



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 and 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 run at the SQL Server.

2. *If you are upgrading from below 4.10.10 do the following at the Comm Server. In DataBase go to Setup/System Parameters 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 "**Run as Administrator**". 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 the program.

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 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. Depending on the version you were coming from this version may have to perform an Upgrade to the existing Access Levels the first time you login. See the Note after step 9.

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 upgrading from 4.5.12 and lower at the Comm Server and 4.8.50 and lower at the Comm Server or DailyOps PC.

Scripts

- 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**

//It is ok to run a script more than once. Ignore errors

Permissions – In all configurations the Windows Login must have full control over the Local folder where the software is installed and to the Shared Folder (Comm Server) where the images reside and to the two SQL Databases AcsData and AcsLog.

Remote Sessions – If the DataBase will be managed through remote sessions it is best to remote into a Client PC instead of the Comm Server.

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 management studio.

If all you are doing is moving to a newer 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 and Restart.

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 both 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 on the server. Find SQL Server Browser. Double click the service. Change the startup type from "Disabled" to "Automatic." Click the START button.

Shared Resource Folder

When using SQL server to hold the database there is a file share (folder) where all the other objects that aren't stored in SQL are kept such as graphics, photos, Icons and Wave Files. That share location can be found in the WinDSX Database program under the Setup Tab > Database Path. This path should be the same on all DSX clients. UNC is best.

Important Docs

Docs - Hardware - Hardware Installation Manuals, Quick Cards, LAN Module Instructions, 1040PNV 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.

Moving the Comm Server to a Virtual Server or new PC

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 after the software is uninstalled. Paste the WinDSX folder to the target drive of the New PC or Virtual Server.
3. Install the WinDSX software into the \WinDSX folder that was just copied to the new server. It may be necessary to adjust IP Addresses under System Parameters and Comm Ports

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.

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.

DSX Key Monitor and DSXSoftkey

Physical PC New Install and Upgrade

All New Version 6 Installations and Upgrades will require a SoftKey to be created or upgraded using the USB flash drive Installation Media from DSX.

For New Installations or upgrades on a Physical PC follow these steps.

Warning: *This key can only be assigned once; make sure the Computer you assign it to is on the network domain where the system will be used. You cannot move keys from one **system** (domain) to another. The Key belongs on the Comm Server but can be moved to a Virtual Comm Server or as hardware is replaced to a new Comm Server as long as it's in the same Domain.*

- a) Make sure that the Comm Server PC has the .Net Framework 4.0 or higher installed.
- b) Make sure you have Administrative Privileges over this PC.
- c) Insert the DSX USB Flash Drive into a USB Port on the Comm Server PC. Make sure you can read and write to the DSX Flash Drive. Do Not unplug the drive until after step 4.
- d) Make sure you have launched the database program once to complete the installation before proceeding.
- e) If this is an upgrade, make sure the existing dsxkeydata.xml file is in this WinDSX folder on the Comm Server where the flash drive is connected.

1. In the C:\WinDSX folder on the Comm Server where the software was just installed, locate and launch DSX_Key_Configure.exe
2. Select the appropriate option (typically the first) and click on Load Key followed by Assign Key.
3. When a grayed out **Done** is displayed, 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.

Virtual Server New Install and Upgrade

If you are going to use DSX in a Virtual Environment, follow these instructions:

1. For new Installations select a Physical PC that is on the same Domain as the virtual server. For an upgrade the PC does not have to be on a Domain. Install the software on this physical client PC and make sure that items "a-e" under "Physical PC New Installs" to the left have been done.
2. If this is an upgrade, copy the dsxkeydata.xml file from the WinDSX folder on the virtual server to the WinDSX folder on this physical client PC. In this case the PC does not have to be on the same Domain.
3. In the C:\WinDSX folder on this Client PC locate and launch DSX_Key_Configure.exe.
4. Select the appropriate option (typically the first) and click on Load Key followed by Assign Key.
5. When a grayed out **Done** is displayed, close the program.
6. 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.
7. Copy the dsxkeydata.xml file to the WinDSX folder on the Virtual Server where the software has been installed or upgraded.

DSX Key Monitor Operational Notes:

- There is a 30 second delay between the DSX program (Comm Server) being started and the DSX_Key_Monitor program allowing access to Card Holders.
- The DSX_Key_Monitor.exe program will be started and stopped by the Comm Server program. Once you close DSX on this PC, the DSX_Key_Monitor program will also close. 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 to run 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 system (domain).

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 be logged in as Administrator.
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 DSX directory where the software was just 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 DSX Comm Service. Within seconds the Workstation program should show "Primary Online" in the lower right corner.

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 Communication 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.

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.

Before you can configure Encryption, you will need to email DSX Technical Support the DSXKeyData.xml file from your system. Encryption will be enabled, and the file sent back to you.

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 report templates must be unzipped and placed in the root of all \WinDSX folder installations including the Shared folder.