



# Entire Connection

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Installation

Version 4.3.2



This document applies to Entire Connection Version 4.3.2 and to all subsequent releases.

Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

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# Table of Contents

<b>Installation</b>	1
Installation	1
<b>Supported Communication Methods</b>	2
Supported Communication Methods	2
TN3270(E)	2
Telnet VTxxx	2
BS2000	3
BS2000 TCP/IP	3
HLLAPI	4
Serial, SAG-NPA	5
Serial, VTxxx	5
NetWare for SAA	6
Microsoft SNA Server	6
VT100 Protocol Converter	7
<b>Possible Setup Scenarios</b>	8
Possible Setup Scenarios	8
Asynchronous Communication with IBM Host Systems	8
Communication via TCP/IP Networks	9
Terminal Emulation for UNIX Systems	10
<b>Installing Entire Connection</b>	11
Installing Entire Connection	11
Prerequisites	12
Installing Entire Connection for the Administrator	13
Program Folders	15
Environment Variables	15
Registry	15
Installing Entire Connection on a Client Workstation	16
Uninstalling Entire Connection	16
<b>"key" Files for Protocol Converters</b>	17
"key" Files for Protocol Converters	17
"key" Files Provided with Entire Connection	17
Sample "key" File	18
Entries with Special Meanings	20
Mnemonic Names	20



# Installation

The following topics provide all information required for installing Entire Connection.

- Supported Communication Methods
- Possible Setup Scenarios
- Installing Entire Connection
- "key" Files for Protocol Converters

# Supported Communication Methods

Entire Connection supports the following methods:

- TN3270(E)
  - Telnet VTxxx
  - BS2000
  - BS2000 TCP/IP
  - HLLAPI
  - Serial, SAG-NPA
  - Serial, VTxxx
  - NetWare for SAA
  - Microsoft SNA Server
  - VT100 Protocol Converter
- 

## TN3270(E)

Entire Connection supports TCP/IP TN3270 and TN3270E communication for display sessions. It also supports TCP/IP TN3270E communication for host printer sessions.

You can use any network adapter that is supported by any TCP/IP stack software which provides the WinSock 2 interface. This mode supports extended attribute bytes (EABs).

The TCP/IP stack software must be installed and active in order to activate terminal emulation.

For IBM host printer emulation, it is necessary to define generic, specific or associated printers on the Telnet server. See your Telnet server documentation for details.

See also: communication parameters for TN3270(E) in the section Overview of Object Properties.

## Telnet VTxxx

Entire Connection supports VT100, VT220 and VT320 communication with any network adapter that is supported by any TCP/IP stack software which provides the WinSock 2 interface.

The TCP/IP stack software must be installed and active in order to activate terminal emulation.

The communication for the data transfer with Natural on Open Systems is done using an additional port. During installation the number of this port is entered in the Registry key FTPPortNum (under HKEY\_LOCAL\_MACHINE\SOFTWARE\Software AG\Entire Connection\Server).

See also: communication parameters for Telnet VTxxx in the section Overview of Object Properties.

## BS2000

Entire Connection supports any BS2000 communication hardware for which the vendor supplies the BS2000 API defined by Software AG.

Once your vendor-supplied programs are successfully communicating with the host, invoke Entire Connection. If any of the vendor-supplied software required by Entire Connection is removed from memory when Entire Connection is terminated, the vendor-supplied software must be reinvoked each time you invoke Entire Connection.

To make the terminal emulation key settings similar to those on a BS2000 keyboard, use the predefined key scheme BS2000KEYS.

See also: communication parameters for BS2000 in the section Overview of Object Properties.

## BS2000 TCP/IP

This communication method emulates the standard 9750 terminal which is a 24 by 80 characters display without colors. Local printing is not supported. In addition to the standard 9750 terminal features, the following features of the 975x family are supported:

- 80 FTZ per line
- 20 P-keys
- 24 F-keys
- reverse video
- full 9756-type memory support for P-Registers

In Natural environments, the color terminal type 9763 (7 bit) is also supported. As a prerequisite, Natural Version 3 or above must be installed. By default, Natural uses the terminal type 9750 (monochrome). To activate the terminal type 9763, use the following Natural terminal command (either in a screen or in a program):

```
%T=9763
```

When activating the terminal type 9763, it is recommended that you also load the Siemens function keys F1 through F20 using the following Natural terminal command:

```
%KN
```

Entire Connection supports TCP/IP communication with BS2000 hosts with any network adapter that is supported by any TCP/IP stack software which provides the WinSock 2 interface.

The prerequisite on the host side is the communication subsystem BCAM version V.11, which establishes the connection with the host (available within the Siemens product DCAM).

No third-party software is needed for Entire Connection to activate terminal emulation.

To make the terminal emulation key settings similar to those on a BS2000 keyboard, use the predefined key scheme BS2000KEYS.

See also: communication parameters for BS2000 TCP/IP in the section Overview of Object Properties.

## HLLAPI

Entire Connection supports any communication environment for which HLLAPI software for Windows (32 bit) is available. Support for extended attribute bytes (EABs) depends on the third-party HLLAPI software.



Many programs will support extended attribute bytes in DFT mode, but not in CUT mode.  
Some vendors' APIs must be started before Entire Connection.

To activate terminal emulation, Entire Connection requires the vendor-supplied emulator package and HLLAPI. Install and test the vendor's emulator in your specific communication environment before you start Entire Connection.

Once your vendor-supplied programs are successfully communicating with the host, invoke Entire Connection. If any of the vendor-supplied software required by Entire Connection is removed from memory when Entire Connection is terminated, the vendor-supplied software must be reinvoked each time you wish to invoke Entire Connection.

When using HLLAPI mode to communicate with the mainframe, the SESSION command allows you to switch to different logical unit (LU) sessions.

See also: communication parameters for HLLAPI in the section Overview of Object Properties.

## Serial, SAG-NPA

Entire Connection supports any serial port (COM1 through COM4). If you are not using a direct connection, an internal or external asynchronous modem is required.

The prerequisite for your target mainframe host is the Natural module NTCNPA (with Natural Version 2.2.7 or above). For further information on this module, see the *Natural Connection* documentation. NTCNPA is no longer supported with Natural Version 2.3.

Full-screen support is provided when communicating with NPA. Extended attribute bytes (EABs) are supported.

No vendor-supplied software is needed for Entire Connection to activate terminal emulation.

See also: communication parameters for the SAG-NPA serial port in the section Overview of Object Properties.

## Serial, VTxxx

Entire Connection supports any serial port (COM1 through COM4). If you are not using a direct connection, an internal or external asynchronous modem is required.

VT100/VT220/VT320 escape sequences are supported (private DEC codes as well as ANSI standard codes for VT100/VT220/VT320). ANSI colors (VT340+) are also supported.

When using Entire Connection to communicate with a VMS or UNIX machine, the line from the PC must be connected to a port on the VMS host or on a terminal server that is either identified as VT100/VT220/VT320 or set to request terminal identification.

To set up Entire Connection for serial communication with a VTxxx host, enable XON/XOFF flow control if it is supported by the host machine to which you are connected. If the host machine supports bidirectional flow control (i.e. an XOFF can be sent from the host to an application and an XOFF can be sent from the application or user to the host), enable both directions.

See also: communication parameters for the VTxxx serial port in the section Overview of Object Properties.

## NetWare for SAA

To use Entire Connection with Novell NetWare for SAA Version 1.3 to 4.0, you must have access to the SAA gateway via IPX/SPX or TCP/IP.

No third-party software is required for Entire Connection to activate terminal emulation.

For IBM host printer emulation, it is necessary to define the LU on the SAA gateway as a printer LU. The SAA gateway does not distinguish between LU1 and LU3.

See also: communication parameters for NetWare for SAA in the section Overview of Object Properties.

## Microsoft SNA Server

Microsoft's SNA Client for Windows must be installed on your PC. Entire Connection supports SNA Server (and Client) version 3.0 to 4.0.

To use Entire Connection with Windows, you must have access to the SNA Server.

For IBM host printer emulation, the configuration of a printer LU on the SNA Server is exactly the same as the configuration of a terminal LU (LU2). The only difference is the LU definition in VTAM.

See also: communication parameters for Microsoft SNA Server in the section Overview of Object Properties.

## VT100 Protocol Converter

A protocol converter converts the 3270 data stream into another communication protocol. There are a number of different communication protocols. Entire Connection, however, supports only the ANSI VT100 protocol. Non-standard extensions to the ANSI VT100 protocol are not supported.

Extended attribute bytes (EABs) are not supported.

Most protocol converters convert normal 3270 field types and then assign VT100 attributes to each field type. You can define the colors you want to use for displaying the attributes.

See also: communication parameters for VT100 Protocol Converter in the section Overview of Object Properties.

### To set up your protocol converter for use with Entire Connection

1. Configure the protocol converter for VT100 mode.
2. Set the protocol converter to enable XON/XOFF flow control, if available. If the protocol converter supports bidirectional flow control (i.e. an XOFF can be sent from the protocol converter to the application and an XOFF can be sent from the application or user to the protocol converter), both directions should be enabled.
3. Disable any status line display generated by the protocol converter.
4. Import the terminal function code table for your protocol converter.
5. Use one of the supplied "key" files or create a "key" file that contains all valid escape code sequences required by your protocol converter.  
If none of the supplied "key" files is compatible with your protocol converter, you must either create a new "key" file or modify one of the supplied "key" files.
6. Check each escape sequence in the "key" file to ensure that it corresponds to the escape sequence required by your particular protocol converter.  
Because most protocol converters may be customized when installed, this applies to both supplied and customized "key" files. It is important to verify that the escape sequences needed by the protocol converter have not been modified.  
If you are using multiple protocol converters and different sets of escape sequences are required among them, you must create a unique "key" file for each protocol converter.
7. Import each "key" file to internally store this information for terminal emulation purposes.
8. Define all required communication parameters.

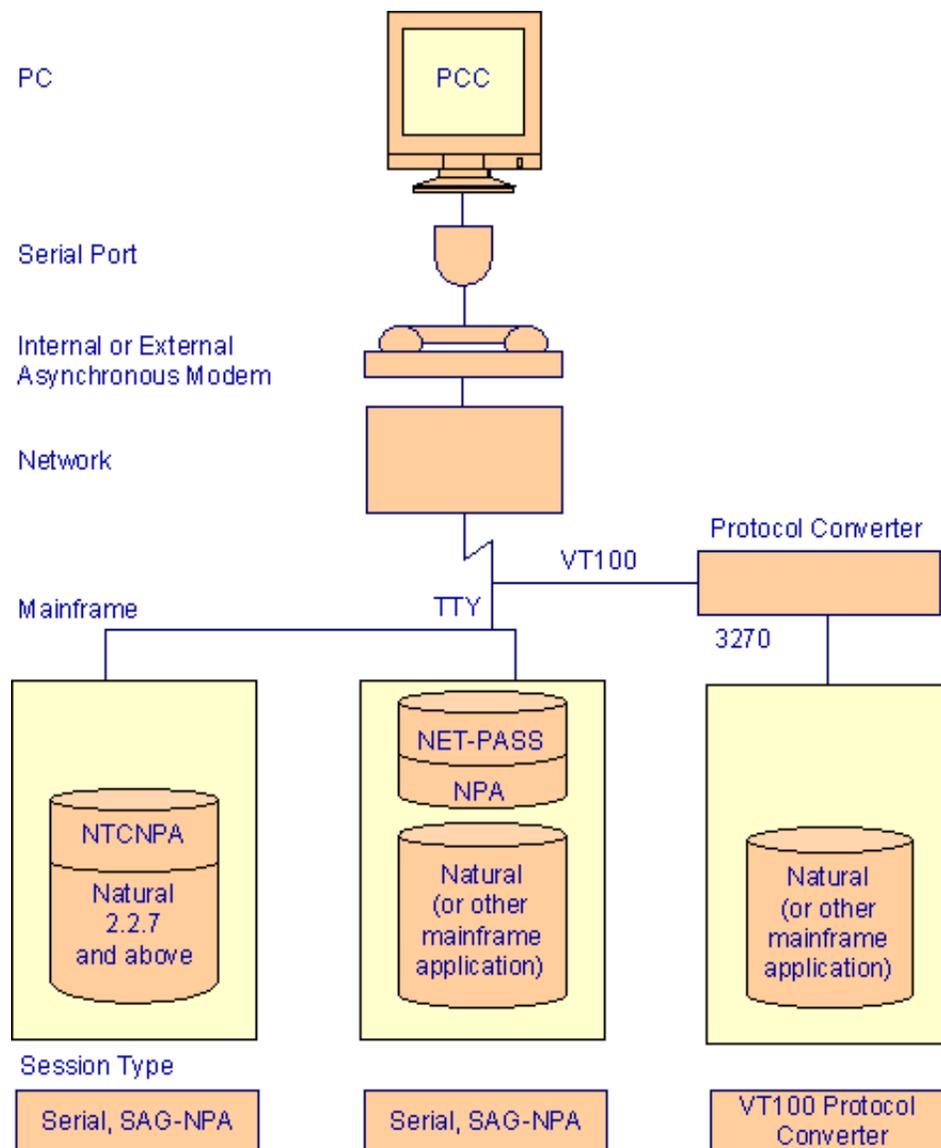
# Possible Setup Scenarios

Entire Connection can be installed in a wide range of network configurations. The diagrams in this section illustrate the possible scenarios:

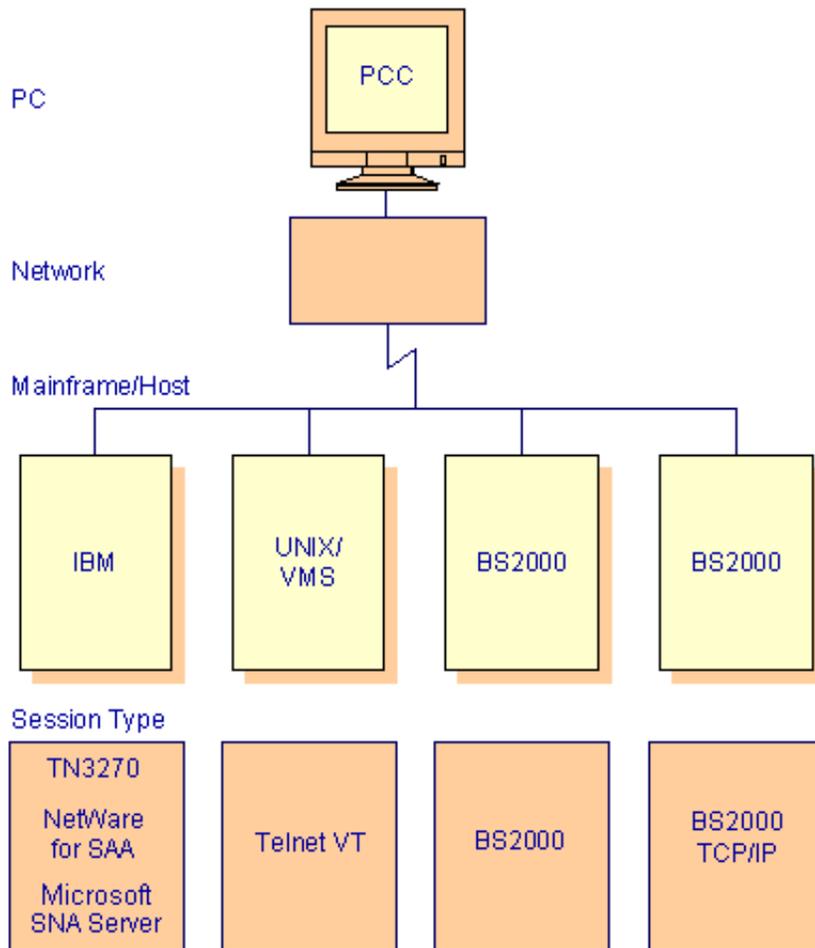
- Asynchronous Communication with IBM Host Systems
- Communication via TCP/IP Networks
- Terminal Emulation for UNIX Systems

For each scenario, the diagram indicates the prerequisites and the session type you must define once Entire Connection is installed.

## Asynchronous Communication with IBM Host Systems



## Communication via TCP/IP Networks



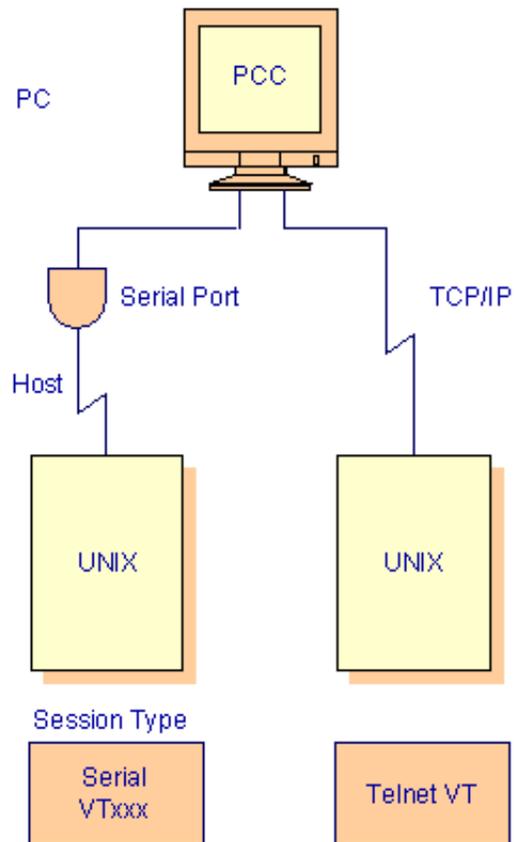
Third-party software requirements:

- WinSock 2
- Only for session type BS2000: the BS2000 API defined by Software AG. This API is available from many vendors that offer hardware and software for BS2000 communication.

**Note:**

Session type BS2000 TCP/IP provides native BS2000 support via TCP/IP (without third-party software). It does not provide the complete 975x functionality.

## Terminal Emulation for UNIX Systems



UNIX terminal emulation:

- VT100
- VT220
- ANSI color support (VT340+)

Third-party software requirements:

- WinSock 2

# Installing Entire Connection

This section provides the following information:

- Prerequisites
  - Installing Entire Connection for the Administrator
  - Program Folders
  - Environment Variables
  - Registry
  - Installing Entire Connection on a Client Workstation
  - Uninstalling Entire Connection
-

## Prerequisites

The following hardware and software is required in order to install and run Entire Connection:

<b>Hardware</b>	Any PC capable of running Microsoft Windows. Approximately 20 MB of free disk space. During installation, additional 40 MB are required in the Temp directory.
<b>Operating System</b>	<p>Microsoft Windows NT 4 with service pack 6 or a higher service pack <sup>*</sup>, or Microsoft Windows 98 plus the DCOM update for Windows 98, or Microsoft Windows 2000 (Datacenter is not supported) <sup>*</sup>, or Microsoft Windows Me, or Microsoft Windows XP Home Edition or Professional (32 bit). Fast user switching is not supported <sup>*</sup>.</p> <p><sup>*</sup> No terminal server support.</p> <p><b>Note:</b> DCOM for Windows 98 can be downloaded from <a href="http://www.microsoft.com">www.microsoft.com</a>.</p>
<b>Communication Method</b>	At least one of the supported PC-to-host communication methods.
<b>Third-party Software</b>	No third-party software is required for the new communication method BS2000 TCP/IP. For the old BS2000 method, a third-party software stack providing the Software AG BS2000 API must be installed.
<b>Data Transfer Software</b>	<p>If you want to transfer data between the host and your PC, the following Software AG products must be installed on the host to which the PC is being linked:</p> <ul style="list-style-type: none"> <li>● Natural Version 2.3 or above.</li> <li>● The version of Natural Connection that is compatible with the version of Natural you are using.</li> </ul> <p>If you want to download data to Excel format or upload Excel data, one of the following Excel versions must be installed on your PC:</p> <ul style="list-style-type: none"> <li>● Excel 97 or</li> <li>● Excel 2000.</li> </ul>
<b>Online Documentation</b>	<p>Microsoft Internet Explorer 5 or 6 for viewing the Entire Connection documentation in HTML help format. You can download the latest version from the Microsoft web site.</p> <p>Adobe Acrobat Reader for viewing and printing the Entire Connection documentation in Portable Document Format (PDF). The Adobe Acrobat Reader is provided on the Entire Connection CD-ROM.</p>

## Installing Entire Connection for the Administrator

Before installing Entire Connection, read the file Install.txt on the Entire Connection CD-ROM.

The setup program on the CD-ROM installs Entire Connection for one user, the administrator. In the simplest case, this is a single installation on a local PC, where the user can act as an administrator and define all required object types.

When several users are to work with the same installation (multi-user installation), the administrator can install Entire Connection on a network file server or shared drive and prepare the system for all users who are to access Entire Connection from different client workstations. For this type of installation, you have to choose the setup type "Custom" and select the option "Client Setup". The "Client Setup" option creates the Netsetup folder in the "Entire Connection 4.n.n" folder. By default, this is "\Program Files\Software AG\Entire Connection 4.n.n\Netsetup". The Netsetup folder contains the client installation program Setup.exe. Each user can run this program from his or her client workstation. It registers Entire Connection on the client workstation and creates an Entire Connection folder in the Start menu of the client workstation. When started, Setup.exe searches for the Readme.doc file in the Netsetup folder. When found, its content is displayed. The administrator can use this file to provide the users with site-specific information for their work with Entire Connection (such as user names, defaults or session names). See Installing Entire Connection on a Client Workstation later in this section for information about the installation on the client workstation.

After the installation, the administrator can define the parameters, objects (e.g. sessions), user groups and access rights for all users (see the section Configuration Manager). As the first step, make sure that the settings in the "System Preferences" dialog box are valid for all users. It is important that the directories for the procedure files and for the log and trace files can be accessed by all users.

### To install Entire Connection

1. Close any active Windows applications.
2. Insert the Entire Connection CD-ROM into your CD drive.

The setup program is automatically started and guides you through the installation.

If the automatic startup option is disabled on your system, you must run Setup.exe which is located in the root directory of the CD-ROM.

The following setup types are available:

<b>Setup Type</b>	<b>Installs</b>
Typical (default)	The most common options. Recommended for most users.
Compact	Only Configuration Manager and Terminal.
Custom	You may select the options you want to install. Recommended for advanced users. Required for a multi-user installation.

The following table indicates the options that are (or can be) installed with a specific setup type:

<b>Option</b>	<b>Typical</b>	<b>Compact</b>	<b>Custom</b>
Configuration Manager	X	X	X
Terminal	X	X	X
Format Converter	X		X
Host Printer LU Support			X
Sample Procedures	X		X
Sample Natural Programs	X		X
Client Setup			X

The following options are always installed: Configuration Manager and Terminal. With a custom installation, it is not possible to deselect these options.

If you want to merge existing user profiles, you must do this directly after installation. See [Merging Existing User Profiles](#) in the Configuration Manager section for further information.

## Program Folders

By default, Entire Connection is installed in the following program folder:

`\Program Files\Software AG\Entire Connection 4.n.n`

Program Folder	Contents
<code>\Entire Connection 4.n.n</code>	*.exe *.dll API ActiveX control PccAPI.ocx. Online documentation Pcc432xx.chm (where xx is the language code "US" for US English or "GR" for German).
<code>\Entire Connection 4.n.n\data</code>	Share411.sag Readme.txt
<code>\Entire Connection 4.n.n\Home</code>	Empty after installation. *.log Trace files (e.g. Monnn.trc and Hllapi.trc). Temporary files for host printer LU support.
<code>\Entire Connection 4.n.n\Netsetup</code>	Client installation program Setup.exe. Only available when the option "Client Setup" has been specified during installation (setup type "Custom").
<code>\Entire Connection 4.n.n\proc</code>	System procedure files. If specified during installation, this folder may also contain sample procedure files and sample Natural programs.
<code>\Entire Connection 4.n.n\tables</code>	Translation tables, keyboard tables, physical terminal function code tables.

## Environment Variables

Entire Connection does not change any environment variables.

## Registry

In the Windows registry, the Entire Connection installation procedure sets up keys in:

- HKEY\_LOCAL\_MACHINE/SOFTWARE/Software AG/Entire Connection  
When you uninstall Entire Connection, these keys are automatically removed.
- HKEY\_CURRENT\_USER/Software/Software AG/Entire Connection  
Entire Connection uses these keys to store runtime information (e.g. window positions). You can delete these keys after uninstalling Entire Connection.

## Installing Entire Connection on a Client Workstation

For a multi-user installation, the administrator must first install and prepare Entire Connection on a network file server or shared drive (see Installing Entire Connection for the Administrator). When this has been done, each user can run Setup.exe in the Netsetup folder from his or her client workstation. It registers Entire Connection on the client workstation and creates an Entire Connection folder in the Start menu of the client workstation.

During installation, the optional input parameter "User ID" can be specified. This parameter is added to the properties of the shortcut.

## Uninstalling Entire Connection

Use the Windows Control Panel (Add/Remove Programs) to uninstall Entire Connection.

When Entire Connection has also been installed on client workstations, it must first be uninstalled on all client workstations. Once this has been done, you can then uninstall Entire Connection on the server.

When you uninstall Entire Connection on the server first, it is no longer possible to uninstall it on the client workstations.

# "key" Files for Protocol Converters

This section explains which information can be modified in a "key" file.

- "key" Files Provided with Entire Connection
  - Sample "key" File
  - Entries with Special Meanings
  - Mnemonic Names
- 

## "key" Files Provided with Entire Connection

The "tables" directory of Entire Connection contains several "key" files for protocol converters. Select the "key" file that is most compatible with your protocol converter. Check whether the entries in this file correspond to the escape sequences required by your protocol converter (see the documentation for your protocol converter). Use only the VT100 escape sequences.

Among others, the following "key" files are copied to your hard disk during installation:

File	Description
Bb.key	Brown's Box
I3708.key	IBM 3708
I71.key	IBM 7171
Ldi.key	Local Data InterLynx
M80.key	MaComm MDS 8070
Mic.key	MiCom
Pci.key	PCI 1071
Prot.key	Default used in share file
Renex.key	Renex
Sitin.key	SitIntel
Tnt.key	Telenet Network Version of Local Data

## Sample "key" File

During installation, the file Ldi.key (see below) is copied to your hard disk. This sample "key" file consists of several columns:

- First column: identifies the terminal function key to be defined.
- Second column: XCLOCK indicates that the key will wait for a response from the host or protocol converter before allowing additional input from the keyboard.
- Third column: KEYRESET indicates that the keyboard is reset when insert mode is switched on.
- Fourth column: contains the escape sequence assigned to the terminal function key.



### Warning:

**The only data in a "key" file that should be modified are the data contained in the fourth column.**

When modifying the data in column four, you can use the mnemonic names for the hexadecimal values X'00' through X'1F'. All escape sequences must be enclosed in single quotation marks; they are case-sensitive.

If your protocol converter does not support an entry in the "key" file, insert an asterisk (\*) in the first position of the corresponding line. This entry will then be ignored.

If the "key" file you select contains an asterisk (\*) in front of an entry required by your protocol converter, you must remove the asterisk and replace the question marks in column four with the required escape sequence.

```
* ldi.key
* (C)Copyright Software AG 1993-1999
* terminal emulation function key table for Local Data InterLynx
* and similar Protocol Converters.
*
* DO NOT change the keyword line below ("WiTeKeyTable PROT"):
*
* If you have to change the table in the share file, modify this
* file (or one of the others which is closer to your needs) and
* import the table using the Entire Connection configuration manager.
```

WiTeKeyTable PROT

```
* set vtkey attn                type ????????
set vtkey backspace             type esc '[D'
set vtkey backtab               type BS
set vtkey break                 type cr
set vtkey clear                 xclock  keyreset  type esc 'Om'
set vtkey cr                    xclock  keyreset  type cr
set vtkey delete                type DEL
set vtkey devcncl               type esc ']'
set vtkey down                  type esc '[B'
set vtkey dup                    type esc 'Ov'
set vtkey eof                   type esc 'Ot'
set vtkey eraseinp              type esc 'Ow'
set vtkey fldmark               type esc 'Ol'
set vtkey home                  type esc 'Op'
set vtkey icr                    keyreset  type cr
* set vtkey ident                type ????????
set vtkey insert                type esc 'On'
```

```

set vtkey left type esc '[D'
set vtkey newline type LF
set vtkey pa1 xclock keyreset type esc 'Oq'
set vtkey pa2 xclock keyreset type esc 'Or'
set vtkey pa3 xclock keyreset type esc 'Os'
set vtkey pf1 xclock keyreset type esc '1'
set vtkey pf10 xclock keyreset type esc '0'
set vtkey pf11 xclock keyreset type esc '!'
set vtkey pf12 xclock keyreset type esc '@'
set vtkey pf13 xclock keyreset type esc '#'
set vtkey pf14 xclock keyreset type esc '$'
set vtkey pf15 xclock keyreset type esc '%'
set vtkey pf16 xclock keyreset type esc '^'
set vtkey pf17 xclock keyreset type esc '&'
set vtkey pf18 xclock keyreset type esc '*'
set vtkey pf19 xclock keyreset type esc '('
set vtkey pf2 xclock keyreset type esc '2'
set vtkey pf20 xclock keyreset type esc ')'
set vtkey pf21 xclock keyreset type esc esc '1'
set vtkey pf22 xclock keyreset type esc esc '2'
set vtkey pf23 xclock keyreset type esc esc '3'
set vtkey pf24 xclock keyreset type esc esc '4'
set vtkey pf3 xclock keyreset type esc '3'
set vtkey pf4 xclock keyreset type esc '4'
set vtkey pf5 xclock keyreset type esc '5'
set vtkey pf6 xclock keyreset type esc '6'
set vtkey pf7 xclock keyreset type esc '7'
set vtkey pf8 xclock keyreset type esc '8'
set vtkey pf9 xclock keyreset type esc '9'
set vtkey por keyreset type esc '<'
set vtkey print type esc 'Ox'
set vtkey refresh keyreset type ^w
set vtkey reset keyreset type DC2
set vtkey right type esc '[C'
* set vtkey sysreq type ???????
set vtkey tab type tab
set vtkey test xclock keyreset type esc 'Oy'
set vtkey up type esc '[A'
set vtkey vtdisc type esc '~'
set vtkey vtinit type esc '<'

```

## Entries with Special Meanings

The following entries in a "key" file have special meanings:

Entry	Description
BREAK	Send a break signal only (data are not sent). You can specify a value for the length of the break.
CR	Carriage return - required by Entire Connection when performing file transfers.
HOME	Required by Entire Connection when performing data transfers.
ICR	Immediate Carriage Return - similar to the CR entry except that ICR does not wait for a response from the mainframe or protocol converter. This entry is frequently used when establishing communications.
POR	Simulate a power-on-reset function. It is possible that the required escape sequence is not supported by your protocol converter, or that it can only be invoked from the main menu of the protocol converter.
REFRESH	Inform the protocol converter that the screen display needs to be refreshed.
VTDISC	VT disconnect - terminate the connection with the protocol converter.
VTINIT	VT initialize - establish a connection with the protocol converter.

## Mnemonic Names

The following table contains all allowed mnemonic names for the hexadecimal values X'00' through X'1F'. The columns labeled "Alternative 1" and "Alternative 2" contain additional mnemonic names that can be used to transmit a particular hexadecimal value.

**Note:**

The caret (^) symbol is the internal representation for the CTRL key.

Hex. Value	Mnemonic Name	Alternative 1	Alternative 2
X'00'	^@	NUL	
X'01'	^A	SOH	
X'02'	^B	STX	
X'03'	^C	ETX	
X'04'	^D	EOT	
X'05'	^E	ENQ	
X'06'	^F	ACK	
X'07'	^G	BEL	
X'08'	^H	BS	
X'09'	^I	HT	

Hex. Value	Mnemonic Name	Alternative 1	Alternative 2
X'0A'	^J	LF	
X'0B'	^K	VT	
X'0C'	^L	FF	
X'0D'	^M	CR	
X'0E'	^N	SO	
X'0F'	^O	SI	
X'10'	^P	DLE	
X'11'	^Q	DC1	XON
X'12'	^R	DC2	
X'13'	^S	DC3	XOFF
X'14'	^T	DC4	
X'15'	^U	NAK	
X'16'	^V	SYN	
X'17'	^W	ETB	
X'18'	^X	CAN	
X'19'	^Y	EM	
X'1A'	^Z	SUB	
X'1B'	^[	ESC	
X'1C'	^\ ^	FS	
X'1D'	^]	GS	
X'1E'	^^	RS	
X'1F'	^_ ^	US	