requirements

The following table lists 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

#### 4.1.2 Port requirements

The following table lists the ports that are required by the DS-Mobile Client software. Port numbers 4400-4406 are IANA-assigned.

Ports	Description
4401	DS-Mobile Client to DS-System

#### 4.1.3 Software requirements

The following table lists the requirements for installing the DS-Mobile Client software on a Windows machine. For the latest information, see the *Support Matrix*.

---

**NOTE:** The DS-Mobile Client software can be installed only on the 64-bit version of the supported operating system.

---

Operating system	Database
Windows Server 2016	• Firebird (embedded)
Windows 10	• Firebird (embedded)

Table 2 Software requirements for DS-Mobile Client

## 4.2 Installing the DS-Mobile Client software

This section describes how to install the DS-Mobile Client software.

### To install the DS-Mobile Client software:

1. Log onto the target DS-Mobile Client computer as a local Administrator.
2. On the DVD click **Setup.exe**.
3. On the Windows Product Installation Center page, click **DS-Mobile Client**.
4. On the **Choose the Setup Language** page, select a setup language, and then click **Next**. A prerequisite check is performed.
5. Once the prerequisite check is complete, click **Next**.
6. On the **License Agreement** page, read the license agreement carefully, click **I accept the terms of the license agreement**, and then click **Next**.
7. On the **Select Installation Location** page, specify a destination folder for the installation files and click **Next**.
8. On the **Specify Service Logon Account** page, specify the user account and password that the DS-Mobile Client will use to log on when it is started as a Windows service, and then click **Next**.
  - If you leave the fields empty, the *Local System* account credentials will be used for the service.
  - Select **This Account** to specify a user that is a member of the Administrator group of the local computer and type the credentials.
  - If you specify the same user account and password which you used to log on to the Windows computer, *Classic DS-Mobile User* will use those credentials to automatically log into the DS-Mobile Client when it is launched.
9. On the **Completing the wizard** page, 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.

---

## 5 Installing the DS-Notebook Client software (Mac)

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

### 5.1 Preparing to install the DS-Notebook Client software

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

#### 5.1.1 Hardware requirements

The following table lists 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)

#### 5.1.2 Software requirements

The following table lists the requirements for installing the DS-Notebook Client software on a Macintosh machine. For the latest information, see the *Support Matrix*.

---

**NOTE:** The DS-Notebook Client software can be installed only on the 64-bit version of the supported operating system.

---

Operating System	Database
Mac OS X 10.12 (Sierra) or 10.13 (High Sierra)	PostgreSQL 10 (embedded)

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

### 5.1.3 Port requirements

The following table lists the ports that are required by the DS-Mobile Client software. Port numbers 4400-4406 are IANA-assigned.

Ports	Description
4401	DS-Notebook Client to DS-System

## 5.2 Installing the DS-Notebook Client software

This section describes how to install the DS-Notebook Client software.

### To install the DS-Notebook Client software:

1. Log on to the target installation computer as the root user.
2. Run the setup program from the following location on the DVD:  
`\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.
3. On the **License Agreement** page, read the license agreement carefully, click **I accept the terms in the license agreement**, and then click **Next**. A prerequisite check is performed.
4. Once the prerequisite check is complete, click **Next**.
5. On the **Select Installation Location** page, specify a destination folder for the installation files, and then click **Install**.
6. On the **Setup Complete** page, click **Done**, and 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
```

## 5.3 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.

## Installing the DS-Notebook Client software (Mac)

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

- **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.

## Installing the DS-Notebook Client software (Mac)

Installing the DS-Notebook Client software from a command line



## 6 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-MLR Service** - The DS-MLR service is required to perform the backup and recovery of Microsoft Outlook email messages at the individual message level or to perform a granular restore of individual items from a Microsoft Exchange Server (VSS-aware) backup set. The DS-MLR service must be installed and running on the same machine where the items are stored. The DS-MLR service account must be a domain administrator.
- **DS-Recovery Tools Service** - The DS-Recovery Tools service is required to perform the backup and recovery of Microsoft SharePoint Servers at the individual item level. The DS-Recovery Tools service must be installed and running on the same machine where the items are stored. The DS-Recovery Tools service account must be a domain administrator.

---

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

---

### 6.1 Preparing to install the DS-Recovery Tools

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

#### 6.1.1 Hardware requirements

The following table lists 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

#### 6.1.2 Software requirements

The following table lists the requirements for installing the DS-Recovery Tools on a Windows machine. For the latest information, see the *Support Matrix*.

---

**NOTE:** The DS-Recovery Tools software can be installed only on the 64-bit version of the supported operating system.

---

Email Server	Operating System
Microsoft Exchange Server 2016	<ul style="list-style-type: none"><li>Windows Server 2016</li></ul>
Microsoft Outlook 2016	<ul style="list-style-type: none"><li>Windows Server 2016</li><li>Windows 10</li></ul>
Microsoft SharePoint Server 2016	<ul style="list-style-type: none"><li>Windows Server 2016</li></ul>

## 6.2 Installing the DS-Recovery Tools

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

### To install the DS-Recovery Tools:

1. Log on to the target installation computer as a local administrator.
2. On the DVD, click **Setup.exe**.
3. On the **Windows Product Installation Center**, click **DS-Recovery Tools**.
4. Select a language for the installation, and then click **OK**.
5. On the **DS-Recovery Tools Hardware & Software Prerequisite** page, wait for the prerequisite check to complete, and then click **Next**.
6. On the **License Agreement** page, read the license agreement carefully, click **I accept the terms of the license agreement**, and then click **Next**.
7. On the **Select Destination Location** page, specify a destination folder for the installation files, and then click **Next**.
8. On the **Choose the option which you would like to install** page, select the backup source that you want to back up, and then click **Next**.
9. On the **DS-MLR / DS-Recovery Tools Service Logon Account** page, do one of the following, and then click **Next**.
  - To use the Windows local system account, select **Local System Account**.
  - To use a specific user account, select **This account**, and then specify the user account and password.

---

**NOTE:** Auto Start is selected by default (recommended). DS-MLR / DS-Recovery Tools Services will start automatically each time the computer starts.

---

10. On the **Installation Wizard Complete** page, click **Finish**.

## 6.3 Upgrading the DS-Recovery Tools

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

### 6.3.1 Performing an automatic upgrade

By default, the DS-MLR and DS-Recovery Tools services download their automatic upgrade packages from the DS-Client. If an upgrade package is required (and available on the DS-System), the DS-Client will download the upgrade package and silently push the installation to the target DS-Recovery Tools or DS-MLR service installation.

### 6.3.2 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.

## Installing the DS-Recovery Tools (Windows)

### Upgrading the DS-Recovery Tools

## 7 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).

### 7.1 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.

---

#### 7.1.1 Hardware requirements

The Local DS-VDR Tool is installed on the DS-Client machine. See [Section 2.1.2, “Hardware requirements”](#).

## 7.1.2 Software requirements

The following table lists the software requirements for installing the Local DS-VDR Tool on a Windows machine. For the latest information, see the *Support Matrix*.

---

**NOTE:** The Local DS-VDR Tool software can be installed only on the 64-bit version of the supported operating system.

---

Operating System	Database
Windows Server 2016	<ul style="list-style-type: none"><li>• Microsoft SQL Server 2017</li><li>• Microsoft SQL Server 2016 SP1</li><li>• Microsoft SQL Server 2014 SP 2</li></ul>

Table 1 Software requirements for Local DS-VDR Tool

## 7.2 Installing the Local DS-VDR Tool

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

### To install the Local DS-VDR Tool:

1. Log on to the target installation computer as a local administrator.
2. On the DVD, click **Setup.exe**.
3. On the **Windows Product Installation Center** page, click **Local DS-VDR**. A prerequisite check is performed.
4. Once the prerequisite check is complete, click **Next**.
5. On the **License Agreement** page, read the license agreement carefully, click **I accept the terms in the license agreement**, and then click **Next**.
6. On the **Destination Folder** page, retain the default location or select a different location and click **Next**.
7. On the **Ready to install** page, click **Next**.
8. On the **Microsoft SQL Configuration** page, specify the Microsoft SQL Server instance, and then click **Next**.
9. On the **Installation Wizard Complete** page, click **Finish**. The Local DS-VDR Service will start automatically.