rcServer Help

rcServer Help

Copyright © 2001-2008 C-R Media All Rights Reserved

Table of Contents

Welcome

Part

I

rcServer (remote control Server) is a program that serves as a communications bridge between multiple "client applications" and a Maestro™ v3.0 (or above) or DCS™ unit. It might also be called an "application server" or "host server". "Client applications" include any software program that needs or wants to communicate with these audio delivery systems.
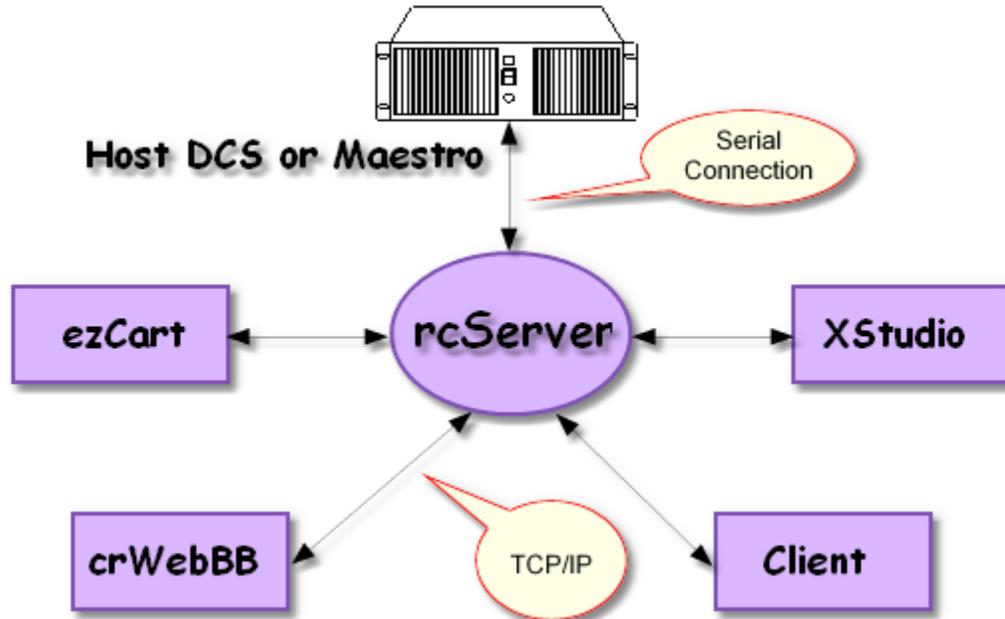
As the diagram illustrates, there are some major benefits of using rcServer:

1. As the DCS or Maestro unit requires a serial connection, there can be only one serial connection to the host audio delivery unit. rcServer overcomes this by being the single serial connection and hosting multiple TCP/IP connections by clients.

2. rcServer communicates with the client applications via TCP/IP, which allows for more flexible connections. The client application is not limited by the requirement for a physical serial cable connection to the host audio unit. Client applications can even connect via the Internet if your in-house LAN infrastructure permits.

3. rcServer supports multiple, concurrent connections by client applications, allowing more than one application to utilize the resources of the host audio delivery unit.

> While multiple connections are supported, there are still certain limitations, including only one recording activity at a time and no more than two or three (depending on number of discreet audio outputs) playback actions at the same time. These limitations are imposed by the host audio delivery unit.

Overview

Part

II

2.1 What's New in rcServer

Version 1.3.1 - 07/04/2002

1. A bug that manifests itself when using the **/lan** switch has been fixed. Previously, rcServer would error because the location of the preferences file was being set incorrectly and when the application closed, it could not save screen settings.

Version 1.3 - 01/31/2002

1. Initial release of rcServer.

2.2 Features

- TCP/IP connectivity by client applications to rcServer, eliminating the serial connection requirement for the client application.

- Multiple, concurrent client application connections - may be multiple users and/or multiple applications run by same user. Concurrent connection count is limited by licensed number of connections.

- Remote control of host DCS or Maestro unit, even via the Internet!

- File transfer from rcServer to client applications. User may select files to transfer from a dialog, or transfer is automatic, depending on the client application.

- Chat capabilities among connected client applications. Users of client applications can tell who else is connected and even have a dialog with one or more users. Both private messaging or general (broadcast) messaging is supported.

2.3 Warranty and License Agreement

PLEASE READ THIS DOCUMENT CAREFULLY. BY INSTALLING AND USING THE SOFTWARE, YOU ARE AGREEING TO BECOME BOUND BY THE TERMS OF THIS AGREEMENT. IF YOU DO NOT AGREE TO THE TERMS OF THE AGREEMENT, PLEASE DO NOT INSTALL OR USE THE SOFTWARE.

This is a legal agreement between you and C-R Media This Agreement states the terms and conditions upon which C-R Media offers to license the software. Whether contained in the disk package or having been pre-loaded by C-R Media on the machines hard drive, together with all related documentation and accompanying items including, but not limited to, the executable programs, drivers, libraries and data files associated with such programs (collectively, the "Software").

LICENSE

Grant of License. The Software is licensed, not sold, to you for use only under the terms of this Agreement. You own the disk or other media on which the Software is originally or subsequently recorded or fixed; but, as between you and C-R Media (and, to the extent applicable, its licensors), C-R Media retains all title to and ownership of the Software and reserves all rights not expressly granted to you.

For Use on a Single Computer. You may use the Software only on a single computer by a single user at any one time. You may transfer the machine-readable portion of the Software from one computer to another computer, provided that

(a) the Software (including any portion or copy thereof) is erased from the first computer, and

(b) there is no possibility that the Software will be used on more than one computer at a time.

Stand-alone Basis. You may use the Software only on a stand-alone basis, such that the Software and the functions it provides are accessible only to persons who are physically present at the location of the computer on which the Software is loaded. You may not allow the Software or its functions to be accessed remotely, or transmit all or any portion of the Software through any network or communication line.

One Archival Copy. You may make one (1) archival copy of the machine-readable portion of the Software for backup purposes only in support of your use of the Software on a single computer, provided that you reproduce on the copy all copyright and other proprietary rights notices included on the originals of the Software.

No Merger or Integration. You may not merge any portion of the Software into, or integrate any portion of the Software with, any other program, except to the extent expressly permitted by the laws of the jurisdiction where you are located. Any portion of the Software merged into or integrated with another program, if any, will continue to be subject to the terms and conditions of this Agreement, and you must reproduce on the merged or integrated portion all copyright and other proprietary rights notices included on the originals of the Software.

Network Version. If you have purchased a "network" version of the Software, this Agreement applies to the installation of the Software on a single "file server". It may not be copied onto multiple systems. Each "node" connected to the "file server" must also have its own license of a "node copy" of the Software, which becomes a license only for that specific "node".

Transfer of License. You may transfer your license of the Software, provided that

(a) you transfer all portions of the Software or copies thereof,

(b) you do not retain any portion of the Software or any copy thereof, and,

(c) the transferee reads and agrees to be bound by the terms and conditions of this Agreement.

Limitations on Using, Copying, and modifying the Software. Except to the extent expressly permitted by this Agreement or by the laws of the jurisdiction where you acquired the Software, you may not use, copy or modify the Software. Nor may you sub-license any of your rights under this Agreement.

Decompiling, Disassembling, or Reverse Engineering. You acknowledge that the Software contains trade secrets and other proprietary information of C-R Media and its licensors. Except to the extent expressly permitted by this Agreement or by the laws of the jurisdiction where you are located, you may not decompile, disassemble or otherwise reverse engineer the Software, or engage in any other activities to obtain underlying information that is not visible to the user in connection with normal use of the Software. In any event, you will notify C-R Media of any information derived from reverse engineering or such other activities, and the results thereof will constitute the confidential information of C-R Media that may be used only in connection with the Software.

TERMINATION

The license granted to you is effective until terminated. You may terminate it at any time by returning the Software (including any portions or copies thereof) to C-R Media The license will also terminate automatically without any notice from C-R Media if you fail to comply with any term or condition of this Agreement. You agree upon such termination to return the Software (including any portions or copies thereof) to C-R Media Upon termination, C-R Media may also enforce any rights provided by law. The provisions of this Agreement that protect the proprietary rights of C-R Media will continue in force after termination.

LIMITED WARRANTY

C-R Media warrants, as the sole warranty that the disks on which the Software is furnished will be free of defects, as set forth in the Warranty Card or printed manual included with the Software. No distributor, dealer or any other entity or person is authorized to expand or alter this warranty or any other provisions of this Agreement. Any representation, other than the warranties set forth in this Agreement, will not bind C-R Media.

C-R Media does not warrant that the functions contained in the Software will meet your requirements or that the operation of the Software will be uninterrupted or error-free. EXCEPT AS STATED ABOVE IN THIS AGREEMENT, THE SOFTWARE IS PROVIDED AS-IS WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

You assume full responsibility for the selection of the Software to achieve your intended results, and for the installation, use and results obtained from the Software. You also assume the entire risk as it applies to the quality and performance of the Software. Should the Software prove defective, you (and not C-R Media, or its distributors or dealers) assume the entire cost of all necessary servicing, repair or correction.

This warranty gives you specific legal rights, and you may also have other rights, which vary from country/state to country/state. Some countries/states do not allow the exclusion of implied warranties, so the above exclusion may not apply to you. C-R Media disclaims all warranties of any kind if the Software was customized, repackaged or altered in any way by any third party other than C-R Media.

LIMITATION OF REMEDIES AND DAMAGES

THE ONLY REMEDY FOR BREACH OF WARRANTY WILL BE THAT SET FORTH IN THE WARRANTY CARD OR PRINTED MANUAL INCLUDED WITH THE SOFTWARE. IN NO EVENT WILL C-R MEDIA OR ITS LICENSORS BE LIABLE FOR ANY INDIRECT, INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES OR FOR ANY LOST PROFITS, LOST SAVINGS, LOST REVENUES OR LOST DATA ARISING FROM OR RELATING TO THE SOFTWARE OR THIS AGREEMENT, EVEN IF C-R Media OR ITS LICENSORS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO EVENT WILL C-R Media's LIABILITY OR DAMAGES TO YOU OR ANY OTHER PERSON EVER EXCEED THE AMOUNT PAID BY YOU TO USE THE SOFTWARE, REGARDLESS OF THE FORM OF THE CLAIM.

Some countries/states do not allow the limitation or exclusion of liability for incidental or consequential damages, so the above limitation or exclusion may not apply to you.

PRODUCT RETURNS

IF YOU MUST SHIP THE SOFTWARE TO C-R Media OR AN AUTHORIZED C-R Media DISTRIBUTOR OR DEALER, YOU MUST PREPAY SHIPPING AND EITHER INSURE THE SOFTWARE OR ASSUME ALL RISK OF LOSS OR DAMAGE IN TRANSIT.

U.S. GOVERNMENT RESTRICTED RIGHTS

All Software and related documentation are provided with restricted rights. Use, duplication or disclosure by the U.S. Government is subject to restrictions as set forth in subdivision (b)(3)(ii) of the Rights in Technical Data and Computer Software Clause at 252.227-7013. If you are sub-licensing or using the Software outside of the United States, you will comply with the applicable local laws of your country, U.S. export control law, and the English version of this Agreement.

CONTRACTOR/MANUFACTURER

The Contractor/Manufacturer for the Software is:

C-R Media
8494 Saratoga Lane
Eden Prairie, MN 55347 USA

GENERAL

This Agreement is binding on you as well as your employees, employers, contractors and agents, and on any successors and assignees. Neither the Software nor any information derived therefrom may be exported except in accordance with the laws of the United States or other applicable provisions. The laws of the State of Minnesota govern this Agreement (except to the extent federal law governs copyrights and federally registered trademarks). This Agreement is the entire agreement between us and supersedes any other understandings or agreements, including, but not limited to, advertising, with respect to the Software.

If any provision of this Agreement is deemed invalid or unenforceable by any country or government agency having jurisdiction, that particular provision will be deemed modified to the extent necessary to make the provision valid and enforceable, and the remaining provisions will remain in full force and effect.

For questions concerning this Agreement, please contact C-R Media at the address stated above. For questions on product or technical matters, contact the C-R Media technical support center nearest you.

SPECIAL PROVISIONS APPLICABLE TO THE EUROPEAN UNION

If you acquired the Software in the European Union (EU), the following provisions also apply to you. If there is any inconsistency between the terms of the Software License Agreement set out above and the following provisions, the following provisions shall take precedence:

Decompilation.

You agree not for any purpose to transmit the Software or display the Software's object code on any computer screen or to make any hard copy memory dumps of the Software's object code. If you believe you require information related to the inter operability of the Software with other programs, you shall not decompile or disassemble the Software to obtain such information, and you agree to request such information from C-R Media at the address listed below. Upon receiving such a

request, C-R Media shall determine whether you require such information for a legitimate purpose and, if so, C-R Media will provide such information to you within a reasonable time and on reasonable conditions.

Limited Warranty.

EXCEPT AS STATED ABOVE IN THIS AGREEMENT, AND AS PROVIDED BELOW UNDER THE HEADING "STATUTORY RIGHTS", THE SOFTWARE IS PROVIDED AS-IS WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY, QUALITY AND FITNESS FOR A PARTICULAR PURPOSE.

Limitation of Remedy and Damages.

THE LIMITATIONS OF REMEDIES AND DAMAGES IN THE SOFTWARE LICENSE AGREEMENT SHALL NOT APPLY TO PERSONAL INJURY (INCLUDING DEATH) TO ANY PERSON CAUSED BY C-R Media's NEGLIGENCE AND ARE SUBJECT TO THE PROVISION SET OUT BELOW UNDER THE HEADING "STATUTORY RIGHTS".

Statutory rights.

Irish law provides that certain conditions and warranties may be implied in contracts for the sale of goods and in contracts for the supply of services. Such conditions and warranties are hereby excluded, to the extent such exclusion, in the context of this transaction, is lawful under Irish law. Conversely, such conditions and warranties, insofar as they may not be lawfully excluded, shall apply. Accordingly nothing in this Agreement shall prejudice any rights that you may enjoy by virtue of Sections 12, 13, 14 or 15 of the Irish Sale of Goods Act 1893 (as amended).

General: the laws of the Republic of Ireland govern This Agreement.

The local language version of this agreement shall apply to Software acquired in the EU. This Agreement is the entire agreement between us and you agree that C-R Media will not have any liability for any untrue statement or representation made by it, its agents or anyone else (whether innocently or negligently) upon which you relied upon entering this Agreement, unless such untrue statement or representation was made fraudulently.

Updated: Dec 23 2007

Setup

Part

III
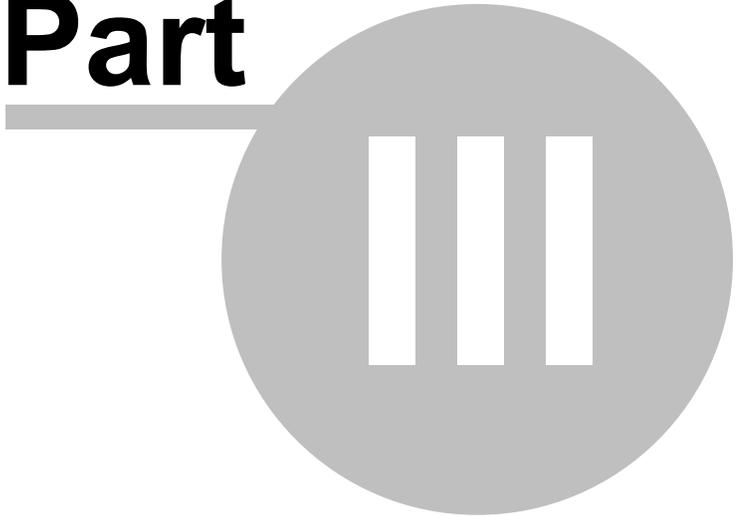
3.1   Hardware Requirements

rcServer Application

rcServer requires a PC that supports Microsoft Windows™ 95 OSR2, 98, ME, NT 4, 2000 or XP.

- a 100% IBM-compatible Pentium™ personal computer with a hard disk and a floppy drive.

- 16MB RAM (Windows 95, 98, ME), 32MB RAM (NT), 64MB RAM (Windows 2000), 128MB RAM (XP).

- 5MB free disk space (for this application only)

- compatible VGA, super VGA, XGA or 8514/A monitor, with adapter, running 800x600 minimum display resolution

- Microsoft mouse or compatible pointing device.

- A LAN card (NIC), known to be working

- A working serial port (COM port)

- TCP/IP networking must be installed and bound the LAN card (NIC)

Host DCS Unit

The host DCS unit must be running in CR (control room) mode and must have a working, available COM port. See the section on setting up your DCS machine for further details.

Host Maestro Unit

The host Maestro unit must be v3.0 or later and must have a working, available COM port. See the section on setting up your Maestro machine for further details.

Additional Hardware Needed

A "null modem" serial cable connecting the DCS or Maestro machine and the rcServer work station. For information on wiring the serial data connection between the two machines, see the section on Serial Interface.

3.2   Installing rcServer

The rcServer installation program provides step-by-step instructions on every screen displayed during the installation. Follow the instructions on each screen to install rcServer.

Before you install rcServer

1. Close all other programs, including any anti-virus programs.

2. If you are installing rcServer on Windows NT, Windows 2000 or Windows XP, log on to your computer with administrator privileges.

To install rcServer from a CD

1. Insert the CD into your CD-ROM drive. The installation program should start automatically. If it does not start, locate your CD-ROM drive in Windows Explorer and double-click in the SETUP.EXE program.

2. Follow the instructions on each screen to install the software.

To install rcServer from a downloaded file

1. After you have downloaded the installation program to your computer, locate the setup program (**rcServerSetup.exe**) in the folder to which you downloaded the file. [**Double-Click**] on the setup program to begin installation.

2. Follow the instructions on each screen to install the software.

Configuration

Part IV

4.1   Configuring rcServer

To set up rcServer, click on the [**Configuration**] button on the main dialog or select **Edit |
Preferences** from the main menu. Configuring rcServer for use involves setting up serial
communications between rcServer and the host DCS or Maestro unit, and setting up the TCP/IP ports
that rcServer will use to communicate with client applications. Some file and directory locations need to
be set as well.

> ⚠️ TCP/IP ports selected for use by rcServer must be available on the client
> application machines as well as the rcServer machine.

COM Port Setup - Serial Communications

1. Select a serial port (COM port) to which the DCS or Maestro unit is connected.

> **Hint** You can use the [**Select COM Port**] button to choose a COM port from a list of
> available ports.

2. Choose whether the COM port will be opened automatically at program startup (default is Yes =
   Checked).
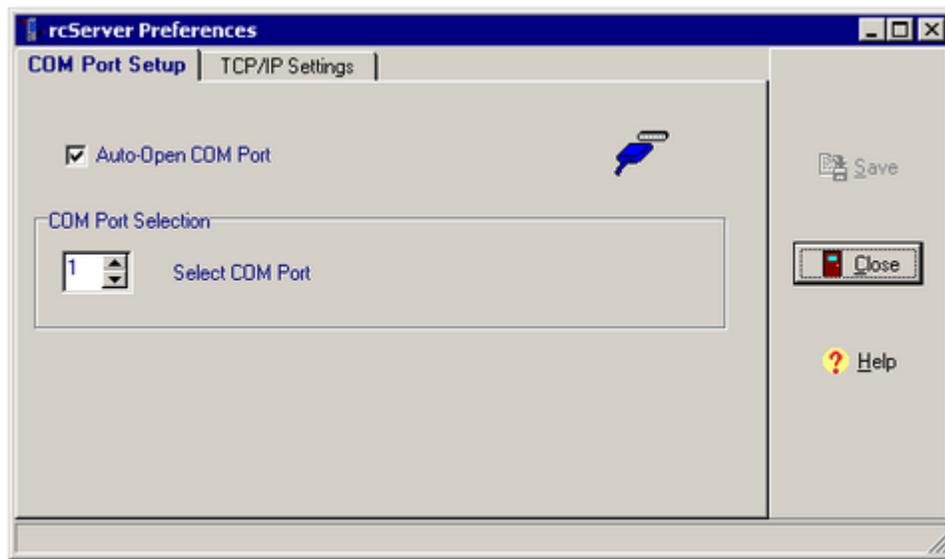
TCP/IP Settings

1. Choose a port for text and commands communications (**Listen Port**). The default port is 5390 and
   can be in the range 5300-6999. **NOTE**

2. Choose a port for file transfer (**File Transfer Port**). The default port is 6000 and can be in the range
   5300-6999. **NOTE**

3. Select the inventory file that is created and maintained by the DCS or Maestro unit. This inventory
   file will be made available to client applications who request it and can be updated automatically on
   the client application. rcServer sends a message to all connected users when the inventory file is

updated by DCS or Maestro.

4. Select a file folder location where files that you wish to make available to client applications for download will be located.

Hint	You can create subdirectories of this main folder, and their contents, available to client applications.
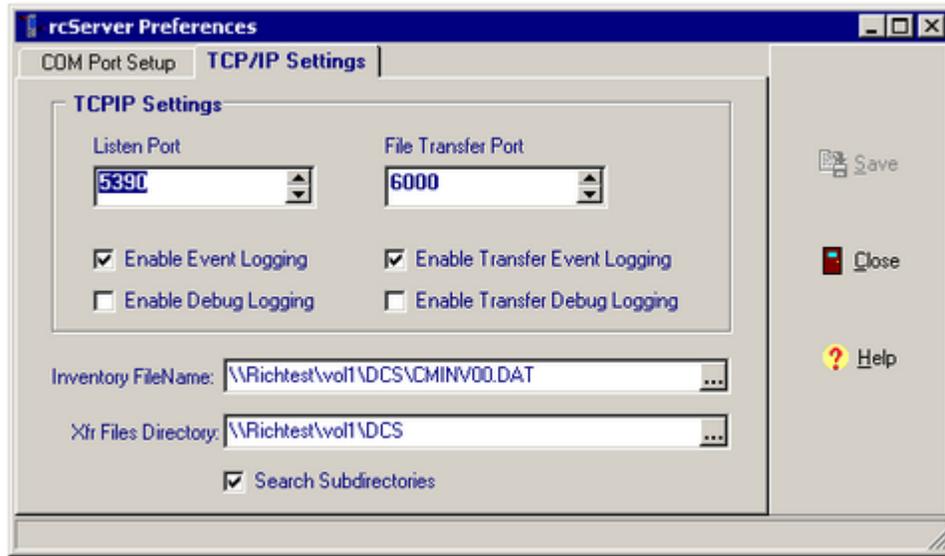
Once you have made all the necessary settings, click on the [**Save**] button, which will have been enabled when you made changes. This will save the settings. Prior to saving, any items that need to be validated will be and an error message presented if there's a problem with your settings.

⚠️	All log files (if enabled) have data appended to them and content is never eliminated from the file. As a result, the files can grow to significant size over time. It is recommended that you enable logging of debug information only if necessary as large amounts of data are placed in debug files.

4.2 Setting up a host DCS unit

There are a few steps you must take to ensure that DCS' remote control feature is enabled. See the hardware requirements section of this application for further information on what's needed on the PC from which you will be running this application. These instructions presume a working knowledge of DCS and configuring DCS - if you are unsure of what to do, consult your DCS documentation or contact your DCS support staff.

Once all hardware requirements are met, including proper serial port cable connections, ensure that the DCS unit is set up in the following way:

1. DCS must be running in **Control Room** mode (CR) to support audition features. DCS allows serial control only in CR mode.

2. If you are using a Production Room machine, use **CMCF** (DCS' configuration editor) to edit your **CR.CFG** configuration file. Ensure that:

   a) The node number assigned is the same as the one assigned in your **PR.CFG** file.

   b) The stations configured are the same as in the **PR.CFG** file.

   c) In the DCS Equipment section, select the menu item **Remote Control** and make sure that the serial control protocol version is set to **v1.4** and that the **Control Channel Initial State for Serial Channel** is "**Enabled**".

   d) **DCS Playline Display Mode** must be set to **Out1/Out2**. Do not set the play line mode to Foreground/Background.

   > **Hint** You may wish to simply open the PR.CFG file in CMCF and save it as CR.CFG to ensure all necessary basic settings are correct and then verify the settings for remote control and play line display mode.

3. You must configure DCS to accept serial data and tell it which serial port you are going to use. This is accomplished by setting a file name in the root directory of the DCS unit boot drive (C:\). You will find a file named **_REMOT_1.OFF** or **_REMOT_2.OFF**. One of these files needs to be renamed to **_REMOT_x.ON**, where the "**x**" value represents the COM port number to use. Typically, you'd use COM2: for serial control, as COM1: is used for an audio switcher, if present. DCS reacts to the presence of this file at startup and enables the COM port hardware on the DCS unit.

   > ⚠️ Only one COM port can be enabled on DCS for remote control. If both **_REMOT_1.ON** and **_REMOT_2.ON** exist, DCS will end up using the COM port for the file name last detected. Be sure that if both files exist, one is named .OFF to avoid unintended results.

4. If the machine you're using is in a production room or otherwise does not need to load a log, you'll also want to set DCS to not look for a log. This is done by checking the root directory of the DCS boot drive (C:\) for the presence of a file named **_LOADLOG.ON**. If found, rename the file to **_LOADLOG.OFF** (i.e., ren _LOADLOG.ON *.OFF).

Once all of these settings are confirmed, you would launch DCS as normal, ensuring you use the command-line: **DCSCR**.

4.3 Setting Up a Host Maestro Unit

There are a few steps required to set up Maestro to enable remote control features. These instructions presume a working knowledge of Maestro and configuring Maestro - if you are unsure of what to do, consult your Maestro documentation or contact your Maestro support staff.

> You must be running Maestro v3.x or greater to use remote control features. Earlier versions of Maestro do not support serial control.

Remote Control Setup (Serial)

You must set up the Maestro work station that you will be using with this application to enable serial control. To do this, follow the steps outlined below:

1. Launch the Maestro configuration program, select the **WorkStation** tab and select the Maestro workstation that you will be connecting to.

2. Click on the **Modify** button and select the **External Controls** tab.

3. If the serial port to which you want to use is not listed, click on the **Add** button to add the port.

4. Set the **Port Type** to **Remote Control/FlexKey**.

5. Set the **Port Number** to the appropriate COM port (typically COM1 or COM2).

6. Set the **Baud Rate** to 2400.

7. The ID field appears to be unnecessary, so it can be left blank.

8. Make sure the **FlexKey** checkbox is de-selected (not checked)

9. **Save** and exit the Maestro configuration

Maestro should now be configured to send and receive serial control data.

> You must have a proper serial port cable connection between Maestro and the machine running this application.

Enabling the "SendAllInfoToRemote" Option in Maestro

There is a registry setting in Maestro 3 that enables or disables extended cart information. If enabled, the information sent by Maestro (out the serial port) when a cart starts playing includes additional information - cart category defined in Maestro, length to AUX mark, title, artist. To turn the feature on, find and change the following registry key to the value "**1**" (turn on):

HKEY_LOCAL_MACHINE\Software\CCC\Maestro\3.0\General\SendAllInfoToRemote = 1

When restarted, Maestro will now send the additional cart information when the audio starts playing.

Operation

Part V
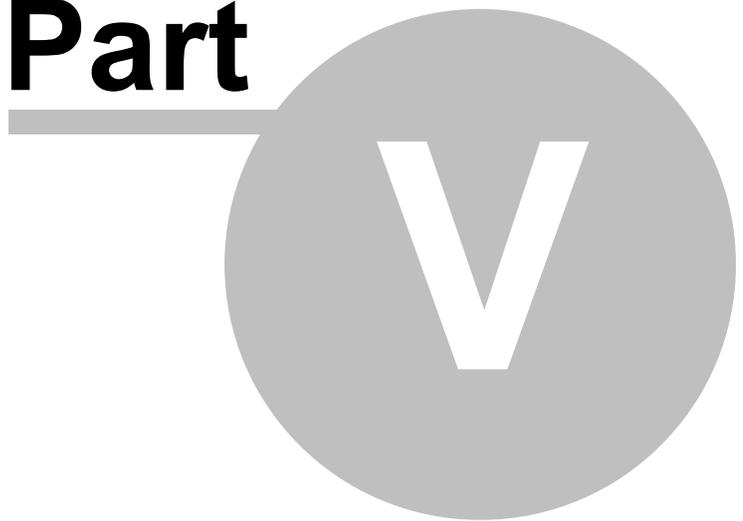
## 5.1 Using rcServer

Once rcServer is set up and running, there is very little user interaction with the program. As it is a server application that services client applications, it's essentially a "set and forget" application. There may be occasions where you will work with the program, primarily in the areas of configuration changes and troubleshooting of client application connections.

The main display of rcServer provides several useful bits of information that will help you get an overview of its status. You can resize the display to suit your preferences. There are also "handles" (aka split panes) on the display to size certain portions of the display as well. rcServer will remember your settings next time the application is launched. Click on the various display panels below to get more detailed information on each:
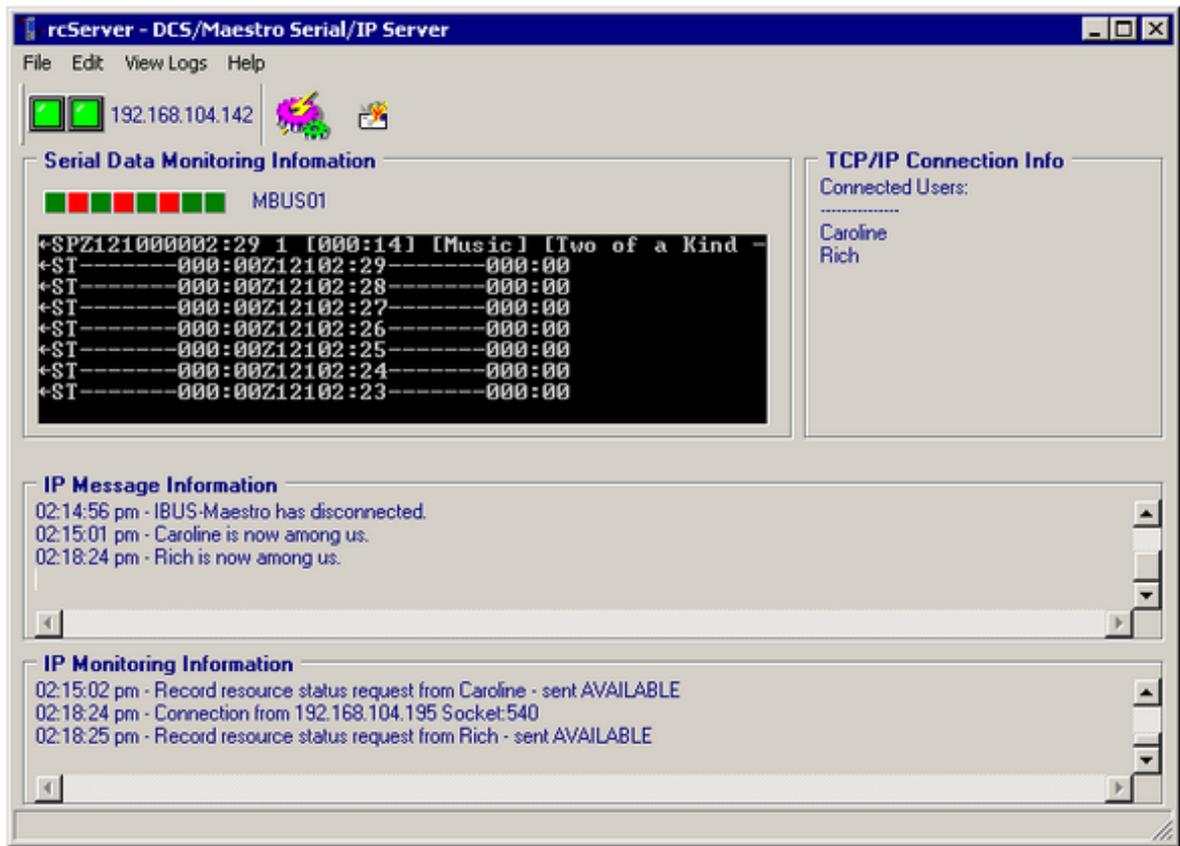
⚠️ The maximum number of concurrent client application connections is limited to the number of connections you have licensed rcServer for. If you need additional concurrent connections, contact your rcServer vendor for details on licensing additional connections.

5.2 Viewing Status Logs

A number of log files are created by rcServer as a part of it's normal operations. Some are enabled by the user by selecting **Edit | Preferences** and then the TCP/IP Settings tab.

Logs Available for Viewing

File Name	**Description**
crSerSrvEvtTxt.Log	event log for text ip service
crSerSrvDbgTxt.Log	event log for text ip service
crSerSrvEvtXfr.Log	event log for file transfer ip service
crSerSrvDbgXfr.Log	debug log for file transfer ip service
crFileList.Log	file list actions log
rcServerException.Log	application exception log - details serious application errors

A standard dialog is used to view all of these files. A typical log view would appear as the dialog below:
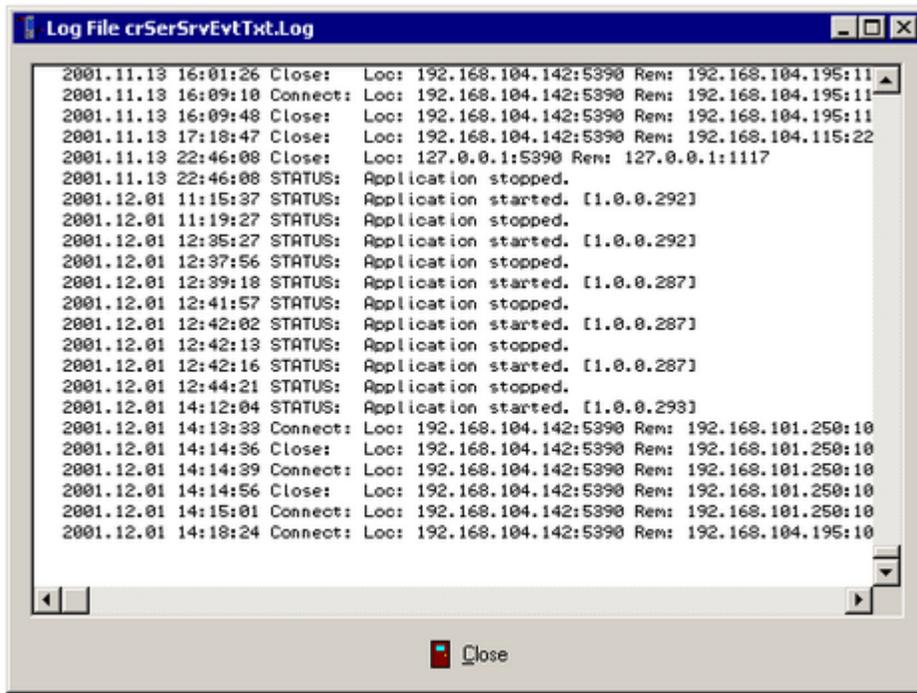
The dialog features a pop-up menu that allows you to save the log as a different file with the file name of your choosing, if desired. The pop-up menu also allows you to refresh the display on-demand (useful if more data has been logged since displaying a given log file).

> All log files (if enabled) have data appended to them and content is never eliminated from the file. As a result, the files can grow to significant size over time. It is recommended that you enable logging of debug information only if necessary as large amounts of data are placed in debug files.

Appendices

Part VI

6.1   Appendix A - Serial Interface

The ability to control DCS or Maestro from a remote host is achieved through a RS-232 serial connection and the protocol described below. The serial connection is to be a **2400 baud**, **8 data bit**, **no parity**, **full-duplex** connection. The DCS serial connection is via the IBM AT standard 9 pin connection with the serial port configured as DTE equipment. In order to communicate with another IBM AT serial port, a modem pair may be used for long distances or for distances estimated to be up to 500 feet, a null modem wired direct connection cable may be used. The pin connections are described below:

DCS/Maestro Side		Host Side
1 Carrier Detect (Not used)		1 Carrier Detect
2 Receive Data	<--	3 Transmit Data
3 Transmit Data	-->	2 Receive Data
4 Data Terminal Ready	-->	6 Data Set Ready
5 Signal Ground	----	5 Signal Ground
6 Data Set Ready	<--	4 Data Term Ready
7 Request To Send (Not used)		8 Clear To Send
8 Clear To Send (Not used)		7 Request To Send
9 Ring Indicator (Not used)		9 Ring Indicator

The DCS or Maestro will use the Data Set Ready signal (host's Data Terminal Ready) as a 'power-on' signal from the host and likewise, DCS or Maestro will provide Data Terminal Ready to the host to indicate that it is powered-on and ready.

> ⚠ rcServer is preset to handle the proper baud rate, data bits, parity and duplex settings for DCS. No user adjustments are required.

6.2 Appendix B - Registration

rcServer requires a valid registration code to enable full use of the product. If you have purchased rcServer, you should have received a registration code with your installation materials. The registration code contains the product serial number and number of licensed concurrent client application connections you've purchased.

If no registration code is entered or available, you will be able to run rcServer for 3 hours at a time to evaluate the product. rcServer will shut down automatically after 3 hours in trial mode (unlicensed copy).

Enter registration information by selecting **Help | Register** from the main menu. You'll be presented with a dialog similar to the following:

Enter the company name and/or call letters in the "**Licensed To**" field. Then, enter the code you were supplied with in the "**Registration Code**" field. If you received the registration code electronically, you may use standard Windows cut and paste methods to paste the code in the field. After entering the information, click on the [**Save**] button to save the information.

After you have completed registration initially, if you re-display this dialog, your registration specifics will be displayed in the Registration Information panel.

> ⚠ If you wish to change your company name and/or call letters at a later date, you will need to re-enter the registration code. *Do not save the registration information without a valid registration code entered!*

6.3   Appendix C - Troubleshooting

rcServer should operate fairly trouble-free, but there are some areas where problems could occur. Typically, these problems are related to initial setup of rcServer. In general, problems encountered will fall into three areas - 1) serial communication with the DCS or Maestro unit; 2) TCP/IP communications problems; and 3) bugs in rcServer and/or application errors related to running rcServer on a particular PC.

Serial Communications Problems

By far the largest number of difficulties fall into this area. rcServer's terminal component (on the main program display) shows serial data communications. If the host audio delivery unit is playing a cart, for instance, and you're seeing data, the communications link is working - if not, then you need to investigate why.

Serial Trouble Shooting Steps

1. Check to be sure that you have a working cable connected between the rcServer machine and the DCS or Maestro unit. This cable must be configured as a "null-modem" cable. See the section on serial interface for details on wiring pin-outs for the serial cable.

2. Ensure that you have selected a valid, working serial port on the PC on which rcServer is running. There should be no other devices using the same port. A common example would be an internal modem using the same port number as a serial port that appears on the exterior of the PC, but is not enabled. You may also have inadvertently chosen the modem port instead of the available serial port on two port machines. Use the Select COM Port button in the rcServer configuration display to select a port. This dialog interrogates the PC and returns only valid ports.

3. Ensure that the serial port you've selected on the DCS or Maestro unit is a valid, working port.

4. Check the DCS or Maestro machine configuration to be sure you've set up the machine properly for serial communications. See the section on Setting Up DCS or Setting Up Maestro 3 for more information, or consult your system manual.

5. If you have performed all of the above steps and communications are still not happening, it's time to experiment. Perform these steps one at a time, then test, then the next, etc., to isolate the problem.

    i. Try changing which serial port is used, if possible, on the PC that's running rcServer.

    ii. Try changing which serial port is used on the DCS machine.

    iii. Try to locate a known-to-be working serial cable configured as a null modem cable and substitute it for the cable you have been using.

TCP/IP Communications Problems

Most often, TCP/IP communications problems will occur if you don't have the host and client applications using the same ports, TCP/IP is not installed on either the rcServer machine or the client application machine, or the port(s) selected for rcServer are already in use by another application.

> Selected ports must be the same on both rcServer and client application. You must use the same port number for both ends of the TCP/IP communication.
>
> For example, if rcServer's file transfer port is 6000, then all client applications must be configured for port 6000 or communications will fail. The same applies to the text & command service. Be careful not to reverse port numbers - i.e. inadvertently assigning the file transfer port to the text and command port

> or vice versa.

TCP/IP is not installed or wrong version

TCP/IP networking must be installed on both the rcServer machine and the client application machines. Further, the TCP/IP networking version number should be version 2 or above. Consult your operating system documentation for assistance in assuring that you have TCP/IP installed correctly and working.

A selected TCP/IP port is already in use

If you configure rcServer (or a client application) to use a port that is already in use by another application, communications will fail. rcServer provides a fairly wide range of port numbers to choose from - you may use port numbers 5300 through 6999.

> The port numbers for the text & command service (Listen Port) and file transfer service must be different.

Application Bugs or Errors

Bugs and errors generally fall into one of two categories - a bug, which is the application not doing something as you might have predicted it would, or; an error, which is the failure of the application to run or perform a specific task altogether.

If you find a bug, report it. Every effort is made to ensure rcServer performs as expected, but there may be circumstances that were not predicted in the development of the software.

If you encounter an error, you will get an error message indicating a severe failure and rcServer may terminate. Provisions are made to "catch" such errors and log the error information to a file in the rcServer application directory named *rcServerException.Log*. Again, report any application errors you encounter. You may be asked to send the appropriate log file to customer support personnel for analysis.

Running rcServer in Debug Mode

You can have rcServer run in Debug Mode by issuing a command-line switch at program startup. Modify your rcServer shortcut to add "`/debug`" to the command line. rcServer will track additional information and add a menu item (**Help | Show Debug Window**). You can view this additional information in the debug window dialog and/or save the debug file by using a pop-up menu item in the dialog. When you select the Show Debug Window menu item, a dialog similar to the sample dialog below is displayed.
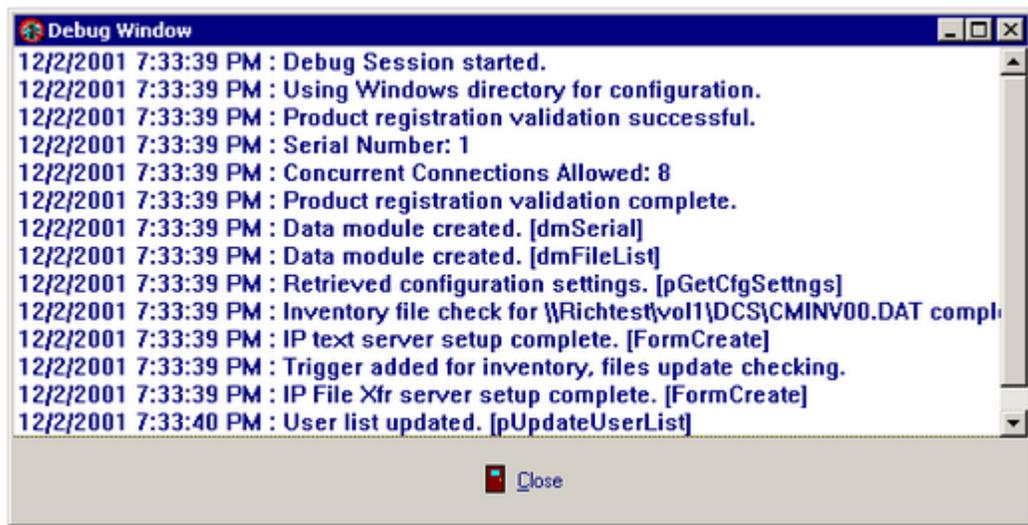
To save the contents of the Debug Window, [**Right-Click**] in the list area and select the Save Contents to File menu option. You'll be prompted for a file name.

> **Hint** See Appendix D - Command-Line Switches for a list of all available command-line switches.

6.4 Appendix D - Command-Line Switches

rcServer provides for the use of a minimal number of command-line switches that can be implemented as needed. These switches can be entered in any order and are not case-sensitive. To add a command-line switch, modify the rcServer shortcut. Add the switch (as documented below), separating each switch with a space.

Note: You must have a space between the end of the executable (program) name and the first command-line switch.

An example command-line switch would look like: `C:\rcServer\crSerSrvr.exe /debug /lan`

Available Command-Line Switches

Switch	*Switch Usage*
/Debug	This command-line switch enables additional tracking of information during application execution. rcServer will add a menu item (**Help | Show Debug Window**) to the main display. You can view this additional information in the debug window dialog and/or save the debug file by using a pop-up menu item in the dialog. See the section on Running rcServer in Debug Mode for more information.
/Lan	Normally, rcServer stores preferences (configuration information) in the operating system's windows directory of the host PC. The information is stored in an INI file (a text file). Occasionally, users would prefer this information be stored in the application directory (co located with the program). Use the /lan switch to accomplish this. If this switch is used, preferences information is stored in the rcServer program directory, which might be on a shared LAN drive.

If you start with the default storage location (the windows directory) and later invoke the /lan switch, you should copy the rcServer INI file to the application directory before restarting rcServer. The INI file name is **crSerSrv.INI**.

Index