BOS

BETTER ON-LINE SOLUTIONS

BOSâNOVA TCP/IP

Online User Guide

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PRODUCT DESCRIPTION

> **Note!**
>
> If you installed BOSâNOVA TCP/IP (e-Twin@x version) from the BOSâNOVA Plus CD-ROM, you *must* use a BOS Twinax adapter card; in addition, the TCP/IP over Twinax Driver must be installed, configured, and running. For details, see Appendix B, p. 113.
>
> Otherwise, you can run the standard version of BOSâNOVA TCP/IP with or without the TCP/IP over Twinax Driver; if you use the TCP/IP over Twinax Driver, you can use a BOS Twinax adapter card or other cards. See the Readme file for a list of non-BOS cards that are supported.

> **Note!**
>
> *In this online user guide, the name "BOSâNOVA TCP/IP" refers to both the standard version and the e-Twin@x version.*

BOSâNOVA TCP/IP combines BOS TN5250E display emulation with LPD printer, FTP file transfer, and ODBC driver software in a package that is specifically designed for direct PC-to-AS/400 connectivity. It runs on Windows 95/98/2000 or Windows NT 4.0.

BOSâNOVA TCP/IP includes the following program modules:

- **Display/Printer Emulation** provides TN5250E display and printer emulation

- **Printer Driver Editor** enables you to customize the printer driver

- **LPD Print Manager** enables printing from an AS/400 using the TCP/IP protocol

- **Printing Configuration Advisor** defines an AS/400 remote output queue and assigns it to a display session so that a print job can be sent to an LPD printer

- **FTP Client** (File Transfer Protocol) provides bi-directional data transfer between the AS/400 and the PC

- **BOSâNOVA IFS for Windows 95** (Windows 98-compatible) enables you to work with AS/400 folders as if they were PC folders

- **TCP/IP over Twinax (e-Twin@x) Driver** provides full TCP/IP connectivity and functionality over existing Twinax cable systems

- **DTF** (Data Transfer Functions) is a 32-bit Windows utility for transferring data between a PC and its host

- **Host Explorer** allows viewing your AS/400 as if it were a drive on your PC

- **User Administration** includes two parts: **User Policy Editor** provides the system administrator an efficient way to assign user privileges and limitations, while **Remote Configuration** allows definition of parameters for all network users from one PC

What's New in BOSâNOVA TCP/IP?

BOSâNOVA TCP/IP now includes:

- DTF (Data Transfer Functions), which is a 32-bit Windows utility for transferring data between a PC and its host (p. 125),

- Host Explorer, a utility for viewing your AS/400 as if it were a drive on your PC (p. 130), and

- User Administration, a set of administrative tools for managing network installations, including: **User Policy Editor** provides the system administrator an efficient way to assign user privileges and limitations, while **Remote Configuration** allows configuration of parameters for all network users from one PC (p. 124).

For information about the major differences between BOSâNOVA TCP/IP and previous 32-bit versions of BOSâNOVA TCP/IP, see the Readme file in the CD-ROM root directory; in addition, check the Readme files in the BOSâNOVA TCP/IP installation folder for late-breaking information about this release.

BOSâNOVA TCP/IP Features

- includes the TCP/IP over Twinax Driver, which provides TCP/IP connectivity over your existing Twinax cable system, giving you access to the Internet and e-mail

- supports up to 32 simultaneous display and/or printer emulation sessions

- features native 32-bit implementation for Windows 95/98/2000/NT

- includes MorphExpress for converting host screens to true GUI screens without changing the host application

- supports Text Assist

- supports 3477FC devices (132-column display with color)

- supports PC and Terminal styles for keyboards, allowing you to work with either a 101/102-key keyboard or the BOS 122-key keyboard

- supports the euro symbol €

- includes comprehensive keyboard mapping and customization, using Shift, Caps Lock, Alt, Ctrl, function keys, etc.

- includes Print Preview, which displays print output before sending the print job to the physical printer

- includes Printer Session Properties, for modifying printer session settings

- includes customizable "floating" toolbars and Internet Explorer-type toolbar buttons

- supports user-definable macros

- includes BOSâNOVA EHLLAPI/DDE Interface 32, which sets a standard IBM EHLLAPI-style interface for enhancing interaction between host sessions and Windows 95/98/2000/NT PC applications

Online Help and Additional Documentation

This online User Guide provides all installation instructions plus comprehensive trouble-shooting information. In addition to this guide, the following documentation is provided:

- **Installation Guide** (booklet provided with the CD-ROM) guides you step by step through the installation process. It includes host and PC system requirements, installation instructions, licensing information, uninstalling instructions, and troubleshooting information.

- **Online Help** includes information on how to configure BOSâNOVA TCP/IP. It lists and explains product features, provides step-by-step instructions, and contains troubleshooting information. Access online Help from the emulation toolbar or by pressing ⊞ from any dialog box.

- **The Readme files** contains all up-to-the-minute information about the current version of BOSâNOVA TCP/IP.

Upgrade Information

If you are upgrading from a previous 32-bit version of BOSâNOVA TCP/IP, see *Upgrade Information (from previous 32-bit versions)* in online Help.

SYSTEM REQUIREMENTS

Host System Requirements

Host:	• AS/400
	• Advanced System/36
	Note! Via an AS/400, you can connect to:
	• System/3*x*
	• Advanced System/36
	• IBM mainframe
Operating System:	OS/400 V2R3 or higher
	Note! **TCP/IP over Twinax** support requires OS/400 V4R2 or higher, with PTF package C8045420 or higher.
In addition, the host must be:	• able to support at least one additional workstation
	• configured to support the type of terminal or Client Access workstation that the display emulation will be emulating
	• able to support the APPC connection type
	Note! For **TCP/IP over Twinax** support, TCP/IP connectivity utilities for AS/400 must be installed, configured, and running.

PC Requirements

PC:	• Windows 95/98:	486 DX/2 66 MHz minimum (Pentium 90 MHz recommended)
	• Windows 2000:	Pentium MMX 150 MHz minimum (Pentium II 233 MHz recommended)
	• Windows NT 4.0:	Pentium 66 MHz minimum (Pentium 90 MHz recommended)
Memory:	• Windows 95/98:	8 MB minimum (16 MB recommended)
	• Windows 2000:	32 MB minimum (64 MB recommended)
	• Windows NT:	16 MB minimum (32 MB recommended)
Hard Disk:	System folder:	7 MB minimum free space
	User folder:	10–18 MB minimum free space (the size depends on the applications installed)

Operating System:	• Windows 95
	Note! TCP/IP over Twinax support requires:
	    • OSR2 *or*
	    • Service Pack 1 and Dial Up Networking Update
	• Windows 98
	• Windows 2000
	• Windows NT 4.0
	Note! TCP/IP over Twinax support requires Service Pack 3 or later		

INSTALLING BOSâNOVA TCP/IP

Installation Overview

The BOS CD-ROM is the source for all installations of BOS emulation products. This CD-ROM is used for new installations, updates, and installation of evaluation versions.

Licensing is an integral part of the installation. Early in the process you will be prompted to enter the CD-Key. Without it, you can only install an evaluation version.

There are two types of licenses:

- **Single License**: an individual license, generally for a standalone PC. It is possible to have multiple single licenses, but each must be installed on a different PC. A unique CD-Key must be entered for each installation.

- **Company License**: a site license. Installation requires a special file provided either on a diskette included in the packaging, or separately from your BOS distributor. This file must be copied to the folder in which BOSâNOVA TCP/IP is installed. At runtime, your company name and the number of users licensed to use the software are displayed in the startup window.

> ### Note!
> Thirty-day evaluation versions of BOSâNOVA products are available from the BOS Product Catalog, located on the BOS CD-ROM, or from the BOS Web site (http://www.bosweb.com). Evaluation versions do not require a CD-Key.
>
> To install an evaluation version, follow steps 1–4 on p. 7. In place of step 5, select **Evaluation version**.

There are four installation setups for BOSâNOVA TCP/IP:

- **Standalone** (for non-network installation): Installs BOSâNOVA TCP/IP directly from the BOS CD-ROM to your PC. This setup can be performed an unlimited number of times to different installation folders.

- **Network Server** (for system administrators): Installs BOSâNOVA TCP/IP from the BOS CD-ROM to the network server installation folder. Afterward, each network user must perform Network User Setup. The system administrator can change parameters and policies for all users through the use of the User Policy Editor and the Remote Configuration (see p. 122).

- **Citrix MetaFrame**: (for thin client/server computing—Windows NT 4.0): (see p. 10).

- **Multiple Installations and Updates:** If different installation folders are used, BOSâNOVA TCP/IP can be installed more than once on either the same PC or server. As well, a previously installed version can be updated (see p. 11).

The TCP/IP Over Twinax Driver

> ### Note!
> Before installing the TCP/IP over Twinax (e-Twin@x) Driver (see p. 111), review the Readme file on the BOS CD-ROM. This provides information about which Twinax adapter cards can be used and how to install them.

If you plan to install the TCP/IP over Twinax Driver as one of your BOSâNOVA TCP/IP modules, you must have a Twinax adapter card installed in your PC.

> ### Note!
> If you are installing the TCP/IP over Twinax Driver as part of BOSâNOVA TCP/IP (e-Twin@x version), the version of BOSâNOVA TCP/IP that is bundled on the BOSâNOVA Plus CD-ROM, then the Twinax adapter card *must* be a BOS card. See Appendix C, p. 119, for instructions on how to install the BOS ISA Twinax adapter card.

Beginning the Installation Procedure

> ### Note!
> If you are using Citrix MetaFrame, *before* beginning the standard installation procedure perform the two initial steps which start on p. 10.

1. Close all applications.

2. Insert the BOS CD-ROM; the Welcome screen appears. Click **Next**.

3. Read the License Agreement. To install BOSâNOVA TCP/IP, you must click **Yes** to accept the License Agreement.

4. Enter your name and the company name. Click **Next**.

5. Enter the CD-Key; the 14-character CD-Key appears on the label on the license certificate accompanying the BOS CD-ROM. After the first six characters are entered in the first field, the cursor moves to the second field. After four characters are entered in the second field, the cursor moves to the third field. After the final four characters are entered in the third field, **Next** is enabled. Click **Next**.

6. Select the appropriate licence type:

   - If installing with a **Single License**, continue with New Installations, on the following page.

   - If installing with a **Company License**, an additional screen requests that you insert the diskette containing the company license files. Insert the diskette (or point to the network location of the file) and click **Next**. Continue with New Installations, on the following page.

New Installations

The following sections describe the installation process for the three setups (Standalone, Network Server, and Citrix MetaFrame).

Standalone Setup

1. Complete the beginning installation procedure described in steps 1–6 starting on p. 7.
2. Select **Standalone Setup**. The installation mode screen appears.
3. Select an installation mode.

    - If you select **Typical**, you receive a standard (default) installation with only the necessary components.

    - If you select **Custom**, you are prompted for:

        - the destination (installation) folder

        - the program folder

        - the host language and the user interface language

        - the modules to be installed (see p. 2)

4. The shortcut screen allows you to create shortcuts on your desktop. Select the desired checkboxes. Click **Next**.
5. Review the installation setup and click **Next**.
6. After the files are copied to your installation folder, Setup prompts you to register your installation of BOSâNOVA TCP/IP. The registration process involves five screens. After each of the first four, click **Next**. After the fifth, click **Finish**.
7. If prompted to do so, reboot your PC.
8. To view late-breaking news about this release, select **Readme file**. To run the Administrator, select **Run Administrator**. Click **Finish**.

Network Server Setup

1. Complete the beginning installation procedure described in steps 1–6 starting on p. 7.

2. Select Network Server Setup. The installation screen appears.

3. Select an installation mode.

    -   If you select **Typical**, you receive a standard (default) installation with only the necessary components.

    -   If you select **Custom**, you are prompted for:

        -   the destination (installation) folder

        -   the program folder

        -   the host language and the user interface language

        -   the modules to be installed (see p. 2)

4. The shortcut screen allows you to create shortcuts on your desktop. Select the desired checkboxes. Click **Next**.

5. Review the installation setup and click **Next**.

6. After the files are copied to your installation folder, Setup prompts you to register your installation of BOSâNOVA TCP/IP. The registration process involves five screens. After each of the first four, click **Next**. After the fifth, click **Finish**.

7. If prompted to do so, reboot your PC.

8. To view late-breaking news about this release, select **Readme file**. To run the Administrator, select **Run Administrator**. Click **Finish**.

Following completion of the Network Server Setup, the network administrator must provide the users with the information necessary for network user setup. Network users must complete the following two steps:

1. Close all applications.

2. Run Netsetup.exe from the BOSâNOVA TCP/IP network server installation folder and follow the prompts.

Setup for Citrix MetaFrame (Windows NT 4.0 only)

> ### Note!
> Any prior standalone installation of BOSâNOVA TCP/IP must be uninstalled before beginning a Citrix MetaFrame installation.

1. Before installing BOSâNOVA TCP/IP, open a command prompt (Select **Start|Run**).

2. In the command prompt, type `change user / install` and press `Enter`.

3. Follow steps 1–6, starting on p. 7, to install BOSâNOVA TCP/IP.

4. Select Setup for Citrix MetaFrame.

5. Select an installation mode.

   - If you select **Typical**, you receive a standard (default) installation with only the necessary components.

   - If you select **Custom**, you are prompted for:

     - the destination (installation) folder

     - the program folder

     - the host language and the user interface language

     - the modules to be installed (see p. 2)

6. The shortcut screen allows you to create shortcuts on your desktop. Select the desired checkboxes. Click **Next**.

7. Review the installation setup and click **Next**.

> ### Note!
> Even if prompted to do so earlier, **wait to reboot** the PC until after completion of step 10.

8. After the files are copied to your installation folder, Setup prompts you to register your installation of BOSâNOVA TCP/IP.   The registration process involves five screens. After each of the first four, click **Next**. After the fifth, click **Finish**.

9. In the command prompt, type `change user / execute` and press `Enter`.

10. After installation of the new files, if prompted, reboot the PC.

Multiple Installations and Updates

You can install BOSâNOVA TCP/IP more than once to the same PC (for Standalone installations) or server (for Network Server installations) as long as you use a different installation folder each time. For example, you might want to install BOSâNOVA TCP/IP in more than one language or with different module combinations. Each installation creates a new installation set number in the Registry. If you run Setup after BOSâNOVA TCP/IP has already been installed, you are prompted to select one of the following:

- **Replace previous installation**: the entire installation is replaced.
- **Add new components**: you are asked to select new components to be installed.
- **Change language support**: you are able to change both the host language and the user interface language while preserving all other definitions.
- **Change license**: you can replace one license with another. (Only appears if Setup is run on a system with a previous installation from a company license.)

> #### *Note!*
> The first time you run Setup, update the older version with the components that are **presently** installed; this preserves data files and configuration.
> After the latest version is installed, to add components run Setup again.

Changing the License

In two circumstances, installation may involve changing a license:

- If the CD-Key is different than the CD-Key used during the original installation and an upgrade is allowed, **Change License** appears as a fourth option.
- If more than one computer is using the same single installation CD-Key, a license violation messages will appear. Restart and insert the new CD-Key and select **Change License**.

Installing the BOS-ODBC/400 Driver

1. Close all applications.
2. From the Welcome screen of the BOS CD-ROM, select **BOS-ODBC/400 Installation**.
3. Follow the prompts.

CONFIGURING BOSâNOVA TCP/IP

BOSâNOVA TCP/IP includes several modules or components to help you configure and maintain the software. These are:

- Setup (to install the software)

- The Administrator (to set and maintain overall parameters)

- The TCP/IP Configurator (to define the TCP/IP connection, proxy servers, and ports)

- The Emulation Configurator (to define emulation sessions)

- Printer Driver Editor (to customize the printer driver)

- LPD Print Manager (to manage printing on a TCP/IP network)

- Printing Configuration Advisor (to help define PC and host parameters and manage print jobs)

- Display and printer emulation

The Administrator

The Administrator provides an overall view of various parameters relating to your installation of BOSâNOVA TCP/IP. The Administrator also enables you to run certain administrative procedures.

Network Server Installations Only

For network server installations, User Administration is provided (p. 124). This a set of administrative tools for managing network installations. It includes the **User Policy Editor**, which provides the system administrator an efficient way to assign user privileges and limitations, and **Remote Configuration**, which allows definition of parameters for all network users from one PC.

All Installations

The Administrator can be accessed directly from Setup. Otherwise, from the Start menu, select **Programs|BOSâNOVA TCP/IP**, and select Administrator.

The **top pane** of the Administrator uses a Windows-style tree structure to display the parameters and installed modules. This structure will be familiar and intuitive to you if you use Windows Explorer in Windows 95/98/2000/NT.

To use this structure:

- An item preceded by a **plus sign (+)** contains nested items. Click the plus sign to expand the item (display the nested folders).

- An item preceded by a **minus sign (-)** is already fully expanded. Click the minus sign to collapse that part of the tree.

- The names of the parameter sets appear in black, while the current status values appear in blue. Values always appear in arrow brackets (< >).

- When you **select** a parameter set or installed module in the top pane, the buttons and controls that configure or run that parameter set or module appear in the **bottom pane**.

The Administrator parameters and modules are divided as follows:

Installation Parameters

When Installation Parameters, in the top pane of the Administrator, is expanded, the following parameters are displayed:

Product Version

The installed version of BOSâNOVA TCP/IP. Technical Support ask for this number if you contact them for help.

Installation Type

Standalone or Network User.

Installation Path

The path to which BOSâNOVA TCP/IP is installed. To change this, you must uninstall BOSâNOVA TCP/IP (from the Windows Control Panel, Add/Remove Programs); then run Setup from the original CD-ROM or diskettes and install BOSâNOVA TCP/IP to another directory.

Installation Set

The set number, if you have installed more than once on the same PC.

Product ID

The BOSâNOVA TCP/IP product ID. Technical Support will ask for this number if you contact them for help.

Administrative Parameters

When Administrative Parameters in the top pane of the Administrator is expanded, the following parameters are displayed:

Host Language/Country

The host keyboard ID (language), the host EBCDIC code page used, and the EBCDIC/ASCII translation table that is used. These values were defined when you installed BOSâNOVA TCP/IP; if you encounter problems with host applications in other languages, you must reset these values by rerunning Setup from the original CD-ROM or diskettes.

License

Displays the license type. You can only change the license by re-running Setup from the BOS CD-ROM.

> **Note!**
> If you installed an evaluation version, you are licensed to use it for 30 days from the time you first run it.

Euro Support

The euro is the single currency of the European Monetary Union that will be adopted by 11 member states from 1 January 1999. If you select this option and your Windows system and the host are set to support the euro symbol, BOSâNOVA Twinax Client 32 uses new euro symbol-compliant keyboard type and code page IDs when allocating a session and new EBCDIC/ANSI and ANSI/EBCDIC tables with euro symbol support. If your host or Windows system do not support the euro symbol, do *not* select this checkbox. See Euro Symbol Support, p. 46, for details on system requirements, changes, and patches.

Connectivity

When Connectivity, in the top pane of the Administrator, is expanded, the following parameter is displayed:

Connection Type

TCP/IP

Run

(This button is disabled for the TCP/IP connection type.)

Configure

Click to open the TCP/IP Configurator to configure the connection.

Installed Modules

When Installed Modules, in the top pane of the Administrator, is expanded, all currently installed BOSâNOVA TCP/IP components are displayed:

Display/Printer Emulation

5250 display and printer emulation.

LPD Print Manager

Printing via the LPD (Line Printer Daemon) protocol. Click **Run** to start LPD printing. Click **Configure** to manually configure the LPD output.

Printing Configuration Advisor

Online assistance for configuring printing (either LPD or non-LPD output). Click **Run** to start the Printing Configuration Advisor.

FTP Client

Data transfer through an FTP (File Transfer Protocol) client. Click **Run** to open the transfer interface.

BOSâNOVA IFS for Windows 95

BOSâNOVA IFS (Integrated File System) provides access to AS/400 folders from Windows 95/98.

DTF

DTF (Data Transfer Functions) is a 32-bit Windows utility for transferring data between a PC and its host.

Host Explorer

Host Explorer allows viewing your AS/400 as if it were a drive on your PC.

Note!
The display/printer emulation will always be installed.

Run

Click this button in the bottom pane to run:

- the emulation (if you chose Display/Printer Emulation)
- LPD printing or the Printing Configuration Advisor (if you selected one of these modules), or
- FTP to open the transfer interface

Configure

Click this button in the bottom pane to configure the selected module (emulation, BOSâNOVA IFS for Windows 95, or LPD):

Diagnostics

If you contact Technical Support with a problem, they may ask you to provide them with special files to help them solve it:

- traces (*.trc or *.bts files) and/or screen captures (*.scn files) to help them debug the problem; create these files from the Emulation Configurator or Router Configurator

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- the information file (default Bsinfo.bts), which includes all technical information related to the problem and which *automatically includes* all trace files and screen captures created in the previous step

Create the information file *after* running traces and screen captures.

Expand Diagnostics in the Administrator display tree to display the following parameter:

Troubleshooting Information

Click **Collect Technical Information** to open the User Information dialog box; fill in the information requested to create the information file (default Bsinfo.bts).

> ### Note!
> You must close all sessions before accessing Diagnostics.

The TCP/IP Configurator

Use the TCP/IP Configurator to configure parameters for your PC to host communication. The TCP/IP Configurator opens automatically when you start BOSâNOVA TCP/IP. You can access it any time to change parameters.

> ### Note!
> When configured for a TCP/IP connection, BOSâNOVA TCP/IP uses the Wsock32.dll interface.

Starting the TCP/IP Configurator

1. Close all sessions and run the Administrator.
2. Expand **Connectivity** in the top pane and click **Connection Type**.
3. In the bottom pane, click **Configure** to open the TCP/IP Configurator.
4. Set the parameters and click **OK** until you exit the Administrator.

Using the TCP/IP Configurator

Configurator parameters are divided among the following two tabs:

Basic

Add, modify, or delete host systems and define security parameters. For details, see *TCP/IP Configurator* in online Help.

Advanced

Define or enable proxy servers and ports.

The **top pane** of the Advanced Tab uses a Windows-style tree structure to display the parameters. This structure will be familiar and intuitive to you if you use Windows Explorer in Windows 95/98/2000/NT.

To use this structure:

- An item preceded by a **plus sign (+)** contains nested items. Click the plus sign to expand the item (display the nested folders).

- An item preceded by a **minus sign (-)** is already fully expanded. Click the minus sign to collapse that part of the tree.

- The names of the parameter sets appear in black, while the current status values appear in blue. Values always appear in arrow brackets (< >). When you change a parameter, it appears in red until you click **OK**.

- When you **select** a parameter set in the top pane, the buttons and controls that configure or run that parameter set appear in the **bottom pane**.

The parameters are divided into the following categories:

- Telnet Proxy Server
- SOCKS Proxy Server
- FTP Proxy Server
- LPD Port

Select a proxy server or the LPD port in the top pane and use the dialog box that appears in the bottom pane to define or modify the connection.

For details, see *TCP/IP Configurator* in online Help.

The Emulation Configurator

Use the Emulation Configurator to change the parameters that control the look and operation of the BOSâNOVA TCP/IP emulation. After Setup is complete, run the Emulation Configurator to define sessions.

> ### *Note!*
> You can access the Emulation Configurator while the emulation is running, but you can **not** add or change sessions while sessions are open.

Starting the Emulation Configurator

When the Emulation is closed, from the Start Menu, select **Programs|BOSâNOVA TCP/IP**, select BOSâNOVA Configurator, or

From the Emulation

- Click from the emulation toolbar, or
- Select **File|Run Configurator** from the emulation menu bar.

Using the Emulation Configurator

Configurator parameters are divided among two tabs, Sessions and Advanced Properties:

Sessions Tab

For adding, modifying, or deleting display and printer emulation sessions. See *The Emulation Configurator* in online Help for details.

Advanced Properties Tab

For adding, modifying, or deleting display and printer emulation sessions, as well as defining sets of global parameters.

The **top pane** of the tab uses a Windows-style tree structure to display the number and type of currently-defined sessions and the sets of global parameters affecting all the sessions. This structure will be familiar and intuitive to you if you use Windows Explorer in Windows 95/98/2000/NT.

The parameter sets are divided into the following categories (see *Advanced Properties* in online Help for details):

Sessions

Settings for all defined display and printer sessions.

Keyboard

For setting the keyboard type and viewing or customizing keyboard mapping and other settings.

Mouse

For defining mouse actions.

Sign-on Screen

For defining any automatic startup or macro action.

MorphExpress

For defining the GUI display.

Display Properties

For defining the color and cursor style.

Session Preferences

For defining the display font and ruler type.

Options

For setting various emulation options.

Diagnostics

If you contact Technical Support with a problem, they may ask you to provide them with special files to help them solve it:

- traces (*.trc or *.bts files) and/or screen captures (*.scn files) to help them debug the problem; create these files from the Emulation Configurator or Router Configurator

- print output (*.asc or *.ebc files) from printer emulation sessions.

- the information file (default Bsinfo.bts), which includes all technical information related to the problem and which *automatically includes* all trace files and screen captures created in the previous step

Create the information file *after* running traces and screen captures.

Expand Diagnostics in the Administrator display tree to display the following parameter:

Troubleshooting Information

Click **Collect Technical Information** to open the User Information dialog box; fill in the information requested to create the information file (default Bsinfo.bts).

Note!
You must close all sessions before running Diagnostics.

THE BOSâNOVA EMULATION

The BOSâNOVA emulation is the environment in which you run your host applications. The host application appears in a window with optional toolbars, the BOSâNOVA TCP/IP menu bar, customizable macros, and customizable display enhancements.

Starting a Display or Printer Emulation

To start an emulation, click **Start**, select **Programs|BOSâNOVA TCP/IP**; then select

BOSâNOVA Emulation

In addition, you can start BOSâNOVA TCP/IP automatically by adding it to the Windows Startup folder. To do this, place a shortcut to the BOSâNOVA TCP/IP Display Emulation (Bsmdemul.exe in your BOSâNOVA TCP/IP folder) in your Startup folder (Start Menu|Programs|StartUp).

Note!

After starting BOSâNOVA TCP/IP, you must open a session in order to start working. If you select **File|Save Workspace**, you can then automatically open all required sessions by selecting **File|Restore Workspace** when you start BOSâNOVA TCP/IP again.

Opening a Session

From the emulation, you can open a display session or printer session in the following ways:

- Click the desired display session button (for example,) or printer session button (for example,).

- Select **Sessions|Activate Session** and select the desired session.

- Select **Sessions|Activate All** to activate all sessions.

- Select **File|Restore Workspace** to automatically open all sessions (if you selected **File|Save Workspace** the last time you ran BOSâNOVA TCP/IP).

Note!

All defined sessions that are not currently open are listed according to session name in Session|Activate Sessions. A session with no session name defined is listed by its number and device model type; for example, Session_2 3477.

Display Emulation Sessions

Display Session Diagram

An example of a display emulation screen is shown below (the image is truncated):
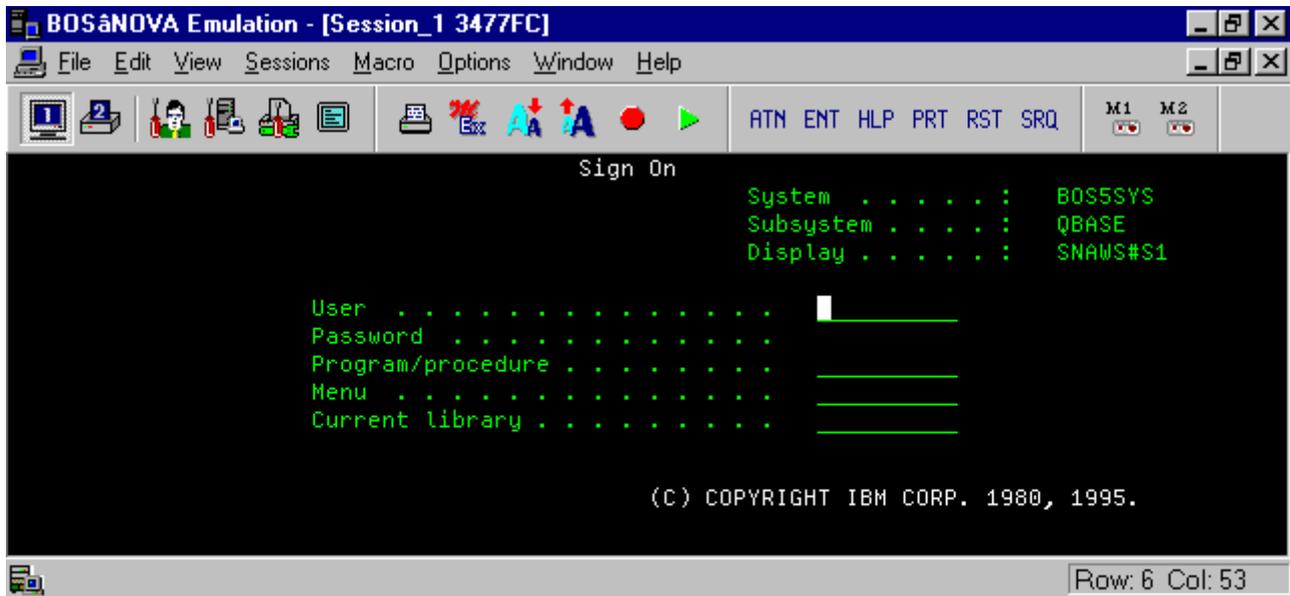
Figure 1: BOSâNOVA Display Emulation Session

Display Emulation Toolbar Buttons

	Shows the active emulation session (when selected).
	Shows the active printer session (when selected).
	Runs the Administrator.
	Runs the Emulation Configurator.
	Displays Print Screen setup.
	Toggles between a normal display screen and full-screen mode. In full-screen mode, the display screen appears larger and without the Windows menu, status, and task bars.
	Places a tab after each line of text in the Windows clipboard. This is useful for pasting text into host fields because the tab causes the next line to be pasted into the next input field.

Copies each line within the screen or selected area as a single line with a carriage return. When pasted back into an emulation screen, the individual lines can then be entered into host fields by selecting **Edit|Paste Tab** or **Edit|Paste Field Exit**.

Performs a Print Screen.

Runs the emulation session in GUI mode (MorphExpress), which display menus, buttons, frames, tables and other Windows interface features.

Decreases the font size in the active display session.

Increases the font size in the active display session. The font is increased in height first, then in width. If you are using Autosize Font (Options|Preferences in the Emulation Configurator), clicking this button changes the minimum font size.

Records a macro: everything entered at the keyboard (characters, symbols, or command keys) is recorded. Recording continues until the macro is stopped. *Note! While you are recording, a two-*

button toolbar displays Pause and Stop buttons: .

Plays the selected pre-recorded macro.

Host operations toolbar functions.

Macro toolbar. These only appear if macros are defined.

Printer Emulation Sessions

BOSâNOVA TCP/IP uses a Windows-style tree structure to display printer sessions and their status information. This structure will be familiar and intuitive to you if you use Windows 95/98/2000/NT; see Using the TCP/IP Configurator, p. 17.

Printer Emulation Diagram

The following diagram shows a sample printer session status screen.

> ### *Note!*
> If a parameter is not applicable to your connection type, it appears blank.
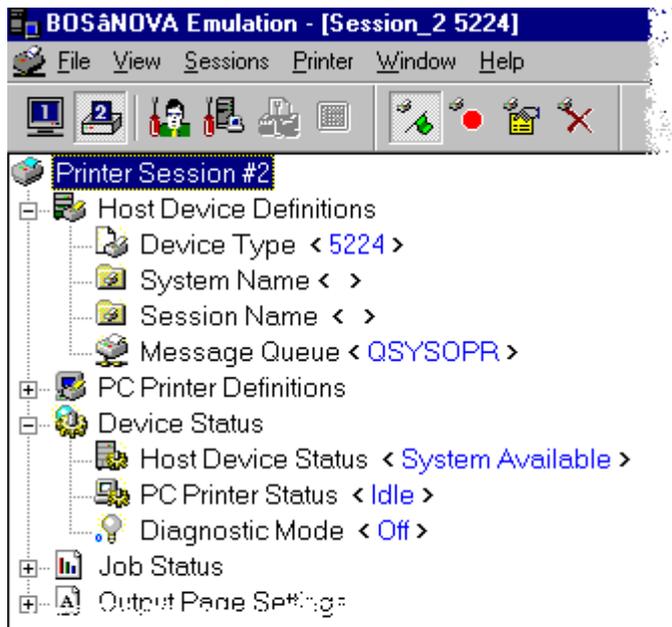
Figure 2: BOSâNOVA Printer Emulation Session

Printer Emulation Toolbar Buttons

	Shows the active emulation session (when selected).
	Shows the active printer session (when selected).
	Runs the Administrator.
	Runs the Emulation Configurator.
	Displays Print Screen setup.
	Starts the printer. If the print queue has been paused or stopped, this resumes printing.
	Stops the printer, including any jobs currently in the print queue. A host error message will appear, indicating that the print queue has been stopped. Jobs in the queue remain there; ready jobs are released once the Start button is pressed or **Printer|Start** is selected.
	Opens Printer Session Properties, for viewing or setting print job parameters.
	Cancels the current job in the print queue. Other jobs will continue.

Printer Session Properties

You cannot change values directly on the screen. Make changes in the Printer Session Properties dialog box. Access the dialog box in one of three ways:

- In a print emulation screen, right-click to display the popup menu and select **Properties**.

- From the print emulation menu bar, select **Printer|Properties**

- From the printer emulation toolbar, click

General Tab

This tab contains parameters defining the printer driver and job timeout settings.

> ***Print Test Page***
> Sends a test page to the local printer. The print session emulates a host print device, but the output is directed to a PC printer.

> ***Printer Driver***
> BOSâNOVA TCP/IP enables you to print using your default Windows printer driver or to bypass Windows printing by defining your own custom printer driver.

> ***Timeout Settings***
> The default job timeout is 10 seconds. This is the maximum amount of time that can elapse between buffers received from the host. If no buffer is received within this time period, BOSâNOVA TCP/IP assumes that the end of the print job has occurred. During troubleshooting, you may need to increase this number. To restore the default value, click **Set Default Timeout**.

Previous Job Attributes Tab

Displays the attribute values of the most recent host print job in the left pane and corresponding local printer settings (converted from the host attributes by the BOSâNOVA printer emulation) in the right pane. For details, see *Printer Session Properties* in online Help.

Page Setup Tab

For setting parameters such as CPI, LPI, page orientation, paper size, and paper source. For details, see *Printer Session Properties* in online Help.

Note!

If your screen display is not clear, click the + or **-** box in front of an entry several times to refresh the screen.

Diagnostics

Contains parameters for running diagnostic mode. This is for troubleshooting print problems. For details, see *Printer Session Properties* in online Help.

Page Setup Tab

See *Printer Session Properties* in online Help for more information.

> ***Note!***
> If your screen display is not clear, click the **+** or **-** box in front of an entry several times to refresh the screen.

Custom Driver Considerations

In order to decide whether to use the default Windows driver or a custom driver, you must understand how BOSâNOVA TCP/IP handles print jobs.

When using the Windows driver, a data buffer (ASCII or EBCDIC) arrives at the Windows driver. It is then output as a graphics buffer to the printer queue. Each output buffer is approximately 40K.

When using a custom driver, a data buffer arrives at the custom driver. It is then output as the same strings (ASCII or EBCDIC) plus commands for that printer driver. This output is then routed to the Windows driver, where it again is output to the printer queue as data strings plus printer commands. Because no graphic processing is involved, each buffer is approximately 3K.

If you are printing straight ASCII text, for example, and require speed and high throughput, you might consider using a custom driver. Custom drivers can be modified using the Printer Driver Editor.

Copying Between Sessions or Applications

Most Windows applications use the Windows Clipboard to transport text, graphics, and other data. You can also use the Clipboard to copy data from a session into another session or another application.

1. In an active display emulation session, use the mouse to mark the on-screen text you want to copy.

2. To copy:

   - select one of the copy methods from the Edit menu (Copy Continuous, Copy by Line, or Copy Bitmap), or

   - press <Ctrl+C>, or

   - click on the toolbar.

---

3. If you are copying to a different session or application, switch to the other session or application.

4. Before pasting the copied text, use the mouse to position the cursor at the insertion point.

5. To paste:

    - select one of the paste methods from the Edit menu (Paste Continuous, Paste Tab, or Paste Field Exit), or

    - press <Ctrl+V>, or

    - click [icon] on the toolbar.

Note!
The data copied into the Windows Clipboard will remain there until replaced by the next copy action.

Switching Between Emulation Sessions

You can switch (or toggle) between open display and printer emulation sessions using the toolbar, the menu bar, or the keyboard.

From the Toolbar

Click the display session button (for example, [icon]) or the printer session button (for example, [icon]) to switch to that session.

From the Menu Bar

Select the Window menu. The bottom of the menu lists all the open display and printer emulation sessions. A check appears next to the currently-active session (on top session). You can switch to another session by selecting it from this list.

From the Keyboard

In Windows, press <Ctrl>+<F6> or <Ctrl>+<Tab> to switch to the next open emulation session.

- Press the mapped PC key for "Jump to Next Session" (default <Alt>+<PageUp>).

- You can remap this key in the Mapping Editor (see Customizing Your Keyboard, p. 31).

- Set the Session Toggle Key Combination:

  1. From the menu bar, select **Options|Keyboard Customization**.

  2. Under Session Toggle Key Combination, select **No key** (for no toggle key combination) or <**Alt+Num**> or <**Ctrl+Num**>.

  3. Check that Num Lock is on.

  4. To switch to another session, press Alt or Ctrl (depending which combination you selected in step 2) and press the session number on the numeric keypad. The session changes when you release both keys.

Using Macros

Macros are strings of keystrokes (characters, symbols, or command keys) entered at the keyboard and saved for repeated use. They provide a simple way to enter repetitive command data into a host session screen. Macros are stored in the Windows Registry.

> *Note!*
> You will not be able to use macros from another BOS emulation product; you must re-record the desired macros in BOSâNOVA TCP/IP.

Recording a Macro

To record a macro, you must be in a display emulation session (see Opening a Session, p. 21).

1. Click from the toolbar or select **Macro|Record Macro**. A popup Record

   toolbar appears containing, the Pause and Stop buttons.

2. Stop recording by clicking or selecting **Macro|Stop Macro**. The Record popup toolbar closes.

> *Note!*
> If you exit the emulation before clicking **Stop Macro**, the recorded key sequences are lost.

3. The Save Macro As dialog box appears. Enter a name for the macro and click **Save**.

Note!
If you record a macro with a key sequence that is already in use, the new key sequence automatically replaces the existing one.

Viewing a Macro

1. Select **Macro|Organize Macro**. The Macros dialog box opens.

2. Select a macro from the list and click **View** to open the View Macro dialog box. The macro appears as commands and text strings.

3. When you have finished viewing, click **Close**.

Playing a Macro

To play a macro, you must be in a display emulation session.

- From the Sessions toolbar:

    1. Click . The Macros dialog box opens.

    2. Select a macro from the list and click **Play**.

- From the Macro menu:
    1. Select **Macro|Play Macro**. A list of all defined macros is displayed.

    2. Select a macro from the list.

- From the Macros toolbar, click the desired macro button.

Deleting a Macro

1. Select **Macro|Organize Macro**. The Macros dialog box opens.

2. Select a macro from the list and click **Remove**.

3. Confirm the delete action by clicking **Yes**.

4. Select another macro to delete, or click **OK** to close the dialog box.

The Macro Organizer and Macro Editor

With the Macro Organizer, you can manage and modify recorded macros in an easy-to-use interface. The Macro Organizer interface displays a list of existing macros on the left side and buttons for managing the macros on the right side.

The Macro Editor provides a convenient way for adding, removing, or substituting macro commands or text strings in a selected macro. The Macro Editor displays the text strings and commands of the selected macro in the order they were recorded or entered in the Macro Organizer. For details, refer to online Help.

Closing a Session

To close a session:

- close the session window by clicking the Close button (☒) at the far right of the title bar, or

- select **Sessions|Close Session** and select the desired session

To close all sessions, select **File|Exit** to close BOSâNOVA TCP/IP

Note!
All open sessions appear in the Close Session cascade menu and are listed according to session name. A session with no session name defined is listed by its number and device model type; for example, Session_2 3477.

Stopping an Emulation Session

When you close the BOSâNOVA emulation, all sessions will be closed. To do this:

- Select **File|Exit**, or

- Click ☒ on the window title bar.

Note!
If you log out of the host session without closing your host application, the session may remain defined at the host side even if BOSâNOVA TCP/IP is closed. To prevent this, select **Check for sign-on screen on exit** in Sign-on Screen in the Advanced Properties tab in the Emulation Configurator. This displays a warning if you try to close a session when the host Sign-on screen is not the current screen.

CUSTOMIZING EMULATION SESSIONS

Keyboard

Accessing Keyboard Customization

- From an emulation session, select **Options|Keyboard Customization** from the emulation menu bar.

- From the Administrator:

    1. In the top pane, select **Installed Modules|Display Emulation**; in the bottom pane, click **Configure**.

    2. Select the **Advanced Properties** tab. In the top pane, select **Keyboard;** in the bottom pane, click **Keyboard Customization**.

Customizing Your Keyboard

1. From the Advanced Properties tab in the Emulation Configurator, select **Keyboard**.

2. In Keyboard style, select **Terminal** or **PC** (that is, the style of the keyboard you use).

3. In Keyboard type, select the keyboard you are using from the list (BOS 122-Key or Standard 101/102-Key). If you are using the BOS 122-key keyboard, you must install its driver (see Installing the BOS 122-key Keyboard Driver, p. 37).

4. To view the default keyboard settings, click **Keyboard Customization** (for details, see *Keyboard Customization* in online Help).

Note!
If the default keyboard settings are appropriate, which is the case for most users, go to step 6 (to check host settings). If, however, you want to change these settings, continue with step 5.

---

5. To change the default keyboard settings, set the following parameters (for details, see *Keyboard Customization* in online Help):

    Keyboard Mapping Name
    When you install BOSâNOVA Twinax Client 32, the only two PC keyboard options on the list are BOS 122-key and Standard 101/102-key. Select the type of keyboard you have.

Note!
The following parameters apply to *all* the keyboard mappings in the list; therefore, if you change a parameter, it changes in all the listed keyboard mappings, not just the selected one.

Keyboard Locks

You an override these default Terminal or PC-style keyboard mappings:

- Select **Shift Lock** *or* **Caps Lock**. On a terminal-style keyboard, <Caps Lock> works like a terminal <Shift Lock> and remains in place until the <Shift> key is pressed

- **Set Num Lock at session startup**: when selected, this sets <Num Lock> when you open a session. On a terminal-style keyboard, the numeric keypad is always numeric whether or not <Num Lock> is selected.

Enter and Field Exit

Select the keystrokes for Enter and Field Exit. There are two choices:

- <Field exit>=Enter; <Enter>=Right Ctrl (terminal-style keyboard defaults)

- <Field exit>=Right Ctrl; <Enter>=Enter

Word Processor Key Combination

If you are using Office Vision Text Assist, select the key combinations used for text editing functions (<Alt>+<Key> or <Ctrl>+<Key>). These key combinations are not usually supported by Windows (they perform different functions in Windows). Selecting a key combination enables BOSâNOVA Twinax Client 32 to support your text editing functions. If you are not using Text Assist, select **None** to improve system performance.

Session Toggle Key Combination

No key, or Alt+Num, or Ctrl+Num.

Key Sound

Select **Enable** to hear a click when pressing a key.

6. To view the current Host-to-PC keyboard mapping, click **Edit** to open the Mapping Editor (see *Mapping Editor* in online Help).

Note!

If the default Host-to-PC keyboard mappings are appropriate, which is the case for most users, go to step 12. If, however, you want to change these mappings, continue with step 7.

---

7. In Categories, select a host action category (Characters on PC and Host keyboard, Emulation controls, Host function keys, Host operations, Macros, or Numeric pad keys).

8. Select an action from the [Host actions list] edit box. (The title on this edit box is the category you selected in Categories.) The PC key to which that host action is currently mapped appears in PC Key and is highlighted (blue border) on the keyboard display.

---

9. On the keyboard display, delete the current mapping of the highlighted key by left-clicking it.

10. Remap the selected host action by left-clicking the new key to which you want to map it. This opens Mapping for PC key. Click the button with the desired key combination (Norm, Shift+, Ctrl+, or Alt+). If this key combination is already mapped, you are prompted to change the existing mapping. Click **Yes** to accept the change and return to Mapping Editor. The new mapping appears in PC Key.

Note!
You can remap from a PC key to a host action by right-clicking the key you want to map. The popup menu displays the current mapping of the selected PC key combinations: Norm, Shift+, Ctrl+, and Alt+. Follow the cascading menus to delete the current mapping or to remap the key combination to a different host action.

---

11. When done, click **Save As**. This opens Keyboard mapping will be saved as. In Name, type a name for your customized keyboard mapping. In Description, you can type a more detailed description of this mapping. Click **OK** to save the keyboard mapping.

12. When done, click **Save As** and give the customized keyboard mapping a name. You can also add a more detailed description of the mapping (optional). Click **OK** to save the keyboard mapping.

Mapping Editor

Use the Mapping Editor dialog box to define which host actions map to which PC key combinations.

- To map from host actions to PC keys, use the edit boxes at the top of the dialog box and left-click.

- To map from PC keys to host actions, use the keyboard display and right-click.

Note!
All the following parameters apply to the selected keyboard mapping name that appears in square brackets [ ] in the title bar of the Mapping Editor dialog box.

Categories

Select one of the following categories:

> **Characters on PC and Host keyboard**
> This category includes all the keys for letters, numbers, and symbols.

Emulation controls
This category includes emulation actions such as <Jump to next host session> and <Play macro>.

Host function keys
This category includes the host command keys such as <Cmd1>.

Host operations
This category includes host actions such as <Attn>, <Clear>, and <Field +>.

Macros
This category includes recorded host macros such as <Sign off> and <Sign on as QUSER>.

Numeric pad keys
This category includes the numbers on the numeric keypad.

[Host Actions List]

The title of this middle edit box changes according to the category you selected in Categories. This edit box lists all the host action options in the selected category. Select the host action you want to map to a PC key.

PC Key

Displays the PC key (or keys) to which the selected host action is currently mapped.

Keyboard display: The keyboard in the bottom half of the dialog box, displays the current mapping of the keyboard mapping name shown on the title bar of the popup dialog box. Right-click a key: it will be highlighted by a blue border. The popup dialog box shows the key to which the selected host action is currently mapped. From the keyboard display, you can perform the following functions:

- Display the current mapping of any key by holding the cursor over it for a few seconds.

- Delete the current mapping of the highlighted key by left-clicking it.

- Remap the selected host action by left-clicking the new key to which you want to map it. This opens Mapping for PC key.

- Remap from a PC key to a host action by *right-clicking* the key you wish to map. The popup menu displays the current mapping of the highlighted PC key combinations: <Norm>, <Shift>, <Ctrl>, and <Alt>. Follow the cascading menus to delete the current mapping or to remap the key combination to a different host action.

OK

Not available when you select **Standard 101/102-key** or **BOS 122-key** keyboards; when you customize and save the new mapping, you can then view this customized keyboard mapping without making any changes and click **OK**.

Save As

To save a customized keyboard mapping, click **Save As** and give the keyboard mapping a name; you can also add a more detailed description of the keyboard mapping (optional).

Cancel

If you do not want to change the keyboard mapping or if you made changes to the mapping that you do not want to save, click **Cancel**.

Mapping for PC Key

In the Mapping Editor, select a host operation from the list at the top of the Editor. When you left-click a key in the Mapping Editor, you open a Mapping for PC key dialog box. The key you clicked appears in square brackets [ ] in the title bar and the host operation you selected appears in angle brackets (< >) in the first line.

Map the host operation you chose to one of the key-combination buttons displayed in the Mapping for PC key dialog box:

- **<Norm>**   maps the selected host action to the normal key character.
- **<Shift>+...**   maps the selected host action to <Shift> + the key character.
- **Ctrl>+...**   maps the selected host action to <Ctrl> + the key character.
- **<Alt>+...**   maps the selected host action to <Alt> + the key character.

Deleting a Keyboard Mapping

You can remove a customized keyboard mapping from the Keyboard Mapping Name list by deleting it. If you want to remove it from the list, but not erase it, first Export it to a file (see Exporting a Keyboard Mapping, p. 36). Then you can Import it later if necessary.

Note!
You cannot delete BOS 122-Key or Standard 101/102-Key keyboards as they are the standards from which you map your customized keyboards.

---

1. Open the Keyboard Customization dialog box (see Accessing Keyboard Customization, p. 31).

2. In Keyboard mapping name, select a customized keyboard mapping.

3. Click **Delete** to remove the keyboard mapping and return to Keyboard Customization.

4. Click **OK** to save the changes and exit the Emulation Configurator.

Exporting a Keyboard Mapping

You can save a keyboard mapping to a file and send it to others on the network.

1. Open the Keyboard Customization dialog box (see Accessing Keyboard Customization, p. 31).

2. In Keyboard mapping name, select a customized keyboard mapping.

3. Click **Export** to open the Save As dialog box.

4. In File name, enter the Keyboard mapping name. In Save as type, select **Keyboard mapping files (*.kbm)**. Click **Save** to save the file and return to the Keyboard Customization dialog box.

5. Click **OK** to exit the dialog box.

Importing a Keyboard Mapping

You can open a keyboard mapping that has been saved to a file (for example, by the system administrator). You can also make changes to it.

1. Open the Keyboard Customization dialog box (see Accessing Keyboard Customization, p. 31).

2. In Keyboard mapping name, select a customized keyboard mapping.

3. Click **Import**; locate the file and click **Open**. The customized keyboard mapping opens directly in Mapping Editor.

> ### Note!
> The imported keyboard mapping overrides the keyboard type and style settings for all the keyboard mappings listed in Keyboard Mapping Name. If you need to change these settings, see Customizing Your Keyboard, p. 31.

5. Make any changes and click **Save As** to save the new mapping.

6. Enter the new customized keyboard mapping name and click **OK**. Click **OK** to accept the changes and to exit the Emulation Configurator.

Installing the BOS 122-key Keyboard Driver

> ### Note!
> The BOS122-key keyboard is available for Windows 95/98 only, not for Windows NT.

1. From the Windows Control Panel, select **Keyboard**.

2. In the General tab, select the keyboard type and click **Change**. This opens the Select Device dialog box.

3. Click **Have Disk** and enter the full path of the BOSâNOVA TCP/IP installation folder, or click **Browse** to search.

4. Windows automatically searches for .inf files. Select the file **Oemsetup.inf** and click **OK**.

5. Click **OK** again. The BOS 122-key keyboard appears as the keyboard model.

6. Click **OK** to install the driver.

7. Click **Close** to close the Keyboard Properties dialog box and return to the Control Panel.

Toolbars

There are six toolbars in BOSâNOVA TCP/IP (listed below). Select **View|Toolbars** to open the Toolbar dialog box to define which toolbars are displayed and which buttons they contain.

The toolbars below are shown as they would appear when "floating" (that is, when they have been dragged into the emulation screen area). When toolbars appear under the menu bar, they do not have titles.

Note!
All toolbar functions are duplicated in menu items or by keyboard hotkeys.

Note!
You can display toolbars with visible borders or in the style used by Microsoft Internet Explorer (where a button has a visible border only when the mouse cursor is on the button). Select the kind of borders you want in the Toolbar dialog box.

Sessions

Contains a button for each defined session plus buttons for accessing the Emulation Configurator and Print Screen setup, running ATF, and toggling between full-screen and normal display mode.

General

Contains buttons for performing a print screen, changing fonts, playing macros, displaying print attributes, and changing the ruler cursor style.

Host Operations

Contains buttons of these common host commands.

Function Keys
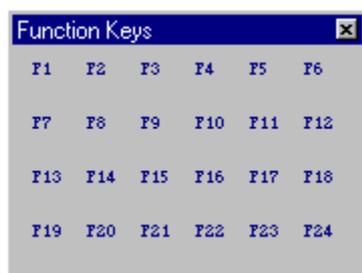
Contains buttons for function keys.

Printer

(Appears only if the in-focus session is a printer emulation session.) Contains buttons for starting and stopping print jobs.

Macros

Contains buttons of all defined macros. If no macros have been recorded, this toolbar will not appear.

Customizing Toolbars

1. From the emulation, select **View|Toolbars**.

2. Select the toolbar you want to modify and click **Customize**. This opens the Customize Toolbar dialog box (for details, see *Customizing Toolbars* in online Help).

3. Customize the toolbar:

   - To add a button, select it in the Available Buttons table on the left side of the dialog box, and click **Add**.

   - To remove a button, select it in the Toolbar Buttons table on the right side of the dialog box, and click **Remove**.

   - To display a small popup help message over interface elements when the cursor rests on them for a few seconds, select **Show Tooltips**.

- To display toolbars in the same style used by the Microsoft Internet Explorer; that is, a button has no visible border until the mouse cursor rests on it, select **Set MSIE Style**.

4. When you have made all changes, click **Close** to return to the Toolbar dialog box.

Note!

Changes are not saved until you click **OK** in the Toolbars dialog box. This saves the changes and returns you to the emulation. Click **Reset** to return the values to the previously saved settings.

---

5. Click **OK** to save the changes and close the Toolbars dialog box. The modifications appear as soon as that toolbar is displayed.

Arranging Toolbar Buttons

You can arrange the order of buttons in toolbars in two ways.

- From the Customize Toolbar dialog box:

    1. Select **View|Toolbars**.

    2. Select a toolbar and click **Customize** to open the Customize Toolbar dialog box (for details, see *Arranging Toolbar Buttons* in online Help).

    3. Select a button in Toolbar Buttons (on the right side of the dialog box), and click **Move Up** or **Move Down** to reposition it. Toolbar buttons are arranged according to the order in which they appear in the Toolbar Buttons table.

    4. When you have finished, click **Close**.

    5. Click **OK** in the Toolbars dialog box to save the changes and return to the emulation screen.

- On the toolbar:

    1. <Alt>-click a toolbar button (that is, click a toolbar button with the left mouse button while holding down the <Alt> key).

    2. Drag the button to a new location on the toolbar and release the mouse.

    3. If you drag the button off the toolbar, it will be removed; to restore it, go back to the Customize Toolbar dialog box.

Moving Toolbars

Windows 95/98 and Windows NT support "floating toolbars": that is, you can click-and-drag toolbars to different places on your screen.

- Click a toolbar and drag it onto the session area. When you release the mouse button, the toolbar changes into a toolbox. The buttons remain arranged in the same order.

- Click a toolbar and drag it to the bottom of the session area. When you release the mouse button, the toolbar is displayed at the bottom of the screen.

- Click a toolbar and drag it to either side of the session area. When you release the mouse button, the toolbar is displayed vertically at the side of the screen.

Viewing Options

You can control various viewing options in BOSâNOVA TCP/IP:

- To determine which toolbars are displayed, select **View|Toolbars** in the emulation menu bar. This opens the Toolbars dialog box.

- To display the status bar, select **View|Status Bar** in the emulation. If a check appears next to this menu item, the status bar appears at the bottom of the display session screen. To turn it off, click again.

- To convert the host display to a Windows style display, select **View|MorphExpress** in the emulation. MorphExpress changes the look of the display session, converting it into a true GUI application.

Note!
MorphExpress only appears in the View menu if a display session is active.

Hotkeys

BOSâNOVA TCP/IP supports the following hotkeys:

Note!
The hotkey examples given here are for 101/102 keyboards only.

\<Alt> + \<Page Up>	jumps from one session to another
\<Alt> + \<Insert>	toggles between a full screen and a split screen for the present session
\<Alt> + \<Page Down>	cycles between the different ruler cursor styles
\<Alt> + \<F3>	starts recording a macro
\<Alt> + \<F5>	starts playing a macro
\<Alt> + \<F8>	toggles between Test mode (in which host attributes are displayed) and normal mode
\<Alt> + \<Print Scrn>	performs a print screen to the local PC printer

MorphExpress

MorphExpress is an automated tool that converts your original host screen into a GUI screen by:

- analyzing host screens
- automatically detecting commands and menus and converting them from plain text to GUI buttons
- adding panels and graphic elements
- converting subfiles into tables, and options into buttons

Displaying the MorphExpress Screen

Click on the toolbar to toggle between the GUI display and your previous color scheme choice (Color or Mono).

The original (non-MorphExpress) color tables are always saved.

Configuring MorphExpress

1. From the Advanced Properties tab in the Emulation Configurator, select **MorphExpress** in the top pane and click **GUI Customize** in the bottom pane to open GUI Logic Configuration (for details, see *Configuring MorphExpress* in online Help).
2. Set the parameters to define the way MorphExpress recognizes and converts screen elements.
3. Click **OK** in each dialog box to save the changes and close the dialog box until you exit the Emulation Configurator. The changes take effect as soon as you return to the emulation screen.

Customizing GUI Controls

1. From the Advanced Properties tab in the Emulation Configurator, select **Display Properties** in the top pane and click **Display Properties** in the bottom pane to open the Display Properties dialog box.
2. In Display Mode, select **MorphExpress** and click **Customize** to open the MorphExpress Options dialog box, where you define how the controls look.
3. Make changes and click **OK**. Click **OK** in each dialog box to save the changes and close the dialog box until you exit the Emulation Configurator. The changes take place automatically in **all** display sessions.

Customizing GUI Colors

1. From the Advanced Properties tab in the Emulation Configurator, select **Display Properties** in the top pane and click **Display Properties** in the bottom pane to open the Display Properties dialog box.

2. Under Display Mode, select **MorphExpress**; under Color scheme name, select the palette from the dropdown list.

3. Select a background color for controls from the BackColor dropdown palette.

4. Select a background color for input fields from the BackColor dropdown palette. (Using a contrasting color helps make input fields more noticeable.)

5. Click **Apply** to make the changes. You can see how the selections look in the sample (the top half of the dialog box). When you are satisfied with the color schemes, click **OK** to close the Emulation Configurator.

EURO SYMBOL SUPPORT

The euro is the single currency of the European Monetary Union that will be adopted by 11 member states from 1 January 1999. These are Belgium, Germany, Spain, France, Ireland, Italy, Luxembourg, the Netherlands, Austria, Portugal and Finland. For more information see the Euro Web site (http://europa.eu.int/euro) run by the European Commission.

There are now fonts, keyboard types, and code pages that add the euro symbol character. For euro symbol support to function correctly in your BOS applications, both the host and Windows must be configured for euro symbol support. Check your host and Windows configuration for euro symbol support and select **Euro support** in the Administrator (in Administrative parameters|Host language/country). If your host and/or Windows are not configured for euro support, deselect **Euro support** to use the old code page.

Host Requirements

AS/400 Release (Version)	Group PTF Number	Info APAR Number
V3R2M0	SF99205	II11523
V4R1M0	SF99206	II11523
V4R2M0	SF99207	II11523
V4R3M0	SF99208	II11523

Changes Required for Euro Symbol Support

The character ID for all countries was changed from 697 to 695.

The following table contains the required code changes by country:

Country	Old KBDTYPE and CCSID (code page)	New (Euro) KBDTYPE and CCSID (code page)	Euro EBCDIC	Euro ANSI
Austria/Germany	AGB 237	AGE 1141	0x9F	0x80
Belgium	BLI 500	BLM 1148	0x9F	0x80
Canadian French	CAI 500	CAM 1148	0x9F	0x80
Denmark	DMB 277	DME 1142	0x5A	0x80
France (azerty)	FAB 297	FAE 1147	0x9F	0x80
Finland/Sweden	FNB 278	FNE 1143	0x5A	0x80
Italian	ITB 280	ITE 1144	0x9F	0x80
Netherlands	NEB 037	NEE 1140	0x9F	0x80
Norway	NWB 277	NWE 1142	0x5A	0x80
Portugal	PRB 037	PRE 1140	0x9F	0x80
Spain	SPB 284	SPE 1145	0x9F	0x80
Switzerland/French	SFI 500	SFM 1148	0x9F	0x80
Switzerland/German	SGI 500	SGM 1148	0x9F	0x80
United Kingdom	UKB 285	UKE 1146	0x9F	0x80
United States/Canada	USB 037	USE 1140	0x9F	0x80

You can access the download page with patches for BOSâNOVA Twinax Client 32 3.30 for a specific language from the BOS Web site at http://www.bosweb.com.

For additional information about requirements and patches, see the following Web sites:

- BOS at http://www.bosweb.com

- IBM at http://wwweuro.raleigh.ibm.com/

- Microsoft at http://www.microsoft.com/europe/euro/

OTHER APPLICATIONS

The following applications are part of BOSâNOVA TCP/IP:

PDE (Printer Driver Editor)

PDE enables you to modify custom printer drivers. For details, refer to online Help.

LPD Print Manager

LPD Print Manager manages printing on a TCP/IP network For details, refer to online Help.

Printing Configuration Advisor

The Printing Configuration Advisor helps you define PC and host parameters and manage print jobs. For details, refer to online Help.

FTP Client

FTP Client provides bi-directional PC/host data transfer via an FTP (File Transfer Protocol) client. For details, refer to online Help.

TCP/IP over Twinax Driver

The TCP/IP over Twinax Driver expands the use of existing Twinax networks from networks intended solely for AS/400 communication to general networks suitable for a variety of tasks. Connecting to your AS/400 over TCP/IP is faster than connecting with APPC, and upgrading your existing Twinax network to support TCP/IP is convenient. For details, refer to Appendix B, p. 111.

BOSâNOVA IFS for Windows 95

BOSâNOVA IFS (Integrated File System) provides access to AS/400 folders from Windows 95/98. With IFS, you can work with AS/400 files and folders as if they were PC files and folders. For details, refer to Appendix A, p. 105, or see *IFS* in online Help.

UNINSTALLING BOSâNOVA TCP/IP

To uninstall BOSâNOVA TCP/IP you must use the Control Panel. **Do not use the Windows Explorer to delete files or folders!**

1. From the Control Panel (Settings|Control Panel), double-click **Add/Remove Program**.

2. From the list at the bottom of the Install/Uninstall dialog box, select the BOSâNOVA TCP/IP set that you want to uninstall (for example, **BOSâNOVA TCP/IP Set 2**).

3. Click **Add/Remove**.

4. After InstallShield has finished preparing the Uninstall program, close the Install/Uninstall dialog box.

5. Click **Next** to proceed with Uninstall and follow the prompts.

TROUBLESHOOTING

Tips for Laptop Users

Because most laptop computers don't have a separate numeric keypad, we recommend that you do **not** use the Set Num Lock at session startup feature.

Reboot Warning

When running Setup, a reboot warning is issued if DLLs used by BOSâNOVA TCP/IP are in use when BOSâNOVA TCP/IP is being installed. This can occur if another application is running while BOSâNOVA TCP/IP is being installed. To resolve this warning, reboot your PC after Setup is finished.

Installing on Windows NT

If you are installing BOSâNOVA TCP/IP on Windows NT, you must have **administrative privileges**. If you try to run Setup without administrative privileges, you will receive an error message.

Resource Conflict with BOSâNOVA TCP/IP

A resource conflict may occur if you want to run BOSâNOVA Twinax Client 32 while the TCP/IP over Twinax driver is installed on your system.

If you receive a resource conflict error, you must disable the TCP/IP over Twinax driver, as follows:

1. Close *all* applications.
2. In the BOSâNOVA TCP/IP Administrator, Installed Modules, select **TCP/IP over Twinax Driver** and click **Configure**.
3. Select the **Advanced** tab, click **Disable Driver**, and click **OK**.
4. If prompted, restart Windows.

If you are running BOSâNOVA Twinax Client 32 and want to run BOSâNOVA TCP/IP:

1. Close *all* applications.
2. In BOSâNOVA TCP/IP Administrator, Installed Modules, click **Configure** and click **Twinax Wizard**. During this procedure, you may be prompted to restart Windows.

Printer Session

In a printer session, if you selected **Current Windows Driver** (General tab) and you saved print output in ASCII format (Diagnostics tab|Save to ASCII file), do *not* click **Collect Technical Support Information** because the resulting file may be too large.

Troubleshooting in Other Modules

For BOSâNOVA IFS for Windows 95, see Known Limitations, p. 110. For TCP/IP over Twinax Driver, see Troubleshooting, p. 116. All other modules have full troubleshooting and error message information in online Help.

Euro Support

For euro symbol support to function correctly in your applications, both the host and Windows must be configured for euro symbol support. If you receive a euro symbol support error, check your host *and* Windows configuration for euro symbol support and select **Euro support** in the Administrator (in **Administrative parameters|Host language/country**). If your host and/or Windows are not configured for euro symbol support, deselect **Euro support** to use the old code page. For details, see Euro Symbol Support, p. 44.

Traces and Screen Captures

When you experience problems with an emulation session, Technical Support may request that you provide them with files to help them solve the problem. Prepare files, as follows:

1. First, record traces (*.trc or *.bts files) and/or screen captures (*.scn files) from the Emulation Configurator (Advanced Properties|Diagnostics) or the router configurator; or record print output (*.asc or *.ebc files) from printer emulation sessions.

2. Then, send the technical information file (default Bsinfo.bts) from the Administrator (Diagnostics|Troubleshooting Information). The technical information file automatically includes all *.trc, *.scn, *.bts, *.asc, and *.ebc files created

Recording a Telnet Trace

Record a Telnet Trace when you have problems with an display emulation session.

To record a trace:

1. Close all applications.

2. In the Emulation Configurator, select the **Advanced Properties** tab.

3. Expand Diagnostics and select **Record Telnet Trace** in the top pane.

4. In the bottom pane, select **Record Telnet Trace** and specify a filename and location.

5. Create screen captures, if required (see the next section).

6. Run an emulation. Make sure you run the TCP/IP trace on the first session only!

7. When the error occurs again, close the emulation. Trace data is written to the file specified in step 4, above.

8. Prepare the information file for Technical Support; see Preparing the Information File, p. 52.

Screen Capture

Playback Recorded Screens

If selected, you must specify the playback file (see *Record Screens for Playback*, below) or use the pulldown list of the last four previously stored files.

Record Screen for Playback

Creates a file with "snapshots" of the display session screens. Enter the filename (default Demo.scn), using the extension .scn. The file is automatically created in the BOSâNOVA TCP/IP installation folder (or another folder, if defined).

BOSâNOVA Client (for Windows 3.1) playback screens can be used for playback purposes in BOSâNOVA TCP/IP, as they have the same format. Simply copy them to the BOSâNOVA TCP/IP folder and select **Playback Recorded Screens** (see *Playback Recorded Screens*, above).

Note!

Record only works for the first (display) session; **Playback** can be run during any display session. The screens are played back in the same sequence in which they were recorded.

To record a screen capture:

1. Close all open sessions.

2. In the Emulation Configurator, select the **Advanced Properties** tab.

3. Expand Diagnostics and select **Screen capture** in the top pane.

4. In the bottom pane:

    a) Select **Record screen for playback**.

    b) If you don't want the screen grabs to be written to Demo.scn, browse for another file; note that *all* screen captures will be recorded in the file selected.

    c) Click **OK**.

5. Continue at step 6 ("Run an emulation") in *Recording an APPC Trace* in the previous section. Note that each screen that is opened when you run the emulation will be captured and placed in the file selected in 4b, above.

From a Printer Session

1. In an open Printer session, right-click.

2. Select Properties.

3. Select the **Diagnostics** tab.

4. Select **Activate Diagnostic Mode** and select the output option.

5. Prepare the information file to send to Technical Support for analysis; see Preparing the Information File, p. 52.

From BOSâNOVA IFS for Windows 95

1. Double-click to run the BOSâNOVA IFS Configurator.

2. Select **Enable trace** and click **Advanced** to open the Advanced Options dialog box.

3. Click **Stop IFS**, then **Start IFS**, then **Close**.

4. Start the operation that didn't run properly. When the error occurs again, stop the operation.

5. Run the Emulation Configurator, click **Advanced**, and click **Stop IFS**. A trace file will be created as defined in the client you are using or, if not defined, as the default trace file in the Windows System folder.

6. Prepare the information file to send to Technical Support for analysis; see Preparing the Information File, p. 52.

Recording Router Traces

Create router traces as follows:

1. In the Administrator, in the Connectivity parameter, select the connectivity type.

2. In the lower pane, click **Configure**.

3. Select the **Diagnostics** tab.

4. Select **Enable trace** and fill in parameters (click **Help** at the bottom of the dialog box for details).

5. Click **OK**.

6. Prepare the information file to send to Technical Support for analysis; see *Preparing the Information File*, below.

Preparing the Information File

> **Note!**
> Make sure that you have created *all* the trace files and screen captures required by Technical Support before preparing the information file.

1. Close all sessions.

2. Run the Administrator.

3. In the top pane, expand Diagnostics and select **Troubleshooting information**.

4. In the bottom pane, click **Collect Technical Information** to open the User Information dialog box (for details, see *Collecting User Information*, below

5. Complete the information and save the user information file (default name Bsinfo.bts).

6. The user information file automatically includes all trace and screen captures. Send the file (as an e-mail attachment) to Technical Support for analysis.

Collecting User Information

Use this dialog box to collect diagnostic information in the Administrator and to collect printer troubleshooting information in Printer Session Properties|Diagnostic.

The information you enter in these fields will be written to a text file when you click **OK**. The default file is Bsinfo.bts in the BOSâNOVA TCP/IP installation folder. Include this file along with the trace (dump) files or recorded screens for Technical Support.

> **Note!**
> The file also automatically includes other information, depending on the origin (Administrator or Printer Session Properties). When run from the Administrator, data about your system, all defined sessions, and EBCDIC to ANSI translation tables, are automatically captured and added to the file. When run from Printer Session Properties, a subset of this information is captured (system information plus the specific printer session only).

Name

By default, the name you used when installing BOSâNOVA TCP/IP will be used. You can change this.

Company

By default, the company name you used when installing BOSâNOVA TCP/IP will be used. You can change this.

Address

Enter your full mailing address, including the postal code and country.

Phone Number

Enter a daytime phone number where we can reach you. Users outside the US are requested to include the country code.

E-mail Address

(If available)

Tech Support Call

This number will be provided by Technical Support. Make sure to include it so that your diagnostic files can be properly tracked.

Host Type

Enter your host type (AS/400, System/36, AS/36, etc.).

Host OS Version

Enter the complete version number of your host operating system.

Description

Describe the problem carefully. Under what circumstances does the problem occur? Are you able to duplicate it? Have you made any changes to your connectivity hardware or software that could contribute to this?

Contacting Technical Support

Before Contacting Technical Support:

1. Refer to the appropriate topic in the Troubleshooting sections. The problem may be something you can solve on your own.

2. If you can't solve the problem by yourself, run the Administrator. In the top pane, expand **Diagnostics** and select **Troubleshooting information**. In the bottom pane, click **Collect Technical Information** to open the User Information dialog box. Fill in the form before contacting Technical Support. If contacting us via fax, include a printout of this form; otherwise, have it handy when you call us.

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Error Messages

Many of the error messages in BOSâNOVA TCP/IP are self-explanatory; they include possible causes of the problem and suggest solutions. When multiple solutions are suggested, always try them in the order presented. If the solutions do not work or if you do not understand the message, contact Technical Support.

The errors can be accessed by clicking the code from the list below, by clicking the bookmark in the panel to the left, or by searching for the specific code number.

Error Codes

All BOSâNOVA Plus 32 error messages have the following syntax: *xxxnnn* where *xxx* is three-letter code for the error category (that is, which the software is responsible for the error), and *nnn* is a three-digit code for the particular error.

Error Categories

The following codes are used (click the code to get more information on the error):

ADM	Administrator errors; p. 60
BCD	Driver errors; p. 67
BPC	Emulation Configurator errors; p. 63
BSV	Message or text errors; p. 66
EML	Display emulation errors and errors that occur in the printer session list window; p. 64
FTP	FTP (File Transfer Protocol) Client errors; p. 73
INS	Setup (installation) errors; p. 56
ITM or TPM	TCP/IP over Twinax Monitor errors; p. 90
ITR	TCP/IP over Twinax Tracer errors; p. 88
IWZ	Twinax Wizard (TCP/IP configuration) errors; p 99
KRN	Kernel engine errors; p. 71
LPD	Printing errors (errors that occur in the LPD Print Manager or LPD Print Manager Configurator); p. 73
NWZ	Twinax Wizard (Networking) errors; p. 94
TPC	TCP/IP Configurator errors; p. 61
TWC	TCP/IP over Twinax Configurator errors; p. 98
TWZ	Twinax Wizard errors; p. 88

In addition, there are WinSock Return Codes; p. 81.

Installation Error Messages (INS)

INS100   **Error:**
An error occurred during the mode data process *name*.

Cause 1:
A connection error may have occurred while files were being copied.

Action 1:
Reboot the PC and try again.

Cause 2:
The CD-ROM may be corrupted or damaged.

Action 2:
Contact your BOS dealer for another CD-ROM.

INS101   **Error:**
Uninstall Setup failed to initialize. You may not be able to uninstall this product.

Cause 1:
A Windows error may have occurred.

Action 1:
Reboot and try again.

Cause 2:
There may not be enough disk space to run Setup.

Action 2:
Check your system.

Cause 3:
You may not have necessary privileges to install.

Action 3:
Contact your system administrator.

INS102   **Error:**
The specified directory is write-protected. Check write access to this directory.

Cause:
You do not have write privileges to this folder.

Action:
Select another folder and try again.

INS103   **Error:**
```
Error creating directory.
```

Cause:
The path (drive or folder) is write-protected or the drive name is invalid.

Action:
Select another folder or ask your system administrator to change the folder's write protection.

INS104   **Error:**
```
Cannot install to the system root folder!
```

Cause:
The system root folder is reserved.

Action:
Select a different folder and try again.

INS105   **Error:**
```
The folder you have selected folder_name is the system
root folder. Files cannot be installed to this
folder; select a different folder.
```

Cause:
The system root folder is reserved.

Action:
Select a different folder and try again.

INS106   **Error:**
```
Cannot install to this folder!
```

Cause:
The folder may be write-protected.

Action:
Select a different folder and try again, or contact your system administrator to change the folder's protection.

INS107   **Error:**
```
The folder you have selected folder_name is the name
product folder. Files cannot be installed to this
folder; select a different folder.
```

Cause:
The system root folder is reserved.

Action:
Select a different folder and try again.

INS108   **Error:**
`The specified directory is invalid.`

Cause:
You directly entered a non-existing path.

Action:
Check the path and try again.

INS109   **Error:**
`The file path is too long. Enter a different file`
`path.`

Cause:
The path may exceed Windows' 250-character maximum path length.

Action:
Check the path and try again.

INS110   **Error:**
`The specified directory doesn't contain policy`
`setting files.`

Cause:
You are attempting to install a customized version which requires policy setting files.

Action:
Contact your system administrator.

INS111   **Error:**
`Setup can't continue. Login with system administrator`
`privileges.`

Cause:
You are installing on Windows NT and do not have system administrator privileges.

Action:
Log out and log in again on the appropriate account. Contact your system administrator for details.

INS112   **Error:**
`This CD-Key can only be used for updating the`
`existing version.`

Cause:
You are attempting to install a BOS product with a CD-Key valid only for updating. The BOS product is not already installed on your PC.

Action:
Contact your BOS dealer for the correct CD-Key.

INS113   **Error:**
`Product with license code` *number* `can't be updated.`
Cause:
The CD-Key you are using does not match the actual CD-ROM.
Action:
Contact your BOS dealer for the appropriate CD-Key or CD-ROM.

INS114   **Error:**
`LaunchApp failed. Couldn't find` *filename*`.`
Cause:
An internal error occurred; the CD-ROM may be corrupted.
Action:
Contact your BOS dealer.

INS115   **Error:**
`Unable to update. The version on your drive is a`
`newer version than the one in Setup.`
Cause:
You are attempting to update an existing BOS installation from an old CD-ROM.
Action:
If you have another CD-ROM, try again; otherwise, contact Technical Support.

INS116   **Error:**
`The Company License information you entered is`
`incorrect. Insert the Company License diskette into`
`the driver selected below.`
Cause:
Your installation is a site license which requires a company license file.
Action:
Contact your system administrator for the file.

INS117   **Error:**
`You have entered an invalid license code. Try again.`
Cause:
You may have mis-typed the license code.
Action:
Check the code and try again.

INS118   **Error:**
`The license number you entered is not valid for`
`Citrix Setup. Contact you BOS distributor for a`
`company license.`

Cause:
During Setup, you specified a Citrix MetaFrame installation, yet your license does not match.

Action:
Contact your BOS dealer.

INS119   **Error:**
`One or more previous Citrix MetaFrame installations`
`of filename already exist on your drive or on the`
`network drive.  Before selecting Standalone Setup,`
`uninstall previous Citrix MetaFrame installations.`

Cause:
Citrix MetaFrame does not support multiple installations in Standalone mode.

Action:
Uninstall previous versions and rerun Setup.

Administrator Errors (ADM)

ADM01   **Error:**
`Wrong password verification.`

Cause:
In MS SNA Server configuration, the password verification you entered is incorrect.

Action:
Enter the correct password verification.

ADM02   **Error:**
`Unable to load library <library name>.`

Cause:
The load library is missing or was deleted.

Action:
Check that the library path is correct. Rerun the Administrator.

ADM03   **Error:**
Cannot execute <filename>. File not found.

Cause:
The executable file is not correctly installed.

Action:
Check that you have selected the appropriate operation to perform.

The following Administrator errors have no error code numbers:

Error:
You must enter the host alias name.

Cause:
The host alias name parameter is undefined.

Action:
Define the host alias name.

Error:
Wrong TCP/IP number: value can't be zero.

Cause:
A TCP/IP address segment is zero.

Action:
Define the correct AS/400 IP address, making sure that no address segment is zero.

Error:
Wrong TCP/IP number: value must not exceed 255.

Cause:
The host TCP/IP address is incorrectly set in the Administrator.

Action:
In the Administrator, select **Connectivity|Connection Type|TCP/IP** and define the correct TCP/IP address.

TCP/IP Configurator Errors (TPC)

TPC001   **Error:**
Unable to save Registry parameters.

TPC002   **Error:**
Password verification is incorrect.

TPC003   **Error:**
Unable to read Registry parameters.

TPC004   **Error:**
```
Incorrect system name.
```

TPC005   **Error:**
```
Registry for the system <system name> is corrupted.
Reinstall the software.
```

TPC006   **Error:**
```
Unable to read parameter <parameter name> from the
Registry. Reinstall the software.
```

TPC007   **Error:**
```
Parameter <parameter name> in the Registry is
invalid. Reinstall the software.
```

TPC008   **Error:**
```
Parameter <parameter name> must be defined.
```

TPC009   **Error:**
```
Unable to read parameter <parameter name> of the
system <system name> from the Registry. The default
value will be used.
```

TPC010   **Error:**
```
Parameter <parameter name> of the system <system
name> in the Registry is invalid. The default value
will be used.
```

TPC011   **Error:**
```
Unable to load <filename>.
```
           Action:
Check if this file exists. Contact Technical Support.

TPC012   **Error:**
```
Parameter <parameter name> is invalid.
```

TPC013   **Error:**
```
Unable to read <parameter name> parameters from the
Registry. The default values will be used.
```

TPC014   **Error:**
```
Unable to read Default Templates from the Registry.
Reinstall the software.
```

TPC020   **Error:**
```
The maximum number of systems (n) is already defined.
```

TPC021   **Error:**
The system name <system name> has been assigned to
another system. This system name must be unique.

TPC023   **Error:**
No system defined. Define at least one system.

Action:
In the TCP/IP Configurator, Basic tab, define at least one system.

TPC024   **Error:**
Unable to read key <registry key> from the Registry.
Reinstall the software.

TPC026   **Error:**
The system name <system name> has been assigned to
more than one system. This system name must be
unique.

Emulation Configurator Errors (BPC)

BPC001   **Error:**
Registry **x** corrupted.

Cause:
This key is missing from the Registry or is incorrectly defined.

Action:
Run Setup; in Setup, select **Update** and **Revert Registry**.

BPC002   **Error:**
Unable to load <module name>.

Cause:
The module is missing or has been deleted.

Action:
Rerun Setup; in Setup, select **Update** and **Update Executable Files**.

BPC003   **Error:**
Error using DLL <DLL name>.

Cause:
Internal error.

Action:
Contact Technical Support.

BPC004   **Error:**
x memory allocation failure!

Cause:
Not enough Windows resources.

Action:
Close other applications; if this doesn't help, restart Windows.

BPC005   **Error:**
Unknown product ID has been detected.

Cause:
The Registry was corrupted.

Action:
Run Setup; in Setup, select **Replace** or install to a new directory.

BPC006   **Error:**
Key x not valid.

Cause:
The Registry was corrupted.

Action:
Run Setup; in Setup, select **Update** and **Revert Registry**.

Display Emulation Errors (EML)

EML1   **Error:**
Failed to create toolbar.

EML2   **Error:**
Initialization failed.

EML3   **Error:**
The application is already running.

EML4   **Error:**
Unable to open session.

EML5   **Error:**
Registry access denied.

EML7   **Error:**
Unable to close session.

EML8   **Error:**
Configuration parameter error.

EML9 **Error:**
Unable to disconnect from the kernel.

EML10 **Error:**
Unable to load emulation font.

EML11 **Error:**
Registry corrupted. **x** key or value doesn't exist.

EML12 **Error:**
Unable to start printer emulator process.

EML13 **Error:**
Unable to execute printer command.

EML14 **Error:**
Memory allocation error.

EML15 **Error:**
Invalid macro name length. The name must be between 1
and **<n>** characters long.

EML16 **Error:**
Keyboard Processing: Passed parameters (HostCom: **x**)
are wrong. ReturnStatus: **x**.

EML17 **Error:**
Unable to run Configurator **x**.

Message or Text Errors (BSV)

BSV001   **Error:**
`Unable to open Registry Key.`

Cause:
This key is missing from the Registry or is incorrectly defined.

Action:
Check that Regedit.exe exists in the Windows folder. Then run Setup; in Setup, select **Update** and **Revert Registry**.

BSV002   **Error:**
`Incorrect function call in Administrator mode.`

Cause:
Internal error.

Action:
Contact Technical Support.

BSV003   **Error:**
`Unable to retrieve` *x* `value from` *y* `Registry Key.`

Cause:
This key is missing from the Registry or is incorrectly defined.

Action:
Check that Regedit.exe exists in the Windows folder. Then run Setup; in Setup, select **Update** and **Revert Registry**.

BSV004   **Error:**
`There is no installation Registry Key.`

Cause:
This key is missing from the Registry or is incorrectly defined.

Action:
Check that Regedit.exe exists in the Windows folder. Then run Setup; in Setup, select **Update** and **Revert Registry**.

BSV005   **Error:**
`Unable to save` *x* `value into` *y* `Registry Key.`

Cause:
This key is missing from the Registry or is incorrectly defined.

Action 1:
Check that Regedit.exe exists in the Windows folder. Then run Setup; in Setup, select **Update** and **Revert Registry**.

Action 2:
Contact Technical Support.

Driver Errors (BCD)

BCD001   **Error:**
`Internal error BCD001, code x.`

Cause:
Internal error.

Action:
Contact Technical Support.

BCD002   **Error:**
`GetProcAddress failed: x.`

Cause:
You may have an old version of the library file.

Action:
Run Setup; in Setup, select **Update** and **Update Executable Files**.

BCD003   **Error:**
`Unable to load library filename (code x)`

Cause:
The library file is missing or incorrect.

Action:
Run Setup; in Setup, select **Update** and **Update Executable Files**.

BCD004   **Error:**
`Unable to open installation registry key (code x).`

Cause:
Internal error.

Action:
Contact Technical Support.

BCD005   **Error:**
`Unable to retrieve x value from y registry key (code x).`

Cause:
Internal error.

Action:
Contact Technical Support.

BCD006   **Error:**
Can't allocate memory. Close unused applications or restart Windows.

Cause:
Insufficient memory.

Action 1:
Close all unnecessary applications.

Action 2:
Restart Windows.

BCD007   **Error:**
Unable to open registry key (code *x*).

Cause:
Internal error.

Action:
Contact Technical Support.

BCD008   **Error:**
Unable to create Data or Keyboard events.

Cause:
This is an internal Windows error.

Action:
Restart Windows.

BCD009   **Error:**
Unable to create Decode or Keyboard threads.
This is an internal Windows error.

Action:
Restart Windows.

BCD010   **Error:**
Unable to establish a connection to the host. Check that the connection type is defined correctly in the Administrator.

Cause:
The connection type is wrong or incorrectly configured.

Action:
Correct the connection type in the Administrator
(**Connectivity|Connection type**)

BCD012   **Error:**
```
Cannot start session. Check session parameters
(system name, session name, etc.).
```
Cause 1:
Session parameters are incorrect.

Action:
Check the session parameters in the Emulation Configurator (Sessions tab).

Cause 2:
This session name is already active on the AS/400.

Action:
Change the session name in the Emulation Configurator (Sessions tab).

BCD044   **Error:**
```
Version of <filename> file does not correspond to
version of BSCLDRV.DLL file.
```
Cause:
The version of this file is too old and cannot be connected to Bscldrv.dll.

Action:
Run Setup; in Setup, select **Update** and **Update Executable** Files.

BCD052   **Error:**
```
Unable to open trace file <filename>.
```
Cause:
The emulation is trying to create a file in a write-protected folder.

Action:
Define another trace folder in the Emulation Configurator (**Advanced Properties tab|Diagnostics|Record APPC Trace**).

BCD060   **Error:**
```
Unable to start connection to host.
```
Cause:
The connection supplier is not connected to the AS/400.

Action:
Check the status of the connection supplier.

BCD070   **Error:**
`Failed to load <filename>.`

Cause:
The file is damaged or does not exist.

Action 1:
Check the file's status.

Action 2:
Run Setup; in Setup, select **Update** and **Update Executable Files**.

BCD071   **Error:**
`Some WinSock functions not found.`

Cause:
The Wsock32.dll file is corrupted or is an older version that no longer works.

Action:
Install a new version of the TCP/IP protocol.

BCD072   **Error:**
`Error received from WinSock.`

Cause:
This is a WinSock error; if the WinSock error is **11001** or **11004**, this may be caused by the session configuration. The Local Control Point name of the AS/400 was defined as System Name, which is correct for an APPC connection but not for TCP/IP; refer to WinSock Return Codes, p. 81.

Action 1:
Remove System Name from the session configuration or change it to an IP address or name defined in your TCP/IP network for the AS/400. See Basic, p. 17.

Action 2:
Use a name defined in the Hosts file in the Windows folder.

BCD073   **Error:**
`Too many open files`

Cause:
Too many applications are currently open.

Action:
Close all unnecessary applications.

BCD074   **Error:**
Access denied.

Cause:
The Telnet trace folder is write-protected.

Action:
Define another trace folder in the Emulation Configurator (**Advanced tab|Diagnostics**).

BCD075   **Error:**
Sector not found.

Cause:
Internal error.

Action:
Contact Technical Support.

BCD076   **Error:**
General failure.

Cause:
This is an internal emulation error.

Action:
Contact Technical Support.

BCD077   **Error:**
Network access denied.

Cause:
This is an internal emulation error.

Action:
Contact Technical Support.

BCD078   **Error:**
Failed to open file.

Cause:
The Telnet trace folder is write-protected.

Action:
Define another trace folder in the Emulation Configurator (**Advanced tab|Diagnostics**).

Kernel Engine Error Messages (KRN)

KRN001   **Error:**
Internal error KRN001, code x.

KRN002   **Error:**
Unable to load dynamic link library (DLL).

KRN003   **Error:**
GetProcAddress failed: x

KRN004   **Error:**
Application provided invalid callback function
address(es).

KRN005   **Error:**
Maximum number of session exceeded.

KRN006   **Error:**
Can't initialize synchronization object.

KRN007   **Error:**
Can't open file.

KRN008   **Error:**
File contains incorrect data format.

KRN009   **Error:**
Can't retrieve driver data.

KRN010   **Error:**
Can't allocate memory.

KRN011   **Error:**
Unable to continue: the application wasn't initiated.

FTP Client Errors (FTP)

FTP001   **Error:**
Your workstation was disconnected by the AS/400
possibly because the inactivity timeout (INACTTIMO)
defined in FTP Attributes on the AS/400 expired. Ask
your system manager to increase or disable this
timeout.

Cause:
It is possible that you were automatically disconnected because of
inactivity.

Action:
Reconnect to FTP Client. You may want to ask your system manager to
extend the timeout period (INACTTIMO) or to disable it completely.

The following FTP errors have no number:

Problem:
Can't find drives in the middle list box.

Action:
Scroll down to the bottom of the list.

Problem:
Can't find a directory (folder).

Action:
Click **Refresh** or **..** in the middle list box

Problem:
List box does not respond.

Action 1:
Click **Refresh** or **..** in the middle list box.

Action 2:
Log in again (you may have been automatically timed out).

LPD Print Manager Errors (LPD)

LPD001   **Error:**
Unable to load file name.

Cause:
The file may have been corrupted

Action:
Run Setup; in Setup and select **Update Previous Installation**.

LPD002   **Error:**
Unable to read Registry parameter name of spool
queue spool queue name. From the BOSaNOVA TCP/IP
Administrator, run the LPD Print Manager
Configurator to fix the problem.

Cause:
The parameters may have been corrupted in the Windows Registry.

Action:
In the LPD Print Manager Configurator, change the parameter and try
again.

LPD003   **Error:**
Registry parameter name of spool queue spool queue
name is invalid. From the BOSaNOVA TCP/IP
Administrator, run the LPD Print Manager
Configurator to fix the problem.

Cause:
The parameters may have been corrupted in the Windows Registry.

Action:
In the LPD Print Manager Configurator, change the parameter and try
again.

LPD004   **Error:**
Unable to create or write to the file name file.

Cause:
You have no write privileges to write in the spool directory.

Action:
Run the LPD Print Manager Configurator and define a new spool queue
directory where you have write privileges.

LPD005   **Error:**
`Unable to create directory name because a file with`
`this name already exists.`

Cause:
The LPD Print Manager failed to create spool directory.

Action:
Run the LPD Print Manager Configurator and define a new spool queue directory.

LPD006   **Error:**
`Unable to create directory name.`

Cause:
The LPD Print Manager failed to create spool directory.

Action:
Run the LPD Print Manager Configurator and define a new spool queue directory.

LPD007   **Error:**
`From the BOSaNOVA TCP/IP Administrator, run the LPD`
`Print Manager Configurator to create a spool queue`
`directory.`

Cause:
The LPD Print Manager didn't find a spool directory (you didn't define the directory name).

Action:
Run the LPD Print Manager Configurator and define a spool queue directory.

LPD008   **Error:**
`Unable to open file name.`

Cause:
LPD Print Manager failed to open the file to save log information.

Action:
Define a different path and filename.

LPD009   **Error:**
`Unable to write to file name.`

Cause:
The LPD Print Manager failed to write log information into the filename file.

Action:
Define another path and filename.

LPD010   **Error:**
`The LPD Print Manager Configurator is running. Close`
`it if you want to run the LPD Print Manager.`

Cause:
You can't run the LPD Print Manager if the LPD Print Manager Configurator is open.

Action:
Close the LPD Print Manager Configurator and try again.

LPD011   **Error:**
`No spool queue is defined. From the BOSaNOVA TCP/IP`
`Administrator, run the LPD Print Manager`
`Configurator to define a spool queue.`

Cause:
You need at least one spool queue in order to use the LPD Print Manager.

Action:
Close the LPD Print Manager, run the LPD Print Manager Configurator, and click **Add Queue**. Follow the prompts to define a spool queue.

LPD012   **Error:**
`Unable to read the LPD port number from the`
`Registry. In the BOSaNOVA TCP/IP Administrator,`
`select Connection Type|Configure|Ports and enter the`
`correct LPD port number.`

Cause:
The parameters may have been corrupted in the Windows Registry.

Action:
In the Administrator, enter the correct port number.

LPD013   **Error:**
`The LPD port number in the Registry is invalid. In`
`the BOSaNOVA TCP/IP Administrator, select Connection`
`Type|Configure|Ports and enter the correct LPD port`
`number.`

Cause:
The parameter is not correct.

Action:
Enter the correct port number in the Administrator.

LPD014   **Error:**
The LPD Print Manager is already running.

Cause:
You cannot run the LPD Print Manager in two windows simultaneously.

Action:
Hotkey back to the window running the LPD Print Manager.

LPD015   **Error:**
Unable to write to the Registry.

Cause:
The LPD Print Manager failed to create file preview process.

Action:
Close all unnecessary applications and try again.

LPD016   **Error:**
Unable to preview the spool job.

Cause 1:
Windows has no free resources.

Action:
Close all unnecessary applications and try again.

Cause 2:
The file Bslpdprw.exe is missing from the <installation directory>/LPD
directory.

Action:
Run Setup; in Setup, select **Update Previous Installation**.

LPD017   **Error:**
The printer driver name defined for spool queue
spool queue name is not installed in Windows.
Printing from this queue is disabled.

Cause:
The specified printer has not been installed in Windows.

Action:
Install the printer by running Setup from your original Windows
diskettes or CD-ROM.

LPD050   **Error:**
Communications initialization failure. Unable to
load WSOCK32.DLL.

Cause:
TCP/IP is not installed in Windows.

Action:
Install the TCP/IP protocol in Windows.

LPD051 **Error:**
`Communications initialization failure. WSOCK32.DLL`
`corrupted.`

Cause:
The Windows TCP/IP drivers are corrupted.

Action:
Reinstall the TCP/IP protocol in Windows.

LPD052 **Error:**
`Communications initialization failure. WSOCK32.DLL`
`initialization error.`

Cause:
Windows has no free resources.

Action:
Close all unnecessary applications and try again.

LPD053 **Error:**
`Communications initialization failure. The`
`WSOCK32.DLL version currently in use does not`
`support WINSOCK v.1.1 API.`

Cause:
The Windows TCP/IP drivers are corrupted.

Action:
Reinstall the TCP/IP protocol in Windows.

LPD054 **Error:**
`Communications initialization failure. TCP/IP socket`
`creation error (WinSock Error).`

Cause:
If the WinSock Error is 10043, the TCP/IP protocol is not installed on the PC.

Action 1:
If the WinSock Error is 10043, install TCP/IP protocol in your Windows.

Action 2:
Rerun Windows. If the problem is not fixed, contact Technical Support.

LPD055 **Error:**
`Communications initialization failure. TCP/IP socket`
`binding error (WinSock Error).`

Cause:
For details, see WinSock Return Codes, p. 81.

Action:
Rerun Windows. If the problem is not fixed, contact Technical Support.

LPD056   **Error:**
Communications module initialization error (case n).

Cause:
Windows has no free resources.

Action:
Close all unnecessary applications and try again.

LPD057   **Error:**
WSAAsyncSelect() error during the TCP/IP Listen socket initialization (case WinSock Error).

Cause:
Windows has no free resources.

Action:
Close all unnecessary applications and try again.

LPD058   **Error:**
Listen() error during TCP/IP Listen socket initialization (case WinSock Error).

Cause:
Windows has no free resources.

Action:
Close all unnecessary applications and try again.

LPD059   **Error:**
The internal buffer size is too small. Contact BOS Technical Support.

Cause:
This is an internal error.

Action:
Contact Technical Support.

LPD060   **Error:**
Protocol violation (case n). Contact BOS Technical Support.

Cause:
Wrong sequence of LPD/LPR commands sent by LPR client.

Action:
Contact Technical Support and inform them which type of LPR client you are using (AS/400, Windows NT, a UNIX platform, etc.). If you are using an AS/400 LPD client, indicate the OS/400 version.

LPD061   **Error:**
`WSAAsyncSelect() error in the TCP/IP receive/send`
`procedure (case WinSock Error).`

Cause:
There are communications problems.

Action:
Run the LPD Print Manager again.

LPD062   **Error:**
`Recv() on the TCP socket has failed (case WinSock`
`Error).`

Cause:
There are communications problems.

Action:
Run the LPD Print Manager again.

LPD063   **Error:**
`WSAAsyncSelect() error in the TCP/IP accept`
`procedure (case WinSock Error).`

Cause:
There are communications problems.

Action:
Run the LPD Print Manager again.

LPD064   **Error:**
`The attempt to create a TCP connection with the host`
`has failed (case n; WinSock Error).`

Cause:
Windows has no free resources.

Action:
Close all unnecessary applications and try again.

LPD100   **Error:**
`Unable to load file name.`

Cause:
Installation corrupted.

Action:
Run Setup; in Setup, select **Update Previous Installation**.

LPD101   **Error:**
Internal error while running print job preview.

Cause:
This is an internal error.

Action:
Contact Technical Support.

LPD102   **Error:**
Unable to read parameter name of spool queue spool
queue name in the Registry. From the BOSaNOVA TCP/IP
Administrator, run the LPD Print Manager
Configurator to fix the problem.

Cause:
The parameter may be incorrect or corrupted in the Registry.

Action:
Run the LPD Print Manager Configurator and change the parameter.

LPD103   **Error**
The value of parameter name of spool queue spool
queue name in the Registry is invalid. From the
BOSaNOVA TCP/IP Administrator, run the LPD Print
Manager Configurator to fix the problem.

Cause:
The parameter may be incorrect or corrupted in the Registry.

Action:
Run the LPD Print Manager Configurator and change the parameter.

LPD104   **Error:**
Insufficient memory.

Cause:
Windows has no free resources.

Action:
Close all unnecessary applications and try again.

WinSock Return Codes

Each WinSock return code (listed by its Hex value) is presented with a brief description. For some codes, a cause and suggested action are provided.

10004   **Error:**
Interrupted system call.

10009   **Error:**
Bad file number.

10013   **Error:**
Permission denied.

10014   **Error:**
Bad address.

10022   **Error:**
Invalid argument.

10024   **Error:**
Too many open files.

Cause 1:
Too many WinSock applications are running simultaneously.

Action:
Close unnecessary applications.

Cause 2:
An application opens and closes sockets frequently but does not close them properly.

Action:
Restart the application.

10035   **Error:**
Operation would block.

10036   **Error:**
Operation now in progress.

10037   **Error:**
Operation already in progress.

10038   **Error:**
Socket operation on nonsocket.

10039   **Error:**
`Destination address required.`

Cause:
The destination address is missing.

Action:
Define the host destination address in the Administrator
(**Connectivity|Connection Type|Configure**).

10040   **Error:**
`Message too long.`

10041   **Error:**
`Protocol wrong type for socket.`

10042   **Error:**
`Bad protocol option.`

10043   **Error:**
`Protocol not supported.`

10044   **Error:**
`Socket type not supported.`

10045   **Error:**
`Operation not supported on socket.`

10046   **Error:**
`Protocol family not supported.`

10047   **Error:**
`Address family not supported by protocol family.`

10048   **Error:**
`Address already in use.`

Action:
Do not run two TCP/IP applications of the same type on the same
machine. Remove all TCP/IP applications and restart BOSâNOVA
TCP/IP.

10049   **Error:**
`Cannot assign requested address.`

Cause:
The destination address is missing.

Action:
Define the host destination address in the Administrator
(**Connectivity|Connection Type|Configure**).

10050   **Error:**
`Network is down.`

Action:
Check that your WinSock protocol stack, network driver, and network interface card configuration exist. Reinstall BOSâNOVA TCP/IP.

10051   **Error:**
`Network is unreachable.`

Action:
Try to ping the destination AS/400 to see if you get the same results. Check that the destination address is correct. Check that you have a router configured in your network system. Perform a trace to determine where the failure occurs along the route between your host and the destination AS/400. If this doesn't work, contact your network administrator.

10052   **Error:**
`Net dropped connection or reset.`

Cause:
The network dropped the connection.

Action:
Ping the remote host. If it does not respond, it might be off-line or there may be a network problem along the way. If it does respond, this problem might be temporary (in which case, try to reconnect) or the server application might have terminated (in which case, ask your system administrator to restart the server).

10053   **Error:**
`Software caused connection abort.`

Cause:
The software aborted the connection.

Action:
Ping the remote host. If it does not respond, it might be off-line or there may be a network problem along the way. If it does respond, this problem might be temporary (in which case, try to reconnect) or the server application might have terminated (in which case, ask your system administrator to restart the server).

10054   **Error:**
`Connection reset by peer.`

Cause:
Connection reset by AS/400.

Action:
If your network system supports commands that report statistics, check the number of TCP RST packets or port unreachable CMP packets received. See *Error 10053*, above.

10055   **Error:**
`No buffer space available.`

Cause:
There is a shortage of resources on your system, which can occur if you are trying to run too many applications simultaneously.

Action:
Close all unnecessary applications and restart BOSâNOVA TCP/IP.

10056   **Error:**
`Socket is already connected.`

10057   **Error:**
`Socket is not connected.`

10058   **Error:**
`Cannot send after socket shutdown.`

10059   **Error:**
`Too many references, cannot splice.`

10060   **Error:**
`Connection timed out.`

Action:
Check the following: that the destination's alias name is defined as a valid IP address; use the Hosts file or Host.sam to define alias names. If you used a host name, did it resolve to the correct address? Can you ping that host? Do you have a router configured? Is the router up and running? Check your subnet mask. If you do not have the proper subnet mask, your network system could treat local addresses as remote addresses. If this doesn't work, contact your network administrator.

10061   **Error:**
Connection refused.

Cause:
Connection refused by the AS/400 (either you tried to connect to the wrong host or the server application you are trying to contact is not executing).

Action:
In the Administrator (**Connectivity|Connection Type|Configure**), right-click **Run Ping**. Check the AS/400 address you are using. If you used a host name, check that it resolves to the correct address.

10062   **Error:**
Too many levels of symbolic links.

10063   **Error:**
File name too long.

10064   **Error:**
Host is down.

10065   **Error:**
No route to host.

Cause:
No route to the AS/400.

Action:
Try to ping the destination host to see if you get the same results. Check that the destination address is the one you wanted to go to. Check whether you have a router configured in your network system. Perform a trace route to try to determine where the failure occurs along the route between your host and the destination host. Contact your network administrator.

10066   **Error:**
Directory not empty.

10067   **Error:**
Too many processes.

10068   **Error:**
Too many users.

10069   **Error:**
Disk quota exceeded.

10070   **Error:**
Stale NFS file handle.

10071   **Error:**
              ```
              Too many servers of remote in path.
              ```

10091   **Error:**
              ```
              Network subsystem is unavailable.
              ```
              Action:
              Check that Wsock32.dll file comes from the same vendor as your
              underlying protocol stack. To do so, select **Wsock32.dll** from the
              Explorer (in **Windows|System**), right-click, and select
              Properties|Version.

10092   **Error:**
              ```
              WINSOCK.DLL version out of range.
              ```
              Cause:
              Wrong WinSock DLL version.
              Action:
              You must have WinSock DLL version 1.1.

10093   **Error:**
              ```
              Successful WSAStartup( ) not yet performed.
              ```
              Cause:
              The network subsystem is wrongly configured or inactive.
              Action:
              Contact your network administrator.

10101   **Error:**
              ```
              Session was disconnected; socket error.
              ```

11001   **Error:**
              ```
              Host not found.
              ```
              Action:
              Check that your name server(s) and/or host table are configured. If you
              are using name server(s), check whether the server AS/400 is running.

11002   **Error:**
              ```
              Non-authoritative AS/400 found.
              ```
              Action:
              Check that your name server(s) and/or host table are configured. If you
              are using name server(s), check whether the server AS/400 is running.

11003   **Error:**
              ```
              Non-recoverable query error.
              ```
              Action:
              Check that your name server(s) and/or host table are configured. If you
              are using name server(s), check whether the server AS/400 is running.

11004   **Error:**
`Valid name, but no data of that type.`

Action:
Check that your name server(s) and/or host table are configured. If you are using name server(s), check whether the server AS/400 is running.

TCP/IP over Twinax Tracer Error Messages

TCP/IP over Twinax Monitor errors

TPM001   **Error:**
`Unable to load <filename>. Reinstall the software.`
`If this doesn't work, contact BOS Technical Support.`

Cause:
The necessary file (usually a DLL) is missing or was corrupted.

Action 1:
Reinstall the software.

Action 2:
Contact Technical Support.

Twinax Wizard Errors

ITW001   **Error:**
`Internal error ITW001: primary code <code>,`
`secondary code <code>. See Error Messages in online`
`Help for further instructions.`

Cause:
There are many reasons why internal errors occur, including Windows problems, resource conflicts, software or hardware problems, user errors.

Action:
If you manually changed or deleted necessary DLL or Registry or script files, reinstall the software and run the Twinax Wizard again. If this is not the problem, contact BOS Technical Support.

ITW002   **Error:**
```
Internal error ITW002: primary code <code>,
secondary code <code>. See Error Messages in online
Help for further instructions.
```
Cause:
There are many reasons why internal errors occur, including Windows problems, resource conflicts, software or hardware problems, user errors.

Action:
If you manually changed or deleted necessary DLL or Registry or script files, reinstall the software and run the Twinax Wizard again. If this is not the problem, contact BOS Technical Support.

ITW003   **Error:**
```
Can't start the Twinax link (primary internal code
<code>, secondary internal code <code>). See Error
Messages in online Help for further instructions.
```
Cause:
There are many reasons why internal errors occur, including Windows problems, resource conflicts, software or hardware problems, user errors.

Action:
If you manually changed or deleted necessary DLL or Registry or script files, reinstall the software and run the Twinax Wizard again. If this is not the problem, contact BOS Technical Support.

ITW004   **Error:**
```
Can't open the Twinax device (primary internal code
<code>, secondary internal code <code>). See Error
Messages in online Help for further instructions.
```
Cause:
There are many reasons why internal errors occur, including Windows problems, resource conflicts, software or hardware problems, user errors.

Action:
If you manually changed or deleted necessary DLL or Registry or script files, reinstall the software and run the Twinax Wizard again. If this is not the problem, contact BOS Technical Support.

ITW005 **Error:**
```
Can't open a display session (primary internal code
<code>, secondary internal code <code>). See Error
Messages in online Help for further instructions.
```
Cause:

There are many reasons why internal errors occur, including Windows problems, resource conflicts, software or hardware problems, user errors.

Action:

If you manually changed or deleted necessary DLL or Registry or script files, reinstall the software and run the Twinax Wizard again. If this is not the problem, contact BOS Technical Support.

ITW006 **Error:**
```
Unable to open script file: <filename>. See Error
Messages in online Help for further instructions.
```
Cause:

There are many reasons why internal errors occur, including Windows problems, resource conflicts, software or hardware problems, user errors.

Action:

If you manually changed or deleted necessary DLL or Registry or script files, reinstall the software and run the Twinax Wizard again. If this is not the problem, contact BOS Technical Support.

ITW007 **Error:**
```
Read error. See Error Messages in online Help for
further instructions.
```
Cause:

There are many reasons why internal errors occur, including Windows problems, resource conflicts, software or hardware problems, user errors.

Action:

If you manually changed or deleted necessary DLL or Registry or script files, reinstall the software and run the Twinax Wizard again. If this is not the problem, contact BOS Technical Support.

ITW008   **Error:**
```
Invalid return code parameter. See Error Messages in
online Help for further instructions.
```
Cause:

There are many reasons why internal errors occur, including Windows problems, resource conflicts, software or hardware problems, user errors.

Action:

If you manually changed or deleted necessary DLL or Registry or script files, reinstall the software and run the Twinax Wizard again. If this is not the problem, contact BOS Technical Support.

ITW009   **Error:**
```
Function <function name>. Return code <code>. See
Error Messages in online Help for further
instructions.
```
Cause:

There are many reasons why internal errors occur, including Windows problems, resource conflicts, software or hardware problems, user errors.

Action:

If you manually changed or deleted necessary DLL or Registry or script files, reinstall the software and run the Twinax Wizard again. If this is not the problem, contact BOS Technical Support.

ITW010   **Error:**
```
Unknown\\uncompleted <command name> command. See
Error Messages in online Help for further
instructions.
```
Cause:

There are many reasons why internal errors occur, including Windows problems, resource conflicts, software or hardware problems, user errors.

Action:

If you manually changed or deleted necessary DLL or Registry or script files, reinstall the software and run the Twinax Wizard again. If this is not the problem, contact BOS Technical Support.

Twinax Wizard (TCP/IP Configuration) Errors

IWZ201   **Error:**

```
Unable to load <filename>. Reinstall the software.
If this doesn't work, contact BOS Technical Support.
```

Cause:

The necessary file (usually a DLL) is missing or was corrupted.

Action 1:

Reinstall the software.

Action 2:

Contact Technical Support.

IWZ202   **Error:**

```
All four fields of the IP address must be filled.
Enter the complete IP address.
```

Cause:

You didn't fill in one or more of the four IP address fields.

Action:

Enter the complete IP address.

IWZ203   **Error:**

```
Unable to get the Vendor ID of <adapter name>
adapter. See Error Messages in online Help for
further instructions.
```

Cause:

This could be a software problem or a hardware problem.

Action 1:

Contact Technical Support for help determining whether this is a software or a hardware problem.

Action 2:

For a hardware problem, contact your local BOS distributor.

IWZ204   **Error:**

```
Cannot open display session. Contact BOS Technical
Support.
```

Cause:

There are many possible reasons why this occurs.

Action:

Contact Technical Support for further instructions.

Twinax Wizard (Network Configuration) Errors

NWZ001   **Error:**
Unable to load <filename>, error <message>. Contact BOS Technical Support for further instructions.

Cause:
The necessary file (usually a DLL) is missing or was corrupted.

Action:
Contact Technical Support.

NWZ003   **Error:**
Found the TCP/IP over Twinax adapter in the Network configuration, but failed to set the registry hardware parameters. See Error Messages in online Help for further instructions.

Cause:
The Registry parameters were corrupted.

Action:
Delete the corrupted Registry information:

1. In the Registry, under HKEY_LOCAL_MACHINE|System|CurrentControlSet|Services|Class|Net, open the BOS driver folder.
2. Check that the DeviceVxDs is Bs525ip.sys to be sure this is the correct folder.
3. Delete this folder.
4. Restart Windows.
5. Run the Twinax Wizard again.

NWZ004   **Error:**
Unable to open <Registry key name> Registry Key (case n). Try running the Twinax Wizard again. If this doesn't help, reinstall the software.

Cause:
The Registry key may have been moved.

Action 1:
Run the Twinax Wizard again.

Action 2:
Reinstall the software.

NWZ006   **Error:**
```
You canceled the TCP/IP over Twinax adapter
installation. Run the Twinax Wizard again.
```
Cause:

You clicked Cancel during the Twinax Wizard procedure.

Action:

Run the Twinax Wizard again. Don't click Cancel during the
procedure.

NWZ007   **Error:**
```
Error occurred while adding the TCP/IP over Twinax
adapter to the Network configuration. See Error
Messages in online Help for further instructions.
```
Cause:

The Registry parameters were corrupted.

Action 1:

Delete the corrupted Registry information:

1. In the Registry, under
   HKEY_LOCAL_MACHINE|System|CurrentControlSet|Services|
   Class|Net, open the BOS driver folder.
2. Check that the DeviceVxDs is Bs525ip.sys to be sure this is the
   correct folder.
3. Delete this folder.
4. Restart Windows.
5. Run the Twinax Wizard again.

NWZ008   **Error:**
```
You canceled the TCP/IP over Twinax adapter
uninstall. Run the uninstall procedure again.
```
Cause:

You clicked Cancel during the uninstall procedure.

Action:

Run the uninstall procedure again:

1. From the Start menu, select **Settings|Control Panel**.
2. Double-click **Add/Remove Programs**.
3. Select BOS e-Twinax TCP/IP Set <n> and click **Add/Remove**.
   Follow the prompts.

NWZ010   **Error:**

```
The TCP/IP over Twinax adapter was not found. Run
the Twinax Wizard again. If this doesn't work, see
Error Messages in online Help for further
instructions.
```

Action 1:

Run the Twinax Wizard again.

Action 2:

Collect troubleshooting information to send to Technical Support:

1. In the top pane of the Administrator, select and expand Diagnostics.

2. Click **Collect Technical Information** to open User Information.

3. Complete the information, copy the user information file, the Registry, and any trace or event log files onto a diskette, and contact Technical Support.

NWZ011   **Error:**

```
The TCP/IP protocol was not installed successfully.
Run the Twinax Wizard again. If this doesn't work,
see Error Messages in online Help for further
instructions.
```

Action 1:

Run the Twinax Wizard again.

Action 2:

Collect troubleshooting information to send to Technical Support:

1. In the top pane of the Administrator, select and expand Diagnostics.

2. Click **Collect Technical Information** to open User Information.

3. Complete the information, copy the user information file, the Registry, and any trace or event log files onto a diskette, and contact Technical Support.

NWZ012   **Error:**

```
There is at least one other adapter bound to the
TCP/IP protocol. Run the Twinax Wizard again and
follow the 'Add Protocol' instructions in Step 14
EXACTLY.
```

Cause:

Another non-BOS adapter is bound to the TCP/IP protocol.

Action:

Run the Twinax Wizard again. When you reach Step 14, the Windows Network dialog box will open and the BOS Helper will open on the right with the appropriate instructions for setting up your PC network configuration. Follow these instructions EXACTLY.

NWZ013   **Error:**
```
Error occurred while removing the TCP/IP over Twinax
adapter. In the Advanced tab of the TCP/IP over
Twinax Configurator, click Disable Driver again.
```
Cause:
You may have clicked Cancel during the disabling process.

Action:
Access the TCP/IP over Twinax Configurator, select the Advanced tab, and, under Driver Status, click **Disable Driver**. Follow the prompts.

NWZ014   **Error:**
```
Error occurred while removing the TCP/IP over Twinax
adapter. In the Advanced tab of the TCP/IP over
Twinax Configurator, click Disable Driver again.
```
Cause:
You may have clicked Cancel during the disabling process.

Action:
Access the TCP/IP over Twinax Configurator, select the Advanced tab, and, under Driver Status, click **Disable Driver**. Follow the prompts.

NWZ015   **Error:**
```
You don't have the required privileges to set up the
TCP/IP over Twinax adapter. Logon to Windows NT with
higher privileges and run the Twinax Wizard again.
```
Cause:
You don't have the required privileges (probably Administrator privileges) to set up the adapter.

Action:
You don't have the required privileges to set up the TCP/IP over Twinax adapter. Logon to Windows NT with higher privileges and run the Twinax Wizard again.

NWZ016   **Error:**
```
You don't have the required privileges to uninstall
the TCP/IP over Twinax adapter. Logon to Windows NT
with higher privileges and run the procedure again.
```
Cause:
You don't have the required privileges (probably Administrator privileges) to uninstall the adapter.

Action:
Logon to Windows NT with the appropriate privileges and the procedure you were running when you received the error.

NWZ017   **Error:**
```
You don't have the required privileges to install
the TCP/IP protocol. Logon to Windows NT with higher
privileges and run the Twinax Wizard again.
```
Cause:
You don't have the required privileges (probably Administrator privileges) to install the TCP/IP protocol.

Action:
Logon to Windows NT with the appropriate privileges and run the Twinax Wizard again.

NWZ018   **Error:**
```
You don't have the required privileges to perform
the selected operation. Logon to Windows NT with
higher privileges and run the Twinax Wizard again.
```
Cause:
You don't have the required privileges (probably Administrator privileges) to do what you wanted to do.

Action:
Logon to Windows NT with the appropriate privileges and run the Twinax Wizard again.

NWZ019   **Error:**
```
Unable to unbind the TCP/IP over Twinax adapter. See
'Unbinding Protocols from Adapters' in online Help.
```
Cause:
The application was unable to unbind the TCP/IP over Twinax adapter.

Action:
See *Unbinding Protocols from Adapters* in TCP/IP over Twinax Driver online Help for instructions on manually unbinding the protocol.

NWZ020   **Error:**
```
The TCP/IP over Twinax adapter is still bound. See
'Unbinding Protocols from Adapters' in online Help.
```
Cause:
You may have stopped the unbinding process before it was completed.

Action:
See *Unbinding Protocols from Adapters* in TCP/IP over Twinax online Help for instructions on manually unbinding the protocol.

NWZ021 **Error:**
```
The TCP/IP protocol was not bound to another
adapter. See 'Binding Protocols to Adapters' in
online Help.
```
Cause:

The TCP/IP protocol was unbound from the BOS adapter without being bound to another adapter.

Action:

See *Unbinding Protocols from Adapters* in TCP/IP over Twinax Driver online Help for instructions.

TCP/IP over Twinax Configurator Errors

TWC001 **Error:**
```
Unable to load <filename>. Reinstall the software.
If this doesn't work, contact BOS Technical Support.
```
Cause:

Can't load the necessary DLL file.

Action 1:

Reinstall the software.

Action 1:

Contact Technical Support and request a new version of the CD-ROM or patch.

TWC002 **Error:**
```
Unable to get the Vendor ID for adapter <adapter
name>
```
Cause:

This could be a software problem or a hardware problem.

Action 1:

Contact Technical Support for help determining whether this is a software or a hardware problem.

Action 1:

For a hardware problem, contact your local BOS distributor.

Twinax Wizard Errors

TWZ601   **Error:**
You don't have the required privileges to install BSTWXTCP service. Logon to Windows NT with higher privileges and run the Twinax Wizard again.

Cause:
You don't have the required privileges (probably Administrator privileges) to set up the adapter.

Action:
Logon to Windows NT with the appropriate privileges and run the Twinax Wizard again.

TWZ602   **Error:**
Failed to open BSTWXTCP service. Restart Windows NT and reinstall the software.

TWZ603   **Error:**
Failed to start BSTWXTCP service. Restart Windows NT and reinstall the software.

TWZ604   **Error:**
CreateFile to BSTWXTCP driver failed. Restart Windows and reinstall the software.

TWZ605   **Error:**
Lock IO buffers failed. Restart Windows and run the Twinax Wizard again.

TWZ606   **Error:**
The current version of BSTIPLNK.DLL is incompatible with this version of the BSTWXTCP driver. Reinstall the software.

TWZ607   **Error:**
Failed to create BSTWXTCP service. Restart Windows and reinstall the software.

TWZ608   **Error:**
`Internal error occurred while checking whether the miniport driver is active. See Error Messages in online Help for further instructions.`

Cause:
There are many reasons why internal errors occur, including Windows problems, resource conflicts, software or hardware problems, user errors.

Action:
If you manually changed or deleted necessary DLL or Registry or script files, reinstall the software and run the Twinax Wizard again. If this is not the problem, contact BOS Technical Support.

TWZ610   **Error:**
`Internal error occurred while closing the TCP/IP connection. See Error Messages in online Help for further instructions.`

Cause:
There are many reasons why internal errors occur, including Windows problems, resource conflicts, software or hardware problems, user errors.

Action:
If you manually changed or deleted necessary DLL or Registry or script files, reinstall the software and run the Twinax Wizard again. If this is not the problem, contact BOS Technical Support.

TWZ611   **Error:**
`Failed to close TCP/IP connection. CloseStation returned with error. Restart Windows and run the Twinax Wizard again.`

TWZ612   **Error:**
`Failed to close TCP/IP connection. Close Twinax adapter returned with error. Restart Windows and run the Twinax Wizard again.`

TWZ613   **Error:**
`Internal error occurred while closing the TCP/IP`
`connection. See Error Messages in online Help for`
`further instructions.`

Cause:
There are many reasons why internal errors occur, including Windows problems, resource conflicts, software or hardware problems, user errors.

Action:
If you manually changed or deleted necessary DLL or Registry or script files, reinstall the software and run the Twinax Wizard again. If this is not the problem, contact BOS Technical Support.

TWZ614   **Error:**
`Internal error occurred during OpenAdapter. See`
`Error Messages in online Help for further`
`instructions.`

Cause:
There are many reasons why internal errors occur, including Windows problems, resource conflicts, software or hardware problems, user errors.

Action:
If you manually changed or deleted necessary DLL or Registry or script files, reinstall the software and run the Twinax Wizard again. If this is not the problem, contact BOS Technical Support.

TWZ615   **Error:**
`Open adapter failed. Twinax adapter is in use by`
`another driver. Close other applications that are`
`using the Twinax adapter and run the Twinax Wizard`
`again. If this doesn't work, see Error Messages in`
`online Help for further instructions.`

Action 1:
Run the Twinax Wizard again.

Action 2:
Collect troubleshooting information to send to Technical Support:

1.   In the top pane of the Administrator, select and expand **Diagnostics**.

2.   Click **Collect Technical Information** to open User Information.

3.   Complete the information, copy the user information file, the System.ini and Autoexe.bat files, and any trace or event log files onto a diskette, and contact Technical Support.

TWZ616   **Error:**
`Open adapter failed. Twinax adapter was not found.`
`Restart Windows and run the Twinax Wizard again.`

TWZ617   **Error:**
`Error occurred during adapter open. Restart Windows`
`and run the Twinax Wizard again.`

TWZ618   **Error:**
`Internal error occurred during OpenAdapter. See`
`Error Messages in online Help for further`
`instructions.`

Cause:
There are many reasons why internal errors occur, including Windows problems, resource conflicts, software or hardware problems, user errors.

Action:
If you manually changed or deleted necessary DLL or Registry or script files, reinstall the software and run the Twinax Wizard again. If this is not the problem, contact BOS Technical Support.

TWZ619   **Error:**
`Twinax address is already in use. Run the Twinax`
`Wizard again and find an available address.`

Cause:
The Twinax address you selected in step 8 of the Twinax Wizard is in use.

Action:
Run the Twinax Wizard again. We suggest you select Automatic in step 7 so the Twinax Wizard can check for an available address in step 8.

TWZ620   **Error:**
`Twinax address is invalid. Run the Twinax Wizard`
`again and find an available Twinax address.`

Cause:
The Twinax address you selected in step 8 of the Twinax Wizard is in use.

Action:
Run the Twinax Wizard again. We suggest you select Automatic in step 7 so the Twinax Wizard can check for an available address in step 8.

TWZ621   **Error:**
`Twinax address is not available. Run the Twinax`
`Wizard again and find an available Twinax address.`

Cause:
The Twinax address you selected in step 8 of the Twinax Wizard is in use.

Action:
Run the Twinax Wizard again. We suggest you select Automatic in step 7 so the Twinax Wizard can check for an available address in step 8.

TWZ622   **Error:**
`Wrong Twinax address. Run the Twinax Wizard again`
`and find an available Twinax address.`

Cause:
The Twinax address you selected in step 8 of the Twinax Wizard is in use.

Action:
Run the Twinax Wizard again. We suggest you select Automatic in step 7 so the Twinax Wizard can check for an available address in step 8.

TWZ623   **Error:**
`Internal error occurred during OpenStation. See`
`Error Messages in online Help for further`
`instructions.`

Cause:
There are many reasons why internal errors occur, including Windows problems, resource conflicts, software or hardware problems, user errors.

Action:
If you manually changed or deleted necessary DLL or Registry or script files, reinstall the software and run the Twinax Wizard again. If this is not the problem, contact BOS Technical Support.

TWZ624   **Error:**

```
Failed to receive the first TCP/IP frame from the
host. Verify that your TCP/IP interface is active on
the host side. See Error Messages in online Help for
further instructions.
```

Cause 1:

The TCP/IP interface on the host side is in inactive mode.

Action:

Activate the TCP/IP interface. For instructions, see *Activating the TCP/IP Interface on the AS/400* in TCP/IP over Twinax Driver online Help.

Cause 2:

The Twinax device is in varied off or failed status.

Action:

If the Twinax device is varied off, vary it on. If the device is in failed status, vary it off and then vary it on again.

Cause 3:

The automatic configuration value (QAUTOCFG) on the AS/400 is set to off.

Action:

Set QAUTOCFG system value to on.

APPENDIX A: BOSâNOVA IFS FOR WINDOWS 95

Introduction

BOSâNOVA IFS (Integrated File System) is a Windows 95/98 utility that enables you to work with AS/400 folders as if they were PC folders.

With BOSâNOVA IFS, you can:

- use an AS/400 as a file server for your PC

- assign a root folder on an AS/400 to an available drive on your PC

- use IFS in both Windows 95/98 and DOS applications

- copy folders and files to and from your PC and an AS/400

- change file attributes

- create, browse, rename, move, and delete PC and AS/400 folders and files

Requirements

- Windows 95/98

- BOSâNOVA TCP/IP installed and configured

- OS/400 v3.10 or higher

- The following host servers must be active: *SVRMAP, *SIGNON, *FILE (for details, see Setting up the Host Side, p. 106).

Installing BOSâNOVA IFS

When you install BOSâNOVA TCP/IP, BOSâNOVA IFS for Windows 95 is one of the modules that you can choose to install. If you already installed BOSâNOVA TCP/IP and did not select this module, you can rerun the installation and add BOSâNOVA IFS for Windows 95 as follows:

1. Insert the BOSâNOVA TCP/IP CD-ROM. The Welcome screen appears after a few seconds.

2. Select **Install BOSâNOVA TCP/IP**. This launches the install program. Follow the prompts.

3. When presented with a list of modules to install/add, select **BOSâNOVA IFS for Windows 95**.

4. Follow the prompts.

Setting up the Host Side

To run BOSâNOVA IFS for Windows 95 over a TCP/IP connection, the following host servers must be active: *SVRMAP, *SIGNON, *FILE.

> ### *Note!*
> If you do not have access to the AS/400 command line, see your system administrator.

1. At the AS/400 command line, enter

    WRKIPXD

    to display the list of IPX descriptions.

2. Choose an IPX description and enter

    STRIPX <IPX description**>**

3. Enter

    STRHOSTSVR SERVER(*SVRMAP *SIGNON *FILE)

Getting Started

> ### *Note!*
> To run BOSâNOVA IFS for Windows 95 over a TCP/IP connection, the following host servers must be active: *SVRMAP, *SIGNON, *FILE (for details, see *Setting up the Host Side*, above.

1. From the BOSâNOVA TCP/IP program group, select the **Administrator**.

2. From the Administrator, select **IFS for Windows 95** in Installed Modules and click **Configure**.

3. Select **BOSâNOVA TCP/IP** and click **Enable IFS Support**. When prompted to restart Windows, click **Yes**.

4. The BOSâNOVA IFS button ![icon] appears in the bottom right of the taskbar and the <system name> button and <system name> folder appear in Windows Explorer under **Network Neighborhood\Entire Network\BOSaNOVA AS/400 Network**. Expand the <system name> folder to display the AS/400 folders (see *Figure 3* on the next page).
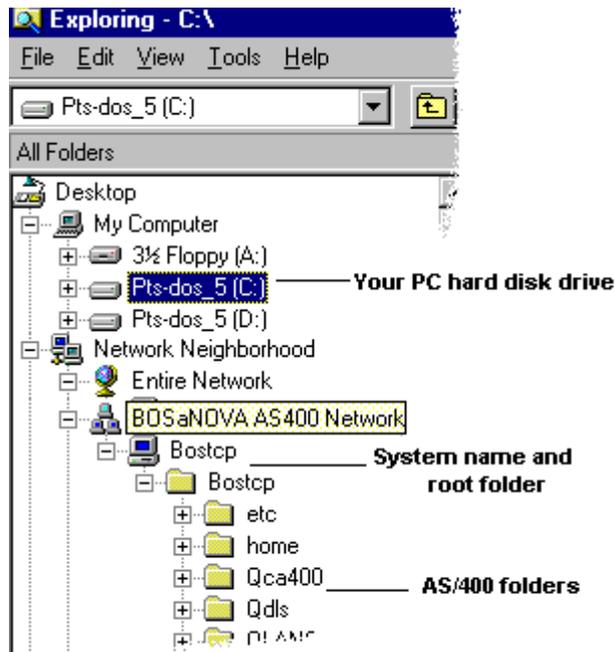
Figure 3: Windows Explorer with AS/400 Network Display

Note!
The system name displayed in the tree is defined in the TCP/IP
Configurator.

---

5. The system name in the example above is **Bostcp**. Double-click the Bostcp button to open the BOSâNOVA IFS dialog box. Enter your **User ID** and **Password** and click **OK**.

6. Since MS-DOS does not use universal naming conventions (UNC), you **must** map the AS/400 to a single-letter network drive to use BOSâNOVA IFS with MS-DOS application. We recommend that you set up the mapped drive even if you plan to use only Windows 95/98 applications.

7. In Windows Explorer, right-click the <system name> folder under the <system name> button under BOSâNOVA AS/400 Network (refer to Figure 3 above). Select **Map Network Drive** from the popup menu.

8. In the Map Network Drive dialog box, select an available drive for the AS/400 folders and files. Select **Reconnect at logon** and click **OK**.

9. In Windows Explorer, select **View|Refresh**. Expand the mapped drive to display the list of AS/400 folders (see Figure 4 on the next page).
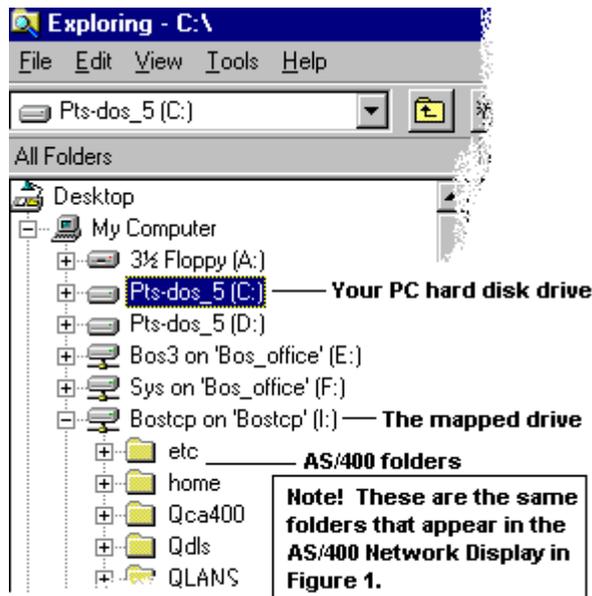
Figure 4: Windows Explorer with Mapped Drive **I:** Display

Disabling Long Filename Support

QDLS (IBM Document Library Services) is the standard IBM name for the root folder used in the earlier versions of IBM PC Support Shared Folders. With BOSâNOVA IFS, you can continue to use QDLS. Since QDLS does not support long filenames, you must first disable the default long filename support setting in BOSâNOVA IFS:

1. Double-click [icon] to run the BOSâNOVA IFS Configurator.

2. Click **Advanced** to open the Advanced Options dialog box.

3. Deselect **Enable long filenames** and click **OK**. When prompted to restart Windows, click **Yes**.

Using the BOSâNOVA IFS Configurator

Use the Configurator to control the operation of BOSâNOVA IFS for Windows 95. To open the IFS Configurator:

1. In the top pane of the BOSâNOVA TCP/IP Administrator, expand **Installed Modules** and select **IFS for Windows 95.**

2. In the bottom pane, click **Configure**.

Use Connection as Defined in

BOSâNOVA TCP/IP appears here (when BOSâNOVA IFS for Windows 95 is one of its modules).

Enable BOSâNOVA IFS Support

Sets up and starts BOSâNOVA IFS for Windows 95.

Disable BOSâNOVA IFS Support

(Available only when BOSâNOVA IFS for Windows 95 is enabled.) Removes BOSâNOVA IFS for Windows 95.

Enable Trace

(Available only when BOSâNOVA IFS for Windows 95 is enabled.) Creates a trace of the IFS activity. A trace file will be created as defined in the client you are using or, if not defined, as the default trace file in the Windows System folder. Send the trace file to BOS Technical Support.

Advanced

(Available only when BOSâNOVA IFS for Windows 95 is enabled.) Opens Advanced Options for starting and stopping IFS and modifying certain parameters.

Using BOSâNOVA IFS

Moving Folders and Files between the AS/400 and Your PC

In Windows 95/98 Applications:

Use Windows Explorer to drag-and-drop or copy-and-paste folders and files to and from the AS/400 (from the mapped drive or from the <system name> folder in **Network Neighborhood\Entire Network\BOSaNOVA AS/400 Network\<system name>**) and your PC's hard disk (usually **C:**).

In MS-DOS Applications:

In Start|Programs, select **MS-DOS Prompt** to open the DOS box. Use DOS commands (for example, DIR, COPY) or a special DOS navigation utility (such as Norton Commander) to copy and delete directories and files between the AS/400 (the mapped to drive) and your PC (usually **C:**).

Browsing or Searching Folders and Files from the AS/400

In Windows 95/98 Applications:

Click **Start|Find** to browse folders or files on the AS/400 as you would for folders and files on your PC.

In MS-DOS Applications:

In Start|Programs, select **MS-DOS Prompt**. Use DOS commands (for example, DIR, COPY) or a special DOS navigation utility (such as Norton Commander) to search directories and files on the AS/400.

Uninstalling BOSâNOVA IFS

1. In the top pane of the Administrator, expand Installed Modules and select **IFS for Windows 95**.

2. In the bottom pane, click **Configure**. This runs the BOSâNOVA IFS Configurator.

3. Click **Disable BOSâNOVA IFS**. When prompted to restart Windows, click **Yes**.

4. Delete all the files from the BOSâNOVA IFS folder you created on your PC hard disk.

> ### Note!
> To remove BOSâNOVA TCP/IP from your system, you must first disable BOSâNOVA IFS for Windows 95.

Known Limitations

This version of BOSâNOVA IFS for Windows 95 has the following limitations:

- Only one root folder for each system can be mapped as a network drive.

- You cannot run .exe files from the AS/400.

- You cannot access AS/400 folders from 16-bit Windows applications.

- In **File|Properties**, only the Modified date and time is shown for a file.

- You cannot browse directories in Norton Commander for Windows.

- When you copy a long filename from your PC to the AS/400, the filename appears in all capital letters.

- When you attempt to move a folder, an error message occurs if the folder contains any read-only files. (All other files are moved successfully, however.)

- An anti-virus program installed on your PC may prevent copying files from your PC to an AS/400.

APPENDIX B: TCP/IP OVER TWINAX DRIVER

Introduction

The TCP/IP over Twinax Driver expands the use of existing Twinax networks from networks intended solely for AS/400 communication to general networks suitable for a variety of tasks. Connecting to your AS/400 over TCP/IP is faster than connecting using APPC and upgrading your existing Twinax network to support TCP/IP is inexpensive.

<div style="border:1px solid">

Note!

BOSâNOVA TCP/IP (e-Twin@x version), the TCP/IP application in BOSâNOVA Plus, requires the TCP/IP over Twinax Driver *and* a BOSâNOVA Twinax adapter card. Make sure that the TCP/IP over Twinax Driver is installed, configured, and running and that one of the following BOSâNOVA Twinax adapter cards is installed in your PC:

- BOSâNOVA PLUS ISA (PID 6401)
- BOSâNOVA Plus PNP (PID 6411)
- BOSâNOVA Plus PCI (PID 6461)
- BOSâNOVA Plus Express (PID 6481)

</div>

Features

With the TCP/IP over Twinax Driver, you can:

- Connect to various types of host computers using TCP/IP

- Support Internet, Lotus Notes, Domino, e-mail (both internal and Internet), Microsoft Networking, or any other application based on the TCP/IP protocol

- Organize workgroups that can easily share files and printing resources

- Connect to NT and Novell file servers

- Implement IP Telephony to reduce long distance telephone charges

Components

The TCP/IP over Twinax Driver is a module that can be installed under the BOSâNOVA TCP/IP emulation software. It includes the following components:

- **TCP/IP over Twinax Configurator**
  To view, set, and change settings for your Twinax adapter card, TCP/IP over Twinax Driver, and network configuration

- **Twinax Wizard**
  To configure your Twinax adapter card, the TCP/IP over Twinax Driver, and your Windows Network configuration and to check the TCP/IP over Twinax connections

- **TCP/IP over Twinax Monitor**
  To display the status (active or inactive) of the TCP/IP over Twinax Driver

- **TCP/IP over Twinax Tracer**
  To set up and run traces for troubleshooting

See the respective topics in online Help for detailed information.

Configuring the TCP/IP over Twinax Driver

There are two ways to configure the TCP/IP over Twinax Driver:

- with the Twinax Wizard (recommended method)
- manually

Twinax Wizard

The Twinax Wizard:

- configures the Twinax adapter card
- configures the TCP/IP over Twinax Driver
- configures your Windows network
- checks the TCP/IP over Twinax connection

Automatic Start

When you select **TCP/IP over Twinax Driver** as a module of BOSâNOVA TCP/IP, the Twinax Wizard configures TCP/IP over Twinax Driver and Windows network configuration. You can also start the wizard from the Administrator:

Starting the Twinax Wizard from the Administrator

1. In the top pane of the Administrator, expand Installed Modules and select **TCP/IP over Twinax Driver**.

2. In the bottom pane, click **Configure**.

3. In the Settings tab, click **Twinax Wizard** to run the Twinax Wizard. Follow the prompts.

> ### Note!
> When you reach step 14, the BOS Helper opens automatically whenever the Windows Network dialog box opens. We recommend that you minimize the online Help window and follow the instructions in the BOS Helper exactly. When you click **OK** in the Network dialog box, the BOS Helper closes and you can return to the online Help window for further instructions.

See *Twinax Wizard*, in online Help, for details.

Changing Driver Settings

You can change the TCP/IP over Twinax Driver settings by running the Twinax Wizard:

- again from the Windows Control Panel,
- manually from the Windows Control Panel, or
- from the BOS Emulation Administrator.

From the Control Panel:

1. In the Control Panel (Start|Settings), double-click **Network**.

2. Follow the procedure for your operating system:

    #### Windows 95/98
    In the Configuration tab, select the name of your Twinax adapter (for example, BOS Stealth Express ISA-PnP Twinax) and click Properties.

    #### Windows NT
    Select the **Adapters** tab. Under Network Adapters, select **TCP/IP over Twinax Adapter** and click **Properties**.

3. Select the **Settings** tab and click **Change Settings**.

4. Change any settings and click **OK** to save the settings. Continue clicking **OK** until you exit the Network dialog box. The changes take effect next time you restart Windows.

From the Administrator:

1. In the top pane of the Administrator, expand Installed Modules and select **TCP/IP over Twinax Driver**.

2. In the bottom pane, click **Configure**.

3. In the Settings tab, click **Change Settings**.

4. Change any settings and click **OK** to save the settings. Continue clicking **OK** until you exit the Network dialog box. The changes take effect next time you restart Windows.

Managing the TCP/IP over Twinax Driver

TCP/IP over Twinax Monitor

The monitor displays the status of the TCP/IP over Twinax Driver, whether it's active or inactive.

The Monitor button ![icon] appears in the lower right corner of the taskbar on Windows startup. When the TCP/IP over Twinax Driver is inactive, ![icon] appears.

Right-clicking the button opens a popup window:

- **Detailed Information**: opens TCP/IP over Twinax Detailed Information for detached status information about your TCP/IP connection to the host, your Twinax adapter, and your TCP/IP over Twinax Driver in a dynamic, real-time display.

- **Run Configurator**: runs the TCP/IP over Twinax Configurator for viewing, setting, and changing settings for your Twinax adapter card, TCP/IP over Twinax Driver, and network configuration.

- **Renew TCP/IP connection**: in Windows 95/98, this opens the IP connection dialog box (click **Renew** to the TCP/IP connection); in Windows NT, this renews the TCP/IP connection.

- **Close**: closes the TCP/IP over Twinax Monitor and removes it from the taskbar.

Closing the Monitor

Right-click the button ![icon] and select **Close**.

Running the Monitor

1. Right-click ![icon] on the taskbar and select **Run Configurator**.
2. Select **Diagnostic**.
3. Under TCP/IP over Twinax Monitor, click **Run Monitor Now**.

Disabling the Monitor

1. Right-click ![icon] on the taskbar and select **Run Configurator**.
2. Select **Diagnostic**.
3. Under TCP/IP over Twinax Monitor, deselect **Show the Monitor** on the task bar and click **OK**. When you restart Windows, the Monitor will not appear.

Enabling the Monitor

1. Right-click on the taskbar and select **Run Configurator**.

2. Select **Diagnostic**.

3. Under TCP/IP over Twinax Monitor, deselect **Show the Monitor** on the task bar and click **OK**.

4. When you restart Windows, the Monitor will appear in the taskbar. To run the Monitor without restarting Windows, click **Run Monitor Now.**

Viewing Detailed Status Information

1. Right-click on the taskbar and select **Show Details**.

2. Select the tab for the information you want. You can move the Monitor to another position on your screen by clicking the title bar and dragging it.

3. To close Details, click **OK** or **Cancel**.

Running the TCP/IP Configurator from the Monitor

Right-click on the taskbar and select **Run Configurator**.

Testing the TCP/IP over Twinax Connection

Right-click on the taskbar and select **Ping to Default Gateway**.

Renewing the TCP/IP Connection

In Windows 95/98

1. Right-click on the taskbar and select **Renew TCP/IP Connection**

2. In the IP Connection dialog box, click **Renew**.

In Windows NT

Right-click on the taskbar and select **Renew TCP/IP Connection**.

Disabling the Driver

1. In the top pane of the Administrator, expand Installed Modules and select **TCP/IP over Twinax Driver**.

2. In the bottom pane, click **Configure**.

3. Select the **Advanced tab**.

4. Under Driver Status, click **Disable Driver** to stop the driver and disconnect it from the network configuration.

Restarting the Driver

If you have disabled the TCP/IP over Twinax Driver, you must run the Twinax Wizard to enable it again.

Troubleshooting

> ***Note!***
> Refer to Troubleshooting, p. 48, for general troubleshooting information.

TCP/IP over Twinax Tracer

Use the TCP/IP over Twinax Tracer to set up and run traces for troubleshooting. A TCP/IP over Twinax trace is used to check miniport driver behavior and TCP/IP interface flow. The information is saved in the Twxtrace.bts file, in the BOSâNOVA TCP/IP folder, which can then be sent to Technical Support for analysis. When you contact Technical Support, they may request that you run a trace.

Creating a TCP/IP over Twinax Trace

Before you run the trace, you must first create it:

1. Run the TCP/IP over Twinax Tracer:

    - From the TCP/IP over Twinax Monitor:

        a) Right-click ![icon] on the taskbar and select **Run Configurator** to open the TCP/IP over Twinax Configurator.

        b) Select **Diagnostic**.

        c) Click **Run Tracer Now** to run the TCP/IP over Twinax Tracer.

    - From the Administrator:

        a) In the top pane of the Administrator, expand Installed Modules and select **TCP/IP over Twinax Driver**.

        b) In the bottom pane, click **Configure** to open the TCP/IP over Twinax Configurator.

        c) Select Diagnostic.

        d) Click **Run Tracer** Now to run the TCP/IP over Twinax Tracer.

2. In the Tracer, set the parameters for the information you want to collect. Click **Close**.

Running a TCP/IP over Twinax Trace

- From any point *after* the BOSâNOVA TCP/IP emulation starts:

  1. Set the parameters for a trace. See *Creating a TCP/IP over Twinax Trace* above. Click **Start Trace**.

  2. Run an emulation. Make sure you run the TCP/IP trace on the first session only!

  3. When the error occurs again, click **Stop Trace** in the TCP/IP over Twinax Tracer. The data is written to the file specified in step 1, above.

  4. From the Administrator, expand Diagnostics in the top pane and select **Troubleshooting Information**.

  5. In the bottom pane, click **Collect Technical Information**. Complete the information. Include it along with the TCP/IP over Twinax trace file and send it to Technical Support for analysis.

- From Windows startup (to gather information about the startup of the TCP/IP over Twinax Driver):

  1. In the TCP/IP over Twinax Configurator, select **Diagnostic**.

  2. Under TCP/IP over Twinax Tracer, select **Run the Tracer on Windows Startup**.

  3. Click **Run Tracer Now**.

  4. Set the parameters, including the trace filename, for the trace. Click **Close**.

  5. Restart Windows.

  6. Run an emulation. Make sure you run the TCP/IP trace on the first session only!

  7. When the error occurs again, close the emulation. The data is written to the file specified in step 4, above.

  8. From the Administrator, expand Diagnostics in the top pane and select **Troubleshooting Information**.

  9. In the bottom pane, click **Collect Technical Information**. Complete the information. Include it along with the TCP/IP over Twinax trace file and send it to Technical Support for analysis.

Collecting User Information

Use this dialog box to collect diagnostic information in the Administrator and to collect printer troubleshooting information in Printer Session Properties|Diagnostic. See Collecting User Information, p. 52.

Modifying Script Files

The Twinax Wizard uses script files to perform host TCP/IP over Twinax configuration. The script files are used to create a dynamic product configuration.

The script files are defined for the most common host configuration. If a script file fails during your host TCP/IP over Twinax configuration, it is possible that the script file is not appropriate for your particular configuration.

Script files can be modified using the syntax that can be found in *Modifying Script Files*, in online Help.

Note!

We strongly recommend that you call BOS Technical Support before changing the script files; they will help you determine what to change and how to change it.

Configuring TCP/IP over Twinax Settings on the AS/400

You may need to perform all or only some of the following procedures. They are divided into parts for easier navigation:

- Creating or Finding the Twinax Line

- Adding a New TCP/IP Interface

- Activating the TCP/IP Interface

See *Configuring TCP/IP over Twinax Settings on the AS/400* in online Help.

Error Messages

TCP/IP over Twinax error messages start on p. 88.

- ITM, TPM: TCP/IP over Twinax Monitor errors; p. 88

- ITR: TCP/IP over Twinax Tracer errors; p. 88

- ITW, TWZ: Twinax Wizard errors; p. 88

- IWZ: Twinax Wizard (TCP/IP configuration) errors; p. 92

- NWZ: Twinax Wizard (Network configuration) errors; p. 93

- TWC: TCP/IP over Twinax Configurator errors; p. 98

Contacting BOS Technical Support

To contact BOS Technical Support, see p. 54.

APPENDIX C: INSTALLING THE BOS ISA TWINAX ADAPTER CARD

> ### *Note!*
> You must have a Twinax adapter card installed in your PC in order to use the TCP/IP over Twinax adapter. If you installed BOSâNOVA TCP/IP (e-Twin@x version), the version of BOSâNOVA TCP/IP that is bundled on the BOSâNOVA Plus CD-ROM, the Twinax adapter card *must* be a BOS card.

> ### *Note!*
> A diskette containing Twinax adapter card information (.inf file) accompanies all BOS Twinax adapter cards. You may be prompted to insert the diskette during driver installation or after starting Windows.

The slot in which you install the Twinax adapter card depends on the type of card:

Twinax Adapter Card Type	Slot Type
ISA	ISA
Plug and Play	PnP on ISA
PCI	PCI
Express	PnP on ISA

Insert the adapter card into the appropriate expansion slot, as follows:

1. *Turn off and unplug the PC!*
2. Remove the PC cover. Remove the appropriate expansion slot cover and save the screw that attaches the cover.
3. Remove the BOS Twinax adapter card from its packaging. Be careful not to touch the electronic components or the lower edge connector.
4. *Optional for ISA cards:* set the DIP switches on the card to the I/O address you wish to use (factory setting is 2710).
5. Slide the card carefully into the free expansion slot. Push the card gently but firmly until it clicks into the motherboard. Secure it with the screw set aside in step 2.
6. Unwrap the T-connector and plug it into the 15-pin D-type connector on the card. Connect the Twinax cable to the T-connector.
7. Replace the cover, reconnect the power cord, and turn on the PC.

8. If prompted, insert the accompanying adapter card diskette in the diskette drive; see the previous note.

Note!
If you don't insert the adapter card information diskette when Windows requests it, you will have to run Add New Hardware from the Control Panel at a later time.

The BOS ISA Twinax Adapter Card

Of the four BOS Twinax adapter cards provided for the BOSâNOVA Plus family, only the BOS **ISA** Twinax adapter card, shown below, has DIP switches. To change DIP switch settings, see the table below.
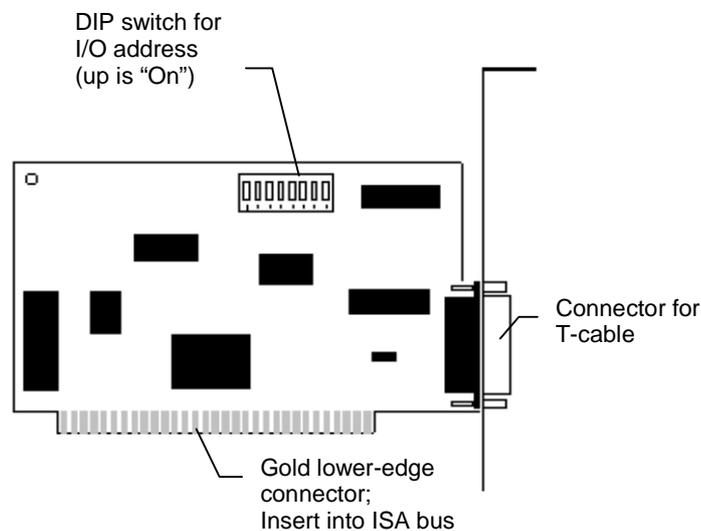

Figure 5: BOS ISA Twinax Adapter Card

BOS ISA Twinax Adapter Card DIP Switch Settings

DIP switches are found on the BOS ISA Twinax adapter card only. The factory default is 2710; 2500 is the next best choice. To set the switches, 1= ON (up) and 0 = OFF (down).

Non-recommended values (reserved for use by the PC) are not listed.

I/O	Switches 1 2 3 4 5 6 7 8	I/O	Switches 1 2 3 4 5 6 7 8
2500 (2nd good choice)	0 0 0 0 0 0 1 1	251X	1 0 0 0 0 0 1 1
2520	0 1 0 0 0 0 1 1	253X	1 1 0 0 0 0 1 1
2540	0 0 1 0 0 0 1 1	255X	1 0 1 0 0 0 1 1
2560	0 1 1 0 0 0 1 1	2570	1 1 1 0 0 0 1 1
2580	0 0 0 1 0 0 1 1	2590	1 0 0 1 0 0 1 1
25A0	0 1 0 1 0 0 1 1	25B0	1 1 0 1 0 0 1 1
25C0	0 0 1 1 0 0 1 1	25D0	1 0 1 1 0 0 1 1
25E0	0 1 1 1 0 0 1 1	2610	1 0 0 0 1 1 1 1
2620	0 1 0 0 1 1 1 1	2630	1 1 0 0 1 1 1 1
2640	0 0 1 0 1 1 1 1	2650	1 0 1 0 1 1 1 1
2660	0 1 1 0 1 1 1 1	2680	0 0 0 1 1 1 1 1
2690	1 0 0 1 1 1 1 1	26A0	0 1 0 1 1 1 1 1
26B0	1 1 0 1 1 1 1 1	26C0	0 0 1 1 1 1 1 1
26D0	1 0 1 1 1 1 1 1	26E0	0 1 1 1 1 1 1 1
2710 (default)	1 0 0 0 0 1 1 1	2700	0 0 0 0 0 1 1 1
2730	1 1 0 0 0 1 1 1	2720	0 1 0 0 0 1 1 1
2750	1 0 1 0 0 1 1 1	2740	0 0 1 0 0 1 1 1

APPENDIX D: USER ADMINISTRATION

User Policy Editor

The User Policy Editor is accessed from the main interface of BOSâNOVA TCP/IP; from the Administrator, select **User Administration|User Policy Editor**. See online Help for details.

User policies are the limitations and privileges assigned to a group or a specific user. With the User Policy Editor, the system administrator can create groups, name the groups, and assign users to groups. Once a group is created, policies can be assigned in Edit Policies. These policies give the system administrator the ability to manage both users within the network and users not connected to the network. With the User Policy Editor, the system administrator can:

- create groups and assign identical privileges and limitations to all members of the group. This saves the system administrator the repetitious task of assigning policies to each user separately.

- disable specific applications (such as file transfer) or limit use of the application (for example, limit the direction of file transfer).

- limit access to menus, buttons, and dialog boxes (for example, prevent access to Display Preferences or the Save Changes button in emulation options).

- inform users when policies are changed.

Remote Configuration

Remote Configuration is accessed from the main interface of BOSâNOVA TCP/IP; from the Administrator, select **User Administration|Remote Configuration**. See online Help.

Remote Configuration enables the system administrator to:

- access and configure the BOS emulation software on a user's computer
- edit the remote computer's registry

There are two main reasons to use Remote Configuration:

- to limit user access to configuration modules. Use the User Policy Editor to limit users' access and then use Remote Configuration to do any necessary configuration.

- to handle network configuration at a remote site.

Refer to the online Help for instructions regarding how to enable remote configuration in Windows 95/98/2000; Windows NT usually has Remote Registry Service already installed.

> ### *Note!*
> A system administrator working on a computer with Windows 95/98/2000 cannot remotely configure a computer using Windows NT.

APPENDIX E: DTF (DATA TRANSFER FUNCTION)

Introduction to DTF

DTF (Data Transfer Functions) is a 32-bit Windows utility for transferring data in either direction between a PC and a host (AS/400 or System/3x).

DTF is included as part of BOS emulation software (for example, BOSâNOVA Client 32, BOSâNOVA TCP/IP, BOSâNOVA Plus 32, etc.). The data is transferred via APPC, TCP/IP, or HLLAPI connections. The connection type depends on the BOS client you have installed.

Data transfers are managed by file transfer profiles. These are files with an **.h2p** (host-to-PC) or **.p2h** (PC-to-host) extension that contain information about the data and how it is to be transferred, e.g., the source and destination paths, the transfer type, and conversion information.

After you create a DTF profile, you have a number of options to use for transferring the data: DTF interface (interactive mode), DTF background mode, Profile lists (batch mode), and the Scheduler. In addition, the Send utility provides a tool for transferring strings and running script files in display sessions via HLLAPI.

DTF contains four components:

- The DTF Wizard helps you create new DTF profiles.

- The DTF interface displays DTF profiles in a Windows-like tree structure. In the DTF interface, you can:

    - View profiles and profile lists

    - Create profiles

    - Change profile parameters

    - Create profile lists

    - Change profile lists

    - Run data transfers in interactive mode. (See also *Running DTF in Background Mode*, in online Help.)

- The Scheduler lets you define automated transfers to run on a specified schedule or as triggered by a dynamic event.

- The Send utility lets you send strings or commands to the host.

With DTF, you can create a list of profiles and then run these multiple transfers in background mode.

If you have used *via* BOSaNOVA for data transfer, you will be familiar with many of the terms and procedures in DTF. For information about **new** terminology and procedures in DTF, see Tips for via BOSaNOVA Users, in online Help.

If you have used ATF for data transfer, you will be familiar with many of the terms and procedures in DTF. For information about **new** terminology and procedures in DTF, see *Tips for ATF Users*, in online Help.

For details about running data transfers, refer to the online Help.

Getting Started

> ### *Note!*
> For DTF via HLLAPI, the *via* BOSaNOVA host software must be installed on the host system. If it is not already installed, contact your BOS distributor.

1. Verify that you have the correct system requirements installed and configured on your PC and host systems.

2. In the BOS Emulation Configurator|Sessions tab, configure one or more display sessions. You **must** set the short HLLAPI name for each target session.

3. Activate the target session and logon.

4. Get to the screen with the command line and position your cursor in the command line.

> ### *Note!*
> **For AS/400 users!** If you do not have access to the command line, you must get to the file transfer screen of the target session.

5. In the BOS emulation, click [icon] or select File|Run File Transfer to open DTF Open Profile.

6. Continue with the instructions for the type of transfer you want to run:

    - Transferring Data from an AS/400 to a PC

    - Transferring Data from a PC to an AS/400

    - Transferring Data from a System/3x to a PC

    - Transferring Data from a PC to a System/3x

    See online Help for details.

The DTF Wizard

Use the DTF Wizard to create a new DTF profile. A DTF profile contains information about the data and how it is to be transferred. The parameters that appear in the wizard depend on the host type (AS/400 or System/36) and transfer direction (host-to-PC or PC-to-host) you selected in DTF Open Profile; they are also affected by the connection type used (APPC, TCP/IP, or HLLAPI). For details about each step in the DTF Wizard, click **Help** in the wizard screen.

The DTF Interface

The DTF interface displays the selected data transfer profile or profile list. It provides all the controls for creating DTF profiles and profile lists, viewing the host file, and running data transfers.

Menu Bar

Use the menus in the menu bar to perform all the functions available in DTF.

Toolbar

Use the buttons on the toolbar to perform many of the common functions found in the menus. ToolTips define the buttons.

Panes

The **top pane** of the DTF interface uses a Windows-style tree structure to display the parameters of the displayed profile or profile list. This structure will be familiar and intuitive to you if you are familiar with Windows Explorer in Windows 95 or Windows NT.

To use this structure:

- If an item has a **plus sign (+)** next to it, it contains nested items. Click the plus sign to expand the item (display the nested folders).

- If an item has a **minus sign (-)** next to it, it is already fully expanded and all the nested items are displayed. Click the minus sign to collapse that part of the tree.

- The names of the parameter sets appear in black; current status values appear in blue. Values always appear in <brackets>.

- When you select a parameter set in the top pane, buttons and controls for defining or changing that parameter set appear in the **bottom pane**.

Note!

To access online Help for the displayed dialog box, press F1, click ![?] , or select Help|Context-sensitive Help.

The parameters are divided into the following categories:

- **General**: Host type, transfer direction, transfer type, code page conversion information.

- **Host**: Information for finding and identifying the source or destination on the host and for defining how the transferred data will be written on the host.

- **PC**: Information for finding and identifying the source or destination on the PC and for defining how the transferred data will be written on the PC.

- **Advanced**: Advanced parameters affecting the data transfer.

The Scheduler

With the Scheduler, you can run tasks automatically, according to the time and other conditions. You can choose to run file transfers at set periods of time, or based on certain **string triggers** which occur on the host emulation screen. You can schedule to send strings or run script files via the Send utility. You can schedule other Windows applications to run in conjunction with file transfers.

Create a task using the Scheduler Wizard, which prompts you for all required information.

The Scheduler Interface

The Scheduler interface resembles the DTF interface, with a top pane containing a tree structure of all created tasks and their parameters.

The Menus

The Scheduler menu bar contains the following menus:

- **File**: create new, open, close, save, and hide Scheduler.

- **Task**: suspend and resume tasks. Also contains Options,Scheduler_Options>main for setting the frequency and intervals of the scheduled tasks.

- **Log**: display details and write log to a file.

- **Help**: displays this online Help topic.

The Toolbar

The following toolbar contains the basic tools for working with tasks.

Scheduler Wizard

With the Scheduler, you define data transfer tasks to be run automatically. You can choose to run file transfers at set periods of time, or based on certain **string triggers** which occur on the host emulation screen. You can schedule to send strings or run script files via the Send utility. You can schedule other Windows applications to run in conjunction with file transfers. Use the Scheduler Wizard to define the tasks.

For details about each step in the Scheduler Wizard, click **Help** in the specific wizard screen.

In the first screen, enter a **description**.

Note!
This is the name of the DTF task that will appear in the Scheduler list, so we recommend using a descriptive name that will help you remember the purpose of the task.

The Send Utility

The Send utility is a BOS application for sending a simple string from the PC to a specified position on a specified display session or for processing a script file via the specified display session.

A simple string is a string which will be sent to the specified display session either at the current cursor position or another specified position.

A script file is a series of statements (commands) to be processed. The statements must follow a specific syntax and must be terminated with a carriage return/line feed combination (also referred to as EOL, or End-of-Line).

For details about Send syntax and usage, refer to online Help.

APPENDIX F: HOST EXPLORER

Introduction

With BOS's Host Explorer, you can view your AS/400 as if it were another drive on your PC. The Host Explorer is designed to look and function similarly to Windows Explorer or Internet Explorer. It includes:

- access to all connected AS/400s, displaying libraries and files as if they were folders on another (PC) network drive

- drag-and-drop copying of folders or files

- send print jobs directly from your PC to AS/400 printer queues

- a full, customizable toolbar (with or without text labels)

Host Explorer Interface

The Host Explorer is designed to look and function similarly to Windows Explorer or Internet Explorer.

Menu Bar

The active window contains a menu bar with the following menus: File, Edit, View, and Help. Most of the menu functions are standard Windows-type functions. For information on functions specific to BOS's Host Explorer, refer to online Help.

Toolbar

The active window contains a toolbar with standard buttons (Back, Up, Cut, Copy, Paste, Refresh, Delete, Properties, Views) and a Stop button for stopping the current activity, while keeping Host Explorer active.

> ### Note!
> Some of the toolbar buttons (for example, Back,Views) are followed by an arrow. As in Microsoft Internet Explorer, you click the arrow to select from a list of options or click the button to toggle through the options.

You can hide the toolbar by deselecting Standard Buttons (View|Toolbar), or hide the button descriptions by deselecting Text Labels (View|Toolbar).

Tree View

When you first open Host Explorer, all drives appear in the tree view (left pane of the active window):

- AS/400 Folders appears at the end of your PC network list at the same level as My Computer. Expand folders by clicking them; the contents of the folders appear in the right pane.

- Printer appears at the end of each AS/400's list of folders. Click the Printer folder to view (in the right pane) all the printer devices on that AS/400. You can connect appropriate PC printer drivers to AS/400 printer devices and then send print jobs directly from your PC to AS/400 printer queues. See Printing from Your PC to an AS/400 Printer.

Status Bar

The bottom of the active window contains the Status Bar. This displays the current status of Host Explorer; for example, Reading (if trying to access the host), Ready, Pasting, etc.