
RALS™ Remote Connect (RRC) Version 2.2

Installation and Configuration Instructions

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Overview

This document discusses the installation of RALS™ Remote Connect (RRC) Version 2.2. System requirements are detailed, followed by step-by-step procedures for installing the software and information about configuring the RRC software. Finally, a “Quick-start Guide” checklist of procedures is included.

Functionality

RRC comprises two software programs intended to run on a Microsoft Windows computer, making it an “RRC Download Workstation”. One of the programs, RRC.exe, is installed as a service that runs continually in the background whenever the Windows operating system is up and running. The RRC service uses the PC’s serial or USB ports to communicate with a local Point-of-care (POC) instrument or device on the one side, and the PC’s Ethernet port on the other side to link the device via the network to a remote RALS™ System server. The other program, RRC_Status.exe, allows the user to configure the RRC service and monitor its operation. (Configuration information is stored in a third file, RRC.ini). The following figure illustrates the major components of the system in which the RRC operates and their interconnections.



Applicability

RRC 2.2 is intended for all new RRC installations, as well as to upgrade and replace all prior versions of RALS™ Remote Connect. RRC 2.2 incorporates all important functionality of the earlier versions.

Platform Requirements

RRC is an application for Microsoft Windows and is designed as a light-weight service, making only modest demands on system resources. The system must be connected to the same network as the RALS™ System and it must have the serial or USB ports necessary to connect the desired POC devices.

Installation Package

The RRC 2.2 installation package contains a single Windows folder containing three files:

1. “setup.exe”, the installation program executable file
2. “RALS Remote Connect.msi”, a Windows Installer package database
3. “Data1.cab”, a cabinet file containing the target executable files

Pre-installation Activities

Before starting the RRC installation, the following should be completed:

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1. Confirm Device Support

Table 1, found later in this document, lists the devices most commonly interfaced using RRC. If your device is not listed there, please contact customer support at 1-877-627-7257. Additional devices are supported but require additional installation instructions beyond the scope of this document.

2. Collect Configuration Information

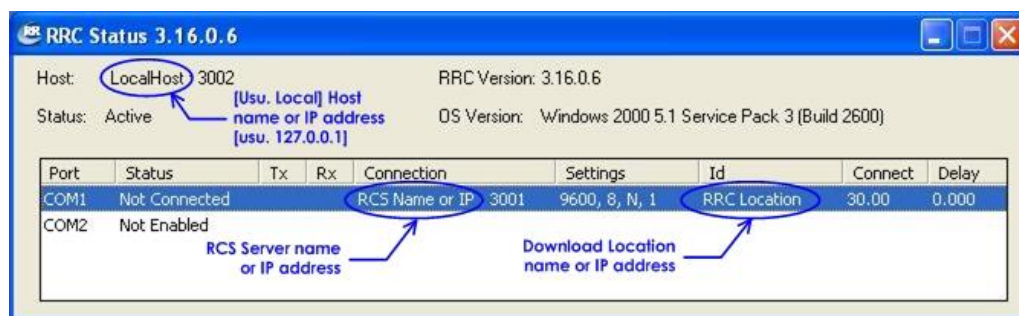
For RRC to be able to communicate with a RALS™ System, both the server and workstation must be configured with each other's host names or IP addresses. In the case of a new RRC installation, the RALS™ System must be configured with the new workstation name as a download location.

If RRC is being re-installed or upgraded, the download location will already have been configured in the RALS™ System. In this case, you can collect the information from the existing RRC setup by double-clicking the RRC icon in the system tray.

3. Confirm Cable Connections

Consult the device documentation and ensure you have the required cables and software (e.g. Serial-to-USB driver). Additionally, confirm the workstation where RRC will be installed has the necessary ports to connect the cables. Do not connect any cables to the workstation yet.

4. Install Serial-to-USB Drivers, If Necessary



If you are using a USB port on the computer, ensure that the necessary serial-to-USB drivers are installed. If this RRC installation is an upgrade of a previous version that was working, that should not be a concern.

5. Verify Network Connectivity

Confirm the workstation is connected to the same network as the RALS™ System and that the port(s) used by RRC (listed later in this document) are not blocked or already in use on the computer.

Install RRC

Once the pre-installation activities are complete, RRC can be installed:

1. Logon

For all versions of Windows, the installation process requires administrative privileges to succeed. With Windows 2000, Windows XP or Windows Server 2003, the installer must be logged in as an administrator prior to starting the installation. With later version of Windows, the logon user is largely irrelevant, since administrator credentials will be demanded regardless of the logon user during the install. If you need these credentials, please contact your facility's IT department or security officer.

2. Close RRC Status, If Necessary

If you are performing an upgrade to an existing installation of RRC on the workstation, then close the RRC Status window by clicking the red "X" in the upper right corner of that window.

3. Run Setup.exe

Browse to the RRC installation package and run "setup.exe".

This will start the RRC installer and guide you through the following steps:

a. Preparing to Install

Initial screen, click "Next" to continue.

b. Destination Folder

The default folder for new installations is "C:\Program Files\MAS\RRC". For upgrades on the same machine, this will be wherever RRC was previously installed. If you wish to change the installation folder from what is shown, click "Change" and either type in order browse to the installation folder you desire. When you are satisfied with the destination folder, click "Next" to continue.

c. Ready to Install

When you're ready, click "Install" to continue.

d. Files in Use

If the installation is an upgrade of a previous version of RRC, the "files in use" screen may appear. If this screen appears, select "Do not close applications..." and "OK". After a short time, another identical "Files in Use" window will be displayed. Again Select "Do not close applications..." and "OK". Installing RALS™ Remote Connect" screens showing the progress of the installation will reappear.

e. Finish

Click "Finish" to complete the installation and "Yes" to reboot the workstation. Upon reboot, the RRC Status window should be displayed. On Windows 2000, XP, Vista, or Server 2003, the RRC icon (black, red, yellow, or green dot) should appear in the system tray. On newer versions of Windows, the RRC Status icon in the notification area will be hidden by default. In order to see the RRC Status icon, you must click the "show hidden icons" button in the notification area, select "customize", and then select "show icon and notifications" next to "RRC Status".



RRC Status Icon Color

The RRC Status icon color indicates RRC service status as follows:

1. Red

A **red** icon indicates that the RRC Status program is communicating normally with the RRC service, and the RRC service is idle and not communicating with any devices via serial ports or servers via the network. If the cursor lingers over a red icon, **"IDLE"** will be displayed.

2. Yellow

A **yellow** icon indicates that a local device has begun transmitting to the RRC via its serial port, but the RRC service has not yet established communications with the corresponding server via the network. This should be a very transitory situation when the RRC, device, and server are all properly connected and configured. If the icon remains yellow more than a second or so, it indicates a problem in the network connection or the configuration of communication between RRC and the server. Possible causes are (a) a discrepancy in the "Download Location" name or IP address between the RRC and the server, (b) the network port used to communicate with the server is not configured properly, or (c) there is a general problem with network connectivity.

If the cursor lingers over a yellow icon, **"ATTEMPT CONNECT"** will be displayed.

3. Green

A **green** icon indicates RRC is actively communicating with the server via the network and is most likely communicating with one of the local devices as well.

If the cursor lingers over a green icon, **"DOWNLOADING"** will be displayed.

4. Black

A **black** icon indicates that the RRC Status program is unable to connect to the RRC service, which could mean the service is stopped, has not been properly installed or configured (see the following section on configuring RRC), or that the RRC program (RRC.exe) is missing or corrupted.

If the cursor lingers over a black icon, **"NOT ENABLED"** will be displayed.

Configuring the RRC 2.2 Software

If your installation was an upgrade from a previous version of RRC that was working, then no further configuration should be necessary. However, the RRC Status window should be checked to confirm that all previously connected devices are still communicating as desired. If not, follow the configuration procedure below. This procedure is applicable for all new installations and re-installations on “new” workstations (where the RRC software has not been previously installed).

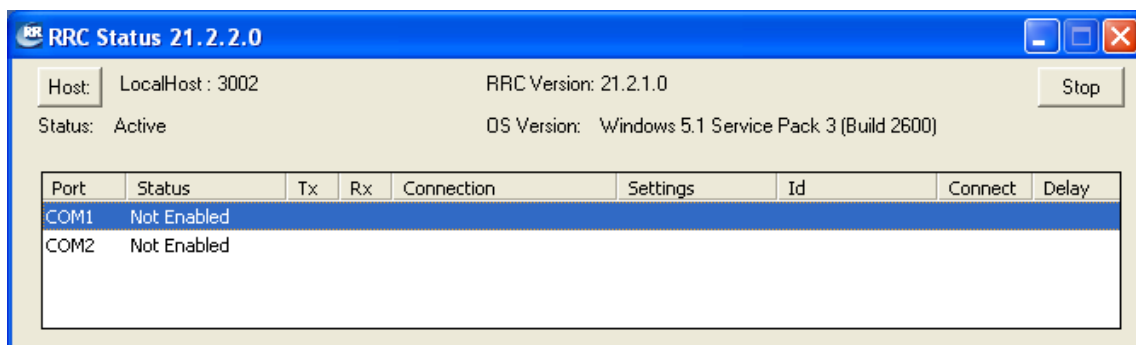
1. Right-click on the RRC icon and select “Administer RRC Settings”.

NOTE: If the RRC icon is not visible in the system tray then the RRC Status window must first be opened at “C:\Program Files\MAS\RRC\”

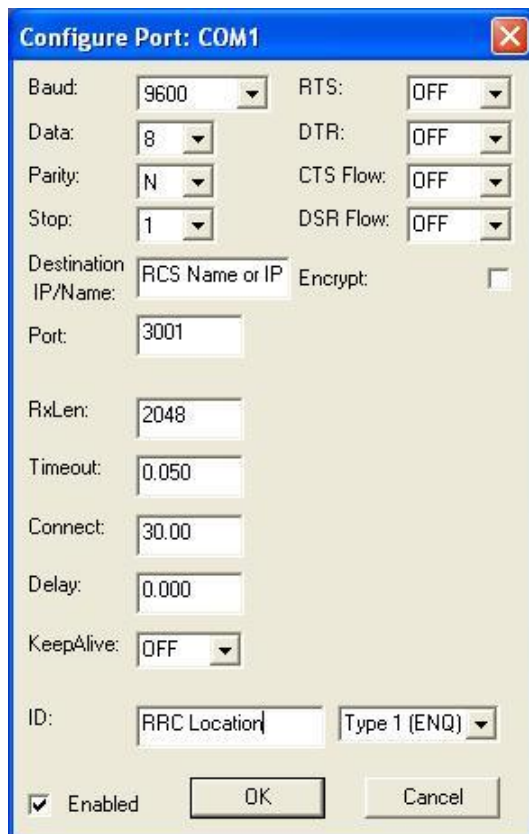
2. You will need to enter a password to enable RRC The RRC password will be “alabama”
3. If the RRC icon is **red**, skip to the following step. If the RRC icon is **black**, select the “Host” button and change Host to 127.0.0.1, Port to 3002, and check the box beside “Set As Default”. If the RRC icon is now **red**, skip to the following step. If the RRC icon is still **black**, the cause is most likely one of the following scenarios:
 - a. another software program is currently using the network port (3002 by default) on the PC used by RRC Status to communicate with the RRC service, or
 - b. the network port used by the RRC Status program to communicate with the RRC service (usually port 3002) is being blocked by IT, or
 - c. (less likely, but possible) the RRC service is stopped, has not been properly installed, or the RRC.exe file has been moved, deleted, or corrupted.

If the situation is **a.**, you must either remove the other software program using port 3002, or choose a different PC on which to load the RRC software. If the situation is **b.**, you will need to contact your hospital’s IT department or security officer. In the case of **c.**, try uninstalling and re-installing the software.

4. If the RRC icon is **red** and the serial port to be configured (e.g., COM1, etc.) is visible in the RRC Status window, enable the port by double-clicking on it.



5. A “Configure Port: [Port ID]” window will appear. Select the “**Enabled**” check box; this will permit further selections.



The values for Baud, Data, Destination IP/Name, Port and ID are given in **Table 1**, below. The default values of the other items are as follows:

Data:	8	RxLen:	2048
Parity:	N	Timeout:	0.050
Stop:	1	Connect:	30.00
RTS:	OFF	Delay:	0.000
DTR:	OFF	KeepAlive:	OFF
CTS Flow:	OFF	ID (Type):	Type 1 (ENQ)
DSR Flow:	OFF		

The following table lists the devices most commonly (serially) interfaced using RRC. If your device is not listed here, you should call AI Customer Support at 1-877-627-7257. Certain devices that are supported but are not listed have additional installation instructions that are beyond the scope of this document.

Table 1: Most common devices supported by the RRC

Device Manufacturer	Device Name	Connection (Destination IP/Name)	Baud Rate	[Network] Port	ID (Download Location Name or IP)
Roche Diagnostics	Accu-Chek® Inform II	RCS Server Name or IP	9600	TCP 3001	Location Name (Case Sensitive)
IL	GEM® Premier™ 3000, 3500, 4000				
SIEMENS	RapidPoint® 400 & 405				
SIEMENS	Stratus CS Acute Care Diagnostic System®				
Radiometer	ABL® 80, 800 (series)				
SIEMENS	Clinitek Status® Connect System	RCS Server Name or IP	9600	TCP 3001 & UDP 3003	Location Name
ITC	Hemochron® Signature Plus and Hemochron Signature Elite®				
Abbott POC	i-STAT® PCA	DE Server	19200	TCP 6000	[Leave Blank]
Abbott POC	i-STAT® 1	DE Server	38400	TCP 6004	[Leave Blank]
Abbott POC	DRC300	DE Server	38400	TCP 6004	[Leave Blank]

6. Click “OK”, plug download cable into configured COM port and test download.

7. Repeat steps 4 - 6 for additional COM ports as necessary.

Downloading Devices Utilizing RRC

Under normal operation, no further operator interaction should be necessary. The RALS™ Remote Connect (RRC) service is configured to start automatically when the PC is started and should remain running at all times. Devices that support automatic downloading may transfer data even if no user is logged in to the PC – assuming, of course, that the PC power is on.

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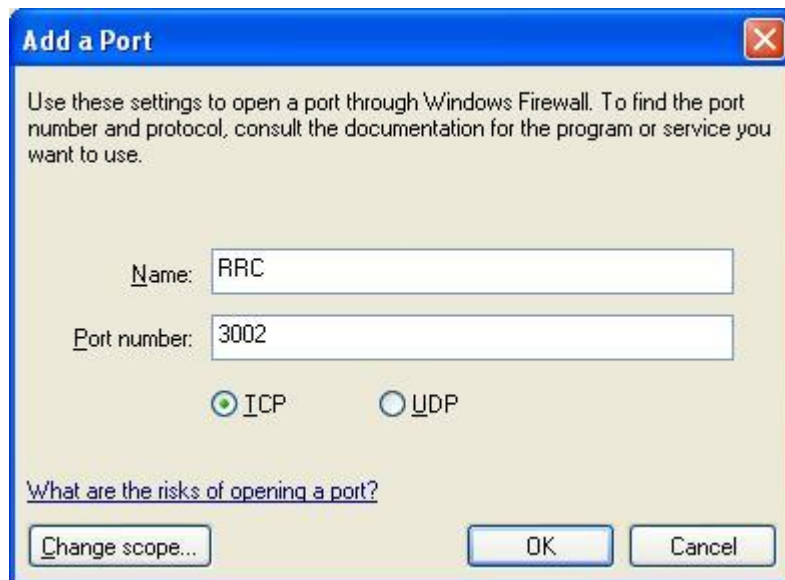
Windows Firewall Configuration

For new installations or re-installations on computers with Windows XP– Service Pack 2 or later, Windows Vista, Windows 7, Windows 10, Windows 2016 Server, Windows 2008 Server R2 or Windows Server 2003 installed, if the local Windows Firewall is active, you will need to configure the Firewall to allow the RRC to communicate with the RCS Server (or the DE Server). Specifically, you must add any TCP or UDP Ports used by RRC to the Firewall Exceptions and configure the Windows Firewall to allow ICMP incoming echo request (“ping”) messages. The procedure for doing this varies by the operating system used. Specific procedures by operating system follow.

Windows XP/Windows Server 2003 Firewall Configuration

NOTE: This installation process requires administrative privileges.

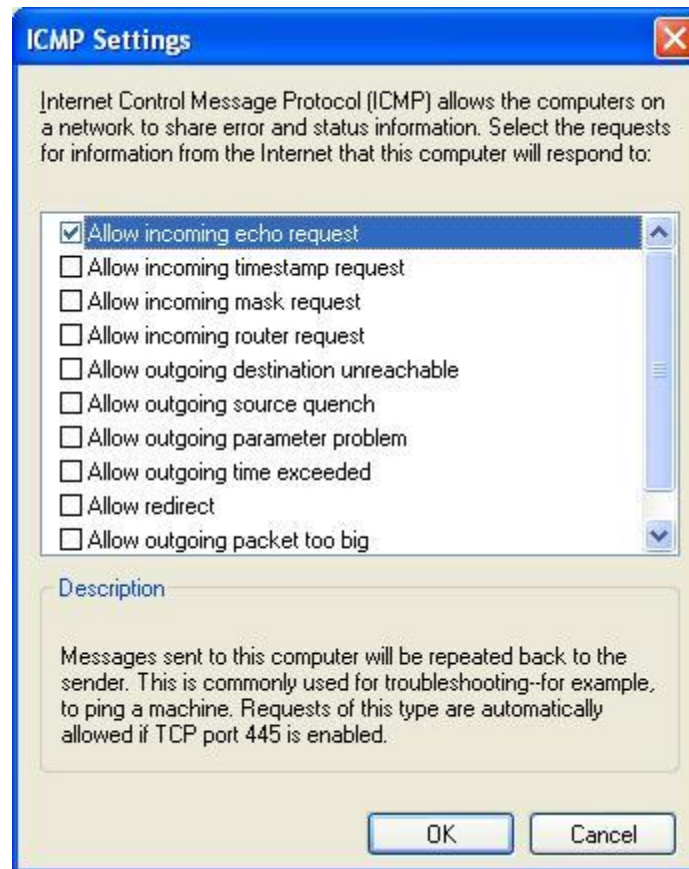
1. On the “Start” menu, select “Control Panel”, then “Windows Firewall”.
2. In the “Windows Firewall” window, select the “Exceptions” tab, then click “Add a port...”
3. In the box beside “Name”, type “**RRC**”, unless another port will be needed, in which case a name that will differentiate the ports, like “**RRC1**” or “**RRC [Device]**” should be used. For “Port number:” enter the (network) port number and port type (“TCP” or “UDP”) found in Table 1, above (also see the following figure). If there is more than one device and/or a different port is used, you will need to add additional ports.



4. Still in the “Windows Firewall” window, select the “Advanced” tab, then click the “Settings” button beside “ICMP”.
5. In the “ICMP Settings” window, make sure that the box “Allow incoming echo request” is checked (see following figure), select “OK” to close this window, then select “OK” to close the “Windows Firewall” window.

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Windows Vista / Windows 7/Windows Server 2008 R2 Firewall Configuration

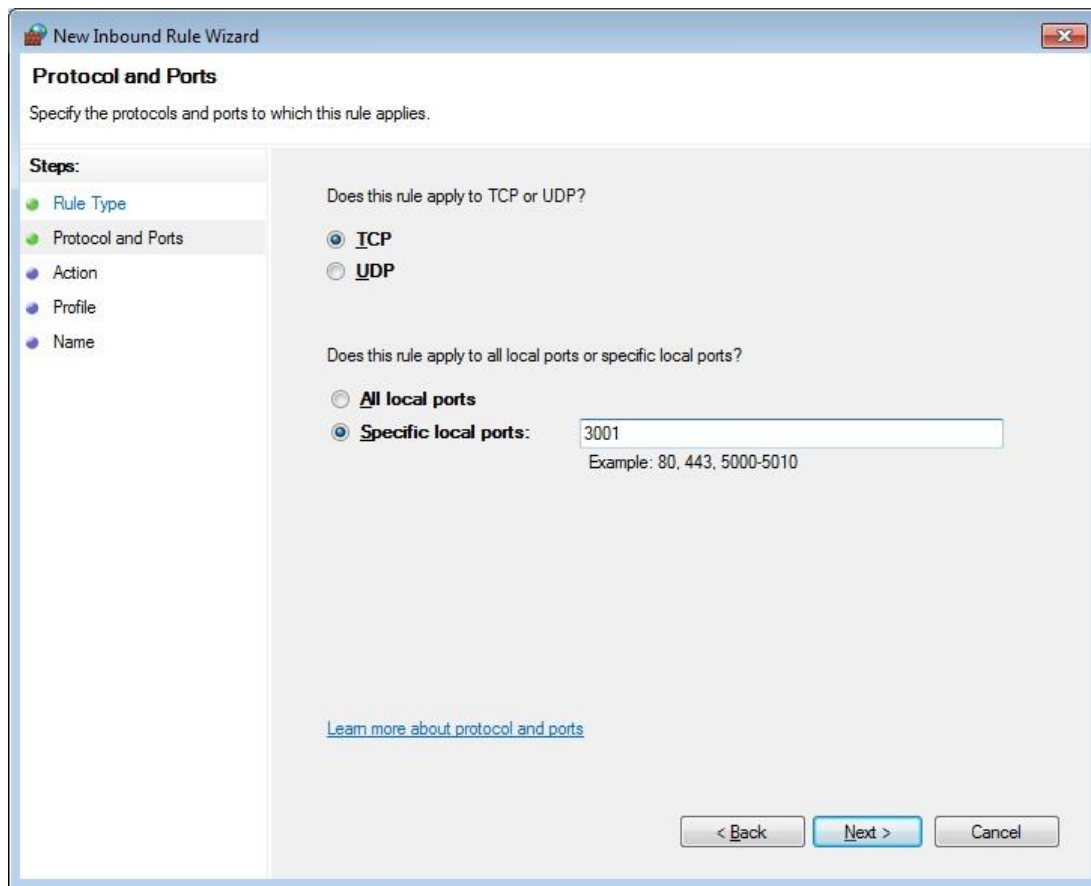
NOTE 1: This installation process requires administrative privileges.

NOTE 2: The screen shots below are from Windows 7. Vista screens may appear somewhat different, but don't differ significantly in content.

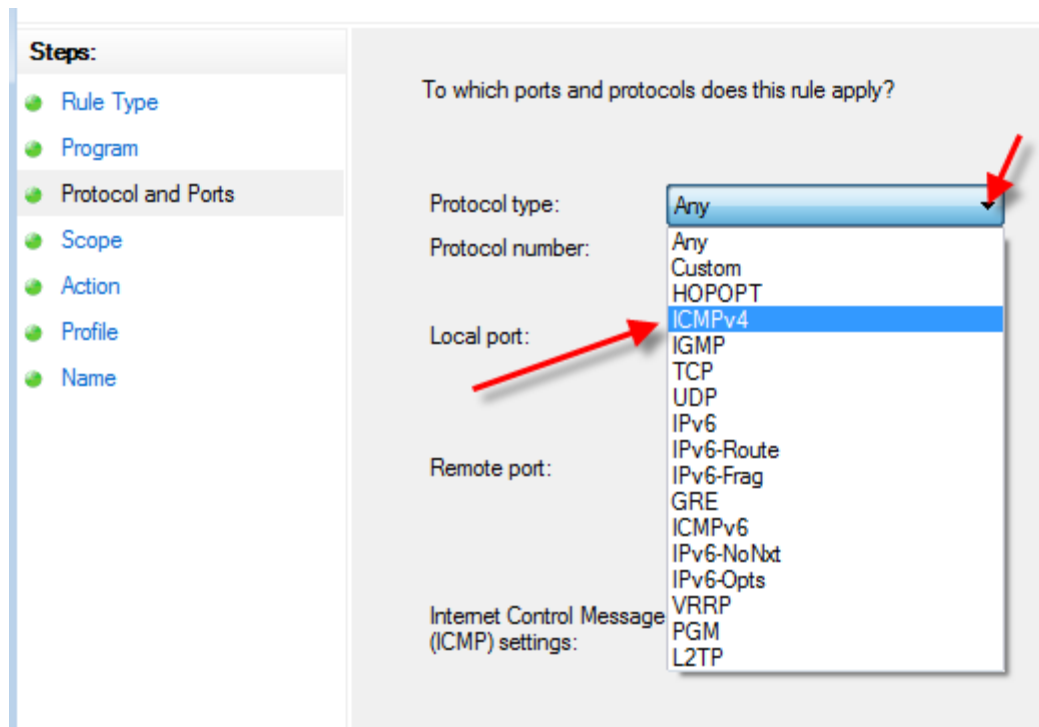
1. Press the Windows button (lower left corner of the desktop), "Control Panel", "System and Security", "Windows Firewall", then "Advanced Settings".
2. Select "Inbound Rules".
3. With the "Inbound Rules" pane displayed, select "New Rule..." under "Actions".
4. The "New Inbound Rule Wizard" window should be displayed, with a "Rule Type" selection. Click the button beside "**P**ort", then click "**N**ext".
5. Select "TCP" or "UDP" and, in the box beside "Specific local ports:", enter the (network) port number found in Table 1, above (see the following figure), then click "**N**ext".

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6. On the next screen, make sure the button beside **“Allow the connection”** is selected, then click **“Next”**.
7. On the following screen, **“Domain”**, **“Private”**, and **“Public”** should all be checked, then click **“Next”**.
8. Finally, name this rule, say, **“RRC”**, unless another rule will be needed for another port, in which case a name that will differentiate the ports, like **“RRC1”** or **“RRC [Device]”** should be used. The description is optional but recommended. You could say “RRC link between [Device] and RCS”, for example.
9. Select “Finish” to complete the rule. The rule just created should appear at the top of the list of “Inbound Rules” with a green check mark beside it. If there is more than one device and/or a different port is used, you will need to add additional rules. When done with creation of rules for specific ports, select “New Rule...” under “Actions” again to allow ICMP (“Internet Control Message Protocol”) incoming echo request (“ping”) messages.
10. In the “New Inbound Rule Wizard” window, click the button beside **“Custom”**, then click **“Next”**.
11. On the next screen (“Program”), make sure the button beside **“All programs”** is selected, then click **“Next”**.
12. On the next screen, click on the button beside **“Protocol type:”** and select **“ICMPv4”** from the drop-down list as shown in the following figure. Leave all other settings at their default values and click **“Next”**.



13. On the following screen ("Scope"), leave "Any IP address" selected for both "...local IP addresses..." and "...remote IP addresses..." and click **"Next"**.
14. On the following screen ("Action"), leave "Allow the connection" selected and click **"Next"**.
15. On the following screen ("Profile"), **"Domain"**, **"Private"**, and **"Public"** should all be checked, then click **"Next"**.
16. Finally, name this rule something like **"Echo Request (ICMPv4-In "Ping")"**, then select **"Finish"** to complete the rule. The rule just created should appear at the top of the list of "Inbound Rules" with a green check mark beside it. You can now close the "Windows Firewall with Advanced Security" window, as well as the "Windows Firewall" window.

Procedure for Un-Installing RRC

1. Close RRC Status
2. Access Add/Remove Programs in Windows
 - a. Located in the Control Panel for older versions of Windows
 - b. Located in Apps & Features for newer versions of Windows
3. Select “RALS Remote Connect”
4. Select “Remove”

RRC 2.2 Quick-start Installation Guide

The following is a brief summary of the installation process which may be useful to the experienced RALS™ System user or to anyone as a checklist to follow while preparing for and carrying out the installation and subsequent configuration.

Pre-installation Tasks

- ☐ If upgrading RRC Version 1.0 to Version 2.2, **DO NOT** un-install RRC Version 1.0 first.
- ☐ RRC 2.2 can be installed on Windows Operating Systems (except Millenium)
- ☐ Confirm that the device is supported by RRC: check **Table 1** in the Configuration section, above, or call AI Customer Support at the number below.
- ☐ RCS or DE Server name or IP address: _____
- ☐ Location name (Case Sensitive): _____
- ☐ Password will be “alabama” _____
- ☐ Check that all required device cables are present and can be connected.
- ☐ Install serial-to-USB driver (if required).
- ☐ Reboot.
- ☐ Install serial-to-USB cables (as many as required).
- ☐ Verify that the computer is connected to the network and communicating.

Install RALS™ RRC 2.2 Software

- ☐ If upgrading, close RRC Status window.
- ☐ Execute “setup.exe” in RRC 2.2 installation package.
- ☐ In Windows Vista and 7, select “Run” in Security Warning window.
- ☐ Select “Next”, “Next”, “Install”.
- ☐ In Windows Vista and 7, supply administrative credentials and select “Yes” in the User Account Control window.
- ☐ In Windows Vista and 7, select “Do not close applications...” and “OK” in the two “Files in Use” windows.
- ☐ Select “Finish”, then “Yes” to reboot the PC.

Configure RALS™ RRC 2.2 Software

- ☐ Right-click the RRC icon (red dot) in system tray/Notification Area.
- ☐ Select “Administer RRC Settings”, enter Password “alabama” when prompted
- ☐ Double-click the COM port that you wish to configure.
- ☐ Fill in information for the device being connected according to Table 1 in the Configuration section, above.
- ☐ Configure additional COM ports as required.
- ☐ If the Windows Firewall is enabled, follow the instructions in **Windows Firewall Configuration**, above.
- ☐ Test downloading a device.

If you have any questions regarding RALS™ Remote Connect (RRC), contact AI Customer Support

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