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ICONTROL

IC-BASE-EDITION-V3 & IC-BASE-EDITION-ENT-V3

Quick Start Guide

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www.grassvalley.com

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Getting Started with iControl

This *Quick Start Guide* is designed to help you get iControl up and running for the first time, on your **IC-BASE-EDITION-V3**, or **IC-BASE-EDITION-ENT-V3** Application Server.

A new iControl system, as shipped, includes one or more iControl Application Servers and related hardware accessories. It also ships with a document folder containing this Quick Start Guide, Release Notes, as well as a Welcome letter with Setup & Configuration checklists that provide a summary of the main steps that you must complete, to set up and configure your iControl system. Follow this Quick Start Guide for detailed instructions, at each of these steps.

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Overview

iControl is a high-level Element and Network Management System for television service providers, content originators and broadcasters, used to perform wide-ranging video and audio signal, device and facility monitoring and control over a TCP/IP network.

The central element of any iControl system is the iControl Application Server. The Application Server is a compact, 1 RU server that interfaces to video, audio and other hardware through a variety of configurable ports (RS-232, RS-422, ethernet), and connects to a local LAN over TCP/IP.

iControl runs in a distributed network environment. Devices to be monitored or controlled are either directly connected to the iControl Application Server, or accessible over a TCP/IP connection. Each iControl Application Server runs several device control services, as well as a lookup service.

Multiple Application Servers can coexist on a network, allowing large-scale distributed systems to be defined and controlled. Using a Web browser, multiple users can connect to any Application Server from any convenient desktop or portable computer.

iControl comprises a set of software components, the principal ones being:

- iC Navigator
- iC Router Control
- iC Creator

- iC Web

Each of these core components can be started from **iControl Launch Pad**, which is a client application, available from the iControl's *Startup* page.

There are three other core iControl components, important for system administration, and the smooth, integrated operation of iControl as a whole. You can access pages dedicated to their functions from the *Startup* page. These other components are:

- iControl Admin
- iControl License management
- iControl Reports

iControl's Startup Page

iControl Launch Pad

For a more in-depth overview of iControl's features, please refer to Chapter1: "Introduction to iControl" in the *iControl User Guide*.

System Requirements

Client Platform Requirements

You can connect to an iControl Application Server from any client PC or laptop on your network, by using a standard Web browser (Microsoft Internet Explorer, Mozilla Firefox, or Google Chrome). Once you are connected to an Application Server, you can download iControl client applications to your PC.

Grass Valley recommends the client platform meet the following system specifications for optimal performance:

Memory	8 GB RAM
Processor	Intel Core i3 or better
Graphics Card	Optimized for NVIDIA or ATI GeForce or Radeon family with 1 GHz clock speed or faster, and minimum 128 MB memory.
Operating System	Windows 10, Windows 8, or Windows 7

Network Requirements

Users can access the iControl Application Server from a client PC using a standard Web browser . When a client logs in and launches an iControl module, the software is automatically downloaded from the Application Server. Consequently, no other application software is needed, which greatly simplifies installation and system maintenance.

Grass Valley recommends that the iControl Application Server (as well as the associated equipment it controls) be installed on a dedicated LAN, using the existing security infrastructure. A qualified system administrator should verify that the setup follows your organization's security standards.

Software Component Compatibility

The Dell PowerEdge R330 application server supports iControl versions 5.00 and later.

- Should you wish to install — or reinstall — a version of iControl between 6.00 and 7.20 on a Dell PowerEdge R330 application server, you must apply the *R330 Compatibility* component upgrade `R330-compatibility.zip`, available from Grass Valley Technical Support (see page 21), as well.
- If you must install iControl version 5.00 on a Dell PowerEdge R330 application server, please contact Grass Valley Technical Support (see page 21).
- If you wish to add a Dell PowerEdge R330 application server to an existing Redundancy Group, you must install component upgrade `ICONTROL-19711.zip`, available from Grass Valley Technical Support (see page 21), on all *non-R330* application servers in the Redundancy Group.

iControl is compatible with several Grass Valley software components. The versions of these software components recommended by Grass Valley for best performance and maximum functionality are listed below:

- RCP-200 Remote Control Panel version 1.7 or later

- Kaleido-X version 7.60 or later
- Densité 3+ frame controller (CPU-ETH3) version 1.0.3 or later
- GV Node frame controller (CPU-ETH3) version 1.0.3 or later
- Densité CPU-ETH2 version 2.0.4 or later
- EdgeVision version 1.21 or later
- NV9000 version 6.3.0 build 1873 or later
- SE Utilities version 6.3.0 build 136 or later

Step 1: Hardware Warranty and Ownership Transfer

When you purchase a Dell server from Grass Valley Canada, you qualify for a 39-month warranty with ProSupport (i.e., next business day on site) service level. This warranty, as well as the ownership, are transferable to the client (you). Once the warranty is transferred, you may call Dell USA any time for assistance. For customers in Canada, you may call Dell Canada for assistance.

You can find the Warranty and Ownership Transfer form in the Support section of Dell's website.

To perform the warranty and ownership transfer of your Dell server

1. Pull out the information tag, from your server's front panel, and note the service tag number.

   The information tag is a slide-out label panel, located on the front of your server, toward the center.
2. In your browser's address bar, enter `www.dell.com/support/assets-transfer`.

   (Alternatively, navigate to `www.dell.com`, and search for *ownership transfer.*)
3. Enter your service tag number to access the Warranty and Ownership Transfer form.
4. Complete the form, using the information listed below.

Original owner	Grass Valley Canada
Postal code	H4S 2C6

Step 2: Physical Setup

Grass Valley's Application Server is the hardware at the heart of the iControl system, providing control, monitoring, logging and interface services. As of iControl version 7.30, all Application Servers configured with new systems are Dell PowerEdge model R330 (order code IC-BASE-EDITION-V3, or IC-BASE-EDITION-ENT-V3). The Application Server is a compact 1 RU server that interfaces to other iControl devices over TCP/IP. Users can connect to the Application Server via TCP/IP from any desktop or portable computer.

Notes

- Hardware documentation for the Dell PowerEdge R330 is available from `dell.com/poweredgemanuals`.
- Install the faceplate, after the server is placed in a rack.

To install the iControl Application Server

1 Place the Application Server in a standard 19-inch rack, using the rails, screws and washers provided.

Make sure that the unit has adequate ventilation.

2 If you purchased an 8-port Comtrol RocketPort card connect the 8-port breakout box (see Connecting the 8-port Break-Out Box, below).

3 Connect power cords, and then turn the server on.

The power switch is located on the front panel.

> IMPORTANT
> An unexpected power disruption, such as might occur during a power failure, can damage the file system on an Application Server. It is strongly recommended that all Application Servers be connected to a standby power source, such as a UPS (Uninterruptible Power Supply), as a preventive measure.

4 [OPTIONAL] Install the Grass Valley faceplate onto the front of the Application Server by sliding it onto the guide blocks on the side handles, then pushing it in until it clicks into place.

Connecting the 8-port Break-Out Box

If you purchased an 8-port Comtrol RocketPort card (with breakout box), make sure you have installed the RocketPort PCI card into the Application Server, by following the procedure for installing an expansion card, in the *Dell PowerEdge R330 Owner's Manual* (available from `dell.com/poweredgemanuals`).

To connect the 8-port breakout box

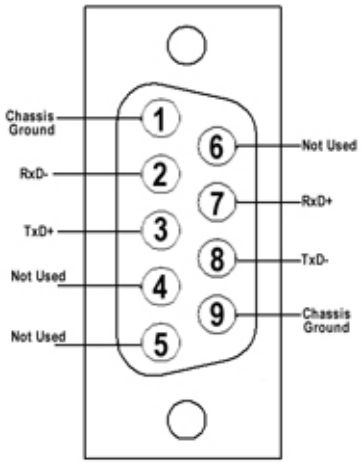
1 Plug the breakout box connector into the large port (PCI expansion slot) at the back of the Application Server.

2 Connect cables from the devices to be controlled to the serial ports on the breakout box.

> Notes
>
> - It is important to assign serial ports on both the Application Server and any routers that will be participating in the iControl system to avoid conflicts that might negatively affect system performance (see Configuring Serial Ports, on page 13, for more information).

Notes *(continued)*

- When connecting an Application Server to other serial devices, such as Symphonie or Quartet frames, use a straight-through RS-422 cable. Should you need to create a custom cable, refer to the pinout assignment diagram:



Step 3: Networking Setup

IMPORTANT

Ethernet Port Labels on Dell PowerEdge R330 Application Servers
The physical Ethernet ports on the back of the Dell PowerEdge R330 are labeled **Gb1** and **Gb2**. The physical (cabling) port called **Gb1** corresponds to logical port **eth0**. Likewise, the physical port called **Gb2** corresponds to logical port **eth1**. In all iControl-related documentation, when speaking of cabling and physical ports, we use the logical port names. For example, if a procedure instructs you to connect a cable to **eth0**, you must connect the cable to the physical port labeled **Gb1**, on the Dell PowerEdge R330.

Logical Ethernet port usage
The Application Server is shipped with the **eth0** port turned on, in a default configuration that permits an initial connection. You must use **eth0** as your main network interface. The other Ethernet port (**eth1**) is also configurable, but is intended for specialized use, such as connecting Grass Valley Densité frames and some third-party devices (e.g., SNMP devices) as long as they are on the same local subnet as **eth1**. The **eth1** network interface is disabled by default.

Before you can begin operations, you must configure the Application Server, to make it available on your local network. Specifically, you must:

- Connect to the Application Server from a client PC
- Log on to the Application Server's *iControl admin* page and configure the server's TCP/IP settings:
  - Ethernet interface
  - Network gateway
  - Domain Name Service settings
  - Host name and IP address

- Apply your changes and perform a readiness check

Configuring the Application Server's Network Settings

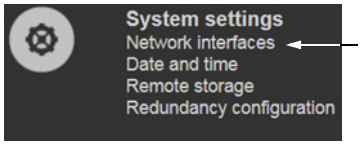
To configure your Application Server's network settings

1 Configure a client PC or laptop to access the application server in its default configuration (see Configuring TCP/IP Settings on a Client PC, on page 9).

2 Using a crossover Ethernet cable, connect your client PC or laptop to the **eth0** port, on the Application Server.

3 Open *iControl admin* on your client PC or laptop (see Opening iControl admin, on page 8).

4 In the *iControl admin* page, under **System settings**, click **Network interfaces**.



The *Network interfaces* page appears.

5 Under **System**, perform the following:

a Type the host name by which you would like this Application Server to be known on your network.

b If required, add DNS servers to the list of IP addresses in the **DNS Servers** list.

6 Under **Eth0**, configure Ethernet interface settings:

a Select the **Activate at boot-time** check box.

> **Note:** If you do not select the **Activate at boot-time** check box, the **eth0** interface will revert to its previous values the next time the system restarts.

b Type the IP address you would like to use for this Application Server.

> **Note:** Typically the IP addresses for all devices on a LAN begin with the same two data groups, and the remaining two are assigned by the system administrator.

c Type the appropriate network mask.

d Type the desired gateway address, if required.

Note: Ask your system administrator for the IP address of the network gateway that this Application Server will use. If a gateway is *not* required, then leave **Default Gateway** empty.

7 Click **Apply**.

8 On the *iControl admin* page, click **Reboot and shutdown**, under **Other**.

The *Reboot and shutdown* page appears.

9 Click **Reboot**.

The Application Server restarts with its new network settings.

IMPORTANT
You may lose communication to the Application Server
If your PC is on a different subnet than the Application Server's new address, you will need to change the PC's network settings to further communicate with the Application Server after it has rebooted.

10 Disconnect the client PC that was used to configure the Application Server. Remember to restore the previous network settings on the PC.

11 Connect the Application Server to its designated network. Use a standard Ethernet cable plugged into the Application Server's **eth0** port (see step 2 on page 7).

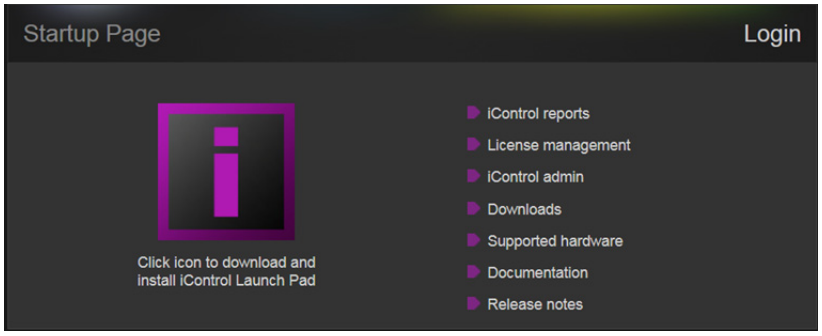
Opening iControl admin

To open iControl admin

1 On your client PC, open a browser window, and then type your Application Server's IP address, in the address bar.

Note: If your Application Server still has its factory-default network settings, its IP address is **10.0.3.6**.

The iControl Startup page appears.



Notes

- If your Web browser cannot find the Application Server, make sure the PC's network settings are correct (see Configuring TCP/IP Settings on a Client PC, on page 9).
- Click the *iControl logo*—visible on *all* iControl pages—to return to the Startup page.

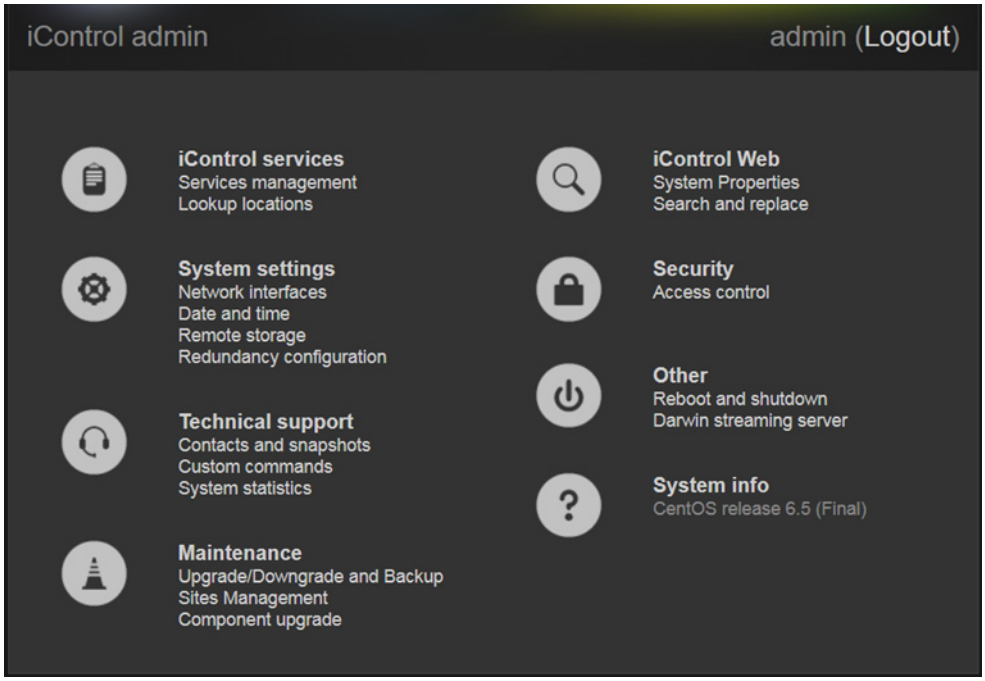
2 Click **iControl admin**.

The system prompts you for a user name and password.

3 Type the following credentials, and then click **Log in**.

- User name: `admin`
- Password: `icontrol`

The iControl admin page appears.



Configuring TCP/IP Settings on a Client PC

You will use a client PC to configure the new Application Server. The client PC must have network settings that will allow it to communicate with an iControl Application Server in its default state.

To configure the TCP/IP settings of a client PC or laptop

1 Press the Windows key on your keyboard, type "control panel" and then press Enter.

2 In the search box, type "adapter" and then, under **Network and Sharing Center**, click **View network connections**.

3 In **Network Connections**, right-click the network adapter you wish to configure (e.g., *Local Area Connection,* or *Ethernet*), and then click **Properties**. If the system prompts you for an administrator password or confirmation, type the password or provide confirmation.

   The Properties window for the selected network adapter opens.

4 On the **Networking** tab, under **This connection uses the following items**, click **Internet Protocol Version 4 (TCP/IPv4)**, and then click **Properties**.

   The **Internet Protocol Version 4 (TCP/IPv4) Properties** window opens.

5 Take note of the PC's current settings.

6 On the **General** tab, click **Use the following IP address**.

   The default IP address of a new Application Server is 10.0.3.6.

7 Type an IP address in the same range (e.g., `10.0.3.10`), in the **IP address** box.

   The default subnet mask of a new Application Server is 255.255.0.0.

8 Type `255.255.0.0`, in the **Subnet mask** box.

9 Click **OK**.

10 In **Local Area Connection Properties**, click **Close**.

Notes

- The factory-default IP address and subnet mask settings for an Application Server appear on a sticker, on the top cover of the chassis.
- Remember to return the PC to its original network settings once you have finished configuring the Application Server.

Step 4: Optional Networking Setup

Once the Application Server is plugged into and available on your network, you may need to configure additional settings to permit it to operate in that environment.

- Disable superfluous Lookup Services (see Disabling Superfluous Lookup Services, below).
- Configure alarm discovery locations (see Specifying Service and Alarm Discovery Locations, on page 12).
- Activate serial ports (see Configuring Serial Ports, on page 13).
- Activate the iControl Services Gateway (see Activating the iControl Services Gateway, on page 15).
- Configure date and time settings (see Configuring an Application Server's Date and Time, on page 17).
- Add mappings to client workstations' hosts files (see Configuring Client Workstations for Better Streaming Performance, on page 18.

Disabling Superfluous Lookup Services

iControl uses a lookup service for discovery over a network. By default, each iControl Application Server runs a lookup service that registers and makes available information

about the devices on its network. It also registers with all lookup services that are running on other Application Servers on the same subnet.

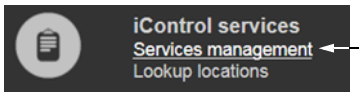
> IMPORTANT
> The lookup service should only be activated on a maximum of two Application Servers per subnet.

If you have multiple Applications Servers and/or multiple subnets in your iControl network, you should disable superfluous lookup services.

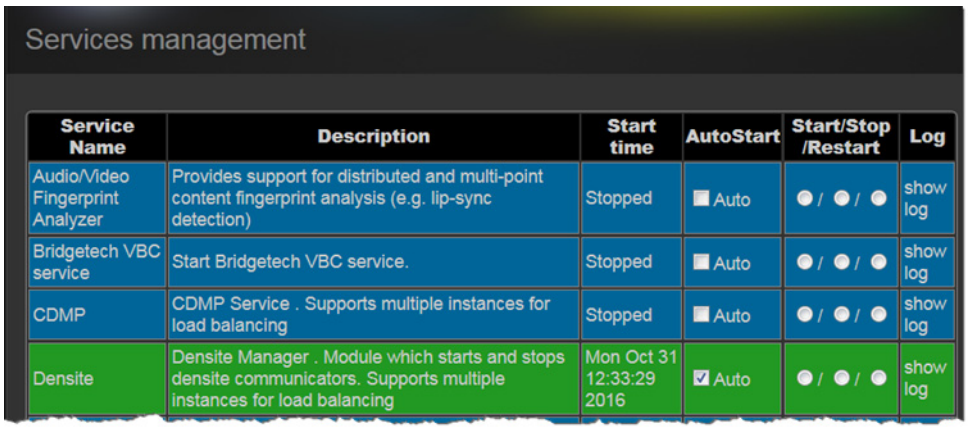
To turn an Application Server's lookup service off

1 Open the *iControl admin* page (see Opening iControl admin, on page 8).

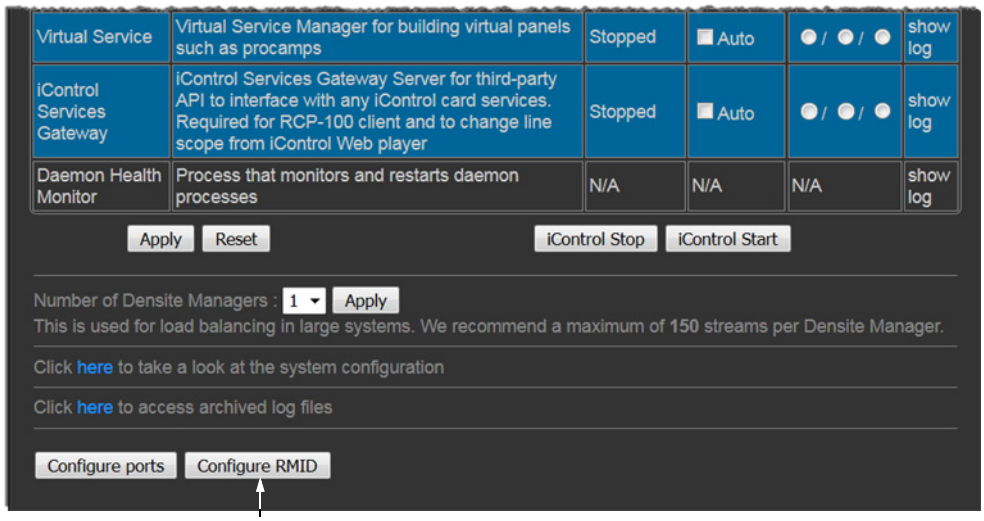
2 In iControl admin, under **iControl services**, click **Services management**.



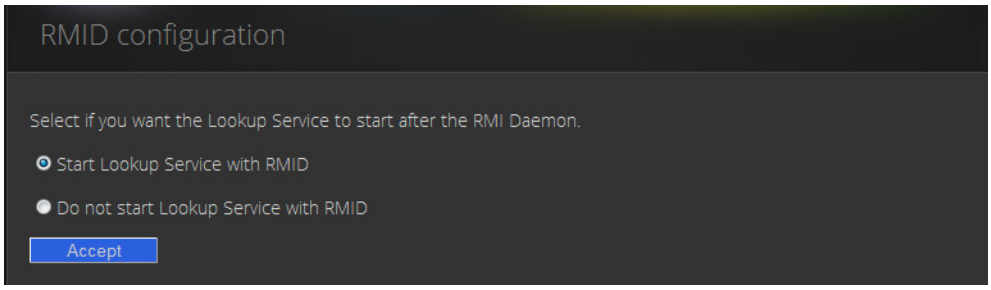
The Services management page appears.



3 Click **Configure RMID**, near the bottom of the page.



The *RMID configuration* page appears.



4 Click **Do not start Lookup Service with RMID**, if you do not want this Application Server to run the Lookup Service.

5 Click **Accept**.

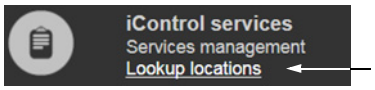
Specifying Service and Alarm Discovery Locations

To operate **iC Web** on client PCs on a subnet other than the one used by the iControl Application Server, you must add the IP address of an Application Server running a lookup service.

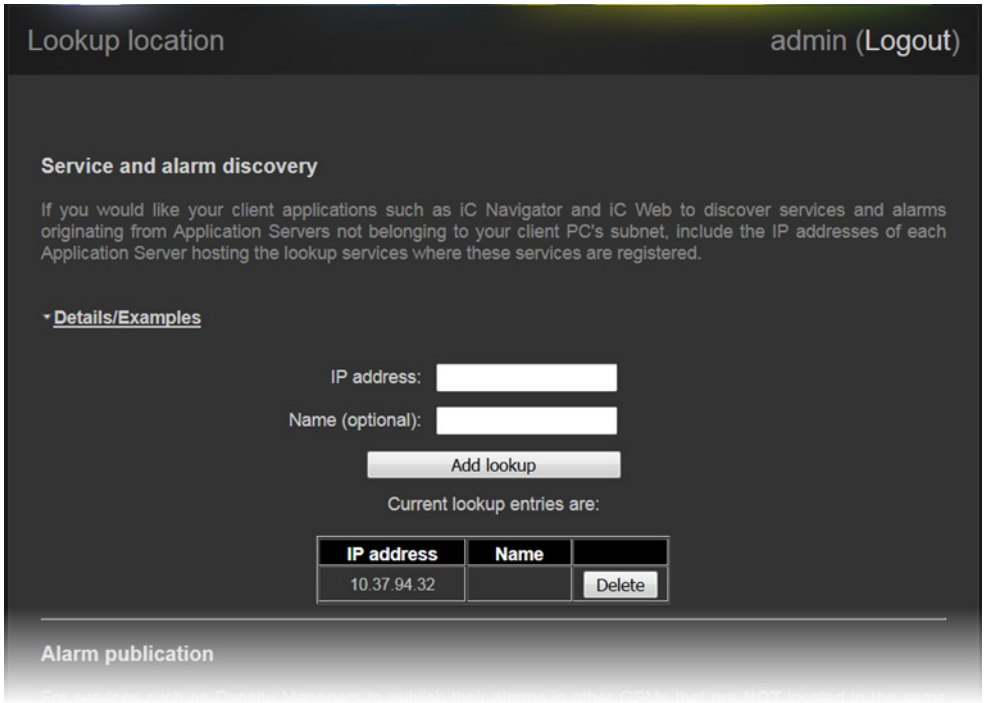
To add a lookup location for service and alarm discovery

1 Open the *iControl admin* page (see Opening iControl admin, on page 8).

2 In iControl admin, under **iControl services**, click **Lookup locations**.



The *Lookup location* page appears.



3 Under **Service and alarm discovery**, type the IP address and (optionally) the name of an Application Server that **is** running a lookup service.

4 Click **Add lookup**.

The new lookup location appears in the Service and alarm discovery table.

Configuring Serial Ports

The iControl Application Server communicates with devices in your network over both serial and TCP/IP connections. Once these connections are made physically (using the appropriate cabling), the corresponding ports must be configured.

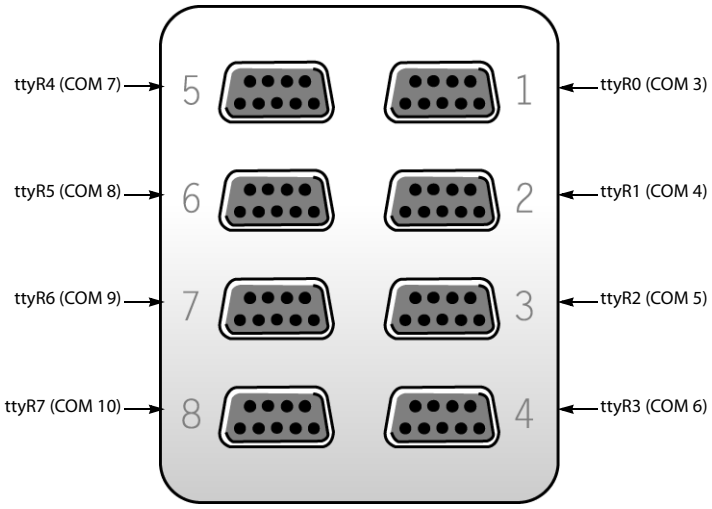
In its standard configuration, the iControl Application Server has two built-in RS-232 ports (one internal, one external). An 8-port expansion card with breakout box optionally can be purchased to accommodate eight RS-422 serial ports.

The built-in RS-232 serial ports are designated as follows:

Port designation		Connector location
S0	COM 1	rear panel
S1	COM 2	internal

The RS-422 serial ports on the optional RocketPort 8-port serial breakout box are designated as follows:

Port Designation	
TTY	COM
R0	3
R1	4
R2	5
R3	6
R4	7
R5	8
R6	9
R7	10

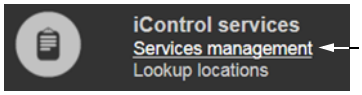


Note: The numbers stamped onto the breakout box case (if any) **do not** correspond to the port number.

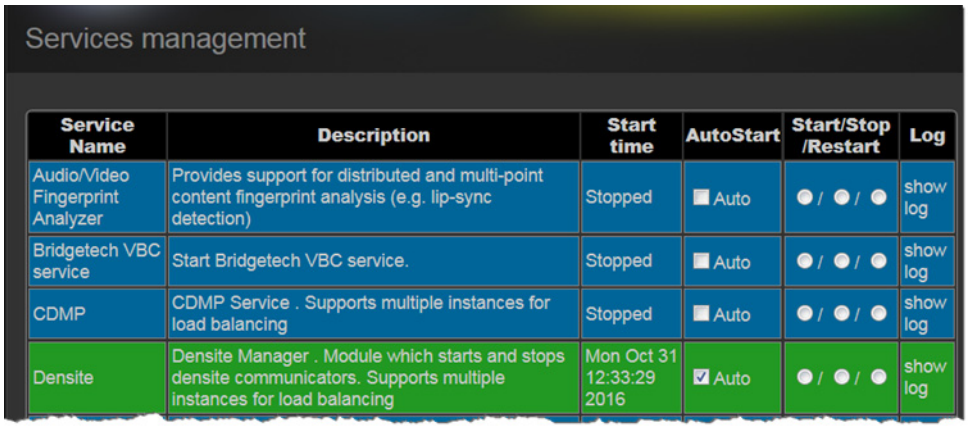
To configure serial ports for an Application Server

1 Open the *iControl admin* page (see Opening iControl admin, on page 8).

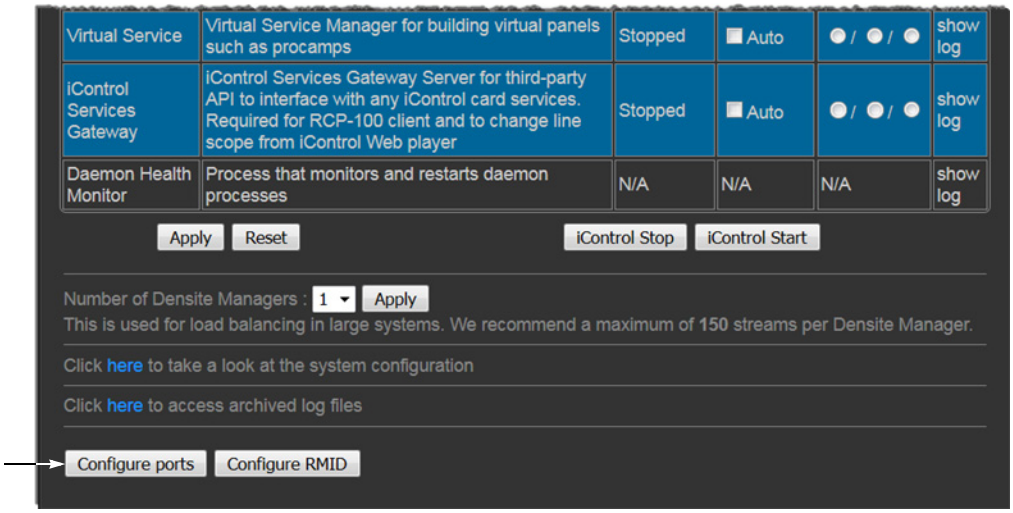
2 In iControl admin, under **iControl services**, click **Services management**.



The *Services management* page appears.



3 Click **Configure Ports**, near the bottom of the page.



The *Serial ports configuration* page appears, showing all available ports and their current assignments.

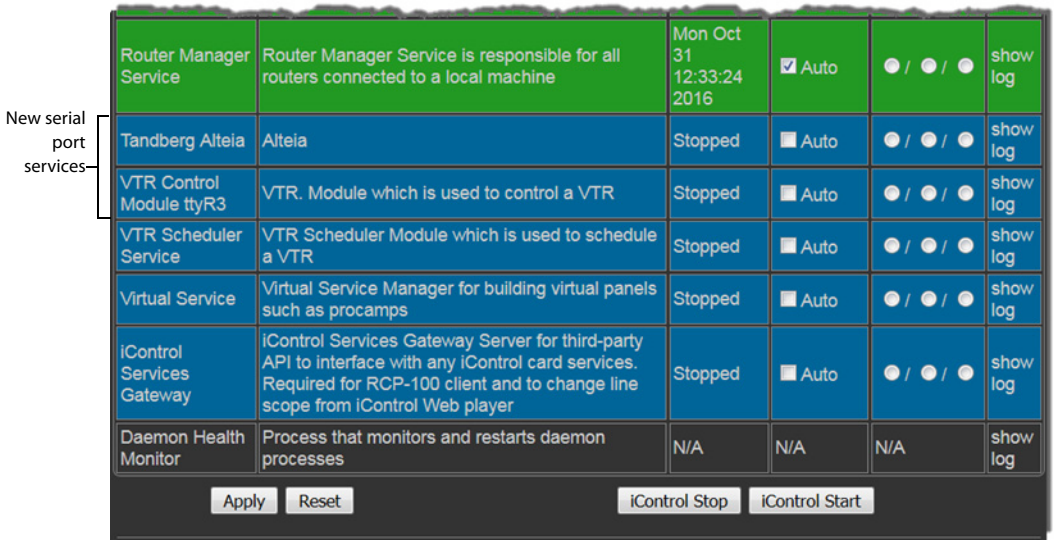
4 For each port you wish to activate, select the appropriate assignment, from the corresponding list.

Port assignment	Description
None	Configures the port to communicate with standard RS-422 devices (e.g., routers)
Imaging Connection Manager	Configures the port to communicate with Grass Valley's Symphonie or Quartet frames and their Imaging series cards
VTR Controller	Configures the port to communicate with a VTR
Tandberg Alteia	Configures the port to communicate with a device using the Alteia Remote Control Protocol

Note: It is good practice to activate *only* the required ports. Otherwise, the Application Server would unnecessarily monitor ports that are not used.

5 Once you have made all required port assignments, click **Accept**.

The *Services management* page reappears, with a new row for each of the newly assigned ports.



Notes

- Assigning multiple ports to an **Imaging** Connection Manager or **VTR** Connection service creates a new row for each port, identified by the port number.
- Assigning multiple ports to the **Tandberg Alteia** service does not create more than one row.
- A green background indicates services that are running. Blue indicates services that are stopped.

6 For each of the services corresponding to the newly assigned serial ports:

a In the **AutoStart** column, select the **Auto** check box.
This will cause the services to start automatically, whenever the Application Server restarts.

b In the **Start/Stop/Restart** column, click **Start**.

7 Click **Apply**.

The page reloads with the ports you have activated showing a green background.

8 Click **iControl Stop**, then **iControl Start**, to activate new serial port services (**Auto** must be selected).

Activating the iControl Services Gateway

The iControl Services Gateway is software that enables external devices to access resources (via XML) on an iControl network. If any of the following situations apply, you should activate the iControl Services Gateway on your Application Server:

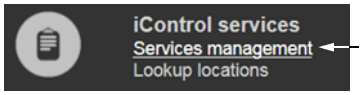
- You wish to use an RCP-100 or RCP-200 remote control unit, as a client to the Application Server.

- You wish to use the **Line Selection** function of the **Line Scope** option for the VCP and SCP series of video probes, in iC Web.
- You wish to display decoded VBI or CC, from VCP or SCP probes, in iC Web.
- You wish to use third-party applications, to control Densité or Imaging cards via iControl.

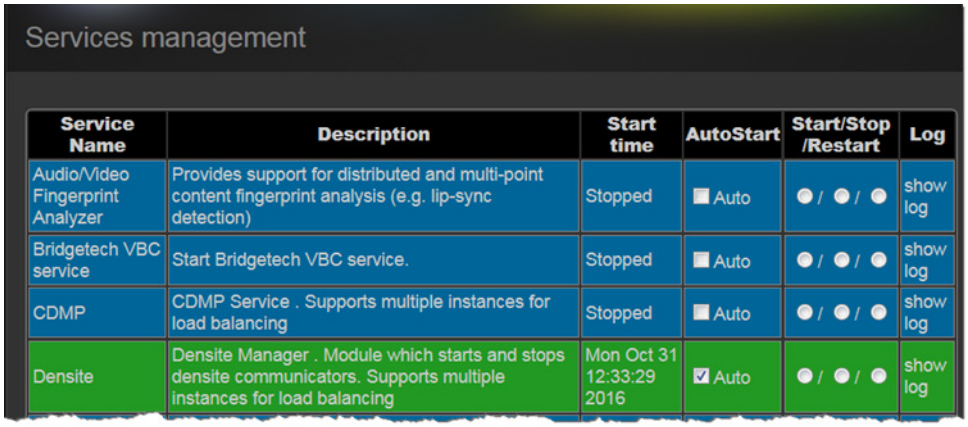
To activate the iControl Services Gateway

1 Open the *iControl admin* page (see Opening iControl admin, on page 8).

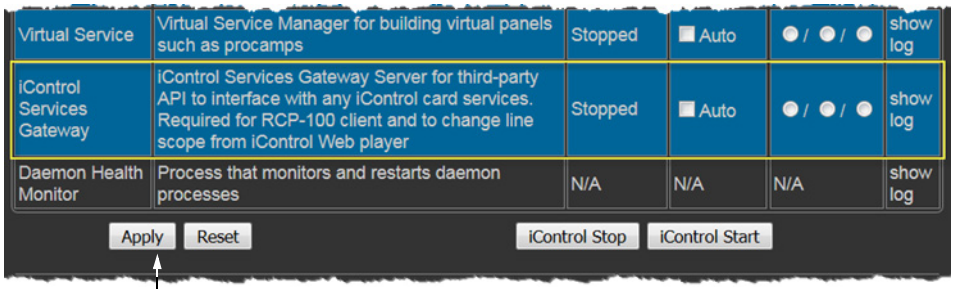
2 In iControl admin, under **iControl services**, click **Services management**.



The *Services management* page appears.



3 Locate the **iControl Services Gateway** row in the list of services.

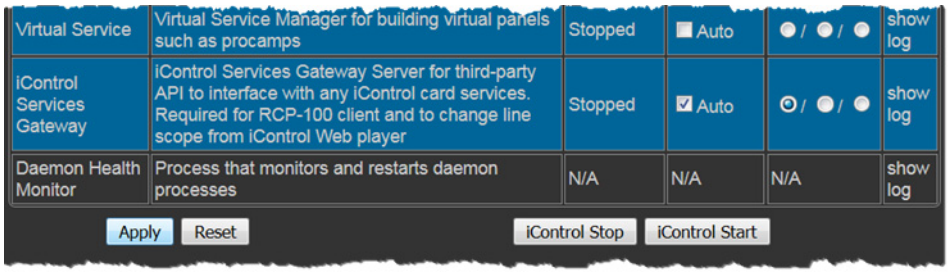


4 In the **AutoStart** column, select the **Auto** check box.

This is to ensure that the iControl Services Gateway will restart automatically if the Application Server is rebooted.

5 In the **Start/Stop/Restart** column, click the left-most button (corresponding to **Start**).

6 Click **Apply**.



After a few seconds, the Web page will reload, and the iControl Services Gateway row will be green (indicating that the service is active).

Configuring an Application Server's Date and Time

By default, the Application Server's date and time are based on the time set in the operating system. You may choose to peg the server's time to the time of another server. The other server must either be running an NTP (Network Time Protocol) server, or have the time protocol enabled in its *inetd* super-server daemon.

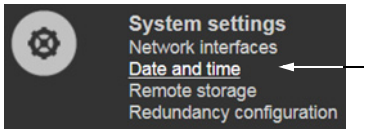
Notes

- For your system to use NTP for synchronization you must have the `ntpdate` NTP client program installed.
- Before beginning this procedure, make sure the remote Application Server whose time you would like to synchronize to, is online and functioning.

To synchronize an Application Server's system time to that of another server

1 Open the *iControl admin* page (see Opening iControl admin, on page 8).

2 In iControl admin, under **System settings**, click **Date and time**.



The *Date and Time* page appears.

3 In the **Time zone** area, select the desired time zone from the list, and then click **Save**.

4 In the **Time settings** area:

If you wish to synchronize your Application Server's time to a remote NTP server:

a In the **Time settings** area, enable **NTP synchronization**.
Three **NTP server IP address** fields appear.

b Type appropriate IP addresses, in the **NTP server IP address** fields, and then click **Apply**.

If you do **NOT** want to synchronize to a remote NTP server:

a In the **Time settings** area, disable **NTP synchronization**.

b Configure the desired date and time for this Application Server, and then click **Apply**.

Configuring Client Workstations for Better Streaming Performance

Any Windows 10, Windows 8, or Windows 7 workstation with access to an Application Server can be used to operate iControl, without the need for special client-side software.

Application Servers use the Darwin Streaming Server to stream video thumbnails from some network devices to iControl applets running on client PCs. For example, when you open a video card's control panel from iC Navigator, the control panel displays a thumbnail representation of the current video signal. For such streaming to work properly, a client PC must be able to resolve the host name (and reverse resolve the IP address) of the Application Server from which the applet was launched. For better streaming performance, you should make sure that every client PC has all available Application Servers and Allégro-1 systems listed in its hosts file.

To add mappings to a client workstation's hosts file

1. On the client PC, open the hosts file (no extension) in a text editor.

   In Windows, the hosts file is located in `C:\WINDOWS\System32\drivers\etc`.
2. For each Application Server and Allégro-1 that the PC will be accessing, add a line of the form:

   ```
   AAA.BB.CC.DD    HostName.yourDomain.com
   ```

   where `AAA.BBB.CC.DD` is the IP address of the Application Server or Allégro-1.
3. Save, and close the hosts file.

Step 5: Documentation

Grass Valley makes its iControl documentation suite available to clients in two different formats—PDF and online help (HTML)—, depending on the document in question. All documents are available locally, on the iControl Application Server. You can also obtain the latest version of the documentation from the *Documentation Library* section of Grass Valley's website.

A subset of the documentation suite is available in HTML format:

- iControl User Guide
- iRouter User Guide
- iControl Solo User Guide

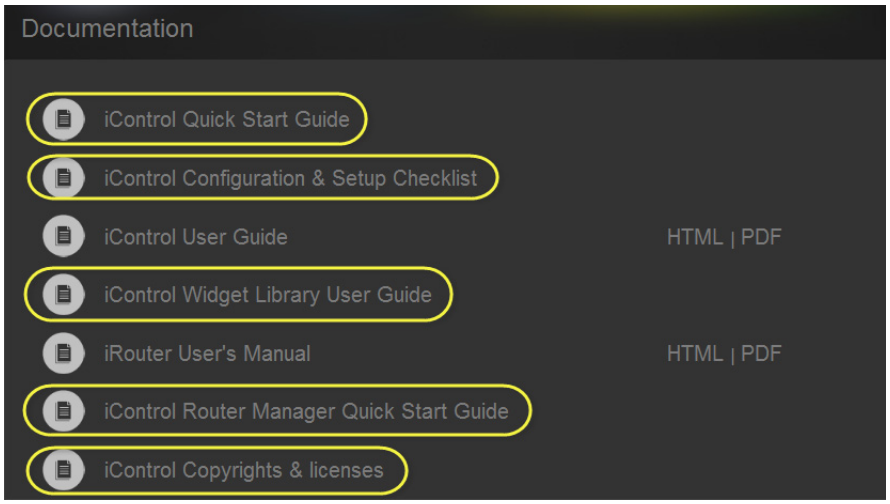
Since all online help is sourced directly from the Grass Valley website, it always displays the latest information. The **HTML** links visible on the iControl Documentation page and the **Help** (or **?**) buttons/menus available from the iControl Navigator, iControl Router Control, and iControl Solo client applications all link to online help on the website. When clicking these links, you will need to log in to the website *only once every 24-hour period* using your Grass Valley Support account profile.

To access documentation from iControl's Startup page

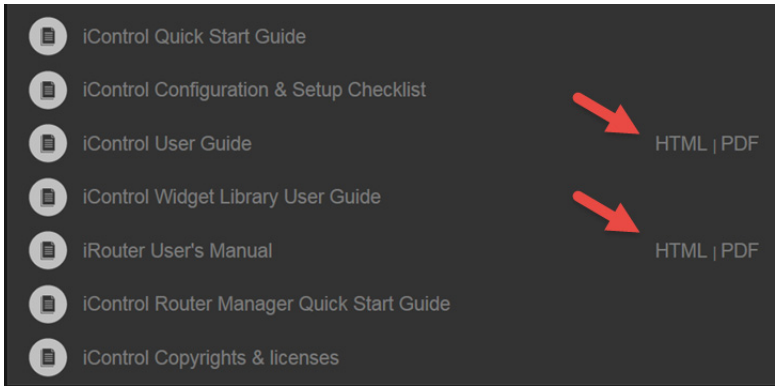
- Click **Release Notes** if you wish to read the Release Notes.

  The Release Notes page appears.
- Click **Documentation** if you wish to access any other iControl documentation.

  The Documentation page appears.
  - Click any of the links (circled, here, in yellow) to open a PDF version of a document.



- Where available, click either HTML or PDF to open a document in the desired format.



Notes

- Refer to the *iControl User Guide* for information on opening online help from **iC Navigator**, or from **Router Manager Configurator**.
- All iControl documentation (PDF and HTML) is also available from the *Documentation Library* section of Grass Valley's website.

Grass Valley Technical Support

For technical assistance, contact our international support center, at 1-800-547-8949 (US and Canada) or +1 530 478 4148.

To obtain a local phone number for the support center nearest you, please consult the Contact Us section of Grass Valley's website (www.grassvalley.com).

An online form for e-mail contact is also available from the website.

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