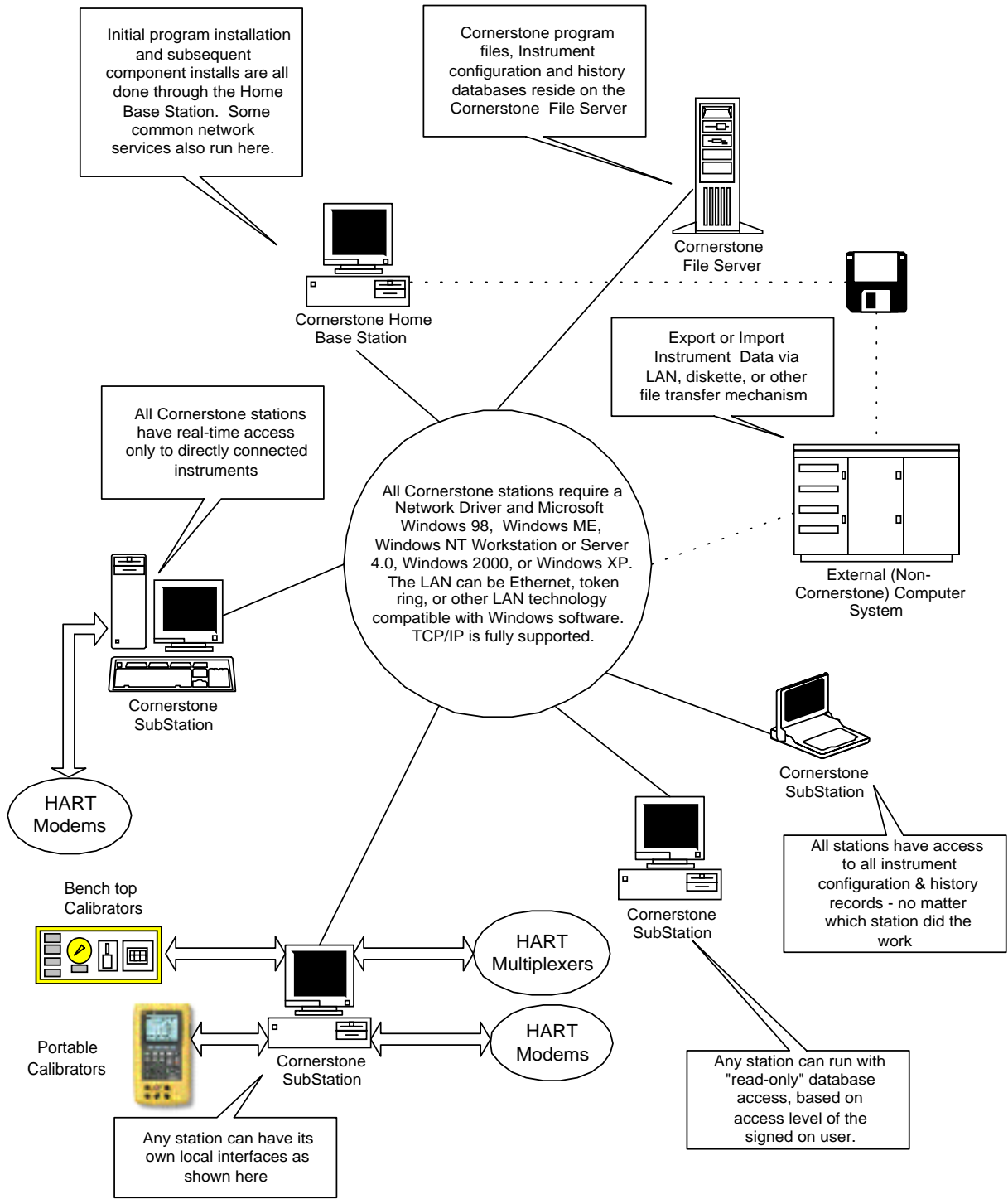


# Cornerstone™ Feature Description

## Multi-user (Networked) Base Station System



## Cornerstone LAN Software Products

### Base Station

Base Station software may either be used on a stand-alone computer, or as the first Cornerstone station in a networked configuration. The install procedure for the standard Base Station product includes user choices for the location of the common Cornerstone program and data files. They may be located on a dedicated LAN server station or on any network drive on the LAN. The computer designated as the *Cornerstone File Server* cannot run the Cornerstone application software, but can run other programs. If the installation of this new version constitutes an update of a previous stand-alone Base Station, then the existing instrument database is preserved and becomes the common database, accessible on the LAN from other stations.

The computer where the initial installation takes place has a special status in the system and is called the *Home Base Station*. Common service programs, required for operation of all Cornerstone stations on the LAN, will reside and execute on the Home Base Station. Other optional Cornerstone libraries, for use throughout the network, are installed only through the Home Base Station. Those libraries will reside on the same network drive as the Base Station program and database files (i.e. the Cornerstone File Server). Software registration and authorization for all Cornerstone stations takes place through the Home Base Station.

### Multi-user Kits

Three optional Multi-user Kits add Cornerstone stations (called SubStations) to the Home Base Station described above. Kits are purchased separately and are available in three sizes, providing a total of 3 users, 6 users, and 10 users. With the exception of a few network administration functions, SubStations provide all of the functions of a stand-alone Base Station or the Home Base Station. They can perform direct on-line calibration or calibrator docking. They can interface directly connected HART instruments and instrument networks using various supported multiplexer or IS barrier systems. Substations must meet Base Station hardware platform requirements, except that minimal hard disk space is required. Multi-user kits include a Server install disk, a SubStation install disk, a Multi-user kit install disk, and an installation manual. With all Multi-user kits, you can install SubStation software on any number of computers on your LAN. The 3, 6, or 10 user kit sizes limit only the number of simultaneous active users on the network.

### User Manuals

Use of the SubStation software is identical to that documented in the [User's Manual for Cornerstone Base Station](#), which is included with the single Base Station model. Additional User's Manuals for use with SubStations are ordered separately in the quantity you require.

### Optional Components

Instrument Status Monitor and optional CalLibs, ModLibs, and ComLibs may be added to a networked Cornerstone system. Just as with a stand-alone system, multiple types of each of these components may be used on the same networked system. For example, you may have several types of Calibrator Interface Libraries on a single system. You need purchase only a single licensed copy of these options for use on a networked system. Each option is installed only once through the Home Base Station, and the program files reside on the Cornerstone File Server.

## LAN System Requirements

- Cornerstone program files and global system database files may be installed on a dedicated LAN server station or they may be installed on any suitable server or other station on the LAN. The computer where these files reside must be running Windows NT Server 4.0, Windows 98, Windows 2000, or Windows XP. The computer where the common Cornerstone files reside cannot run the Base Station application. The server computer can run other applications or act as a file server for other applications. This Cornerstone File Server also hosts the license (key) server that administers multi-user operation of the Base Station software.
- All Cornerstone stations (Home Base Station and SubStations) must be running Microsoft Windows 98, Windows NT Workstation 4.0, , Windows 2000, or Windows XP.
- The Cornerstone File Server, Home Base Station and SubStation computers should be set up to run the TCP/IP protocol or the standard Microsoft NetBEUI Network protocol. One of these protocols can normally coexist on the same hardware platforms and network cable with other network protocols and file servers (e.g. IPX/SPX). A multi-user Base Station system can be set up that does not run either of these protocols, but such a configuration will yield slower data access response times, making it advantageous to run the TCP/IP or NetBEUI protocol.
- LAN hardware and driver software must be compatible with Windows software.
- The server computer where the Cornerstone program files and global system database files are located (designated the Cornerstone File Server) and the computer where the Home Base Station software is installed, must both be operating in order for any other Cornerstone LAN stations to operate.

## Operational Considerations

- Cornerstone Multi-user configurations have been designed and tested for correct performance on local area networks (LANs). Wide Area Network (WAN) operation may be feasible but was not a specific design objective and is not supported. Note that use of the NetBEUI protocol is not compatible with routers and other equipment normally associated with long distance network connections.
- Normal Cornerstone user password security is provided on the LAN system. The user and password tables are global for the entire LAN system. There is no Base Station imposed restriction as to which user may sign on to which station on the LAN. The software does provide the Cornerstone System Manager user with the ability to configure each SubStation as to the major function windows that it displays. With this feature, you can restrict certain functions to certain SubStations. For example, you could designate which stations allow calibrator docking.
- The user password and security level system of Cornerstone software allows a SubStation, based on the security level of the signed on user, to act as a read-only station on the network. The "Restricted" security level allows read-only access to the instrument and history database. It also provides the ability to print reports and to export data from the database into .CSV files for use by other applications. Restricted users cannot make any database changes and cannot connect to any instruments, calibrators, or multiplexer networks.
- The Home Base Station and any SubStation can connect to HART instruments through a hardware interface physically attached to that station. On-line instrument access "across the LAN" is not supported. Note that any station can access, through the database, the results of an instrument connection session.

- The Event Log is maintained local to each station on the network.
- Software response time performance on a LAN is a function of hardware capabilities, the activity on each Cornerstone station, other activity on the LAN, and loads on the Server from other applications. For best Base Station performance, the TCP/IP or NetBEUI network protocols should be used, in addition to any other network protocols that your network applications may require.

### **On-line System Considerations**

These considerations relate only to those systems that have HART multiplexers connected to Cornerstone LAN stations where HART instruments are permanently attached to the Cornerstone system through these multiplexers.

- The HART Comm window on any Cornerstone LAN station can gain on-line access only to those instruments that are wired to a modem or instrument network that is physically attached to that station. The data resulting from such a connection is available to all stations on the LAN.
- Non-Cornerstone application program access to on-line instruments via DDE is available to applications running on the station to which the instrument is attached. Instrument access using Net DDE can also be set up for applications running in other computers on the LAN.
- The optional Instrument Status Monitor (ISM), if installed, runs only on those stations that have an attached instrument network and performs its functions only with respect to the instruments attached to that station.
- There are separate On-line Event Log displays for each Cornerstone LAN station that has an attached instrument network.

### **Disk Space Requirements**

Cornerstone File Server (or other designated LAN disk drive) - Base Station program files require approximately 10 MB. Database file space depends on the history record capacity selected by the user and the number of instruments in the database. A good rule of thumb is about 105 KB per instrument (this allows for 25 history records each). Therefore, for 1000 instruments (as an example), you will need an additional 105 MB of disk space.

Home Base Station - Common service programs and local configuration data files require approximately 3 MB.

SubStations - Local configuration data files require approximately 3 MB.