

LINUX DS-Client Installation Guide



Assumptions

The following assumptions are made about the audience for this document:

Familiarity: User is familiar with the Operating System platform. User is familiar with basic Internet browsing.

Correct Input: User enters the correct data (e.g. user names, passwords, etc.) when asked or required. If invalid data is entered, an error message will appear, and you will be forced to correct the error before you may proceed.

Canceling activities: The option to cancel the current activity (in some cases the option is “No”) will exit the activity.

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This document may contain sample screen shots, used to demonstrate Asigra Cloud Backup™ procedures. All information appearing in this document is used for illustration purposes only, and it should be considered fictitious.

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About Asigra Cloud Backup™

Asigra Cloud Backup™ is a unique alternative to traditional backup methods, replacing conventional tape based systems with a fully automated Online solution. It provides centralized and automated backups of PCs, file servers and application/database servers with secure offsite storage and immediate Online restoration.

The system uses a DS-Client, installed onto the customer network, which hosts the Asigra Cloud Backup™ client application software that performs the backup and restore activity.

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Before you install	4
I) Hardware & Software Minimum Requirements	4
II) Install and configure PostgreSQL database for DS-Client	5
III) Configure System file /etc/hosts	6
IV) Obtain the DS-Client Installation Program	7
V) Select your encryption key(s)	7
VI) Backup your existing DS-Client database	7
Install or upgrade DS-Client	8
Step 1. Log in to target installation computer	8
Step 2. Run Installation Package	8
Step 3. Select Installation Location	8
Step 4. Choose Setup Type	9
Step 5. Specify DS-Client Database Credentials	9
Step 6. Enter Registration Information	9
Step 7. Specify DS-System Address	10
Step 8. Select Encryption Key(s)	10
Step 9. Review Installation Summary	10
Step 10. Create DS-Client Database	11
Step 11. Finish Installation	11
Configuring the DS-Client (After Installation)	12
DS-Client Configuration File Location and Format	12
Using the asigraenc tool to encrypt password strings	12
DS-Client Upgrade	13
Manual Upgrade	13
Auto-Upgrade	14
DS-User Only Installation	15
Before Installing DS-User	15
Install DS-User only (for remote management)	15
DS-User Upgrade (Upgrading an existing installation)	15
Install or upgrade DS-Client (Console Mode)	16
Step 1. Log in to target installation computer	16
Step 2. Run Installation Package	16
Step 3. Select Installation Location	17
Step 4. Choose Setup Type	17
Step 5. Specify DS-Client Database Credentials	17
Step 6. Enter Registration Information	17
Step 7. Specify DS-System Address	19
Step 8. Select Encryption Key(s)	19
Step 9. Review Installation Summary	19
Step 10. Create DS-Client Database	19
Step 11. Finish Installation	20
Moving Linux DS-Client from 32-bit to 64-bit hardware	21

Before you install

Verify the installation computer meets the following requirements:

I) Hardware & Software Minimum Requirements

You should use the best hardware possible to maximize Asigra Cloud Backup™ performance. If applicable, it is strongly recommended that you use the fastest brand-name components available.

Hardware	x86 (32-bit) or x64 (64-bit) Architecture
CPU (1 or 2)	2 GHz or greater
RAM	4 GB RAM or more
Free disk space for app. and buffer	1 GB or more
Connection to DS-System	LAN, Internet, WAN

Software	Version
Operating System & RPM package requirement: <ul style="list-style-type: none"> • Each OS requires the “Compatibility Standard C++ libraries”, which may not come with the default Linux installation. • 32-bit (x86) Operating Systems require “libstdc++.so.5” (the 32-bit version). • 64-bit (x64) Operating Systems require “libstdc++.so.6” (the 64-bit version). • The listed RPM package(s) contain the required libraries for the corresponding Operating System version. 	RedHat Enterprise Linux 4 - ES/AS U8 (x86) <ul style="list-style-type: none"> • compat-libstdc++-33-3.2.3-47.3.i386.rpm RedHat Enterprise Linux 4 - ES/AS U8 (x64) <ul style="list-style-type: none"> • libstdc++-3.4.6-11.x86_64.rpm RedHat Enterprise Linux 5 - ES/AS U4 (x86) <ul style="list-style-type: none"> • compat-libstdc++-33-3.2.3-61.i386.rpm RedHat Enterprise Linux 5 - ES/AS U4 (x64) <ul style="list-style-type: none"> • libstdc++-4.1.2-46.el5.x86_64.rpm SUSE Linux Enterprise Server 10 up to SP2 (x86) <ul style="list-style-type: none"> • compat-libstdc++-5.0.7-22.2.i586.rpm SUSE Linux Enterprise Server 10 up to SP2 (x64) <ul style="list-style-type: none"> • libstdc++-4.1.2_20070115-0.21.x86_64.rpm SUSE Linux Enterprise Server 11 (x86) <ul style="list-style-type: none"> • libstdc++33-3.3.3-11.9.i586.rpm SUSE Linux Enterprise Server 11 (x64) <ul style="list-style-type: none"> • libstdc++43-4.3.3_20081022-11.18.x86_64.rpm Open Enterprise Server SP2 (x86) <ul style="list-style-type: none"> • libstdc++-3.3.3-43.41.i386.rpm
Database	PostgreSQL 8.2 or 8.3 or 8.4

II) Install and configure PostgreSQL database for DS-Client

The DS-Client can use a database on the local computer, or on a remote computer.

Note: If you are going to use a remote database, you must install it on a supported operating system and make sure that the time zone is the same as the one on the DS-Client.

II.1) Obtaining PostgreSQL packages:

1. The DS-Client requires a PostgreSQL database server in order to function. If the Linux OS does not come with a PostgreSQL package:
 - a free package can be downloaded from www.postgresql.org or
 - a commercial license (and support) can be obtained from www.commandprompt.com.
2. Obtain a PostgreSQL package and install it. You can install PostgreSQL on either:
 - the DS-Client computer itself (i.e. locally), or
 - any computer networked with the DS-Client (i.e. remote database).

*Note: The **pg_dump** utility must be installed on the DS-Client computer in order for DS-Client to be able to perform dumps of the 'dsclient' database. This is included if you install PostgreSQL locally, but if you install a remote database, you must also install at least this utility on the DS-Client computer.*
3. After installing PostgreSQL, the configuration files and any new databases will typically reside either in "/var/lib/pgsql/data" (for the free default postgresql installation) or in "/usr/local/pgsql/data" (in case the postgresql package from www.commandprompt.com is used). This path will now be referred to as "<pg_data_path>" throughout the document. Please make sure you identify the correct path for your system.

II.2) Configuring the PostgreSQL 8.x Server

You must configure the PostgreSQL Server to accept connections from the DS-Client. The following examples will configure PostgreSQL to accept connections if DS-Client supplies the credentials of an authorized user (i.e. user "postgres" with the password you configure). You may need to adjust them to your particular network environment.

Note: Read the instruction comments in the pg_hba.conf file, and refer to the PostgreSQL Administrator's Guide.

II.2.1) Set a password for the database user "postgres":

1. Switch to user 'postgres' to perform the configurations using the command:

```
# su postgres
```
2. Set a password for the database user "postgres" (The DS-Client must use this username / password to connect to the PostgreSQL server):

```
> psql template1 postgres
> ALTER USER postgres PASSWORD '<enter_password_text_here>' ;
> \q
```

II.2.2a) To configure a PostgreSQL installation on the local DS-Client computer:

1. Switch to user 'postgres' to perform the configurations using the command:


```
# su postgres
```
2. In <pg_data_path>/pg_hba.conf, replace all un-commented lines (ones that do not start with #) with the following lines:

# TYPE	DATABASE	USER	CIDR-ADDRESS	METHOD
local	all	all		md5
host	all	all	127.0.0.1/32	md5

Note: The user 'postgres' must also have ownership of the file **pg_hba.conf**, otherwise postgresql will not start.

3. Restart the PostgreSQL service as root user with the following command:


```
#/etc/init.d/postgresql restart
```

II.2.2b) To configure PostgreSQL on a remote computer (other than the DS-Client):

1. Switch to user 'postgres' to perform the configurations using the command:


```
# su postgres
```
2. Open the file "<pg_data_path>/postgresql.conf" and edit the following line:


```
listen_addresses='*'
```

Note: Make sure you remove the "#" sign (un-comment the line).

Note 2: The user 'postgres' must also have ownership of the file **postgresql.conf**, otherwise postgresql will not start.
3. In <pg_data_path>/pg_hba.conf, replace all un-commented lines (ones that do not start with #) with the following lines:

# TYPE	DATABASE	USER	CIDR-ADDRESS	METHOD
local	all	all		md5
host	all	all	127.0.0.1/32	md5
host	all	all	<ip-address>/<CIDR-mask>	md5

where: <ip-address> represents the **DS-Client** computer IP address. Normally, a default CIDR-mask of "32" will work.

4. Restart the PostgreSQL service as root user with the following command:


```
#/etc/init.d/postgresql restart
```

II.2.3) Verify the password for the database user "postgres":

1. Switch to user 'postgres' to perform the configurations using the command:


```
# su postgres
```
2. To verify the password (to test if PostgreSQL accepts a DS-Client connection):
 - If postgres is on the local DS-Client computer, at the command prompt type:


```
> psql -h localhost template1 postgres
```
 - If postgres is remote, you must switch to the DS-Client computer and install the PostgreSQL Utilities, then type:


```
> psql -h <ip-address_of_postgres_server> -d template1 -U postgres
> \q
```

III) Configure System file /etc/hosts

- For each host, add a single line with the following information:

IP-Address	canonical_hostname	aliases
------------	--------------------	---------

IV) Obtain the DS-Client Installation Program

Contact your Asigra Cloud Backup™ Service Provider to register. You will be provided with:

- Installation Disc (or download from Service Provider Website);
- Your Customer Account number: _____;
- Your DS-Client number: _____;
- The DS-System IP address: _____;

Write these numbers down (a space is provided for each above). They are required by the Installation program in **“Step 6. Enter Registration Information” on page 9.**

- Alternatively, your Service Provider can provide you with a .CRI (Customer Registration Information) file. This file contains your customer account and DS-Client number, along with the DS-System IP address.

V) Select your encryption key(s)

- Data backed up through the DS-Client is encrypted using the encryption key(s) you specify.
- Encryption keys are set once. You cannot change the key(s) once set. The DS-Client service will not be allowed to start.
- You must select the type of encryption key (DES, AES 128-bit, AES 192-bit, AES 256-bit). Stronger encryption requires longer keys (8, 16, 24, or 32 characters).
- **Private key:** You must set this key.
- **Account key:** If you only have one DS-Client, you do not need to set this key. When you have more than one DS-Client, you must specify an Account key. This must be the same for every DS-Client that is registered under this same customer account on the DS-System. Common data from your DS-Clients will be encrypted using the Account key.

VI) Backup your existing DS-Client database

If you are upgrading an existing DS-Client installation, you should back up the existing DS-Client database using the command:

```
# pg_dump -U postgres dsclient > /<installation_path>/dsclient.dmp
```

Install or upgrade DS-Client

Step 1. Log in to target installation computer

- Logon as root
- Start PostgreSQL DBMS with the command:
`/etc/init.d/postgresql start`

Step 2. Run Installation Package

Depending on your selections, some different screens will appear. These differences are noted below.

1. **[Option A]** Run the installation program from the download directory or from the corresponding folder on the installation DVD:
`32-Bit Version: /Software/DS-Client/Linux_32_bit/setuplinuxclient.bin`
`64-Bit Version: /Software/DS-Client/Linux_64_bit/setuplinuxclient.bin`
[Option B] Run the Asigra Cloud Backup™ Installation Center for Linux Products (**setup_lin.sh**) located in the root directory of the installation DVD.
 - The Installation Center is a common launcher for all Linux-platform installations. It allows you to choose the specific installation package you want, without the need to browse the installation DVD.
2. Follow the GUI to install DS-Client, or 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 may reduce the screens (simplified installation), or eliminate the need for user interaction entirely (silent mode installation).
3. The Installation starts:
 - Choose the Setup Language (English / German) and Click Next.
Note: The selected language will be installed for the DS-Client service. Once set, the DS-Client Service language cannot be changed (for logs and popup messages). The DS-User GUI language can be changed from the Initialization screen (if the required language components have been installed).
4. A pre-requisite check is performed on the installation machine. This scans the hardware and Operating System for compatibility (see **“1) Hardware & Software Minimum Requirements” on page 4**). Click Next.
5. The License Agreement page appears. You must accept the license agreement to continue. Click Next.

Step 3. Select Installation Location

1. The Select Destination Directory screen appears.
2. The default destination folder is:
`/opt/CloudBackup/DS-Client`
3. To specify a different destination folder, click the Browse Button.
 - The Choose Directory screen appears.
 - Specify a new directory path
 - Click OK.
 - The Choose Destination Location screen returns with the selected path in the destination folder field.
4. Click Next.

Step 4. Choose Setup Type

1. The Choose Setup Type screen appears.
2. Three options are available:

Type	Description
Typical	Installs all the essential DS-Client and DS-User Software.
DS-Client only	Allows you to install only DS-Client components (without DS-User).
DS-User only	This option is for end-user workstations. You can install DS-User on any network computer, so end-users can access the DS-Client and specify their own backup sets.

3. By default, the Typical installation is selected.
4. Click Next. Depending on the setup type selected, some screens may not appear. The following steps describe a Typical installation.

Step 5. Specify DS-Client Database Credentials

1. The DS-Client Database Credentials screen appears.
2. Specify the PostgreSQL database that the DS-Client Service will use:

DB Name	dsclient
Hostname	IP Address or computer_name where the PostgreSQL instance resides.
Port	The service port on the database server available for DS-Client connections.
Database Home	This is the directory where you can find: <ul style="list-style-type: none"> • bin/psql
Username	“postgres” (default) or any database super-user
Password	Password for the user provided.
Confirm	Retype the password.
Start DS-Client at boot time	Check to configure to automatically start when the computer boots up.

3. Click Next.

Step 6. Enter Registration Information

1. The Enter Registration Information screen appears.
2. Enter the appropriate information in each field of the screen.

Name	Enter a descriptive name for this DS-Client. This name appears in brackets in the Connect to DS-Client Service screen. (In the JAVA version, it also appears in the list of available DS-Client computers.)
Account #	Enter your Account number.
DS-Client #	Enter your DS-Client number.
Browse	An alternative to manually entering the above information is to use a .CRI file supplied by your Service Provider. Click Browse to search for this file.

3. Your Account and DS-Client numbers must match those provided to you by your Service Provider System (see: [IV\) Obtain the DS-Client Installation Program](#) in the Before You Install section).
4. Click Next.

Step 7. Specify DS-System Address

You received the IP address of the DS-System (see: [IV\) Obtain the DS-Client Installation Program](#) in the Before You Install section). The DS-Client requires this address in order for it to connect to the DS-System.

1. The Specify DS-System Address screen appears.
2. Enter the IP address of the DS-System your DS-Client will be using. Your Service Provider may have more than one IP address for the DS-System, if this is the case you can specify any or all of them.
3. Click Next.

Step 8. Select Encryption Key(s)

1. The Encryption Keys Setup screen appears. In this screen, you must set the encryption key that the DS-Client will use. (See: [V\) Select your encryption key\(s\)](#))
 - Choose an encryption type (DES or AES) and level (# of bits) from the list.
 - An encryption key is case sensitive. Its length (in characters) depends on the type and level of encryption selected. DES requires 8 characters, AES-128 requires 16 characters, AES-192 requires 24 characters, and AES-256 requires 32 characters. For better security, do not use dictionary words or proper names, and try to randomly mix numbers in with the letters.
 - Auto-complete feature: If you do not specify the full amount of characters in the Key field, installation will fill in the remainder by repeating the string of characters you have entered. (e.g. entering "123" with AES-128 will generate an encryption key of "1231231231231231", or entering "a" for DES will generate the encryption key "aaaaaaaa").
 - Keep the key(s) in a secure location. It is necessary if you ever need to reinstall your DS-Client (e.g. if the computer was destroyed in a disaster) to a new computer.
2. **Private Key:** You must set the private key for your DS-Client.
 - Backup data from your DS-Client installation will be encrypted with this key.
3. **Account Key:**
 - Common backup data from all your DS-Client installations will be encrypted with this key.
4. **Allow encryption key forwarding to DS-System:**
 - Check to have DS-Client forward the encryption key(s) to the DS-System the first time it connects with DS-System.

NOTE: If you forward the keys, they will remain encrypted on the DS-System. However, your Service Provider will be able to create a valid .CRI file containing the encrypted keys. This file will be able to recreate a working version of this DS-Client. Make sure this conforms to your security policies before enabling this option.
5. Click Next.

Step 9. Review Installation Summary

1. A summary of the installation will appear for your review.
2. Click Next to copy files to the destination directory.

Step 10. Create DS-Client Database

1. If you are installing on a machine where there was a previous DS-Client (that was removed) the installation may detect the old database. A popup screen will ask you if you want to recreate the database:
 - Yes: installation deletes the existing (old) database and creates a new (empty) one.
 - No: installation will use the old database that was detected.
2. Click Next.

Step 11. Finish Installation

1. The Setup Complete screen appears once all files are copied.
 - You can select to start the DS-User and DS-Client upon exiting the Installation.
2. Click Finish to complete the installation.
3. You can manually start and stop the DS-Client service with the following commands:

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

Configuring the DS-Client (After Installation)

The DS-Client configuration file is `/etc/dsclient.cfg`. This file is created during installation and can be edited manually. Though it is easier to use the Linux DS-Client installation to set these parameters, some advanced users may prefer to edit the configuration parameters manually.

DS-Client Configuration File Location and Format

The DS-Client configuration file is `/etc/dsclient.cfg`. It is a text file that contains key + value pairs. The key is separated from the value by a colon (":"). The key name can be followed by any number of spaces before the colon (":"). Depending on the key, the value may or may not be case sensitive. It is safest to assume the value is case sensitive.

Using the `asigraenc` tool to encrypt password strings

Passwords must be stored in encrypted format in the configuration file. To encrypt a string manually, you may use the `asigraenc` tool provided in the DS-Client installation directory. This tool will generate an encrypted string for any input string. Note that the encrypted string may vary between different runs of `asigraenc`. There is no tool to decrypt such encrypted strings.

DS-Client Upgrade

Before upgrading, read the new version's Release Notes for any special steps you need to perform.

Normally, the DS-Client should be the same version / Service Pack as the DS-System.

- An "incompatible version" error message appears in the DS-Client Event Log whenever the DS-Client must be upgraded.

Linux DS-Client can be upgraded either manually or automatically (if DS-System is configured):

- See "Manual Upgrade" on page 13.
- See "Auto-Upgrade" on page 14.

Manual Upgrade

If the DS-System is not configured for "Auto Upgrade", you must perform a manual upgrade of the DS-Client.

To manually upgrade a DS-Client from one version / Service Pack to the next, do the following:

1. Make sure the DS-Client is not running backup/restore activities that are of critical importance for your customers.
2. Stop the DS-Client daemon.
3. 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 will apply the database patches.
 - The installation will also detect and upgrade the DS-Client components that are installed on the DS-Client machine.
4. Finish the installation.
5. Start the DS-Client daemon.
6. Check if you can connect to the DS-Client daemon using the same (upgraded) version of the DS-User GUI.
 - If the connection is successful, check the DS-Client Event Log for errors.
7. Run a Daily or Weekly Admin to see if the DS-Client can connect to the DS-System.
8. If there are any problems with the upgrade, contact your Service Provider.

Auto-Upgrade

If the DS-System is configured for “Auto Upgrade”, the DS-Client will automatically upgrade itself on the first connection to the upgraded DS-System.

1. DS-Client will download the upgrade package from the DS-System.
 - The DS-System is configured for “silent mode” upgrade, meaning the entire upgrade will be performed without the need for user interaction.
2. Check if you can connect to the DS-Client daemon using the same (upgraded) version of the DS-User GUI.
 - If the connection is successful, check the DS-Client Event Log for errors.
3. Run a Daily or Weekly Admin to see if the DS-Client can connect to the DS-System.
4. If there are any problems with the upgrade, contact your Service Provider.

Note: You can also perform a manual upgrade of the DS-Client (provided that you have received the new DS-Client Release / Service Pack installation from your Service Provider).

DS-User Only Installation

You can install DS-User on any workstation that can see the DS-Client computer.

DS-User is the user interface to the DS-Client, and distributing it allows end-users to access the DS-Client and specify their own backup sets from their local computer. It can also be installed individually on network workstations, to allow remote management of the DS-Client.

Before Installing DS-User

Make sure that:

- You are logged in as the workstation's root user (or a user with equivalent privileges);
- The workstation is connected to a local/network printer (for Reports);
- The time on the computer is correct;
- The workstation is networked to a DS-Client;
- The installation is running one of the supported Operating Systems from section ["I\) Hardware & Software Minimum Requirements"](#) on page 4.

Note: These are minimum requirements. Use the best hardware possible to maximize Asigra Cloud Backup™ performance.

Install DS-User only (for remote management)

DS-User GUI can be installed using two different installation packages:

1. DS-User Multiplatform Installation:
 - Run **setuplinux.bin** from the Installation DVD folder:

```
  \Software\DS-Client\DS-User\Linux
```
 - Choose the Setup Language.
 - Follow the GUI to install DS-User.
- DS-Client Installation:
 - Follow the same steps from the section ["Install or upgrade DS-Client"](#) on page 8 until you reach the Select Installation Type screen.
 - Select DS-User.
2. Click Next and continue clicking Next until the Setup Complete screen appears.
3. Click Finish.
4. You may start the program and connect to DS-Client.

DS-User Upgrade (Upgrading an existing installation)

To upgrade to a new software version, you must use the same type of installation package (DS-User Multiplatform or DS-Client Installation). (For example: If you installed using the Multiplatform Installation, you must upgrade using a Multiplatform Installation package. Otherwise, the installation will fail with an error indicating that the specified software is not installed on the target machine.)

To upgrade an existing DS-User installation, perform the following steps:

- Close all open DS-User GUIs on that machine.
- Choose the correct installation package for upgrade, and run it.
- Open the DS-User and try to connect to a DS-Client that has the same version as the DS-User. Connection will be successful; otherwise, an error message will be reported.

Install or upgrade DS-Client (Console Mode)

Console mode installation allows you to install the DS-Client from a command-line (without a GUI).

Step 1. Log in to target installation computer

1. Logon as root
2. Start PostgreSQL DBMS: `/etc/init.d/postgresql start`

Step 2. Run Installation Package

Depending on your selections, some different screens will appear. These differences are noted below.

1. Browse the installation DVD for the installation program (`setuplinuxclient.bin`):
 - 32-Bit Version: from the folder `/Software/DS-Client/Linux_32_bit`
 - 64-Bit Version: from the folder `/Software/DS-Client/Linux_64_bit`
2. Run the command-line
 - `setuplinuxclient.bin -console`

Note: Use of the XML installation template file "inst_param.txt" is disabled for console mode. Even if it exists, you must complete every step of the console wizard.
3. The Installation starts:

Console mode offers a command-line style interface that requires single-key input commands to change settings. The command prompt is pre-ceded by a default number in brackets (for example "[0]"). If you press the Enter key, the default number is input. For a different command, press another number from the menu on the screen.

4. Choose the Setup Language:
 - English: Press **[1]** and **Enter**
 - German: Press **[2]** and **Enter**

Note: The selected language will be installed for the DS-Client service. Once set, the DS-Client Service language cannot be changed (for logs and popup messages). The DS-User GUI language can be changed from the Initialization screen (if the required language components have been installed).
5. An **[X]** appears beside the language you have selected. Press **[0]** and **Enter** to accept.
6. A confirmation command line appears. Press **[1]** and **Enter** to continue.
7. The software license agreement appears. You must accept the terms of the license agreement to continue.
 - Keep pressing **Enter** until you reach the end of the license agreement
 - To accept: Press **[1]** and **Enter**
8. An **[X]** appears beside your selection. Press **[0]** and **Enter** to accept.
9. A confirmation command line appears. Press **[1]** and **Enter** to continue.

Step 3. Select Installation Location

1. Select the destination directory where DS-Client will be installed. The default destination folder is:
`/opt/CloudBackup/DS-Client`
2. To specify a different destination folder, type a valid path on the local computer and press **Enter**.
3. A confirmation command line appears. Press **[1]** and **Enter** to continue.

Step 4. Choose Setup Type

1. Three Setup Type options are available:

Type	Description
Typical	Installs all the essential DS-Client and DS-User Software.
DS-Client only	Allows you to install only DS-Client components (without DS-User).
DS-User only	This option is for enduser workstations. You can install DS-User on any network computer, so endusers can access the DS-Client and specify their own backup sets.

- Typical: Press **[1]** and **Enter**
 - DS-Client Only: Press **[2]** and **Enter**
 - DS-User Only: Press **[3]** and **Enter**
2. An **[X]** appears beside your selection. Press **[0]** and **Enter** to accept.
 3. A confirmation command line appears. Press **[1]** and **Enter** to continue.
 4. Depending on the setup type selected, some screens may not appear. The following steps describe a Typical installation.

Step 5. Specify DS-Client Database Credentials

1. Specify the PostgreSQL database that the DS-Client Service will use:

DB Host	IP Address where the PostgreSQL instance resides. (For the local computer you can type 127.0.0.1).
Username	"postgres" (default) or any database super-user
Password	Password for the postgres user provided.
Confirm	Retype the password.
Port	The service port on the database server available for DS-Client connections. The default is 5432, and should not be changed unless you have a specific requirement.
Database Home	This is the directory where you can find: <ul style="list-style-type: none"> • bin/psql
Start DS-Client at boot time	Select "Yes" to configure to automatically start when the computer boots up.

2. A confirmation command line appears. Press **[1]** and **Enter** to continue.

Step 6. Enter Registration Information

1. Enter the appropriate Registration Information in each field of the screen.
 - Customer Name: Enter a descriptive name for this DS-Client. This name appears in brackets in the Connect to DS-Client Service screen. (In the JAVA version, it also appears in the list of available DS-Client computers.)
 - Account #: Enter your Account number.
 - DS-Client #: Enter your DS-Client number.

2. Your Account and DS-Client numbers must match those provided to you by your Service Provider System (see: **IV) Obtain the DS-Client Installation Program** in the Before You Install section).
3. A confirmation command line appears. Press **[1]** and **Enter** to continue.

Step 7. Specify DS-System Address

You received the IP address of the DS-System (see: [IV\) Obtain the DS-Client Installation Program](#) in the Before You Install section). The DS-Client requires this address in order for it to connect to the DS-System.

1. Enter the IP address of the DS-System your DS-Client will be using. Your Service Provider may have more than one IP address for the DS-System, if this is the case you can specify any or all of them by separating each IP with a semi-colon (;).
2. A confirmation command line appears. Press **[1]** and **Enter** to continue.

Step 8. Select Encryption Key(s)

1. You must set the encryption key that the DS-Client will use. (See [“V\) Select your encryption key\(s\)”](#) on page 7.)
 - DES: Press **[1]** and **Enter**
 - AES-128 bit: Press **[2]** and **Enter**
 - AES-192 bit: Press **[3]** and **Enter**
 - AES-256 bit: Press **[4]** and **Enter**
2. An **[X]** appears beside your selection. Press **[0]** and **Enter** to accept.
3. Enter the Private Key.
4. Confirm the Private Key.
5. You can set an Account encryption key that the DS-Client will use.
 - None: Press **[1]** and **Enter**
 - DES: Press **[2]** and **Enter**
 - AES-128 bit: Press **[3]** and **Enter**
 - AES-192 bit: Press **[4]** and **Enter**
 - AES-256 bit: Press **[5]** and **Enter**
6. An **[X]** appears beside your selection. Press **[0]** and **Enter** to accept.
 - (If applicable) Enter the Account Key.
 - (If applicable) Confirm the Account Key.
7. Select if you want to allow encryption key forwarding to DS-System. If selected, DS-Client will forward the encryption key(s) to the DS-System the first time it connects with DS-System:
 - Yes: Press **[1]** and **Enter**
 - No: Press **[2]** and **Enter**

NOTE: If you forward the keys, they will remain encrypted on the DS-System. However, your Service Provider will be able to create a valid .CRI file containing the encrypted keys. This file will be able to recreate a working version of this DS-Client. Make sure this conforms to your security policies before enabling this option.
8. An **[X]** appears beside your selection. Press **[0]** and **Enter** to accept.
9. A confirmation command line appears. Press **[1]** and **Enter** to continue.

Step 9. Review Installation Summary

1. A summary of the installation will appear for your review.
2. Press **[1]** and **Enter** to continue.

Step 10. Create DS-Client Database

1. If you are installing on a machine where there was a previous DS-Client (that was removed) the installation may detect the old database. A popup screen will ask you if you want to recreate the database:

- Yes: Press **[1]** and **Enter** - installation deletes the existing (old) database and creates a new (empty) one.
- No: Press **[2]** and **Enter** - installation will use the old database that was detected.

Step 11. Finish Installation

1. The Setup Complete screen appears once all files are copied.
 - You can select to start the DS-User and DS-Client upon exiting the Installation.
2. You can manually start and stop the DS-Client service with the following commands:

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

```
Stop DS-Client: /etc/init.d/dsclient stop
```

Moving Linux DS-Client from 32-bit to 64-bit hardware

Creation Date: February 25, 2008

Revision Date: February 25, 2008

Product: DS-Client (Linux)

Summary

New DS-Client installations should be done on the faster 64-bit platforms available. For existing DS-Client installations, you may eventually be required to move from the old 32-bit platform.

This article describes the following scenarios:

- [“Move DS-Client and its database to a new 64-bit machine” on page 21](#)
- [“Move DS-Client to 64-bit machine but continue using existing database \(remotely\)” on page 23](#)

Note: You must use the same version number of the Operating System and Database Server. For example: if using RedHat Enterprise Linux 5 ES U1 and PostgreSQL Server 8.1 on the old 32-bit machine, you must install those same versions and Service Packs (for 64-bit) on the new 64-bit machine.

Move DS-Client and its database to a new 64-bit machine

In this scenario, you move **both** the DS-Client installation and the database to a new 64-bit machine.

1. Run Daily Admin (Setup Menu > System Activities) to dump DS-Client database to the DS-System.
 - Your DS-Client must be configured to dump the database (Setup Menu > Configuration > Parameters Tab: Database Options).
 - This dump backs up the DS-Client databases (dsclient & dsdelta).
Note: If you follow these steps, you will lose any statistical information gathered by the LAN Storage Discovery Tool. To preserve this information, follow the steps in [“Preserving the dslanfiles database” on page 22.](#)
2. Prepare the new 64-bit machine by installing the 64-bit Operating System.
 - [See “I\) Hardware & Software Minimum Requirements” on page 4.](#)
3. Make sure the new 64-bit DS-Client can keep the same IP Address / DNS name that was used on the old 32-bit DS-Client.
4. Install a PostgreSQL Server instance on the new 64-bit machine. This can be the same computer as the DS-Client or on a remote machine.
5. Install the 64-bit DS-Client on the new machine.
 - Follow the instructions from: [“Install or upgrade DS-Client” on page 8](#)
 - When prompted, choose a database instance on the new 64-bit machine.
6. Finish the installation. If required, install any DS-Client Service Pack(s) or Hot Fix(es) to match the version on the old 32-bit machine.
7. Start the DS-Client and run DS-User. At this point, you need to recover the backed up DS-Client databases (from step 1).
 - Setup Menu > System Activities. The System Activities Administration screen appears.
 - Click Repair. The Repair DS-Client dialog box appears.

- Select "DS-Client database" and click OK. A recovery message appears, instructing you to restart the DS-Client service.
8. Restart DS-Client and test the connection with the DS-System by running a Daily Admin. Verify there are no errors in the Activity Log.

Preserving the dslanfiles database

The 'dslanfiles' database contains the information scanned using the LAN Storage Discovery Tool. This information is not critical to upgrade the DS-Client, however if these steps are not performed, you will lose any information that was gathered.

1. Backup (dump) the "dslanfiles" database on the 32-bit DS-Client machine with the command:

```
pg_dump -i -Fc -h localhost -U postgres -f /PATH/dslanfiles.dmp dslanfiles
```
2. After installing the 64-bit DS-Client, copy the "dslanfiles.dmp" file from the 32-bit machine to the 64-bit machine.
 - Stop the DS-Client daemon on the 64-bit machine.
 - Drop the newly installed "dslanfiles" database with the command:

```
# su postgres
$ psql template1 postgres
> drop database dslanfiles;
```
 - Then you must create a new empty "dslanfiles" database with the command:

```
> create database dslanfiles template=template0 encoding='unicode';
```
 - After that perform following command to restore the "dslanfiles" database to the new 64-bit machine:

```
pg_restore -Fc -h localhost -U postgres -d dslanfiles /PATH/dslanfiles.dmp
```
 - Start the DS-Client daemon and login to DS-User.

Move DS-Client to 64-bit machine but continue using existing database (remotely)

In this scenario, you move **only** the DS-Client installation to a new 64-bit machine. You keep the existing database at its old 32-bit location (as a remote database).

1. Run Daily Admin (Setup Menu > System Activities) to dump DS-Client database to the DS-System.
 - Your DS-Client must be configured to dump the database (Setup Menu > Configuration > Parameters Tab: Database Options).
2. Prepare the new 64-bit machine by installing the 64-bit Operating System.
 - **See “I) Hardware & Software Minimum Requirements” on page 4.**
3. Make sure the new 64-bit DS-Client can keep the same IP Address / DNS name that was used on the old 32-bit DS-Client.
 - This means you must change the IP Address / DNS name of the old 32-bit machine where the database still resides.
 - If you cannot preserve the IP Address / DNS name of the DS-Client on the new 64-bit machine, you must ask your Service Provider to reconfigure the DS-System with the new IP Address / DNS name. After you finish installation, you must first re-register the DS-Client to reset the hardware on the DS-System (Setup Menu > Configuration > Setup Tab: Register Now).
4. Install the 64-bit DS-Client on the new machine.
 - Follow the instructions from: **“Install or upgrade DS-Client” on page 8**
 - When prompted, choose the PostgreSQL Server instance where the databases are located on the old 32-bit machine.
 - When prompted, choose to “Keep the existing databases”.
5. Finish the installation. If required, install any DS-Client Service Pack(s) or Hot Fix(es) to match the version on the old 32-bit machine.
6. Restart DS-Client and test the connection with the DS-System by running a Daily Admin. Verify there are no errors in the Activity Log.

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