BOSâNOVA Web
User Guide

License Information

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Introduction

This guide contains instructions for configuring and working with BOSâNOVA Web and is designed for the BOSâNOVA Web **User.**

For other information about BOSâNOVA Web, refer to the documents listed on the following page.

Table 1: BOSâNOVA Web Documentation Suite

Title	Format	Audience	Contents
Installation Guide	Printed manual	person installing BOSâNOVA Web	A Quick Install sheet. The instructions contained on this sheet are often enough to successfully install BOSâNOVA Web.
Online Help	HTML, opens in a browser	Administrator and users	Context specific help topics for every dialog box plus a general, fully indexed, HTML Help.
System Administrator's Guide	PDF, opens in Acrobat Reader	System Administrator	Instructions for installing, configuring, and uninstalling the BOSâNOVA Web system.
User's Guide	PDF, opens in Acrobat Reader	End users	Instructions for using display and printer sessions.
Release Notes	A .txt file available from the CD-ROM	System Administrator	Information about changes from previous versions, late-breaking news, and errata.

Components of the BOSâNOVA Web System

The BOSâNOVA Web System includes two parts:

Server
Can be set up either on a PC (running Windows NT, 2000, XP, or 2003) or on an iSeries host that has a Java Virtual Machine available.

Client
End-users can run BOSâNOVA Web display and printer sessions from a Web browser that supports the Java 2 platform, Enterprise Edition™. The user simply opens a Web browser and enters the IP address (or Domain Name) of the PC or iSeries acting as the BOSâNOVA Web server. A Java applet automatically opens and a BOSâNOVA Web frame is displayed in the browser window.

Features of the BOSâNOVA Web System

BOSâNOVA Web is an enterprise-wide, centrally managed, Java-based solution that provides iSeries-to-desktop TN5250e GUI emulation and printing facilities. Computer users connected to an iSeries via an Intranet, Extranet, or the Internet access this application through any Web browser that supports the Java 2 platform, Enterprise Edition™.

BOSâNOVA Web can be housed on an iSeries or a PC with Windows NT/2000/XP/2003, where it is maintained and managed. BOSâNOVA Web's security features, based on SSL and industry-standard encryption mechanisms, ensure a safe and secure connection to the iSeries via the Web.

Part of BOSâNOVA Web's power is the ability to control access via the use of different access points:

- Users running sessions over a normal (non-secure) connection use the http protocol and the non-secured http BOSâNOVA Web server port.
- Users running sessions over a secure (SSL) connection use the https protocol and one of the https BOSâNOVA Web server ports. This can be with or without client authentication.
- To access the User Configurator, use User.html
- For the Administrator Configurator, use Admin.html

The BOSâNOVA Web System also:

- Provides iSeries display and printing emulation.
- Provides SQL-based data transfer.
- Employs the SSL protocol, industry-standard encryption algorithms, and BOSâNOVA Web server login authentication to ensure secure and confidential communication between the server and clients.
- Includes MorphMaster, a tool which instantly converts legacy screens to full-color, mouse-sensitive screens complete with panels, popup windows, buttons, and more, all without altering the underlying legacy screens.
- Includes a full SCS Windows printing plug-in installed and initiated via the browser.
- Deploys automatically to all Internet or network-attached workstations using a Web browser.
- Includes a “thin” Web server that runs on the BOSâNOVA Web server, eliminating the need for an existing Web server.

Getting Started with BOSâNOVA Web

This section includes:

Table 2: System Requirements for End-Users Computer

	Processor	OS	Memory	Java VM	Connection
PC	Pentium 230 MHz or higher	Windows 95/98/ or Window NT/ 2000/XP	128 MB minimum	Sun Java Plug-in 1.4.1 and higher or Microsoft Java 1.1	TCP/IP
Browser Requirements	BOSâNOVA Web display and printer sessions run on the following browsers: • Microsoft Internet Explorer, version 5 and higher • Netscape, version 6 and higher • Mozilla 1.3 ***NOTE**: Ensure that the browser supports the Java 2 platform, Enterprise Edition™. Refer to the Computer Requirements listed above.*				

Installing BOSâNOVA Web

The BOSâNOVA Web Client includes two components.

- the Java applet
- the BOSâNOVA Web Spooler, that is, the printing client

These are downloaded from the server both the first time the user connects to the server and during a software upgrade.

Installing the Java Applet

To install the Java applet:

1. Ensure that the BOSâNOVA Web administrator has given you the information required in step #3.
2. On your computer, open a Web browser.
3. In the browser's address field, enter the data provided by your BOSâNOVA Web administrator:
   a. For non SSL connections: **http://**
   For SSL connections:**https://**
   b. The IP address or Domain Name (DN) for the iSeries or PC acting as the BOSâNOVA Web server.
   c. The http or https port number.

   For example:

   non SSL connections:
   http://194.90.180.80:8080
   IP address or DN : port

   SSL connections:
   https://194.90.189.80:4443
   IP address or DN : port
4. Press **Enter**. Your browser will connect to the BOSâNOVA Web server.

   The BOSâNOVA Web server home page is displayed.

NOTES: If the browser fails to connect to the iSeries or computer where the BOSâNOVA Web server is running, contact your BOSâNOVA Web administrator.

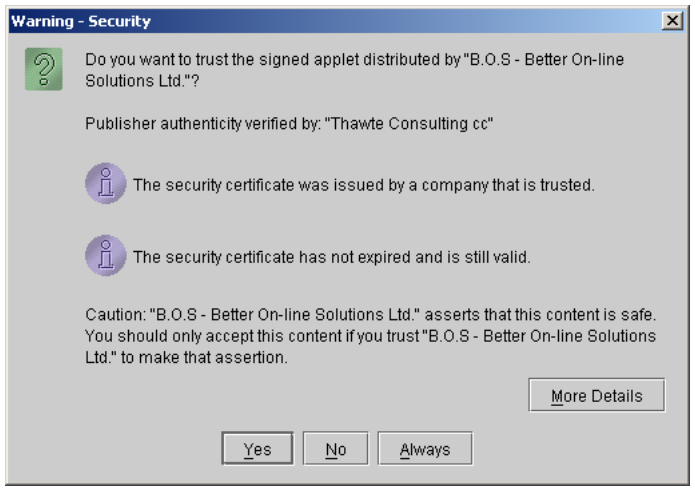
5. Click either:

   BOSâNOVA Web Client
   This options runs the most recent version of BOSâNOVA Web.

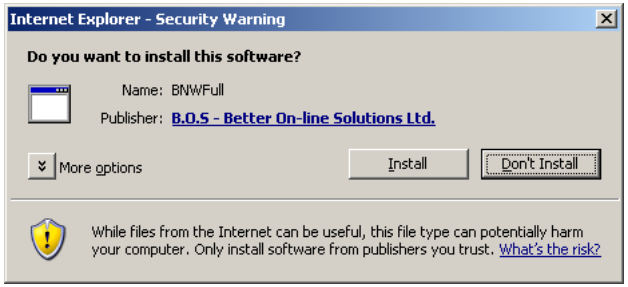
   BOSâNOVA Web Client version *x.5*
   This option runs the older, Java 1.1 client.

6. Continuation of the installation differs per web browser. The difference is explained below.

   - For Internet Explorer Users with Sun J2SE:
     A security warning, similar to the one below, is displayed. Click **Yes**.



   - For Internet Explorer Users with MS Java 1.1:
     A security warning, similar to the one below, is displayed. Click **Install**.



   - For Netscape Navigator Users with Sun J2SE:

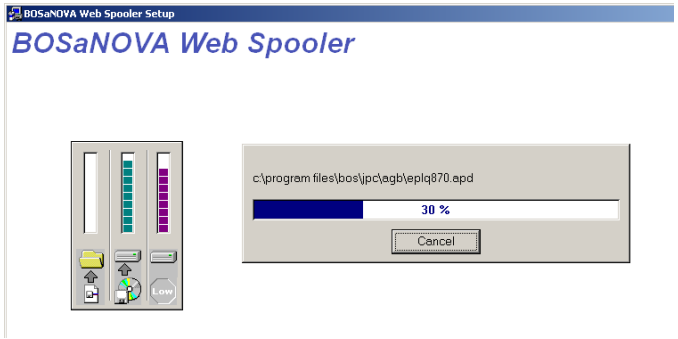
     i. The Java Plug-in screen opens. Select **Grant this session** or **Grant always**.

     ii. The Java Security screen opens. Select **Remember this decision** and click **Grant**.

NOTE: If the user runs the MS Java applet and is allowed to run display sessions, then the BOSâNOVA Fonts are downloaded and installed into his Windows font directory on the first login.

Installing the BOSâNOVA Web Spooler

If the user is allowed to run printer sessions—both after the initial login and when updates are available—BOSâNOVA Web Spooler is installed automatically. The message “BOSâNOVA Web Spooler installation, please wait …” is displayed. Then, this standard progress screen is displayed:



Upon completion, the Sessions table is displayed.

Logging In

To log-in to BOSâNOVA Web:

1. From any computer, open a Web browser.
2. In the browser's address field, enter the BOSâNOVA Web Server address. (Your system administrator must give you the address.)
3. Press **Enter**. The server home page is displayed.

***NOTE**: BOSâNOVA Web can be configured to bypass the login screen. In that case, the first screen is the sessions table.*

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4. Click BOSâNOVA Web **Client**. The Log-in screen is displayed.

5. Enter your Username and Password.
6. Clear or select **Run Default Sessions**. When selected, BOSâNOVA Web runs the iSeries sessions designated as default sessions.
7. Click **Log In Now**.

***NOTE**: If a user is allowed to run printer sessions—after the initial login and when updates are available at the server—the BOSâNOVA Web Spooler installation program runs. See "Installing the BOSâNOVA Web Spooler" on page 9.*

The Sessions Table is displayed. Available sessions are listed on the Sessions Table.

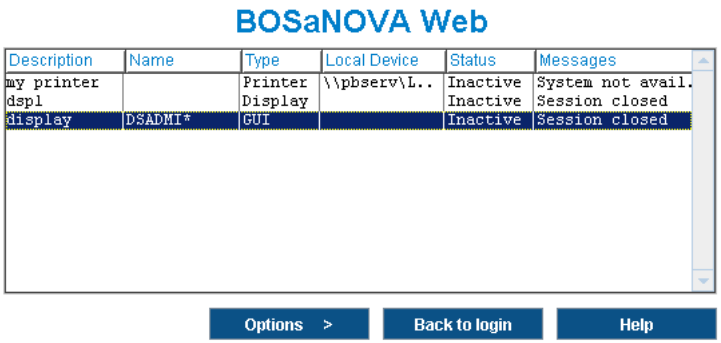


Figure 1: The Sessions Table

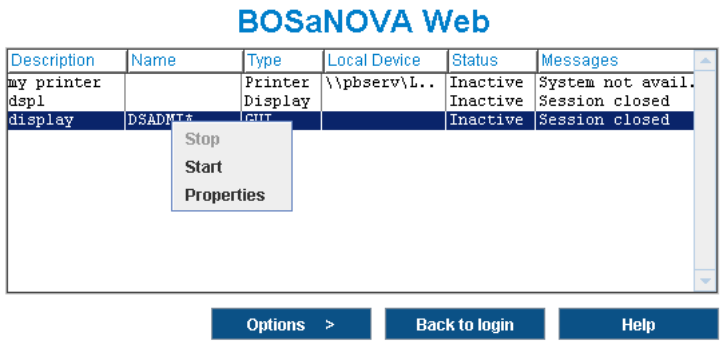
Running Sessions

Your BOSâNOVA Web administrator can configure and assign to you several sessions of each type. Each session can have different permissions and each can connect you to a different iSeries host computer.

Running a Single Session

To run a single session:

1. Log-in to BOSâNOVA Web. (See “Logging In” on page 10.)
2. Select a session.
3. Right-click the session. A popup menu is displayed.

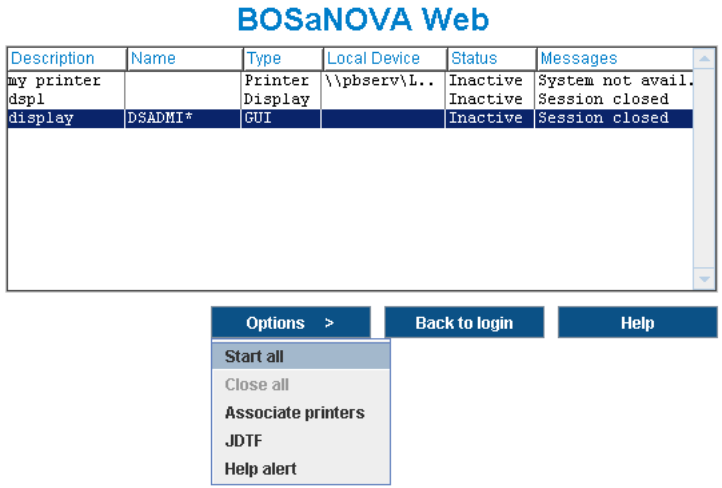


4. Click **Start**.

Running All Sessions

To run all sessions:

1. Log-in to BOSâNOVA Web. (See “Logging In” on page 10.)
2. Click **Options**. The Options menu is displayed.



3. Click **Start All**.

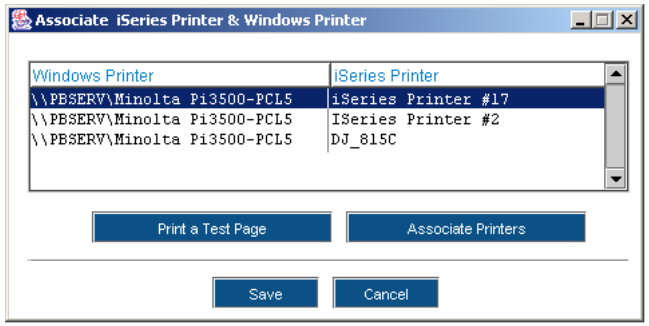
Using the Sessions Table

Use the Sessions Table to complete the following tasks.

Associating Printers

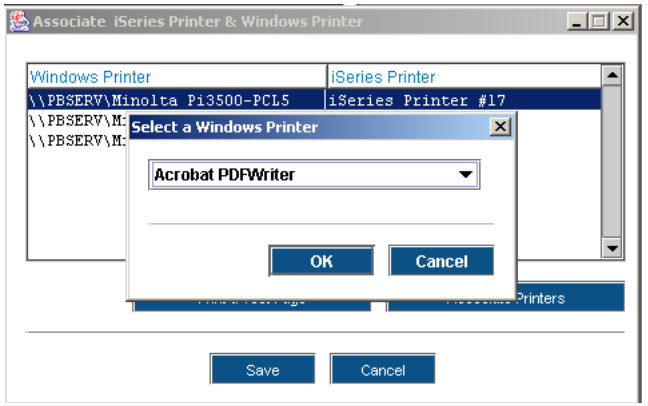
To associate a Windows printer with a session:

1. Log-in to BOSâNOVA Web. (See “Logging In” on page 10.)
2. Click **Options**. The Options menu is displayed.
3. Click **Associate printers**. A message is displayed indicating that all active sessions will be closed.
4. Click **Yes**. The Associate Printers dialog box is displayed.

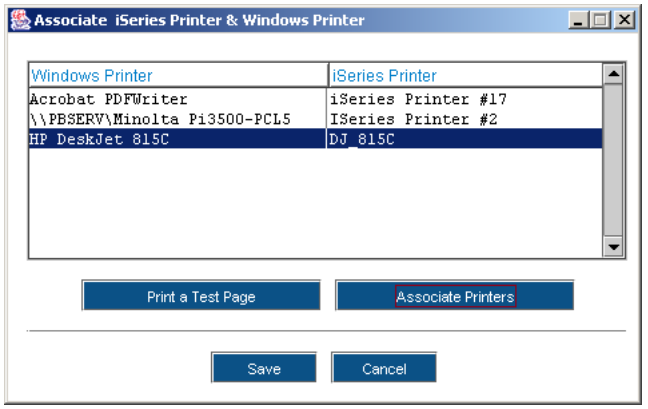


- If the Administrator associated the session profile with the default Windows printer, its name is listed.
- If not, the words “No Printer” are listed.

5. Select a row.
6. Click **Associate Printers**. The Select a Windows Printer dialog box is displayed.



7. Select a printer and click **OK**. The new association is displayed in the table.

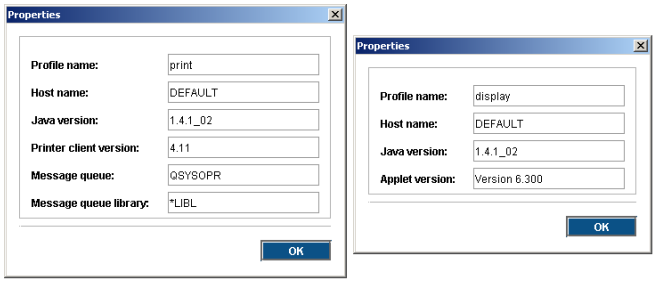


8. Click **Save**. The Sessions Table is restored and all printer sessions are reactivated.

Viewing Session Properties

To view session properties:

1. Log-in to BOSâNOVA Web. (See “Logging In” on page 10.)
2. Select a session.
3. Right-click the session. A popup menu is displayed.
4. Click **Properties**. Either the Print Session or the Display Session Properties window is displayed.



Requesting Help

You can send a request for help to the System Administrator. The Help Request is displayed in the Administrator’s Configurator.

To send a request for help:

1. Log-in to BOSâNOVA Web. (See “Logging In” on page 10.)
2. Click **Options**. The Options menu is displayed.
3. Click **Help alert**. A request is sent which includes the originating PC’s IP address.

Installing Client x.5

NOTE: This procedure can be performed only for BOSâNOVA Web version 4.x with Java 1.1. Due to limitations inherent in Java 2, BOSâNOVA Web x.6, which runs on Java 2, cannot be installed from the CD-ROM.

Under most circumstances, installation of BOSâNOVA Web occurs when you log in. This process is described in the section, “Logging In” on page 10.

However, if you have a slow internet connection, you can install these BOSâNOVA Web Clients from the BOS CD-ROM:

- BOSâNOVA Web Client for display emulation sessions without security.
- BOSâNOVA Web Client SSL for display emulation sessions with security.

Installing Either Web Client

To install BOSâNOVA Web Client and BOSâNOVA Web Client SSL:

1. Insert your BOS CD-ROM into the computers CD-ROM drive.
2. From the Welcome screen, select **Install Your Product**.
3. Follow the prompts and enter your BOSâNOVA Web CD-Key.
4. From the Welcome to the BOS family screen, select BOSâNOVA Web **Client** and follow the prompts. The Welcome screen may appear momentarily in the background.
5. From the Setup screen, select either BOSâNOVA Web Client or BOSâNOVA Web Client SSL. Setup opens your default browser and installs the BOSâNOVA Web Client in the browser. Upon completion, the BOSâNOVA Web Log-in screen is displayed. A message advises you to connect to the BOSâNOVA Web server.
6. Enter the IP address of the BOSâNOVA Web server. The BOSâNOVA Web Log-in screen is displayed, this time without the message.
7. Log-in.

Configuring BOSâNOVA Web

This section includes:

The User Configurator

To log-in to the BOSâNOVA Web User Configurator:

1. From any computer, open a Web browser.
2. Enter the BOSâNOVA Web home page address.
3. Press **Enter**. The BOSâNOVA Web server home page is displayed.

4. Click **User Configurator**.
5. Enter your User name and Password and press Enter. The User Configurator screen opens.

The User Configurator contains the following options:

Change Password
Select Change Password to change the password you use to log in to BOSâNOVA Web.

Default Sessions
Select this item to designate default sessions, that is, sessions that will open when Run Default Sessions is selected (see p. 10).

Sign-on Bypass
BOSâNOVA Web supports a Sign-on Bypass connection which enables BOSâNOVA Web to skip user identification when connecting to the iSeries (see p. 17).

SSL
BOSâNOVA Web supports the SSL (Secure Sockets Layer) protocol, which creates a bidirectional, secure connection between the server and the client. If your BOSâNOVA Web administrator set up a secure connection for you, you will need to download the certificate.

Run Sessions

Select this item to display the Log-in screen. After you log in, all sessions that have been defined for you by your BOSâNOVA Web administrator appear in a list (see *Installing BOSâNOVA Web* on page 7).

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*NOTE: If **Change Password** and/or **Default Sessions** are not displayed, your BOSâNOVA Web Administrator did not give you access to these options.*

Modifying Your Password

Use the Change Password screen to change your BOSâNOVA Web User password (not the host password). However, you cannot change your password if your user configuration:

- Was defined with “Check password via host” or
- Does not include the “Allow user to configure password” permission.

To change your password:

1. From the User Configurator, select **Change Password**. The Change Password screen opens.
2. Enter a password in the New password field.
3. Re-enter the password in the Verification field.
4. Click **OK**.

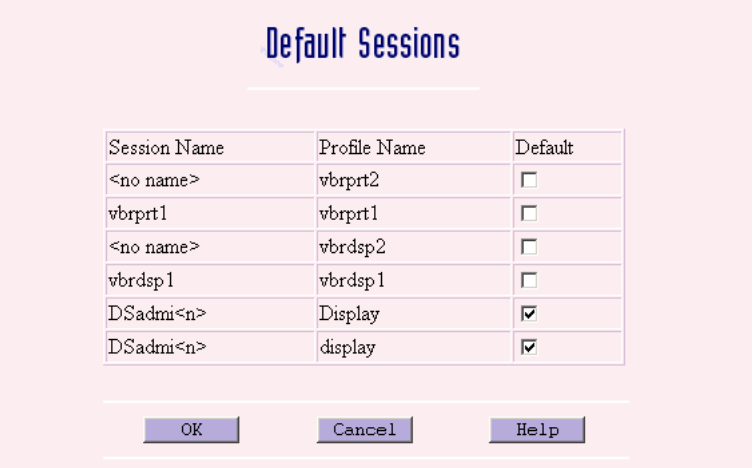
Defining Default Sessions

Use the Default Sessions screen to designate default sessions, that is, sessions that will open when Run Default Sessions is selected (see p. 10).

All sessions appearing in this list were defined for you by your BOSâNOVA Web administrator.

To define default sessions:

1. From the User Configurator main screen, select **Default Sessions**. The Default Sessions screen opens.



2. Select the checkbox next to one or more sessions.
3. Click **OK**.

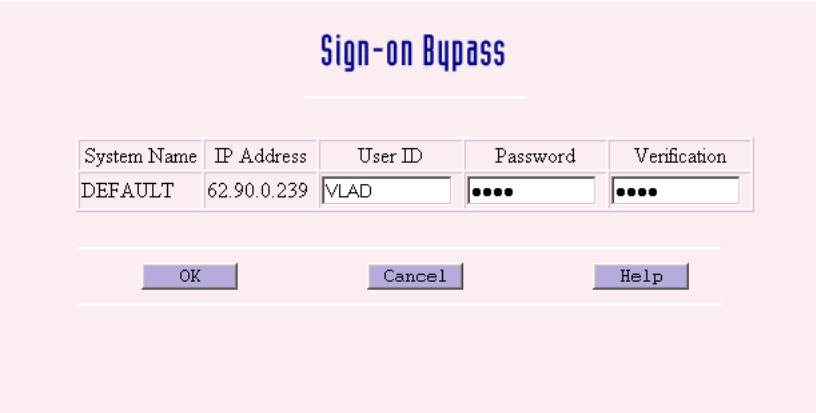
Sign-on Bypass

Sign-on Bypass enables you to skip user identification when connecting to the iSeries. Sign-on Bypass applies to display and JDTF sessions.

*NOTE: When using **Check password via host**, Sign-on Bypass is not needed for the host the password is checked with (see Adding Users in the Administrator's Guide).*

To set up user Sign-on Bypass:

1. From the User Configurator main screen, select **Sign-on Bypass**. The Sign-on Bypass screen is displayed.



2. Enter your User ID and Password.
3. Confirm your password by typing it again in the Verification field and click **OK**.

Working with SSL Certificates

The following table lists the browser requirements for use of certificates. Requirements differ depending upon the connection type defined for the user by the BOSâNOVA Web System Administrator.

Table 3: Requirements for Certificates

Connection Type	Default Port Number	Server Root Cert.	User Root Cert.	User Cert.
Non secure	8080	No	No	No
SSL	4443	Yes*	No	No
SSL with user certificate authentication	4444	Yes*	Yes	Yes

* Only if a self-signed SSL certificate is used for issuing the server certificate. If the server certificate is issued by a well-known Certificate Authority (e.g., Verisign or Thawte), then you don't need to install the root certificate in the browser. The standard browser installation includes root certificates of the most popular Certificate Authorities.

User SSL Configuration Wizard

The wizard checks the SSL configuration on the BOSâNOVA Web server and identifies the steps that must be performed in order to configure the browser.

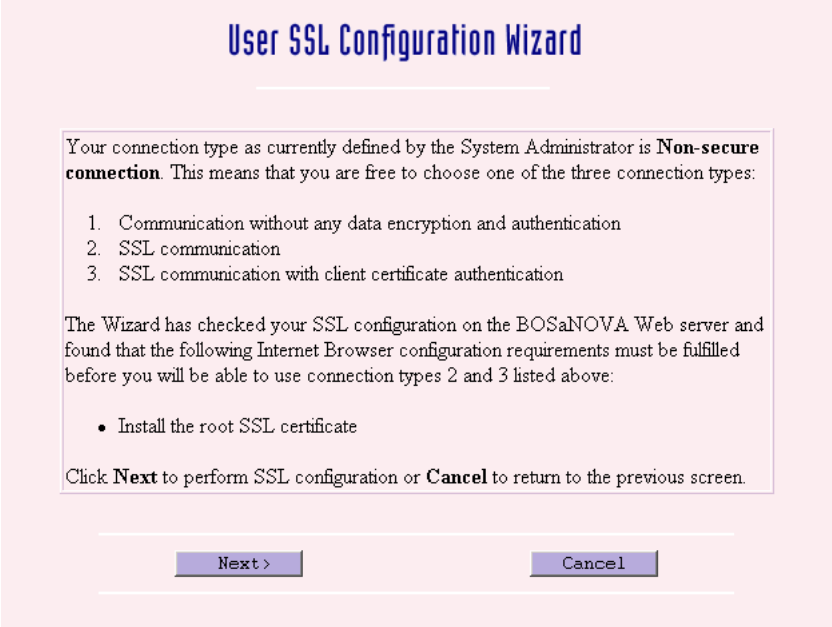
There are two steps that can be performed:

- Installing a root server SSL certificate:
  This step will be performed only if the server SSL certificate is signed by another self-signed certificate that was generated by the BOSâNOVA Web server.
- Generating and installing a client certificate:
  This step will be performed only if the following two conditions exist:
  - The connection type defined by the BOSâNOVA Web administrator is **SSL with authentication**.
  - The **Wait for certificate** option is selected in the User Properties screen.

To launch the SSL configuration wizard:

1. Using a browser, connect to the BOSâNOVA Web User Configurator.
2. Log-in with your user name and password.
3. From the User Configurator main screen, select **SSL**. The User SSL Configuration Wizard is launched.

   If the server SSL certificate is signed by another self-signed certificate that was generated by the BOSâNOVA Web server, and the user's connection is **SSL with authentication** with the **Wait for certificate** option, then the screen below is displayed.



4. Click **Next**. The Install Root Certificate screen opens.

   The instructions displayed on the Install Root Certificate screen differ depending upon the type of Internet browser being used.
5. Click **Install Certificate** and follow the Internet browser's prompts.
6. When the server root certificate has been installed, click **Next** to continue.
7. The Client Certificate Request screen opens. This screen is used for generating and installing the user

certificate. You will see certificate parameters that were taken from the user root certificate.

a. Enter the name of your organization unit.

b. Select the public key length (for Netscape browser only).

c. Click **Next**.

The Internet browser will generate the public/private key pair, generate a Certificate Signing Request (CSR), and send it to the BOSâNOVA Web Certificate Manager. If you are using a Netscape browser then you will be prompted to define a password for the **Communicator Certificate DB**. Don't forget this password because you will be prompted for it when you connect to the BOSâNOVA Web server.

The Certificate Manager will generate the user certificate, sign it by the user root certificate, create the certificate list that consists of the user root certificate and the newly created user certificate, and send this list back to the browser. The Install Client Certificate screen opens.

8. Click **Install Certificate** to install the received certificate list in the browser certificate database.

SSL Certificates and BOSâNOVA Web 6.x with Java 2

To use Client certificates with BOSâNOVA Web version 6.x with Java 2, the following is required:

- the BOSâNOVA Web client must run over Java Plug-in 1.4.2—not a lower version
- the BOSâNOVA Web client must be running over a Microsoft Windows operating system
- you must be using Internet Explorer.

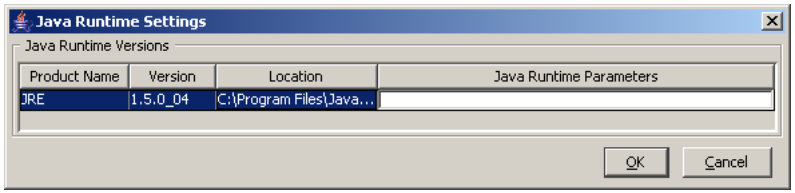
To use client certificates over Java Plug-in 1.4.2 or higher:

1. Complete the steps listed in the previous section, "User SSL Configuration Wizard" on page 18.
2. From the Internet Explorer menu, select **Tools > Internet Options > Content > Certificates**.
3. Select the Personal tab.
4. From the "Personal certificates" list, select the certificate just installed.
5. Click **Export** and run the Certificate Export Wizard.
6. Select **Yes, export the private key**.
7. Ensure that the "Delete private key" option is cleared. Continue with the Wizard.
8. When the export is completed:
   a. Open the **Control Panel**.
   b. Select **Java Plug-in**.

c. There are two options:

- For Java 1.4.x, select the **Advanced** tab.
- For Java 1.5.x, select the **Java** tab and click **View**.

The Java Runtime Settings screen is displayed.



9. Add the following three lines in the “Java Runtime parameters” field. Make sure to leave a space at the end of each line:

```
Djavax.net.ssl.keyStore=g:\temp\secur3.pfx
Djavax.net.ssl.keyStorePassword=secur3
Djavax.net.ssl.keyStoreType=PKCS12
```

The underlined text are values which were defined during the Certificate Export Wizard, that is, the file path of the exported certificate and the certificate password. They must be set according to the values you defined during the Certificate Export Wizard.

Exporting User Certificates

A BOSâNOVA Web user can generate a certificate only once. If you are using different Internet browsers or different computers, you must export the installed certificate into a file and then import it into another browser.

To export a certificate from Microsoft Internet Explorer (MS IE):

1. Select **View > Internet Options > Content > Personal** in MS IE v4.*x* or **Tools > Internet Options > Content > Personal** in MS IE v.5.*x*.
2. Select your certificate from the list.
3. Click **Export**.
   - If you are using MS IE v.4.*x*, you will be prompted to define a password and a filename.
   - If you are using MS IE v.5.*x*, then the Certificate manager Export Wizard will be launched. You must response to the wizard steps in the following way:

Table 4:

Step	Response
Export private key with certificate	Select the **Yes, export the private key** option.
Certificate Export File	Select the **Include all certificates in the certification path** option.

- To export a certificate from a Netscape browser:
  i. Select **Communicator > Tools > Security Info > Certificates > Yours**.
  ii. Select the certificate and click **Export**.
  iii. Follow the prompts and enter:
    - A password for the Communicator Certificate DB.
    - A password to protect the data being exported.
    - The filename.

Importing User Certificates

To import a certificate into Microsoft Internet Explorer (MS IE):

1. Select:
   - **View > Internet Options > Content > Personal** in MS IE v4.*x*
   - **Tools > Internet Options > Content > Personal** in MS IE v.5.*x*.
2. Click **Import**. You will be prompted to define a password and a filename.

***NOTE**: Certificates with 1024-bit keys generated in a Netscape browser can't be imported into MS IE European edition because this version has a limitation for the public key length due to U.S. government export restrictions.*

To import a certificate into a Netscape browser:

1. Select **Communicator > Tools > Security Info > Certificates > Yours**.
2. Click **Import a Certificate**.
3. Follow the prompts and enter:
   a. A password for the Communicator Certificate DB.
   b. A password to protect the data being exported.
   c. The filename.

If you are using a self-signed server certificate on the BOSâNOVA Web server, you must install the server root certificate in the browser.

To install, connect to BOSâNOVA Web User Configurator and select **SSL**. The User SSL Configuration Wizard will guide you in installing this certificate.

The Display Emulation

This section includes:

Working with the Display Emulation

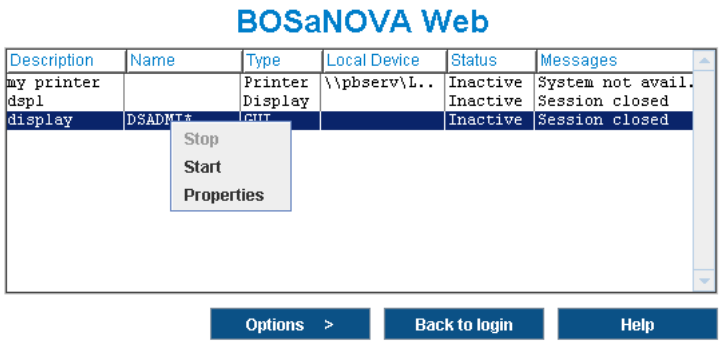
Emulation includes the following features:

- Includes MorphMaster, a tool which instantly converts legacy screens to full-color, mouse-sensitive, screens complete with panels, popup windows, buttons, and more, all without altering the underlying legacy screens.
- Supports 3477FC devices (132-column display with color).
- Supports PC styles for keyboards, allowing you to work with either a 101-key or 102-key keyboard.
- Includes comprehensive keyboard mapping and customization, using the Shift, Alt and Ctrl function keys, etc.
- Supports full-screen mode.
- Supports user-definable macros, including the option to set automatic sign-on and sign-off macros.
- Includes enhanced right-click popup menus.
- Includes enhanced copy and paste options.

Starting the Emulation

To start the display emulation:

1. Log-in to BOSâNOVA Web. (See “Logging In” on page 10.)
2. Select a session.
3. Right-click the session. A popup menu is displayed.



4. Click **Start**.

***NOTE**: If you set the Sign-on Bypass option, or have Check password via host assigned in your user configuration, you do not need to sign in to each iSeries session.*

The Emulation Menus

Following are explanations of the items available from each of the emulation menus.

NOTE: The Administrator can customize your menu content. Therefore, some of the menus might not be available.

Session Menu

The Session menu contains the following items:

New Session
Opens a new display session.

Save Workspace
Saves the workspace as is, including any customization changes you made (see p. 27).

Print Screen
Prints the current screen directly to your default printer (see p. 27).

Exit
Stops and exits the emulation (see p. 27).

Edit Menu

The Edit menu contains the following items:

Copy
Copies selected text according to the selected copy mode. See “Copying & Pasting” on page 28.

NOTE: The Copy and Paste commands are operational only when using the Legacy (green text) screen.

Paste
Pastes text according to the selected paste mode. See “Copying & Pasting” on page 28.

Copy Mode
Point to this item to display the two copy mode options, Copy Continuous and Copy by Line.

Paste Mode
Point to this item to display the three paste mode options, Paste Continuous, Paste Tab, and Paste Field Exit.

View Menu

The View menu contains the following options:

Picture
Searches the server’s images\viewer directory to locate an image file whose name matches a word selected on the display session screen (see p. 29).

Ruler
Hides or toggles through the three ruler formats (see. p. 38)

Toolbar
Hides or shows the toolbar (see p. 32).

Full Screen
Sets full-screen mode (that is, without the emulation menus, toolbar, and task bar) (see p. 30).

MorphMaster
Sets MorphMaster mode, which converts your original host screen into a full-color, mouse sensitive screen with buttons, panels, and more (p. 45).

Test Mode
Shows the display attribute's location. The value is displayed in the Java Console as the pointer is over the display attribute. Test Mode can be used only from a Legacy (green) screen.

Macro Menu

The Macro menu contains the following items:

Macro Organizer
Opens the Macro Organizer (see p. 39).

Record Macro
Starts the process of recording a new macro (see p. 40).

Pause
Temporarily stops the process of recording a new macro (see p. 40).

Stop Macro
Stops the process of recording a new macro (seep. 40).

Play Macro
Plays a selected macro (see p. 40).

Option Menu

The Option menu contains the following items:

Display
Opens a screen where you can change the display attributes of a display session. See "Display Color Attributes" on page 32.

Keyboard Mapping
Opens a dialog box where you can map/customize your keyboard. See "Creating or Editing a Keyboard Mapping" on page 37.

Toolbar Customization
Opens a dialog box where you can customize the emulation toolbar. See "Customizing the Toolbar" on page 30.

Exclude
Opens a dialog box for configuring MorphMaster to ignore specific elements from the current screen; MorphMaster will not convert these elements. See "Excluding Elements from Conversion" on page 46.

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*NOTE: Exclusions defined in the Exclude dialog box are different than exclusions defined in a Rule base (see p. 55). Exclusions defined in the Exclude dialog box prevent MorphMaster from converting elements in the open screen **only**.*

MorphMaster Customization
Opens the MorphMaster Customization dialog box. Use the MorphMaster Customization dialog box to build a Rule base that directs MorphMaster's identification of screen

elements and to customize Styles that define the appearance of the MorphMaster screen. See “Customizing MorphMaster” on page 47.

Help Menu

The Help menu contains the following items:

Contents
Opens the emulation Help files.

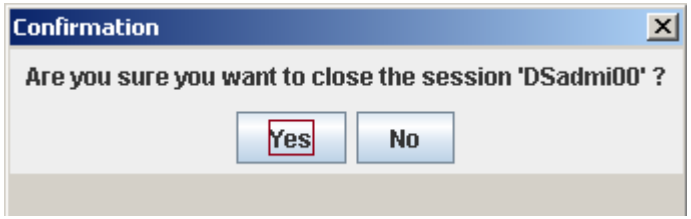
About
Displays product information including version number and copyright.

Stopping the Emulation

To exit the emulation, select one of the following:

- From the Session menu, click **Exit**.
- From the Sessions table, select a session and right-click. From the popup menu, click **Stop**.

  A confirmation message, similar to the following, is displayed.



Saving the Emulation Workspace

If you want to save your workspace as is, including any customization changes you made, select one of the following **before** stopping the emulation:

- From the Session menu, select **Save Workspace**.
- Press **CTRL + S** on the keyboard.

Printing a Screen

You can print the current screen directly to your default printer.

To print a screen, select one of the following:

- From the emulation Sessions menu, select **Print Screen**.
- Press **CTRL + P** on the keyboard.
- Right-click, point to **Session**, and click **Print screen**.

Copying & Pasting

Both copying and pasting are performed according to the preselected mode.

NOTE: The Copy and Paste commands are operational only when using the legacy (green text) screen.

To copy:

1. From the Edit menu, point to **Copy mode**.
2. Select the copy mode:

   Copy Continuous
   If this mode is selected, all copy actions will copy the text of the screen or the selected area as a single block, even if the original appears in different columns or rows. The BOSâNOVA Web emulation interprets this single block as a single line of data. Regardless of the format of the original, when pasted into an emulation, text editor, or other application, the data appears as a single line.

   Copy by Line
   If this mode is selected, all copy actions will copy each line within the screen or the selected area and add a CR (carriage return) character at the end of each line of the original. When pasted into an emulation, the CR has an impact only if you Paste Tab or Paste Field Exit. When pasted into a text editor or other application, each CR causes a new line.

3. Using the pointer, select the text to be copied.
4. To copy the selected text, you can:
   - Click the copy icon in the toolbar.
   - Select **Copy** from the Edit menu.
   - Right-click and select **Copy**.

NOTE: If you are continuing to use the previously selected copy or paste mode, skip steps 1 and 2. The current copy mode appears in the right-click menu within parentheses.

To paste:

1. From the Edit menu, point to **Paste mode**.
2. Select a paste mode.

   Paste Continuous
   If this mode is selected, pasting takes all text on the clipboard and enters it at the cursor location as a single, continuous line. The cursor remains in the same input field, at the end of the paste.

   Paste Tab
   If this mode is selected, pasting takes each line of text on the clipboard, enters it at the cursor location, and adds a tab. The tab causes the next line to be pasted into the following input field. Following the paste, the cursor is already positioned in the next input field. This mode is particularly useful when combined with Copy by Line.

Paste Field Exit
If this mode is selected, pasting takes each line of text on the clipboard, enters it at the cursor location, deletes any remaining text that follows the new line of text, and adds a tab. The tab causes the next line to be pasted into the following input field and the remaining text in that field is also deleted. Following the paste, the cursor is already positioned in the next input field. This mode is particularly useful when combined with Copy by Line and pasting into fields with text that must otherwise be manually deleted.

3. Insert the cursor where the paste is to begin.
4. To paste the selected text, you can:
   - Click the paste icon in the toolbar.
   - Select **Paste** from the Edit menu.
   - Right-click and select **Paste**.

***NOTE**: If the content that is pasted from the clipboard fills all the screen's input fields, pasting begins again from the screen's first input field and overwrites the current content of the fields.*

Viewing Images

Use the **Picture** command on the **View** menu to enable BOSâNOVA Web to search the server images directory to locate an image file whose name matches a word you have selected.

***NOTE**: The selected word must be delimited by spaces. BOSâNOVA Web appends the image file extension (for example, .jpg) to the word and searches for this file on the server.*

There are two ways to use the **Picture** command:

1. From the emulation View menu, select **Picture**:
2. On the display session screen, locate the word that will serve as the name of the image file BOSâNOVA Web will search for.
3. Position the cursor on one letter of the word.
4. Select **View > Picture**.

If an image file with the specified name exists, the file opens in a new, top level browser window.

Right-clicking a word on the display screen:

1. On the display session screen, right-click the word that is the name of the image file BOSâNOVA Web will search for.
2. Select **Picture** on the menu that appears.

If an image file with the specified name exists, the file opens immediately in a new, top level browser window.

Viewing Full-screen Mode

To work in full-screen mode—that is, without the emulation menus, toolbar, and task bar— select one of the following:

- From the emulation View menu, select **Full Screen**.
- Right-click and select **Full Screen**.

***NOTE**: To return to the emulation view, right-click and clear Full Screen.*

Customizing the Display Emulation

This section documents the various ways you can customize the appearance of your display sessions.

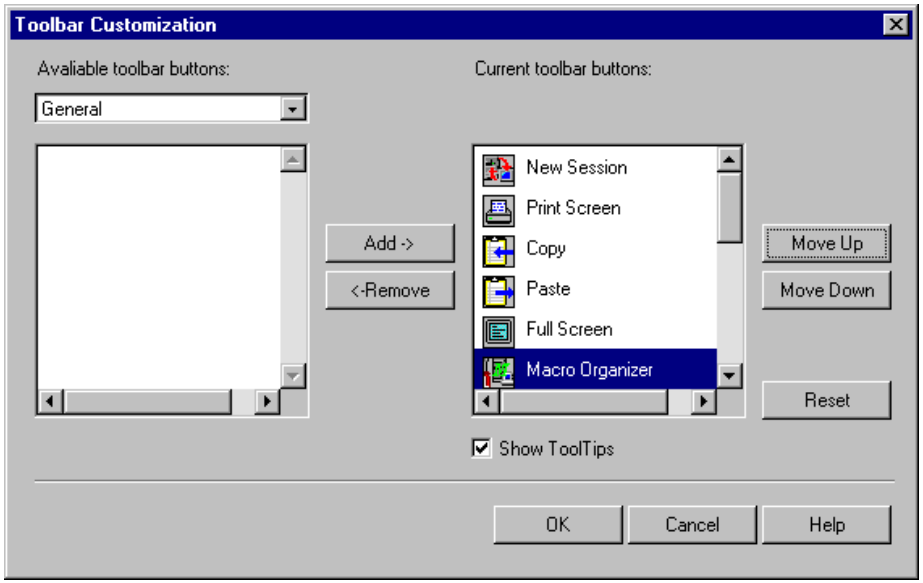
The Emulation Toolbar

The emulation toolbar contains buttons for activating common tasks such as Copy, Paste, Save, New Session, etc. You can add or remove buttons, or change button order within the toolbar, by using the Toolbar Customization dialog box.

Customizing the Toolbar

To customize the emulation toolbar, select one of the following:

1. To open the Toolbar Customization dialog box:
   - From the emulation Options menu, select **Toolbar Customization**.
   - Press **CTRL + L** on the keyboard.
   - Right-click, point to **Options**, and select **Toolbar Customization**.



2. From the Available toolbar buttons dropdown list, select a “family” of toolbar buttons to customize.

   The available button “families” are:

   General
   Represents the BOS display emulation add-on functions.

   Host Operations
   Represents some of the iSeries actions and commands.

   Function Keys
   Represents the iSeries function keys, for example, F3.

   Personal Macros
   Represents the macros built by you for your personal needs.

   In addition, the names of the host command groups assigned to the user appear in this list.

Adding a Button to the Emulation Toolbar

1. Select a “family” of buttons from the Available toolbar buttons dropdown list.
2. Select the button to add to the emulation toolbar.
3. Click **Add**. You have now added the selected button to the emulation toolbar.

Changing the Location of a Button

1. Select the button from the Current toolbar buttons list.
2. Click **Move Up** or **Move Down** to change the order of the button in the toolbar.

Removing a Button

1. Select the button to remove.
2. Click **Remove**. The button no longer appears in the emulation toolbar.

Miscellaneous

- **Disabling the ToolTips**: Clear the **Show ToolTips** option.

- **To return to the previous saved values**: Click **Reset**.

Click **OK** to save any changes and to close the Toolbar Customization dialog box.

Showing or Hiding the Toolbar

To hide the toolbar, select one of the following:

- From the emulation View menu, deselect **Toolbar**.
- Right-click and deselect **Toolbar**.

To show the toolbar, select one of the following:

- From the emulation View menu, select **Toolbar**.
- Right-click and select **Toolbar**.

Display Attributes

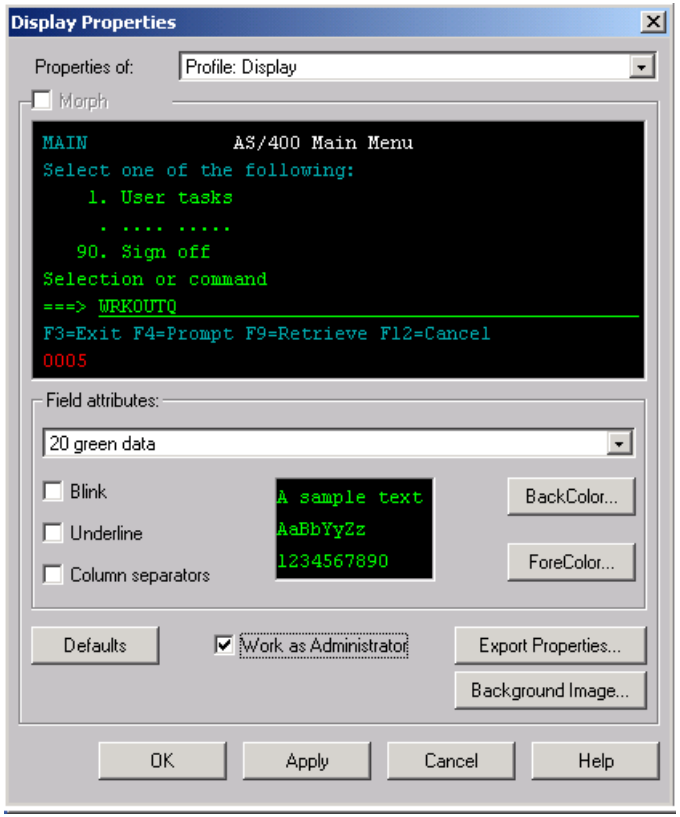
With this option you can determine how your iSeries display will look. You can change the display attributes of any display session assigned to you. Note that this option applies to the green screen sessions only.

Display Color Attributes

To change the display attributes of a display session, select one of the following:

- From the emulation Options menu, select **Display**.
- Press **CTRL + D** on the keyboard.
- Right-click, point to **Options**, and select **Display**.

The Display Properties dialog box opens.



1. From the **Properties of** dropdown list, select the display session whose attributes you are changing.
2. For each field attribute (selected from the **Field attributes** dropdown list), preview your selection and

select the best option for you. Set the following options as needed:

a. Click **BackColor** to change the attribute's background color. A color pallet opens. When you select the background color, the color pallet is automatically closed.

b. Click **ForeColor** to change the attribute's foreground color. A color pallet opens. When you select the foreground color, the color pallet is automatically closed.

c. Select **Blink** to set a blinking attribute.

d. Select **Underline** to underline the selected attributes.

e. Select **Column separators** to use a separator with this attribute.

3. Click **Apply** to save any changes and keep the dialog box open. Click **OK** to save the changes and close the Display Properties dialog box.

---

*NOTE: Click **Defaults** to restore the defaults of the display attributes.*

You can also change the display color attributes by using the right-click menu:

1. Right-click and select **Color Attributes**.
2. You can:

a. Select **BackColor** to change the attribute's background color. A color pallet opens. When you select the background color, the color pallet is automatically closed.

b. Select **ForeColor** to change the attribute's foreground color. A color pallet opens. When you select the foreground color, the color pallet is automatically closed.

c. Select **Blink** to set a blinking attribute.

d. Select **Underline** to underline the selected attributes.

e. Select **Column separators** to use a separator with this attribute.

Exporting Display Properties

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*NOTE: The **Work as Administrator** checkbox is available only to users with Administrator privileges. The **Export Properties** and **Background Image** tools are only available to users with Administrator privileges*

Select **Work as Administrator** to save the display properties as a global configuration to be applied to all users.

When this option is not selected, the saved display properties are only available to the user that saved them. However, when selected, the global display properties are applied to every user ***except for*** users that have defined private display properties for that display session.

When a display session is started, BOSâNOVA Web tries to apply display properties in the following order:

a. The user's private display property definitions. If any exist, these will be applied.

b. If there are no private display property definitions, the global display property attributes defined by the Administrator. If any exist, these will be applied.

c. If neither private nor global definitions exist, the default factory settings are applied.

The **Export Display Properties** dialog box is an Administrator tool. Using Export Display Properties, an Administrator can copy one global display property definition into another global definition.

***NOTE**: A user with Administrator privileges that is not working as an Administrator, cannot save global display property settings. If the settings are saved while **Work as Administrator** is clear, the profile will not appear in the Export Display Properties dialog box's **Select profile to export** pane.*

To export any display properties:

1. Select the **Work as Administrator** option.
2. Click the **Export Properties** button. The Export Display Properties dialog box opens.
3. From the left pane, select a profile to export.
4. From the right pane, select the target profile that will be overwritten.
5. Click **Export** to overwrite the target profile.

Inserting or Changing the Background Image

*NOTE: The **Work as Administrator** checkbox is available only to users with Administrator privileges. The **Export Properties** and **Background Image** tools are only available to users with Administrator privileges.*

Select **Work as Administrator** to save the display properties as a global configuration to be applied to all users. When this option is not selected, the saved display properties are only available to the user that saved them. However, when selected, the global display properties are applied to every user ***except for*** users that have defined private display properties for that display session.

When a display session is started, BOSâNOVA Web tries to apply display properties in the following order:

a. The user's private display property definitions. If any exist, these will be applied.

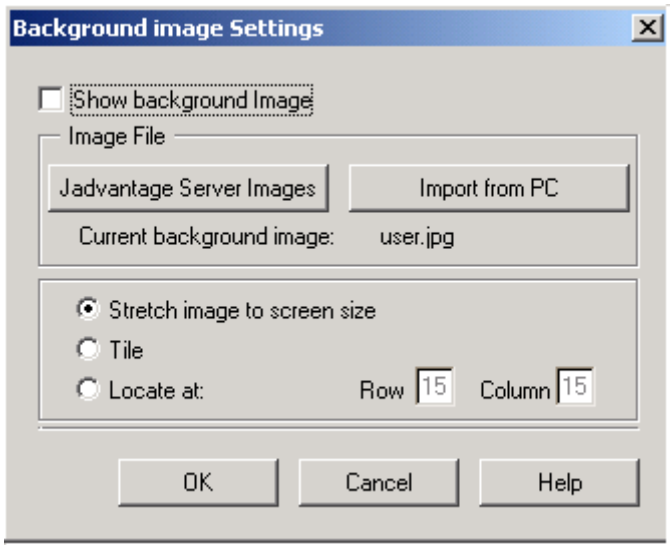
b. If there are no private display property definitions, the global display property attributes defined by the Administrator. If any exist, these will be applied.

c. If neither private nor global definitions exist, the default factory settings are applied.

NOTE: A user with Administrator privileges that is not working as an Administrator, cannot save global display property settings.

To insert or change a background image:

1. On the Display Properties dialog box, select the **Work as Administrator** checkbox.
2. Click **Background Image**. The Background Image Settings dialog box appears.



3. Select the **Show background Image** checkbox to insert a background image.

*NOTE: If the **Show background image** checkbox is clear, the background will be the color previously chosen from the BackColor palette. If no background color is chosen the default color will be displayed.*

4. From the Image File box, select either:

- BOSâNOVA Web **Server Images**
  This lists previously defined images available for use as a background image.
- **Import From PC**
  Select this to download a picture from your PC to be used for the background image.

NOTE: The maximum file size for this picture is approximately 32k.

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5. From the lower panel, select either:
   a. **Stretch image to screen size**
   b. **Tile** inserts the picture repeatedly in rows and columns to fill up the screen.
   c. **Locate at** allows you to insert a picture that is smaller than the screen and place it by specifying the location of the top left corner using the row and column boxes.
6. Click **OK**.
7. Click **OK**.

While customizing the scheme, click **Apply** to preview the results in the current emulation session.

Keyboard Customization

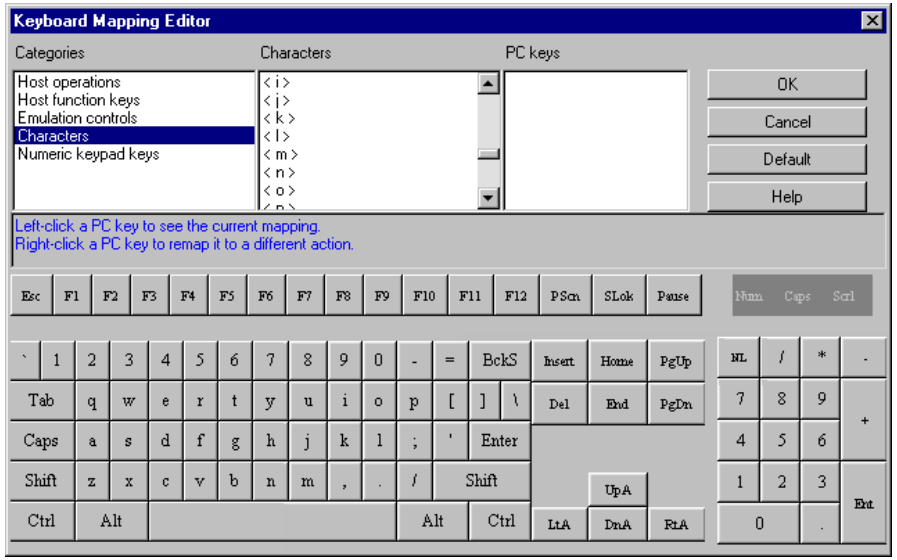
With this option you can:

- Map (assign) any iSeries command to any keyboard key or to any combination of keyboard keys.
- Create a new mapping or import a default keyboard mapping.

To map/customize your keyboard, select one of the following:

- From the emulation Options menu, select **Keyboard Mapping**.
- Press **CTRL + K** on the keyboard.
- Right-click, point to **Options**, and select **Keyboard Mapping**.

The Keyboard Mapping dialog box opens.



NOTE: By default, the left Control key is mapped to Perform Error Reset and the right Control key is mapped to Perform Field Exit.

Viewing a Keyboard Mapping

To view the current mapping of a keyboard key, select the keyboard key (left click).

The selected Keyboard Key is displayed in the PC keys column in the top panel. The Categories column shows to what type of function the key is currently mapped. The Characters column shows to which particular command, function, symbol, or character the key is currently mapped.

The Categories Column contains the following groups:

Host Operations
Includes common host actions (Attn, Clear, Field+, etc.).

Host Function Keys
Includes common host command keys (Cmd1, etc.).

Emulation Controls
Includes common emulation actions (Jump to next host session, Play macro, etc.).

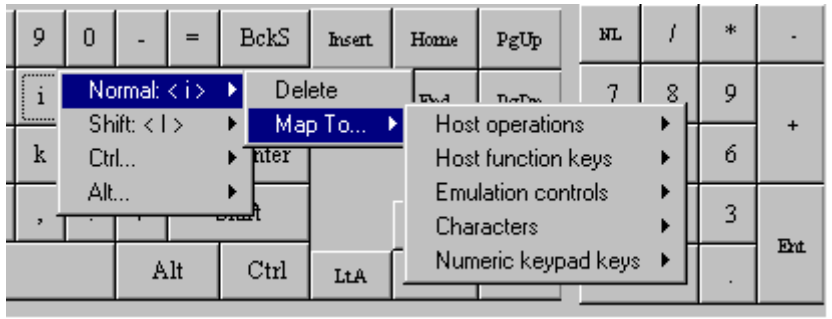
Characters
Includes all the keys for letters, numbers, and symbols.

Numeric Keypad Keys
Includes the numbers on the numeric keypad.

Creating or Editing a Keyboard Mapping

To create a new keyboard key map or change the current mapping of a keyboard key, use the right mouse button:

1. Right-click the keyboard key. The following cascading menu is displayed:



2. If you want to use a PC key combination, select **Shift**, **Ctrl**, or **Alt**. Select **Normal** to map the key's face value.
3. Point to **Map To** and select a group from the cascading menu (the contents of each group is described in "Viewing a Keyboard Mapping" on page 37).
4. Select the new desired keyboard assignment from cascading menus and click **OK**.

Removing a Keyboard Mapping

To completely remove a currently assigned keyboard key map, use the right mouse button:

1. Right-click the keyboard key.
2. If you want to delete a keyboard key map with a PC key combination, select **Shift**, **Ctrl**, or **Alt**. Select **Normal** to delete the key's face value map.
3. Select **Delete** from the cascading menu.

The Emulation Ruler

If the System Administrator has enabled Ruler in the display session profile properties, the display session can be customized to include a ruler.

Use the **Ruler** command on the **View** menu to hide the display ruler and to change the way the display session ruler appears. If the ruler icon has been added to the toolbar, the ruler can also be controlled from the toolbar.

***NOTE**: The ruler is not displayed when MorphMaster is running. If MorphMaster is running and View > Ruler is selected, the display session automatically switches to a green screen.*

Ruler options include:

None
The ruler is hidden.

Horizontal
Only a horizontal ruler is displayed.

Vertical
Only a vertical ruler is displayed.

Horizontal and Vertical
Both rulers are displayed.

Working with Macros

With the Macro Organizer you can:

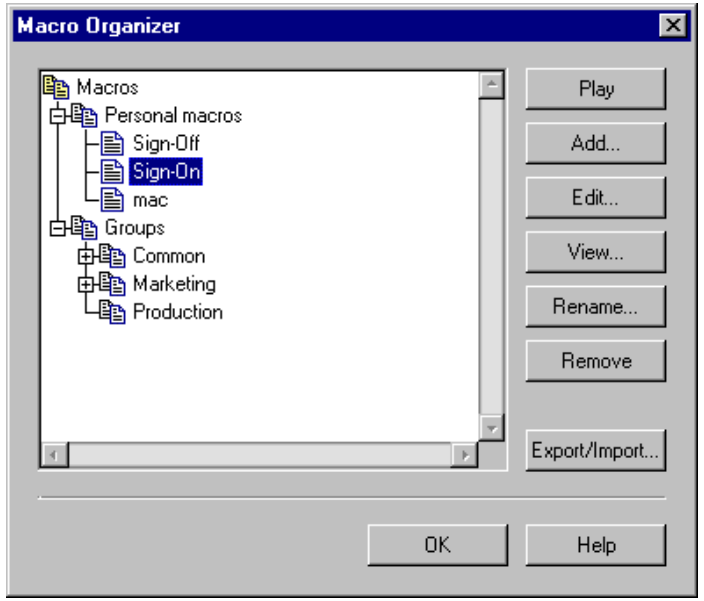
- Play a macro, p. 40
- Add a new macro, p. 40
- View macro commands, p. 41
- Edit a macro, p. 41
- Rename a macro, p. 42
- Delete a macro, p. 42
- Export/Import macros, p. 42

Opening the Macro Organizer

To open the Macro Organizer, select one of the following options:

- From the emulation Macro menu, select **Macro Organizer**.
- Press **CTRL + M** on the keyboard.

The Macro Organizer screen opens, where all macros assigned to you are displayed in a Windows-like tree structure:



NOTE: The Macro Organizer functions are enabled depending on the permissions assigned to you by your BOSâNOVA Web administrator.

Playing a Macro

To run an existing macro, select one of the following:

From the Macro Organizer

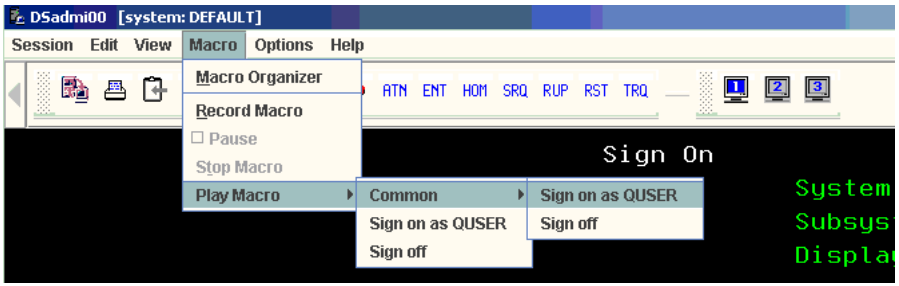
1. Open the Macro Organizer (see p. 39).
2. Select a macro from the macros list.
3. Click **Play**. The macro is launched.

From the Display Emulation

Select one of the following options:

- Right-click, point to **Macro**, select **Play Macro**, and select from the cascading menu the macro you want to play.
- Click the toolbar button for the macro to run.
- From the Macro menu, point to **Play Macro,** and select a macro to run.

An example of the macros list is shown below.



Recording a New Macro

To record a new macro from the emulation:

1. Select one of the following options:
   - Click the **Record Macro** icon on the emulation toolbar.
   - Right-click, point to **Macro**, and select **Record Macro**.
   - From the Macro menu, select **Record Macro**.
2. Enter or select any action to be recorded.
3. Click **Stop** to finish recording. Select **Pause** to temporarily stop the recording process. To resume recording, deselect **Pause**.
4. Enter a unique logical name for the new macro and click **OK**.

Adding a New Macro

To record a new macro:

1. Open the Macro Organizer (see p. 39).
2. Click **Add**. The new macro dialog box opens.
3. Enter a unique logical name for the new macro.
4. Click **OK**. The Macro Editor opens.
5. Continue with the *Editing a Macro* procedure, p. 41.

6. Click **OK** to save the changes. The new macro appears at the end of the Personal Macros list.

Viewing a Macro

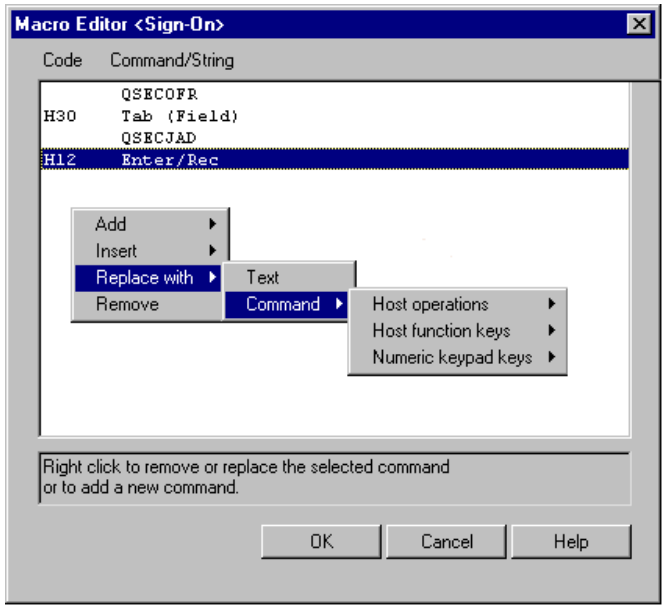
To view the macro commands:

1. Open the Macro Organizer (see p. 39).
2. Select a macro from the list.
3. Click **View**. The Macro Viewer opens. You can view all the macro commands and codes, but you cannot change any commands.
4. Click **Close** to return to the Macro Organizer.
5. Click **OK** to close the Macro Organizer.

Editing a Macro

To change commands in a Personal macro (note that you can't change any Common or Group macros):

1. Open the Macro Organizer (see p. 39).
2. Expand the Personal Macros tree and select a macro. **Edit** is enabled.
3. Click **Edit**. The Macro Editor opens.



4. Select the command or string to change.
   - To delete: Right-click and select **Remove**.
   - To replace: Right-click, point to **Replace with**, and select a new command to replace the current command.
   - To add: Right-click, point to **Add**, and select a command from one of the options after the last command or string.
   - To insert: Right-click, point to **Insert**, and select a new command from one of the options to insert after the selected command or string.
5. Click **OK** to save any macro changes and to return to the Macro Organizer.

6. Click **OK** to close the Macro Organizer.

Renaming a Macro

To change the name of an existing Personal macro (note that you can't change any Common or Group macro's name):

1. Open the Macro Organizer (see p. 39).
2. Select a macro from the Windows-like macros list.
3. Click **Rename**. The Rename Macro dialog box opens.
4. Enter a new name for the macro.
5. Click **OK** to save the name and return to the Macro Organizer. The macro with the new name appears in the list.

Deleting a Macro

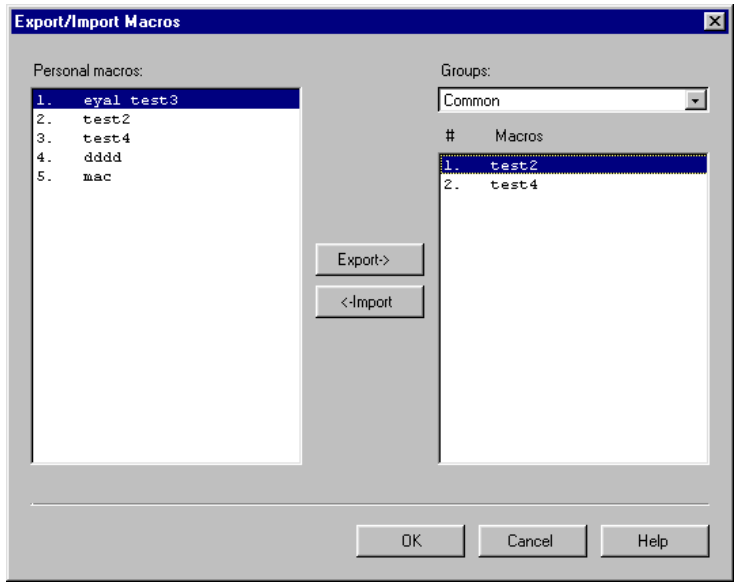
To completely remove a Personal macro (note that you can't remove any Common or Group macros):

1. Open the Macro Organizer (see p. 39).
2. Select a macro from the Windows-like macros list.
3. Click **Remove**. The following message appear:

4. Click **Yes**. The Macro Organizer re-opens. The removed macro is no longer in the list.

Exporting and Importing Macros

1. Open the Macro Organizer (see p. 39).
2. Click **Export/Import**. The Export/Import Macros dialog box opens.



3. To export a macro to a group:
   a. Select the macro to export from the Personal macros list.
   b. Select the group from the Groups dropdown list.
   c. Click **Export**. The macro appears in the group's macro list.
   d. Click **OK** to save the changes and return to the Macro Organizer.
4. To import a macro from a group:
   a. Select a group from the Groups dropdown list.
   b. Select the macro to import from the Group macros list.
   c. Click **Import**. The macro appears in the Personal macros list.
   d. Click **OK** to save the changes and return to the Macro Organizer.
5. Click **OK** to close the Macro Organizer.

MorphMaster

This section includes:

An Overview of MorphMaster

MorphMaster is a real-time tool that analyzes IBM legacy screens and instantly converts them to full-color, mouse-sensitive screens complete with panels, popup windows, buttons, and other standard graphic user interface features. Without altering the underlying legacy screens, you can change the look of your MorphMaster screens as often as you want; changes take effect immediately. You can also exclude MorphMaster elements from being "morphed," giving you complete control over the screen's appearance.

MorphMaster enables BOSâNOVA Web system administrators to maintain and modify site-wide applications and prevent custom-designed MorphMaster screens from being modified by individual users.

With MorphMaster, there is no need to maintain dual screen sets because the conversion from host screen to morphed screen is dynamic. Any change in the host screen is automatically visible in the MorphMaster screen. Style changes in MorphMaster, however, do not change the underlying host screen.

Selecting and Deselecting MorphMaster Display

To select MorphMaster display mode:

- On the emulation toolbar, click 

.
- From the emulation View menu, select **MorphMaster**.
- Right-click and select MorphMaster.

To deselect MorphMaster display mode:

- On the emulation toolbar, click 

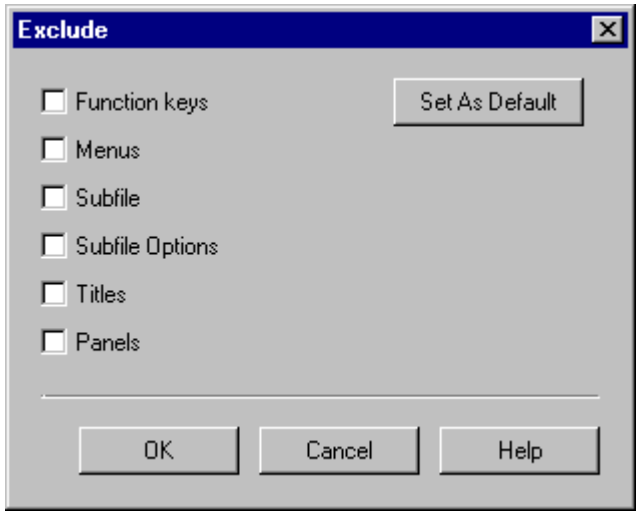
.
- From the emulation View menu, deselect **MorphMaster**.
- Right-click and deselect MorphMaster.

Excluding Elements from Conversion

Use the Exclude dialog box to determine which MorphMaster elements will not be applied to a specific host screen.

*NOTE: Exclusions defined in the Exclude dialog box are different than exclusions defined in a Rule base (see p. 55). Exclusions defined in the Exclude dialog box prevent MorphMaster from converting elements in the open screen **only**.*

1. From the emulation Options menu, select **Exclude**. The Exclude dialog box opens.

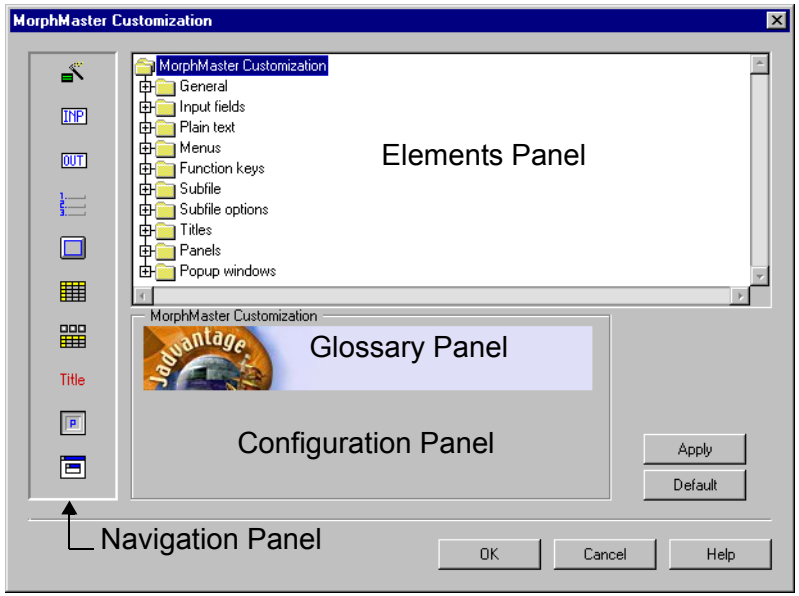


2. Select one or more checkboxes; these indicate the MorphMaster elements that MorphMaster will not create in the active screen. If you reopen the Exclude dialog box when the same screen is active, these checkboxes are displayed as selected.
3. If you want these selections to appear each time you open the Exclude dialog box—that is, for screens that have never had any Exclude options assigned to them—click **Set as Default**. If you do not click **Set as Default**, the next time you open the Exclude dialog box—that is, for screens that have never had any Exclude options assigned to them—all the checkboxes will be clear.
4. Click **OK**. The changes are applied immediately.

Customizing MorphMaster

Use the MorphMaster Customization dialog box to build a **Rule base** that directs MorphMaster's identification of screen elements and to customize **Styles** that define the appearance of the MorphMaster screen. You can customize most elements on the host screen including fonts, colors, buttons, panels, titles, and more.

To open the MorphMaster Customization dialog box, from the emulation Options menu, select **MorphMaster Customization**.



As pictured above, the MorphMaster Customization dialog box has four panels:

Elements Panel
Lists the potential components of a "morphed" screen.

Navigation Panel
Buttons enable easy navigation through the elements panel.

Glossary Panel
Displays a definition, procedural hints, or a preview of the style.

Configuration Panel
Contains buttons and fields for defining settings.

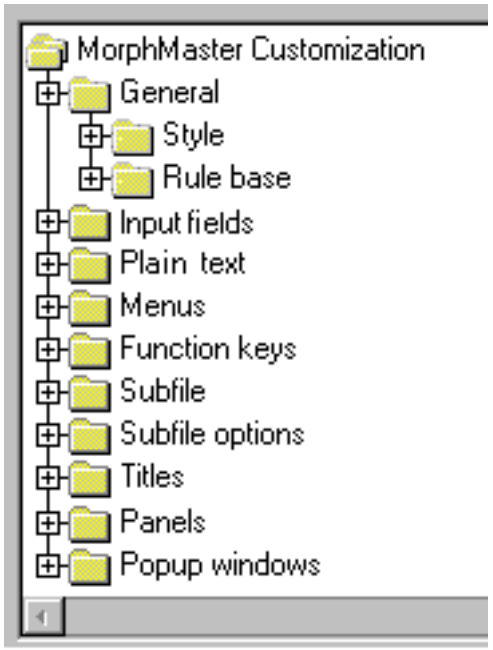
An Overview of MorphMaster Customization

The Elements Panel of the MorphMaster Customization dialog box uses a "tree" structure.

- If an item has a plus sign (+) next to it, it contains nested items. Click it to expand the item and display the nested content.
- If an item has a minus sign (-) next to it, it is already fully expanded. Click it to collapse that part of the tree.

When you select an element in the Elements Panel, buttons and fields for configuring that element set appear in the Configuration Panel.

Pictured below is the Elements Panel of the MorphMaster Customization dialog box.

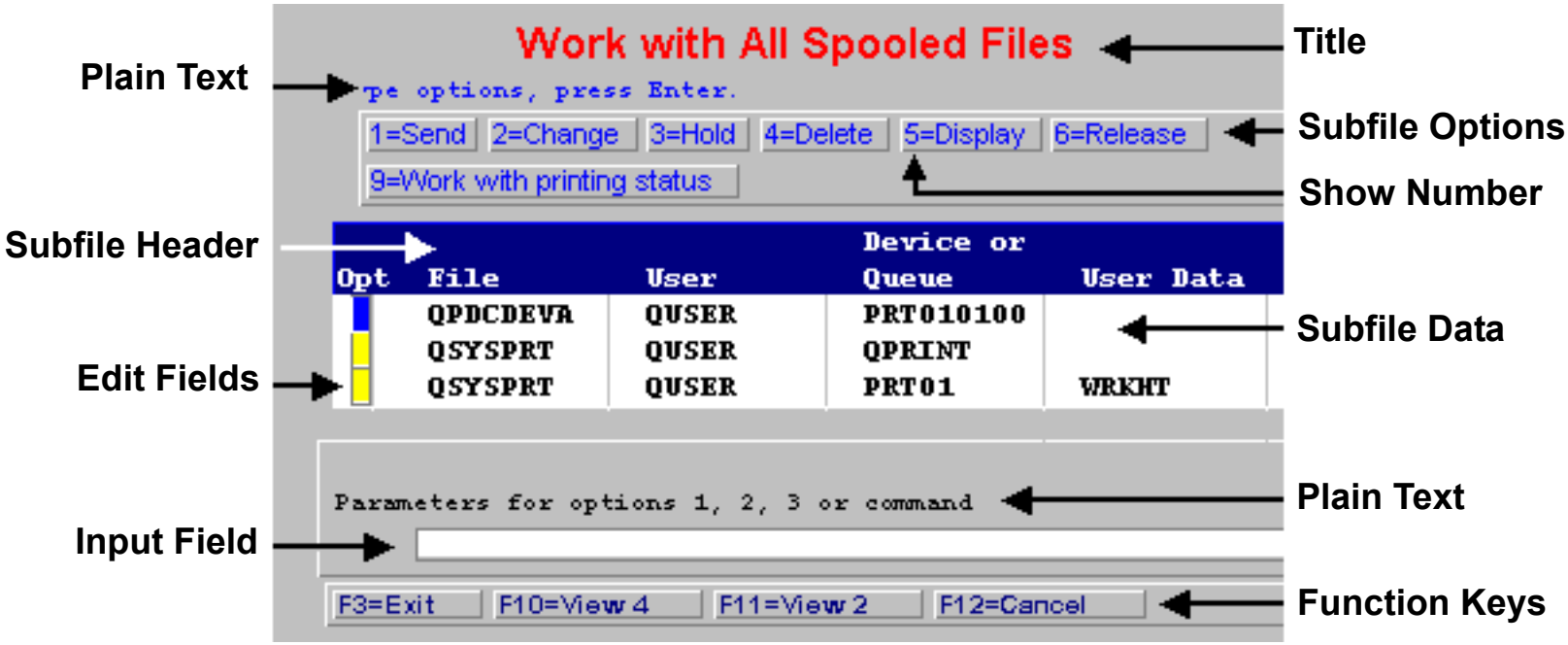


There are ten categories of elements. Each category contains one or both of the following folders:

- **Style:**
  Use Style to define the appearance of the MorphMaster screen. You can customize fonts, colors, and the optional use of color translation, panels, and button numbers.
- **Rule base:**
  Use the Rule Base to enter instructions for MorphMaster that direct its identification of graphic screen elements.

***NOTE**: For an illustration of each category, see Figure # 2.*

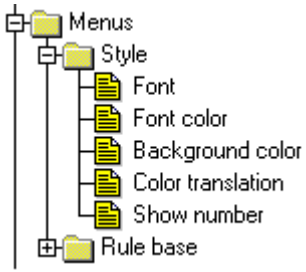
Figure 2: Elements of a Screen that MorphMaster can Customize



Also note the subfile option panel, the input field panel, and the function key panel.

Customizing from the Style Folder

Use the Style folder content to define the appearance of your MorphMaster screen. The contents of the Style folder will include some or all of the following:



- Font, see p. 52.
- Font color, see p. 52.
- Background color, see p. 52.
- Show number, p. 53.
- Message line, p. 53.
- Design, p. 53.
- Grouping range, 54
- Color translation, see the following section.

The Subfile Style folder is discussed on page p. 54.

Customizing a Color Translation Table

A host screen text may be displayed with any of 32 attributes including colors, underscore, and blinking. Normally, MorphMaster ignores the attributes and displays the host screen element using the color defined in Style. However, using a Color Translation table, MorphMaster can be configured to display input fields, output fields, titles, and subfiles in a color different than that defined in Style and that maintains the original text attributes.

In the first column of the Color Translation table, 32 host screen text attributes are listed. You define the MorphMaster colors that replace one or more of the original host assigned attributes; this is a Color Translation table. Next, in the Input, Plain text, Menus, Function keys, or Subfile Style folder, you apply the table. In this way, you link the Color Translation table to the MorphMaster element.

Color translation is especially useful when working with applications that use different colors to highlight specific data.

There are three steps to creating a customized Color Translation table:

1. Open and name a new Color Translation table.
2. Define the text color of one or more host screen elements.
3. Define the background color of one or more host screen elements.

To open and name a new Color Translation table:

1. Expand both the **General** folder and its **Style** folder.
2. Select **Color translation table**.
3. From the lower panel, click **Add**. The Host screen attribute translation table dialog box opens.
4. Enter a name for the Color Translation table in the **Table name** field.
5. In the lower panel, from the first column of the table, double-click a host screen attribute. The Color table settings dialog box opens.

To define the color of the text:

6. Select both **Translate** and **Text Foreground**.
7. Select a color from the palette, or click **More colors** to customize a color. (If you've customized a color, click OK to close the Custom Color dialog box.)

To define the color of the background:

8. Ensure that the **Transparent** checkbox is clear.

NOTES about Transparent:

*To make the background color of the elements Plain text and Titles the same color as the background screen or panel color, select **Transparent**. If you select **Transparent**, you cannot define a background color.*

*Only the background of the elements Plain text and Titles becomes **Transparent**. If, in a Color Translation table, any other element is assigned **Transparent**, it will take the background color assigned to it in its Style folder.*

When background color is used, MorphMaster performs the color translation every time the attribute exists. If there is no text in the field, the result is an empty screen of the color you defined as the background color.

---

9. Select **Text Background**. (Ensure that **Translate** is still selected.)
10. Select a color from the palette, or click **More colors** to customize a color. (If you've customized a color, click OK to close the Custom Color dialog box.)
11. If necessary, select additional host screen attributes and repeat steps 6 –10.
12. Click **Apply** to preview the change, **OK** to approve the change and close the dialog box, or **Cancel** to reject the change and close the dialog box.

Customizing the Font

Note on Font Resizing!
MorphMaster evaluates the space available on a screen and determines whether or not, using the assigned settings, the content will fit. If the content will not fit on the screen, MorphMaster automatically resizes the font. In some instances, this is why a screen does not appear exactly as customized.

To customize a font, use one or both of the following Style files:

- **Font:** to customize type face, style, and point size.
- **Font color:** to customize the color of the text.

To customize type face, style, and point size:

1. Expand both the Element folder and its Style folder.
2. From the Elements panel, click **Font**.
3. From the lower panel, use the three dropdown menus to customize the font, its style, and its size.
4. For the elements Plain text and Titles ***only***: Select **Transparent** to make the attribute's background color the same as the background screen color.
5. Click **Apply** to preview the change, **OK** to approve the change and close the dialog box, or **Cancel** to reject the change and close the dialog box.

To customize the color of the text:

1. Expand both the Element folder and its Style folder.
2. From the Elements panel, click **Font color**.
3. From the lower panel, select a color from the palette or click **More** to customize a color. (If you've customized a color, click OK to close the Custom Color dialog box.)
4. Click **Apply** to preview the change, **OK** to approve the change and close the dialog box, or **Cancel** to reject the change and close the dialog box.

Customizing the Background Color

*NOTE: customize the background color of the entire display screen, as opposed to the background color of a specific element, select **General > Style > Background color**. Then, follow steps 3 and 4 below.*

1. Expand both the Element folder and its Style folder.
2. From the Elements panel, click **Background color**.
3. From the lower panel, select a color from the palette or click **More** to customize a color. (If you've customized a color, click OK to close the Custom Color dialog box.)
4. Click **Apply** to preview the change, **OK** to approve the change and close the dialog box, or **Cancel** to reject the change and close the dialog box.

Customizing Color Translation

1. Expand both the Element folder and its Style folder.
2. From the Elements panel, click **Color translation**. For information about Color Translation tables, see p. 50.
3. From the **Color table** menu in the lower panel, select a color table.
4. Click **Apply** to preview the change, **OK** to approve the change and close the dialog box, or **Cancel** to reject the change and close the dialog box.

Customizing Show Number

Menus, function keys, and subfile options have action numbers associated with them. You can define MorphMaster to omit or display the number during conversion.

1. Expand both the element's folder and its Style folder.
2. From the Elements panel, click **Show number**.
3. From the lower pane, select or clear the **Show number** checkbox.
4. Click **Apply** to preview the change, **OK** to approve the change and close the dialog box, or **Cancel** to reject the change and close the dialog box.

Customizing the Message Line

Warnings, confirmations, and other iSeries messages appear on the bottom line of the screen. To customize the appearance of these messages:

1. Expand both the General folder and its Style folder.
2. From the Elements panel, click **Message line**.
3. To customize the font attributes, click **Font**. Then, from the Configuration panel, use the three dropdown menus to customize the font, its style, and its size.
4. To customize the font's colors, click **Color**. Then, from the Configuration panel, select a color from the palette or click **More** to customize a color. (If you've customized a color, click **OK** to close the Custom Color dialog box.)
5. Click **Apply** to preview the change, **OK** to approve the change and close the dialog box, or **Cancel** to reject the change and close the dialog box.

Customizing the Design

Menus, function keys, and subfile options can be displayed as either 3D buttons or hyperlinks. To customize the Design:

1. Expand both the element's folder and its Style folder.
2. From the Elements panel, click **Design**.
3. Choose from one of the two options:

- **3D button:**
  Each element appears as a button. Click **Customize style** to define whether or not the button will change its appearance when the mouse pointer is placed on it.
- **Hyperlink:**
  The text of each element changes when the mouse pointer is placed on it. Click **Customize style** to begin the Hyperlink Style Wizard. Instructions regarding the Hyperlink Style Wizard appear on the wizard's screens.

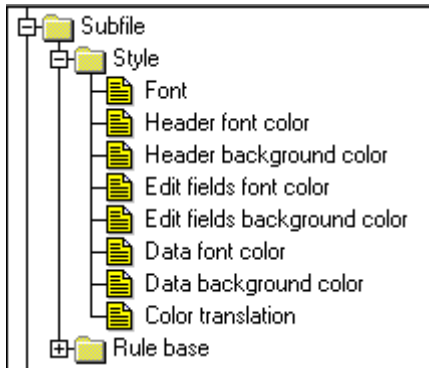
4. Click **Apply** to preview the change, **OK** to approve the change and close the dialog box, or **Cancel** to reject the change and close the dialog box.

Grouping Range

Buttons located within a defined range of rows can be configured to appear on a panel. To define the range:

1. Expand the Function keys folder and its Style folder.
2. From the Elements panel, click **Grouping Range**.
3. Enter the row range to which grouping will be applied. Host screen elements outside the specified range will not be grouped.

Customizing the Subfile Style Folder



1. Expand both the Subfile folder and its Style folder.
2. Select one of the six entries ending with the word **color**.
3. From the lower panel, select a color from the palette or click **More** to customize a color. (If you've customized a color, click OK to close the Custom Color dialog box.)
4. Click **Apply** to preview the change, **OK** to approve the change and close the dialog box, or **Cancel** to reject the change and close the dialog box.

Note on Subfile Font!

Because subfile text alignment is important, we recommend that you use a fixed-width font—where each character is the same width—such as Courier. Unlike proportionally-spaced fonts, fixed-width fonts ensure that each character takes up the same amount of space on the screen. IBM legacy screens use fixed-width fonts; if MorphMaster also uses fixed-width fonts, it can maintain host screen proportions between field and value sizes.

Customizing the Rule Base

The Rule base is a set of rules that MorphMaster uses to analyze the host screen. Use the contents of each Rule base folder to modify these rules and, thereby, change the way MorphMaster interprets the host screen.

MorphMaster is a real-time tool whose analysis of the host screen depends heavily on the host screen's appearance. Host applications vary greatly in their screen formats and design conventions. One application may use Command keys (<CMD3=Exit>, for example) to list function keys, while another may use Function keys (<F3=Exit>, for example). Some applications may use single-column menus while, in others, menus have two or even three columns. In some host applications, popup windows are enclosed by a colored frame; in others, they are enclosed by a frame of repeated characters.

MorphMaster's default Rule base settings are compatible with most common host screen design principles. However, if your host application contains unusual screen formats, you may have to modify the Rule base definitions to improve MorphMaster's analysis. We recommend that you *run MorphMaster with the default Rule base settings and modify them **only** when you see that MorphMaster has misinterpreted the host screen*.

Changes in the Rule base go into effect immediately and are visible as soon as the MorphMaster screen updates.

The following elements have Rule base folders that can be customized:

- General, see p. 56.
- Menus, see p. 56.
- Function keys, see p. 58.
- Subfile, see p. 60.
- Subfile options, see p. 62.
- Titles, see p. 63.
- Panels, see p. 64.
- Popup windows, see p. 64.

General Rule Base

Use the General Rule base to define groups of screens which will not be converted by MorphMaster, to instruct MorphMaster not to create panels, and to determine how MorphMaster arranges the elements on the user interface.

NOTE**: Unlike the Exclude feature (see p. 46), which is used to determine which elements of **individual** screens will not be affected by MorphMaster, this definition enables you to display groups of full screens in Excluded mode: **all screens containing the string in the specified range are excluded.

1. Expand **General > Rule base**.
2. Select **Screen inhibitors**.
   a. From the bottom panel, click **Add**.
   b. Enter a string and a **From line / To line** range.

   When the string is present in the specified location, MorphMaster mode is not available.
3. Select or clear the **Block panels analysis** checkbox. When selected, MorphMaster does not create panels.
4. Select an **Arrange elements** option.

   Font size
   Select the attributes of the font from the three lists in the Configuration Panel. MorphMaster arranges the elements based on the font's attributes.

   Window size
   MorphMaster arranges the elements according to the size of the session window.

***NOTE**: If you have a layout problem, try assigning font attributes that are identical to the attributes of the output font.*

Menus Rule Base

MorphMaster recognizes a menu by identifying the prefixes and suffixes beside menu numbers and by identifying delimiters.

- A prefix is the character that precedes the menu entry number.
- A suffix is the character that separates the menu number from the menu text (for example, a period, blank, or hyphen).
- A delimiter is the space that follows the menu text.

In the example `*5. work with line status` the prefix is an asterisk, the suffix is a period, and the delimiter is the empty space following the word *status*.

To configure MorphMaster to identify menus:

1. Expand **Menus > Rule base**.
2. Select **Number prefixes and suffixes**.
3. From the bottom panel, click **Add**.
4. Enter a prefix, a suffix, or both.

In menus that contain more than a single column, it is better to define how MorphMaster recognizes the end of menu items. This configuration also helps when plain text follows the menu text on the same line.

To define how MorphMaster recognizes the end of menu items:

1. Expand **Menus > Rule base**.
2. Select an option.

   Delimited by display attributes
   If this option is used, the end of a menu item is set by the presence of any display attribute (between Hex 20 and 3F).

   Delimited by spaces
   Select the checkbox and enter a figure between 2 and 20. If this option is selected, the specified number of spaces (following menu text) marks the boundary of a menu item. For example, if minimum number of spaces is set to 5, MorphMaster will interpret the first occurrence of five successive spaces as the end of the menu text.

NOTE: If you select both, MorphMaster will recognize the end of a menu item either by a display attribute or the specified minimum number of spaces, whichever comes first.

To configure MorphMaster to recognize uppercase letters as menu numbers:

1. Expand **Menus > Rule base**.
2. Select **Number format**.
3. From the bottom panel, select **Allow uppercase letters**.
4. In the **Number of letters** field, select either 1, 2, or 3.

You can determine the range allowed for menu numbers. Numbers outside of this range will not be recognized as menu numbers.

To determine the range allowed for menu numbers:

1. Expand **Menus > Rule base**.
2. Select **Menu numbers range**.
3. From the bottom panel, enter a line range. Numbers outside of that range will not be converted to a menu.

To determine the number of spaces between a menu number, or its suffix, and the menu text:

1. Expand **Menus > Rule base**.
2. Select **Maximum number of spaces**.
3. In the bottom panel, enter a figure in the **Maximum number of spaces** field.

There may be certain conditions when a screen contains aligned text that looks like a menu, but isn't. To prevent MorphMaster from attempting to convert this text into a menu, specify disqualification strings. These are strings that, when present, prevent MorphMaster from converting these screen areas (which otherwise would qualify as menus) into menus.

To define disqualification strings:

1. Expand **Menus > Rule base**.
2. Select an option.

   Menu level disqualifier
   Click Add and enter the string. If host menu-like text contains this string, it will not be converted into a MorphMaster menu. Note that if one menu is "eliminated," there may still be another list on the same legacy screen that can qualify as a menu.

   Screen level disqualifier
   Click Add, enter the string and the range. If a screen contains this string within the defined area, no menu will be created anywhere on the screen.

You can specify the area on the screen within which MorphMaster will look for host text that can be converted to menus. If host text appears outside that range, it will not be converted to a menu.

To configure a search area:

1. Expand **Menus > Rule base > Line search range**.
2. Select an option. (A popup window is a smaller window that opens on top of full window. See p. 64.)

   Full window
   Enter a range. If a host menu appears outside that range, it will not be converted to a menu.

   Popup window
   Enter a range. Ensure that the entries are relative to the line-numbering of the popup window—the frame of the popup window is line #1—and not to the line-numbering of the original green screen. If a host menu appears outside that range, it will not be converted to a menu.

Function Keys Rule Base

MorphMaster recognizes Function keys by identifying the prefix and suffix. Prefix and suffix combinations that accompany the standard function keys, F1–F24, are configured as default settings.

Each prefix and suffix combination forms a separate unit and requires a separate entry. At runtime, MorphMaster searches the listings in the order of their appearance. We recommend that you list the more commonly used entries first to optimize MorphMaster performance.

In addition, you can define an Action buttons for any text on the screen that you want to see as a button and not as plain text.

To add a Function key prefix/suffix combination:

1. Expand **Function keys > Rule base**.
2. Select **Function key** and click **Add**.
3. Enter a prefix and suffix.

   Prefix
   Add additional strings that reflect the common usage in your environment. This defines prefix strings for standard function keys (1-24). MorphMaster will only recognize a screen element as a function key if it contains a number (1-24) preceded by one of the defined strings.

   Suffix
   Add additional strings that reflect the common usage in your environment. The suffix is a string of one or more characters that separates the identifier from its explanation. The suffix does not appear as part of the button text at runtime.

To add an Action button:

1. Expand **Function keys > Rule base**.
2. Select **Action buttons** and click **Add**.
3. Complete the three fields:

   On screen text
   Enter the string that MorphMaster will convert into a button.

   Host command
   Enter the command to be performed when the button is pushed.

   Suffix
   Enter a character that separates between identification data and button description.

To insert a picture as an Action button:

1. Select the **Show Picture** checkbox.
2. Click **Picture**. The Image Settings dialog box appears.
3. Select an option.
   - BOSâNOVA Web **Server Images**
     This is a list of previously defined images.
   - **Import From PC**
     Click to download a picture from a PC to be used for the background image.

***NOTE**: The maximum file size for this picture is approximately 32k.*

To remove an Action button:

1. Expand **Function keys > Rule base**.
2. Select **Action buttons**.
3. Select an Action buttons.
4. Click Remove.

Separators

Separators create a visual break between multiple function keys and between multiple buttons. The default separator is two spaces. However, you can define other characters to be separators (for example, a comma).

Example 1: The separator between the two function keys is two spaces.

```
F1=Help  F3=Exit
```

Example 2: The separator between the two function keys is a comma. No spaces are used.

```
F1=Help,F3=Exit
```

To add a separator:

1. Expand **Function keys > Rule base**.
2. Select **Separators** and click **Add**.
3. Enter the new separator in the field in the lower panel.

You can specify the area on the screen within which MorphMaster will look for host screen elements that can be converted to function keys. If host text appears outside that range, it will not be converted to a function key.

To configure a search area:

1. Expand **Function key > Rule base > Line search range**.
2. Select an option.

   Full window
   Enter a range. If host text appears outside that range, it will not be converted to a function key.

   Popup window
   Enter a range. Ensure that the entries are relative to the line-numbering of the popup window—the frame of the popup window is line #1—and not to the line-numbering of the original green screen. If host text appears outside that range, it will not be converted to a function key.

Subfile Rule Base

Use the Subfile Rule base to define how MorphMaster identifies subfiles on host screens.

Subfiles (tables) are indicated in the host screen by the presence of aligned, column-like text. MorphMaster identifies columns by aligned display attributes, or by aligned spaces, based on definitions set in the Subfile Rule base files.

To define how MorphMaster identifies subfiles on host screens:

1. Expand **Subfiles > Rule base**.
2. Select a parameter and enter the changes:

   Header's vertical separators
   Click Add and enter the character that, when occurring in a header line, serves as a separator between columns.

   Header's horizontal separators
   Click Add and enter the character that, when occurring in a header line, serves as a separator between the subfile header and the first row of data.

   Data's vertical separators
   Click Add and enter the character that serves as a separator between columns of data.

   Column number disqualifier
   Change this parameter to reflect the common usage in your environment. In many applications, fields and their captions look like two-column subfiles. To prevent MorphMaster from misinterpreting these two-column items as subfiles, the Minimum columns default setting is set at 3. This means that at least three columns must appear in the host screen for MorphMaster to convert them to a subfile.
3. Sometimes, host screen text that is not a subfile contains subfile characteristics that cause MorphMaster to transform the text to a subfile. To prevent MorphMaster from making this mistake, in the three disqualifiers, specify strings that, when present in the specified range, tell MorphMaster not to create a subfile.

   Screen level disqualifier
   Procedure: Select Screen level disqualifier, click Add, and enter the string and the From line / To line range.
   Explanation: When the string is found within the specified range, MorphMaster will not create any subfiles in the screen.

   Subfile level disqualifier
   Procedure: Select Subfile level disqualifier, click Add, and enter the string.
   Explanation: When the string is found inside text that is similar to a subfile, MorphMaster will not convert that part of the screen into a subfile.

   Header's top line trimmer
   Procedure: Select Header's top line trimmer, click Add, and enter the string.
   Explanation: MorphMaster identifies the subfile's header by looking at the lines immediately above the subfile itself. When lines above the header are formatted in a similar manner, MorphMaster may mistake them for part of the header. To prevent this, define strings that identify lines outside the subfile header. When MorphMaster encounters any of these strings, it assumes that this line and all lines above it are not part of the subfile header.

4. Procedure: Select **Folded subfiles** and, from the lower panel, select or clear **Analyze folded subfile**.
   Explanation: A host screen subfile that contains too many columns to fit on one line is folded over to the next line, so that one row of subfile text is displayed on two or more lines. If the host application does not contain folded subfiles, deselect the check box to optimize MorphMaster performance.
5. Procedure: Select **By header**, click **Add**, and, in the lower panel, enter the string and the **From line / To line range**.
   Explanation: MorphMaster will identify subfiles based on the exact string which makes up the header.
   Columns: Click **Columns** to define data column-dividers. Dividers are vertical lines that separate between columns. User definitions override the automatic subfile columns analysis.

   To configure:

   a. Select **Subfile > Rule Base > Subfile by Header**.

   b. Click **Columns**. A dialog box opens within which is defined the columns which will serve as column dividers.

   c. Enter the column numbers where dividers will appear.

   To disclose which numbers to enter, in the display session legacy screen, place the cursor at the divider position. The column number is shown at the bottom right corner of the display session window.

   A list of column numbers can be defined. The delimiter ";" (semi-colon) must be set between the numbers. Select the checkbox if the dividers will also be applied to folded subfiles.

Subfile Options Rule Base

If the screen contains a subfile, MorphMaster looks for subfile options. Use this Rule base to define the characteristics that enable MorphMaster to identify subfile options.

To define a new subfile option identifier:

1. Expand **Subfile options > Rule base**.
2. Select **Suffixes and separators** and click **Add**.
3. Enter the new suffix and separator in the field in the lower panel.

   Suffix
   Add additional strings that reflect the common usage in your environment. A suffix is the character that links the code with its text. For example, in the subfile option `<F1=Create>` the suffix is `<=>`.

   Separator
   Add additional strings that reflect the common usage in your environment. A separator is the character that creates a visual break between one subfile option and

the next. For example, in the subfile option pair `<F1=Create F2=Next level>` a space is the separator.

4. If you want to send 'Enter' after the subfile option number, select **Action** and select the checkbox in the lower panel.

Titles Rule Base

By default, MorphMaster looks for titles in the titles search area defined by the user and identifies them by a built-in algorithm.

If the titles in the host application appear in a different part of the screen, use the Titles Rules base to modify the search area accordingly. You can modify both primary and secondary titles for regular windows and for popup windows.

To modify the search area:

1. Expand **Titles > Rule base**.
2. Expand either **Primary title** or **Secondary title**.
3. Expand either **Full window** or **Popup window**.
4. Enter the new search area in the corresponding file:

   Lines range
   Enter line numbers in the two fields. MorphMaster will search for a title in the specified From / To range.

NOTE: In the case of a From/To range for a popup window, ensure that the entries are relative to the line-numbering of the popup window—the frame of the popup window is line or column #1—and not to the line numbering of the original green screen..

   Columns range
   Expand either 80 Columns screen or 132 Columns screen and enter line numbers in the two fields. MorphMaster will search for a title in the specified From / To range.

If the host application uses colored titles, you can override the title identification algorithm and identify titles by their display attributes. If MorphMaster cannot identify screen titles by their display attributes, and if selected, MorphMaster uses its Automatic search feature.

5. Select **Attributes** and click **Add**.
6. From the Attributes table, select the title's original color. (The Attributes table shows the Hex display attribute character with a description. Any output with this attribute inside the search area will be identified by MorphMaster as a title.)
7. Select **Automatic search** if you want MorphMaster to use its built-in algorithm when no title is found by attributes.

Panels Rule Base

Sometimes, MorphMaster creates panels where they are not suitable. To prevent MorphMaster from making this mistake, define panel screen inhibitors.

1. Expand **Panels > Rule base**.
2. Select **Screen inhibitors**.
   Procedure: From the bottom panel, click **Add**, enter a string and a **From line / To line** range.
   Explanation: When the string is present in the specified location, MorphMaster does not create any panels on the specific screen. Other screens will have panels.

Popup Windows Rule Base

A popup window is a smaller window that opens on top of another screen called the “parent screen.” MorphMaster recognizes a popup window by its frame, which can be a special color or repeated characters.

Use the Popup Windows Rule base to define how MorphMaster will recognize host popups.

To define how MorphMaster will recognize host popups:

1. Expand **Popup windows > Rule base**.
2. Select an option.

   Bordered by attributes
   Procedure: Click Add and select the corresponding attribute from the dropdown list.
   Explanation: Some host applications use color borders to define popup windows. This table shows the host color attribute that MorphMaster will use to identify the border of a popup window.

   Bordered by characters
   Click Add and enter the characters that form the popup window’s border.
3. Select **Screen level disqualifier** and click **Add**.
   Procedure: Enter the string and the **From line / To line** range.
   Explanation: Screen level disqualification is a definition that tells MorphMaster not to translate a host screen item into a popup window, even though the host item contains a popup window identifier. Use screen level disqualification when a host screen item that is not a true popup window contains an identifier that would cause MorphMaster to mistakenly translate it. Make the string unique for these specific cases; otherwise, MorphMaster might not translate host screen items that are, in fact, true popup windows.

BOSâNOVA Web Data Transfer Functions (JDTF)

This section includes:

Introducing JDTF

JDTF (BOSâNOVA Web Data Transfer Functions) is included as part of the BOSâNOVA Web system. It is used for transferring data in either direction between your PC and the iSeries host.

JDTF is an SQL-based data transfer process in which JDTF acts as a client of the iSeries database server.

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, for example, the source and destination paths, the transfer type, and conversion information. JDTF profiles contain this information combined with an SQL query to the iSeries to perform the transfer.

The JDTF interface acts and functions according to the permissions set for you by your BOSâNOVA Web administrator. Via the JDTF interface, you can (depending on your permissions):

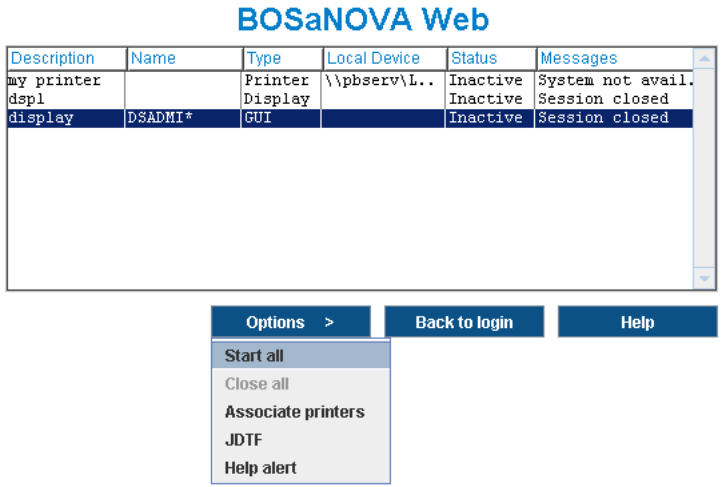
- View profiles and profile lists
- Create profiles
- Change profile parameters
- Run data transfers

When a profile is launched (“Run”), the PC sends an SQL query to the database server of the host computer. The database server responds by sending either corresponding data or an error.

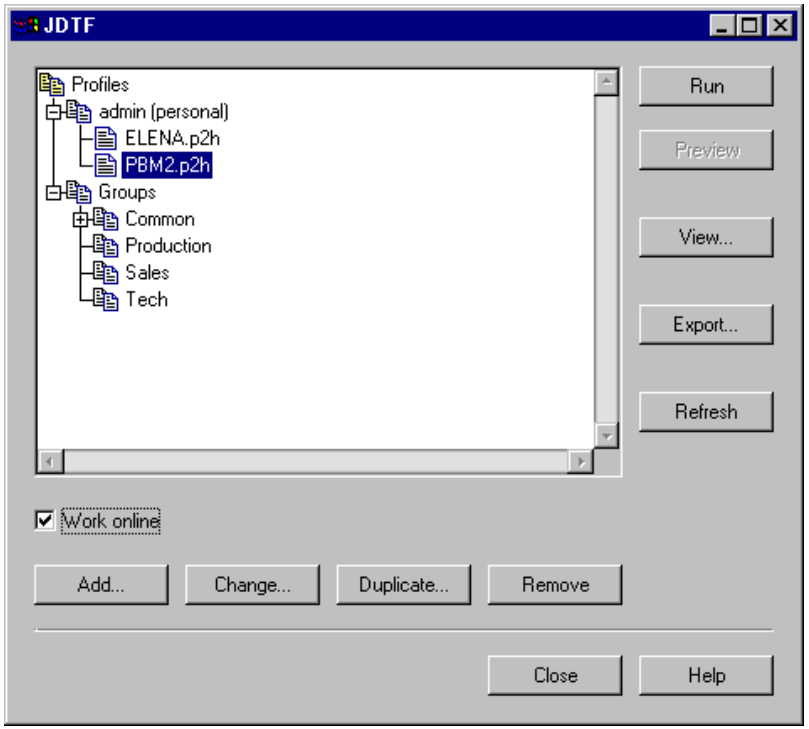
Opening JDTF

To open JDTF:

1. Log-in to BOSâNOVA Web. (See “Logging In” on page 10.)
2. Click **Options**. The Options menu is displayed.



3. Click **JDTF**. The JDTF main window, shown on the following page, opens.



NOTE: If your JDTF permissions include some restrictions, you will receive a message to that effect.

Updating the List of Assigned JDTF Profiles

Due to changes that the BOSâNOVA Web administrator may make in the list of profiles available to you, the list might not be updated automatically. With the Refresh option, you can update or refresh the list of profiles displayed in the JDTF main window.

To update the list of profiles, click **Refresh** in the JDTF main window.

Working Offline

Generally, JDTF is set to work online, that is, connected to the host. To save host resources while creating or changing profiles, clear **Work online**.

Running Data Transfers

This section explains how to run data transfers.

Previewing JDTF Data Before Transfer

Use this option to view the data that is about to be downloaded to your PC from the iSeries host computer.

Note that this option is applicable only while using one of the Host-to-PC (*.h2p) JDTF profiles.

To view data to be downloaded to your PC:

1. From the JDTF main window, select the *.h2p profile that you are about to use for receiving data from the host.
2. Click **Preview**.
3. View the data to be downloaded to your PC: you may decide that this is not the data you need. In this case, you may need to use another *.h2p profile or create a new profile that fits your needs.
4. Click **Close** to return to the JDTF main window.

Transferring Data (Running a JDTF Profile)

Use this option to activate an *.h2p or *.p2h profile to transfer data between your PC and the iSeries host computer.

To start transferring data to/from your PC:

1. From the JDTF main window, select the profile that you are about to use for receiving or sending data to/from your PC.
2. Click **Run**. The JDTF profile starts the data transfer session.
3. Follow the prompts. When the transfer is completed, the number of transferred records is displayed.
4. Close this dialog box to return to the JDTF main window.

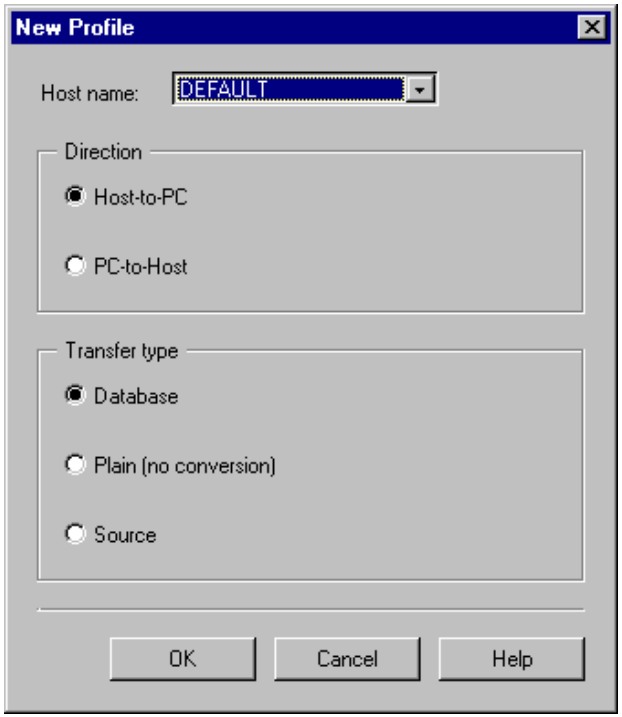
Managing JDTF Profiles

This section explains how to manage your JDTF profiles.

Creating New JDTF Profiles

To create a new JDTF profile:

1. From the JDTF main window, click **Add**. A popup menu is displayed.
2. From the popup menu, click **Profile**. The New Profile dialog box opens.



3. Select the host name from the dropdown list.
4. Determine the direction of the data transfer:

   Host-to-PC
   Downloads data from the iSeries host computer to your PC (this creates an *.h2p file).

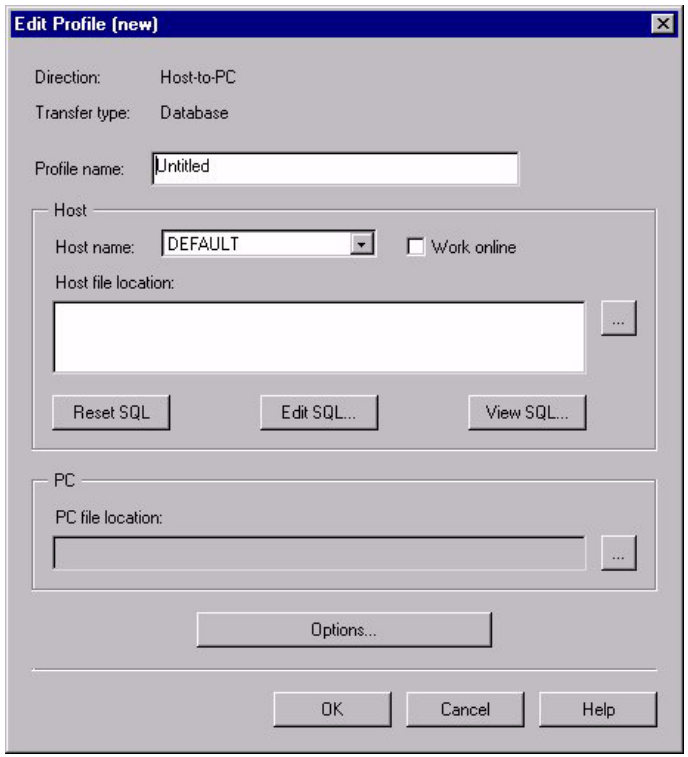
   PC-to-Host
   Uploads data from your PC to the iSeries host computer (this creates a *.p2h file).
5. From the **Transfer Type** box, select the type of data that will be transferred:

Database
Select this option if your host file consists of more than one field.

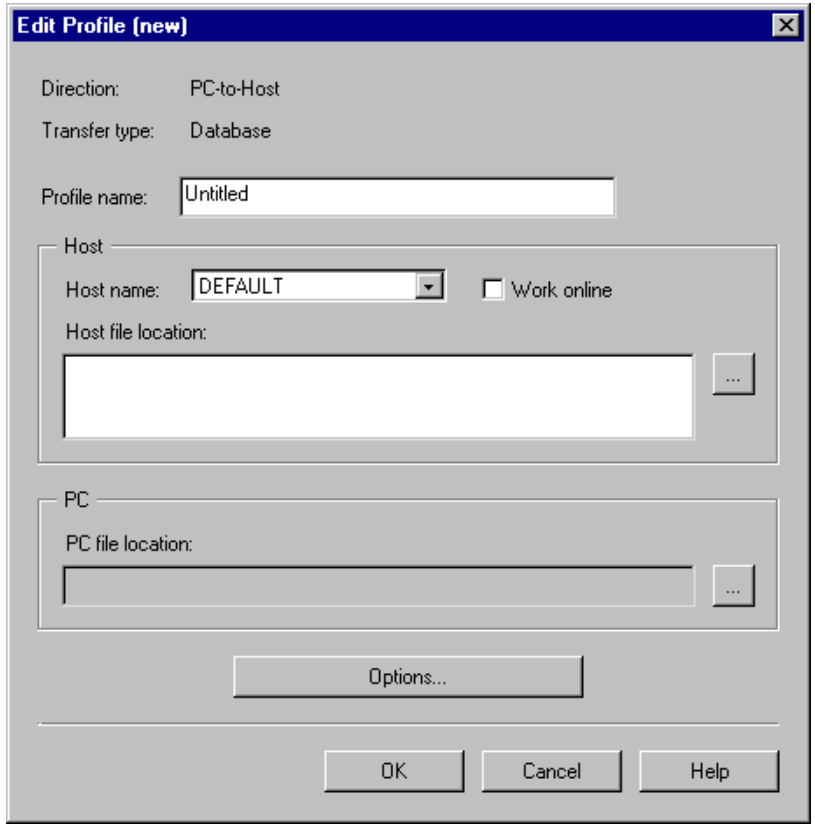
Plain (no conversion)
Select this option to set a specific structure of data query. This structure is comprised of only one field; typically you select this type when using files imported from S/36 computers.

Source
Select this option to use a pre-defined field structure. This is a common and well-known structure among iSeries programmers. This structure is comprised of three fields: record number, last modification date, and alphanumeric field.

6. Click **OK**. If the Sign-on Bypass option was not assigned to you (by your BOSâNOVA Web administrator), the Sign-on dialog box opens. Enter your User ID and Password. Click **Sign-on** to connect.
7. If you selected the Host-to-PC type of profile, the following dialog box opens.



If you selected the PC-to-Host type of profile, a similar dialog box opens but with no Edit SQL and View SQL buttons:



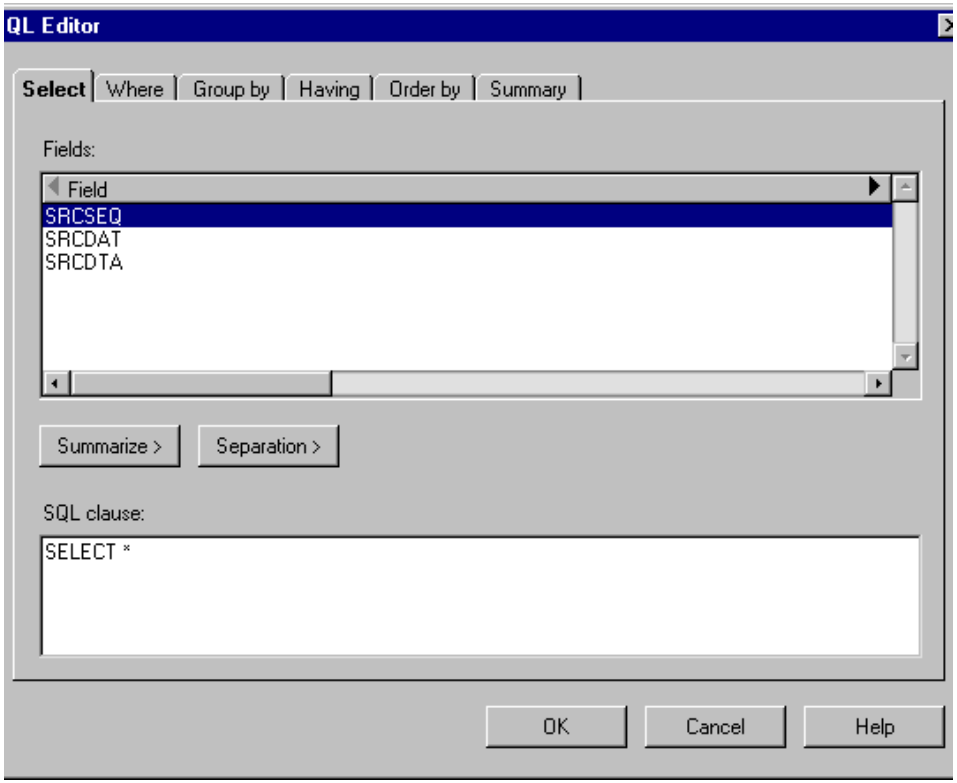
8. Enter the name for the new profile in the Profile name field.

9. Enter the host file location path, or click ... to browse to the location of the file from where the data will be downloaded, or to where the data will be uploaded. Specify host location by using the syntax: “Library name/Filename (member name).”

10. **For Host to PC profiles only**: In the host file location field, specify all the physical files from where the data will be transferred. If more than one file is specified, edit the SQL query (click **Edit SQL**) to define at least the JOIN conditions.

11. **For Host-to-PC profiles only**: Click **View SQL** to view the current SQL structure. The SQL Viewer screen opens. Click **Close** to return to the previous screen.

12. **For Host-to-PC profiles only**: Click **Edit SQL** to rebuild or modify the data sequence that will be sent from the data table. The SQL Editor screen opens.

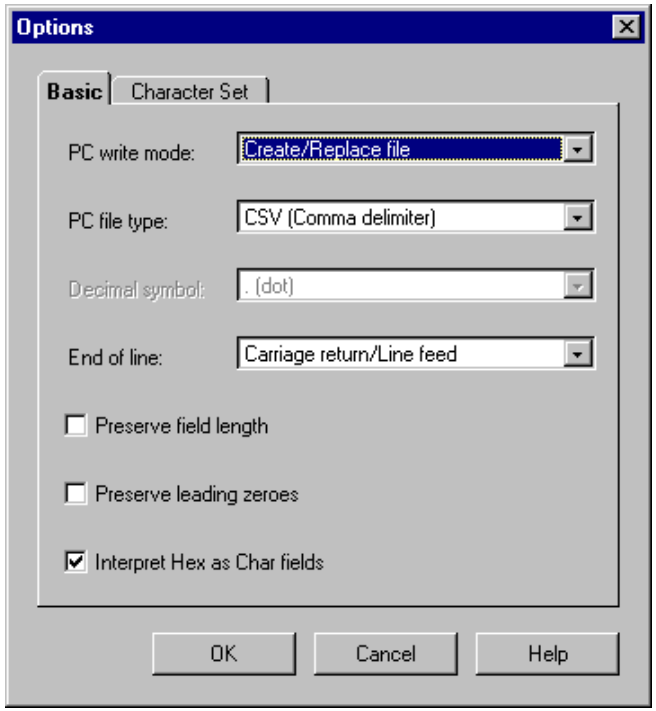


NOTE: For more and detailed information on the DB2 and SQL, see the Web site: http://www.as400bics.rochester.ibm.com/cgi-bin/bookmgr/bookmgr.cmd/books/

13. To set the PC file location path, click ... to browse to the location of the file from which the data will be downloaded or to which it will be uploaded.

14. **For Host-to-PC Profiles Only**:

    a. Click **Options**. The Options dialog box opens with the Basic tab on top.



    b. Select one of the following PC write mode options:

    - **Create/Replace file**
      To replace an existing file or create a new file on your PC.
    - **Create/Append file**
      To create a new file or add new data at the end of an existing file.

    c. Select one of the following PC file types:

- **CSV (comma delimiter)**: To use commas to separate adjacent fields. Text fields are enclosed by double quotation marks (for example: “John”, “Smith”, 012345).
- **PRN (space delimiter)**: To use a space to separate adjacent fields.
- **TXT (tab delimiter)**: To use a tab to separate adjacent fields.
- **TXT (without delimiter)**: To use no separation between adjacent fields.

d. Select one of the following definitions for the Decimal symbol:

- . **(dot)**: To use a dot as the decimal point symbol.
- **, (comma)**: To use a comma as the decimal point symbol.

e. Select one of the following definitions for the end of a line:

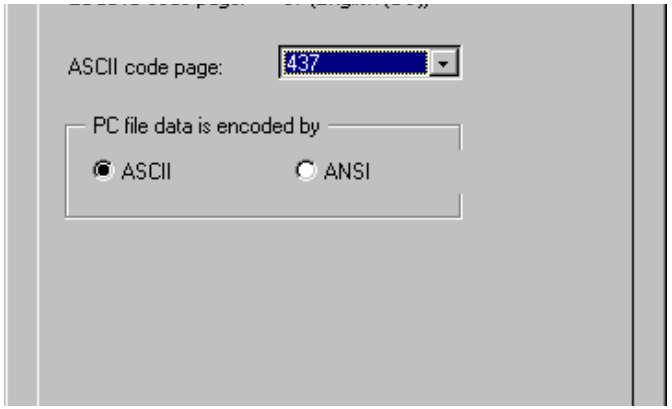
- **Carriage return/line feed**: To end a line by using either a carriage return or line feed keyboard key.
- **Carriage return**: To end a line by using the carriage return keyboard key.
- **Line feed**: To end a line by using the line feed keyboard key.

f. Select the **Preserve field length** option to preserve the field length as defined on the host file.

g. Select the **Interpret Hex as Char fields** option to translate this field’s contents to ASCII/ANSI.

If there is an alphanumeric field in your host file that has CCSID = 65536 (-1), such a field is considered to be HEX. If you don’t select the Interpret Hex as Char fields option, its contents will be transferred “as is.”

h. Select the **Character Set** tab.



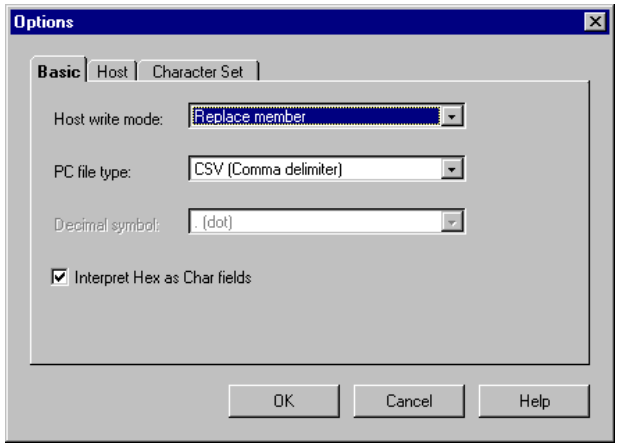
i. In some cases, you have two ASCII tables for your EBCDIC code page. Choose the appropriate one from the dropdown list.

j. Select the way that the PC file data will be encoded during transfer: **ASCII** or **ANSI**.

15. Click **OK** to return to the JDTF main window.

16. **For PC to Host Profiles Only**:

a. Click **Options**. The Options dialog box opens with the Basic tab on top.



b. Select one of the following host write mode options from the dropdown list:

- **Create file**: To create a new file on the host (this requires that you define the Reference Library and the Reference File in the host tab; see the next page).
- **Create member**: To create a new member in an existing file.
- **Replace member**: To replace the data of an existing member.
- **Append member**: To add data to the end of an existing member.

c. Select one of the following PC file type options from the dropdown list:

- **CSV (comma delimiter)**: To use commas to separate adjacent fields. Text fields are enclosed by double quotation marks (for example: “John”, “Smith”, 012345).
- **PRN (space delimiter)**: To use a space to separate adjacent fields.
- **TXT (tab delimiter)**: To use a tab to separate adjacent fields.
- **TXT (without delimiter)**: To use no separation between adjacent fields.

d. Select one of the following definitions for the Decimal symbol:

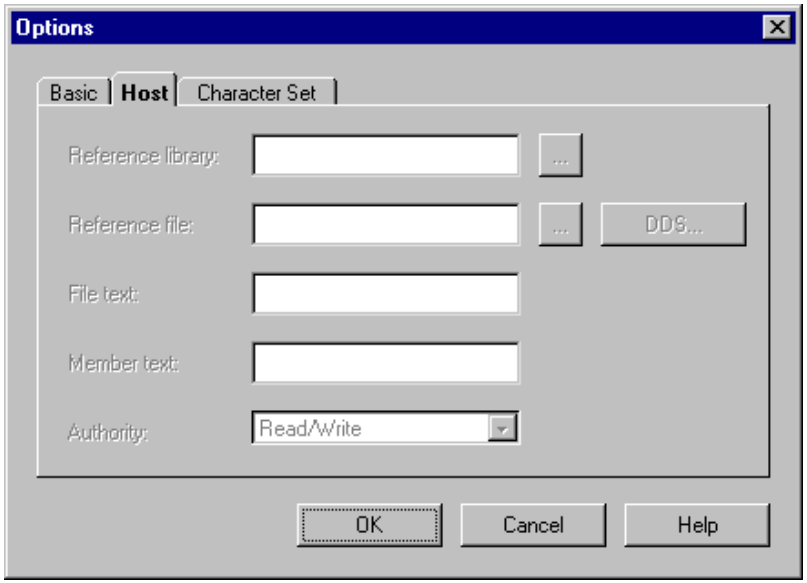
- **. (dot)**: To use a dot as the decimal point symbol.
- **, (comma)**: To use a comma as the decimal point symbol.

e. Select the **Interpret Hex as Char fields** option to translate this field’s contents to ASCII/ANSI.

If there is an alphanumeric field in your host file that has CCSID = 65536 (-1), such a field is considered to be HEX. If you don’t select the Interpret Hex as Char fields option, its contents will be transferred “as is.”

f. Select the **Host** tab.

NOTE: Some of the dialog boxes may not appear depending on the Host write mode selection you made previously in the Basic tab.



g. Browse to the Reference library where you want to create a file.

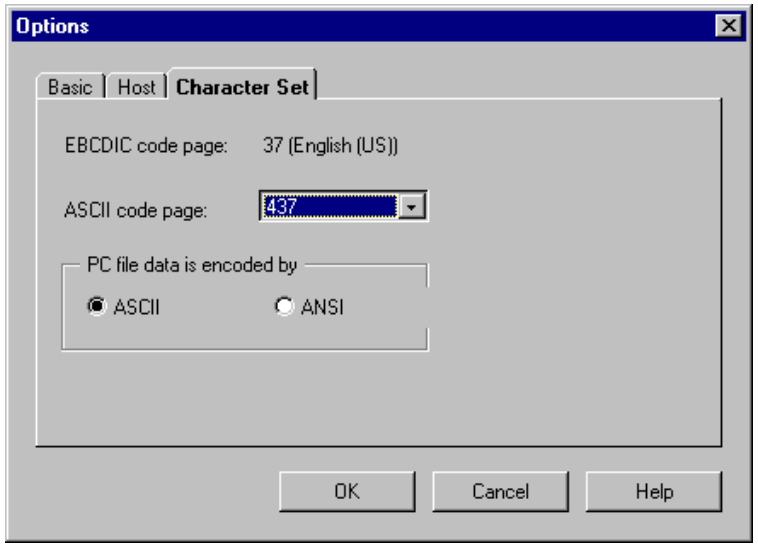
h. Browse to the Reference file where you want to add data or replace the file.

i. Enter the File text description (optional, text only).

j. Enter the Member text (optional, text only).

k. Select the definition for the Authority according to IBM standards.

l. Select the **Character Set** tab.



m. In some cases, you have two ASCII tables for your EBCDIC code page. Choose the appropriate one from the dropdown list.

n. Select the way that the PC file data will be encoded during transfer: **ASCII** or **ANSI**.

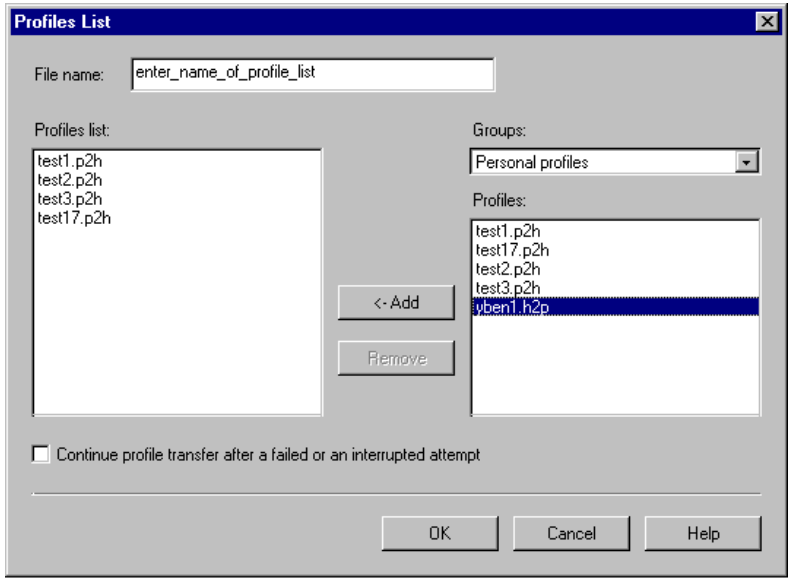
17. Click **OK** to return to the JDTF main window.

Creating a New JDTF Profile List

To transfer more than one profile at a time, create a profile list.

NOTE: Create a profile for each transfer before creating the profile list and add profiles to the list in the order you want to transfer them.

1. From the JDTF main window, click **Add**. The popup menu opens.
2. From the popup menu, click **Profiles list**. The Profiles List dialog box opens.



3. In the File name field, enter a name for the profile list.
4. From the Groups list, select a group with profiles you want to add to the profile list.
5. From the Profiles list, select a profile. You can hold down Ctrl and multi-select profiles.
6. Click **Add**. The selected profile is added to the new Profile list.
7. Continue adding profiles to the list in the order you want to transfer them. To add profiles from a different group, repeat steps 4–6.
8. To remove a profile from the list, select the profile and click **Remove**.
9. To continue the transfer of listed profiles even after a failed transfer attempt, select **Continue profile transfer after a failed or an interrupted attempt**.
10. When the Profile list is finished, click **OK**. The Profiles List dialog box closes and the new profile list, with a .prl extension, appears in the JDTF main window.

To change an existing profile list:

1. From the JDTF main window, select the profile list you want to modify.
2. Click **Change**. The Profile List dialog box opens.
3. Complete the changes and click **OK**.

Viewing JDTF Profile Properties

Use this option to view the properties and parameters of an existing JDTF profile.

1. From the JDTF main window, select a profile and click **View**. The View Profile window opens.
2. Click **Close** to return to the JDTF main screen.

To change any of the viewed parameters, return to the JDTF main window and click **Change**. Follow the procedure on p. 77.

NOTE: It is recommended that you view JDTF properties before you change any parameters.

Modifying a JDTF Profile

Use this option to change any parameter or property (excluding direction) of an existing JDTF profile. All the dialog boxes are identical to those displayed while creating a new JDTF profile.

NOTE: It is recommended that you view JDTF properties before you change any parameters (see Viewing JDTF Profile Properties on page 77).

To modify parameters and properties of an existing JDTF profile:

1. From the JDTF main window, click **Change**. The Change Profile screen opens (same as the New Profile screen).
2. Modify profile parameters or properties as required.
3. Click **OK** to save the changes and return to the JDTF main window.

Creating a New JDTF Profile Based on an Existing One

Use this option to create a new JDTF profile based on an existing one; for example, you may already have a profile that basically fits your needs, but needs a few modifications. All the dialog boxes are identical to those displayed while creating a new JDTF profile.

To modify parameters and properties of an existing JDTF profile:

1. From the JDTF main window, click **Duplicate**.
2. Select the profile to copy and assign a new name to the profile.
3. Follow the instructions in the “Creating New JDTF Profiles” on page 69, to set the parameters/properties of the new profile.

4. When you have finished, click **OK** to save the new profile properties and return to the JDTF main window.

Removing a JDTF Profile

To completely remove a JDTF profile:

1. From the JDTF main screen, select the profile to delete.
2. Click **Remove**. The Confirmation dialog box opens. Click **Yes** to confirm the profile deletion.
3. Click **Yes**. The profile is deleted and disappears from the JDTF main window's tree structure.

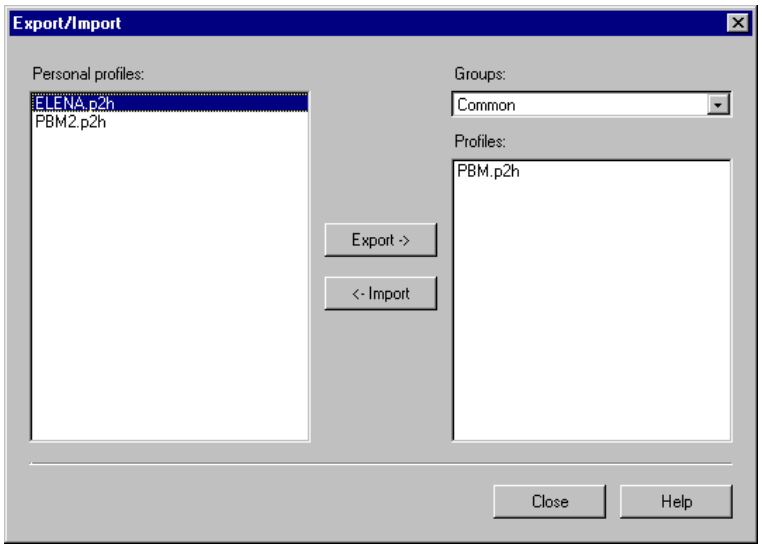
NOTE: If the profile you are deleting belongs to a profile list, a second dialog box—the Remove profile dialog box—opens. This dialog box alerts you to the fact that the profile belongs to a profile list and displays the path of the profile list. Click OK to delete the profile and, when necessary, make corrections to the profile list.

Assigning JDTF Profiles

Use this option to assign a personal JDTF profile to Groups, Users, or as Common (that is, permitted to all groups of users that were permitted to use JDTF).

To assign a JDTF profile:

1. From the JDTF main window, click **Export**. The Export/Import dialog box opens.



2. From the Groups dropdown list, select a group.

3. To add a profile to the selected group:
   a. Select a profile from the Personal profiles list.
   b. Click **Export** to assign the profile to the selected group. The profile now appears under Profiles on the right.
4. To copy a profile from the selected group to the personal profile list:
   a. Select a profile from the Profiles list.
   b. Click **Import** to copy the profile from the selected group and assign it to the Personal profiles list.
5. Click **Close** to return to the JDTF main window. Note the changes in the tree structure.

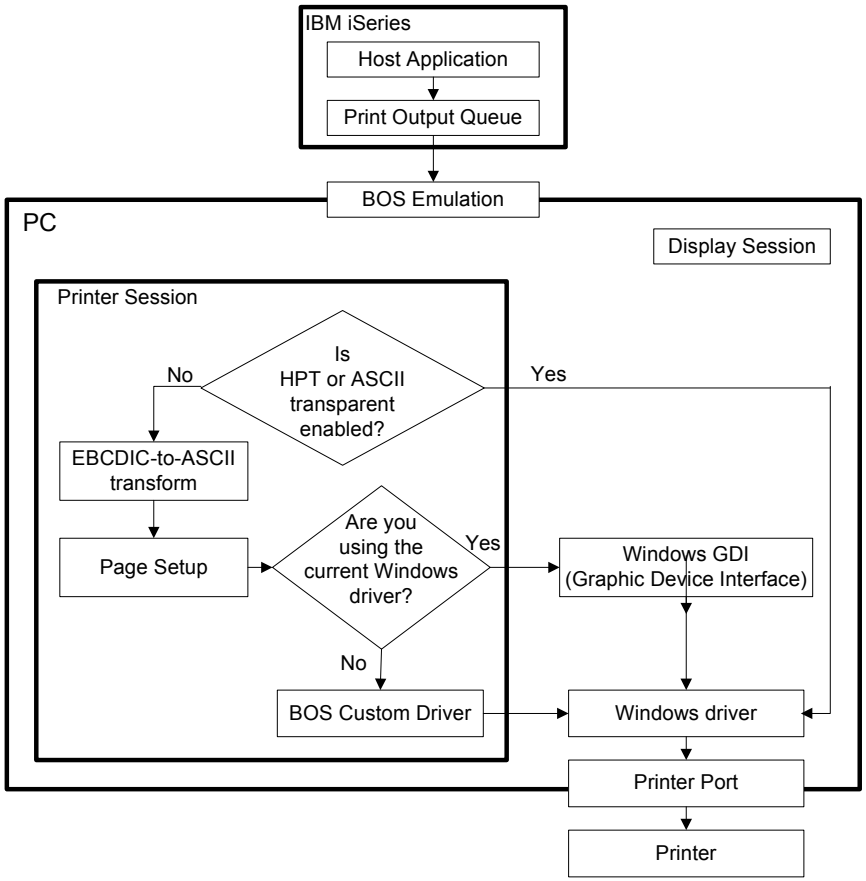
The Printer Emulation

This section includes:

***NOTE**: The BOSâNOVA Web Printer Client (Jpc.exe) file can not be opened from Netscape’s Download dialog box. Instead, record the location where the download will be saved. When the download is completed, locate the file Jpc.exe and, from the right-click popup menu, select **Open**. Follow the prompts of the installation procedure.*

Overview of Printer Sessions

Printer emulation is the process of transforming iSeries data output into an ASCII data stream. This allows you to use a PC printer as an iSeries system printer. The following flowchart provides an overview of the printer emulation process.



With BOSâNOVA Web printer emulation, you manage and configure the printing process using ***printer session profiles***. Printer session profiles are configured by your BOSâNOVA Web administrator.

The printer session runs on your PC and acts as a printer running in the background waiting for print jobs. The printer session communicates with the iSeries host and with the printer.

With BOSâNOVA Web printer emulation, you can use print settings controlled by the host or settings controlled by the PC printer. When you print with Host Print Transform enabled, the printing process and printing configuration is controlled by the host (see “Host Print Transform” on page 129). That means that settings can’t be changed in the via the Printer Session Properties configurator (see “Printer Session Properties” on page 83).

If you disable Host Print Transform, you can control and configure the printing process via the Printer Session Properties configurator.

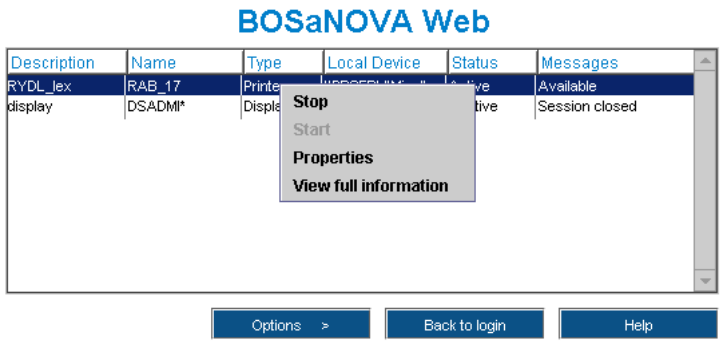
Basics of a Printer Session

This section describes opening and closing printer sessions, and viewing the current properties.

Starting and Stopping a Printer Session

To start a printer session:

1. Log in to BOSâNOVA Web (see “Logging In” on page 10).
2. Select a printer session.
3. Right-click the session. A popup menu is displayed.

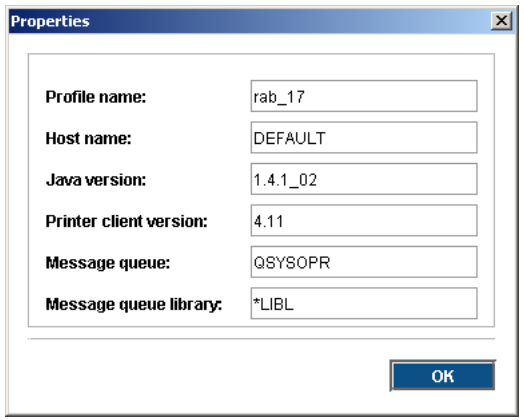


4. Click **Start**. The Printer Session Status changes to Active. If this is the first session running on the PC, the  icon appears in the task bar.
5. To close a Printer Session, right-click the session and click **Stop**.

Viewing Printer Session Properties

To view a printer session’s properties:

1. Log-in to BOSâNOVA Web.
2. Select a printer session.
3. Right-click the session. A popup menu is displayed.
4. Click **Properties**. The Properties window is displayed.



Previewing a Print Job

To preview a print-job:

1. Start a Printer Session (see “Starting and Stopping a Printer Session” on page 82).
2. Open the Printer Session Properties configurator (see “Printer Session Properties” on page 83).
3. Select the **Diagnostic** tab.
4. Select **Activate Diagnostic Mode**.
5. Select **Print Preview**.
6. Click **OK** to close the dialog box.
7. Send the print job. It prints to the screen in a standard Windows print preview format (that is, no output is sent to the printer). You can scroll through the pages and spot potential problems before sending the print job to the physical printer.

Printer Session Properties

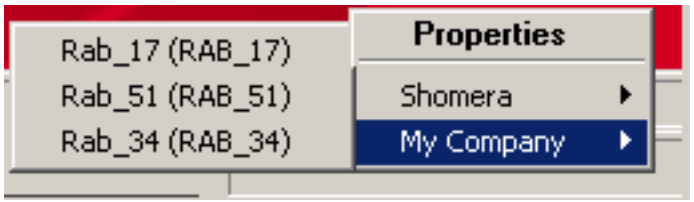
Use the Printer Session Properties configurator to define all parameters relevant to printer sessions.

Printer Session Property parameters are divided into the following tabs: General, Previous Job Attributes, Page Setup, Diagnostic, and Advanced.

Opening the Printer Session Properties

To open Printer Session Properties:

1. Open a Printer Session (see “Starting and Stopping a Printer Session” on page 82).
2. Right-click the  icon in the task bar. A popup menu is displayed which lists the names of the companies, that is, the active BOSâNOVA Web servers.

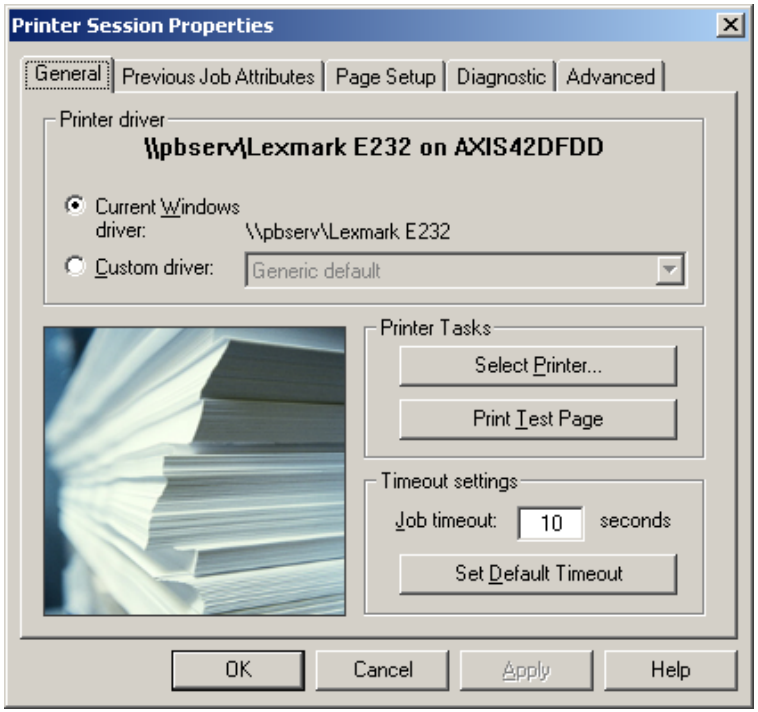


In this picture, the local station has activated three printer sessions from the server named My Company and printers from the server named Shomera.

3. Point at a server name. A sub-popup menu is displayed which lists the names of the active printer sessions.
4. Click the name of a printer session. Printer Session Properties opens. The General tab is displayed.

The General Tab

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



Changing the Printer Driver

With BOSâNOVA Web, you can print using your default Windows printer driver or you can bypass Windows printing by defining your own custom printer driver.

To change the printer driver:

1. Start a Printer Session (see “Starting and Stopping a Printer Session” on page 82).
2. Open the session’s Printer Session Properties configurator (see “Printer Session Properties” on page 83).
3. Select the **General** tab.
4. There are two possibilities:
   - If **Current Windows driver** is selected, select **Custom driver** instead.
   - If Custom driver is already selected, continue with step 5.
5. From the dropdown list, select a printer.
6. Click **OK** to close the dialog box.

Selecting a Printer

To select the printer that print-jobs will be sent to:

1. Start a Printer Session (see “Starting and Stopping a Printer Session” on page 82).
2. Open the session’s Printer Session Properties configurator (see “Printer Session Properties” on page 83).

3. Select the **General** tab.
4. Click **Select Printer**. The standard Windows Print Setup dialog box is displayed.
5. Select a printer.
6. Click **OK** to close the Windows Print Setup dialog box.
7. Click **OK** to close the BOSâNOVA Web Printer Sessions Properties dialog box.

Printing a Test Page

To send a test page to a local printer:

1. Start a Printer Session (see “Starting and Stopping a Printer Session” on page 82).
2. Open the session’s Printer Session Properties configurator (see “Printer Session Properties” on page 83).
3. Select the **General** tab.
4. Click **Print Test Page**.
5. Click **OK** to close the dialog box.

Changing the Timeout Setting

The Timeout Setting is the maximum amount of time that can elapse between buffers received from the host before BOSâNOVA Web assumes that the end of the print job has occurred. During troubleshooting, you may need to increase this number. (The default job timeout is 10 seconds.)

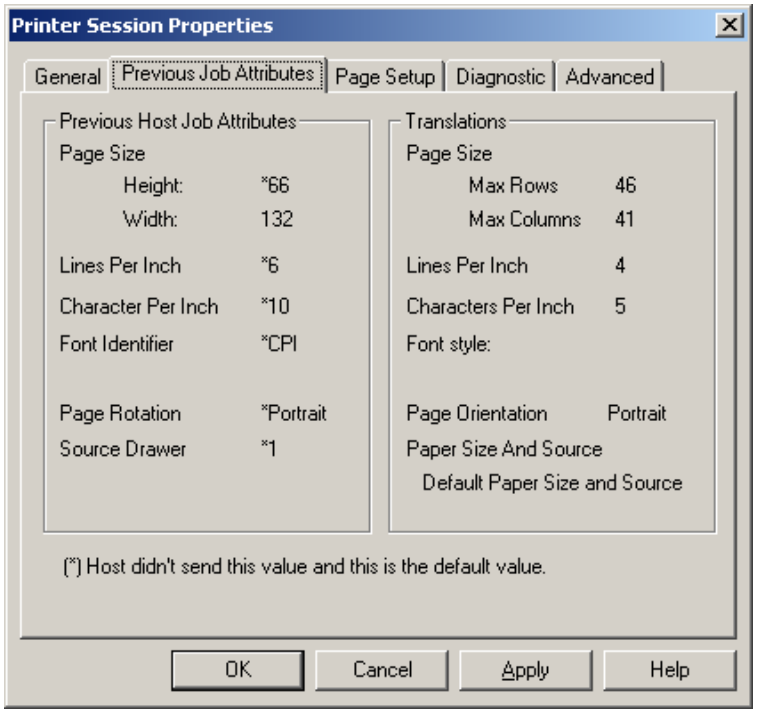
To change the Timeout Setting:

1. Start a Printer Session (see “Starting and Stopping a Printer Session” on page 82).
2. Open the session’s Printer Session Properties configurator (see “Printer Session Properties” on page 83).
3. Select the **General** tab.
4. Enter a number in the **Job timeout** field.
5. Click **OK** to close the dialog box.

***NOTE**: For more information, see “Changing the Printer Driver” on page 84. For assistance in choosing whether to work with the windows printer driver or a custom driver, see Windows vs. Custom Driver on page 131.*

Previous Job Attributes Tab

The left pane displays the attribute values of the most recent host print job. The right pane displays the corresponding local printer settings (converted from the host attributes by the BOSâNOVA Web printer session).

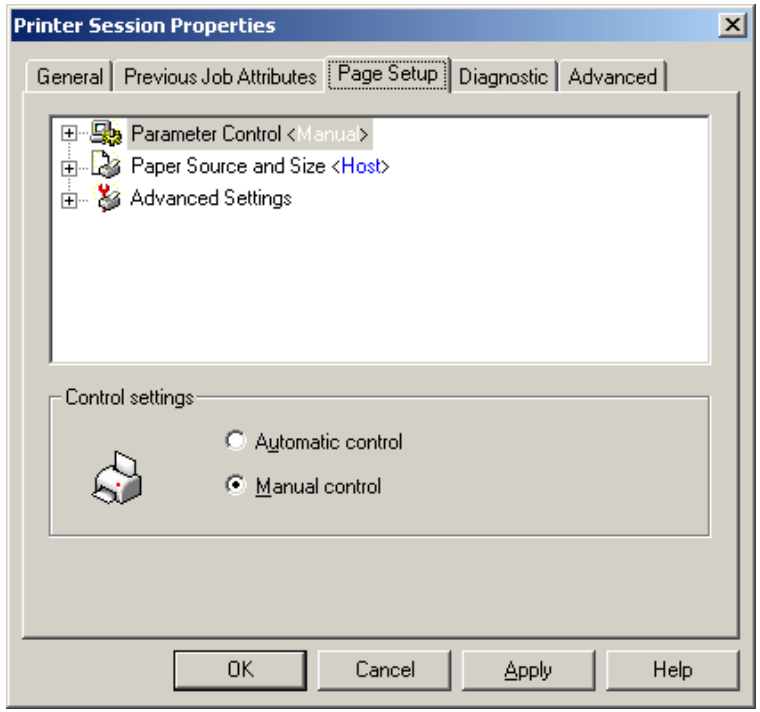


The * (asterisk) character means the default value is displayed.

If a Host Print Transform job is received, these values are not displayed. Rather, a short message indicates that this is an HPT job.

The Page Setup Tab

This tab contains parameters for defining how to fit the print data to the output page, which paper source and page size and margins to use, and whether the host or the PC printer controls these settings.



Changing Printer Drawer and Page Settings

To change these parameters:

1. Start a Printer Session (see “Starting and Stopping a Printer Session” on page 82).
2. Open the session’s Printer Session Properties configurator (see “Printer Session Properties” on page 83).
3. Select the **Page Setup** tab.
4. Expand the **Paper Source and Size** branch.
5. Select **Drawer Translation**.
6. In the bottom pane, select the desired drawer setting/page name and click the **Change** button.
7. Change the settings as needed.
8. Click **OK** in each dialog box to save the changes and close the dialog box. The changes take effect when you return to the emulation.

Changing Parameter Control Settings

To change these parameters:

1. Start a Printer Session (see “Starting and Stopping a Printer Session” on page 82).
2. Open the session’s Printer Session Properties configurator (see “Printer Session Properties” on page 83).
3. Select the **Page Setup** tab.
4. Select the **Parameter Control** branch in the top pane.
5. In the bottom pane, under Control settings, select either **Automatic Control** or **Manual Control**.

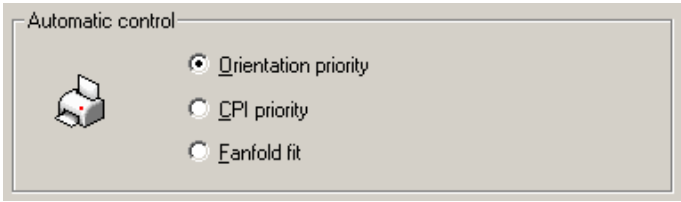
   Automatic Control
   The PC printer automatically adjusts the CPI, LPI and orientation to fit the print data of each print job to the output page according to the priority guideline you set.

   Manual Control (default)
   You set the CPI, LPI, and orientation parameters and you determine whether and how the host or the printer emulation will control these parameters.

NOTE: Use Manual control only if Automatic control does not produce the desired results.

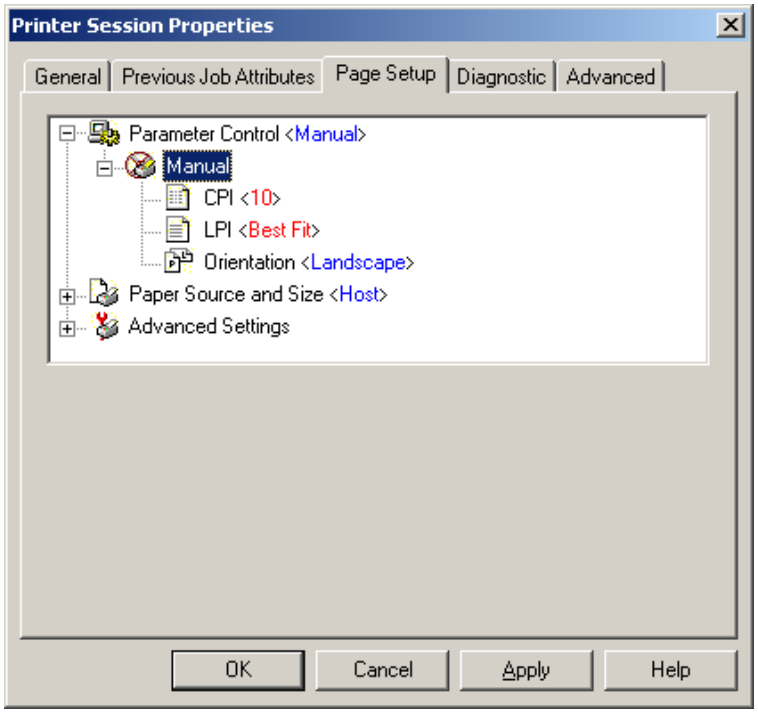
---

6. In the top pane, expand the **Parameter Control** branch.
7. Select the control setting that appears under Parameter Control. There are two possibilities:
   - If you selected Automatic Control, select one of the three priority options displayed in the bottom pane. The other parameters are adjusted to match the prioritized parameter.

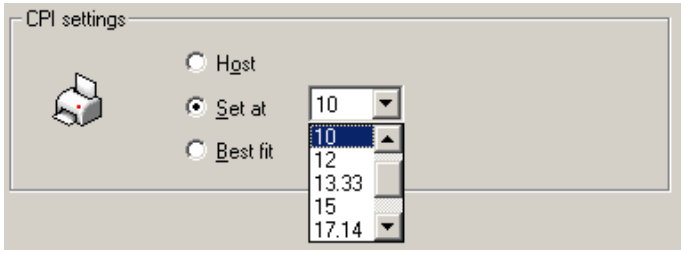


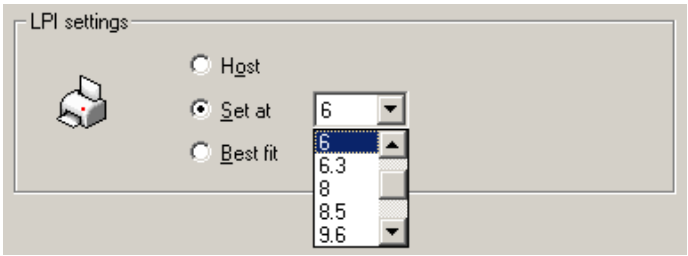
- If you selected Manual Control:

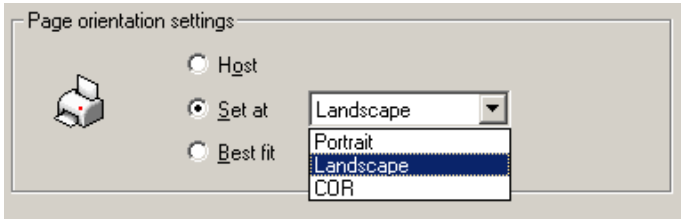
  i. Expand the **Manual** branch. The sub-branches CPI, LPI, and Orientation are displayed.



  ii. Select one of the sub-branches. As illustrated in the following three pictures, the corresponding dialog box is displayed in the bottom pane.







  iii. Select either Host, Set at, or Best fit. These parameters are explained in Table 5, “Page Setup Options per Parameter,” on page 89.

  iv. Repeat step iii for each parameter.

  v. Click **OK** to close the dialog box. The changes take effect when you return to the emulation.

Table 5: Page Setup Options per Parameter

	CPI Settings	LPI Settings	Orientation Settings
Host	The host retains control over CPI settings; that is, the printer emulation applies the CPI value it receives from the host.	The host retains control over LPI settings; that is, the printer emulation applies the LPI value it receives from the host.	The host retains control over orientation settings; that is, the printer emulation applies the orientation setting it receives from the host.
Set at	The PC printer controls the CPI, which is set to a particular value for all print jobs (select from the dropdown list). The options that appear in the list are set in Advanced Settings > CPI Translation.	The PC printer controls the LPI, which is set to a particular value for all print jobs (select from the dropdown list).	The PC printer controls the orientation, which is set to portrait, landscape, or COR (Computer Output Reduction) for all print jobs (select from the dropdown list).
Best fit	The PC printer retains control, but sets the CPI dynamically, based on the “best fit.”	The PC printer retains control, but sets the LPI dynamically, based on the “best fit.”	The PC printer retains control, but sets the orientation dynamically, based on the “best fit.”

Overview of CPI, LPI, and Orientation

This section provides an overview of:

- CPI, see p. 90
- LPI, see p. 91
- Orientation, see p. 91

Understanding CPI

CPI is characters per inch, that is, the number of characters in a horizontal inch. When the printer emulation receives a print job, it adjusts the CPI of the host print data to fit the printer output page according to the CPI settings. That is, it either uses the CPI value sent from the host, uses a value set in the printer emulation, or adjusts the CPI or other parameters (for example, LPI or orientation) to create the best fit.

***NOTE**: The host may send information based on the font identifier instead. In this case, the printer emulation uses a different value to adjust the print data to the output page. See Understanding Font Identifiers and Determining CPI vs. Font ID Control, p. 93.*

If you defined the host printer device to use Host Print Transform or ASCII Transparent, BOSâNOVA Web passes the buffers directly to the printer. In this case, BOSâNOVA Web has no control over the CPI, LPI, or any other print parameters.

If Host Print Transform is disabled, BOSâNOVA Web controls the print parameters according to what you set in Printer Session Properties > Page Setup tab > Parameter Control.

If you are using Automatic control (default), the PC printer automatically adjusts the CPI, LPI, and orientation to fit the print data of each print job to the output page according to the priority guideline you set.

If Automatic control does not produce satisfactory print output, use Manual control with which you set the CPI, LPI, and orientation parameters and you determine whether and how the host or the printer emulation will control these parameters.

Adjusting the CPI

In some cases, you need to know whether a print job is controlled by host CPI values or by host font identifiers (Font ID) in order to modify a setting or correct a problem.

***NOTE**: It is recommended that before you change a CPI setting, you first measure (or calculate) the CPI of the print output page. This value may be needed at a different point in the troubleshooting or problem-solving process (see Calculating the CPI on page 91).*

You can change the CPI setting by defining a fixed CPI value (Set At), a dynamic setting (Best Fit), or the value received from the host (Host).

When you work with Automatic control or with the Host setting under Manual control or with a custom printer,

BOSâNOVA Web maps the CPI values received from the host to supported PC printer values. You may need to adjust this mapping, called CPI translation, or to add new mapping pairs.

Calculating the CPI

There are two methods for calculating the CPI:

- Using a ruler (in inches), measure one (1) inch on the print output page and count the number of characters (including spaces, numbers, punctuation, and other special characters).
- Count the number of characters in a line (including spaces, numbers, punctuation, and other special characters). Take the page width (in inches) and divide it by the number of characters per line. That is:
  CPI = Page width (inches)/Characters per line.

***NOTE**: You can use the same methods for calculating (or counting) the printed CPI on an output page or for calculating a desired CPI value.*

Understanding LPI

LPI is Lines Per Inch, that is, the number of lines in a vertical inch.

If you defined the host printer device to use Host Print Transform, BOSâNOVA Web passes the buffers directly to the printer. In this case, BOSâNOVA Web has no control over the CPI, LPI, or any other print parameters.

If Host Print Transform is disabled, BOSâNOVA Web controls the print parameters according to what you set in Printer Session Properties > Page Setup tab > Parameter Control.

If you are using Automatic control (default), the PC printer automatically adjusts the CPI, LPI, and orientation to fit the print data of each print job to the output page according to the priority guideline you set.

If Automatic control does not produce satisfactory print output, use Manual control with which you set the CPI, LPI, and orientation parameters and you determine whether and how the host or the printer emulation will control these parameters.

Understanding Orientation

Orientation refers to paper rotation (portrait or landscape).

When the printer emulation receives a print job, it adjusts the orientation of the host print data to fit the printer output page according to the orientation and/or other print parameter settings. That is, it either uses the orientation value sent from the host, uses a value set in the printer emulation, or adjusts the orientation or other parameters (for example, CPI or LPI) to create the best fit.

***NOTE**: The host may send information based on the CPI or the font identifier instead. In this case, the printer emulation uses a different value to adjust the print data to the output page.*

If you defined the host printer device to use Host Print Transform, BOSâNOVA Web passes the buffers directly to the printer. In this case, BOSâNOVA Web has no control over the orientation or any other print parameters.

If Host Print Transform is disabled, BOSâNOVA Web controls the print parameters according to what you set in Printer Session Properties > Page Setup tab > Parameter Control.

If you are using Automatic control (default), the PC printer automatically adjusts the CPI, LPI, and orientation to fit the print data of each print job to the output page according to the priority guideline you set.

If Automatic control does not produce satisfactory print output, use Manual control with which you set the CPI, LPI, and orientation parameters and you determine whether and how the host or the printer emulation will control these parameters.

Changing the Orientation

You can change the orientation setting by defining a fixed orientation value (Set At), a dynamic setting (Best Fit), or the value received from the host (Host).

If you are having a problem with the orientation of your print output, see the Flowcharts in *Printer Troubleshooting*, p. 103.

Font Identifiers

A font identifier is a number that represents a particular host font. Hosts may send a print job with a host font identifier or with a CPI (characters per inch. that is, the number of characters in a horizontal inch) value.

When the printer emulation receives a print job that is controlled by font identifiers (see Determining CPI vs. Font ID Control on page 93), it uses the font translation values to adjust the host print data to fit the printer output page.

When you work with Automatic control or with the host setting under Manual control or with a custom printer, BOSâNOVA Web maps the Font ID values received from the host to supported PC printer values. You may need to adjust this mapping, called font translation, or to add new mapping pairs.

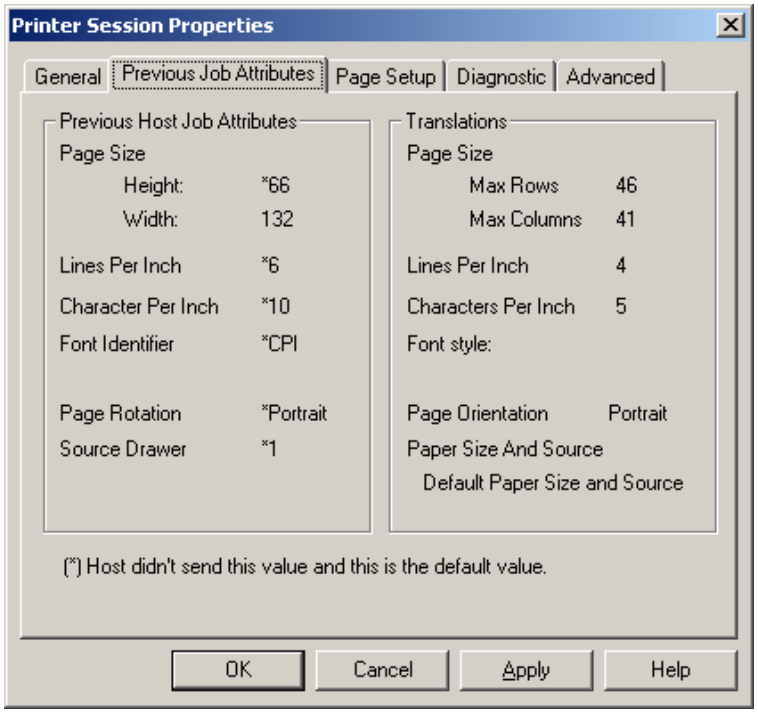
These settings should be changed only if your print output is unsatisfactory and you have determined that the problem is in the font ID translation (see Printing Emulation Troubleshooting – Main Flowchart on page 103).

Determining CPI vs. Font ID Control

In some cases, you need to know whether a print job is controlled by host CPI values or by host font identifiers (Font ID) in order to modify a setting or correct a problem.

To determine the control type:

1. Send a print job.
2. Open the session's Printer Session Properties configurator (see "Printer Session Properties" on page 83).
3. Select the **Previous Job Attributes** tab. The Previous Job Attributes tab opens.



4. In the left pane, under Previous host job attributes, check the Font Identifier parameter:
   - If the value is *CPI, either this print job is controlled by host CPI values or the host did not send a font ID. In that case, the printer emulation uses the CPI that was sent.
   - If the value is not *CPI, this print job is controlled by font identifiers. Write down the Font ID number.
5. Close this dialog box. If the print job is controlled by CPI values, see Changing CPI Translation on page 93. If the print job is controlled by font identifiers, see Changing Font Translation on page 95.

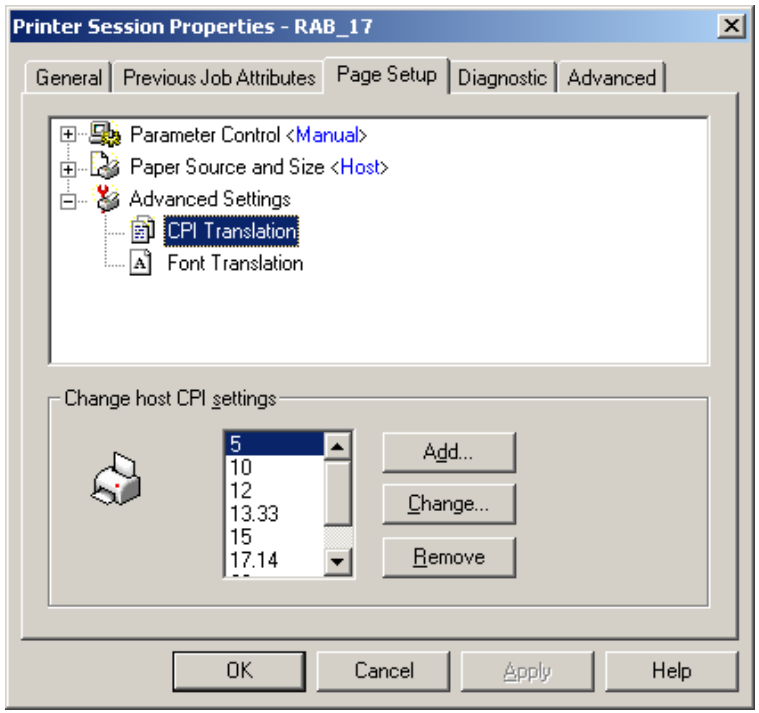
Changing CPI Translation

When you work with Automatic control or with the host setting under Manual control or with a custom printer, BOSâNOVA Web maps the CPI values received from the host to supported PC printer CPI settings. You may need to adjust this mapping, called CPI translation, or to add new mapping pairs.

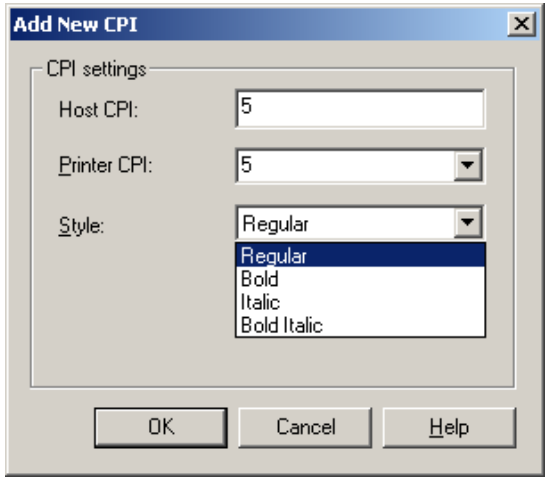
***NOTE**: These settings should be changed only if your print output is unsatisfactory and you have determined that the problem is in the CPI translation (see Printer Troubleshooting Flowcharts, p. 103).*

To change the CPI translation:

1. Start a Printer Session (see “Starting and Stopping a Printer Session” on page 82).
2. Open the session’s Printer Session Properties configurator (see “Printer Session Properties” on page 83).
3. Select the **Page Setup** tab.
4. Expand the **Advanced Settings** branch.
5. Select the **CPI Translation** sub-branch.



6. In the bottom pane, select a **host CPI** (Characters Per Inch) value from the dropdown list.
7. Complete one of the following:
   - To add a new CPI value to the list, click the **Add** button. The Add New CPI dialog box opens.



   - To change a translation (or mapping), select it and click the **Change** button. The Change CPI Settings dialog box opens.

CAUTION!

*If you delete a value from the list, you will not be able to print it. If you accidentally delete a CPI value, select **Advanced Settings** in the top pane and click **Restore Defaults** in the bottom pane. This will restore the deleted CPI and all other default settings.*

8. In the Add/Change CPI Settings dialog box, select a **Host CPI**, **Printer CPI**, and **Style** from the dropdown menus.
9. Click **OK** to close the dialog box. The changes take affect when you return to the emulation.

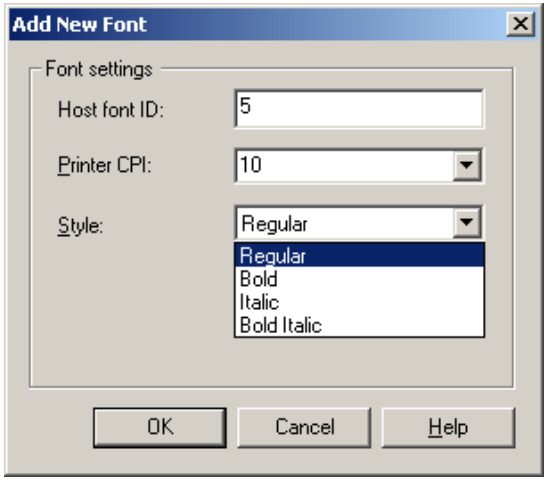
Changing Font Translation

When you work with Automatic control or with the host setting under Manual control or with a custom printer, BOSâNOVA Web maps the font ID numbers received from the host to supported PC printer font settings. You may need to adjust this mapping, called font translation, or to add new mapping pairs.

***NOTE**: These settings should be changed only if your print output is unsatisfactory and you have determined that the problem is in the font ID translation (see Troubleshooting Flowcharts, p. 103).*

To change the font translation:

1. Start a Printer Session (see “Starting and Stopping a Printer Session” on page 82).
2. Open the session’s Printer Session Properties configurator (see “Printer Session Properties” on page 83).
3. Select the **Page Setup** tab.
4. Expand the **Advanced Settings** branch.
5. Select the **Font Translation** sub-branch.
6. In the bottom pane, select a font setting.
7. Complete one of the following:
   - To add a new font ID to the list, click the **Add** button. The Add New Font dialog box opens.



   - To change a setting, click the **Change** button.

CAUTION!
*If you delete a font ID from the list, you will not be able to print it. If you accidentally delete a font ID, select **Advanced Settings** in the top pane and click **Restore Defaults** in the bottom pane. This will restore the deleted font and all other defaults.*

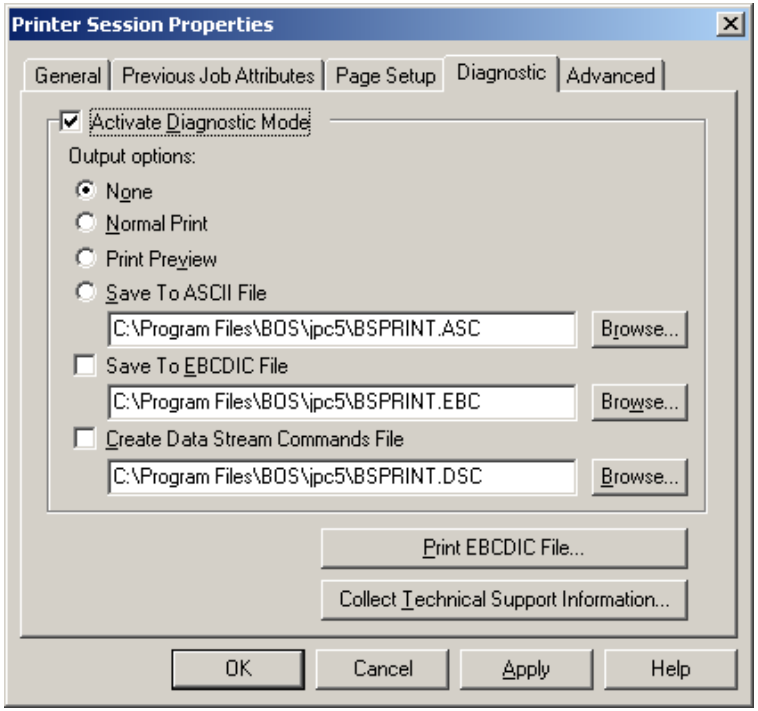
8. In the Add/Change New Font dialog box, select a **Host font ID**, **Printer CPI**, and **style** from the drop-down menus.
9. Click **OK** to close the dialog box. The changes take affect when you return to the emulation.

Testing a Printing Configuration

After you change a printer session setting, send the same print job to the printer to see if it now prints correctly.

Diagnostic Tab

The Diagnostic tab contains parameters for collecting printer troubleshooting information. If you contact BOS Technical Support, they may instruct you to set a particular diagnostic mode configuration.



NOTE: For more and detailed information on how to troubleshoot printing problems, see Diagnosing Printing Problems on page 102.

Activating or Changing the Diagnostic Mode

To activate the diagnostic mode:

1. Start a Printer Session (see “Starting and Stopping a Printer Session” on page 82).
2. Open the session’s Printer Session Properties configurator (see “Printer Session Properties” on page 83).
3. Select the **Diagnostic** tab.
4. Select **Activate diagnostic mode**.
5. Select one of the following output options:

   None
   Collects troubleshooting information without actually printing (that is, no output is sent to the printer). You use this setting to determine if the printing problem originates in the printer emulation or elsewhere in the system.

   Normal Print
   Prints normally using the default Printer Control Panel settings (that is, the same output as when Activate diagnostic mode is not selected). If you select this option and select Save to EBCDIC file, you will generate both a host output file and a printer output hardcopy for BOS Technical Support.

Print Preview
Prints to the screen in a standard Windows print preview format (no output is sent to the printer). You can scroll through the pages and spot potential problems before sending the print job to the physical printer.

Save to ASCII File
Writes the print job output to an ASCII file (no output is sent to the printer). This preserves the exact information that the print device received. Enter the path and filename (extension .asc) or click Browse to locate a file. The file can later be sent to the printer. This file is overwritten each time you send a new print job.

Save to EBCDIC File
Writes the print job output to a binary file (containing EBCDIC characters). This preserves the exact host output with no translation or conversion. Enter the path and filename (extension .ebc) or click Browse to locate a file. The saved file can be printed later by clicking Print EBCDIC File. This file is added to each time you send a new print job.

Create Data Stream Commands File
Select this option to create a file containing only the print commands received from the AS/400, for example, margins, orientation, CPI, LPI, host drawer, etc. (It does not contain the actual text of the print job.) Enter the path and filename (extension .dsc) or click Browse to locate a file. The saved file can be opened in any text-editor and printed. Additional records are appended to the existing log each time you receive a new print job.

Print EBCDIC File
Opens a standard file browsing dialog box for selecting the file to be printed.

Collect Technical Support Information
Creates a file containing system information (computer, CPU, memory consumption, disk consumption), print information (where print sessions are connected, translation tables), any diagnostic files you generated, the user information file (if you completed it), etc. The file (default filename is Bsinfo.bts) is located in the BOSâNOVA Web folder. You can specify another filename or folder in which to save this file. This file should then be sent to BOS Technical Support.

Collecting Technical Support Information

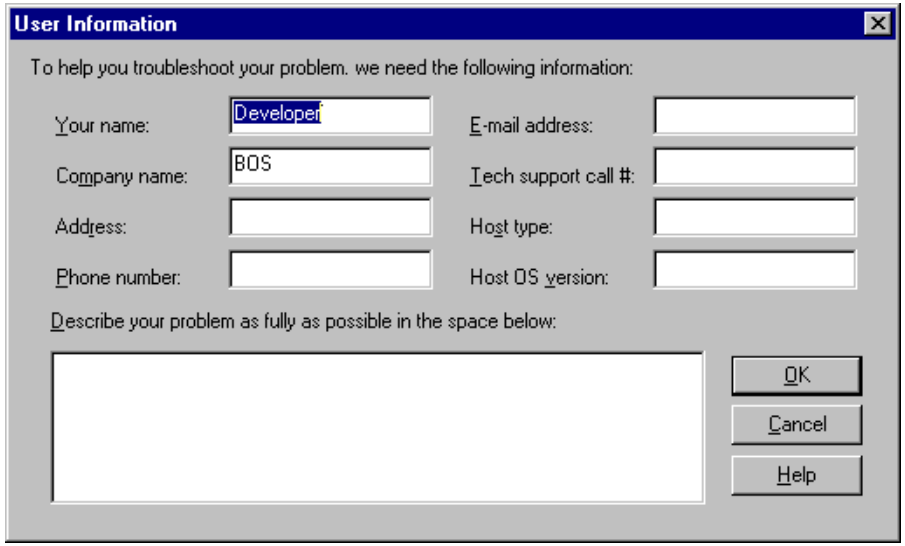
Use the User Information dialog box to collect printer troubleshooting information in Printer Session Properties > Diagnostic tab.

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 Web installation folder. Include this file along with any trace (dump) files or recorded windows for BOS Technical Support.

NOTE: The file also automatically includes other information including system information plus the specific printer session.

To collect and send Technical Support Information:

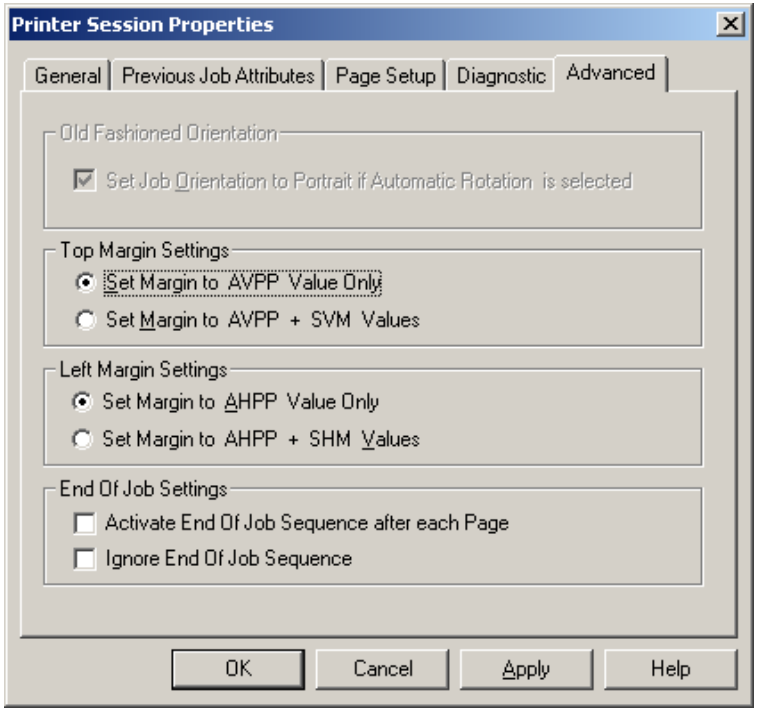
1. Click the **Collect Technical Support Information** button in the Diagnostic tab. The User Information dialog box opens.



2. Fill in the following data:
   a. **Your Name**: By default, the name you used when installing BOSâNOVA Web will be used. You can change this.
   b. **Company**: By default, the company name you used when installing BOSâNOVA Web will be used. You can change this.
   c. **Address**: Enter your full mailing address, including the postal code and country.
   d. **Phone Number**: Enter a daytime phone number where we can reach you. Users outside the US are requested to include the country code.
   e. **E-mail Address** (If available).
   f. **Tech Support Call #**: This number will be provided by BOS Technical Support. Make sure to include it so that your diagnostic files can be properly tracked.
   g. **Host Type**: Enter your host type (iSeries, System/36, AS/36, etc.).
   h. **Host OS Version**: Enter the complete version number of your host operating system.
   i. **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?
   j. Click **OK**. The default file Bsinfo.bts is created in the BOSâNOVA Web installation folder.

Advanced Tab

This tab contains parameters for page orientation and margin settings.



Old Fashioned Orientation

Select this checkbox if portrait orientation is required but Automatic Rotation is selected.

Top Margin Settings

This parameter determines the margin at the top of the page. Select an option:

- When AVPP Value Only is selected, the margin is determined by the Absolute Vertical Presentation Position (AVPP) line specified by the host. The Set Vertical Margin (SVM) is ignored.
- When AVPP + SVM is selected, both parameters are used to determine the top and bottom margins on the page.

Left Margin Settings

This parameter determines the margin at the top of the page. Absolute Horizontal Presentation Position (AHPP) moves the print position to the horizontal position specified by the host. Set Horizontal Margin (SHM) specifies the left and right margins in 1/1440ths of an inch. Margins settings are always relative to the physical left margin.

- When AHPP Value Only is selected, the margin is determined by the Absolute Horizontal Presentation Position (AHPP) line specified by the host. The Set Horizontal Margin (SHM) parameter is ignored.
- When AHPP + SHM is selected, both parameters are used to determine the left and right margins on the page.

End of Job Settings

These parameters create additional flexibility vis-a-vis layout and routing.

- When Activate End of Job Sequence after Each Page is selected, BOSâNOVA Web responds to a

FORMFEED command as if it were an End of Job sequence. This enables you to break up a job into multiple, smaller jobs. For example, if page 1 of a job is to be printed with a Portrait orientation, whereas page 2 is to be printed with a Landscape orientation, this parameter could send page 1 to Tray 1 and page 2 to Tray 2.

- When Ignore End of Job Sequence is selected, the parameters defined at the beginning of the job are saved throughout the entire job and for every page of the job.

Troubleshooting

This section includes:

Printer Emulation Troubleshooting

Diagnosing Printing Problems

When a print job doesn't print satisfactorily, you must determine where in the process the problem occurred in order to fix it.

The flowcharts in this section help you determine what went wrong, where it occurred in the process, and how to reconfigure to solve the problem.

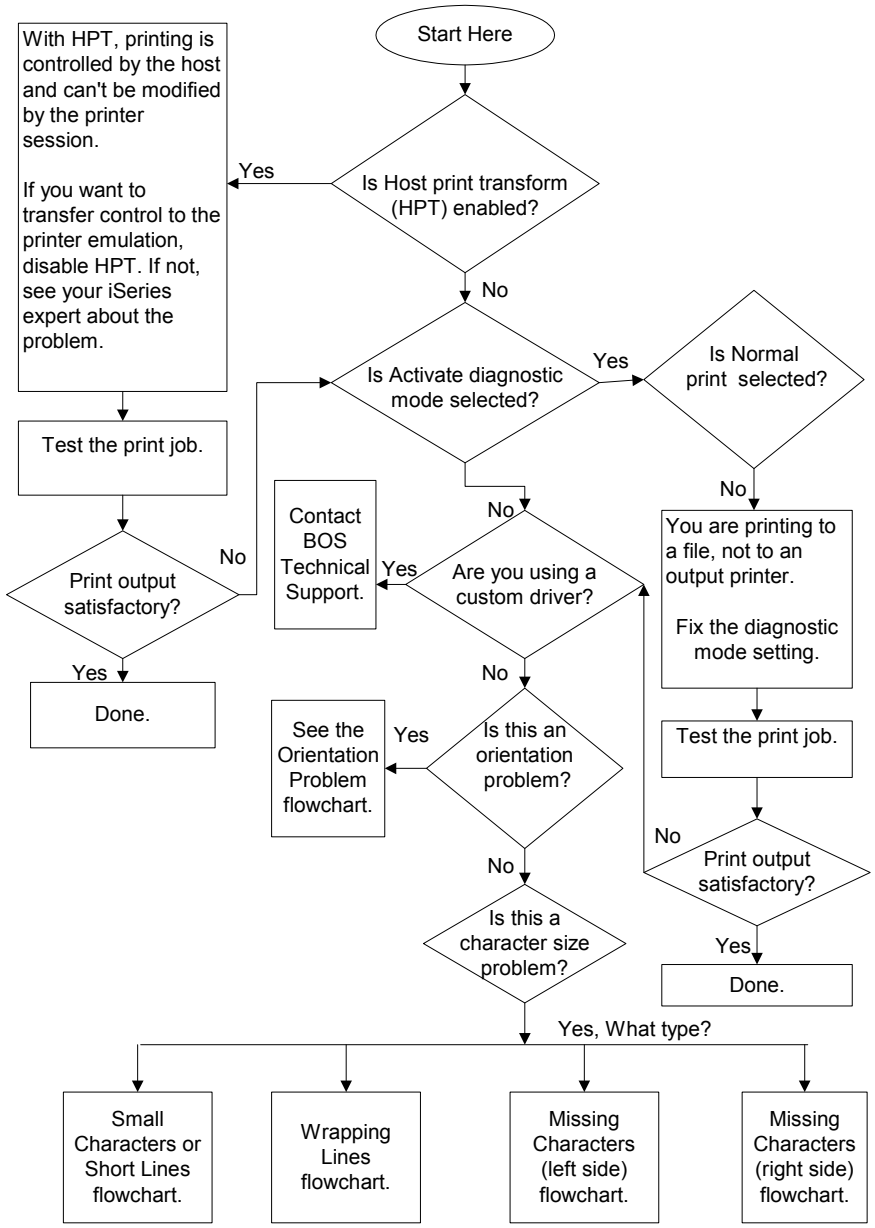
Collecting Troubleshooting Information

If you have tried to solve your printing problem using the flowcharts and other troubleshooting information and the problem persists, collect the following troubleshooting information and send it to BOS Technical Support.

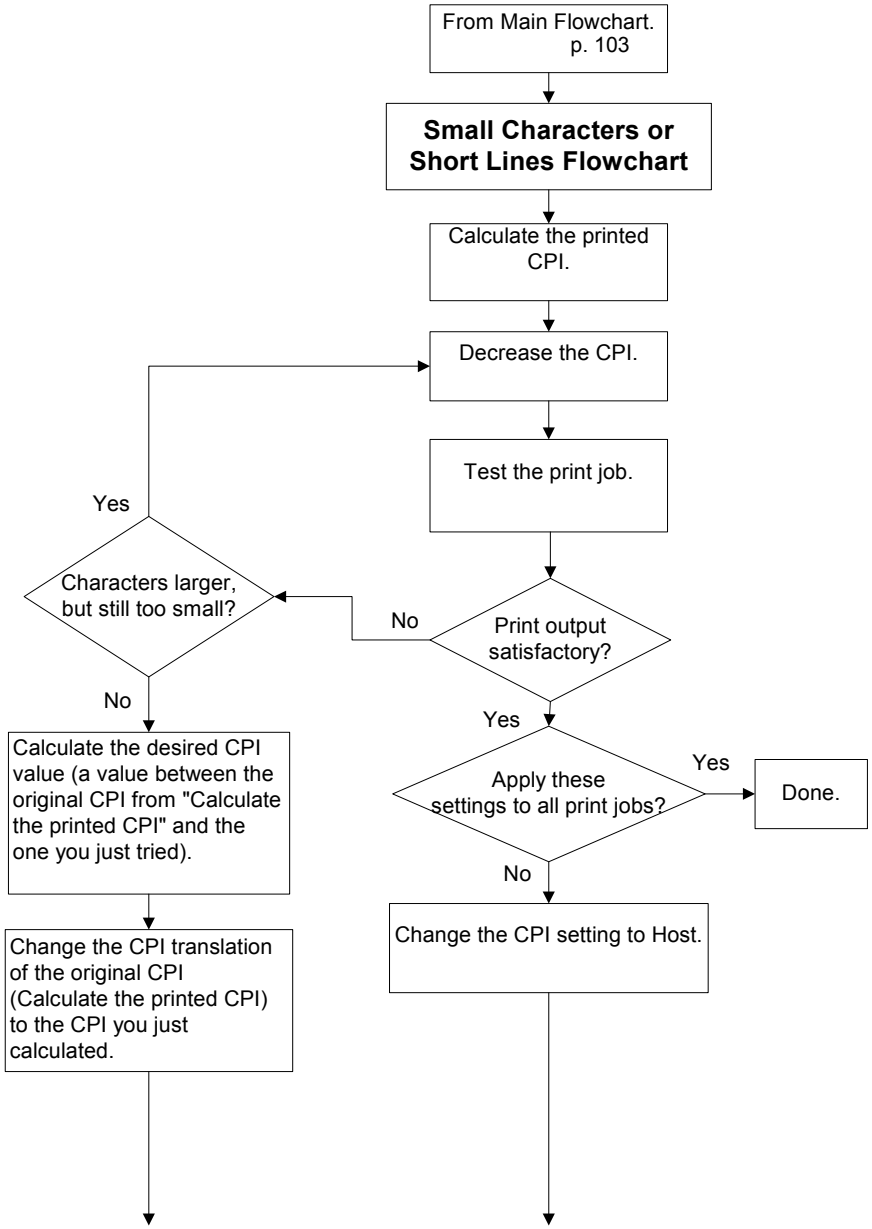
1. In Printer Session Properties > Diagnostic tab, select **Activate diagnostic mode**, select **Save to ASCII file**, and select **Save to EBCDIC file**.
2. Click **OK**.
3. Send a print job.
4. Collect the troubleshooting information:
   a. Right-click the  icon in the task bar.
   b. Select **Properties** to open Printer Session Properties.
   c. Select the **Diagnostic** tab.
   d. Click **Collect Technical Support Information**.
5. Fill out the User Information form.
6. Fax or email the information to BOS Technical Support. Include a fax of a good and a bad printout, that is, an example of how the printout should appear and a copy of the unsatisfactory printout you are getting.

Printing Emulation Troubleshooting – Main Flowchart

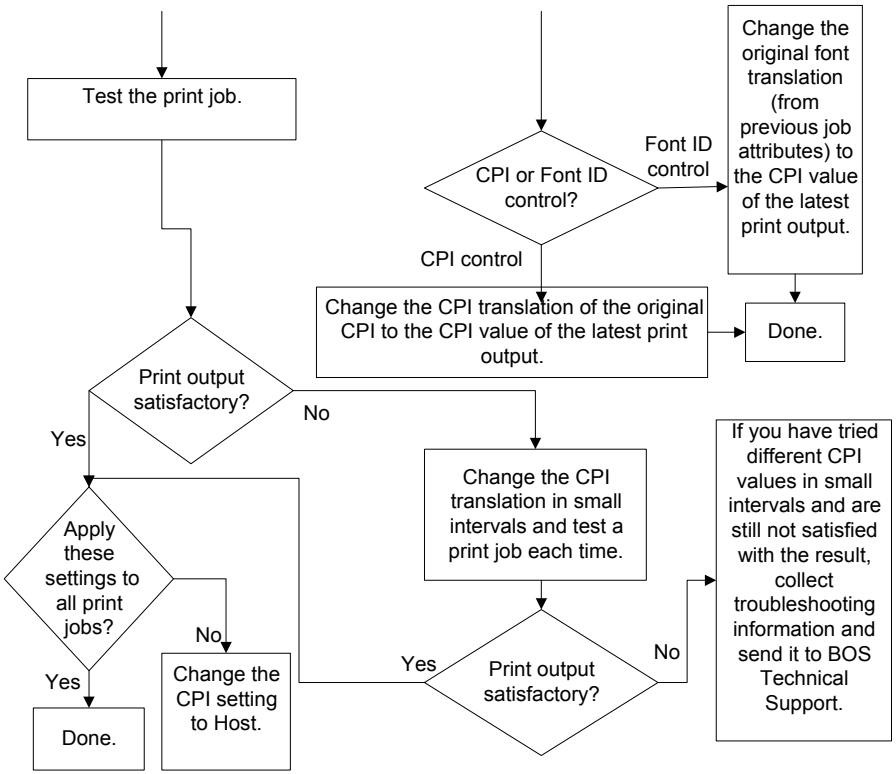
Start troubleshooting from this flowchart.



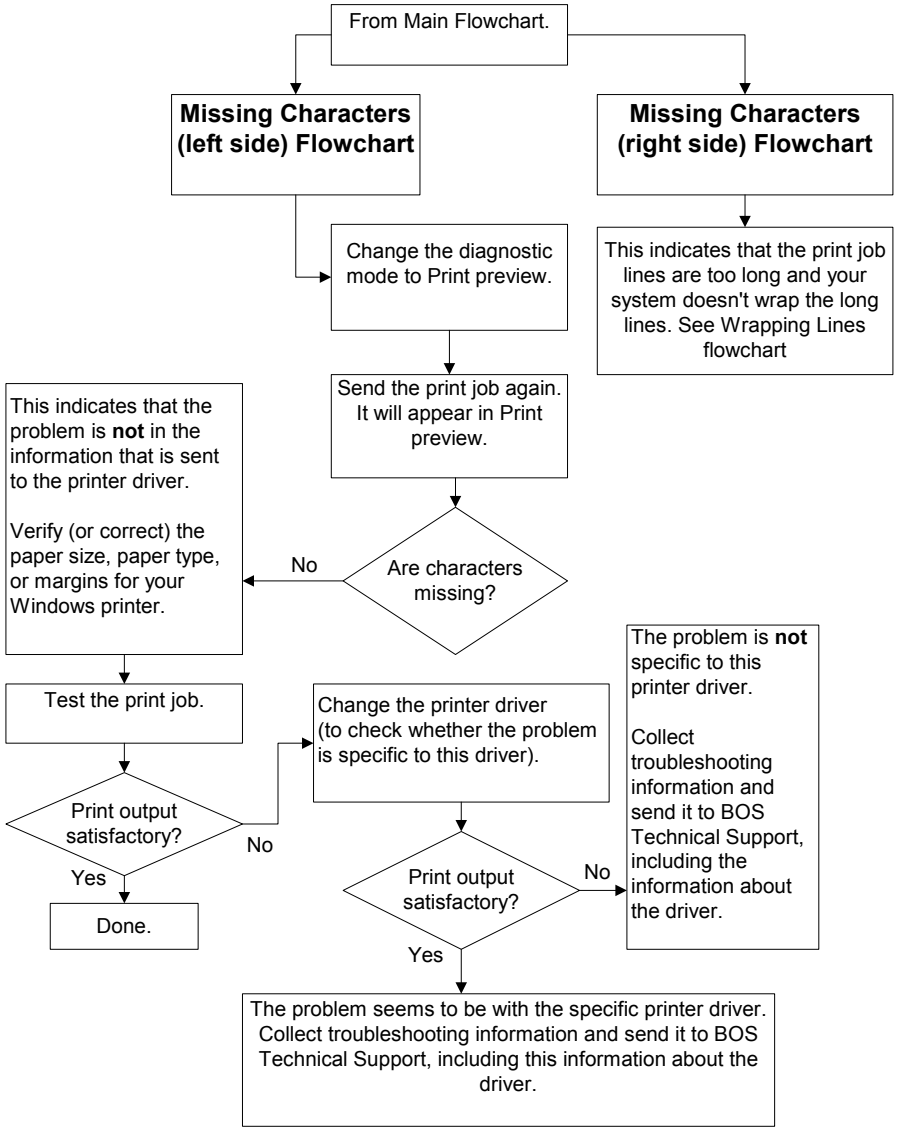
Small Characters/Short Lines Flowchart



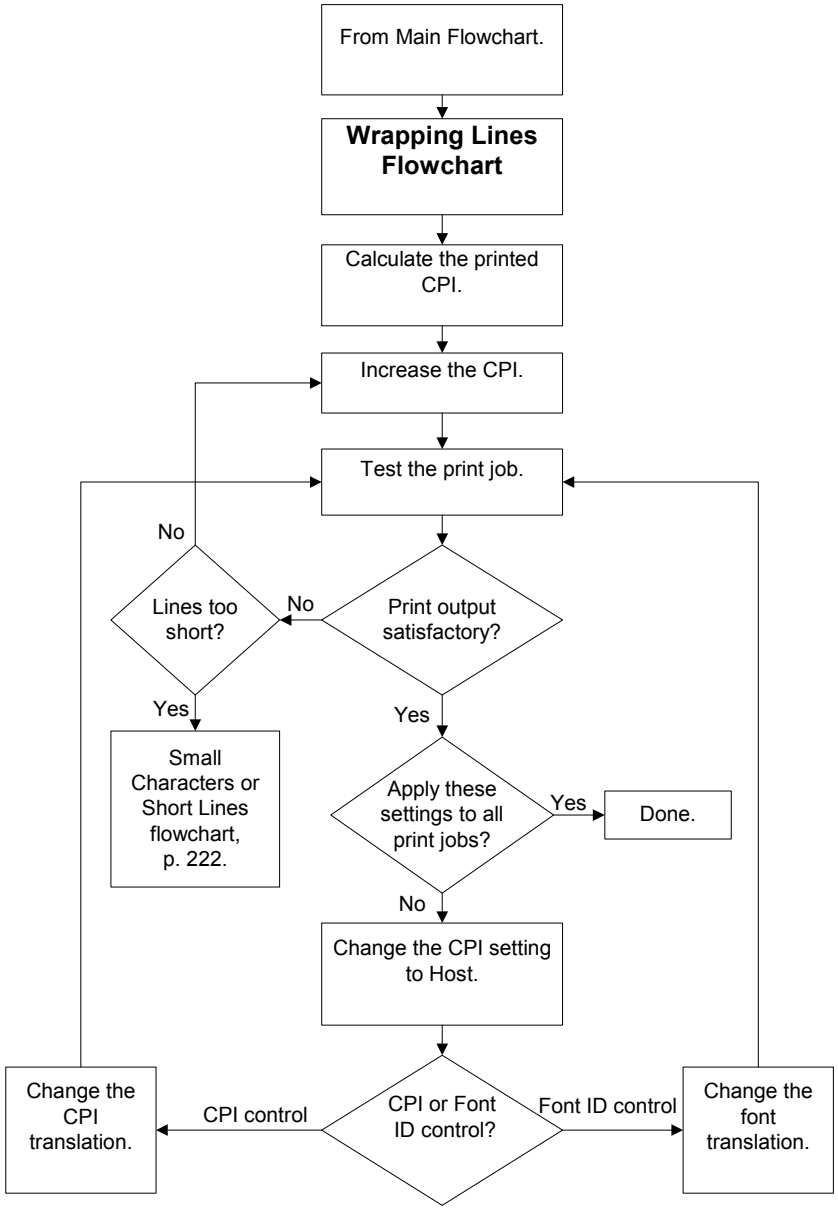
Continued…



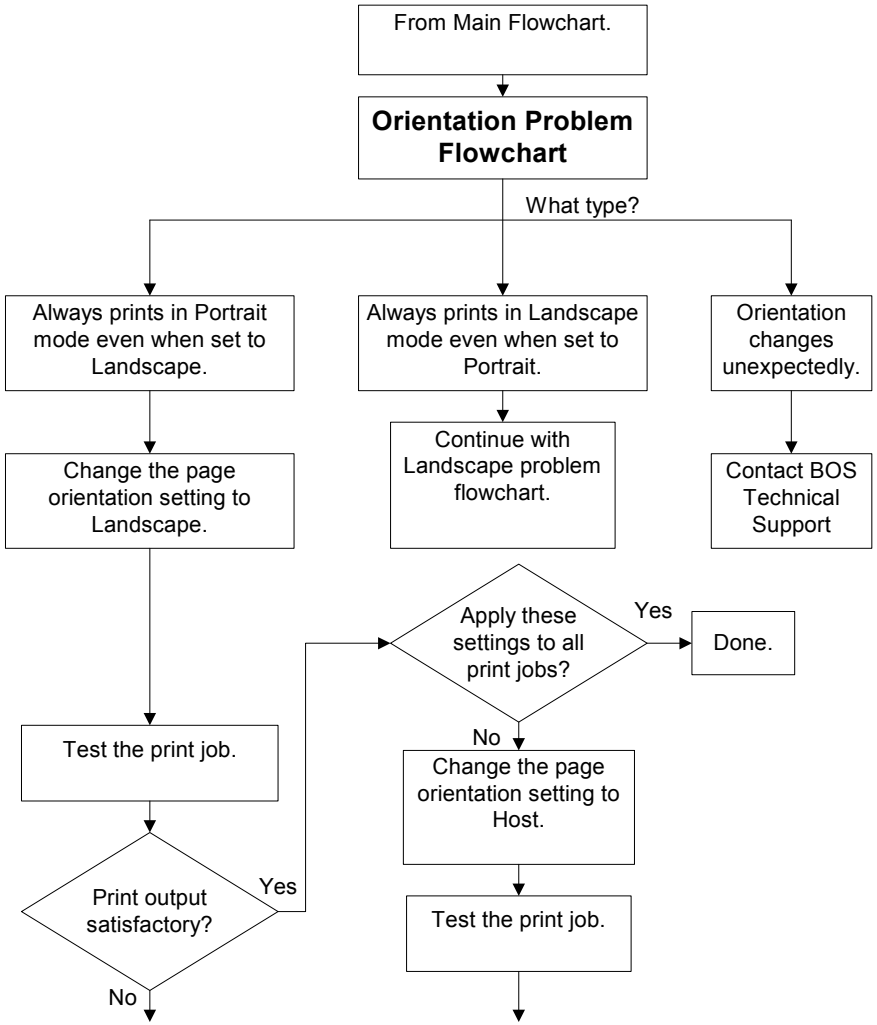
Missing Characters Flowchart

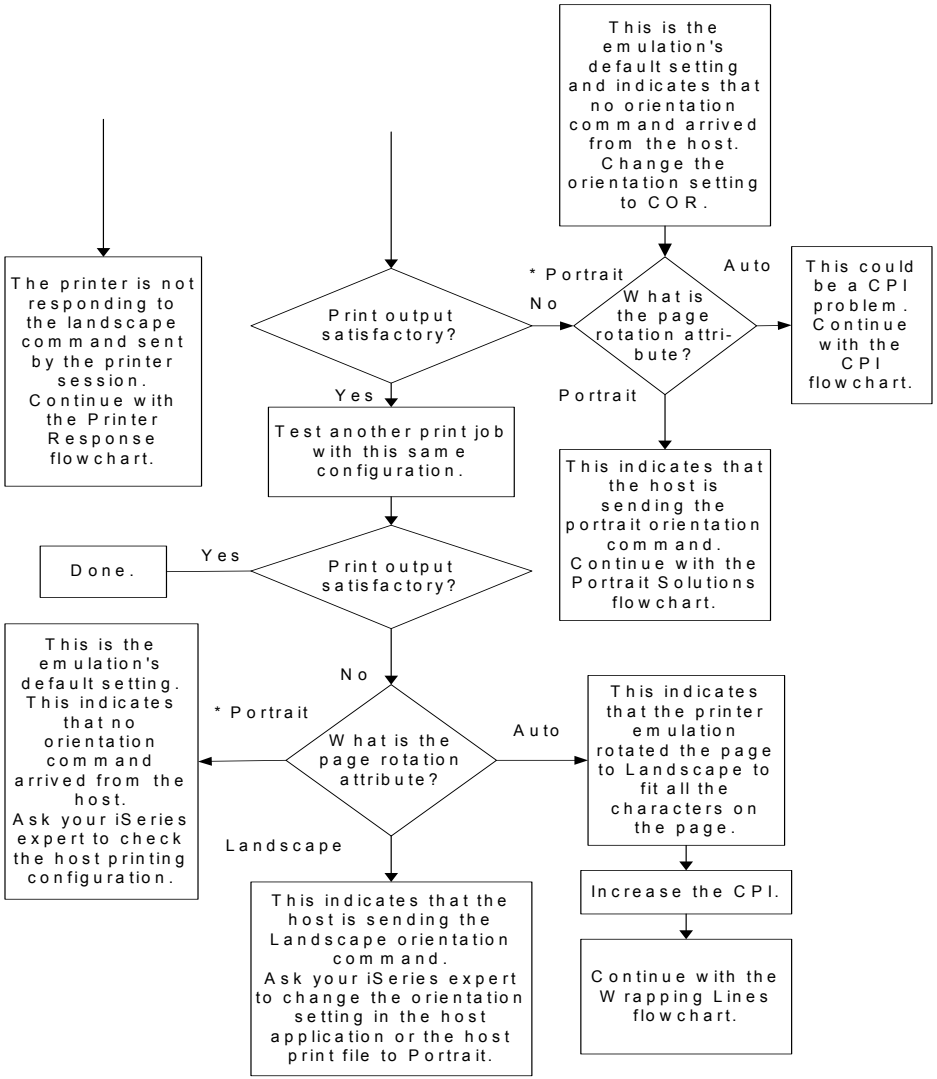


Wrapping Lines Flowchart



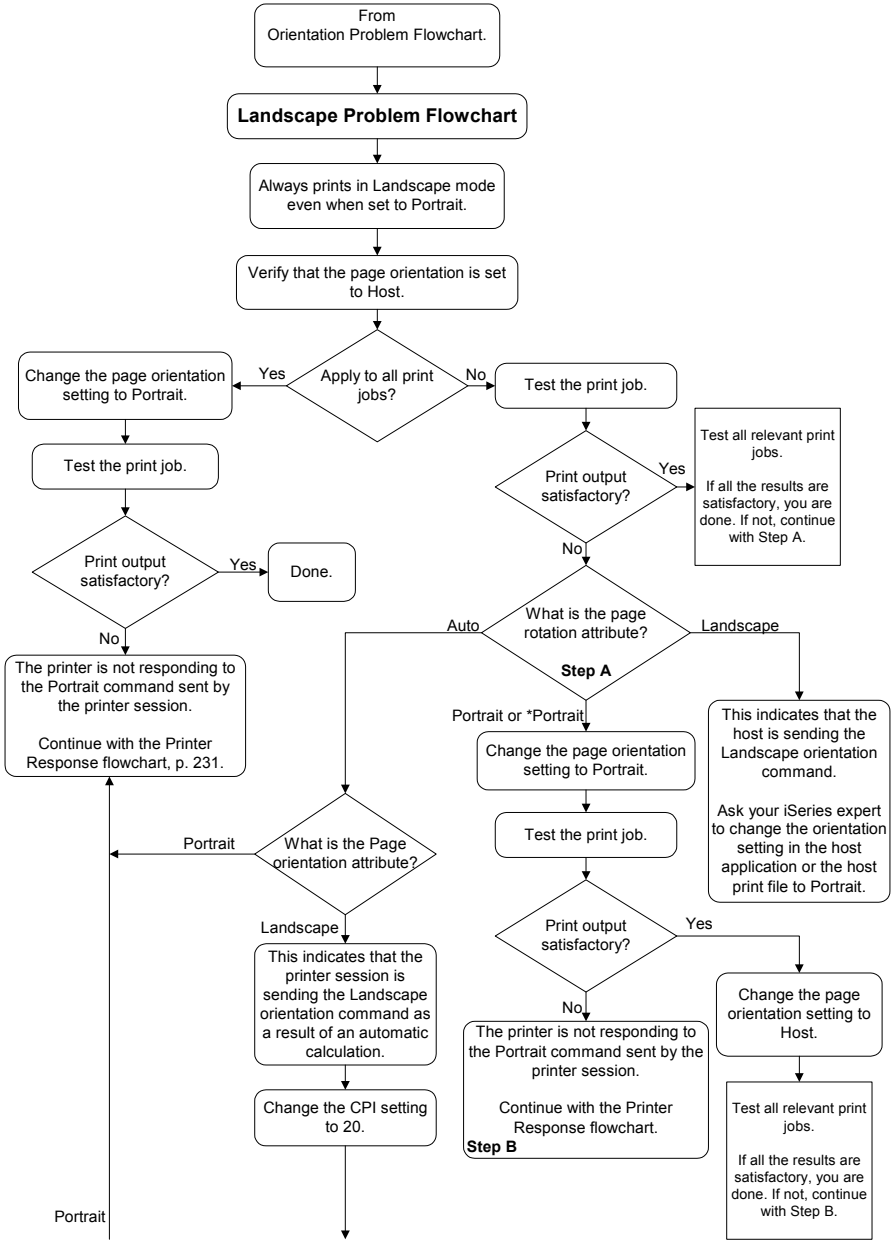
Orientation Problem Flowchart



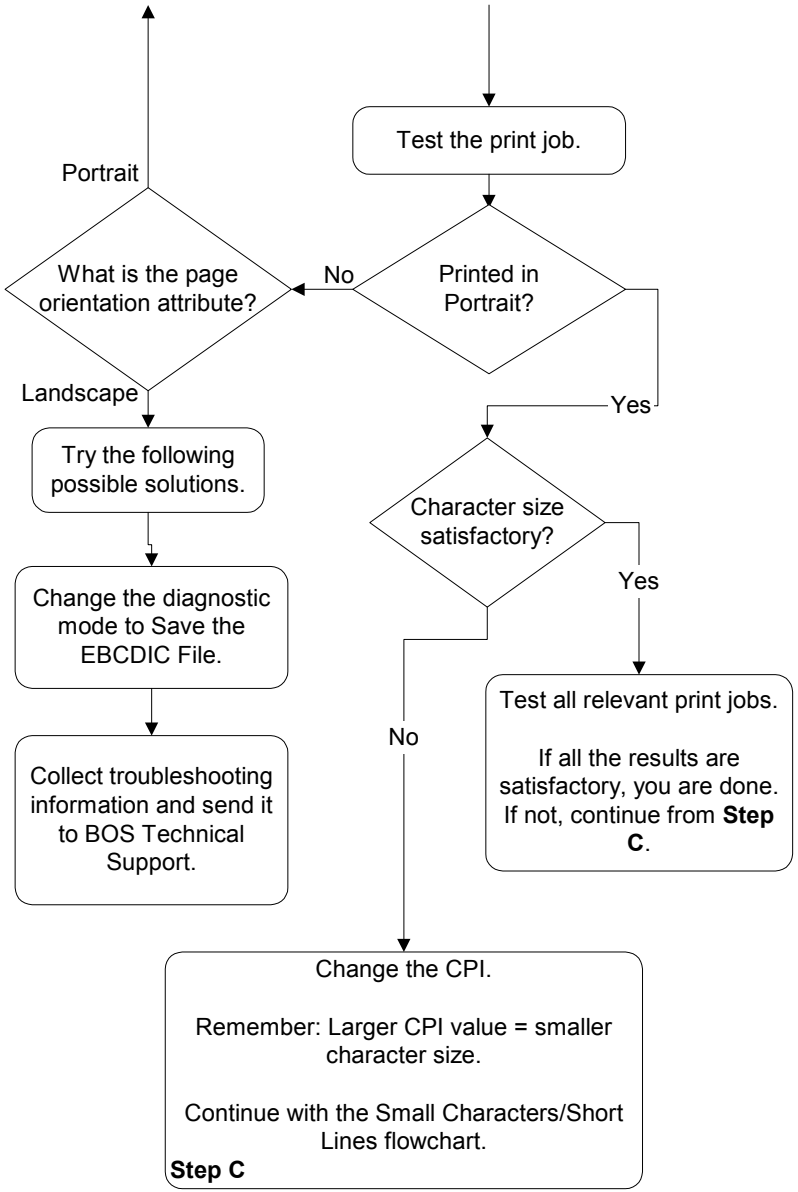


Continued…

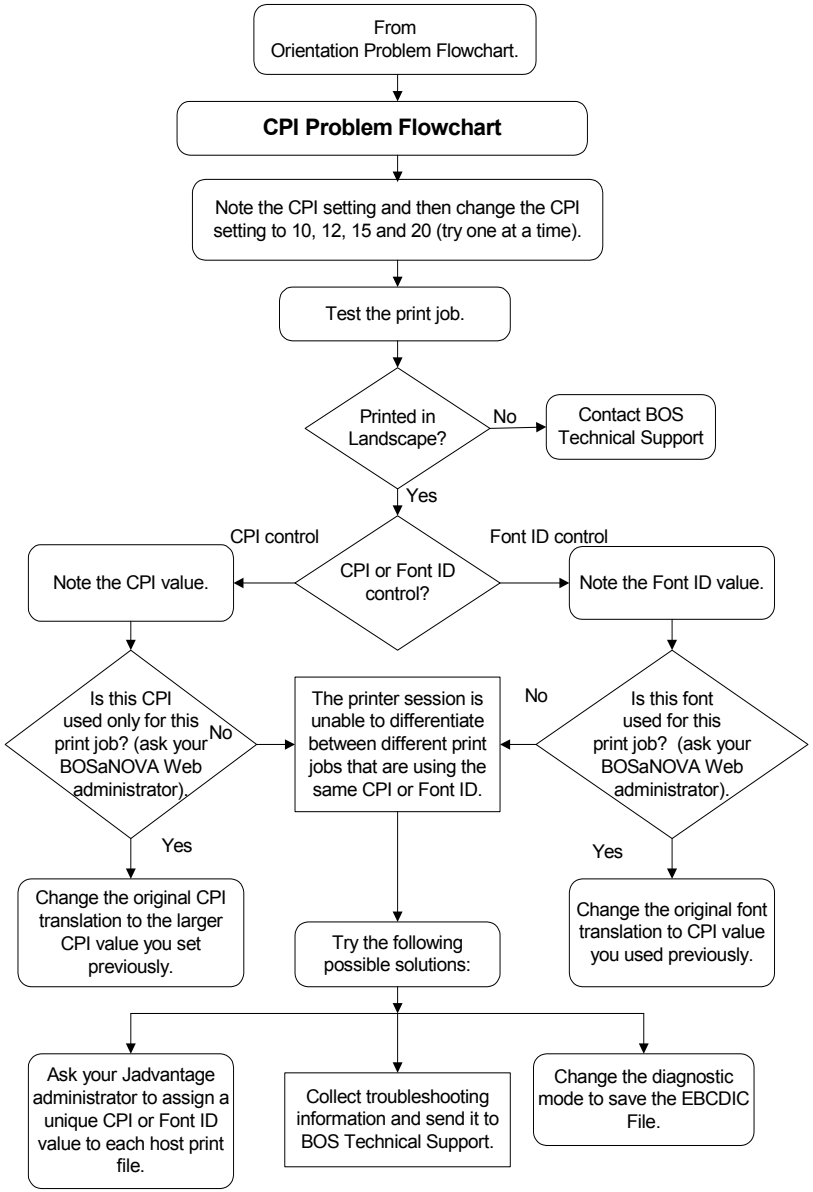
Landscape Problem Flowchart



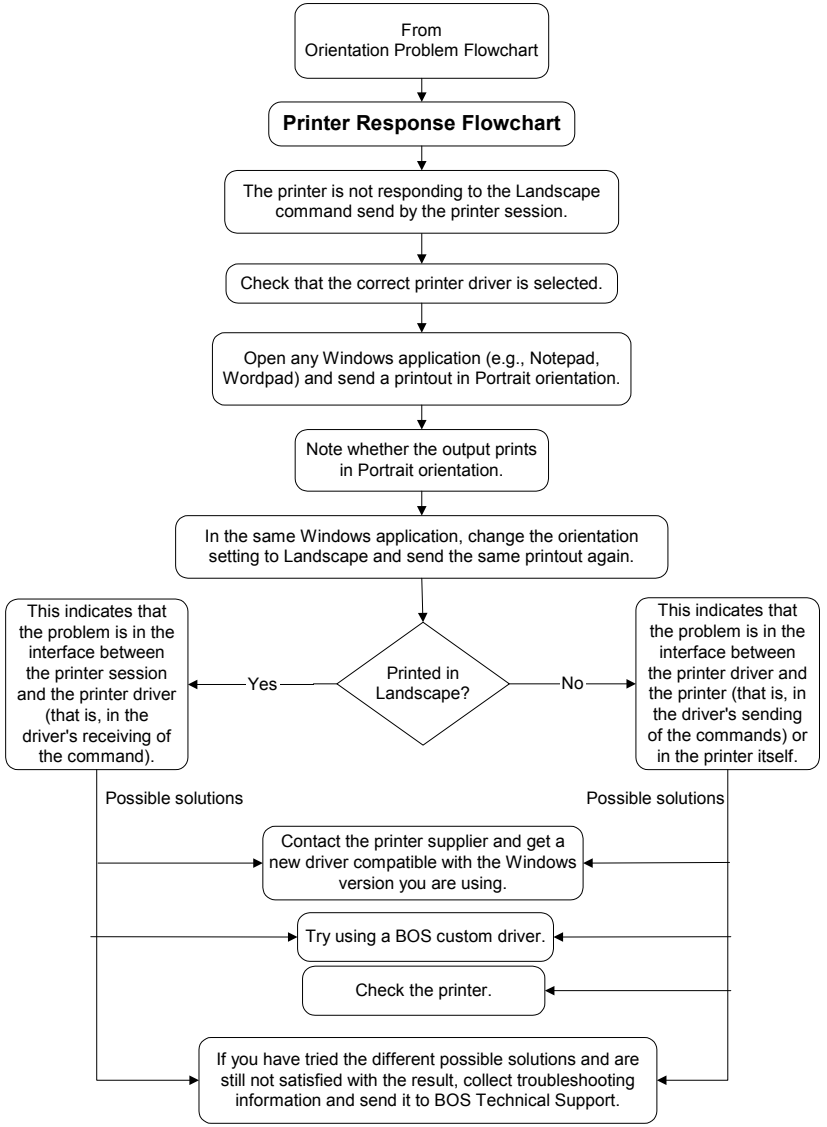
Continued…



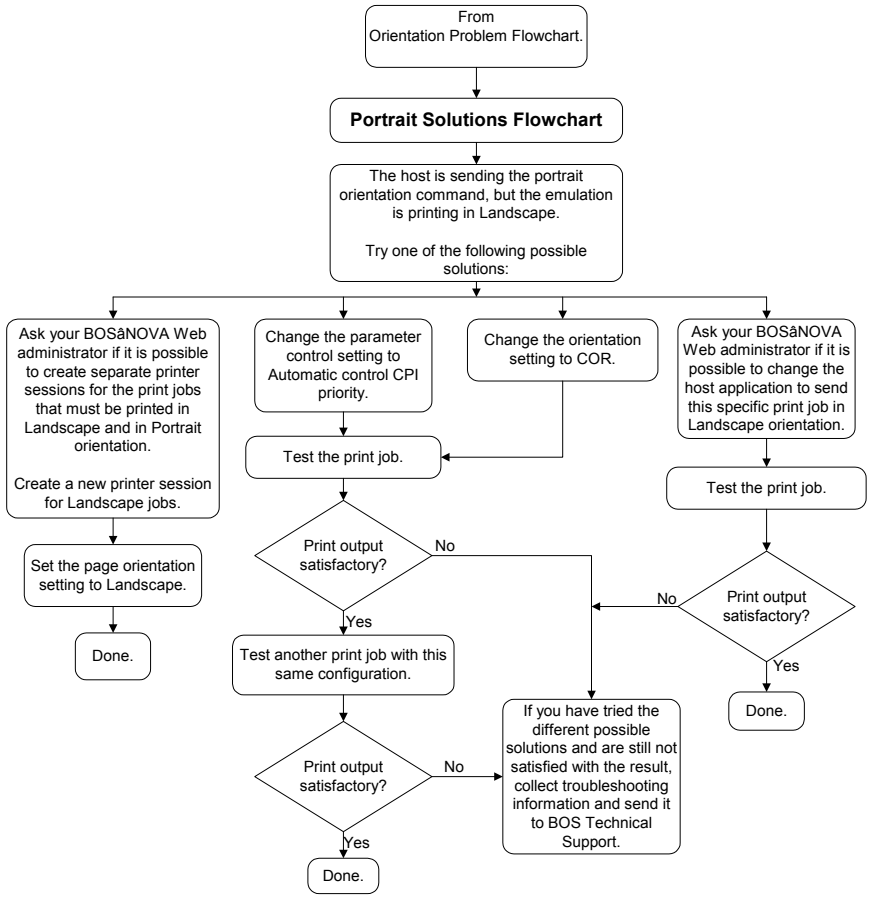
CPI Problem Flowchart



Printer Response Problem Flowchart



Portrait Solutions Problem Flowchart



Solutions for General Printing Emulation Problems

Slow Printing

Using a custom driver is generally faster than printing through Windows functions:

1. From the printer session, open **Printer Session Properties**.
2. In the **General** tab, select **Custom driver**.
3. Select a suitable printer from the dropdown list.

No Printout

There is no output from the printer, even when you click **Print Test Page** in the General tab of Printer Session Properties.

Try the following:

1. If Diagnostic Mode is active, turn it off (in Printer Session Properties > Diagnostics tab, make sure that **Activate diagnostics mode** is not selected). Try printing again.
2. In the General tab, make sure that **Current Windows driver** is selected. Make sure that the driver is correctly defined in the Windows Control Panel (that is, you are trying to print to the correct printer).

3. Select to see if there is enough disk space available on the disk where the Windows Spool folder is located.
4. Try to print from another Windows application, such as WordPad. If nothing prints out, this may indicate a Windows problem. In this case, contact Microsoft Technical Support.
5. Check the Printer Session Status screen:
   a. If Device Status > Host device status is **Not Available**, ask your BOSâNOVA Web administrator to check the system configuration (for example, is the IP address correct? is the iSeries TCP/IP interface activated?).
   b. If Device Status > Host device status is **Available**, but Job Status > Status is **Idle**, check that the print job was sent to the correct printer output queue.
   c. If Device Status > Host device status is **Available**, Job Status > Status rotates from **Idle** to **Spooling** to **Printing**, and Job Status > Bytes received is greater than zero (0), the problem is in the printer configuration.

Zero Bytes

If no printout appears, and the job status entry in the printer session shows 0 bytes received, perform the following:

1. Check that the writer you are using in the host is already started.
2. Make sure that there are no messages in your print job or in the writer and that the print file is ready (not in HLD status). Run the following command: **WRKOUTQ <prtdevname>**
3. Press **<5>** and look for the switch setting (physical address). Make sure that the port number is the same station to which you are connected.
4. If you are using an APPC connection, make sure that the printer to which you send your printouts is the same as the session name defined in the BOSâNOVA Web Configurator.
5. Check that the device type is the same as that defined in the BOSâNOVA Web Configurator by running the following command on the command line: **WRKDEVD <prtdevname>**
6. If it's not the same, end the writer in the host (**ENDWTR <prtname>**), change it, and restart the emulation.
7. If this doesn't help, define your printer device manually (using the CHGDEVD or CRTDEVD commands).

8. Check in WRKCFGSTS *DEV <prtdevname> that your printer is **Varied on**. If the status is Varied off or Failed:
   a. Vary off the device.
   b. Vary on the device.
   c. Start the printer writer (**STRPRTWTR <prt name>**).

Printout Doesn't Fit on the Page

If the printer emulation is using the correct CPI and LPI as defined in the host, but doesn't fit on the page, perform these steps:

1. Open **Printer Session Properties**.
2. In the Page Setup tab, set Parameter Control to **Automatic Control**.

***NOTE**: This means that the PC emulation, not the host, will control CPI and LPI.*

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3. Check to make sure that your physical paper size and source (tray) match the settings. Paper size is defined in the Page Setup tab, under Paper source and size:
   a. If you are using the Windows driver: If Paper source and size is set to Set At, make sure the correct item is selected from the dropdown list, or use Default Paper Size and Source.
   b. If you are using a custom driver: If Paper source and size is set to host, the host selects one of the available paper sizes defined in the printer driver. If the paper in the physical printer does not match that defined in the printer driver, you must use the Printer Driver Editor to define the new paper size for the current driver; the definitions are made under Page Definition.
4. If you are not successful with Automatic, try specifically defining the CPI, LPI, and orientation (in the Page Setup tab > Parameter Control) for the print job.

80-column Output Doesn't Fit on the Page

Your printout may not fit onto the page with the selected CPI, but using the next available CPI produces output that is too small. You can resolve this problem by creating an "in-between" CPI.

If you are using the Windows printer driver:

1. Right-click the  icon in the task bar.
2. Select **Properties** to open Printer Session Properties.
3. In the Page Setup tab, expand **Advanced settings** and select **CPI translation** in the top pane.
4. In the bottom pane, click the **Add** button.

5. In Add New CPI, create a new **CPI** (for example, if the host CPI is 10, and the previous options were 10 or 12, try 10.5 or 11).
6. Click **OK**.

If you are using a custom printer driver:

1. Open the **Printer Driver Editor**.
2. In Font Sets, add a new font definition. Enter the desired CPI and provide the select sequence. Provide a Host Font ID for at least one of the font attributes (regular, bold, italic, or bold+italic).
3. In Character Pitch, add your new CPI to host CPI and assign it to the new font.
4. When you re-enter the printer emulation, session, printer session properties, the new CPI should appear in CPI > Set At in Parameter Control.

Character Size Not Right

If you are using the Windows printer driver:

1. Right-click the  icon in the task bar.
2. Select **Properties** to open Printer Session Properties.
3. In the Page Setup tab, set Parameter Control to **Manual Control**.
4. Set CPI to **Set At** and make sure the required CPI exists. If it does, select it and go to step 6. To define a new CPI, continue with step 5.
5. Define a new CPI:

***NOTE**: This step is for printer models 3812 and 5219 only.*

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   a. Select **Advanced Settings** and select **CPI Translation**.
   b. Click the **Add** button.
   c. Complete the fields in **Add New CPI** and click **OK**.
   d. (Optional) To change the Host Font ID as well, select **Font Translation** (in Advanced Settings) and click the **Add** button.
   e. Complete the fields in **Add New Font** and click **OK**.
   f. Now that the desired CPI has been defined, return to **Parameter Control**, set CPI to **Set At**, and select the CPI you just added.
6. Release the print job (or re-send) to test the output. If the CPI appears OK, you are done for this job. If you have other print jobs requiring a different CPI, go on to step 7.
7. This step enables the host to define CPI settings automatically; this is convenient if you have print jobs that require different CPIs:

NOTE: This step is for printer models 3812 and 5219 only.

a. Return to **Parameter Control** and select **Manual Control**.

b. Change CPI to **Host**.

c. Change Orientation to **Portrait** or **Landscape**, depending on your requirements.

d. Release the print job (or re-send) to test the output. If the output is OK this time, you are done. If not, or if you need to change the orientation depending on the print job, go on to step e).

e. Change Orientation back to **Host**. Define the orientation for each job on the host side. Make sure Rotation is **not** set to *Auto at the host side (You can see what the current setting is by looking in Previous Job Attributes in Printer Session Properties).

If you are using a custom printer driver:

1. Make sure that the defined driver is suitable for your PC printer and its mode (Epson, IBM ProPrinter, HP, etc.).
2. Open **Printer Session Properties**.
3. In the Page Setup tab, set Parameter Control to **Manual Control**.
4. Set CPI to **Set At** and make sure the required CPI exists. If so, select it and go to step 6. To define a new CPI, continue with step 5.
5. Define the CPI by using the **Printer Driver Editor**; the definitions are made under **Character Pitch** and **Font Sets**:
6. When you are done, close the Printer Driver Editor and return to Printer Sessions Properties.
7. Set CPI to **Set At**, and select the CPI you just added.
8. Release the print job (or re-send) to test the output. If the CPI appears OK, you are done for this job. If you have other print jobs requiring a different CPI, continue with step 7.
9. This step enables the host to define CPI settings automatically; this is convenient if you have print jobs that require different CPIs:

NOTE: This step is for printer models 3812 and 5219 only.

a. Return to **Parameter Control** and select **Manual Control**.

b. Change CPI to **Host**.

c. Change Orientation to **Portrait** or **Landscape**, depending on your requirements.

d. Release the print job (or re-send) to test the output. If the output is OK this time, you are done.

If not, or if you need to change the orientation depending on the print job, continue with step e).

e. Change Orientation back to **Host**. Define the orientation for each job on the host side. Make sure Rotation is **not** set to *Auto.

Error Messages

If you receive any of these errors, or any other error which does not provide you with enough information to correct the problem, contact BOS Technical Support.

JDTF Troubleshooting

If you received an error for which there is not enough information below to correct the problem, contact your BOSâNOVA Web administrator.

Error	Exception occurred while opening database.
Cause	Internal error.
Action	Shut down and restart the system.

Error	System error.
Cause	Internal error.
Action	Shut down and restart the system.

Error Socket I/O error.

Cause Internal error.

Action Shut down and restart the system.

Error Failed to get the port number of the database server on the specified host. Check that the database server is running. Use the command STRHOSTSVR *DATABASE to run the database server.

Cause The cause and action are described in the body of the message.

Error Security verification failed (primary RC = *number*, secondary RC = *number*).

Cause Possible error in user ID or password.

Action 1 Try re-entering both.

Action 2 Contact the BOSâNOVA Web administrator.

Error Cannot connect to host *name*, port #*number*.

Cause Either the name or the IP address of the host is wrong.

Action Contact the BOSâNOVA Web administrator.

Cause Port number is wrong.

Action Contact the BOSâNOVA Web administrator.

Error I/O exception occurred while connecting to host: *name*.

Cause Problem with the communication between the PC and the host.

Action Contact the BOSâNOVA Web administrator.

Error Unknown optional parameter received: *name*.

Cause Internal error.

Action 1 Restart the system.

Action 2 Uninstall and reinstall BOSâNOVA Web.

Error Unknown field type: *name*.

Cause Internal error.

Action Restart the system.

Communication was interrupted.

Error Problem with the communication between the PC and the host.

Cause Try connecting again. If the problem repeats, contact the BOSâNOVA Web administrator.

Action

Error The host library either was not specified or does not exist. Verify the location of the host library (or reference library) and try again.

Cause Cause and action described in the body of the message.

Error The host library/file either was not specified or does not exist. Verify the location of the host library/file and try again.

Cause Cause and action described in the body of the message.

Error The host sent the following message: message (primary return code: *number*, secondary return code *number*).

Cause Indicated by the host's message.

Action Depends on the host's message.

Error No data was found to match your request. Check that all host names (libraries, files, members, field, etc.) used in your request are spelled correctly and try again.

Cause Cause and action described in the body of the message.

Error A variable-length host field was found during upload: variable-length host fields are supported for download only. Change the host file you want to upload.

Cause Cause and action described in the body of the message.

Error Unable to convert the field value for field *number* in record *number*. Try again with a different host file.

Cause Cause and action described in the body of the message.

Error For Plain or Source transfer, only one host file is allowed. Remove extra files from the host location.

Cause Cause and action described in the body of the message.

Error If transfer type is Source, the host location must include only the source host file. Choose another host file.

Cause Cause and action described in the body of the message.

Error Number of fields in line #*number* is not equal to the number of fields in the host file.

Cause The structure of the PC file doesn't match the structure of the host file.

Action Fix the PC file.

Error Cannot convert field #*number* in line #*number*.

Cause The structure of the PC file doesn't match the structure of the host file.

Action Fix the PC file.

Error Unable to create a member with the name '*FIRST'. Change the member name.

Cause Cause and action described in the body of the message.

Error Host file specified consists of more than one field, therefore Plain transfer is impossible.

Cause Described in the body of the message.

Action Change transfer type to Database or use another file.

Error Reference file specified consists of more than one field, therefore Plain transfer is impossible.

Cause Described in the body of the message.

Action Change transfer type to Database or use another file.

Error Exception *name* occurred.

Cause Depends upon exception.

Action Try again; if problem recurs, call BOS Technical Support.

Error Wrong line in file.

Cause PC file structure does not conform to the host file structure.

Action Fix the PC file or try a different PC file.

Error Parameter *name* is invalid. Correct it.

Cause A specific profile parameter is wrong.

Action Fix the parameter.

Error The host member either was not specified or does not exist. Verify the location of the host member and try again.

Cause Cause and action described in the body of the message.

Error The client CCSID *number* is not supported by the host.

Cause Described in the body of the message.

Action Choose another host.

Error Host library/file either does not exist or contains no member. Verify the location of the host library/file and try again.

Cause Cause and action described in the body of the message.

Error Unable to connect to host *name*. JDTF will work offline.

Cause Unable to establish connection with the host.

Action Contact the BOSâNOVA Web administrator.

Error Unable to preview for specified transfer type.

Cause Profile is damaged.

Action Remove the profile and create a new one.

Error Host *name* doesn't support code page *number* defined in the profile.

Cause As described in the body of the message.

Action Specify the correct code page or choose another host.

Error Host EBCDIC code page *number* is not supported.

Cause As described in the body of the message.

Action Specify the correct code page or choose another host.

Error	Host *name* specified in the profile is unknown.
Cause	Host specified in the profile doesn't exist in the list of available hosts.
Action	Choose an existing host.

Error	Failed to connect to HTTP server.
Cause	HTTP server is down.
Action	Contact the BOSâNOVA Web administrator.

Error	Unable to retrieve the profiles for the current user.
Cause 1	The current user does not have permission to use JDTF.
Cause 2	No profiles are assigned to this user.
Action	Contact the BOSâNOVA Web administrator.

Error	Unable to open the profile because the name entry either is invalid or was not specified in the profile.
Cause	Profile is damaged.
Action	Remove the profile and create a new one.

Error	The entry *name* either could not be read from the profile or is invalid. The default value will be used.
Cause	Cause and action described in the body of the message.

Error	I/O error occurred while saving the profile.
Cause	Problem with the proxy server.
Action	Contact the BOSâNOVA Web administrator.

Error	I/O error occurred while removing the profile.
Cause	Problem with the proxy server.
Action	Contact the BOSâNOVA Web administrator.

Error	I/O error occurred while retrieving the profile.
Cause	Problem with the proxy server.
Action	Contact the BOSâNOVA Web administrator.

Display Emulation Troubleshooting

If you received an error for which there is not enough information below to correct the problem, contact your BOSâNOVA Web administrator.

Error	Unable to establish connection with the proxy server.
Cause	Proxy server is down.
Action	Contact the BOSâNOVA Web administrator.

Error	Failed to receive server replay.
Cause	Proxy server is down.
Action	Contact the BOSâNOVA Web administrator.

Error	Read operation failed. The failure details follow.
Cause	Cause and action are described in the body of the message.

Error	*File name* file was not saved (file writing error).
Cause	Server is not able to save the file.
Action	Try again. If problem recurs, contact your BOSâNOVA Web administrator.

Error	Unable to delete file *filename*.
Cause	Server is not able to delete the file.
Action	Try again. If problem recurs, contact your BOSâNOVA Web administrator.

Error	Unable to delete *directory name*.
Cause	Server is not able to delete the directory.
Action	Try again. If problem persists, contact your BOSâNOVA Web administrator.

Login Troubleshooting

If you received an error for which there is not enough information below to correct the problem, contact your BOSâNOVA Web administrator.

Error	All fields must be filled in.
Cause	Either the Username or Password field was not filled in.
Action	Enter the relevant information.

	User does not exist.
Error	The name in the username field is not a configured user.
Cause	
Action	Either correct the name, enter another name, or contact your BOSâNOVA Web administrator.

	Incorrect password.
Error	The password was not entered correctly.
Cause	
Action	Either correct the password or contact your BOSâNOVA Web administrator.

	Wrong connection type.
Error	There are three connection types: non-secure, SSL, and SSL with Client Certificate Authentication. You were assigned one of these but are trying to connect using the wrong connection type.
Cause	
Action	Select the correct type and try again. If the problem persists, contact your BOSâNOVA Web administrator.

Error	You can only connect to the BOSâNOVA Web server via SSL. You are trying to create a non-SSL connection.
Cause	Your configuration restricts you to a secure connection via SSL. You attempted to connect without security.
Action	Try again with SSL. If the problem recurs when trying with SSL, contact your BOSâNOVA Web administrator.

Error	You can only connect to the BOSâNOVA Web server via SSL with Client Certificate Authentication. You are either trying to create a non-SSL connection or your certificate is invalid.
Cause	Your configuration restricts you to a secure connection via SSL with valid Client Certificate Authentication. You attempted to connect without security.
Action	Try again with valid Client Certificate Authentication. If the problem recurs, contact your BOSâNOVA Web administrator.

Error	System not available.
Cause	Unable to establish communication with the host.
Action	Contact your BOSâNOVA Web administrator.

Error	Servers.jtn file is not available.
Cause	Servers.jtn file may be corrupted.
Action	Contact your BOSâNOVA Web administrator.

Error	Wrong code page defined.
Cause	As defined in the message.
Action	Define the correct code page.

Error	No sessions….
Cause	The BOSâNOVA Web administrator has not assigned any sessions to this user.
Action	Contact the BOSâNOVA Web administrator.

Error	No Autorun session defined…
Cause	You've selected **Run default session** but have no Autorun session defined.
Action	Either clear **Run default session** and log in again, or define an Autorun session and log in again.

Error	Unable to connect to the BOSâNOVA Web server.
Cause	Problem with the communication between the PC and the server.
Action	Contact your BOSâNOVA Web administrator.

User Configurator Troubleshooting

If you received an error for which there is not enough information below to correct the problem, contact your BOSâNOVA Web administrator.

Error	Proxy failed to save the profile.
Cause	Problem with the proxy server.
Action	Contact the BOSâNOVA Web administrator.

Error	Proxy failed to delete the profile.
Cause	Problem with the proxy server.
Action	Contact the BOSâNOVA Web administrator.

Error	Failed to connect to the host specified because it is unknown.
Cause 1	Either the name or the IP address of the host is wrong.
Action 1	Check the IP address and host name.
Cause 2	Port number is wrong.
Action 2	Contact the BOSâNOVA Web administrator.

Error	Failed to connect to the host specified because of unknown route.
Cause 1	Either the name or the IP address of the host is wrong.
Action 1	Check the IP address and host name.
Cause 2	Port number is wrong.
Action 2	Contact your BOSâNOVA Web administrator.

Error	Host refused to connect.
Cause	Unable to establish connection with the host.
Action	Try again. If the problem recurs, contact the BOSâNOVA Web administrator.

Error	An I/O exception occurred on the proxy server.
Cause	Proxy problem.
Action	Contact the BOSâNOVA Web administrator.

Error	No sessions were defined by the BOSâNOVA Web administrator for this user. Access denied.
Cause	As described in the body of the message.
Action	Contact the BOSâNOVA Web administrator.

Error	Groups directory not found.
Cause	Directory might be corrupted.
Action	Contact your BOSâNOVA Web administrator.

Error	Users directory not found.
Cause	Directory might be corrupted.
Action	Contact your BOSâNOVA Web administrator.

Error	User doesn't exist. Check the username or enter a different name.
Cause	The name in the username field is not a configured user.
Action	As described in the body of the message.

Error	User does not exist.
Cause	The name in the username field is not a configured user.
Action	Either correct the name, enter another name, or contact your BOSâNOVA Web administrator.

Error	Cannot save file (file writing error).
Cause	Server is not able to save the file.
Action	Try again. If the problem recurs, contact your BOSâNOVA Web administrator.

Error	The System.jtn file is missing.
Cause	File may be corrupted.
Action	Contact your BOSâNOVA Web administrator.

	Wrong connection type.
Error	There are three connection types: non-secure, SSL, and SSL with Client Certificate Authentication. You were assigned one of these but are trying to connect using the wrong connection type.
Cause	
Action	Select the correct type and try again. If the problem persists, contact your BOSâNOVA Web administrator.

Error	Incorrect password.
Cause	The password was not entered correctly.
Action	Either correct the password or contact your BOSâNOVA Web administrator.

Error	Access is not allowed.
Cause	Permission for this has not been assigned.
Action	Request permission from your BOSâNOVA Web administrator.

Macro Editor Troubleshooting

If you received an error for which there is not enough information below to correct the problem, contact your BOSâNOVA Web administrator.

Error	The macro name is too long.
Cause	The macro name can't be longer than 32 characters.
Action	Enter a shorter macro name.

Error	Unable to continue recording the macro; the maximum number of operations has been reached.
Cause	A macro can't be longer than 35 operations.
Action	Record the macro as two separate macros.

Error	Macro name **name of macro** already exists.
Cause	As defined in the body of the message.
Action	Enter a different name.

Keyboard Mapping Troubleshooting

If you received an error for which there is not enough information below to correct the problem, contact your BOSâNOVA Web administrator.

Error	This key cannot be remapped.
Cause	Certain keys cannot be changed, including Ctrl, Caps Lock, and Num Lock.
Action	Create the mapping based on a different key.

Uninstalling

The procedure for uninstalling BOSâNOVA Web 6.x (Java 2) depends on the Java version, not on the browser or platform.

Uninstall for Java 1.4x

To uninstall BOSâNOVA Web 6.x for Java 1.4.x:

1. Close all open browser windows.
2. Select **Start > Settings > Control Panel**.
3. Click the Java icon. Depending upon Java version, the icon may be titled **Java Plug-in**.
4. Select the **Cache** tab.
5. Click **Clear**. This will clear all of the Java Plug-in cache, including the BOSâNOVA Web JAR.

***NOTE**: To remove only the BOSâNOVA Web applet, or to see the current content of the cache, click **View**. The BOSâNOVA Web client is listed by the name <server URL>\BOSâNOVA Web.jar or <server URL>\BOSâNOVA WebSSL.jar.*

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6. Click **Yes** at the confirmation message.

Uninstall for Java 1.5x

To uninstall BOSâNOVA Web 6.x for Java 1.5.x:

1. Close all open browser windows.
2. Select **Start > Settings > Control Panel**.
3. Click the Java icon. Depending upon Java version, the icon may be titled **Java Plug-in**.
4. Select the **General** tab.
5. Click **Delete Files**. The Delete Temporary Files window is displayed.
6. Clear all the checkboxes.
7. Select **Downloaded Applets** and click **OK**. This will clear all of the Java Plug-in cache, including the BOSâNOVA Web JAR.

Uninstall for BOSâNOVA Web 4.x

The procedure for uninstalling differs per web browser. To completely remove BOSâNOVA Web 4.x (Java 1.1) from your PC, follow the appropriate procedure.

Microsoft Explorer

1. From the **Tools > View** menu, select **Internet Options**.
2. Select the **General** tab.
3. Click **Settings**. The Settings screen opens.
4. Click **View Objects**. A list of installed components is displayed.
5. Select BOSâNOVA Web.
6. Right-click, and select **Remove**. BOSâNOVA Web is completely removed from your PC.
7. Close the list and click **OK** twice to return to your browser's main screen.

Netscape Navigator

1. From the Edit menu, select **Preferences**. The Preferences screen opens.
2. Under Category, click **Navigator**.
3. Click **Applications** in the Navigator screen. A list of installed components is displayed.
4. Select BOSâNOVA Web from the Description list.
5. Click **Remove**. BOSâNOVA Web is completely removed from your PC.
6. Close to return to your browser's main screen.

If uninstalling from Netscape Navigator 6:

1. Select **Start > Settings > Control Panel > Java Plug-in**.
2. Click **Cache**.
3. Click **Clear JAR Cache**. This will clear all the JARs for your Java Plug-in, including the BOSâNOVA Web JAR.

Host Print Transform

This appendix describes Host Print Transform and how to work with it.

Host Print Transform

Host Print Transform is an iSeries process that enables you to use an ASCII printer as an iSeries system printer. It does this by transforming a print job that was originally written in EBCDIC code into an ASCII data stream that contains both the print job data and the printer commands. This feature is integrated into the iSeries from Version 3 Release 1.

Understanding Host Print Transform

When Host Print Transform is used, BOSâNOVA Web provides a physical connection to the printer, but does not control any printer commands. Host Print Transform works with all emulation products that support the “ASCII Transparent” command.

When printing an SCS spooled file through Host Print Transform, the writer takes data from the spooled file and sends it to Host Print Transform, which then returns an ASCII data stream. This data stream is then wrapped in ASCII Transparent commands and sent to BOSâNOVA Web.

The BOSâNOVA Web printer emulation removes the ASCII Transparent commands and sends the ASCII data stream to the printer without translating the data stream.

When using Host Print Transform, the EBCDIC-to-ASCII transform takes place in the iSeries printer writer’s process. This means that your spooled files are still stored in EBCDIC format on the iSeries.

For more information, see the IBM publication, *“Application System/400: Setting Up and Printing in an OfficeVision/400 Environment,” document number SH21-0511-00.*

Using Host Print Transform

Since the transform is performed on the iSeries, Host Print Transform (HPT) uses more iSeries system resources and has a greater effect on system performance than non-HPT printing. System performance will be affected depending on the number of printers using Host Print Transform, the number of files being sent to these printers, the type and model of your system, and other factors.

On the other hand, Host Print Transform means the printing process and printing configuration are controlled by the host; that is, settings can’t be changed in the printer emulation session. If you want control of your printing configuration, you must first disable Host Print Transform.

Windows vs. Custom Driver

This appendix compares printing with the Windows printer driver to printing with custom drivers.

Windows vs. Custom Driver

When BOSâNOVA Web uses the Windows printer driver to prepare a print job, it takes advantage of Windows GDI and usually prints in graphics mode. While this is slower than text mode, it is the most common way to print from Windows applications, and is certainly the simplest and most trouble-free.

Custom drivers provide faster performance because the data is sent directly to the printer, bypassing Windows processing (that is, they don't use Windows GDI functions). When using a custom driver, BOSâNOVA Web uses text mode and prepares the print job to include all of the escape sequences of the current printer. The obvious drawback of using custom drivers is that some expertise is required to make any changes to them, and once changes are made (through the Printer Driver Editor), the driver becomes harder to troubleshoot. Note that BOSâNOVA Web provides over 30 printer drivers to choose from; when a driver is used unmodified, it is generally trouble-free.

Windows vs. Custom Driver

To decide whether to use the default Windows driver or a custom driver, you must understand how BOSâNOVA Web handles print jobs.

Using a Custom Driver

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.

Side-by-Side Comparison

Here are some side-by-side comparisons to help you decide whether to use the Windows driver or a custom driver:

Table 6: Driver Comparison

Windows	Custom
Usually prepares graphics-mode printing.	Text mode; faster than graphics mode.
Uses a standard, Windows-supplied driver for each printer.	Users must have their own driver or define the printer using the Printer Driver Editor.
Does not support non-standard printing macros or bar-codes.	Supports non-standard printing macros and bar-codes.
Does not support ASCII Transparent printing.	Supports ASCII Transparent printing.
Uses fonts from Windows and from the printer driver.	Uses printer fonts only (such as cartridge-loaded printer fonts).

Selecting or Modifying a Custom Driver

BOSâNOVA Web provides over 30 custom printer drivers that bypass Windows processing (that is, they don't use Windows GDI functions) and use text mode. Custom drivers provide faster performance than the standard Windows printer driver because the data is sent directly to the printer.

Selecting a Custom Driver

1. Right-click the icon in the task bar.
2. Select **Properties** to open Printer Session Properties.
3. Select the **General** tab.
4. Select **Custom driver**.
5. From the dropdown list, select a printer.
6. Click **Select Printer**.

Modifying a Custom Driver

Some expertise is required to make any changes to custom drivers, and once changes are made, the driver becomes harder to troubleshoot.

***NOTE**: For details on modifying a custom driver, see Printer Driver Editor Online Help or contact BOS Technical Support.*

Index and Navigation Tips

This section contains:

Using the Index

All entries in this index are links. Place the cursor over any page number and the cursor will turn into a hand, similar to this:

Click the page number of the index entry and the focus will jump to the designated area of the document.

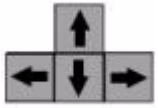
Links to Index Headings

Use this table of Links to Index Headings to jump to entries beginning with a specific letter of the alphabet.

A	B	C	D	E
F	G	H	I	J
K	L	M	N	O
P	Q	R	S	T
U	V	W	X	Y
		Z		

Navigation Tips

The following tips simplify navigation:



- To “turn the page” use either the right and left arrow keys or the up down arrow keys.
- To display either the **Table of Contents** or the **Index**, click the links in the Navigation bar at the bottom of the page.
- **All page numbers are links**. Place the cursor over any page number and the cursor will turn into a hand. Click any page number and the focus will jump to the designated area of the document.
- Click **F4** to toggle **Bookmarks** in and out of view.
- **Bookmarks are links**. The cursor will turn into a hand. Click and the focus will jump to the Bookmark entry.
- To open the Find dialog box, click **Ctrl + F**.

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