Configuring Windows NT Remote Access Service (RAS)

The Remote Access Service (RAS) is a feature built into Windows NT that allows users to log into an NT-based LAN using a modem, X.25 connection, or WAN link. RAS works with several of the most popular network protocols including TCP/IP, IPX, and NetBEUI.

To use RAS to connect to a remote JACE controller, you need to install and configure the service on the JACE controller and the client program on the PC running the Web Supervisor software. Both the service and the client program are built into Windows NT.

Installing the Remote Access Service

Install the RAS service on the JACE controller as follows.

1. Click the Start button on the Taskbar and expand the Settings menu. Click on Control Panel.

   The Windows Control Panel is displayed.

2. Double-click the Network icon, then click the Services tab.
3. If the **Remote Access Service** is not listed, continue as follows to install the service. Otherwise, skip ahead to step #5 to verify the RAS setup.

4. In the Network dialog, click the **Add** button. Wait for a moment for Windows to build the list of available services. Use the scroll bar to scroll down to view Remote Access Service. Click **Remote Access Service**, then click **OK**.

   If the Windows NT setup wizard finds the Windows NT files, simply click OK to proceed.

   If the Windows NT setup dialog is displayed prompting you for the location of the Windows NT files, specify `c:\i386` (the RAS installation files are pre-installed on the JACE controller located in the `c:\i386` directory). Click **Continue**.

   If you are installing the service using some other configuration, locate the RAS installation files and specify that location in the Windows setup dialog. Click **Continue**.

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**Important:** Often device problems can be corrected by reinstalling the latest versions of appropriate device drivers. If you experience any difficulties connecting to the remote JACE controller or if you are not certain that **Service Pack 4** has been previously installed on the JACE controller, install it now.

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**Proper operation of RAS requires a functional installation of Service Pack 4.**

Ensure that Service Pack 4 has been installed on the JACE controller.
5. In the Network Services list, double-click **Remote Access Service** to display the Remote Access Setup dialog. Click **Configure**.

6. In the Configure Port Usage dialog, click the radio button next to **Dial out and Receive calls**.

Selecting both dial out and dial in capability allows the JACE controller to be accessed from a remote client as well as dial out to a Web Supervisor for the purpose of archiving alarms and trend data.

Click **OK**.
7. In the Remote Access Setup dialog, click **Network**.

8. In the Network Configuration dialog, verify the following settings:
   - Check **TCP/IP** as the **Dial out Protocol**
   - Check **TCP/IP** as the protocol allowed by **remote clients**
   - Click the radio button next to **Requires encrypted authentication**

9. Click the **Configure** button next to **Server Settings: TCP/IP**.
In the RAS Server TCP/IP Configuration dialog, verify the following settings:

- Click the radio button next to Allow remote TCP/IP clients to access the Entire network.

- Click the radio button next to Use static address pool. Enter the beginning and ending IP addresses to be used.

These addresses are used by other JACE controllers (i.e., stations) if they attempt to connect to the server station. The range of addresses must be sufficient to support those specified for each client configured to talk to this JACE controller. The address defined in step #7 (below) in Configuring the Remote Client Program on Your Computer must be in this range.

**Important:** When specifying a range of IP addresses, it is important to not duplicate addresses that are already in use by network resources. Check with your Network Administrator to avoid potential conflicts.

- Click the checkbox next to Allow remote clients to request a predetermined IP address.

10. Click OK to close the RAS Server TCP/IP Configuration dialog and save your changes.

11. Click OK to close the Network Configuration dialog and save your changes.

12. Click Continue to close the Remote Access Setup dialog and save your changes.

The Windows NT setup wizard finalizes the installation and setup of the service.

13. Click OK to close the final Setup Message dialog.

The Network dialog is displayed with the newly added network service listed.
14. Click Close to close the Network dialog and save your changes.

15. Restart the JACE controller for your changes to take effect.

**Starting the Remote Access Service**

Once the RAS service has been installed on the JACE controller, it can be manually started (initially), then configured to start automatically each time the JACE controller is restarted.

1. Click the Start button on the Taskbar and expand the Settings menu. Click on Control Panel.

   The Windows Control Panel is displayed.

2. Double-click the Services icon.

   A list of installed services is displayed.

3. Use the scroll bar to scroll down to view the Remote Access Server. Click Remote Access Server, then click Start button.

   Verify the service starts successfully.

4. With the Remote Access Server selected, click the Startup button.

   ![Service Startup Type dialog](image)

   The Service Startup Type dialog is displayed.

5. Click the radio button next to Automatic, then click OK.

6. Click Close to close the Services dialog and save your changes.
Remote Access Administration

An account, with appropriate permissions, must be established for the user connecting to the JACE controller.

1. Click the Start button on the Taskbar and expand the Programs menu to view the Administrative Tools (Common) menu.

2. Click Remote Access Admin.

3. Click Users on the Menu Bar, then click Permissions.

4. Click on the user name and verify that the checkbox next to Grant dial-in permission to user is checked.

5. Click OK to close the Remote Access Permissions dialog and save your changes.

6. Click the Close icon to close the Remote Access Admin dialog.
Configuring the Remote Client Program on Your Computer

**Important:** Often device problems can be corrected by reinstalling the latest versions of appropriate device drivers. If you experience any difficulties connecting to the remote JACE controller, reinstall Service Pack 4 before proceeding.

Configure your PC to run the Remote Access client software as follows.

1. Double-click the **My Computer** icon on the desktop.

2. Double-click the **Dial-Up Networking** icon.

If you have not already done so, specify the local area code, dialing prefix for accessing an outside line, and other modem properties for the Windows Phonebook.

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Proper operation of RAS requires a functional installation of Service Pack 4. Ensure that Service Pack 4 has been installed on your computer before attempting to connect to the remote JACE controller.
3. Click **New** to add a new phonebook entry.

![New Phonebook Entry dialog box](image1)

4. In the New Phonebook Entry dialog, click the **Basic** tab and enter the following:

   - **Entry name**
   - **Area code** and **Phone number**
   - Check **Use Telephony dialing properties**

![New Phonebook Entry dialog box](image2)
5. In the New Phonebook Entry dialog, click the Server tab and enter the following:
   - Set Dial-up server type to PPP: Windows NT, Windows 95 Plus, Internet
   - Check TCP/IP as the Network protocol
   - Check Enable software compression
   - Check Enable PPP LCP extensions

6. In the same dialog, click the TCP/IP Settings button.

7. If the dial-up connection is to connect two stations, click the radio button next to Specify an IP address and enter a valid IP address in the appropriate text box. The IP address should be in the range specified in the static address pool entered in step #9 (above) in Installing the Remote Access Service.

   If the dial-up connection is to connect a WorkPlace Pro client to a remote JACE controller, click the radio button next to Server assigned IP address.

8. Check Use IP header compression.

9. Check Use a default gateway on remote network.

10. Click OK to close the PPP TCP/IP Settings dialog and save your changes.

11. In the New Phonebook Entry dialog, click the Security tab and enter the following:
   - Click the radio button next to Accept only encrypted authentication.

12. Click OK to close the New Phonebook Entry dialog and save your changes.

13. Click Close to close the Dial-Up Networking dialog and save your changes.
Testing the Connection

To test the connection between your WorkPlace Pro client and the JACE controller, proceed as follows.

1. Double-click the My Computer icon on the desktop.

2. Double-click the Dial-Up Networking icon.

3. Select the appropriate phonebook entry, then click Dial.

4. Enter the (Windows NT) user name and password that provides you access to the operating system running on the remote station.

   RAS attempts to establish a connection between the modem on your computer and the modem on the remote JACE controller. Wait for the connection to be made.
If a Connection Complete dialog is displayed, click OK to proceed.

5. With the connection made, click on the Dial-Up Networking Monitor on the Taskbar to check the status of the connection and to discover the IP address assigned to your machine and that of the server station.

6. With the Dial-Up Networking Monitor displayed, click the Details button. The IP Address field displays the address assigned to your machine for this connection. The Dial-Up Server field displays the IP address of the server. Use this address in step #11 (below) to open the station.

7. With the connection made, you can start WorkPlace Pro and access the JACE controller as though you were directly connected.

Click the right mouse button on Dial-Up Networking Monitor on the Taskbar to check the status of your connection or to disconnect.
8. Click the **Start** button on the **Taskbar** and expand the **Programs** menu to view the Niagara folder.

9. Click the WorkPlace Pro icon to launch WorkPlace Pro.

10. With WorkPlace Pro started, click **File** on the **Menu Bar**, then click **Open Station**.

   The Open Station dialog is displayed.

   ![Open Station Dialog](image)

   11. In the **Host** box, type the host name of the remote JACE controller.

   If you have not created a hosts table on your local machine, which equates host name to IP address, enter the IP address of the remote JACE controller here. This is the IP address discovered in step #6 (above).

   12. In the **User Name** box, type your name.

   13. In the **Password** box, type your password.

   14. Click **Open**.

   The Tree View updates and displays the open (remote) station.
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