



WinDSX SQL Upgrade

Follow these simple steps and you will be on your way to using the latest DSX SQL Software. Read through all steps in this document before proceeding.

Make a backup of AcsData / AcsLog databases.

1. Locate the WinDSX folder on the Comm Server. Inside the WinDSX folder locate the MdbStruc subfolder, for example C:\WinDSX\MdbStruc\. Look in this folder and note the highest numbered Upgrade#.sql script file. Once the new software is loaded you will view this same folder to see what new Upgrade Script files are present that will need to be ran at the SQL Server in the Management Studio.

2. At the Comm Server, in DataBase go to Setup/System Parameters/Yes/No Options and make sure "This PC is Comm Server" is selected. Close the program on all PCs. The DSXComm, DSXKey, and DSXDbas services, if found, will need to be stopped.

3. Navigate to the Install folder containing the new software and locate the **Setup.exe**. Right click and select "Run as Administrator". The system will respond by displaying what version is currently installed. When prompted for "Repair or Remove" select "Remove" as this removes the program but leaves the folders and configuration data.

4. From the Install folder containing the new software, right click on **Setup.exe** and select "Run as Administrator" making sure to install it to the same folder the older version was installed in. **Do not Start the DBSql.exe program at this point.**

5. From the Install folder containing the new software, right click on **sqlncli.msi** and select "Install". An older version may have to be uninstalled before this one can be installed.

6. In the WinDSX folder on the Comm Server right click on the DbSql.exe file and select "Run as Administrator". **Do Not Log In.** Cancel and Exit.

7. From the upgraded Comm Server locate the \WinDSX\MdbStruc subfolder, locate the new Upgrade#.sql script files and copy them to a temporary place at the SQL Server. At the SQL Server run the new Upgrade#.SQL script files through the SQL Server Management Studio.

8. At the Comm Server in the WinDSX folder locate the update.txt file. Edit the file and change the 0 to a 1 and save and close. Locate the DbSql.exe and right click and select "Run as Administrator". Login and check the database. **If you had selected this PC is Comm Server, uncheck it now and Restart the Program.** If configured to AutoStart, Workstation should show Comm Loss in the bottom right. Start the DSX Comm Service and the Comm Loss in Workstation should change to show Primary Online.

9. At each Client PC, perform steps 3 - 5. Once the software is installed locate the DbSql.exe program in the WinDSX folder. Right click on DbSql.exe and select "Run as Administrator". Repeat this for all Client PCs. Run SqlSetup.exe from the \WinDSX folder to attach to a different SQL Server if needed.

NOTE/// Access Levels are upgraded when going from 4.5.12 and lower and from 4.8.50 and lower at the Comm Server or DailyOps PC.

SCRIPTS // When running Scripts if you receive "Completed with Errors", move on to the next script. It is ok to run a script more than once.

- From WinDSX SQL 4.0 – 4.7.15 run all scripts. Upgrade1.sql – Up
- From WinDSX SQL 4.7.16 and higher - run Upgrade6.sql – Up
- From WinDSX SQL 4.8.65 and higher - run Upgrade10.sql – Up
- From SQL Server 2008 to SQL Server 2012 and higher - Run Upgrade to 2012.sql

Important Docs

Docs - Hardware - Hardware Installation Manuals, Quick Cards, LAN-D Instructions, and UL Manuals.

Docs - Mobile - Mp4 that shows how to use the mobile app and a pdf on how to configure it.

Docs - Software - Software installation and API configuration docs. Special application instructions.

Docs - User - Power Point, Mp4, PDF Training materials on new software. Enrollment Readers.

Remote Sessions – If the DataBase will be managed remotely, it is best to remote into a Client PC instead of the Comm Server. If you remote into the Comm Server, it should be set as a Service.

Permissions

All Users require Full Control over their Local WinDSX folder and the Shared WinDSX folder (typically the Comm Server). The Shared Folder is Shared to Everyone with Full Control.

For Mixed or **SQL Server Authentication** select SQL Server Authentication and enter a Login and Password. When setting up the Client PCs the first time DBSQL.exe is started it will launch SQLSetup. Enter the Name of the SQL Server and the Username and Password you entered in the SQL Server. This will be done on all PCs the first time the program is run.

For **Windows Authentication** or Named Pipes select Windows Authentication. When setting up the Client PCs, the first time DBSQL.exe is started, it will launch SQLSetup. Enter the Name of the SQL Server. Do not enter a Username or Password. This will be done on all PCs the first time the program is run. Rights and permissions must be given to the user in the SQL Management Studio and AD. For more information on Active Directory Auth see the next page.

If the system is on a **Domain**, it requires a Domain User Account with Local Administrative Rights to the Local folder, the Comm Server PC folder or Shared database folder if different and both SQL databases.

If the System is in a **WorkGroup** and the Comm Server is also the SQL Server, Create the Users for each Client and Comm Server in Computer Management\Local Users and Groups\Users. In the SQL Management Studio \Security\Logins add these same accounts from the local Comm Server and set them to Windows Authentication and give them Data_Reader, Data_Writer, Owner, and Public rights to the AcsData and AcsLog databases.

SQL 2012 and up Additional Configuration

In SQL 2012 and up the TCP/IP protocol and Named Pipes must be enabled. Start the SQL Server Configuration Manager navigate to Protocols for MSSQL Server. Enable Named Pipes & TCP/IP. Double click on the TCP/IP protocol name. On the TCP/IP Properties window, Click the IP Addresses tab. Scroll all the way down to the bottom. Make sure the TCP Port is set to 1433.

In SQL Server 2012 and up you must manually turn on the SQL Server Browser Service. Go to Services and find **SQL Server Browser**. Double click the Service. Change the startup type from "Disabled" to "Automatic." Click the START button.

Moving Databases to new SQL Server

There are two SQL databases that need to be moved, AcsData and AcsLog. If you are moving from SQL 2008 and lower to SQL 2016 or higher you must upgrade to SQL 2012 first before you can upgrade to 2016 or higher. Once you upgrade to SQL2012 you must run the \WinDSX\mdbstruc\upgradeto2012.sql script using the SQL Management Studio.

If all you are doing is moving to a different SQL Server, go to each DSX client, and with the program closed, run \WinDSX\SqlSetup.exe. This program will allow you to enter the connection properties of the new SQL server for WinDSX to use. Start the program and set the DataBase Path to the Shared Folder if it changed. UNC is preferred. Close/Restart.

Moving Comm Server to Virtual/New Server

To migrate the Comm Server to a Virtual Server or new PC, follow these simple steps.

1. Exit the program and stop the DSXComm Service on the Comm Server. Uninstall the software on the existing Comm Server. This leaves the \WinDSX folder and all data in place.
2. Copy the WinDSX folder from the old Comm Server and paste it to the target drive of the New Server.
3. Install the WinDSX software into the \WinDSX folder copied to the new server. It may be necessary to adjust IP Addresses under System Parameters, Comm Ports, and in the LAN Modules.

Active Directory Authentication

Operator Logins can be authenticated by Active Directory instead of WinDSX. To configure this, the WinDSX SQL Operators use the same Login Name as they do in Windows™. Their Login name is entered like always under Operator Passwords. The Operator is assigned a Password Profile but is not assigned a Password. When WinDSX SQL receives a login from an Operator that does not have a password stored in WinDSX SQL, it sends the login request to Active Directory (AD) for authentication. If AD authenticates the operator, they are given access to WinDSX SQL according to the Password Profile assigned to them. To Enable AD Authentication run Upgrade Script # 9 at the SQL Server. When entering the Operator in WinDSX skip the Password Fields just entering the Operator name and assigning a Password Profile. If you click on the password field, you must cancel and start over adding the Operator.

Primary and Backup SQL Servers

WinDSX SQL allows for the definition of both a primary and backup SQL Server and Database Path. If the primary SQL Server fails, the software can be shut down and restarted and it will connect to the backup SQL Server and Database Path. DSX does not automatically reconcile the databases when the primary returns. This feature will facilitate off site backup SQL Servers that cannot use SQL Clustering. Once the software has been upgraded, run the SQLSetup.exe program in the WinDSX folder. Each time you run it you can define a SQL Server to attach to and specify if it is the primary or backup SQL Server.

Reports .RPT files When loading 6.0.24 and up the Report templates are TLS1.2 only, unless you are using Windows Auth. If SQL Auth is being used on a non TLS1.2 SQL Server, the alternate TLS reports must be unzipped into the root of all WinDSX Folders including the Shared Folder.

Software License Key- SoftKey

All New Version 6 Installations and Upgrades from Version 5 will require the purchase of a WinStart SQL and the creation of a SoftKey using the USB flash drive Installation Media from DSX.

SQL2SQL Upgrade Key

SQL Upgrade Software contains the ability to update the Domain and PC Name of an existing DsxKeyData.xml key.

1. Verify the existing DsxKeyData.xml file is in the root of the upgraded WinDSX folder. This could be the Comm Server or any physical PC on the same Domain. Connect the SQL Upgrade USB Drive.
2. From the WinDSX folder run the DSXKey Configure.exe program. Select the appropriate option (typically the first) and click on **Load Key** followed by **Assign Key**. If asked about copying from an old key, select No.
3. When **Done** shows grayed out, close the program.
4. In the same WinDSX folder locate and launch DSX_Key_Monitor.exe - If you see "Status OK" your key is ready. Close the DSX Key Monitor program. When it warns that it is required and asks if you are sure select Yes and close the program.
5. If this is not the Comm Server move the DsxKeyData.xml from this PC to the WinDSX folder on the Comm Server.

Creating a Key for a Virtual Server

If the Comm Server is to reside on a Virtual Server. Perform the Steps above on a Physical PC/Laptop. When finished, Copy the DsxKeyData.xml file to the

WinDSX folder on the Virtual Server. If the two are not on the same Domain or any Domain, you must send the key to DSX Tech Support to have the Domain/Workstation name changed to be correct for the Comm Server **on the same day the Key was created**. If the Comm Server is not on a Domain, the Key will need to reflect the Comm Server PC Name.

DSX Key Monitor Operational Notes:

- There is a 30 second delay between the DSX Comm Server program being started and the program allowing access to Card Holders.
- The DSX_Key_Monitor.exe program will be started and stopped by the Comm Server program. If you configure Comm Server to run as a Service, it will start the DSX_Key_Monitor.exe program without configuring the Key Monitor program as a Service.
- The DSX-USB Flash Drive contains a copy of your DsxKeyData.xml Softkey. If needed, it can be copied onto a new computer in the same domain.

AES 256 Comm Encryption

DSX communications can now be secured using AES 256-bit Encryption. The encryption can be implemented between the Communication Server and the field controllers and between Comm Server and Workstations. This feature requires firmware version 3181 or higher in all controllers and that the feature be enabled in the DSX SoftKey. With Version 5 and 6 Software there is no charge for this feature, but it will have to be enabled in the software license DsxKeyData.xml. You will need to email the file to DSX Technical Support so it can be changed. Each Location can have an Encryption Key entered to encrypt the communications between the Comm Server and that Location's controllers. The AES 256-bit Encryption propagates itself from the Master Controller to all subsequent controllers at power up.

For Controllers (Location)

To enable encryption, enter up to 32 keyboard characters in the "Encryption Key" field on the General Tab of each Location. The key cannot be viewed once entered. Starting at the Master Controller power each controller down and back up.

For Client PCs (Workstations)

To enable encryption between the Comm Server and the Client PCs edit the System Parameters at the Comm Server and go to the Communications Server Tab. Enter up to 32 keyboard characters in the Encryption Key field. Close and restart the program and close and restart the DSX Comm Service. Restart the program on all Client PCs.

Comm Server as a Service

The Communications Server program typically runs as a process in the background and is usually started by the launching of the Workstation program (ws.exe) and is terminated when the Workstation program is closed. The Comm Server program can run as a Service without having a user logged into the Windows operating system.

Below are the steps involved with setting the Communications Server program up as a Service.

1. You must log in as a user with full administrator rights.
2. Make sure Comm Server is fully operational, communicating with controllers and with Client Workstations before configuring it to be a Service. Close the DataBase and Workstation Programs.
3. Copy the InstSrv.exe, SrvAny.exe, and CS as a Service.exe programs from the Utilities folder on the distribution CD and paste them into the WinDSX directory where the software was installed on the Comm Server PC.
4. Right click on "CS as a Service.exe" and select "Run as Administrator". Select "This PC should do daily operations" unless you are setting another workstation to perform DailyOps.
5. Click on "Create Registry Values". Click on "OK" when finished.
6. In Windows go to Services and verify that the DSXComm Service was added. It should appear in the list of Services.
7. Right click on DSXComm and select properties. Change the "Startup Type" to: Automatic (Delayed Start). Go to the Log on Tab and change the "Log-On As" to a valid account that has the appropriate privileges for your system. Click OK to save the changes. Close Services.
8. If you are going to use a shared directory on some other PC, you will have to enter the Database Path using UNC. You cannot use a shared drive letter to refer to the Database Path. This can be \\servername\windxsx or \\172.21.12.4\windxsx
9. Start the DataBase and Workstation programs. Workstation should show "Comm Loss" in Red in the bottom right corner. This is correct.
10. Start the DSXComm Service. Within seconds the Workstation program should show "Primary Online" in Green in the bottom right corner.

DataBase as a Service

The DataBase typically runs as an application and is usually started by the launching of the Dbsql.exe and is terminated when the program is exited. The DataBase program can be configured to run as a Service. This will allow the program to run as a Service on a PC that does not have a user logged into the Desktop. Requires 5/6.0.17 and up.

1. You must login as a user with full administrative rights; you cannot install Services if your login account is not an Administrator.
2. Load the WinDSX or WinDSX-SQL software on the PC that is to perform the Service duties. If this is the Comm Server configure Comm Server to be a Service before creating the DataBase Service.
3. Make sure the DB/DBSQL program is fully operational and able to make database changes before configuring it to be a Service.
4. Create an API password profile that can view a Location and an Image Source. Create an Operator Login and assign it the API profile. 6-15 alphanumeric and keyboard characters.
5. Copy the InstSrv.exe, SrvAny.exe, and WinDSXDBasService.exe programs from the Utilities folder on the distribution media and paste them into the WinDSX directory where the software was just installed on this PC.
6. Right Click and select Run as Administrator on WinDSXDBasService.exe. Enter the DSX Operator Name and Operator Password for the DataBase Service to use for DSX program access and permissions. This must be a Password stored in WinDSX.
7. Click on the "Create Registry Values" button. When this button changes to **Done**, Click on OK and the program will close.
8. Go to Start/Windows Admin Tools/Services and verify that the DSXDBAS service was added. It should appear in the list of Services.
9. Right click on DSXDBAS and select properties. Change the "Startup Type" to: Automatic (Delayed Start). Go to the Log on Tab and change the "Log On As" to a valid account that has the appropriate privileges for your system. Click OK to save the changes. This could be the same service account assigned to the DSXComm Service. Close Services.
10. Place API import files in the Shared WinDSX\API folder or in the Local WinDSX\API folder on the PC where DataBase runs as a Service. DataBase must be run as a Service to process API import files. Start the DSXDBAS Service.