Metasys® System Extended Architecture Remote Access
Technical Bulletin

Johnson Controls

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Document Introduction

This document describes how to use the Metasys® system extended architecture Remote Access (MRA) application for dial-up or Local Area Network (LAN) connections. Remote Access shortens the amount of time spent downloading the Java® Archive (JAR) files and Java® Runtime Environment (JRE) versions used to access the Metasys system extended architecture engines or servers. This document assumes you have already commissioned the Engine to which you plan to connect: Network Automation Engine (NAE), Network Control Engine (NCE), or Network Integration Engine (NIE), or the Application and Data Server (ADS)/ Extended Application and Data Server (ADX).

Related Documentation

Table 1: Metasys System Extended Architecture Remote Access Related Documentation

For Information On	See Document	LIT or Part Number
Installing Remote Access	*Metasys System Extended Architecture Remote Access Installation Instructions*	*Part No. 24-10343-0*
General Network and Information Technology Definitions and Concepts	*Network and IT Guidance for the BAS Professional Technical Bulletin*	*LIT-12011279*
Dialing into Metasys System Extended Architecture from a Computer	*Metasys System Extended Architecture Direct Connection and Dial-Up Connection Application Note*	*LIT-1201639*
Security Issues, Including Adding Users and Roles to the System	*Security Administrator System Technical Bulletin*	*LIT-1201528*
Overview of Metasys System Extended Architecture Features and Functions	*Metasys System Extended Architecture Overview Technical Bulletin*	*LIT-1201527*
Daily Use of the Metasys System Extended Architecture	*Metasys system Help*	*LIT-1201793[1]*
Installing the ADS, ADX, and System Configuration Tool (SCT)	*ADS, ADX, and SCT Installation Instructions Wizard[2]*	*Part No. 24-9898-1*
Installing the NAE/NIE	*NAE55/NIE55 Installation Instructions*	*Part No. 24-10051-0*
Configuring the NAE	*NAE Commissioning Guide*	*LIT-1201519*

1. This LIT number represents a print friendly version of the *Help*.
2. Use the wizard to generate instructions specific to your system*.*

Metasys System Extended Architecture Remote Access Overview

Remote Access automatically manages different versions of the Java Archive (JAR) files stored in individual cache folders on the client computer. Managing these JAR files allows for faster launching of the Metasys system extended architecture engines/servers directly from the application. Remote Access is faster than using a Web browser because the client computer needs to download the JAR files one time for each engine/server. Web browsers do not support the management and sharing of JAR files. Remote Access shares (copies) the files among multiple engines/servers, and downloads only new files or files that have been updated since the last installation or download.

The SCT Manager deletes JAR files and connections used by the MRA application. If you are using the MRA after using the SCT Manager, see the Missing JAR files topic in Table 5 in the *Troubleshooting* section of this document.

Detailed Procedures

Launching Remote Access

To launch Remote Access, from the Start menu, select Programs > Johnson Controls > Metasys > Metasys Remote Access. The Remote Access user interface appears. Figure 1 and Table 2 show and describe the Remote Access application User Interface (UI). (Alternatively, use the Remote Access icon on the desktop.)
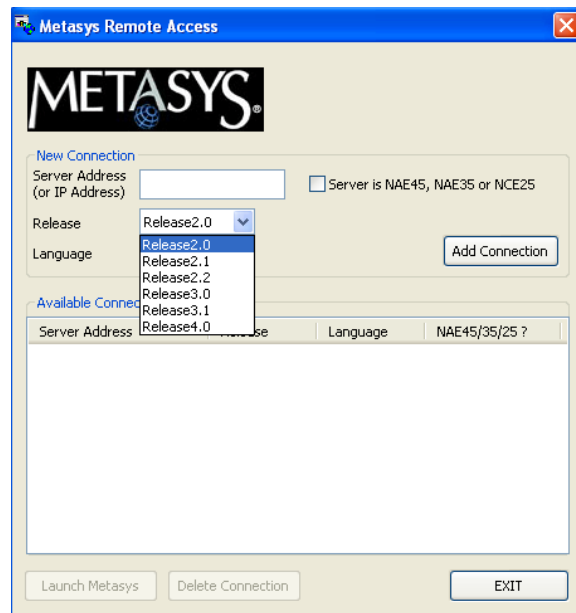

Figure 1: Metasys Remote Access UI Screen

Table 2: Metasys Remote Access UI

Field		Description
New	**Server Name or Address**	Enter the engine/server name of the engine/server to which you want to connect[1]or the Internet Protocol (IP) address.[2]
	Versions	Select the release of the Metasys system extended architecture for the engine/server.
	Language	Select the language you wish to use: en_US (English) or de_DE (German).[3]
	Add Device	Adds the engine/server to the Device list.
Device		Displays the engine/servers added to the program.
Versions		Displays the release of the engines/servers added to the program.
Launch Metasys		Launches the Metasys system extended architecture UI for the selected engine/server.
Delete Device		Removes the selected engine/server from the Device list and its associated cache folder.
Exit		Closes the Remote Access application.

1. If you are using a telephone connection to a site that has never been connected previously from this computer, use the IP address instead of the site name.
2. This application requires the IP address or engine/server name and release of the engine/server.
3. For the connection to appear in the selected language, the server that you want to connect must already be internationalized. For example, by selecting the language during the ADS or SCT installation, or using the Language Installation Program.

Adding an Engine/Server

This application requires the IP address or engine/server name and Metasys system extended architecture release of the engine/server. To add an engine/server on a LAN:

1. Launch Remote Access.

2. Click the Device Name or Address field, and type the IP address or the name of the engine/server to which you want to connect using Table 3.

    Note: When you use a telephone connection, use the IP address if the site name has not been resolved on the computer. If you connect to a LAN using a dial-up Internet Service Provider (ISP), follow the steps for using a LAN.

Table 3: Connection Strategies

Connection	Steps
Dial-up Using the Name	Use the name of the engine/server and the IP address of the modem connection. **Note:** Only advanced users should use this procedure. Errors and incorrect entries in the **hosts** file can cause network/communication problems. To dial using the name: 1. On the computer you are using to dial to the engine/server, browse to the **hosts** file. In the Microsoft® Windows® 2000 Operating System (OS), the address is C:\WINNT\system32\drivers\... In the Windows XP® OS, the address is C:\WINDOWS\system32\drivers\... 2. Create a backup copy of the hosts file. 3. Open the hosts file in any text editor. 4. Add an entry associating the IP address for the modem connection[1] with the engine[2]/server[3] name. For example: 169.254.77.40 nae00108D007F99 If you access multiple engines using this modem connection, add a line for each engine. 5. Save and close the hosts file. 6. Use the name of the engine/server when adding the engine/server to Metasys Remote Access (MRA). For example, use nae00108D007F99.
Dial-up Using the IP Address	Use the IP address of the modem connection.[1]
LAN Using the Name	Use the name of the engine[2]/server.[3]
LAN Using the IP Address	Use the IP address of the engine/server. If you do not know the IP address of the engine, refer to the *Determining the NAE IP Address and Device Name for a LAN Connection* section of the *NAE Commissioning Guide (LIT-1201519)*. The IP address of the server is the IP address of the computer on which the ADS/ADX software is running. To see the IP address of the computer: 1. Open the DOS command prompt on the computer running the ADS/ADX. 2. Type ipconfig and press Enter. 3. Note the address in the IP Address field. 4. Type exit and press Enter.

1. To find the IP address of the modem connection, double-click on the desktop icon for the connection you created. The Modem Status dialog box appears. (If you did not create an icon for the desktop, on the Start menu, click Settings > Control Panel and select the Network and Dial-Up Connections folder [Windows 2000 operating system] or the Network Connections folder [Windows XP operating system]). Click on the Details tab and note the address in the Server IP address field. Click OK.
2. The name for the engine defaults to naexxxxxxxxxxxx, where xxxxxxxxxxxx is the Media Access Control (MAC) address. If you do not know the name of the engine, refer to the *Determining the NAE IP Address and Device Name for a LAN Connection* section of the *NAE Commissioning Guide (LIT-1201519)*.
3. The name for the server is the name of the computer on which the ADS/ADX software is running. To see the name of the computer, on the Start menu of the computer running the ADS/ADX, click Settings > Control Panel > System. The System Properties dialog box appears. Click on the Computer Name tab and note the name in the **Full computer name** field. Click OK.

3. Select the release of the Metasys system extended architecture for the engine/server from the Versions menu.

4. Select the language that was specified in the Metasys user's security profile.

5. Select the appropriate check box, if the target engine/server is an NAE45, NAE35, or NCE25.

6. Click Add Device. The program creates a new cache folder and adds the server to the Device list.

Deleting an Engine/Server

To delete an engine/server:

1. Launch Remote Access.

2. Select the engine/server you want to delete.

3. Click Delete Device. The Delete Device Confirmation dialog box appears (Figure 2).

**Figure 2: Delete Device Confirmation
Dialog Box**

4. Click Yes. The program deletes the engine/server and its cache folder.

Launching an Engine/Server UI

You must establish the desired dial-up connection before launching Remote Access. Double-click the Connection icon on your desktop to connect to the desired engine or server.

To launch an engine/server UI:

1. Launch Remote Access.

2. Select the engine/server you want to launch.

3. Click Launch Metasys. The Remote Access program automatically closes, and the Java Web Start status dialog box appears (Figure 3).
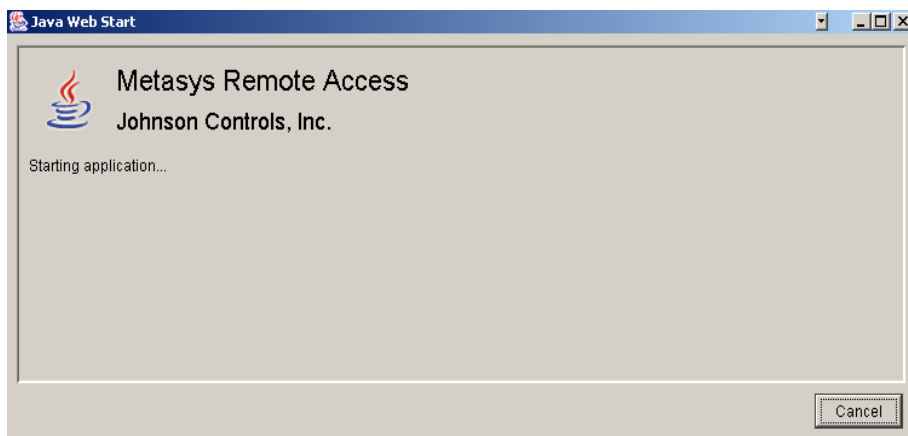

Figure 3: Java Web Start Status Dialog Box

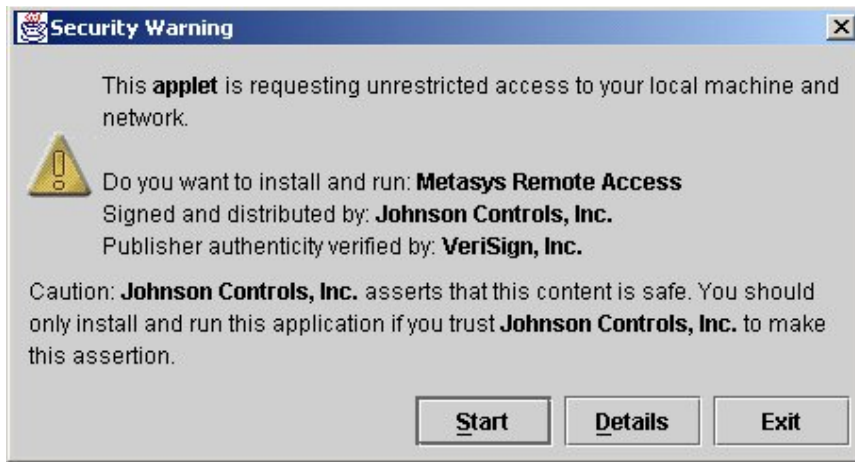**Note:** A Security Warning dialog box may appear (Figure 4). Select Start.

Figure 4: Security Warning Dialog Box

Note: You can select the shortcut creation option from the Java Control Panel (Figure 5). Select the option as desired and click OK.
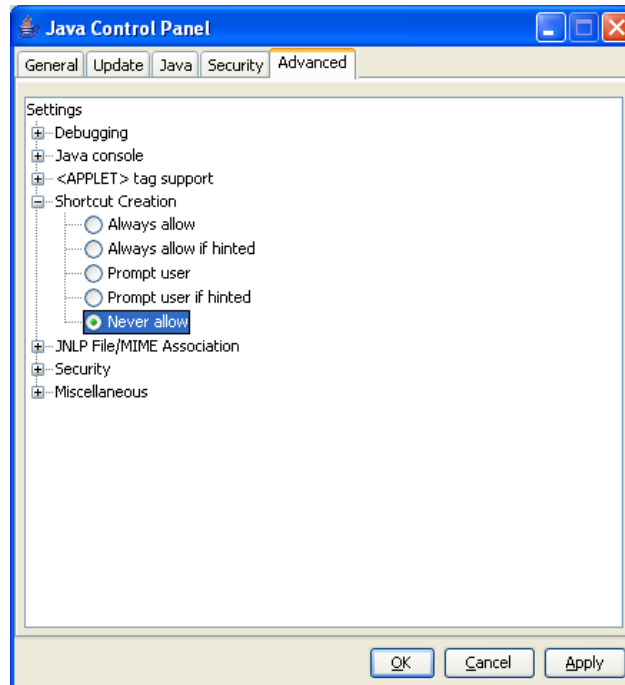

Figure 5: Shortcut Creation Dialog Box

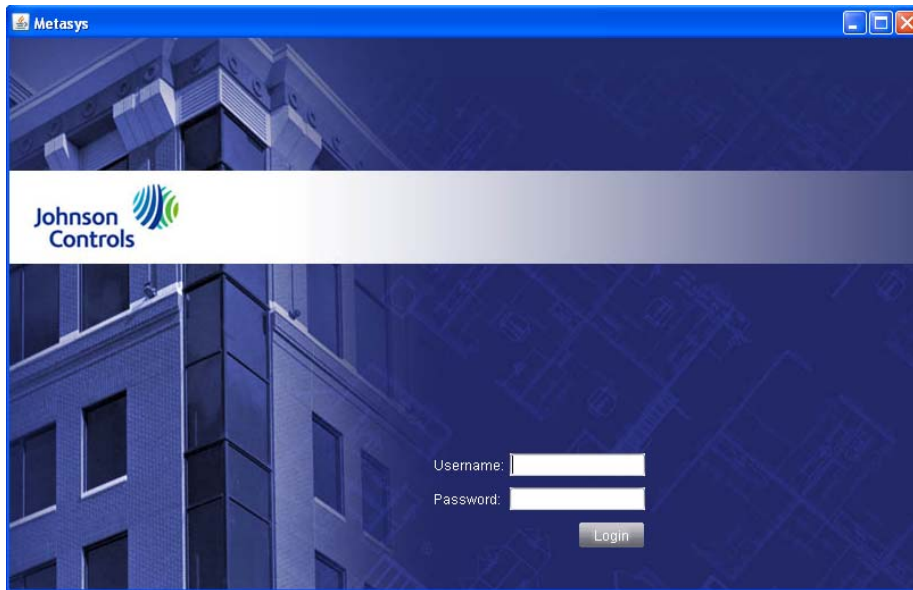The Metasys system extended architecture Login screen appears (Figure 6).

Figure 6: Metasys System Extended Architecture Login Screen

4. Enter your Username and Password and click Login. The Metasys System
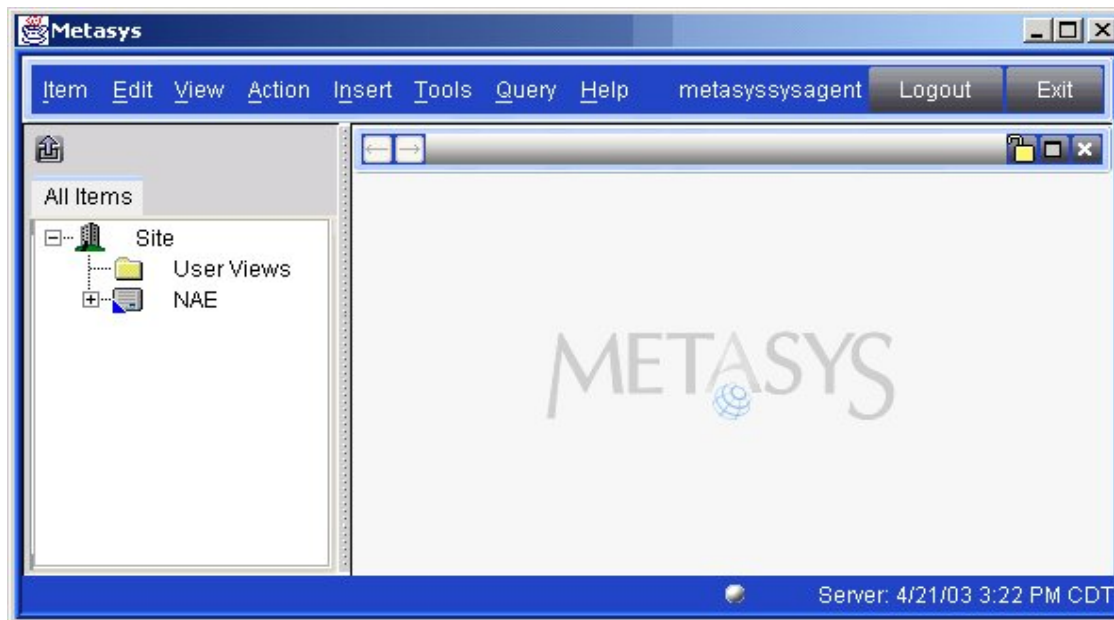   Extended Architecture UI Screen appears (Figure 7).

Figure 7: Metasys System Extended Architecture UI Screen

For information on how to use the system, refer to the Metasys system *Help*.

Exiting Remote Access

To exit Remote Access, click Exit, and disconnect from the dial-up connection.

Adding JRE Versions to the Control Panel after Installing JRE

The Remote Access application requires the appropriate JRE Version listed in Table 4 to connect to the Metasys system extended architecture Release devices/servers.

Table 4: Java Runtime (JRE) Downloads

Java Runtime Version	Metasys Release Number
Java 1.6.0_04	4.0
Java 1.5.0_13	3.1
Java 1.5.0_12	3.0.1
Java 1.5.0_11	3.0
	2.2.3
Java 1.5.0_10	2.1
	2.0.x
Java 1.3.1_15	2.0

1. From the Windows Control Panel, select the Java option. The Java Control Panel appears.
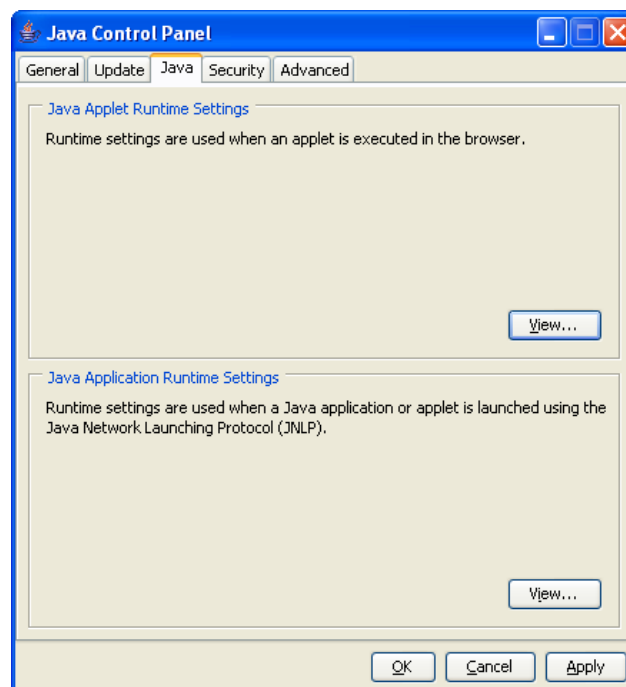
2. Click on the Java tab (see Figure 8).

Figure 8: Java Control Panel

3. Click on **View...** in the **Java Application Runtime Settings** section (see Figure 8). The Java Runtime Settings screen appears. (See Figure 9.)

4. Verify that 1.3.1_15 is not listed in the Product column in the table (see Figure 9).
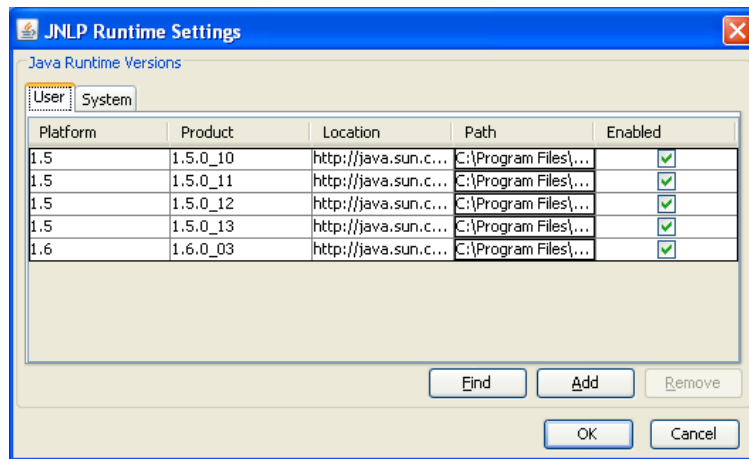

Figure 9: Java Runtime Settings Screen

Note: It is not important which products have a check mark in this table.

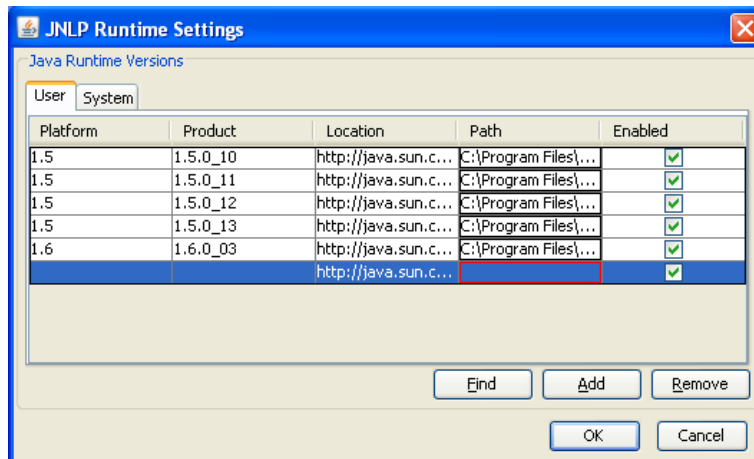5. Click Add. A blank entry appears (Figure 10).

Figure 10: Java Runtime Setting Screen with Blank Entry

6. Select the blank entry and click Find. The JRE Finder dialog box appears (Figure 11).
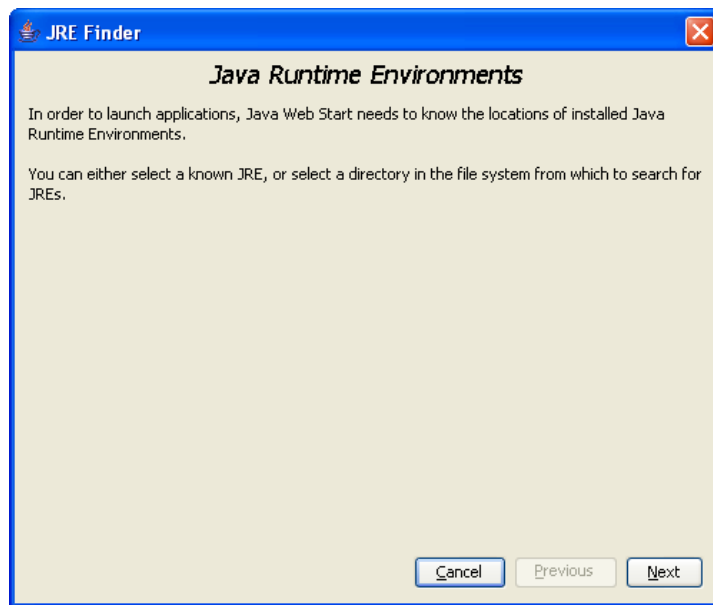

Figure 11: JRE Finder Dialog Box

7. Click Next.

8. On the Look in drop-down list, browse to the folder where JRE 1.3.1_15 is located (see Figure 12).
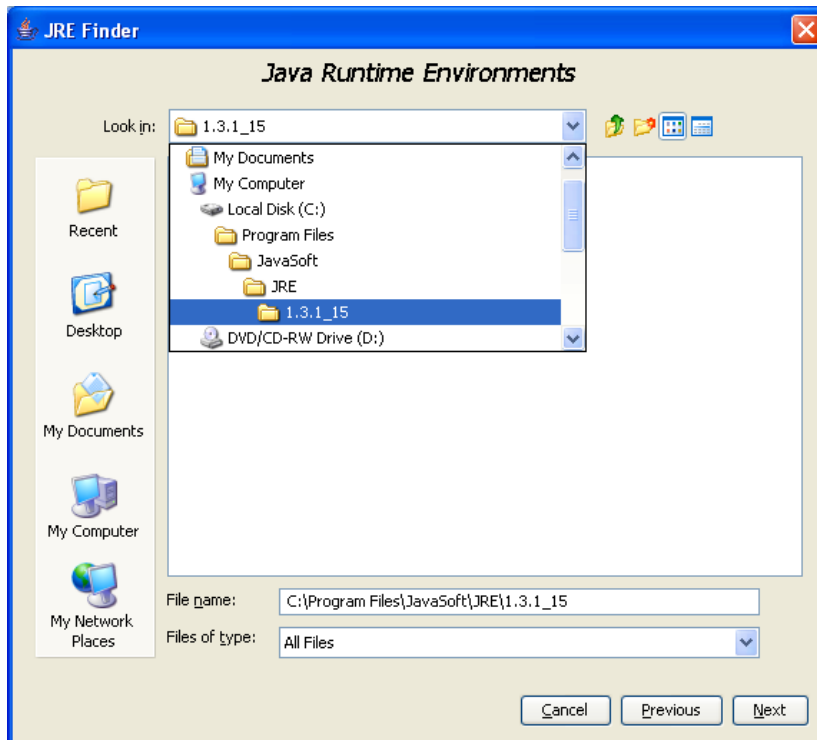

Figure 12: JRE Finder - Locate JRE Version 1.3.1_15

Note: JRE 1.3.1_15 may be in C:\Program Files\JavaSoft\JRE\1.3.1_15\bin.

9. Select JRE 1.3.1_15 and click Next. You should get a list similar to Figure 13.
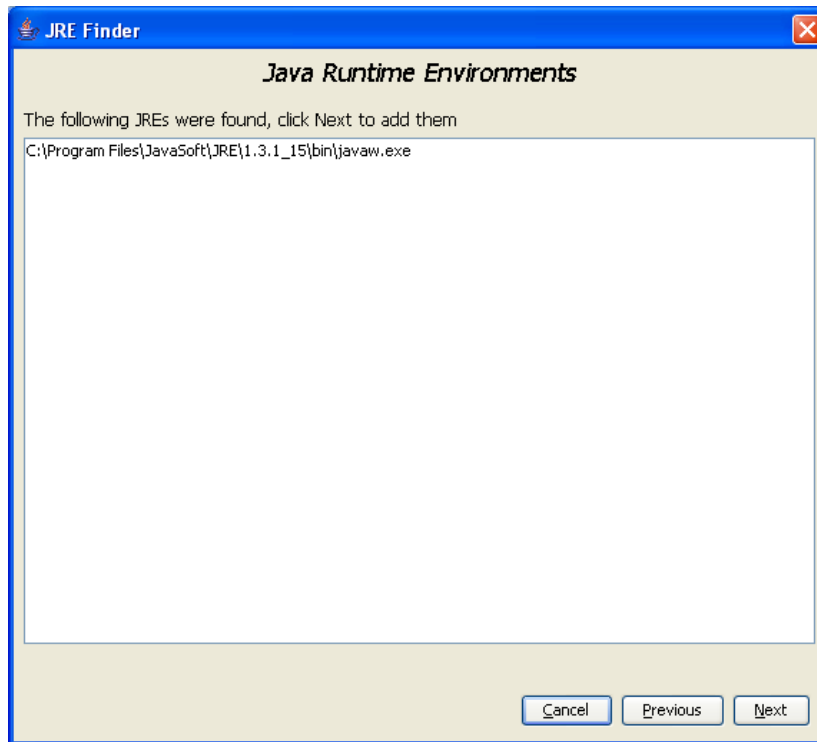

Figure 13: JRE Platform Version List

10. Select JRE 1.3.1_15 from the list and click Next.
    The JNLP Runtime Settings screen reappears, and you now see JRE Version
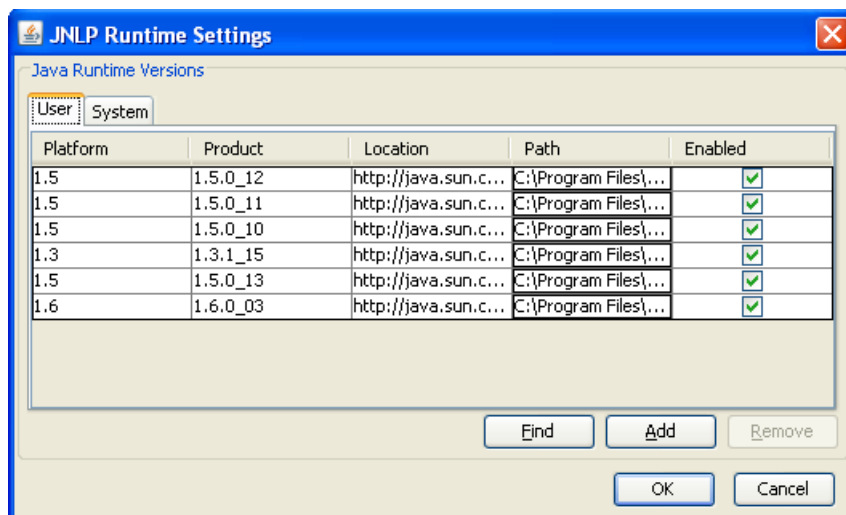   1.3.1_15 on the list (see Figure 14).

Figure 14: JNLP Runtime Settings

Troubleshooting

Table 5 describes troubleshooting procedures for the Remote Access application.

Table 5: Troubleshooting (Part 1 of 3)

Error/Condition	Solution
Internet Explorer displays the following or similar error dialog: **Cannot find the file `"C:\Documents and Settings\ [username] \Local Settings\ Temporary Internet Files\ Content. IE6\QRSTCDX\webstart [2].jnlp"` (or one of its components). Make sure the path and file name are correct and that all required libraries are available.**	Delete the Temporary Internet Files: 1. Close all Internet Explorer windows. 2. Right-click the Internet Explorer icon on your desktop, and select Properties from the menu. 3. Select the General tab. 4. Under the Temporary Internet files selection, click Delete Files. A Delete Files dialog box appears. 5. Select the Delete all offline content check box and click OK. 6. Click OK to close Internet Properties. 7. Launch the engine/server UI using Remote Access.
Internet Explorer displays the following error dialog: `Unable to launch the specified application.`	Delete the Temporary Internet Files: 1. Click Details and select the General tab. 2. Confirm that a message similar to the previous error appears. 3. Click Abort and follow the previous solution.
Remote Access displays the following error upon launch: `Could not connect to server.`	An incorrect Device Name or Address was configured in the Remote Access application. Enter the correct Device Name or Address. See the _Adding an Engine/Server_ section in this document. or The Java Web Start is not configured correctly. See the _Detailed Procedures_ section in this document.

Java Web Start displays the following or similar JRE version/setting error:
`Bad installation. Error invoking Java VM (SysExec)`
`C:\Program Files\JavaSoft\JRE\ 1.3.1_15\bin\javaw.exe`
	The JRE version required for Remote Access is not installed on your computer or Java Web Start is installed incorrectly:
	1. Go to Start > Settings > Control Panel > Add/Remove Programs and verify if the Java 2 Runtime Environment Standard Edition (SE) Version 1.3.1_15 is installed on your computer.
	2. If JRE Version 1.3.1_15 is not installed, refer to the _Uninstalling Remote Access_ section of the _Metasys System Extended Architecture Remote Access Installation Instructions (Part No. 24-10343-0)_.
	3. Install Remote Access as described in the _Metasys System Extended Architecture Remote Access Installation Instructions (Part No. 24-10343-0)_.

Remote Access displays the following error: `Please refer to the troubleshooting document for JRE setting.`	The JRE version required for Remote Access is not installed on your computer. Follow the previous solution. If the previous solution does not work, do the following: 1. Go to Start > Programs > Java Web Start > Java Web Start. 2. Select Preferences from the File menu and select the Java tab. 3. If Platform Version 1.5 appears in the Java Runtime Versions list, select the row and click Remove. Click OK and exit Java Web Start. 4. Follow the _Uninstalling Remote Access_ section of the _Metasys System Extended Architecture Remote Access Installation Instructions (Part No. 24-10343-0)_. 5. Install Remote Access as described in the _Metasys System Extended Architecture Remote Access Installation Instructions (Part No. 24-10343-0)_.
The Metasys System User Interface displays the following logon error: `Unable to login. Unexpected error.`	Follow the instructions in the previous two JRE solutions.

Table 5: Troubleshooting (Part 2 of 3)

Error/Condition	Solution
Remote Access displays the following error: `Can not delete physical cache folder`	You may safely ignore this message. It occurs when you try to delete a device connection from the list but have not yet made a successful device connection to the specified device.
Remote Access displays the following error: `Cache folder not created at this time.`	You may safely ignore this message. It occurs when you try to add a device connection that has not been completely removed.
Remote Access displays the following error: `Dummy cache for Release x.x.x.x not found.`	This is an installation issue. The correct JAR files have not been installed on this computer for the device connection requested. If you attempt to make a connection, MRA deletes the connection automatically. MRA does not support versions earlier than Release 2.0 of Metasys system extended architecture, even if they are listed in a drop-down menu.
Remote Access cannot launch the Metasys UI: `Webstart "target invcation" error appears.`	Double-check to be sure that you have selected the correct check box for the target engine/server, specifying either NAE45, NAE35, or NCE25.

Table 5: Troubleshooting (Part 3 of 3)

Error/Condition	Solution
When you select the `Typical` Setup Type during the installation, the JRE may be incorrect.	This is an uninstallation issue. Open the Java software from the Windows Control Panel. Select the Advanced tab. Uncheck all the Browser boxes listed there. Click Apply.
You launch Metasys from Remote Access. The Remote Access application disappears. Nothing seems to happen, and no connection is made. You do not see any error messages.	Check to see if Internet Explorer Enhanced Security Configuration is enabled on the computer that is running MRA. The Enhanced Security settings do not allow external applications to open Internet Explorer windows to launch Web Start files. You can turn off (disable) the Enhanced Security settings, if approved by your Information Technology (IT) department. If not, have an Internet Explorer window already open before launching Metasys from Remote Access. Remote Access can use the existing Internet Explorer window to launch the Web Sart files.
Missing JAR files. The Web Start attempts to download all of the JAR files, even though the release of the MRA is same as the release of the engine/ server that is connected through MRA.	This may be due to the cached JAR files that were deleted using the **Delete Files . . .** button in the **General** tab of the Java Control Panel, or manually from the C:\Documents and Settings\[USER_NAME]\Application Data\Sun\Java\Deployment\cache location, or by using the SCT Manager. To solve the issue, delete the engine/server entry from the MRA application and add it again using the *Adding an Engine/Server* procedure.
Remote Access displays the following error: `The applications digital signature has an error. Do you want to run the application?`	MRA launches the Metasys UI by using the Java JAR files that are stored locally. These are the same JAR files that are used by Metasys software. A time limit is placed on the digital signatures of these files. If the digital signature expires, Java Web Start displays warning messages. You can safely click Run to continue. To avoid generating this error each time you launch Metasys software, select the **Always trust content from this publisher** check box. If you do not select this check box, this warning message appears each time you launch Metasys software.
Remote Access cannot launch the Metasys UI: `Webstart "target invcation" error appears.`	Double-check to be sure that you have selected the correct check box for the target engine/server, specifying either NAE45, NAE35, or NCE25.