



**DSX Access Systems, Inc.**

## **DSX Networking Overview**

### **Networking and System Overview**

WinDSX is a Multi-Location, Multi-User, Multi-Tasking Windows™ Access Control and Event Monitoring System. The Multi-Station capabilities are facilitated by Local and Wide Area Networks. WinDSX supports from 1 to 999 Workstations, up to 32,000 Operator Passwords and 32,000 Password Profiles.

The Database and Workstation programs can be run at any PC that has a need to monitor and control the system or change the system data. The Comm Server Program (CS.exe) is run only on the PC designated as the Comm Server. This is the PC with the direct serial port connections, LAN connections, or dial-up modem communications to the Location Master Controllers.

The DataBase Program is used to administer the system and card holder data for the entire system. DataBase is where all system data is defined and where reports and Photo ID's are printed. DataBase also holds some system utilities such as Backup and Restore depending on the version of Software.

The Workstation Program is the real-time user interface that polls event data from the Comm Server PC using TCP/IP. The Workstation screen displays events and provides for alarm monitoring and handling. The Workstation program also allows full monitoring and control of Inputs, Outputs, Devices (readers), Maps, and Cameras.

### **Requirements**

The standard WinDSX Software is Local Area Network (LAN) compatible without software supplements or upgrades. WinDSX is compatible with most networks. See the PC Requirements doc for specifics with operating systems.

The WinDSX program is a real-time system monitoring and control application with an online data editor and a communication protocol that supports non-invasive incremental downloads. There are several open databases on the shared data resource (Database Path). These databases contain the System Configuration, System Programming, and all System History. Since this is a real-time system it is important that the PCs meet the minimum PC Requirements and have enough bandwidth available to process events in real-time. The system is reading and writing into the data bases continuously as long as the programs are running. The LAN must be reliable enough for a real-time 24 x 7 system.

System performance is dependent on the PC and LAN processing speeds. Each PC in the DSX System should meet the minimum requirements that are in the "PC Hardware Requirements" document. A faster processor and more memory will increase system performance. For maximum efficiency and stability a 100Mbit LAN with a centralized hub for a star wiring configuration should be used. A 10Mbit LAN connection is the minimum speed that WinDSX Workstations will operate.

The File Server, the Communications Server, the Client Workstations, and all related Switches and HUBs should have adequate UPS or back up power with ample surge protection on all phone lines, data circuits, and power connections.

## **System Configuration**

The WinDSX Software is installed on the local hard disk of each Workstation PC (Fat Client). Each Workstation runs the WinDSX program executable files from its local hard disk, but reference the shared database and history files on the File Server. This configuration is made easy with a Database Path that is set in the WinDSX program the first time it is loaded and run on each PC.

A dedicated File Server is always recommended for maximum efficiency but not required. The database can be kept on the Comm Server for the other Client PCs (Workstations) to share. When more than 5 Workstations are needed, a File Server is recommended. The File Server is used to store the shared database, Card Holder images, maps and history files.

When the Database resides on the Comm Server, this PC must be online so that other workstations can access the database. It must be running the software so that the other WinDSX Workstations have access to controller communications. When the Database Path resides on a separate File Server PC, the Comm Server PC is used for all controller communications and both PCs must be online. The Comm Server can be configured to run as a Service.

## **Communications**

WinDSX requires the TCP/IP protocol on each PC that is to run the Workstation program even if it is a single PC System. The Comm Server PC must have a fixed (static) TCP/IP address, the other PCs do not.

The PC designated as the Comm Server (the one that has the physical/logical connections to the DSX controllers) uses standard PC USB / serial ports or a Multi-Port Communications Board to communicate via RS-232 directly to the Locations or to DSX Modem connected sites thru a standard telephone line. DSX Modems are the ONLY modems supported by DSX. The Comm Server can also use LAN connections to communicate to the Locations controllers using the DSX-LAN(M) interface. WinDSX supports up to 32,000 Locations.

It is necessary for the Comm Server to be online for the other Workstations to have real-time communication abilities. The Comm Server has a fixed TCP/IP address that is entered in the WinDSX DataBase Program on the Comm Server PC. The Workstations running WinDSX have a Database Path set to the shared database resource where they find the TCP/IP address of the Comm Server PC. The Workstation PCs poll the Comm Server program for the real-time events and control requests.

## **Windows™ Permissions**

Each Workstation PC running WinDSX must have a Drive Mapped to the WinDSX Folder where the shared Database resides (File Server or Comm Server). A Mapped Drive or a UNC (Universal Naming Convention – ie \\FileServer\WinDSX ) can be used. The UNC is the preferred method.

All PCs running WinDSX must have full unrestricted permissions to the WinDSX folder both where the database resides, the local WinDSX folder where the software is being run from, and the Temp folders on the local PC. These PCs also require Read Only permissions to the System32 subfolder in the Windows directory of their computer.

## **Remote Access**

Remote Desktop, Terminal Services and Citrix as well as many others are suitable solutions for remote access to a Workstation on the WinDSX network.

## Backups

Backups should be performed on a regular basis. The SQL version of WinDSX does not have any built-in utilities for making Database and History backups. This is a function of the SQL Server and will be set up by your SQL Database Administrator. The standard Microsoft Access version of WinDSX can be configured to automatically backup the database, the history, or both once a day without taking the system down. It will perform a backup at midnight and place the backup on any logical drive specified. The system will make a rotation of 10 different backups and will then overwrite the oldest backup with the most recent. Manual backups can be made at any time.

As previously stated, unless shut down, the system is reading and writing into open databases 24 hours a day 7 days a week. The shared resource (Access Version Database Path) cannot be backed up by a third party program (ie. NTBackup) unless the WinDSX program is not running. It is possible to configure WinDSX to make backups to a network drive that is then backed up by the customer's conventional method.

### // Important Reminders

- WinDSX is not compatible with: Windows 95, Windows 98, Windows ME, or Windows 2000, Windows XPHome Edition, Linux, or the MAC operating systems.
- WinDSX SQL is supported on the Standard or Enterprise Editions of SQL Server.
- DSX will not help setup or support your SQL Server. You must have a DBA perform these functions.
- You must have Administrator Rights to properly install the WinDSX software.
- To run the programs, the User must have Full Control over the local folder where the WinDSX software is installed, Full Control over the shared resource (Database Path) folder, Full Control over their Temp folders, and Read rights on the local System32 folder.
- The Comm Server must have a static TCP/IP address. The Workstations can be DHCP.
- On a single PC system, the Comm Server can be DHCP and the Comm Server address in Database can be set to 127.0.0.1 – the internal loopback address.
- If 127.0.0.1 is used as the address on the Comm Server tab in Database, the Workstation program on other Client PCs will display a Comm Loss message.
- When using Terminal Services, the WinDSX Comm Server cannot run from the same PC as the Windows Terminal Server.
- When using Terminal Services, DSX recommends multiple folders – one for each client.
- In versions 3.1.19 and higher Comm Server uses socket 22223. Make sure there is no other application using that socket.
- In versions below 3.1.19 Comm Server uses socket 80. In Windows 2000 you will need to use Internet Services Manager to disable the Default Website and any other Service using socket 80.
- When setting up the DSX Features Key (USB Key) you must be in front of the PC. You cannot configure it through remote desktop. Install the Driver HDD32.exe that comes with the WinDSX software installation first. Once the driver is installed plug the key in. You must do this at the PC and in this order. If you did not remove the key and uninstall the driver. The load the driver and plug in the key from the console of that PC.