



WINDOWS DS-Client Installation Guide



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Before you install or upgrade

I) Supported Platforms

For the official list of this product's supported Operating Systems and versions, refer to the Installation and Support Matrix . This can be found on the Installation DVD in the following path:	
<ul style="list-style-type: none"> • \Documentation\Release_Information 	
Platform	Version
Windows® VISTA x32 (32-bit) or x64 (64-bit)	<ul style="list-style-type: none"> • Ultimate SP2 • Enterprise SP2 • Home Basic SP2 • Business SP2 • Home Premium SP2
Windows® 2008 x86 (32-bit)	<ul style="list-style-type: none"> • Standard SP2 • Enterprise SP2
Windows® 2008 x64 (64-bit)	<ul style="list-style-type: none"> • Standard SP2 / R2 SP1 • Enterprise SP2 / R2 SP1 • SBS SP2 • Data Center SP2 / R2 SP1
Windows® SBS 2011 x64 (64-bit)	<ul style="list-style-type: none"> • Standard
Windows® 7 * x32 (32-bit) or x64 (64-bit)	<ul style="list-style-type: none"> • Ultimate SP1 • Professional SP1 • Enterprise SP1
Windows® 2012 x64 (64-bit)	<ul style="list-style-type: none"> • Essentials / R2 • Standard / R2 • Datacenter / R2
Windows® 8 x32 (32-bit) or x64 (64-bit)	<ul style="list-style-type: none"> • Standard • Pro • Enterprise
Windows® 8.1 x32 (32-bit) or x64 (64-bit)	<ul style="list-style-type: none"> • Standard • Pro • Enterprise
Windows® 10 x32 (32-bit) or x64 (64-bit)	<ul style="list-style-type: none"> • Pro • Education • Enterprise

*NOTE: In some cases (see Microsoft KB972813) on German Windows 7 Professional, the installation will fail as it installs the MS SQL Server 2005 Express database. This occurs if a language pack (MUI) was used to install the German interface. If this occurs, installation of DS-Client is not supported on that target machine.

II) 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	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

Software	Version
Microsoft® SQL Server 2008 R2 SP1 Express (For DS-Client database)	(Free) All necessary drivers are installed automatically. <ul style="list-style-type: none"> • SQL Server 2008 R2 SP1 Express has a 10GB limit for the databases. If you near 10GB you must activate the DS-Client Database Automatic Expansion feature or upgrade to MS SQL Server. • SQL 2008 R2 Express edition will use only 1 physical CPU (but it uses all the cores if a multi-core processor is present) and it will use up to 1 GB RAM for the buffer pool (even if the computer has more).
- OR -	
Microsoft® SQL Server (For DS-Client database)	(Full versions: Separate purchase is required. SQL Server must be installed and running.) <ul style="list-style-type: none"> • For the official list of this product's supported Databases and versions, refer to the Installation and Support Matrix. • * SQL 2008 SP3 • * SQL 2008 R2 SP2 • * SQL 2012 SP1 (If using this database, see "Installing Windows DS-Client with MS SQL Server 2012" on page 21 BEFORE you install DS-Client.) • * SQL 2014 SP1 (If using this database, see "Installing Windows DS-Client with MS SQL Server 2012" on page 21 BEFORE you install DS-Client.) • "case insensitive" sort order
* NOTE <ul style="list-style-type: none"> • The (free) Express edition from these MS SQL Server versions are also supported. They have similar limitations to the 2008 R2 SP1 Express database that comes automatically with the DS-Client installation. However, if you want to use an Express edition, it is much simpler to use the one that comes automatically with the installation. 	

III) 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 in **"Step 8. Connect to DS-Client and perform initial configuration"** 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.

IV) 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.

V) Log in to target installation computer

- Make sure you have logged on as the target DS-Client computer's Administrator (or a user with equivalent privileges).
- Create a Windows User Account for the DS-Client service to use. This account should be a member of the Administrators Group.
- For MS SQL Server 2008/2012/2014 (both Express and Full versions), whatever user account that is logged in to install DS-Client must also be added to the MS SQL "Logins" and be given the "sysadmin" server role.

Note: If you are installing to a fresh machine (with no database instance) and you want the DS-Client installation to install the SQL database, you can disregard this note, since the user account that installs SQL is automatically granted those database rights.

Run the DS-Client Installation Program

Step 1. 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:
`\\Software\DS-Client\Windows_64_bit\dsclni_13_0_0_0.win64.exe`
[Option B] Run the Installation Center for Windows Products (**setup.exe**) located in the root directory of the installation DVD.
 - The Installation Center is a common launcher for all Windows-platform installations. It allows you to choose the specific installation package you want, without the need to browse the installation DVD.
2. Choose the Setup Language:
 - English
 - German
 - Simplified Chinese

*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..*
3. A pre-requisite check is performed on the installation machine. This scans the hardware and Operating System for compatibility (see **"II) Hardware & Software Minimum Requirements" on page 5**).
4. Click "Next".
 - 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).
5. The License Agreement page appears. You must accept the license agreement to continue. Click Next.

Step 2. Select Installation Options

1. Specify the Destination Folder.
 - The default is: **C:\Program Files\CloudBackup\DS-Client**
 - To specify a different destination folder, click the corresponding Browse button and specify a new directory path.
2. Select the components you want to install:
 - DS-Client Service: (Selected by default) This installs the service application.
 - Classic DS-User: (Selected by 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).
3. Click Next.

Step 3. Specify Database Information

1. The “Database Information” screen appears.
2. You must select if you want to use a database prefix. This is useful if you host multiple DS-Client databases on the same server\instance (as a common remote database location):.

do not use prefix	(Default). The database name will be dsclient .
use customized prefix	The prefix is used to make sure each DS-Client installation has a unique database name (in the form: <Prefix>_<dsclient>). <ul style="list-style-type: none"> • This can be up to 32 characters long; it must start with a letter and the content can be numbers (0-9), letters (a-z), or the “_” (underscore) character.

3. You must specify the database instance.
 - **Install** (local computer only): If this option is available, you can install a new SQL 2008 R2 Express Instance. Click Next and the installation runs SQL 2008 R2 Express setup. This requires the Microsoft .NET Framework, which will be automatically installed by the setup program, if required. This might take several minutes to finish.

WARNING: SQL 2008 R2 Express has a maximum database limit of 10 GB.
 - **Select:** A list of database Instances currently visible from the installation computer appears. Select one of the database Instances from the list, or type* in the target computer and instance manually (computer_name\instance_name).

Note 1: The MS SQL Server must be configured with a “case-insensitive” sort order.

** Note 2: 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.*

Remote SQL Server Instances	<p>The following requirements apply if you are installing to a remote SQL Server.</p> <ul style="list-style-type: none"> • The remote database must be installed on a supported operating system and you must ensure that the time zone is the same as the one on the DS-Client computer. • Make sure the SQL Server has rights to dump the DS-Client database in the installation’s “\db” subfolder (specified in “Step 2. Select Installation Options” on page 7). • If there is a firewall enabled between the DS-Client computer and SQL server machine, then make sure the DS-Client can access the remote SQL Server. • On Windows XP/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”.
MS SQL Server 2008 R2 Express	<p>By default, MS SQL Server 2008 R2 Express is only installed with local connection settings. You must change the settings from SQL Server Configuration Manager:</p> <ul style="list-style-type: none"> • Enable the TCP/IP under SQL Server Network Configuration > Protocols for SQLEXPRESS. • Make sure the SQL Server Browser is running.

4. Click Next.

Step 4. DS-Client Startup / Service Logon

1. The DS-Client Service Logon Account screen appears. You are prompted to enter the account for the DS-Client **service** to use.
 - **Local System Account:** This option is available if you are installing to a DS-Client using a local database (see: [“Step 3. Specify Database Information” on page 8](#)). 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 appropriate fields:
 - This must be a valid Windows user account that has already been created.
 - This account must be a member of the Administrators Group.
 - **Register DS-Client SPN to Active Directory:** In Windows Domain environments, this option may appear to allow the DS-Client to offer a more secure “Logon using security context” feature provided by Active Directory. If selected, the installation registers “CloudBakSvc” as the DS-Client SPN in Windows Active Directory. (See the DS-Client Knowledge Base article “Logon using security context” for more information.)
2. Click Next.

Step 5. Start Copying Files

1. The Start Copying Files screen appears.
2. Click Next.
3. The installation copies the files according to your setup specifications.

Step 6. Database Dump File

If you are installing a new version of the DS-Client, a dump of your old DS-Client database file may be made. Otherwise, the installation skips to [Step 7. Finish Installation](#).

1. The Database installation screen appears.
2. Select the dump location.
 - The default is in the `\\.\DS-Client\db` subdirectory
 - To specify a different folder, click the corresponding Browse button and specify a new directory path.
3. Click Next.

Step 7. Finish Installation

1. The “Installation Complete” screen appears once all files are copied.
 - You have a series of checkboxes to view the help file, start the service, and launch the GUI(s). By default, they will all be selected.
2. Click Finish to complete the installation.

Step 8. Connect to DS-Client and perform initial configuration

On connection to a Windows DS-Client that has not registered with the DS-System, you will encounter an “Initial DS-Client Configuration” screen where you must enter this information. (These steps assume you are using the ‘classic’ Java DS-User GUI.)

1. Start > All Programs > Asigra DS-Client > Classic DS-User.
2. A DS-Client List appears on the left-side of the GUI. From the DS-Client List, select the DS-Client you want (unregistered DS-Clients appear in green).

3. The “Connect to DS-Client Service” screen appears. Enter your Credentials and click “Connect”.
4. After you successfully connect to the DS-Client, the “Initial DS-Client Configuration” screen appears.

5. In the “Customer Registration Info” section, enter the following:

Customer Name	Enter a descriptive name for this DS-Client. <ul style="list-style-type: none"> This name appears in brackets after the computer name in the Java DS-User GUI’s list of available DS-Client computers (when sorted by Name).
Account #	Enter your Account number. This number is provided to you by your Service Provider.
DS-Client #	Enter your DS-Client number. This number is provided to you by your Service Provider.

- **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 on your network.
6. In the “DS-System Info” section, specify the DS-System connection information. You received the IP address of the DS-System from your Service Provider. The DS-Client requires this address in order for it to connect to the DS-System. In the “Address” field:
 - Enter the IP address of the DS-System your DS-Client will be using and click “Add”.
 - 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.

7. In the “Encryption Keys” section, you must set the encryption key(s) that the DS-Client will use.

<p>Encryption Keys</p> <ul style="list-style-type: none"> • 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, the GUI 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. Your ability to select the same encryption type and re-enter the same key is necessary if you ever need to reinstall your DS-Client to a new computer (e.g. if the computer is destroyed in a disaster). 	
Private Key	<p>You must set a private key for this DS-Client. Backup data from your DS-Client installation will be encrypted with this key.</p> <ul style="list-style-type: none"> • Type: Select from the available types. Stronger encryption requires longer keys. • Key: Enter the key. • Confirm: Re-enter the key to verify the string is correct. You cannot change this key once it is set.
Account Key	<p>You must set an account key if more than one DS-Client belongs to your customer account. Common backup data from all your DS-Client installations will be encrypted with this key. Once the account key is set, all DS-Clients from this customer must be configured with that same account key.</p> <ul style="list-style-type: none"> • Type: Select from the available types. Stronger encryption requires longer keys. • Key: Enter the key. • Confirm: Re-enter the key to verify the string is correct. You cannot change this key once it is set.
<p>Allow encryption key forwarding to DS-System</p> <ul style="list-style-type: none"> • Check to have DS-Client forward the encryption key(s) to the DS-System the first time it connects with DS-System. <p>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.</p>	
<p>Connect to DS-System and verify information</p> <ul style="list-style-type: none"> • Check to have DS-Client verify the configured information when you click “Save”. A popup will appear explaining the results. 	

8. In the "User Info" section, supply the requested information about your organization by choosing from the drop-down list options.
9. Once you have made all the initial DS-Client configurations, click “Save” to register with the DS-System.
- If registration is successful, you will be able to use DS-Client immediately. Refer to the DS-Client User Guide for more information.

DS-Client Standalone 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.

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

- See "Manual Upgrade" on page 12.
- See "Auto-Upgrade" on page 13.

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 service.
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. In the DS-Client DB folder, check if any of the database patches returned any errors. (You can find the DB folder in the DS-Client Installation directory. The default is C:\Program Files\CloudBackup\DS-Client on Windows.)
6. If no errors occurred from the database patches, start the DS-Client service.
7. Check if you can connect to the DS-Client service using the same (upgraded) version of the DS-User GUI.
 - If the connection is successful, check the DS-Client Event Log for errors.
8. Run a Daily or Weekly Admin to see if the DS-Client can connect to the DS-System.
9. 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.
 - A “silent” upgrade will be performed, meaning there is no requirement for user interaction.
2. Check if you can connect to the DS-Client service 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 Administrator (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) Supported Platforms"** 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 the Full DS-Client installation package:

1. Follow the same steps from the section **"Run the DS-Client Installation Program"** on page 7 until you reach the "Installation Options" screen.
 - Select "Classic DS-User" and / or "DS-User".
2. Click "Next" and continue clicking "Next" until the "Installation Complete" screen appears.
3. Click "Finish".
4. You may start the program and connect to a remote DS-Client.
 - DS-User will scan for running DS-Clients in the same subnet. If you do not immediately see the remote DS-Client you want, you must configure the GUI with the DS-Client's IP address. (In the Classic DS-User GUI, DS-Client IP addresses are configured in Setup Menu > Initialization > Regional Tab: GUI Language.)

DS-User Upgrade (Upgrading an existing installation)

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

- Close all open DS-User GUIs on that machine.
- Run the latest DS-Client installation package and follow the same steps as in [“Install DS-User only \(for remote management\)” on page 14.](#)
- 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.

Grid DS-Client Installation

Grid DS-Client is a configuration of several DS-Client computer installations 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.

NOTE: You must be familiar with installing a Typical Windows DS-Client (See [“Run the DS-Client Installation Program” on page 7](#)).

Before Installing (Grid DS-Client)

Before Installing any nodes of a Grid DS-Client, make sure of the following:

1. Supported platforms:
 - All DS-Clients that will be part of the Grid DS-Client must be installed on supported Operating Systems ([See “I\) Supported Platforms” on page 4](#)).
 - Hardware and software minimum requirements are listed in section [“II\) Hardware & Software Minimum Requirements” on page 5](#).
 - Operating Systems are recommended to be similar (i.e: in the same Grid, you should only use the same Windows OS version).
2. Database considerations:
 - Database server must be common to all DS-Client nodes in the same Grid.
 - The same databases (e.g. ‘dsclient’, ‘dsdelta’, ‘dsianfiles’) must be used for all DS-Client nodes in the same Grid.
3. Encryption key(s):
 - Both Private and Account Encryption keys must be the same for all DS-Clients belonging to the same DS-Client Grid.
4. DS-Client Windows Service Account:
 - The service account must be the same for all DS-Clients belonging to the same Grid in order to avoid problems with Database connections (Daily and Weekly Admin performing database backup), Local Storage issues, etc.
 - Each node’s service account must have enough credentials to remotely start/stop the DS-Client service on all other nodes. This is required for the “Auto upgrade” feature.
5. DS-Client computers in same Windows domain:
 - All DS-Client computers must be members of the same domain.
 - Each computer must have the same software installations to backup any of the special backup types (e.g. NetWare client, MySQL client, etc.).
 - Each computer must have the same access permissions to all network resources.
6. All nodes (including the database server, if 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.
7. On each node, perform the following (if applicable):
 - On Windows VISTA / 2008 / 7: Go to the Windows Control Panel > 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 > Network and Internet > Network and Sharing Center: the option “File Sharing” should be set to ON.
- On Windows 2008 / 7: Go to the Windows Control Panel > Network and Internet > Network and Sharing Center > Change advanced sharing settings: the option “Turn on file and printer sharing” should be set to ON.
- On Windows VISTA / 2008 / 7, configure the firewall setting:
 - For VISTA / 2008 / 7, make sure “File and printer sharing” and “Remote Administration” are in the exception list.
- On Windows VISTA / 2008 / 7: Verify that UAC (User Account Control) is turned off.
- 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
```

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.

8. Port “4410” is used for the communication between nodes in a Grid DS-Client. This port must be opened on all nodes of the Grid DS-Client.

Grid DS-Client Installation Steps

1. Log in to each of the target DS-Client computers as an Administrator-level user.
 - Create a User Account for the DS-Client to use. This account must be a member of the Administrators Group / Domain Administrators Group.
 - Make sure the conditions in “**Before Installing (Grid DS-Client)**” on page 16 have been met.
2. Run the DS-Client Installation on the first node, second node, third node until the last node belonging to a grid DS-Client without starting the DS-Client service.
 - Follow the steps in “**Run the DS-Client Installation Program**” on page 7. Start the DS-Client service on any node of the Grid DS-Client and connect to that node using the DS-User GUI. You are prompted to perform the “Initial DS-Client Configuration”. Enter the required information and click “Save” (do not select “Connect to DS-System and verify information”). At this point STOP the DS-Client service on this node.
 - Make sure the Database Server you use is configured to access each of the other DS-Client computers’ “DS-Client Buffer” directory (e.g. read/write permissions to the \temp buffer).
 - On the “Database Information” tab, use the exact same settings as the first node and point to the same network Microsoft SQL Server Instance as in step 2. After setup finishes copying the installation files, you are prompted with a message that “an existing DS-Client database has been detected”. Choose “Keep” in order for this node to use the same database created in step 2.
3. Run the **Grid DS-Client Configuration Tool** on any node to configure the grid (from **Start > All Programs > Asigra DS-Client > Grid DS-Client Configuration Tool**).
 - Fill in the required information:

hostname	The computer name of the DS-Client node. Right-Click Properties on My Computer.
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IP	<p>The internal IP address of the DS-Client machine (on LAN) and the external IP address of the DS-Client machine (for WAN).</p> <ul style="list-style-type: none"> • The internal IP addresses will be used to establish communication between the members of the Grid DS-Client. • The external IP address(es) will be used to validate DS-Client connectivity to DS-System.
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- Continue adding the hostname, internal IP address, and external IP address for all the other DS-Clients that will belong to the Grid.
 - Do not change any other values.
4. After installing Grid DS-Client, set the advanced parameter *DSCDBDumpPath* to the path of the MSSQL 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.)
 5. Connect to the Grid DS-Client.

Upgrading from a Standalone DS-Client to a Grid DS-Client

Identify the following for the standalone DS-Client:

- The database server and database names
 - The DS-Client service account
 - The DS-Client encryption keys (both private and account)
 - The IP address (internal and external)
1. Stop the DS-Client service on the existing DS-Client computer.
 2. Install the DS-Client software on every computer that will belong to the same DS-Client Grid.
 - Point to the same database that is used by the Standalone DS-Client you are upgrading.
 - Do not start the DS-Client service or the DS-User GUI once you reach the end of each installation.
 3. Follow the same steps as described above in section **“Grid DS-Client Installation Steps” on page 17**.
 4. After upgrading, the DS-Client must be registered with DS-System again (DS-User > Setup > Configuration: Register Now).

Grid DS-Client Upgrade

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

Upgrading the Grid DS-Client software version (Auto-Upgrade)

If DS-System has an appropriate upgrade package for download, Grid DS-Client can Auto-Upgrade like regular DS-Clients.

- Each node will upgrade individually.
- The first node that upgrades to the higher version will stop all other nodes for the upgrade. After the upgrade is finished, all nodes will be started automatically.
- When a node is started, if its version is lower than any of the other nodes, it will perform Auto-Upgrade first.
- See ["Auto-Upgrade" on page 13](#).

Upgrading the Grid DS-Client software version (Manually)

These steps describe how to upgrade a Grid DS-Client from one version of the software to another.

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

Changing the Grid DS-Client

If you want to add new nodes, remove nodes, or change the hardware / software of an existing node's hardware configuration, the Grid DS-Client must be re-registered with the DS-System.

- If configured, the DS-System may require you to register within a given time window specified by your Service provider (from DS-User: Setup menu > Configuration: Register Now).

Ports used by Grid DS-Client

DS-Clients that belong to the same Grid DS-Client communicate with one another using the port number 4410. Communication is based on the Internal IP address information provided when the Grid DS-Client was installed (See ["Grid DS-Client Installation Steps" on page 17](#)).

- Make sure there is no firewall on the Grid DS-Client LAN that blocks communication on port 4410.
- Make sure DS-System is accessible from any of the DS-Client(s) that belong to the same Grid DS-Client.

Automatic upgrade of MS SQL Server 2005 Express to MS SQL Server 2008 R2 Express

Creation Date: February 19, 2013

Revision Date: February 19, 2013

Product: DS-Client (Windows)

Summary

The v12.0 installation (and higher) will automatically upgrade the MS SQL Server Express database instance used by a Windows DS-Client from 2005 to 2008 R2.

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. MS SQL Server 2005 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 MS SQL Server 2005 Express must be on the local machine.

If the above checks pass:

- The installation upgrades the existing MS SQL Server 2005 Express (32-bit) to MS SQL Server 2008 R2 Express SP1 (32-bit).

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 MS SQL Server 2005 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 MS SQL Server 2005 Express instance.
- If the user chooses to upgrade, no conditions on additional databases apply, and the database will be upgraded to a MS SQL Server 2008 R2 SP1 instance.

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Installing Windows DS-Client with MS SQL Server 2012

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/failover-or-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 MS SQL Server 2012 database (and most probably any higher version of Microsoft SQL Server that is released going forward).

Workaround - BEFORE you use DS-Client

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, you must configure the Microsoft SQL Server 2012 instance to start with trace flag 272 as follows:

1. Open “SQL Server Configuration Manager”.
2. Click “SQL Server Services” on the left pane.
3. Right-click on the SQL Server instance name on the right pane. Make sure this is the instance used by the Windows DS-Client for its ‘dsclient’ database.
4. Click “Properties”.
5. Click “Startup Parameters”.
6. In the “specify a startup parameter” text box, type:
-t272
Note: Use this exact case-sensitive string.
7. Click “Add”.
8. Confirm the changes and restart the SQL Server.

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