FactoryWiz DNC

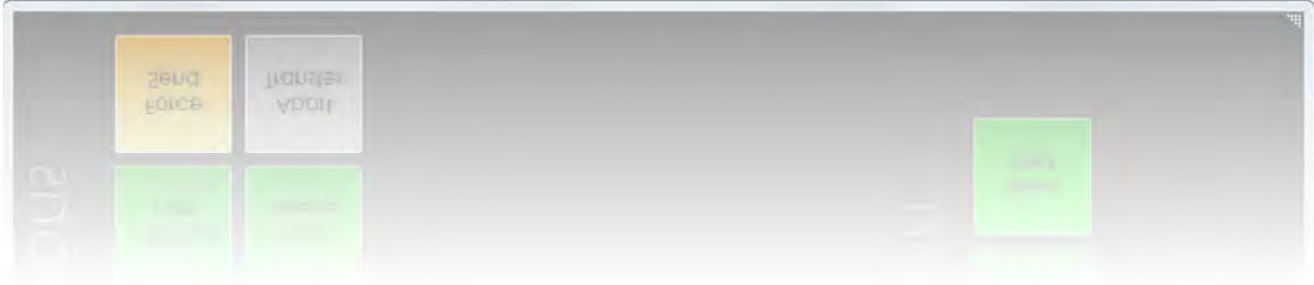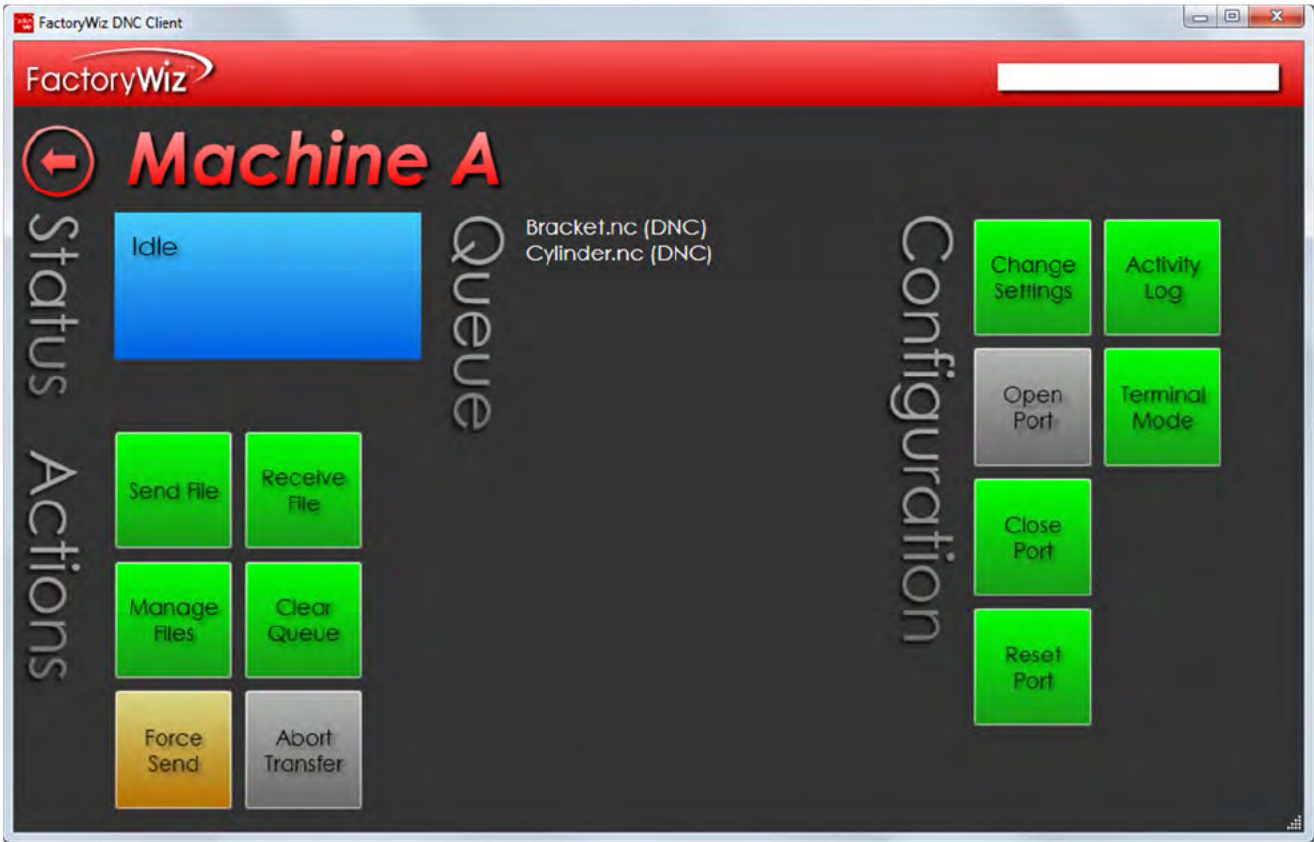# FactoryWiz DNC User Manual

Table of Contents

Installing FactoryWiz DNC

IMPORTANT: If you have QUATECH hardware, please do not proceed before following Instructions for Updating your Quatech Drivers found at this link: http://download.factorywiz.com

Download FactoryWiz DNC Software

You should have received an e-mail that contains the links to the installation files.

Note: Installation instructions for hardware drivers are provided separately.

1.   Make sure you are connected to the Internet.
2.   Open the e-mail containing the link to the installation file.
3.   Click the link to download the installer for FactoryWiz DNC from: *http://download.factorywiz.com*
4.   If you are prompted to Open/Run or Save the file, click on the **Save** pulldown arrow, and select **Save As,** and save the file to your Desktop.
5.   Look for your software to be downloading.

     Note: This could be in a pop-up window or in your browser window's footer.

Install FactoryWiz DNC

6.   Locate the most recently downloaded file on the Desktop.
7.   Double-click to run **fwdnc_server_setup.exe**.
8.   When prompted for a password, enter **FWDNC2015** (all caps no spaces).
9.   Follow the onscreen instructions and click the Next button on each screen to use the default settings.
10. Click **Finish**.
11. Two shortcuts are created on your desktop: FactoryWiz DNC Server and FactoryWiz DNC Client.

License your Software

1.   Locate the shortcut to **FactoryWiz DNC Server** on your desktop and double-click to run the server in the background.

2.   Locate the shortcut to **FactoryWiz DNC Client** and double-click to open the application.

3.   Click the **Log In** button and log in with the username **Admin** and the password **FactoryWiz**.
     Note: The password is case-sensitive.
4.   On the left side of the screen, click **Licensing**.

     Five User Keys display at the top of the licensing information.

5.   Copy User Key 1 through 5 by dragging your cursor to select all five User Keys and then click the right mouse button and select **Copy**.
6.   Open a new e-mail and type your company name and License Request in the subject line.
7.   Paste the license keys in the body of the e-mail.
8.   Be sure to include all your contact information and send to *licensing@factorywiz.com*.
9.   You will receive an e-mail with your license file and instructions on how to activate it.

Using FactoryWiz DNC

FactoryWiz DNC is a modern touchscreen accessible DNC communication system for the secure transfer of files to and from CNC machines. FactoryWiz DNC has full simultaneous communication capability to every machine, comprehensive network support, and powerful remote-request capability from the machine control panel plus mobility features that let you access your client software through any PC, tablet, or mobile device with a standard web browser.

Starting the FactoryWiz DNC Server

The FactoryWiz DNC Server is an application that runs in the background to connect your machines to the FactoryWiz DNC Client.

To start FactoryWiz DNC Server, do one of the following:

- On the Windows Start menu, click **All Programs** > **FactoryWiz DNC Server** > **FactoryWiz DNC Server** to start the server running in the background
- Double-click the FactoryWiz Server icon on your desktop

The DNC Server runs in the background until you log off your computer or close the DNC server application.

Stopping the FactoryWiz DNC Server

The FactoryWiz Server icon is located under the hidden icons location on your task bar near the clock.

To stop the FactoryWiz DNC Server:

- Double-click the icon and then click on the red X to close the server. Click OK after reading the warning message.

Using the FactoryWiz DNC Client

To start a new session of FactoryWiz DNC Client:

1. On the Windows Start menu, click **All Programs** > **FactoryWiz DNC Server** > **FactoryWiz DNC Client**,

   Or

   Double-click the FactoryWiz Client icon on your desktop

2. Press or click the **Log In** button.

3. Enter your username and password.
   Note: Password is case-sensitive.
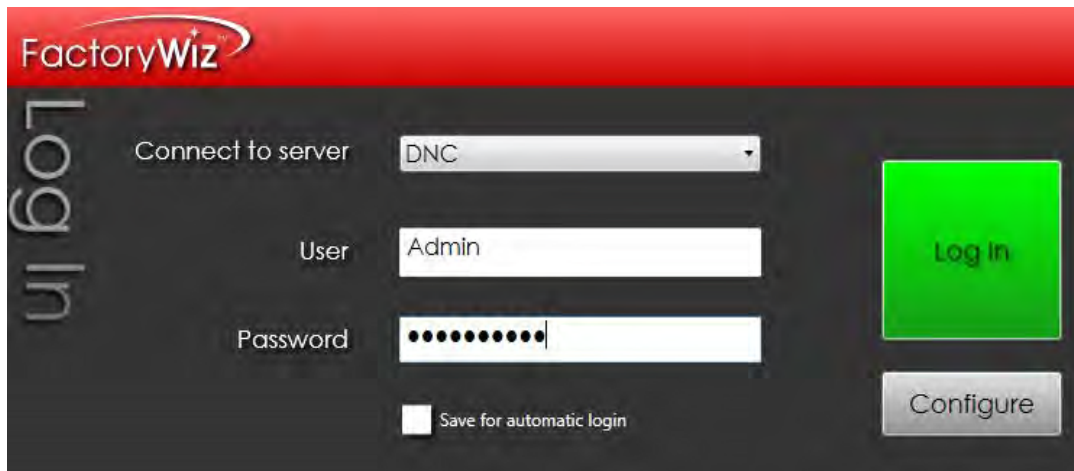
4. To log in automatically the next time you run the client, select **Save for automatic login**.

Note: Work stations can be configured to automatically log in as a particular restricted user without prompting for passwords.

5. Press or click **Log In**.

Figure 1.   *FactoryWiz DNC Client user interface*

Note: The FactoryWiz DNC installation includes a set of basic machine samples.

The large, touch-optimized buttons make FactoryWiz DNC easy to use for new operators. Clearly labeled buttons are color coded to point you to what options are available in your current state. Features you use most will always be clearly visible.

You can organize your CNC list by cell or department, making it simple to find or search for machines. You can also restrict end users to viewing particular departments and keep them out of configuration screens.

Figure 2. *Restricted user interface*
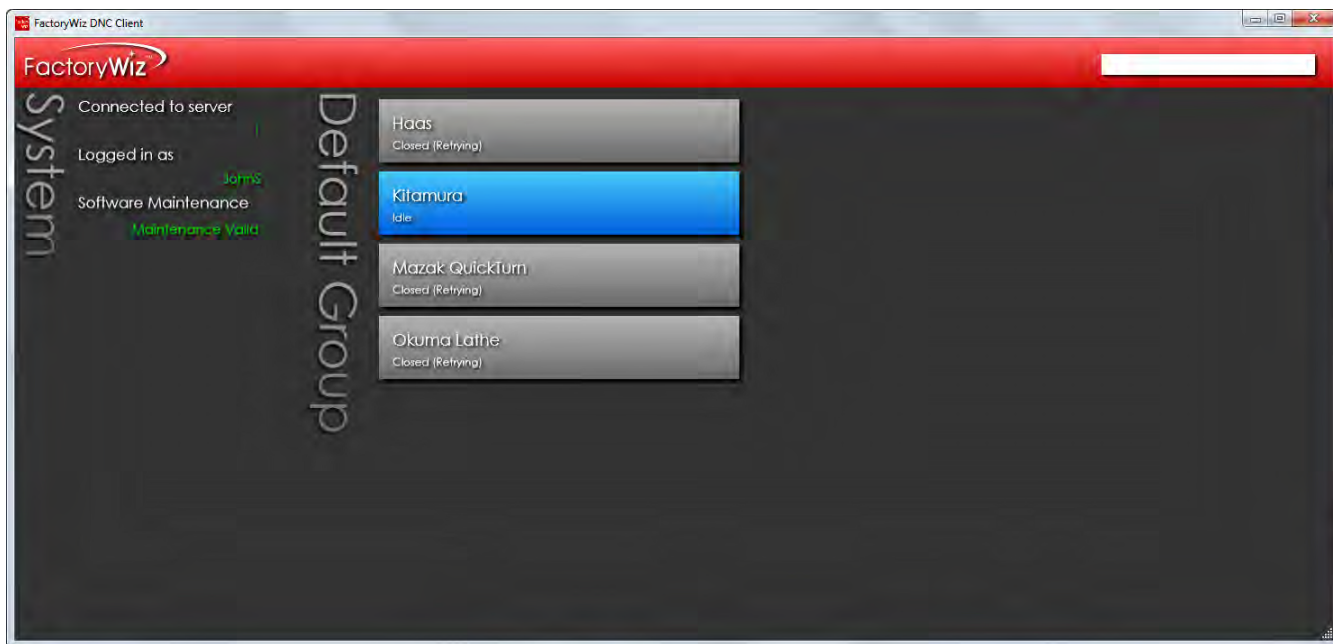
To Log In as a Different User

1. Press or click the user name under **Logged in as** on the main menu,.

2. Enter the **User** and **Password**. The user must already exist in the system.

3. Optionally, select **Save for automatic login** if you want to skip entering a username and password the next time you open the client.

4. Press or click **Log In**.

Using FactoryWiz DNC Floating Client

If you have additional PCs where you want to run the Client software, you will need to download the Client install to each computer and share the FactoryWiz DNC Server configurations.

Sharing FactoryWiz DNC Server Folder

Before starting this section, you should be proficient at sharing folders, understanding user permissions, managing users in a domain or workgroup environment, determining host names, and other basic networking tasks. If you are not proficient at, or do not have authorization to perform these tasks, then you should seek the assistance of your IT professional for the following section.

1. You will need to share the FactoryWiz DNC Server folder on the FactoryWiz DNC Server, and ensure the appropriate user groups have read and modify permission to the share. Depending on your system, the folder is located at one of the following locations:

   - C:\Program Files (x86)\RYM\FactoryWiz DNC Server\SHARED

     Or

   - C:\Program Files\RYM\FactoryWiz DNC Server\SHARED

Download FactoryWiz DNC Client Software

1. Make sure you are connected to the Internet.

2. If you are prompted to Open/Run or Save the file, click on the **Save** pulldown arrow, and select **Save As,** and save the file to your Desktop.

3. Look for your software to be downloading.

4. *Note:* This could be in a pop-up window or in your browser window's footer.

Install FactoryWiz DNC Client

5. Locate the most recently downloaded file on the Desktop.

6. Double-click to run **fwdnc_client_setup.exe**.

7. When prompted for a password, enter **FWDNC2015** (all caps no spaces).

8. Follow the onscreen instructions and click the Next button on each screen to use the default settings.

9. Click **Finish**.

10. Locate the shortcut to **FactoryWiz DNC Client** on your desktop and double-click to open the application.

11. In the Log In screen, click **Configure**.

12. Click on **Add Server**.

13. Browse to the **FactoryWiz DNC Server\SHARED** folder and double-click on the **SERVER.FWDNCSERVER** file.

14. Click **Return**.

15. You must close FactoryWiz DNC Client for the new setting to take effect.

16. Start FactoryWiz DNC Client and login with your username/password.

17. Check the box to **Save for automatic login**.

FactoryWiz DNC Client Administration

When FactoryWiz DNC is installed, an Admin username and password are provided. The Admin user has full privileges to administer the system, which includes adding, changing and removing users and machines.

Figure 3.   *Configure menu*
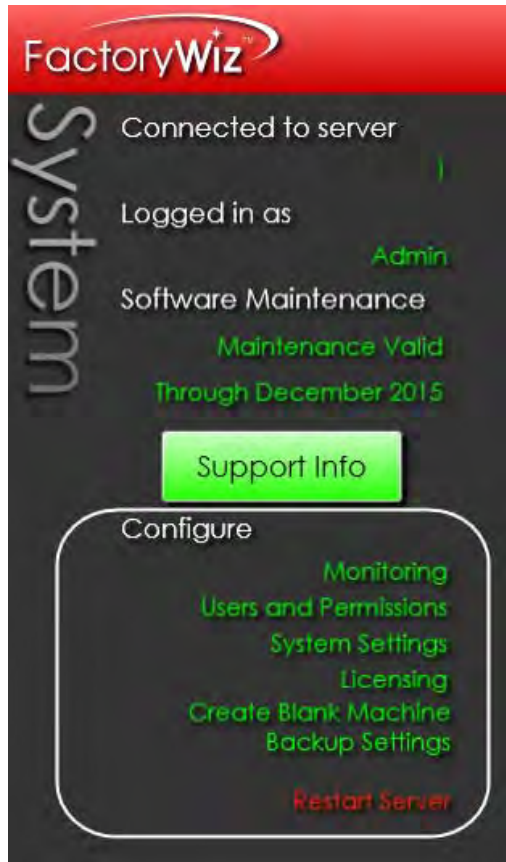
Monitoring

FactoryWiz DNC provides full integration with the FactoryWiz Monitoring solution to make it easy to upgrade to a full monitoring system in the future. With this tight integration, monitoring data such as machine idle reasons can be entered from any DNC client station – or file queuing can be performed from data input tablets used for your monitoring system. Information like macro outputs and probe data are easily shared between the two.

Users and Permissions

Additional users can be allowed access to the FactoryWiz DNC Client. The definition of each user includes full control over individual actions that can be performed by that user and the machines they are allowed to see.

Add a User

1. Open FactoryWiz DNC Client. Login if required.

2. Press or click **Users and Permissions** on the Configure menu.

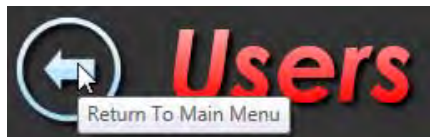   Notice that the Admin user has all permissions and can see all groups.

3. Press or click **Add User**.

4. Type the **New User Name** and **Password**.

5. Retype the same password in **Verify Password**.

6. Press or click **Add User** to add the new user to the list.

7. To save your changes and return to the main menu, click **Return to Main Menu**. Otherwise, set permissions for the new user.

Set Permissions

Each user has a customizable set of permissions that control the tasks they are allowed perform in FactoryWiz DNC Client. You can restrict an end user from performing certain tasks and viewing certain machines.

Note: When a new user is added, all permissions are granted by default except for the ability to configure the system. Only trusted users should be allowed to change the system configuration.

1. On the Users page, select a user in the Users list.

2. Select or clear the individual permissions for that user.

- **Close Port**: Allow the user to close a port to a machine. Typically, a port is closed only to troubleshoot a problem with communication.

- **Configure System**: Allow the user to configure the system. This permits the user to add/remove users and machines. This option is disabled by default.

- **Edit Files**: Allow the user to edit files using the FactoryWiz Editor. If you do not want the user to edit the NC code contained in a file, disable this permission.

- **Manage Files**: Allow the user to manage files, which includes managing folder locations and contents, copying, renaming and deleting files.

- **Manual Receive**: Allow the user to receive files manually.

- **Queue From Anywhere**: Allow the use of a USB drive or local hard drive on the client computer. Disable this option to restrict the sending of files from the Send Directory only.

- **Reset Port**: Allow the user to reset a port to a machine. Typically, a port is reset only to troubleshoot a problem with communication.
- **Toolbreak Start**: Allow the user to restart the transfer of a file after a tool break at the machine.

3. To save your changes and return to the main menu, press or click **Return to Main Menu**. Otherwise, set the machines that are visible to the new user.

Control the Machines Visible to a User

1. On the Users page, select a user in the User list.

   In the list of Machines Visible, any machine group that is highlighted in the list will be visible to the user on the main menu. Any group that is not highlighted will not be displayed to the user.

   By default, ALL GROUPS is highlighted for a new user. This allows the new user to see all machine groups.
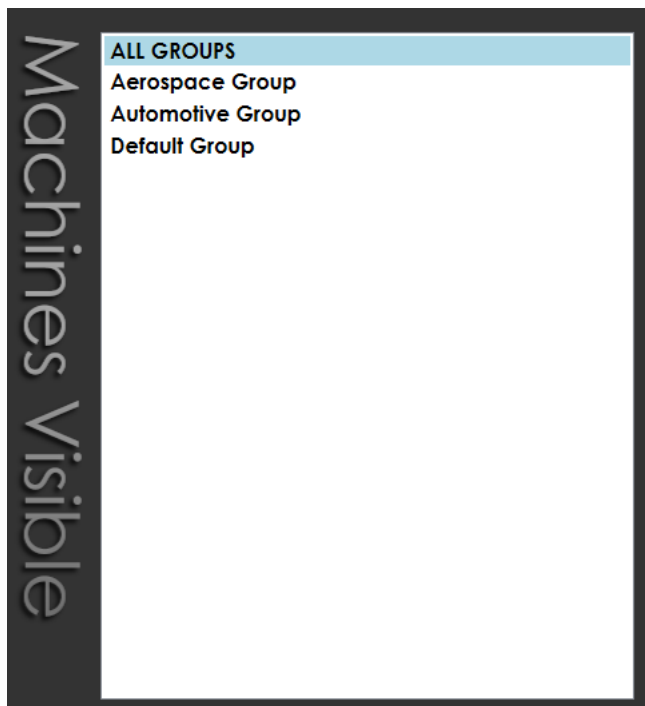
2. In the list of Machines Visible, select a group to make it visible to the user. Select a highlighted group to clear it and make it invisible to the user. Highligh ALL GROUPS to make all machine visible to the user.

3. To save your changes and return to the main menu, click **Return to Main Menu**.
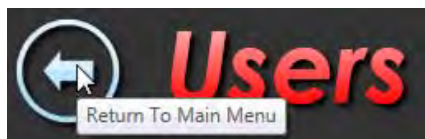
Remove a User

1. On the Users page, select a user in the User list.

2. Press **Remove User**.

Change a Password

1. On the Users page, select a user in the User list.

2. Press or click **Change Password**.

3. Type the new password in **Enter Password**.

4. Retype the same password in **Verify Password**.

5. Press or click **Save**.
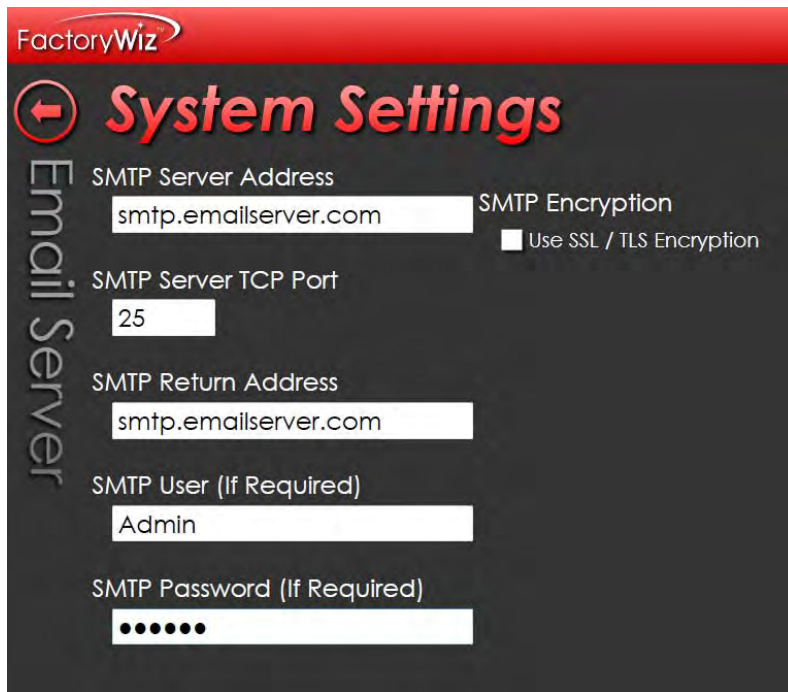
System Settings

System Settings apply to every port.

Set up an email server for the DNC system

Enter information about your email server in order for the DNC system to receive e-mail.

1. Press or click **System Settings** on the Configure menu.

2. Enter the **SMTP Server Address** for outgoing e-mail.

   Simple Mail Transfer Protocol (SMTP) is an Internet standard for e-mail transmission. SMTP is used for outgoing e-mail. Most server names are written in the form "smtp.domain.com" or "mail.domain.com". For example, a Gmail account will refer to smtp.gmail.com.

3. If your SMTP connection is secured by SSL, select **Use SSL/TSL Encryption**.

4. Enter the **SMTP Server TCP Port**.

   By default, SMTP uses TCP port 25.

5. Enter the **SMTP Return Address** for incoming e-mail.

6. If required by the SMTP server, enter the **SMTP User**.

7. If required, enter the **SMTP Password.**

8. When you are done, press or click **Return to Main Menu**.

   Your settings are saved automatically.

Note: The email recipient for each machine is defined in Item 3.51 *File received email recipient* in the machine configuration.

Licensing

FactoryWiz license information is contained in an external FactoryWiz DNC License (*.FWDNCkey) file. The license file is provided by FactoryWiz as part of the installation process.

Add a License

1. Press or click **Licensing** on the Configure menu.

2. Press or click **Add License**.

3. Browse for a FactoryWiz DNC License (*.FWDNCkey) file.

4. Select the file and click **Open**.

5. The new license information is displayed and you are prompted to stop and restart your FactoryWiz DNC Server. Press or click **OK**.

6. Press or click **Return** to return to the main screen.

7. Click **Restart Server** on the Main menu.

8. Press or click **OK** to stop the server and then restart it.
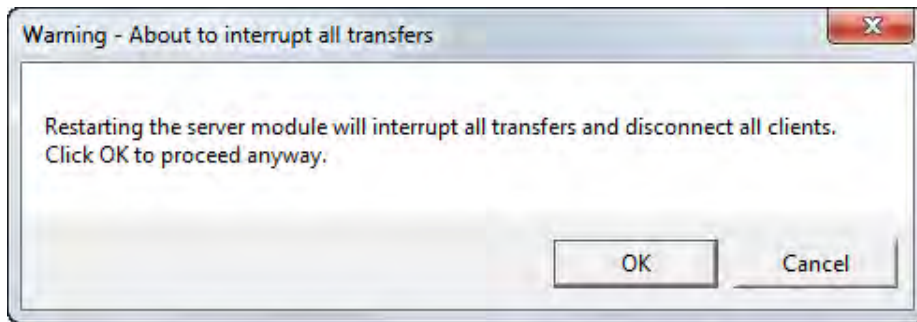
9. When the login page displays, enter your **Username** and **Password** and click **Log In**.

Wipe a License

Wiping a license replaces the current user keys and replaces them with new user keys. You will be required to obtain a new license file for the new user keys after the license is wiped.

Warning: Do not wipe a license unless you are having license problems that cannot be resolved by a FactoryWiz representative.

1. Press or click **Licensing** on the main menu.

2. Press or click **Wipe License**.

3. You are prompted to stop and restart your FactoryWiz DNC Server.

4. Press or click **OK** and then click **Return** to return to the Main menu.

5. Press or click **Restart Server**.

6. Press or click **OK** to stop the server and then restart it.

7. When the login page displays, enter your **Username** and **Password** and click **Log In**.

8. On the left side of the screen, click **Licensing**.

   Five User Keys display at the top of the licensing information.

9. Copy User Key 1 through 5 by dragging your cursor to select all five User Keys and then click the right mouse button and select **Copy**.

10. Open a new e-mail and type your company name and License Request in the subject line.

11. Paste the license keys in the body of the e-mail.

12. Be sure to include all your contact information and send to *licensing@factorywiz.com*.

13. You will receive an e-mail with your license file and instructions on how to activate it.

Machines

The FactoryWiz installation includes a set of sample machines to get you started. Machine configurations can be added, duplicated, edited and organized into groups.

Create a New Machine

1. Press or click **Create Blank Machine** on the Configure menu.

2. Enter a name for the new machine and press **Create**.
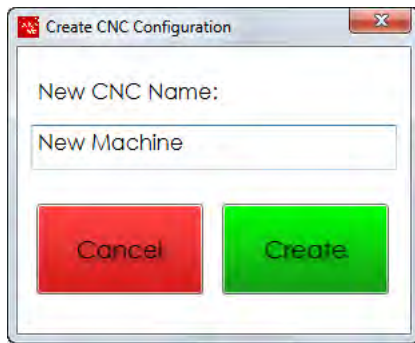
3. Update the configuration settings for the machine. A complete list of all configuration settings is provided in the Machine Configuration Options section of this document.

    Be sure to define the following information:

    - Port Type: Which type of port is this? For typical RS232 machines use "Standard".

    - COM Port: The port number that will be connected to this CNC. You should not use the same COM port number for more than one machine.

    - Baud Rate: The speed at which the CNC is configured to communicate.

    - Send Directories: The folders to be searched when queuing or requesting files.

    - Receive Directories: The folders where received files from the machine will be stored.

    Note: When you highlight an option, information about that option is displayed at the bottom of the frame.
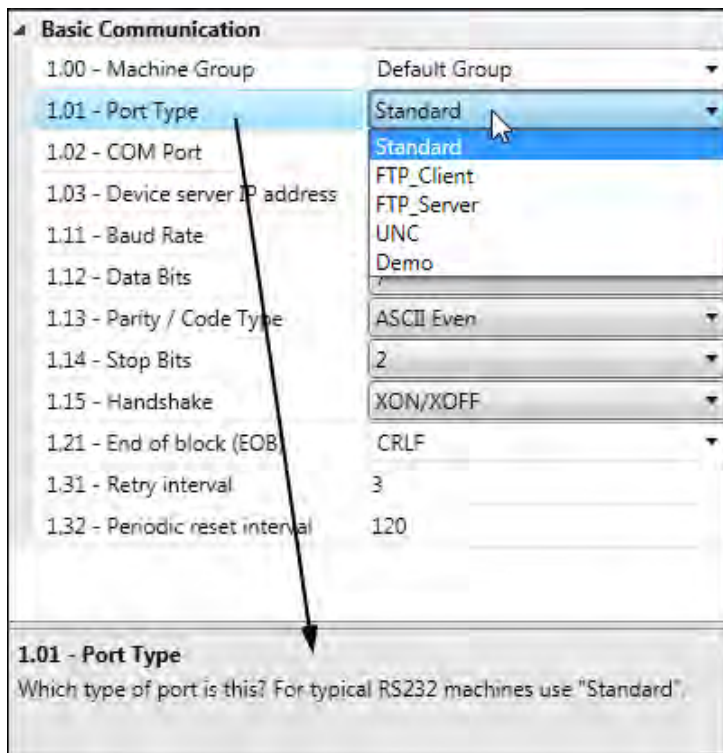
4. When you are done, press or click **Return to Main Menu**.

5. When you are prompted to save your changes, press **Yes**.
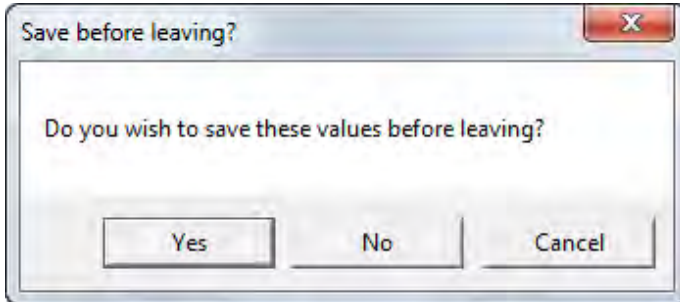
Duplicate an Existing Machine

It is often easier and more reliable to create a new machine by duplicating the configuration of an existing machine. The installation comes with basic machine type samples. As an example, if your factory has Fanuc controls, select Kitamura from the sample machines that come with your installation.

1. Press or click a machine on the Main menu that you want to duplicate.

2. In the **Configuration** group, press or click **Change Settings**.
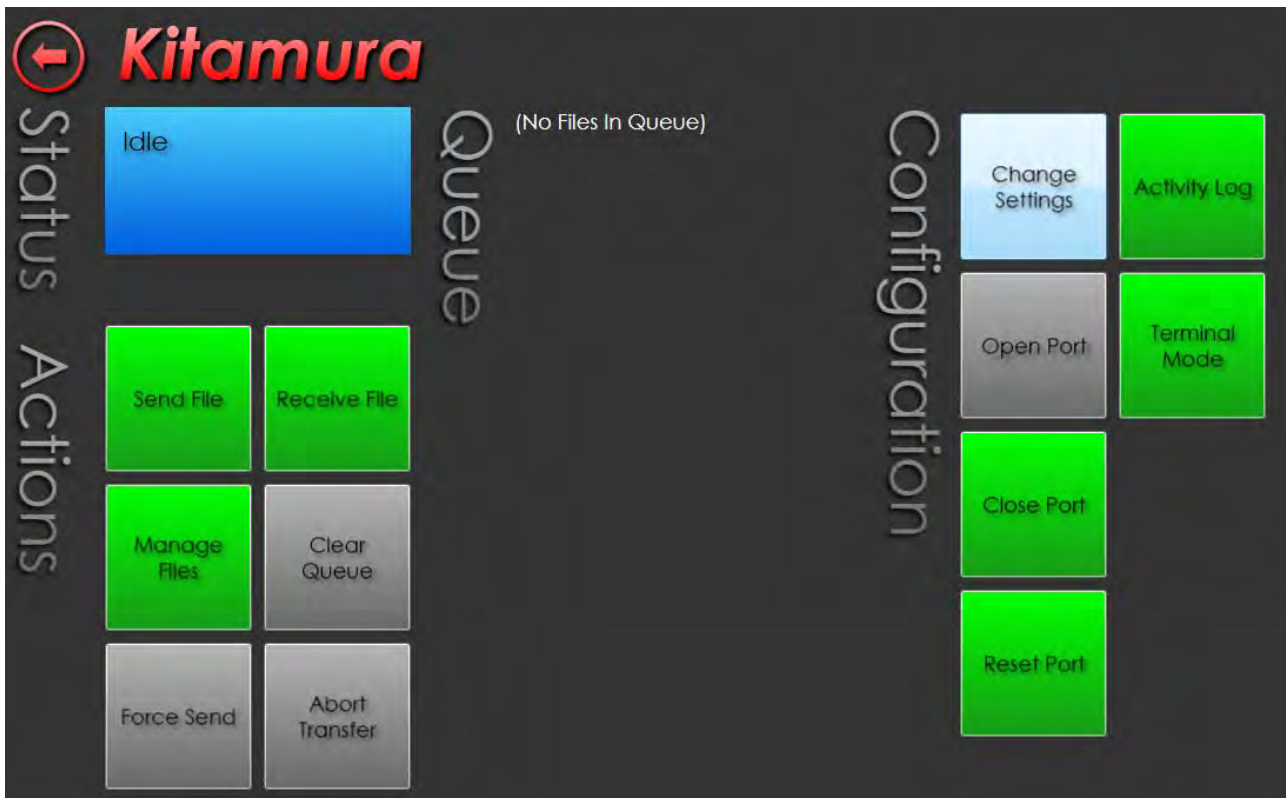
3. Press or click **Duplicate**.

4. Enter a name for the new machine and press **Create**.
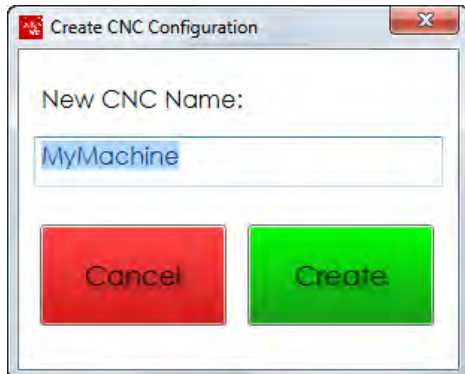
A configuration screen for the new machine opens. All the settings from the sample machine are copied to the new machine.

5. You need only to make basic changes such as:

   • COM Port: The port number that will be connected to this CNC. You should not use the same COM port number for more than one machine.

   • Baud Rate: The speed at which the CNC is configured to communicate.

   • Send Directories: The folders to be searched when queuing or requesting files.

   • Receive Directories: The folders where received files from the machine will be stored.

6. When you are done, press or click **Return to Main Menu**.

7.   When you are prompted to save your changes, press or click **Yes**.
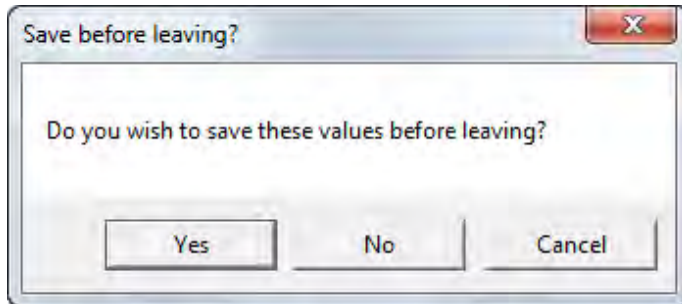
Create a Machine Group

Machine groups are properties of machines. You define a machine group in the configuration settings of a machine. Once a group is defined, it can be selected for other machines.

Machine groups help you organize your CNC list by cell or department, making it simple to find or search for machines.

1.   Press or click a machine listed on the Main menu.

2.   Press or click **Change Settings**.

3.   In the Basic Communication list, place the cursor in the **Machine Group** setting to highlight the name.

4.   Enter a new name for the group.
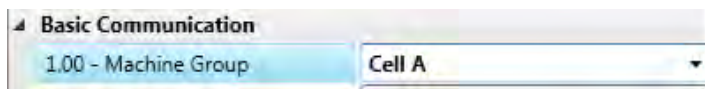
5.   Press or click **Return to Main Menu**.

6.   When you are prompted to save your changes, press or click **Yes**.

The new group will be added to the list of machine groups for all other machines. Be sure to review the machine visibility settings for other users defined in the system.

Propagate settings to other machines

The settings defined for one machine can be propagated to other machines. For example, if you create a new machine group or customize send and receive directories, you can propagate the changes to other machines without having to update each machine one by one.

1.   Open a machine listed on the Main menu.

2.   Press or click **Change Settings**.

3.   Press or click **Propagate Settings**.

4.   In the list of **Settings to Copy**, select all the settings you want to propagate.

     Use the Ctrl or Shift keys to select multiple settings.

5. In the list of **Target Machines**, select all the machines that will receive the settings.
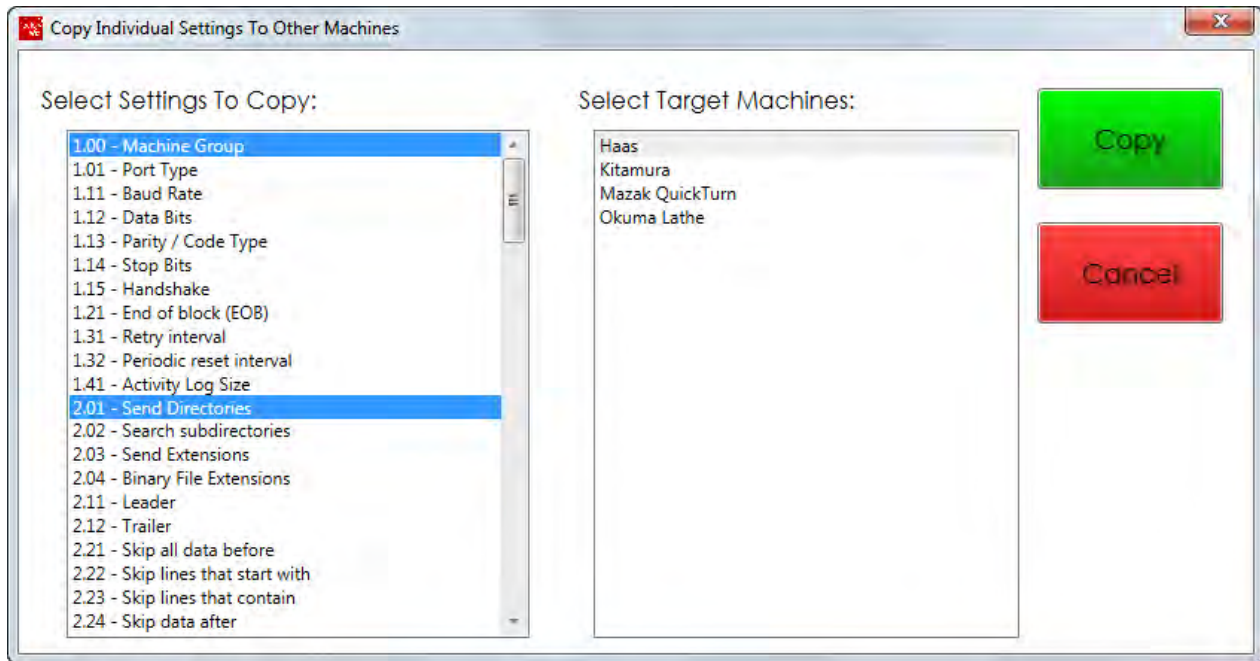
6. Press or click **Copy**.

Backup Settings

After customizing your system, it is good practice to make a backup of your machines and user configurations.

1. Press or click **Backup Settings** on the Configure menu.

2. Select the **Machines** you want to back up. By default, all machines are selected.

   Like most Windows applications, you can use the Ctrl and Shift keys to select multiple machines.

3. Select the **Options** you want to back up. By default, all options are selected.

4. Press or click **Backup**.

5. Browse to the folder location where you want the backup file to be saved.

6. Press **Save**.

A folder is created at the location you specified that contains backup files for the items you selected.

When you install a new version of FactoryWiz DNC or install the software on a new computer, you can copy these files to the FactoryWiz DNC installation folder in the SHARED\CONFIGURATIONS directory.
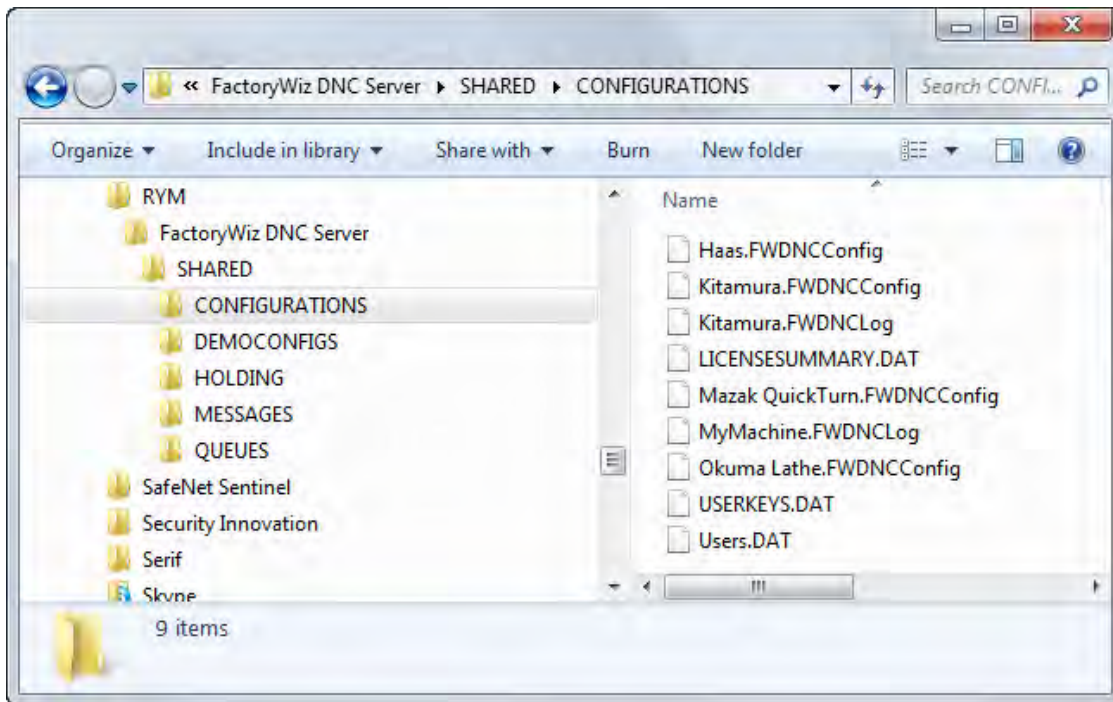
DNC Operations

FactoryWiz DNC supports multiple simultaneous file transfers, drip-feed capability, mid-program restart, remote requests, Mazatrol transfers, and more. Support for Ethernet machines means you can use FactoryWiz DNC to transfer to machines acting as FTP Clients, FTP Servers, or Microsoft SMB servers.

The structure of FactoryWiz DNC separates message and configuration directories so you can use Windows security features to further lock down access without manually manipulating each file.

Files that are not accessible to your DNC system can automatically be imported from local drives and removable media without risk of interruption. Spend less time moving one-time-use files into approved program directories, and never interrupt a drip-feed by accidentally removing a USB stick again.

FactoryWiz DNC can manage files going to and from USB drives for non-attached machines, ensuring that newly modified files get sent to the appropriate inbox folder for proper review

File Management

Each machine has actions you can use to manage your files.

View Files

1. Select a machine on the Main menu.

2. Press or click **Manage Files**.

3. Choose a folder in the **Folders** list. The list displays the folder or folders defined as the Send Directories in the machine configuration.

All files in that folder are displayed in the Folder Contents list.

4. To displays all folders on all drives, press **All Drives**.

Edit Files

The FactoryWiz Editor is designed specifically for editing G-code. It features:

- Powerful side-by-side file compare features
- Coordinate transformations – translation, rotation, scaling, and mirroring
- Extract Program File – Separate by O number, split a file into multiple files
- Sequence number maintenance – renumber, resequence, N-blocks
- Several calculators designed for CNC programmers
- File analysis – Min/max values, cycle times, and more
- Powerful search capability offering saved searches, find and replace
- Great performance when editing large files
- Content based syntax coloring and font highlighting

- "View-only" mode prevents changing files
- File locking improves integrity over a network
- Customizable toolbars, colors, fonts, and other items

The FactoryWiz Editor lets you edit G-code in a separate screen without leaving the FactoryWiz DNC environment.

1. Select a file in the **Folder Contents** list that you want to edit and press **Edit**.
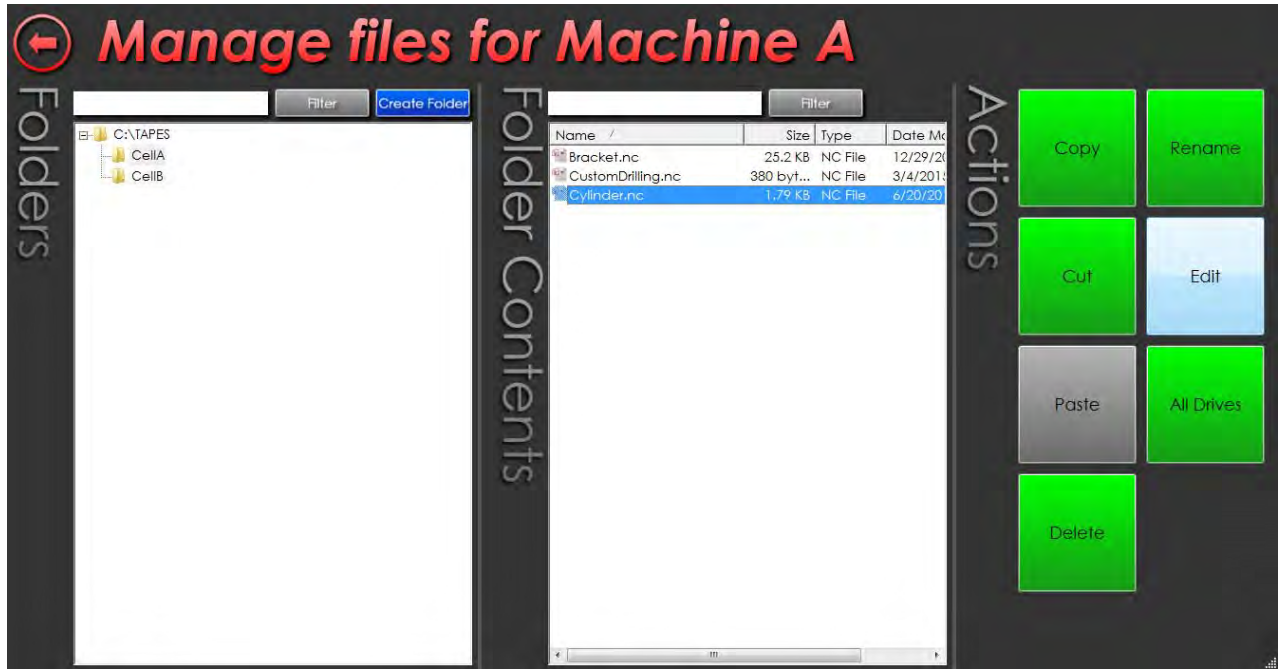
The FactoryWiz Editor displays the NC code for the file.
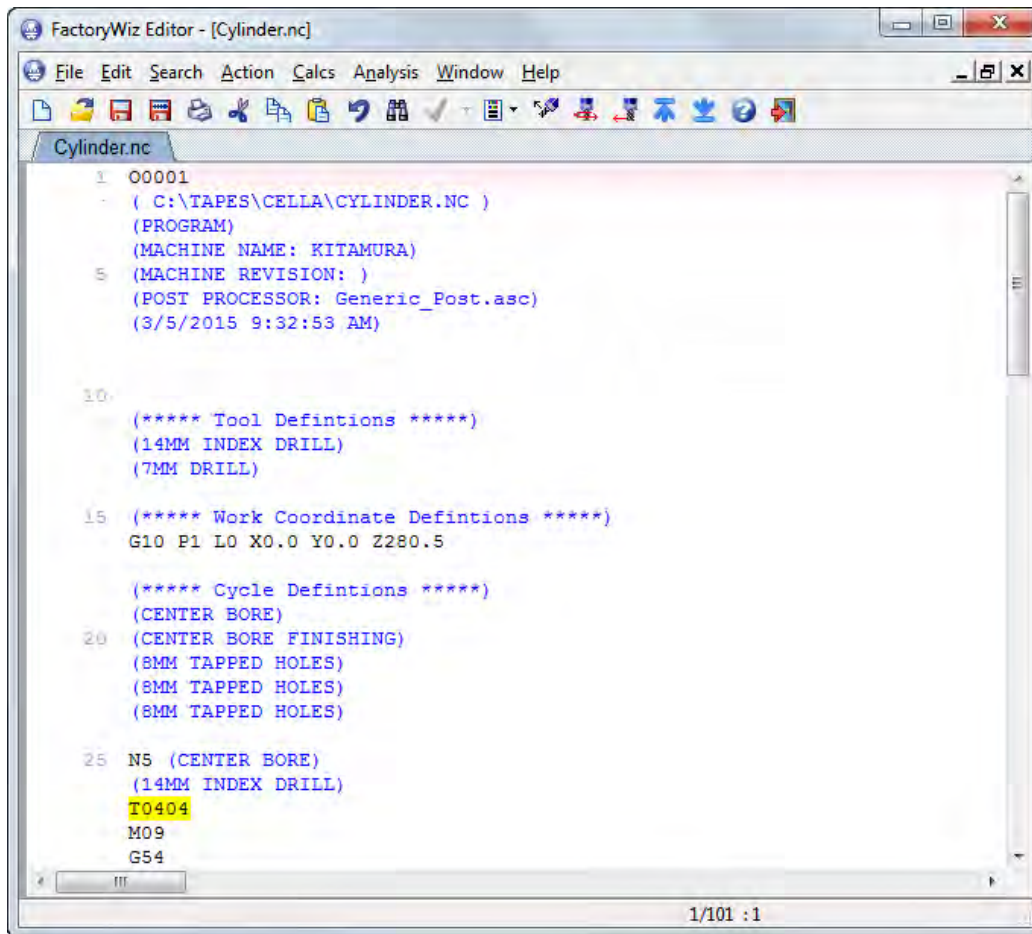
2. Use the functions in the Editor to edit the NC code. Commands on the toolbar let you jump to the next tool change, next speed change, next feedrate change, top of file and end of file.
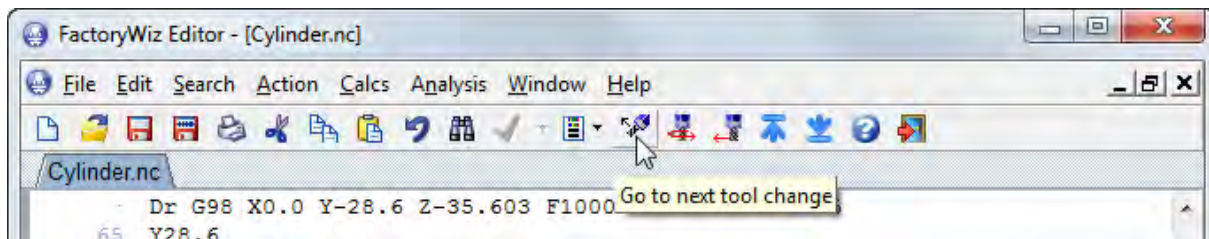
3. When you are done, save the file.

4. Click **Exit** to return to FactoryWiz.
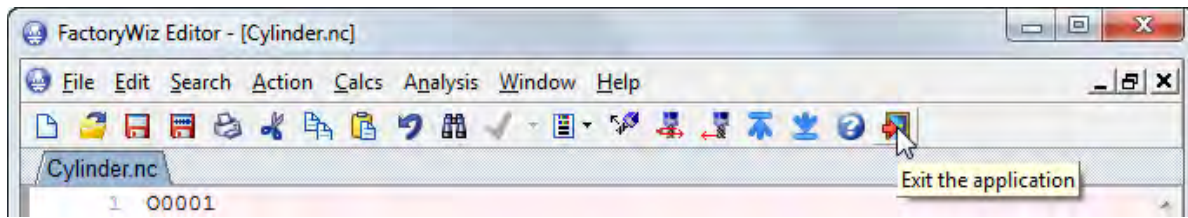
Copy and Paste Files

1. Select a file in the **Folder Contents** list and press **Copy**.

2. Optionally, choose another folder in the Folders list.

3. Press **Paste** to paste the copied file.

Rename Files

1. Select a file in the **Folder Contents** list and press **Rename**.

2. Type the new name.

Delete Files

1. Select a file in the **Folder Contents** list and press **Delete**.

File Transfer

FactoryWiz makes it easy to send and receive files between the system and CNC machines.

Queue a file to send to a machine

1. Open FactoryWiz DNC Client. Login if required.

2. Select a machine on the Main menu.

3. Press or click **Send File**.
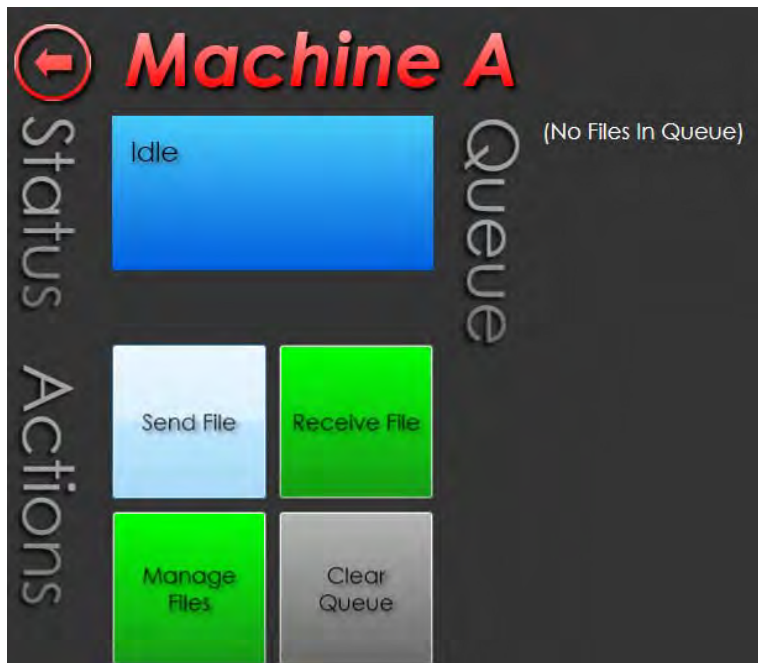
4. The **Folders** list displays the folders defined in the Send Directories option for the machine. If necessary, select a folder.

5. In the list of **Folder Contents**, select the file that will be sent to the machine.
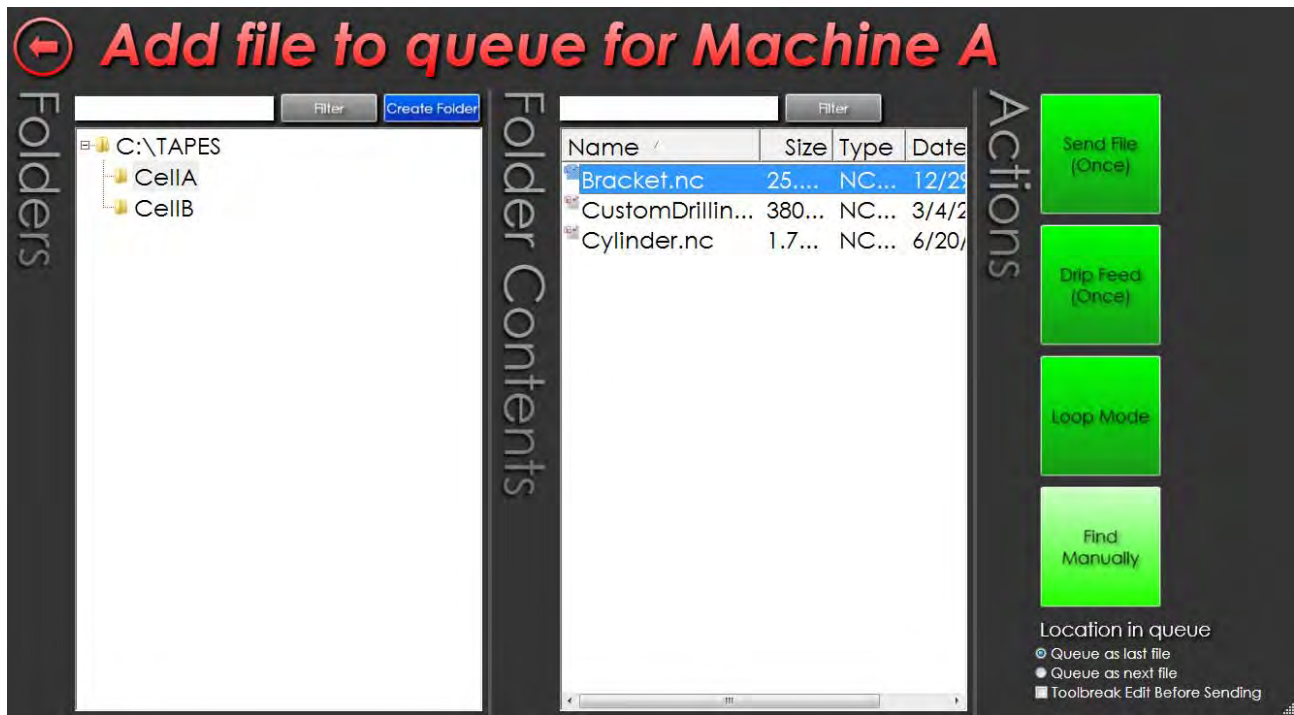
6. Choose the location in the queue for the file:
    - Queue as last file
    - Queue as next file

7. Choose one of the following actions:
    - **Send File (Once)**: Send the file to the queue. This action will use the Automatic Timeout setting in the machine configuration. If a file transfer is stopped for more than this number of seconds, the system will automatically cancel the file transmission.
    - **Drip Feed (Once)**: Send the file to the queue and disable the Timeout Setting in the machine configuration. Use drip feed for programs that exceed the memory of the machine.
    - **Loop Mode**: Keep sending the same file until the queue is manually cleared.
    - **Find Manually**: Only users with permission to *Queue From Anywhere* can use this action. Otherwise, files can only be sent from the send directory. Click Find Manually and then browse to the location of the file on a USB or hard drive.

The file is added to the Queue list.

Depending on how the machine is set up to receive files, go to the machine and read the program into memory.

Remove files from the queue

Files can be removed from the queue two ways:

- Press Clear Queue to remove all files from the queue
- Right-click on a file in the queue and then choose Remove

If you need to stop the transfer of a file, press **Abort Transfer**.

Restart a file transfer after a tool break

When a tool break at the machine interrupts a file transfer, the file can be restarted from the point where the interruption occurred.

1. At the machine, make a note of the block in the NC code where the transfer was interrupted.

2. In FactoryWiz DNC Client, select the machine in the Main menu.

3. Press **Send File**.

4. Select the file to add to the queue.

5. Select **Toolbreak Edit Before Sending**.

6. Press **Send File (Once)**.

7. A temporary copy of the file is made and the file is opened in the Editor. Make any changes to the file in the new window.
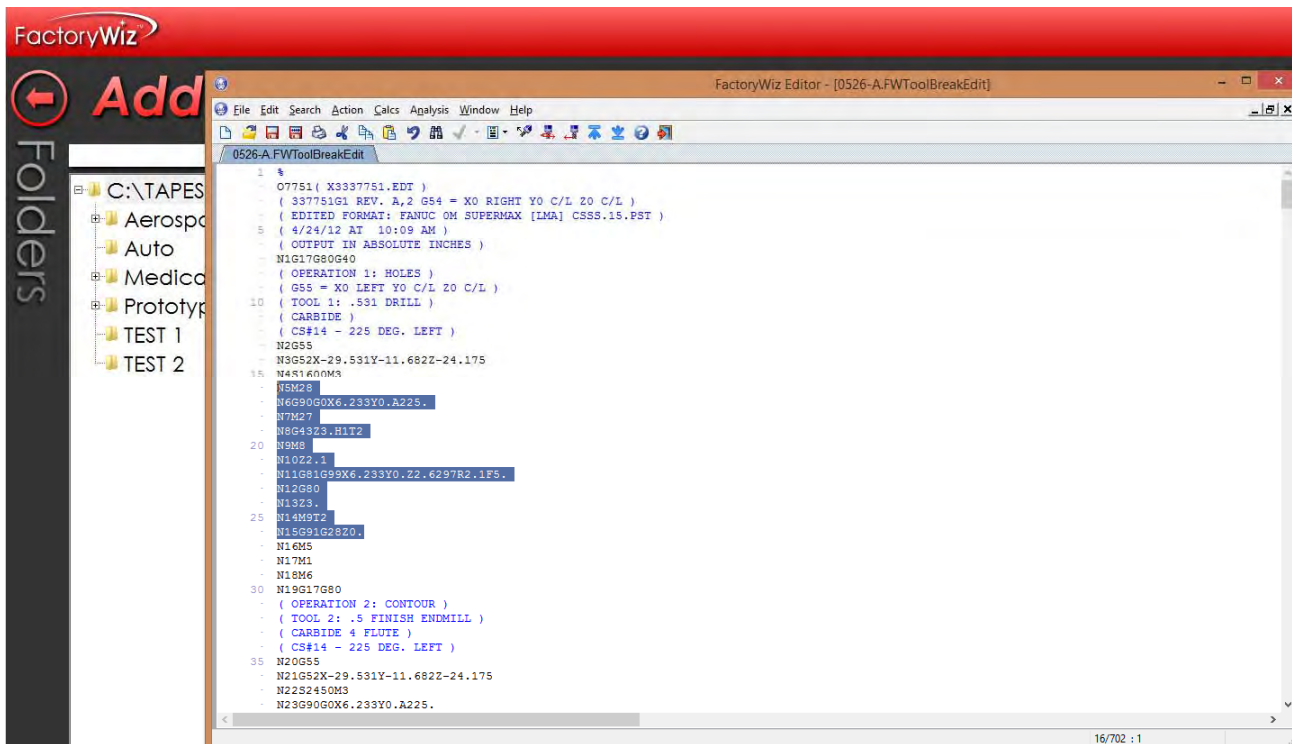
8. Save the file and close the Editor.

The file is added to the queue.

Note: The Editor must be closed before returning to the DNC window. If the Editor is not closed first, the system prompts you to save your edits. If the Cancel button is depressed, the file will not be queued.
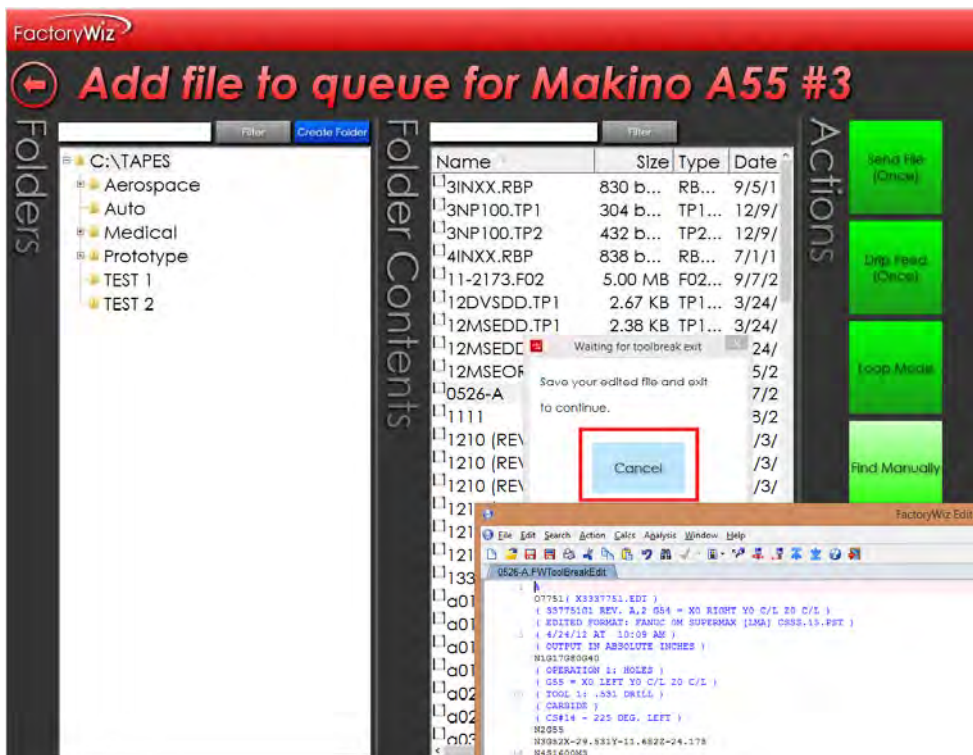
Auto Queue Files (Drop Box)

A directory can be set up to automatically send files to a machine.

1. Select a machine on the Main menu.

2. Press or click **Change Settings**.

3. In Item 2.05 **Auto queue directory**, enter the name of a unique directory for this machine.

For example:

- Send Directories is set to C:\TAPES\Outbox\MachineABC
- Receive Directories is set to C:\TAPES\Inbox\MachineABC
- Auto Queue Directory is set to C:\TAPES\Queue\MachineABC

4. Press or click **Return to Main Menu**.

5. When prompted, save your changes.

6. In Windows Explorer, drag a copy of a file into the queue directory.

Every few seconds, FactoryWiz reads the folder. When it finds a file in this directory, it automatically queues this file for the machine. After the file is queued, the system will delete the file from the Auto queue directory.

Manage Ports

Typically, ports are managed only when there is a communication problem. When a connection is lost, use Close Port, Open Port and Restart Port to restore communication.

Note: When the Retry Interval for the machine is set to 0, the port will have to be reopened manually.
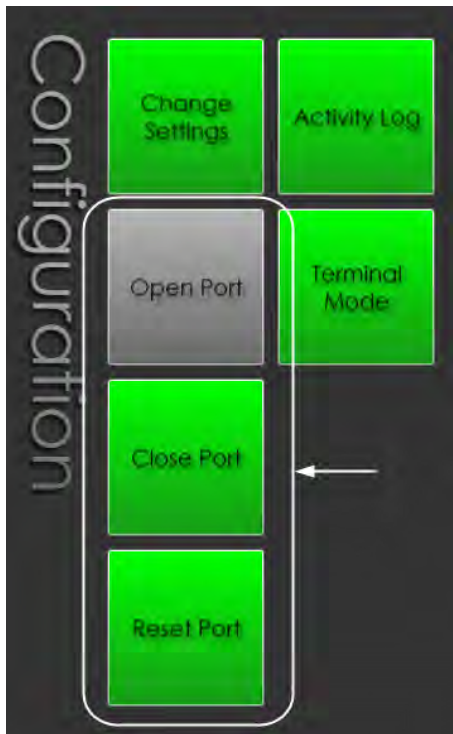
To test if the correct Baud rate is used for the machine, press Terminal Mode to open a diagnostic terminal for the machine.

Machine Configuration Options

Basic Communications

1.00 - Machine Group

Under which group heading should this machine appear? Use this setting to organize your machines and limit access.

1.01 - Port Type

Which type of port is this? For typical RS232 machines use "Standard".

1.02 - COM Port

Select the COM port which will be connected to this CNC. You should not use the same COM port number for more than one CNC.

1.03 - Device server IP address

The IP address of your serial device server. This will be used to ping your device server prior to performing a port open (speeds startup), and to periodically verify the device server is still turned on. If you leave this blank, communication will work however status checking will not be performed. Always leave blank for USB connected devices and internal COM ports.

1.04 - TCP Port

The TCP port corresponding to the FTP server on your CNC. Normally 21.

1.05 - UNC path to device

The folder where FactoryWiz DNC will drop files - either on the CNC, or a network location the CNC can access.

1.06 - UNC return path

The folder where FactoryWiz DNC will retrieve files from - either on the CNC, or a network location the CNC can access. This may or may not be the same as the UNC target.

1.11 - Baud Rate

Select the baud rate (speed) at which the CNC is configured to communicate. This MUST match the speed used by the CNC.

1.12 - Data Bits

Select the data bits in each byte. For most machines this is 7.

1.13 - Parity / Code Type

Select the parity used by the CNC. For most machines this will be ASCII Even.

1.14 - Stop Bits

Select the stop bits used by the CNC. For most machines this will be 1 or 2.

1.15 - Handshake

Select the handshake type used by the CNC. For most machines this will be XON/XOFF (also known as DC Codes or Software handshaking). RTS/CTS handshaking (also known as Hardware handshaking) is less common.

1.16 - Handshake Send Signal

Select the hardware handshake line which will release the file (only applicable if RTS/CTS or BOTH handshaking is selected).

1.21 - End of block (EOB)

Select the character(s) required by the CNC for End of Block. If unsure, try CRLF (Carriage Return + Line Feed).

1.31 - Retry interval

How often should the system attempt to reconnect? Tip: Higher values will mean a longer wait after a connection is turned on before a file transfer can be accomplished. Lower values will slow the system down as connections are attempted. We recommend starting with a value of 3 (minutes).

1.32 - Periodic reset interval

How often should the connection be reset? Tip: When using Moxa units we recommend a value of 120.

1.41 - Activity Log Size

What is the maximum size (in kb) for the activity log? (Recommended size is 256)

Sending Options

2.01 - Send Directories

Folders to be searched (allowed) when queueing or requesting files. One per line. UNC paths preferred.

2.02 - Search subdirectories

Search folders underneath the send folder when sending files.

2.03 - Send Extensions

File extensions that should be displayed / searched when adding files to the queue. One per line such as "".NC"".

2.04 - Binary File Extensions

File extension which indicates a transfer should be performed in raw binary (often used for exec tape transfer). Note: affects receiving of binary files also.

2.05 - Auto queue directory

Files in this directory will automatically be queued, transferred to the CNC, and then deleted. FactoryWiz scans this folder every few seconds. When it finds a file in this directory, it automatically queues this file for the machine. After the file is queued, the system deletes the file from the Auto queue directory.

2.11 - Leader

Data to be appended before the start of the program. Custom characters can be entered as ASCII values inside <>. Example: A Carriage-Return character has an ASCII value of 13 and can be entered as <13>. A NULL character can be entered as <00>.

2.12 - Trailer

Data to be appended after the end of the program. Custom characters can be entered as ASCII values inside <>. Example: A Carriage-Return character has an ASCII value of 13 and can be entered as <13>. A NULL character can be entered as <00>.

2.21 - Skip all data before

Any data up to and including the specified character will be omitted from the file transmission.

2.22 - Skip lines that start with

Any lines starting with this character will be omitted.

2.23 - Skip lines that contain

Any lines containing this character will be omitted, regardless of where they appear on the line. Tip: Use a % to avoid sending duplicate percent signs if one exists in your leader and another in your part program.

2.24 - Skip data after

Any data including and after the specified character on a given line will be omitted.

2.25 - Skip all data after

Any data including and after the specified character for the remainder of the file will be omitted.

2.26 - Send Blank Lines

Include blank lines when sending files.

2.27 - Force upper case

When transmitting data, convert all lower case characters to UPPER CASE characters.

2.28 - Mask characters

Remove these characters when sending data.

2.29 – Characters to substitute when sending

When sending replace one character with another. Use numeric ASCII values in <>, with a semi-colon after each pair. Example: <13>=<00>;

2.31 - Automatic timeout

If a file transfer is stopped for more than this number of seconds, the system will automatically cancel the file transmission.

2.32 - Send without XON timeout

Send the program after (x) seconds if no XON is received. Blank or zero disables the feature.

2.33 - Hardware handshake to release file

When using hardware handshake, which line should be used to trigger the release of the program?

2.34 - Advance queue on reset

When a safety timeout occurs, should the next file be loaded? When set to 'No' FactoryWiz DNC will return to the beginning of the interrupted transfer instead.

2.41 - Ready To Send (RTS) String

String to be output to the CNC when a transfer is ready. For most machines leave blank.

2.42 - Ready To Send (RTS) Interval

Number of seconds between each RTS transmit. Leave at 0 or blank to disable.

2.43 - RS491 protocol enabled

Should the DNC system respond to RS491 control codes? Not needed for most machines.

2.44 - Repeatedly send XON signal

Should the DNC system send an XON character every two seconds? Leave at false for most machines. Mostly for Haas controllers with a particular software bug.

2.51 - Character delay

After every character, the software will pause for (x) milliseconds. If experiencing buffer overflows on a machine that does not perform handshaking, try adding a delay. This setting is ignored when using device driver handshaking.

2.52 - Block delay

After every line, the software will pause for (x) milliseconds. If experiencing buffer overflows on a machine that does not perform handshaking, try adding a delay. This setting is ignored when using device driver handshaking.

2.53 - Character delay (first block)

Time (in milliseconds) to pause between each character on the first line only.

2.54 - First block delay

After the first line only, the software will pause for (x) milliseconds. If experiencing buffer overflows on a machine that does not perform handshaking, try adding a delay. This setting is ignored when using device driver handshaking.

2.71 - UNC target flush interval

Files in the outbox will be deleted after the specified number of hours. Put a number here. 0 or blank signifies the feature is turned off.

Receiving Options

3.01 - Receive Directories

Folder where received files from this machine will be stored. UNC paths preferred. Tip: Usually, you will want to use only one directory per machine.

3.03 - Use CNC defined filename only

When receiving a file via FTP, leave the original filename defined by the CNC intact.

3.11 - Program identifier

Whatever text comes after this string will be used for the filename when files are received automatically.

3.13 - Default Filename

If no program ID is present, this will be used as a fallback filename.

3.14 - Receive filename prefix

Prefix to add to automatically generated filenames.

3.15 - Receive filename suffix

Suffix to add to automatically generated filenames.

3.16 - Auto rename type

When receiving a file with the same name as an existing file in the receive directory, should the system overwrite the old file, rename the old file, or employ version numbering?

3.18 - Receive filename truncate string

Remove this text and all text after from received filenames. For example, entering an open parenthesis would strip out the comment from a filename, including the parenthesis itself.

3.21 - Receive timeout

If the system detects inactivity for (x) seconds, a received file will be deemed complete (in seconds). 3 is the default, but if files are being cut off before completion try increasing this setting.

3.22 - Auto code recognition

When receiving data, automatically detect EIA versus ISO code.

3.31 - Ignore data before first end-of-block

When receiving data, should any data before the first detected EOB be discarded?

3.32 - Ignore data after last end-of-block

When receiving data, should any data after the last detected EOB be discarded?

3.33 - Receive blank lines

Should blank lines be saved when received?

3.35 - Ignore Fadal checksum

You should always select TRUE if using a Fadal controller.

3.41 - Mask characters

Remove these characters when receiving data.

3.42 - Characters to substitute when receiving

When receiving replace one character with another. Use numeric ASCII values in <>, with a semi-colon after each pair. Example: <13>=<00>;

3.61 - DPRNT filename

Used to identify which outputs from the CNC are DPRNT related.

3.62 - DPRNT save directory

Where should DPRNT data which is not intended for FactoryWiz be saved (if different from the standard receive directory)?

Remote Commands

4.02 - Request for file command

Used to remotely add a file to the queue.

4.03 - Request for file command (drip feed)

Used to remotely add a file to the queue (for drip-feed with timeouts disabled).

4.04 - Prefix to assume for requested files

This prefix will be appended to the beginning of the file name for all requested files.

4.05 - Suffix to assume for requested files

This suffix will be appended to the end of the file name for all requested files.

4.06 - Search inside Files

Look for the requested program identifier inside files in the send directory. This will slow down the search substantially and should not be used with folders containing many files and subdirectories.

4.07 - File not found message

This is the text which will be returned to the CNC when a file was not found. Enter EOB as ASCII characters such as <13><10>.

4.08 - Remote request clears queue

Enable this option if you only intend to have one item in the queue at a time. Will clear out accidentally queued entries automatically.

4.11 - Request to save command

Used to remotely define the name of a file about to be sent to the DNC software. Rarely used.

4.12 - Command to ignore

Used to ignore a line that should not be processed as a command.

4.21 - Launch a program command

Using this command will launch a pre-defined program.

4.22 - Launch a program target

The full path to the program which will be invoked by the launch command.

4.31 - Redirect command

Using this command will cause all subsequent remote commands to be forwarded to another device.

4.32 - Redirect default target

When the port opens, automatically begin redirecting commands to this target. Generally used with barcode readers.

Mazatrol Options

5.01 - CMT protocol enabled

Use CMT protocol to transfer via CMT IO, required for Mazatrol programs on T32/M32 and older controllers.

5.02 - CMT controller type

Select the type of Mazak controller (if using CMT) so that file names can be properly parsed.

5.11 - CMT file extension

All files with the designated extension will be treated as CMT files.

5.12 - CMT name to use when receiving

Should the system use the first program number found in the received file, the first program comment found in the received file, or a filename based on the date and time?

5.13 - CMT file prefix

When receiving CMT files, this will be appended to the automatically generated name.

5.14 - CMT file suffix

When receiving CMT files, this will be appended to the automatically generated name.

Monitoring Options

6.01 - Monitoring method

This will determine which method, if any, will be used to collect data for FactoryWiz CNC Monitoring.

6.02 - FactoryWiz Monitoring Name

If the name of this machine in FactoryWiz Monitoring differs from the name in FactoryWiz DNC, indicate the correct FactoryWiz Monitoring name here.

6.11 - DPRNT start of cycle command

When received from the CNC, FactoryWiz will consider the machine in-cycle.

6.12 - DPRNT end of cycle command

When received from the CNC, FactoryWiz will consider the machine completed with a cycle.

6.13 - Paused command

When received from the CNC, FactoryWiz will set the machine to a paused status.

6.15 - Part ID command

When received from the CNC, FactoryWiz will set the current part name.

6.21 - DPRNT alarm command

When received from the CNC, FactoryWiz will consider the machine in an alarm state. Append text after the alarm command to indicate which alarm.

6.22 - DPRNT batch name command

When received from the CNC, FactoryWiz will store the following data in the batch field.

6.23 - DPRNT batch quantity command

When received from the CNC, FactoryWiz will store the following data in the batch quantity field.

6.24 - DPRNT custom double command

When received from the CNC, FactoryWiz will store the following data in the custom double field.

6.25 - DPRNT custom integer command

When received from the CNC, FactoryWiz will store the following data in the custom number field.

6.26 - DPRNT custom text 1 command

When received from the CNC, FactoryWiz will store the following data in the custom text 1 field.

6.27 - DPRNT custom text 2 command

When received from the CNC, FactoryWiz will store the following data in the custom text 2 field.

6.28 - DPRNT custom text 3 command

When received from the CNC, FactoryWiz will store the following data in the custom text 3 field.

6.29 - DPRNT email command

When received from the CNC, FactoryWiz will send an email.

6.30 - Idle reason command

When received from the CNC, FactoryWiz will set the machine's idle reason.

6.31 - Idle commit command

When received from the CNC, FactoryWiz will save the existing idle time and begin a new period.

6.32 - Job command

When received from the CNC, FactoryWiz will store the following data in the job field.

6.33 - Mode command

When received from the CNC, FactoryWiz will store the following data in the mode field.

6.34 - Operator name command

When received from the CNC, FactoryWiz will store the following data in the operator name field.

6.35 - Part counter command

When received from the CNC, FactoryWiz will update the machine resettable part counter field with the specified value.

6.36 - Reference runtime command

When received from the CNC, FactoryWiz will update the reference runtime field with the specified value.

6.37 - Sequence command

When received from the CNC, FactoryWiz will update the current sequence field with the specified value.

6.38 - Tool command

When received from the CNC, FactoryWiz will update the current tool field with the specified value.

6.39 - Parts per cycle command

When received from the CNC, FactoryWiz will update the number of parts produced by each program cycle with the specified value.

6.61 - Haas MDC poll interval

When using Haas MDC, how many seconds should elapse between queries?

Barcode Reader

7.01 - Barcode Port Type

Which type of port is this? For typical RS232 ports use ""Standard"".

7.02 - Barcode COM Port

Select the COM port which will be connected to this barcode reader. This must not be the same number as is used for the CNC.

7.03 - Barcode Baud Rate

Select the baud rate (speed) at which the barcode reader is configured to communicate. This MUST match the speed used by the barcode reader. Most barcode readers default to 9600 baud.

7.04 - Barcode Data Bits

Select the data bits in each byte. Most barcode readers default to 8.

7.05 - Barcode Stop Bits

Select the stop bits used by the barcode reader. Most barcode readers default to 1.

7.06 - Parity / Code Type

Select the parity used by the barcode reader. For most barcode readers this will be ASCII None.

Appendix A: Setting up FactoryWiz Server to run as a service

Before proceeding, you will need to create a Service Login account. This will be the account under which the DNC service runs, so it will need access to any directories that contain part programs, including write access to any inbox directories.

You will first need to open a Command window with admin rights. To do this:

1. On the **Windows Start** menu, click **All Programs** > **Accessories** and then right-click on **Command Prompt**.
2. Select **Run as Administrator**.
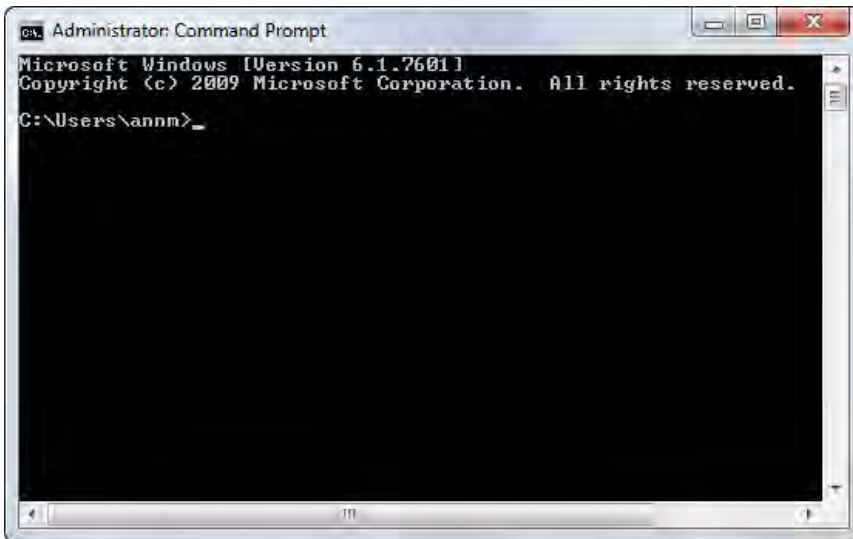
In the command prompt window:

1. Type in the following: **CD "\RYM\FactoryWiz DNC Server"**

   You should have a prompt that states: C:\RYM\FactoryWiz DNC Server>

2. Type in the command: **Install_Service** and press ENTER.

   A Set Service Login dialog box displays.

3. Fill in the Username, Password, and repeat the password for confirmation.
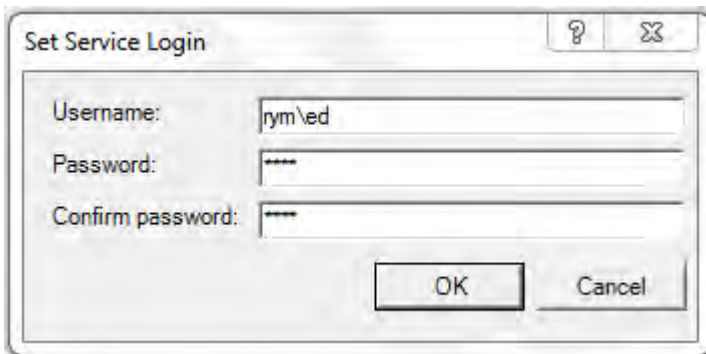
If the service creation is successful, the following message displays:

The Commit phase completed successfully. The transacted install has completed.

If the installation was successful, we recommend opening the service properties on the next page and setting the first, second, and subsequent failures setting on the Recovery tab all to **Restart Service**. This ensures that if there is any problem, your DNC will restart automatically.
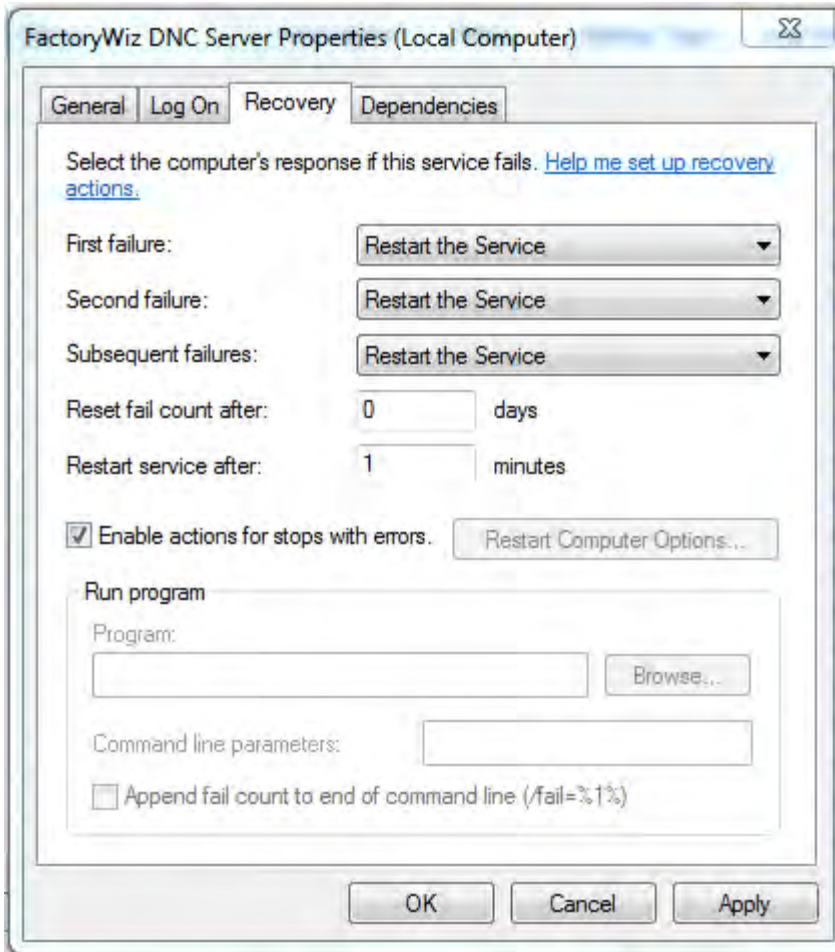
4. Click **OK**.

Appendix B: Importing settings from PC-DNC Plus system

Settings from a PC-DNC Plus system can be imported into FactoryWiz DNC.

1. On the **Windows Start** menu, click **All Programs** > **FactoryWiz DNC Server** > **Import PC-DNC Plus Config**.

   A dialog box will open with two paths displayed:

   - The current path to the original PC-DNC Plus configurations
   - The current FactoryWiz Server location.

2. If the PC-DNC Plus location is not correct, browse to the correct folder.

   (This could be a backup location for PC-DNC Plus, or even a USB storage device)

3. Make sure the box is checked to remove any existing FactoryWiz DNC configurations.

   (When doing the original install, sample machines are entered)

4. Click **Start**.