# iControl

Signal and facility monitoring

# Quick Start Guide

M226-0700-343

1 February 2013

Miranda

A BELDEN BRAND

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|---|---|
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toc

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# 1 Introduction to iControl

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.

## Summary



## Overview

Miranda's iControl is a coordinated suite of software applications and hardware designed for the interactive control and monitoring of distributed broadcasting networks.

iControl allows operators to control and monitor the status of Miranda and third-party video and audio modules (converters, distribution amplifiers, probes, etc.), routing switchers, and other network equipment, all from any convenient point with IP access

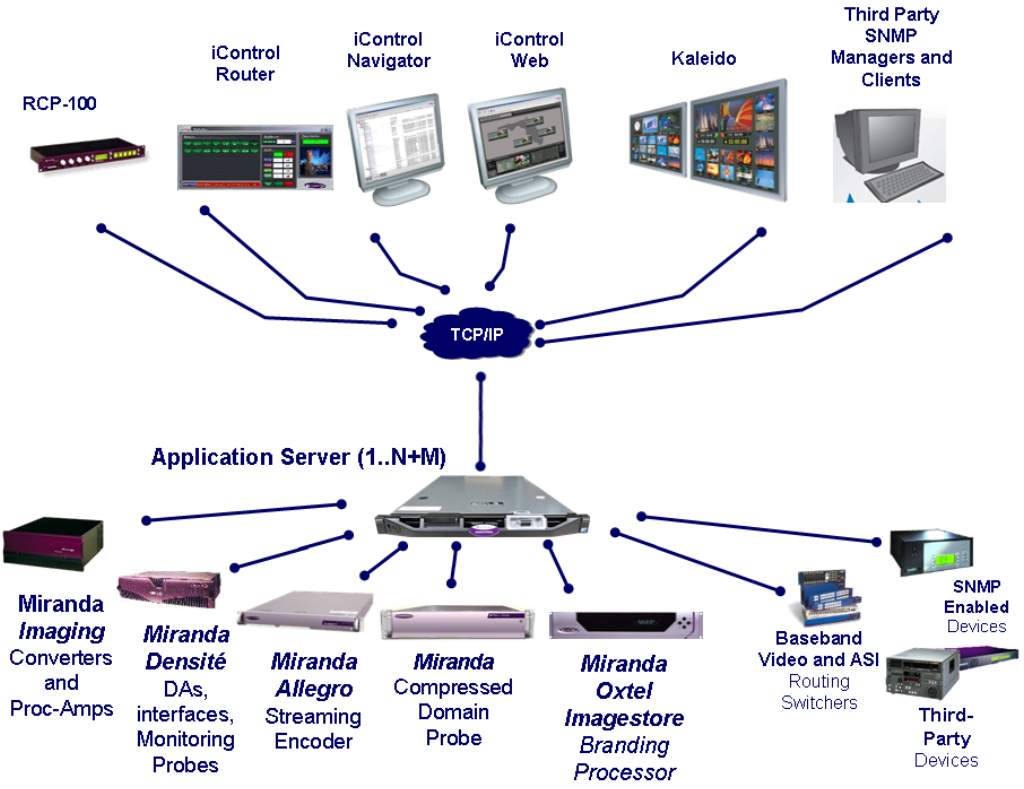
Features of the iControl system include:

- Fully integrated desktop: iControl brings together equipment, signal and facility monitoring and control for highly efficient operations
- Visual customization: Highly customized graphical representations of one or more facilities can be created to offer a highly intuitive control environment
- Third party application control: Multiple third party applications can be hosted in the iControl interface, and these can be selected manually or presented automatically for effective device control.
- SNMP support: iControl combines IP monitoring with SNMP to allow the collection of third party equipment status and offer multi-vendor interoperability.
- Media streaming: High quality streaming provides effective visual monitoring feedback
- Modularity & scalability: iControl is fully scalable and can be used to control just part of a television system or for complete management of multiple sites
- Automated responses: A *scripted macros* feature can provide automated reactions to alarm conditions and guide operators through complex diagnostics

iControl represents video networks with rich, interactive graphics that are immediately understandable and easy to operate. The system is geared towards simplifying operations so that a single user can control more channels, or a broader range of monitoring and control tasks.

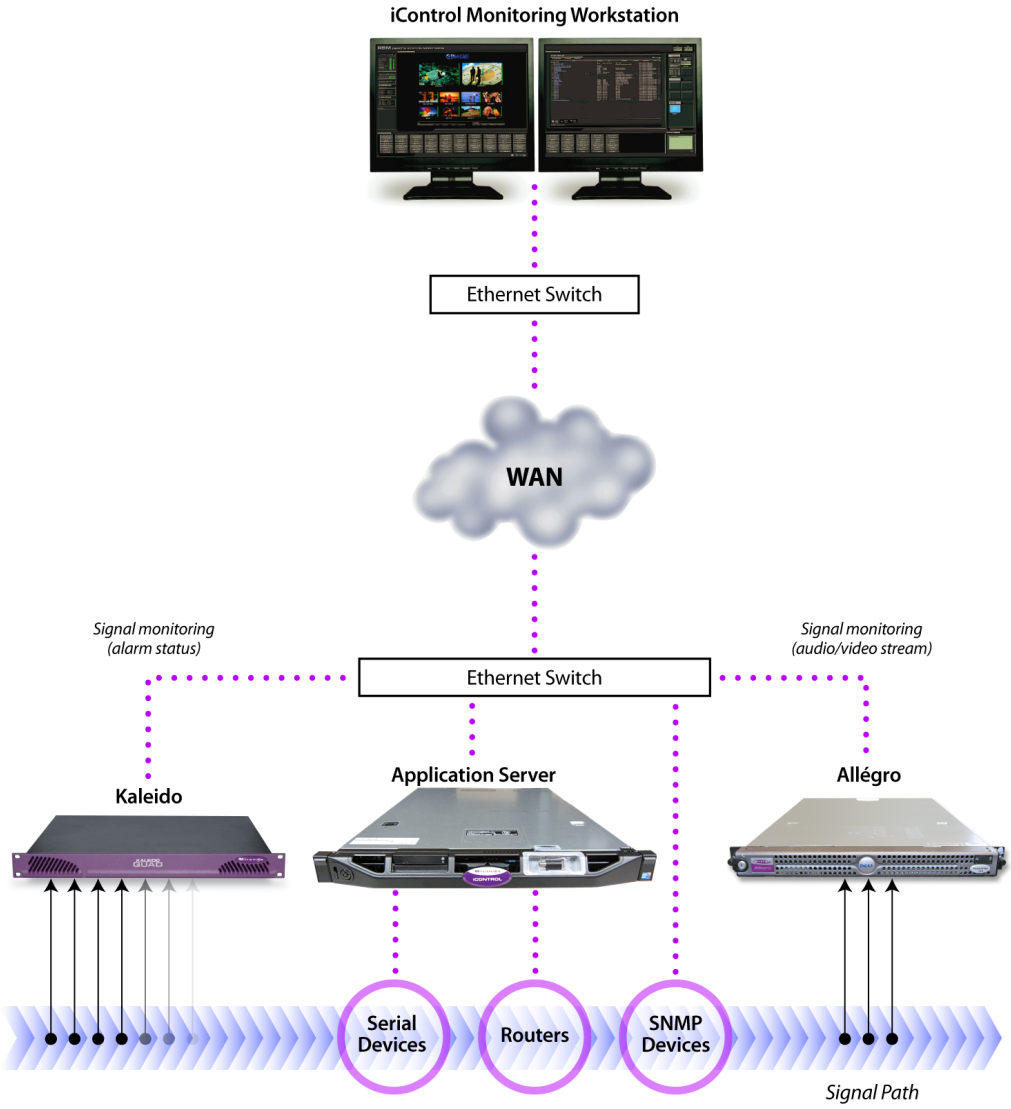
With iControl, customized views of a network can be created, complete with full motion, high quality streaming video and audio. The highly graphical nature of iControl allows operators to quickly identify and respond to alarm conditions, thereby reducing Mean Time to Repair (MTTR).

iControl leverages industry-standard SNMP protocols and integrates other third party control applications to provide a complete facility monitoring environment.



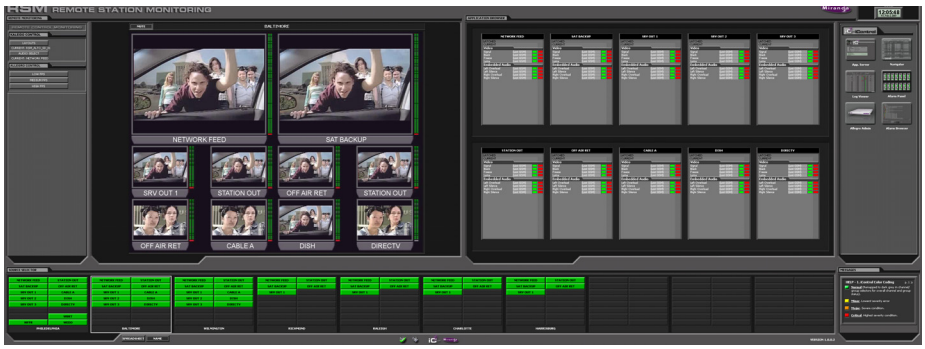

## Operational Overview

The diagram below shows the relationship between the elements of an iControl system, and how they work together to provide real time monitoring of a signal path.




## User Interface

Once the iControl system is up and running, monitoring data and live audio/video streams are automatically presented to operators via custom Web pages. Operators have access to current and historical information on every device and signal being monitored.




*Example 1: customized iControl User Interface*


*Example 2: customized iControl User Interface*


*Example 3: customized iControl User Interface*

## How iControl Works

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.

## Components of iControl

iControl consists of a set of software components, the principle ones being:

- iC Navigator
- iC Router Control
- iC Website Creator
- iC Web

Each of these core components is a Java application, stored on the iControl Application Server. When a user points a Web browser to the IP address of the Application Server, a Startup page appears, with links for each application. If the user clicks on one of these links, the Java code is downloaded to their PC, and the application launches.

There are two other core iControl components, important for system administration, and the smooth, integrated operation of iControl as a whole:

- iControl Webmin
- iControl Services

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

# 2 Getting Started

This Quick Start Guide is designed to help you get iControl up and running for the first time. Follow the steps outlined in this chapter in sequence. When you are finished, your iControl system will be configured and operational.

## Getting Organized

Getting an iControl system up and running involves installing, connecting and configuring a variety of hardware and software components. This manual provides a guide to successfully installing and activating your iControl system in nine tasks:



### New Installation

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 must be completed to properly set up and configure an iControl System.

### Upgrade

The latest version of iControl is pre-installed on all new systems. If you are planning to upgrade an existing iControl system to the latest version, you will need to contact the Miranda Technical Support team (`support@miranda.com`) to request an upgrade package.

#### Upgrading from iControl 1.xx

Previous versions (1.xx) of iControl are not compatible with release versions 2.00 and higher. Not all configuration files can be reused. User configurations such as iControl Navigator aliases, error log configuration and proc amps must be regenerated. We recommend you

record all values before proceeding with an upgrade. Old iControl Web sites will be converted, but the links will need to be reassigned.

An upgrade from version 1.xx involves a platform change. Please contact the Miranda Technical Support team for more information

### Upgrading from 2.xx

In order to update your system from version 2.xx releases, you must obtain an upgrade package from the Miranda Technical Support team. This package consists of the files and instructions you will need, which may vary according to the system to be upgraded.

When planning an upgrade, consider the following:

- If you are upgrading an existing Application Server, review "Hardware Requirements", on page 8. Some version 4.00 features (e.g. streaming and probes), if used, may require a hardware upgrade.
- Check compatibility with other Miranda and third-party software components (see the Release Notes). You may have to upgrade some applications.
- Review configuration guidelines (see the Release Notes) to properly set up your installation.
- Check the hardware compatibility of Imaging or Densité cards with this release (see the Release Notes). Firmware upgrades may be requested from the Miranda Technical Support team.

> **Note:** The iControl Maintenance Form of the Application Server Web administration tool (Webmin) cannot be used to update from 2.xx. The update has to be performed through an SSH command line interface.

# Installation and Network Requirements

## Hardware Requirements

### iControl Clients

The client platform must meet the following system requirements to qualify for this release:

| iControl Client Platforms | Memory | Processor | Operating System |
|---|---|---|---|
| Minimum requirements for general usage (excluding iControl Web) | 2 GB RAM | Intel Core i3 or better | Windows XP Professional or Windows 7[1] |
| Minimum requirement for streaming video and using iC Web | 4 GB RAM | | |

1. On the Windows 7 platform, it is recommended to use the Java 1.6 runtime environment (update 21).

**Note:** On Windows 7 platforms, it is recommended to use the Java 1.6 runtime environment.

| Graphics Card |
| --- |
| Optimized for nVidia GeFORCE 6600GT (PCI Express, 128 MB DDR3, 1 GHz) |

The Miranda Application Server must meet the following system requirements to qualify for this release:

| Application Server Platforms | Memory | Processor |
| --- | --- | --- |
| Recommended requirements for general usage with hosting of small Web sites, with streaming support and limited number of services | 2 GB RAM | Intel Core i3 or better |
| Minimum requirements for a large configuration (e.g. 8 ports used for Symphonie frames, multiple Densité frames, RCP-100 or RCP-200 Client Gateway, proc amps, Router Control, and extensive iC Web sites | 4 GB RAM | |

### Supported Servers

The latest version of iControl is supported on the following Application Servers:

- Dell PowerEdge 850
- Dell PowerEdge 860
- Dell PowerEdge R200
- Dell PowerEdge R210
- Dell PowerEdge R310

## Software Requirements

You can connect to an iControl Application Server from any client PC on your network using a standard Web browser. Once you connect to a valid Application Server IP address, you can download iControl applications to your client PC. Consequently, no other application software is needed, which greatly simplifies installation and system maintenance.

Once launched, the software will continue to run on your PC, communicating with distributed network applications that may or may not reside on the Application Server where the initial connection was made.

To run any application in the iControl suite, you need to have the following software installed on your PC:

- a Web browser (Internet Explorer 8.0 or Mozilla Firefox 1.5 or higher)

- Java 2 Runtime Environment (JRE) version 1.5.0_07 or higher). A Java update (which includes Java Web Start) can be downloaded from the iControl Application Server (see "Installing Java", on page 33 for more information)

**IMPORTANT:** If the Java Web Start application reports errors regarding an inability to find files, it is important to clear the Internet Explorer cache.

**IMPORTANT: Recommendation to run Java in Windows 2000 Compatibility mode**

Miranda highly recommends you switch your Java 2 JRE to Windows 2000 Compatibility mode (see "Running Java in Windows2000 Compatibility Mode", on page 10).

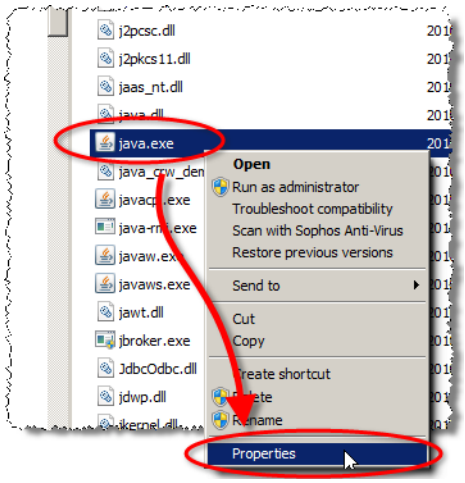
## Running Java in Windows2000 Compatibility Mode

**To switch your client PC's Java JRE to Windows2000 Compatibility mode**

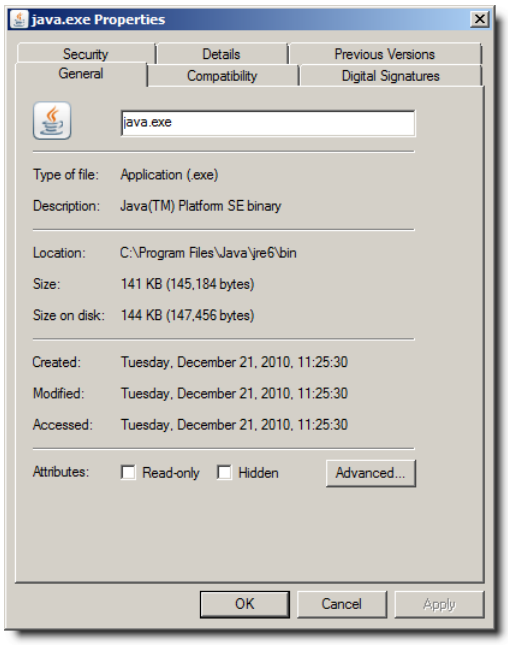
1. In Windows Explorer, navigate to the location of the following Java `*.exe` files:
   - `java.exe`
   - `javacpl.exe`
   - `javaw.exe`
   - `javaws.exe`

   Typically, you would find these files in a location such as the following:

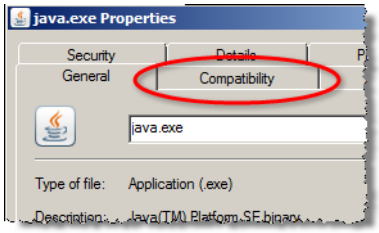
   `C:\Program Files\Java\jre6\bin`
2. Perform the following sub-steps for each of the above-mentioned files:
   a) Right-click the file, and then click **Properties**.



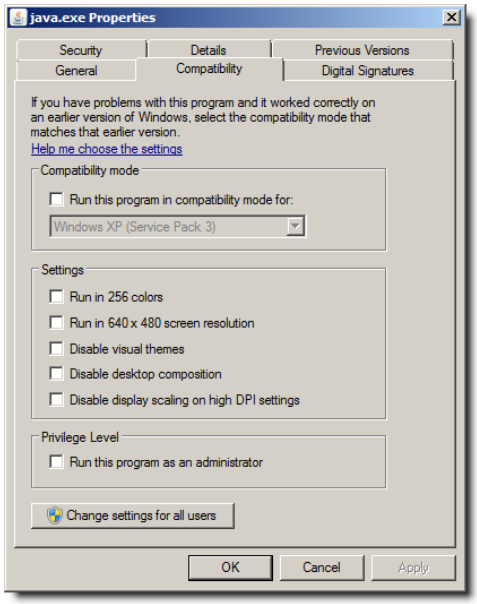

The **Properties** window appears.




b) Click the **Compatibility** tab.

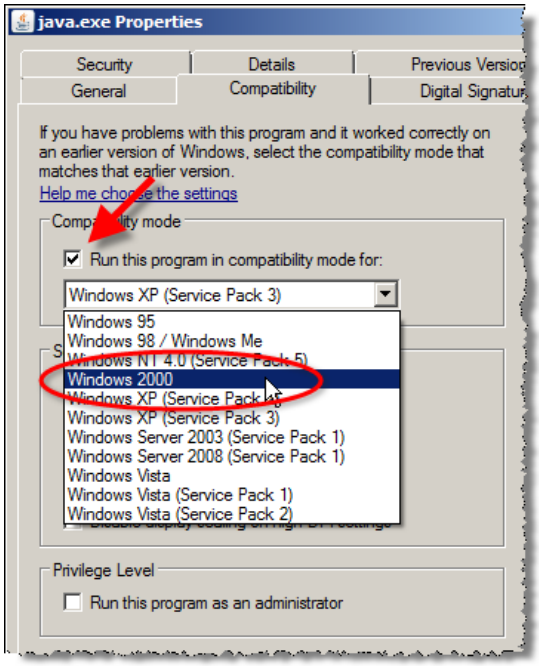



The **Compatibility** tab appears in focus.

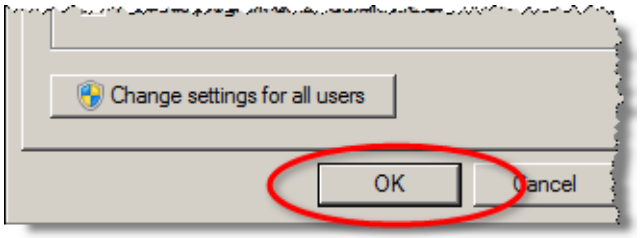


c) Select **Run this program in compatibility mode for**.

d) From the list, click **Windows 2000**.




e) Click **OK**.




## Installation and Network Requirements

We recommend that you install the iControl Application Server (as well as the associated equipment it controls) 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

iControl is compatible with the following Miranda software components:

- iControl Router/Router Configuration Manager and Router Service version 3.00 (or later).
- RCP-100 Remote Control Panel firmware version 1.80 (or higher)
- RCP-200 Remote Control Panel firmware version 1.1.0 and later (version 1.3.0 or later recommended)

- iC Web version 3.00 (*or later*)
- Kaleido-K2 version 5.30 (or later — refer to the Kaleido-K2 release notes)
- Kaleido-X version 2.0 (or later)
- Kaleido-IP version 6.0.0 and later (version 6.5.0 recommended for best performance and maximum functionality)
- Densité CPU ETH controller version 3.00 (or later)
- Densité CPU-ETH2 version 1.0.5 or later (version 2.0.4 or later recommended)
- EdgeVision version 1.0.0 or later (version 1.2.0 recommended for best performance and maximum functionality)
- NV9000 version 6.1.0.1538 and later (version 6.2.0.1674 and later recommended for best performance and maximum functionality)
- SEUtilities version 6.0.28 and later (version 6.2.2 build 125 and later recommended for best performance and maximum functionality)

# Task 1: Installing the iControl Application Server

Miranda's Application Server is the hardware at the heart of the iControl system, providing control, monitoring, logging and interface services. The Application Server is a compact 1 RU server that interfaces to other iControl devices over TCP/IP. A user can connect to the Application Server via TCP/IP from any desktop or portable computer.

**Notes**

- As of the release of iControl version 4.00, all Application Servers configured with new systems are Dell PowerEdge models R210 or R310. The older Dell PowerEdge 850/860 servers are still supported but may require hardware/firmware upgrades in order to run iControl version 4.40.
- If your Application Server is a Dell PowerEdge model, install the faceplate after the server is placed in a rack. If your Application Server is an older Supermicro model, install the faceplate before the server is placed in a rack.

**To install the iControl Application Server**

1. Place the iControl Application Server in a standard 19" rack, using the rails, screws and washers provided. Make sure that the unit has adequate ventilation.
2. Connect power cords, and then turn the server on. The power switch is located on the front panel.
3. **[OPTIONAL]** Install the Miranda 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.

**Notes**

- An unexpected power disruption, such as might occur during a power failure, can damage the file system on an iControl 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.
- Hardware documentation for the PowerEdge 850, 860, R200, R210, and R310 is available from the Dell Web site:
  - `http://support.dell.com/support/edocs/systems/pe850/`
  - `http://support.us.dell.com/support/edocs/systems/pe860/`
  - `http://support.dell.com/support/edocs/systems/peR200/`
  - `http://support.dell.com/support/edocs/systems/peR210/`
  - `http://support.dell.com/support/edocs/systems/peR310/`

## Connecting the 8-port Break-Out Box (optional)

You can optionally purchase an 8-port Comtrol RocketPort card (with breakout box) if required.

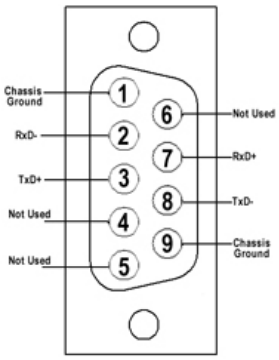
**To connect the 8-port breakout box**

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.

**Note:** It is important to assign serial ports on both the iControl Application Server and any routers that will be participating in the iControl system to avoid conflicts that might negatively affect system performance. Refer to "Task 7: Connecting & Configuring Devices", on page 48 of this guide for more information.

### RS-422 Pinout Assignments

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




*RS-422 connector pinout*

# Task 2: Preparing a PC for Configuring the Application Server

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.

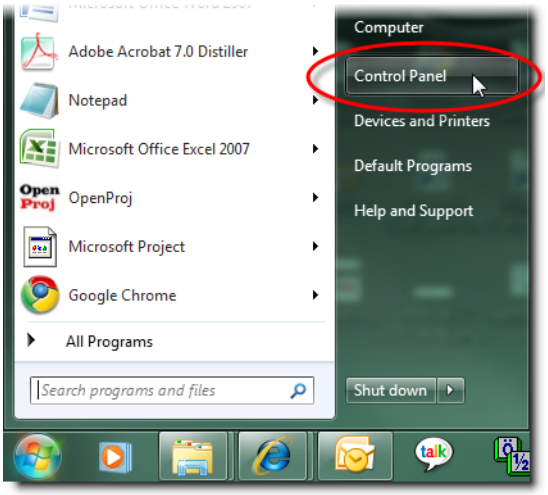
Perform one of the following procedures depending upon your client PC's operating system:

- "Configuring TCP/IP Settings of a Client PC Running Windows 7", on page 15
- "Configuring TCP/IP Settings of a Client PC Running Windows XP", on page 18

## Configuring TCP/IP Settings of a Client PC Running Windows 7

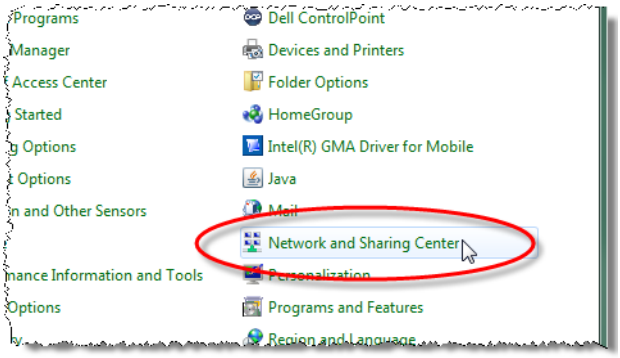
**To configure TCP/IP settings of a client PC running Windows 7**

1. From the Windows 7 **Start** menu, click **Control Panel**.



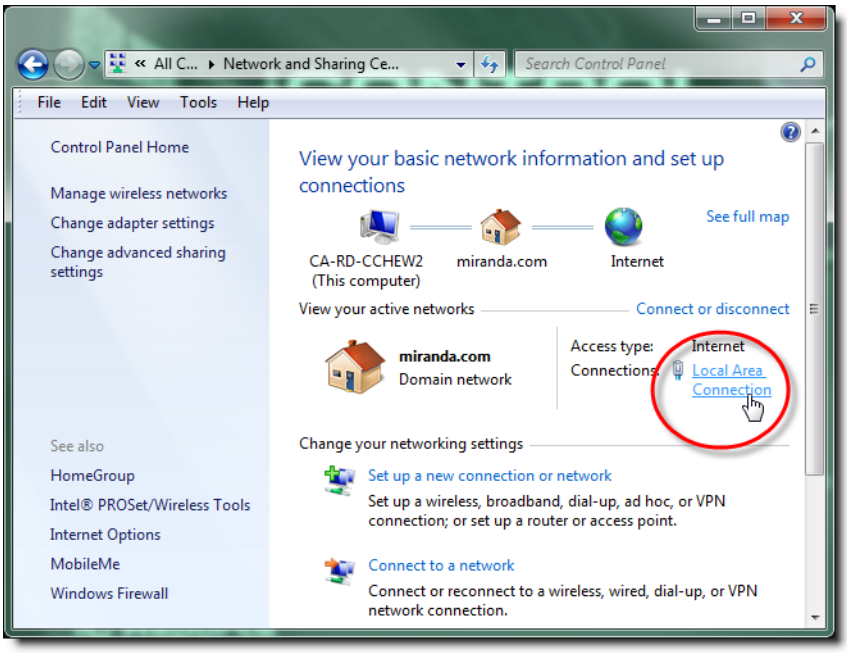

The Control Panel appears.

2. Click **Network and Sharing Center**.

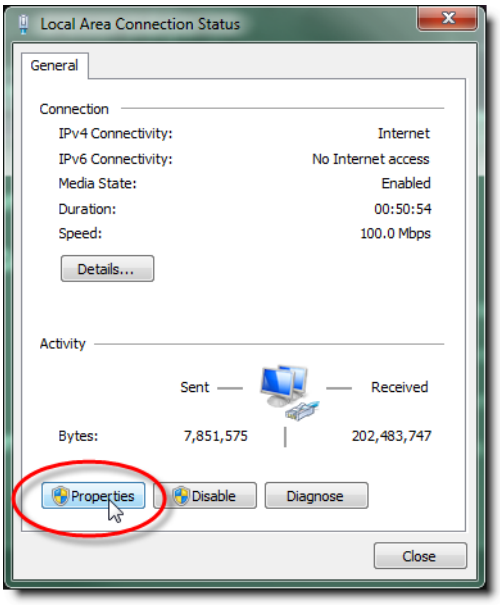



The **Network and Sharing Center** appears.

3. In the **Access type** area, click the link that corresponds to your LAN Internet connection (**Local Area Connection** in the example shown).

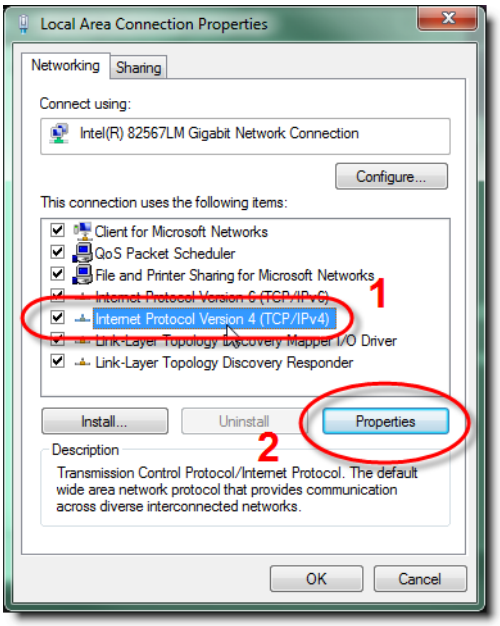



The **Local Area Connection Status** window appears.

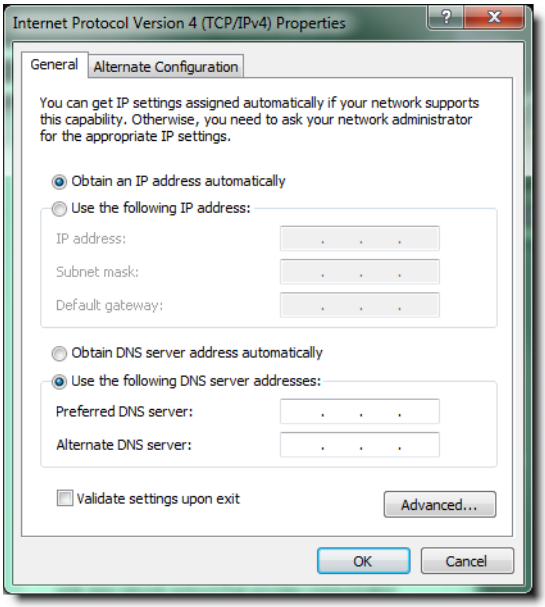



4. Click **Properties**.

   The **Local Area Connection Properties** window appears.

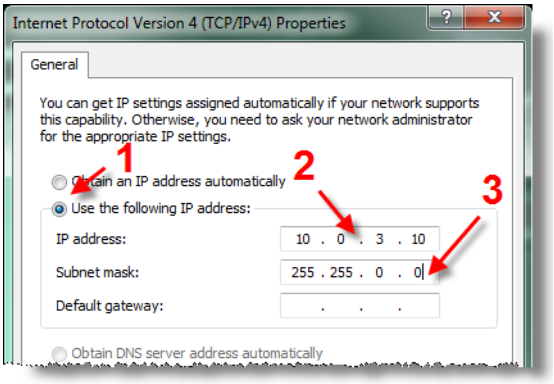



5. Select **Internet Protocol Version 4 (TCP/IPv4)**, and then click **Properties**.
   The **Internet Protocol Version 4 (TCP/IPv4) Properties** window appears.




6. Take note of the PC's current settings.
7. Click **Use the following IP address**.
8. The default IP address of each new iControl Application Server is `10.0.3.6`. On the client PC, type an address in the same range (e.g. `10.0.3.10`) in the **IP address** field.
9. The default subnet mask of each new iControl Application Server is `255.255.0.0`. On the client PC, type `255.255.0.0` in the **Subnet mask** field.

**Note:** The default IP address and subnet mask settings for the Application Server are usually shown on a sticker on the top cover of its chassis.



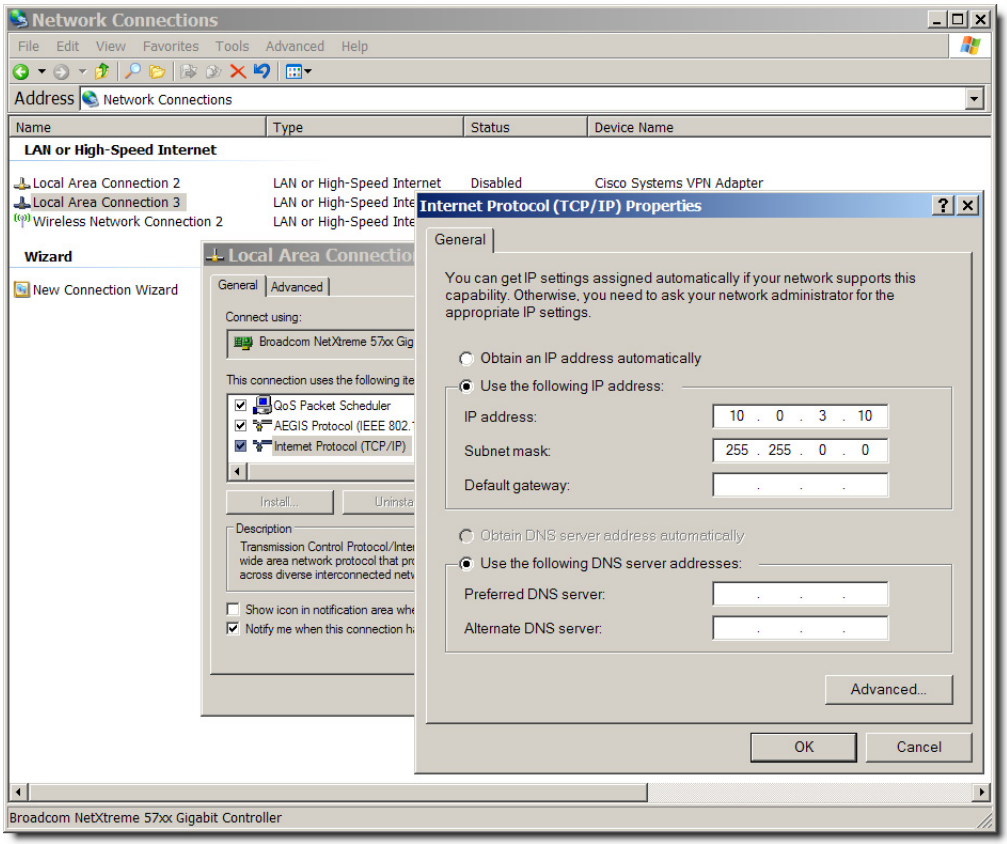

10. Click **OK** to apply these settings.
11. In the **Local Area Connection Properties** window, click **OK**.
12. Close the **Network and Sharing Center** control panel.

**Note:** Remember to return the PC to its original network settings once you have finished configuring the iControl Application Server.

## Configuring TCP/IP Settings of a Client PC Running Windows XP

**To configure TCP/IP settings of a client PC running Windows XP**

1. From the Windows XP **Start** menu, select **Settings** | **Control Panel** | **Network Connections**.
2. Select the currently active Local Area Connection, and then right-click and click **Properties**.
3. In the **Local Area Connection Properties** window, select **Internet Protocol (TCP/IP)**, and then click **Properties**.
4. In the **Internet Protocol (TCP/IP) Properties** window, click **Use the following IP address**.




*Configuring TCP/IP settings on a PC running Windows XP.*

5. Take note of the PC's current settings.
6. The default IP address of each new iControl Application Server is `10.0.3.6`. On the client PC, type an address in the same range (e.g. `10.0.3.10`) in the **IP address** field.
7. The default subnet mask of each new iControl Application Server is `255.255.0.0`. On the client PC, type `255.255.0.0` in the **Subnet mask** field.

> **Note:** The default IP address and subnet mask settings for the Application Server are usually shown on a sticker on the top cover of its chassis.

8. Click **OK** to apply these settings.
9. In the **Local Area Connection Properties** window, click **OK**.
10. Close the **Network Connections** control panel.

> **Note:** Remember to return the PC to its original network settings once you have finished configuring the iControl Application Server.

# Task 3: Configuring the iControl Application Server

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

- Connect to the Application Server from a Client PC
- Log on to the Application Server's Webmin utility and configure the Application Server's:
  - Ethernet interface
  - Network gateway
  - Domain Name Service settings
  - Host name and IP address
- Apply your changes and perform a readiness check

## Connecting to a New iControl Application Server

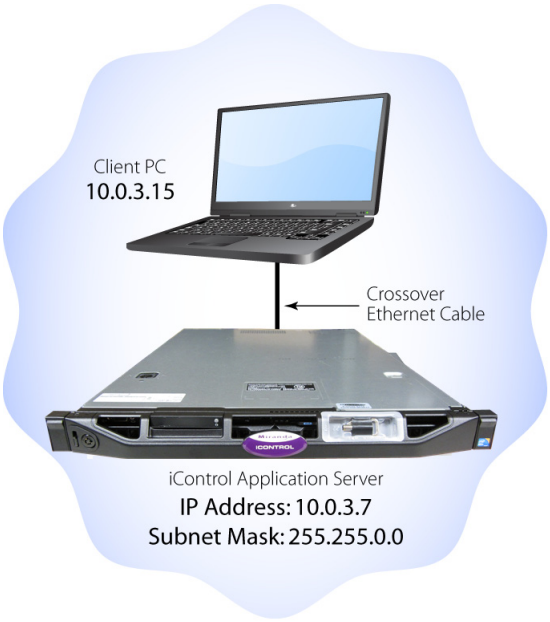
Before you can begin operations, you must configure the Application Server and make it available on your local network. The iControl Application Server is shipped with its **eth0** port configured to a standard setting. As you perform the configuration procedures in this manual, you will reconfigure the port to integrate the Application Server into your network.

**IMPORTANT: Ethernet Port Labels on the PowerEdge R210 and R310**

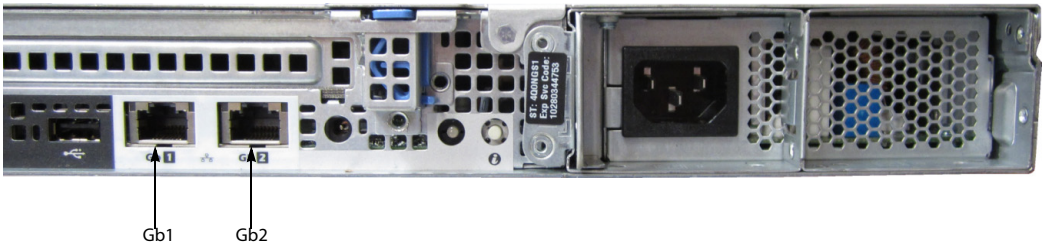
If your Application Server is a Dell PowerEdge R210 or R310, please read the section regarding Ethernet port labels (see page 22).

**To connect to a new Application Server**

1. Using a crossover Ethernet cable, connect the client PC to the **eth0** port on the new Application Server.

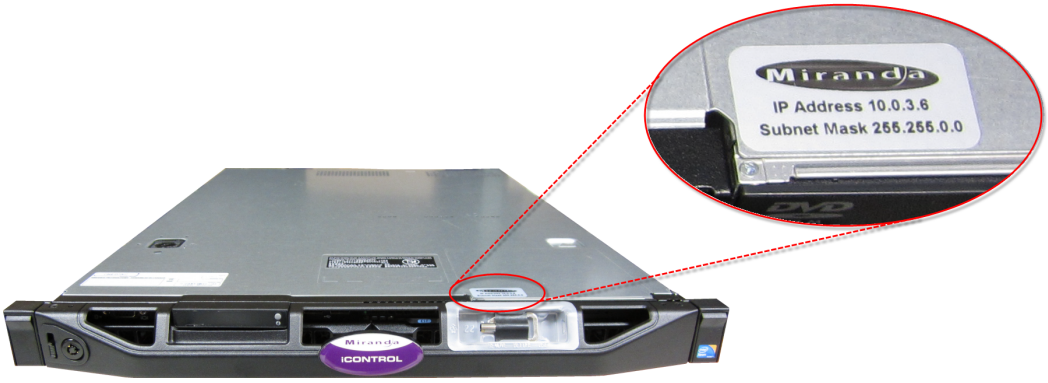



*Connection between client PC and Application Server*




*Rear view of R310 Application Server, showing logical ports eth0 and eth1 (physical ports Gb1 and Gb2, respectively)*

> **Note:** The default IP address and subnet mask settings for the Application Server when shipped from the factory are shown on a sticker on the top cover of the chassis above the front-panel power switch. The factory default is `10.0.3.6`.




2. Open a browser window on the client PC.
3. In the address field, type `10.0.3.6` (this is the default IP address of the iControl Application Server).

   The iControl Startup page appears.


**Notes**

- iC Router Control, iC Web and iC Creator are optional, and will only appear on the iControl Startup Page if you purchased the corresponding options.
- If your Web browser cannot find the Application Server, make sure the PC's network settings are correct (see "Preparing a PC for Configuring the Application Server", on page 15).

## Ethernet Port Labeling on the R210 and R310 Application Servers

The physical Ethernet ports on the backs of the Dell PowerEdge R210 and R310 are labeled as **Gb1** and **Gb2**. The physical (cabling) port called **Gb1** corresponds to logical (Webmin) port **eth0**. Likewise, the physical port called **Gb2** corresponds to logical port **eth1**. Throughout this document, when speaking of cabling and physical ports, the physical port numbers will match the logical port numbers, which is true for all types of Application Servers except the R200, R210, and R310. In the case of the R200, R210, and R310, you must map according to the table below. For example, if a procedure instructs you to connect a cable to an Application Server's **eth0** port, you must connect the cable to the R210's physical port labeled **Gb1**.

**Ethernet Port Mapping on the R200, R210, and R310 Application Servers**

| Physical Label on R200, R210, R310 | Logical (Webmin) Name |
|---|---|
| Gb1 | eth0 |
| Gb2 | eth1 |

## Using Webmin to Configure the Application Server

Webmin is the iControl Application Server's built-in, Web-based management utility. Logging on to Webmin is the starting point for accomplishing many tasks, including configuring the Application Server.

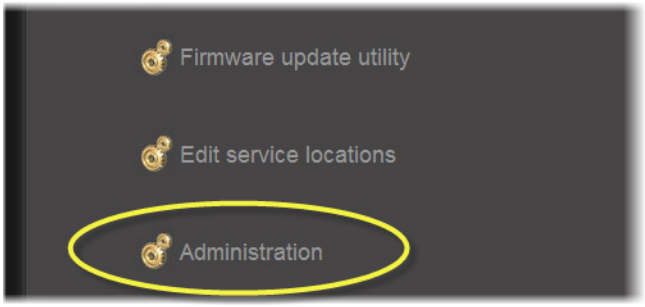
### Logging on to Webmin

**REQUIREMENT**

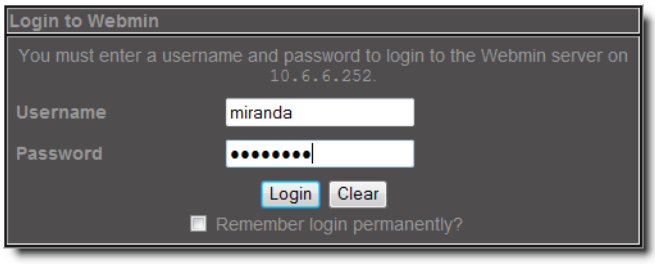
Before beginning this procedure, make sure you have opened iControl.

**To log on to iControl's Webmin utility**

1. Click **System Tools** on the iControl Startup page.
   The System Tools page appears.
2. Click **Administration**.



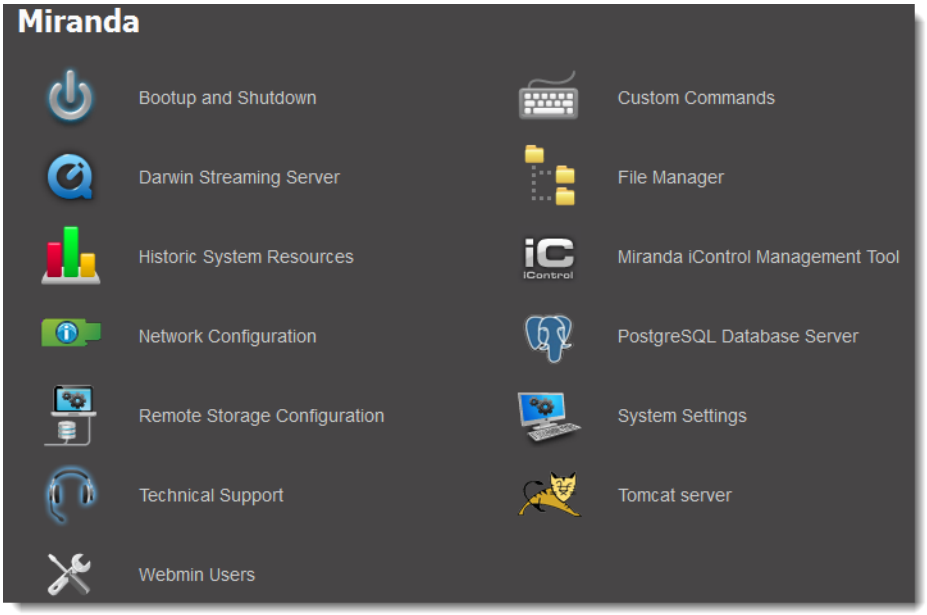

The **Login to Webmin** window appears.




3. Type your user name and password.
   By default, these are:

- Username: `miranda`
- Password: `icontrol`

4. Click **Login**.
   The iControl Webmin home page appears.




## Configuring the Network

When configuring your network you must configure host addresses, DNS client, Gateway, and network interfaces in the proper sequence.

**To configure the network**

1. Specify the DNS settings to be used by your Application Server (see page 25.
2. Configure your host addresses (see page 27).
3. Specify a network Gateway to be used by your Application Server (see page 28).
4. Configure the Ethernet interface (see page 29).
5. Restart and verify the configuration (see "Restarting the Application Server", on page 31).

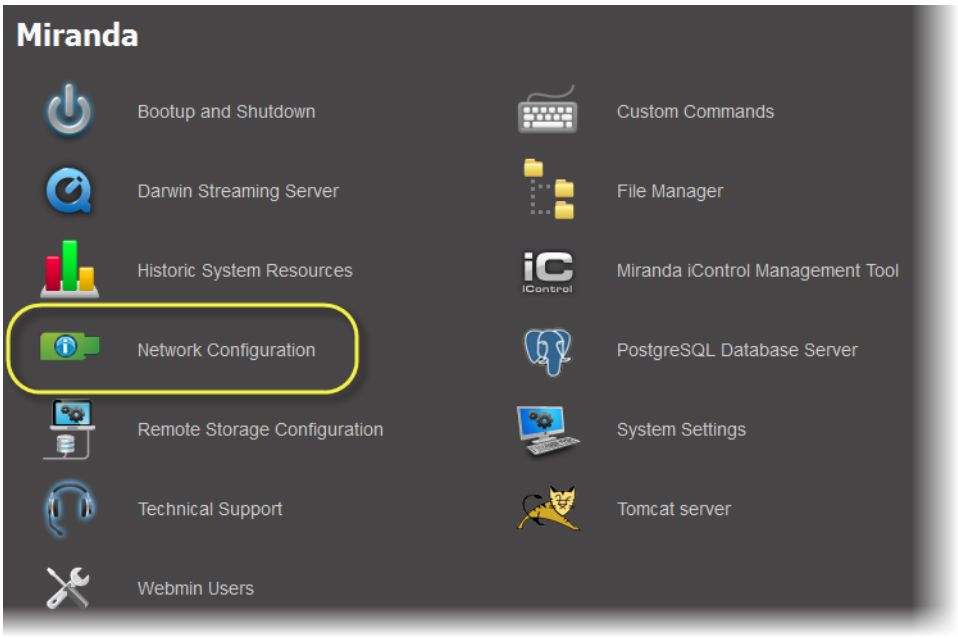
### Navigating to the Network Configuration Page

**REQUIREMENT**

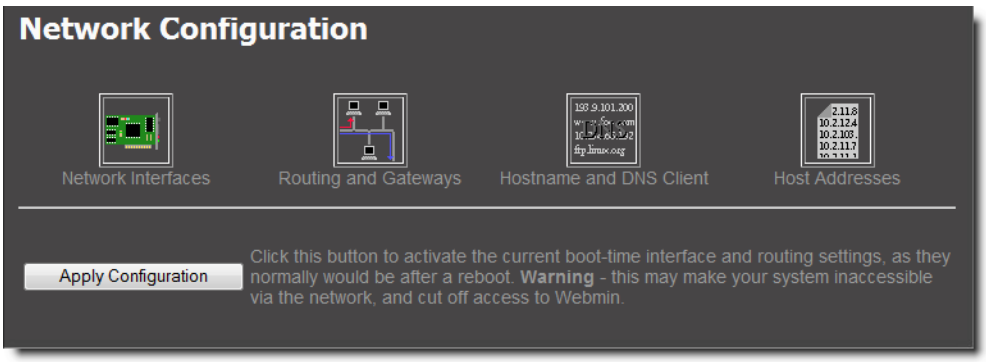
Before beginning this procedure, make sure you are logged on to iControl Webmin (see page 23).

**To navigate to the Network Configuration page**

- On the Webmin page, click **Network Configuration**.




The Network Configuration page appears.




### Specifying DNS Client Settings

The Domain Name Service (DNS) is a type of directory service that translates host names to IP addresses and vice versa. For the most part, Application Servers and other devices on an iControl network rely on IP addresses, and so DNS is not usually needed. There are, however, circumstances where DNS is required, such as when an Application Server needs to have access to the Internet in order to display a Web page from some external source (e.g. www.weather.com).

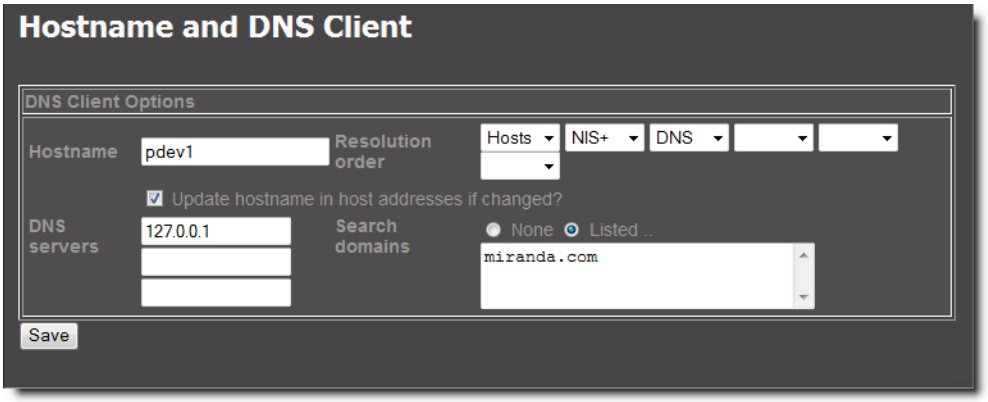
**REQUIREMENT**

Before beginning this procedure, make sure you have navigated to the Network Configuration page of Webmin (see page 24).

**To specify the DNS settings to be used by the iControl Application Server**

1. On the Network Configuration page, click **Hostname and DNS Client**.

The Hostname and DNS Client page appears.




2. In the **Hostname** field, type the host name by which you would like this Application Server to be known on your network.
3. Select the **Update hostname in host addresses if changed** check box.

> **Note:** This function ensures the host name in the Host Addresses page is the same as the host name in the Hostname and DNS Client page.

4. Configure the other parameters as required:

| Parameter | Detailed instruction |
|---|---|
| Resolution Order | Do not change the values in these six boxes unless your system administrator advises otherwise. |
| DNS Servers | The IP address `127.0.0.1`, corresponding to localhost, appears by default. Do not change this address. You may type the addresses of other DNS servers in the lines below. Consult your system administrator |
| Search Domains | Click the Listed option button, and then type a list of all the domains where you wish to have the Application Server look for DNS services (one line per domain). You should type at least your own local domain name. (e.g. `www.miranda.com`). |

5. Click **Save**.

> **Note:** Clicking **Save** does not update the Application Server with the new configuration. To apply your changes, you still need to click **Apply Configuration** on the Network Configuration page or restart the system through Webmin (see "Restarting the Application Server", on page 31).

6. Return to the Network Configuration page by clicking the Return arrow at the bottom of the Hostname and DNS Client page.

> **IMPORTANT:** Do not click **Apply Configuration** on the Network Configuration page.

### Configuring Host Addresses

**REQUIREMENT**

Before beginning this procedure, make sure you have navigated to the Network Configuration page of Webmin (see page 24).

**To configure host addresses**

1. On the Network Configuration page, click **Host Addresses**.

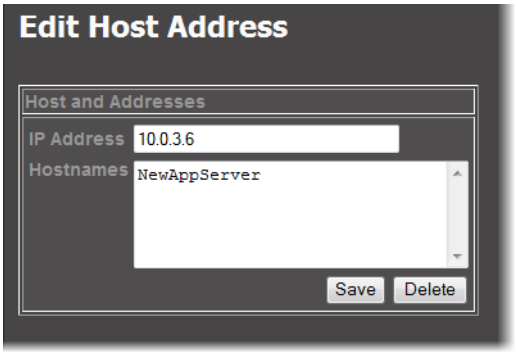
   The Host Addresses page appears. The currently defined hosts are listed, showing the IP address and host name of each.

   **Notes**

   - The first entry is internally-generated and should be left as found:
     - IP Address: `127.0.0.1`
     - Hostname: `localhost.localdomain, localhost`
   - The host name you defined in step 2 of "Specifying DNS Client Settings", on page 25 should be listed here. However, you will need to configure the proper IP address for this Application Server.

2. Click the IP address of the iControl Application Server whose IP address you will change.

   The Edit Host Address page appears.




3. In the **IP Address** field, type the IP address you would like to give to this Application Server.
4. In the **Hostnames** field, make sure the listed host name is the correct one, and then - if required - type one or more other names that will refer to this IP address.

   **Note:** If the host name you entered on the Host Name and DNS Client page is not accurately listed here, correct this name in the Edit Host Address page, now.

5. Click **Save**.

   The Host Addresses page reappears. The saved host names will appear in the list.

**Note:** Clicking **Save** does not update the Application Server with the new configuration. To apply your changes, you still need to click **Apply Configuration** on the Network Configuration page or restart the system through Webmin (see "Restarting the Application Server", on page 31).

6. Return to the Network Configuration page by clicking the Return arrow at the bottom of the Host Addresses page.

**IMPORTANT:** Do not click **Apply Configuration** on the Network Configuration page.

### Specifying a Network Gateway

In order for an Application Server to be able to send to (or receive data from) devices outside its own subnet, it must use a network gateway.

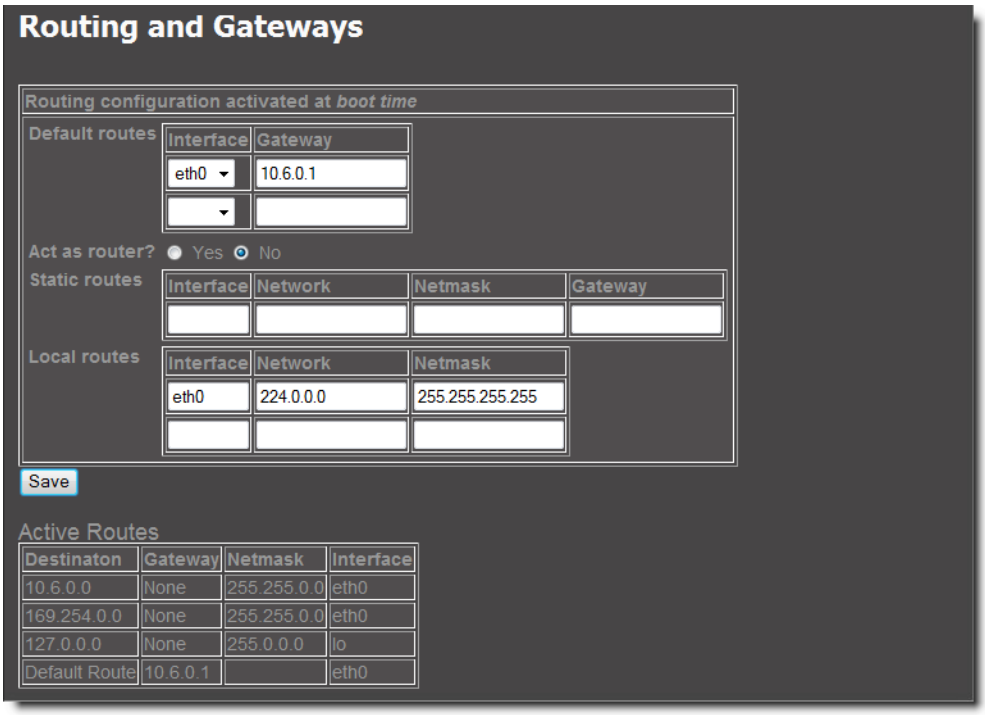
**REQUIREMENT**

Before beginning this procedure, make sure you have navigated to the Network Configuration page of Webmin (see page 24).

**To specify a network gateway to be used by the iControl Application Server**

1. On the Network Configuration page, click **Routing and Gateways**.

   The Routing and Gateways page appears.




2. Select **eth0** from the Interface list in the **Default Routes** area.

**IMPORTANT: Ethernet Port Labels on the R210 and R310 Application Servers**

If your Application Server is a Dell PowerEdge R210 or R310, please read the section regarding Ethernet port labels (see page 22).

3. Ask your system administrator for the IP address of the network gateway that this Application Server will use, and then type this address in the Gateway field. If a gateway is not being used, then leave the **Gateway** field empty.
4. Click **No** beside **Act as Router**.
5. Leave the fields associated with **Static Routes** blank.
6. In the fields associated with **Local Routes**, do not change the value that appears for the **eth0** interface unless your system administrator advises it.
7. Click **Save**.

**Note:** Clicking **Save** does not update the Application Server with the new configuration. To apply your changes, you still need to click **Apply Configuration** on the Network Configuration page or restart the system through Webmin (see "Restarting the Application Server", on page 31).

8. Return to the Network Configuration page by clicking the Return arrow at the bottom of the Routing and Gateways page.

**IMPORTANT:** Do not click **Apply Configuration** on the Network Configuration page.

### Configuring the Ethernet Interface

The iControl Application Server is shipped with the **eth0** port turned on, in a default configuration that permits an initial connection. The default IP address setting for the Application Server is `10.0.3.6`, with subnet mask `255.255.0.0`. This section describes how to reconfigure **eth0** to meet your local network requirements.

**IMPORTANT: Ethernet Port Labels on the R210 and R310 Application Servers**

If your Application Server is a Dell PowerEdge R210 or R310, please read the section regarding Ethernet port labels (see page 22).

**Note:** 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 Miranda Densité frames and some third-party devices. As of iControl version 3.31, new Application Servers have the **eth1** network interface disabled by default.

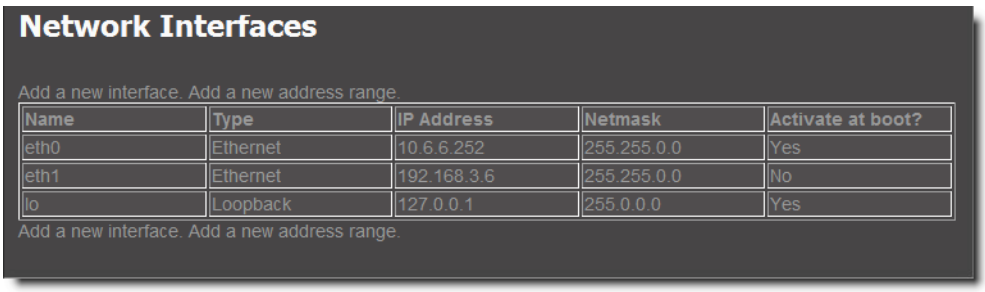
**REQUIREMENT**

Before beginning this procedure, make sure you have navigated to the Network Configuration page of Webmin (see page 24).

**To configure the Ethernet interface**

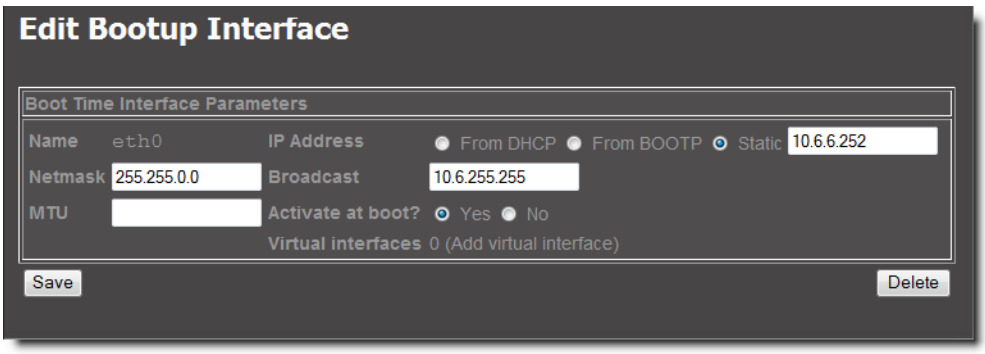
1. On the Network Configuration page, click **Network Interfaces**.

   The Network Interfaces page appears. This page shows all Ethernet interfaces currently active, and lists those that will be activated any time the system is booted.




2. Click **eth0** in the **Name** column.

   The Edit Bootup Interface page appears.




> **Note:** This page shows the current settings for the **eth0** interface, which are the factory default values if you are configuring this port for the first time.

3. Select **Static**.
4. In the field to the right of the **Static** option button, type the fixed IP address you would like to use for this iControl Application Server.

> **IMPORTANT:** Make sure you type the IP address exactly as it is on the Edit Host Address page (see step 3 of "Configuring Host Addresses", on page 27).

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

5. Type addresses in the **Netmask** and **Broadcast** fields that correspond to your desired network configuration.

The values you type should be based on the IP address and the desired network configuration. In the above example (`10.10.80.10`), the corresponding netmask has been configured as `255.255.255.0`, with a resulting broadcast address of `10.10.80.255`. You should always verify these values with a network administrator.

6. Leave the **MTU** field blank.
7. Select **Yes** next to **Activate at boot**.

> **Note:** If you do not select **Yes**, the **eth0** interface resets to its previous values the next time the system restarts.

8. Click **Save**.

> **Notes**
>
> - Clicking **Save** does not update the Application Server with the new configuration. To apply your changes, you still need to click **Apply Configuration** on the Network Configuration page or restart the system through Webmin (see "Restarting the Application Server", on page 31).
> - The Application Server's **eth0** port is set to auto-negotiate, full duplex mode by default. This setting should not be changed. The network switch to which the Application Server is connected should also be set to auto-negotiate to avoid data packet loss.

9. Return to the Network Configuration page by clicking the Return arrow at the bottom of the Network Interfaces page.

**IMPORTANT:** Do not click **Apply Configuration** on the Network Configuration page.

### Restarting the Application Server

Once you have specified all the settings your Application Server needs to be able to operate on your local network, you must restart the system to apply the new configuration.

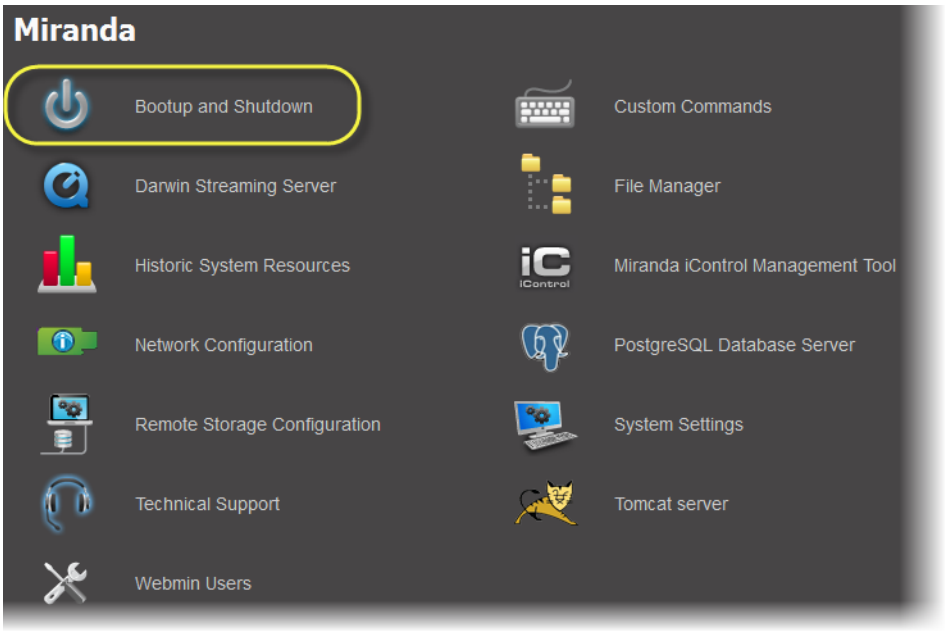
**REQUIREMENTS**

Make sure you meet the following conditions before beginning this procedure:

- You are logged on to iControl Webmin (see page 23).
- You have performed step 1 through step 4 of "Configuring the Network", on page 24.

**To restart the Application Server**

1. On the Webmin home page, click **Bootup and Shutdown**.

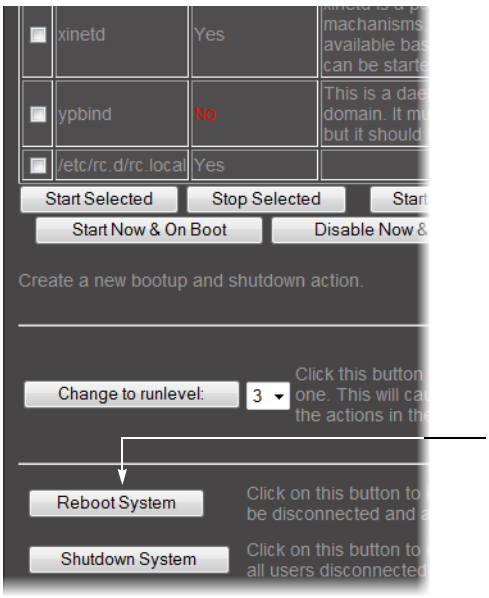



The Bootup and Shutdown page appears.

**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 lose communication with the Application Server once you reboot.

2. At the bottom of the Bootup and Shutdown page, click **Reboot System**.




The Application Server restarts with the network parameters you have established.

3. Disconnect the client PC that was used to configure the Application Server. Remember to restore the previous network settings on the PC (see "Preparing a PC for Configuring the

Application Server", on page 15).

4. Connect the Application Server to its designated network. Use a standard Ethernet cable plugged into the Application Server's **eth0** port (see "Installing the iControl Application Server", on page 13).

> **IMPORTANT: Ethernet Port Labels on the R210 and R310 Application Servers**
>
> If your Application Server is a Dell PowerEdge R210 or R310, please read the section regarding Ethernet port labels (see page 22).

# Task 4: Configuring Client Workstations

Any Linux or Windows workstation with access to an Application Server can be used to operate iControl, without the need for special client-side software. There are, however, two considerations in preparing them to work with iControl: the version of Java installed on the workstation, and its local DNS settings.

## Installing Java

In the course of using iControl, certain software modules (e.g. iC Navigator) may be downloaded from the Application Server to your client workstation. To run any of these iControl applications, you must have the Java 2 Runtime Environment (JRE) installed on your PC. The installer is available from the Application Server itself.

**To install the Java 2 Runtime Environment on your PC**

1. Click **Useful downloads** on the iControl Startup page.
2. Click **JRE for Windows**. When prompted, save the download.The filename should be similar to `jre-1_5_07-windows-i586-p.exe`.
3. Open the downloaded EXE file. The installation process takes several seconds. Once completed, a confirmation message appears.

> **Note:** If the Java Web Start application reports errors regarding the inability to find files, it is important to clear the Internet Explorer cache.

## Configuring DNS Settings

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.

In order for such streaming to work properly, a client PC's internal Domain Name Service (DNS) must be able to resolve the host name (and reverse resolve the IP address) of the Application Server from which the applet was launched.

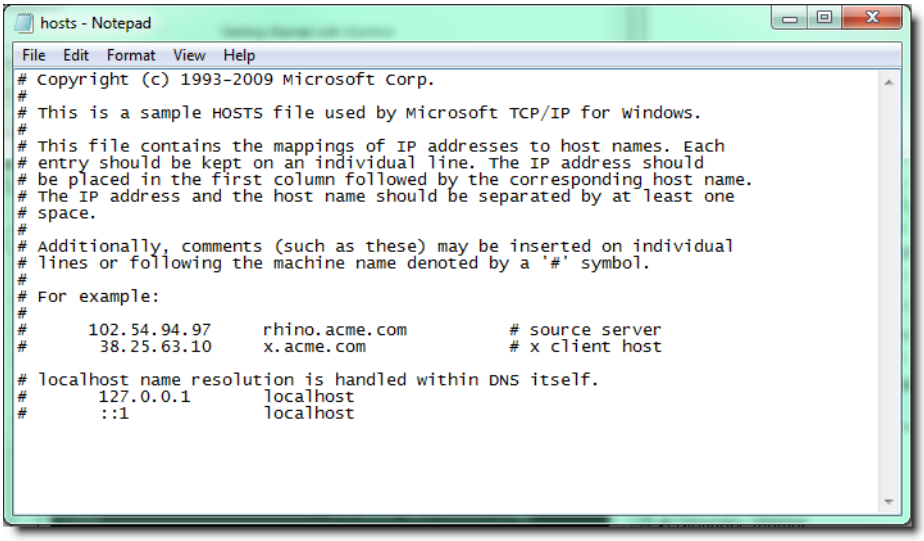
In order to avoid slower streaming performance, you should make sure that each client PC has all available Application Servers and Allégro-1 systems listed in its DNS configuration file.

**To configure DNS settings**

1. On the client PC, open the hosts file (no extension) in a text editor. In Windows XP, the hosts file is located in `C:\WINDOWS\system32\drivers\etc`. In Linux, the hosts file is located in `/etc`
2. For each Application Server and Allégro-1 that the PC will be accessing, add a line of the form:

   `AAA.BB.CC.DDHostName.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.

## Connecting to the Application Server

At this point, you should verify that the iControl Application Server is available on your network.

**To connect to the Application Server**

1. From a workstation on the same subnet, open a Web browser window and type the IP address[1] of the newly-configured iControl Application Server. You should see the iControl Startup page.
2. Alternatively, you can use the `ping` command by performing the following sub-steps:
   a) On the **Start** menu of the client PC, point to **All Programs**, and then to **Accessories**, and click **Command Prompt**.
   b) Type the following:

      `ping AAA.BBB.CCC.DDD`

      where `AAA.BBB.CCC.DDD` is the Application Server's new IP address.

1. Return to the Network Configuration page by clicking the Return arrow at the bottom of the Routing and Gateways page.

A small window should briefly appear with a message similar to the following:

```
Reply from AAA.BBB.CCC.DDD: bytes=32 time<1ms TTL=62
```

# Task 5: Configuring the Application Server on the Network

Once the Application Server is plugged into and available on your network, you will need to configure additional settings to permit it to operate in that environment. Specifically, you will need to configure Lookup Services to make sure that all devices on the network are visible to iControl. You may also need to configure the iControl Services Gateway.

## Configuring 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 will also register with all lookup services that are running on other Application Servers on the same subnet.

If you have multiple Applications Servers and/or multiple subnets in your iControl network, you will need to configure these lookup services.

### Enabling or Disabling the Lookup Service

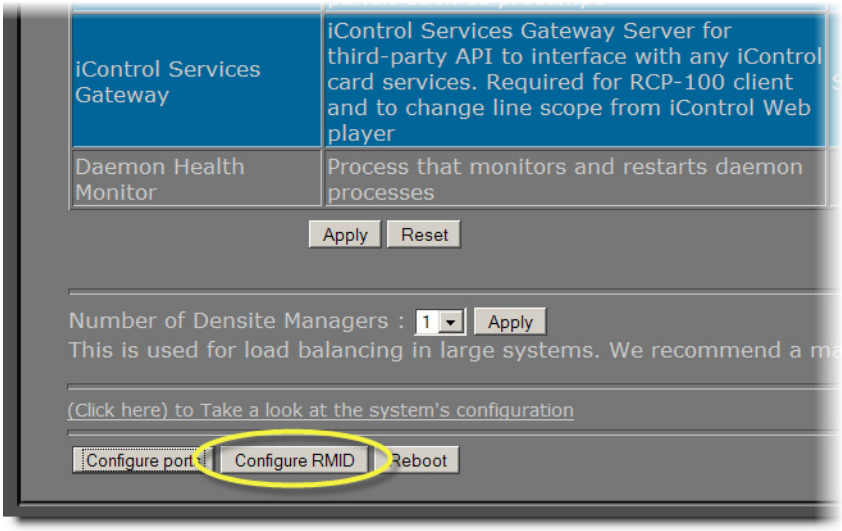
**REQUIREMENTS**

Make sure you meet the following conditions before beginning this procedure:

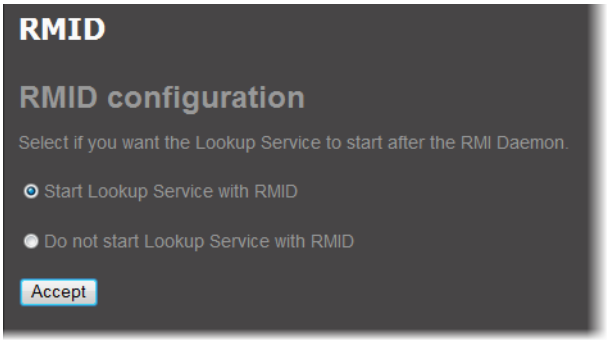
- You have opened iControl.
- You have logged onto Webmin (see page 23).

**To turn a lookup service on or off**

1. On the Webmin main page, click **Miranda iControl Management Tool**.
   The iControl Management Tools page appears.
2. Click the icon beside **iControl services monitoring and configuration tool**.
   The Miranda Monitoring page appears.
3. Click **Configure RMID**.




The RMID page appears. By default, the Lookup Service is configured to start automatically when the RMI (Remote Method Invocation) daemon is activated.




4. Click **Start Lookup Service with RMID** if you want this Application Server to run the Lookup Service.

| | |
|---|---|
| **IMPORTANT:** | The lookup service should be only activated on a maximum of two Application Servers per subnet. |

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

**Note:** The Kaleido-K2 has its own built-in lookup service which must be turned off before it is added to an iControl network.

## Opening the iControl Lookup Locations Page

The need for specifying Lookup Locations depends on several factors. In general, we recommend the following:

- If an Application Server is **not** running a lookup service, you should type the locations of all Application Servers running the lookup service on its own subnet, as well as those on external subnets.
- If an Application Server **is** running a lookup service, you should type the locations of all Application Servers running the lookup service on external subnets.

**See also**

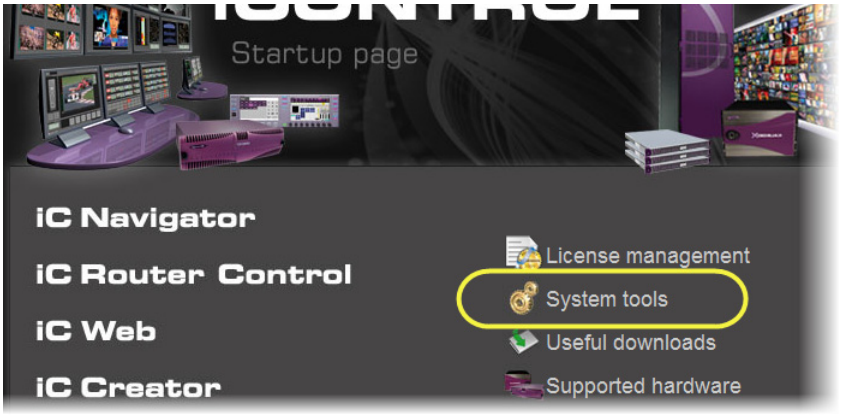
For more information, see the "Lookup Services" section of the "Getting Started" chapter in the *iControl User Guide* (**M226-9900-278**).

**REQUIREMENT**

Before beginning this procedure, make sure you have opened iControl.

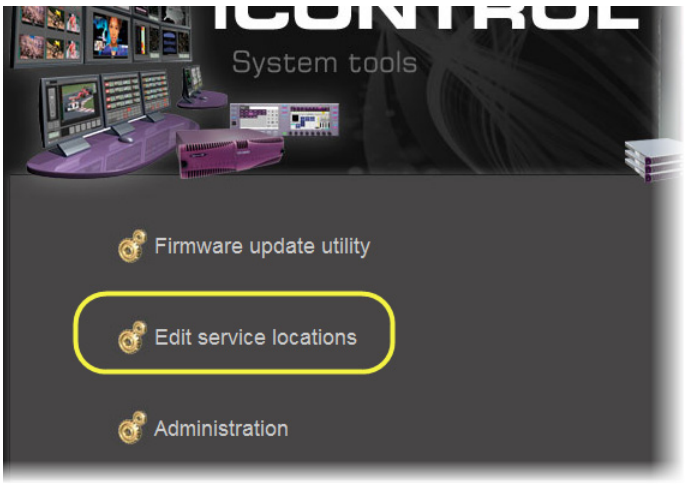
**To open the iControl Lookup locations page**

1. On the iControl main page, click **System tools**.

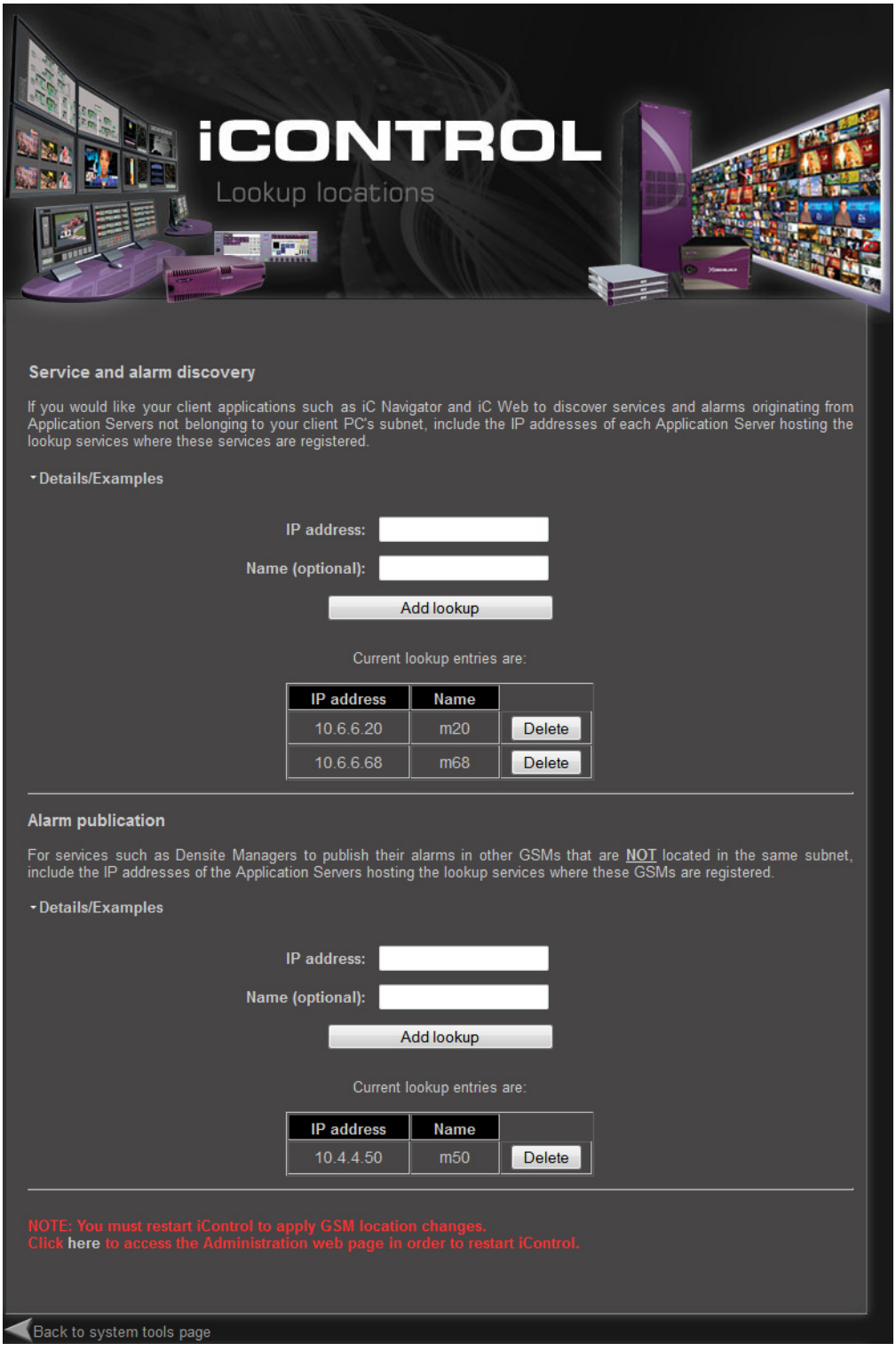



The System tools page appears.

2. Click **Edit service locations**.

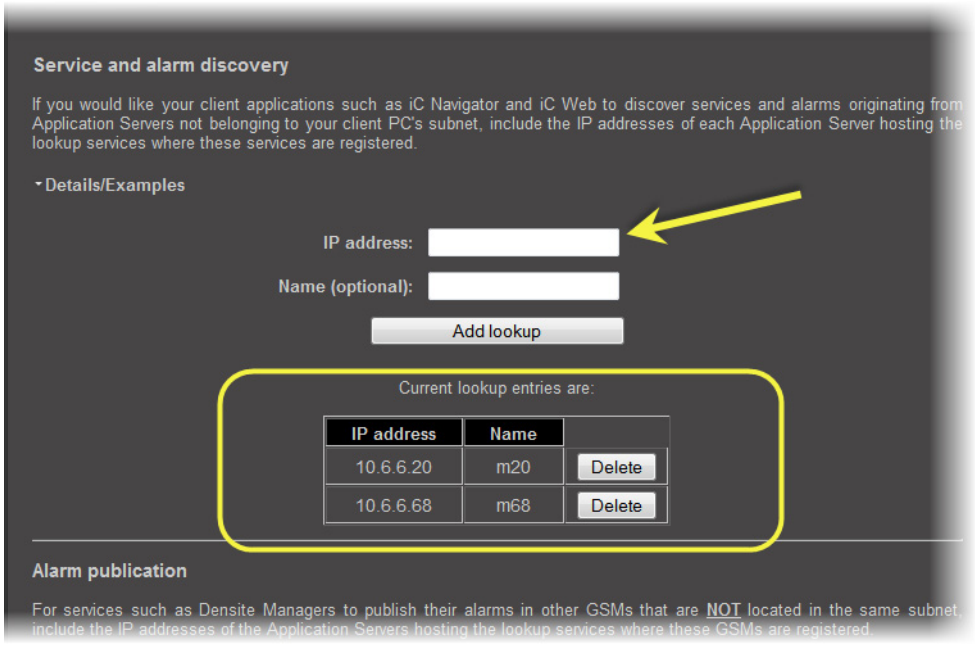


The iControl Lookup locations page appears.



## Specifying Service and Alarm Discovery Locations

In order 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.




**REQUIREMENT**

Before performing any of the following tasks, make sure you have opened the iControl Lookup locations page (see page 36).

| To do this... | ...do this... |
|---|---|
| Add locations for service and alarm discovery | 1. Type the IP address and (optionally) the name of an Application Server that **is** running a lookup service.<br>2. Click **Add lookup**.<br>The new lookup location appears in the **Service and alarm discovery** table**.** |
| Delete a service and alarm lookup entry | 1. In the **Service and alarm discovery** table, find the IP address corresponding to the Application Server you would like to remove.<br>2. In this row, click **Delete**.<br>The specified IP address is removed from the table. |

## Specifying Alarm Publication Lookup Locations

In a basic iControl configuration, services such as the Densité Manager or the Imagestore Manager will automatically detect—and begin publishing alarm status information to—the GSM(s) on their own subnet.

If, however, you wish to have these services connect to GSMs running on Application Servers on other subnets, you must explicitly specify the GSM locations. You do this by typing the

IP address of the target Application Server (on the remote subnet) in the iControl Lookup locations page of the Application Server running the Densité, Imagestore, or other service on the local subnet.

On the Application Servers in the different subnet, you need to specify the IP address of the lookup service where a GSM is registered in the other subnet.

## Adding an Alarm Publication Lookup Location

**REQUIREMENT**

Before beginning this procedure, make sure you have opened the iControl Lookup locations page for the Application Server that is running the Densité, Imagestore, or other service you wish to publish to remote GSMs (see page 36).

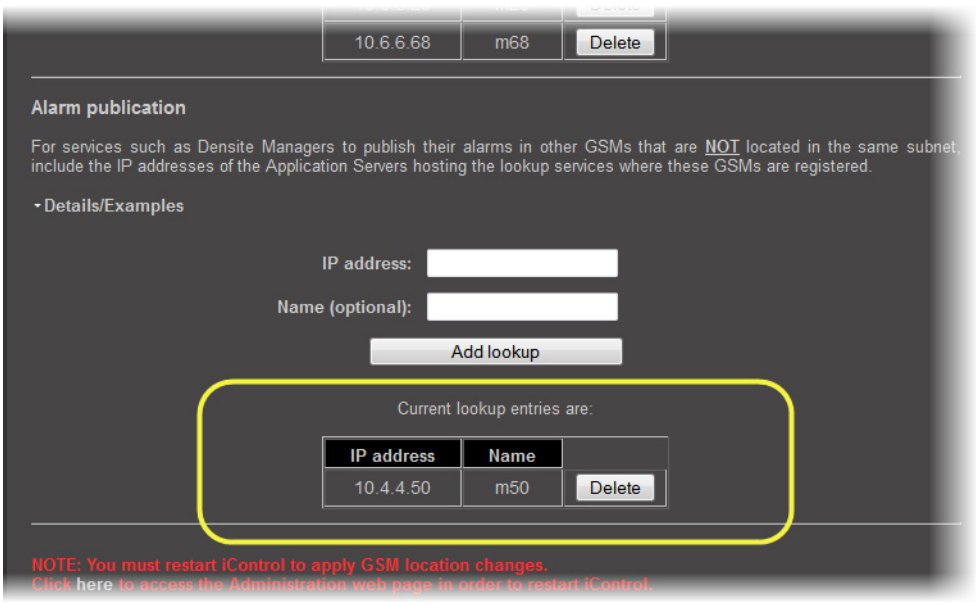
**To add an Alarm publication lookup location**

1. On the iControl Lookup locations page, type one of the following:
   - the IP address of an Application Server on a remote subnet that is running a GSM
   - the IP address of an Application Server on a remote subnet that is running a lookup service

   **Note:** Use of the **Name** field to indicate the Application Server's host name is optional.

2. Click **Add lookup**.

   The address appears in the **Alarm publication** lookup table.




3. Restart the specific service (e.g. Densité Manager) that you wish to publish to the remote GSM, or restart iControl to publish all services to the remote GSM (see "Starting & Stopping iControl Services", on page 666).

### Deleting an Alarm Publication Lookup Location Entry

**REQUIREMENT**

Before beginning this procedure, make sure you have opened the iControl Lookup locations page on the Application Server hosting the Densité or ImageStore services you no longer wish to be visible outside the subnet (see page 36).

**To delete an Alarm publication lookup location entry**

1. On the iControl Lookup locations page, in the **Alarm publication** lookup table, find the IP address corresponding to the Application Server whose entry you would like to delete.
2. In this row, click **Delete**.

   The specified IP address is removed from the **Alarm publication** lookup table.

## Configuring the iControl Services Gateway

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

- an RCP-100 or RCP-200 remote control unit is being used as a client on the Application Server
- the **Line Selection** function of the **Line Scope** option for the VCP and SCP series of video probes is being used in iC Web
- decoded VBI or CC from VCP or SCP probes is to be displayed in iC Web
- third-party applications are being used to control Densité or Imaging cards via iControl

**Note:** The iControl Services Gateway is not related to the Network Gateway function, although the latter may need to be active to allow the iControl Services Gateway to operate between different subnets (see "Specifying a Network Gateway", on page 28).

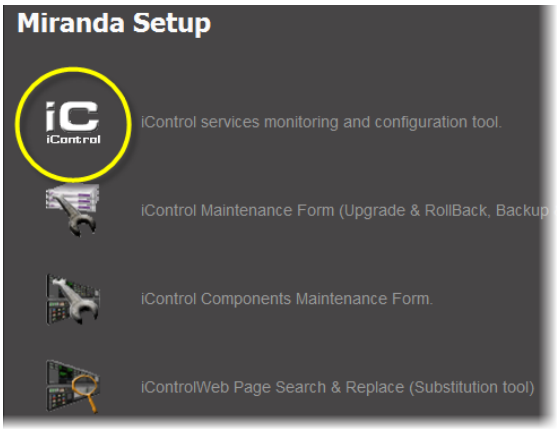
**REQUIREMENT**

Before beginning this procedure, make sure you have logged on to iControl Webmin (see page 23).

**To activate the iControl Services Gateway**

1. From the Webmin main page, click **Miranda iControl Management Tool**.

   The Miranda Setup page appears.
2. Click the icon beside **iControl services monitoring and configuration tool**.

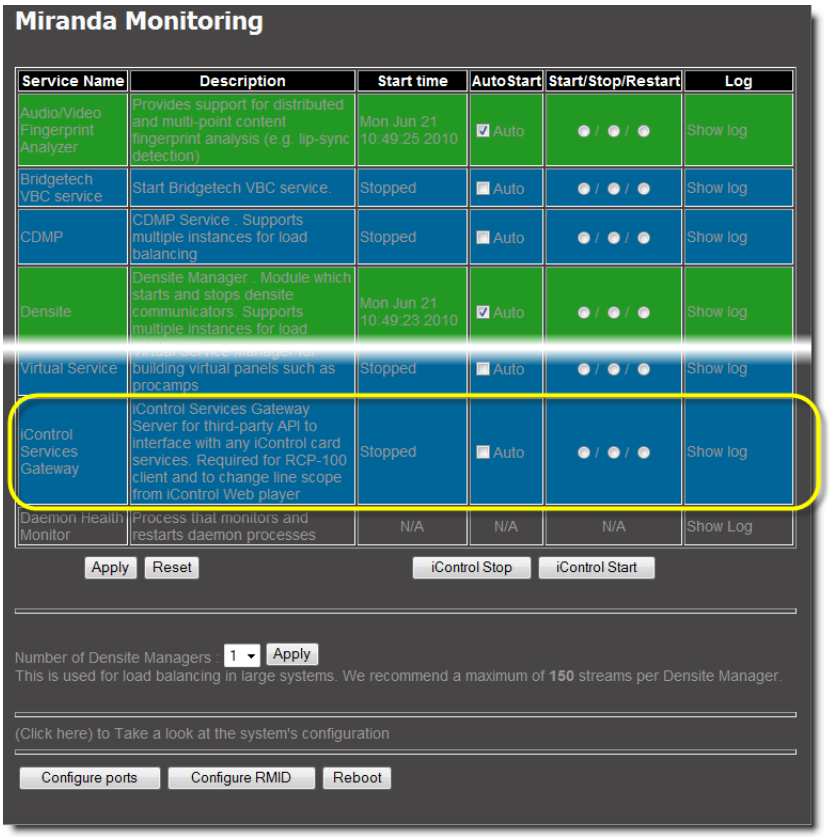



The Miranda Monitoring page appears.

All iControl services available on the current Application Server are listed in a table, one service per row. A row's background color indicates the service state:

- Green indicates an active service
- Blue indicates an inactive service
- Red indicates a problem with the service.

3. On the Miranda Monitoring page, locate the **iControl Services Gateway** row in the list of services on the Miranda Monitoring page.



4. In the **Auto Start** 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 row corresponding to iControl Services Gateway will be green (indicating that the service is active).

## Task 6: Configuring GPI Outputs on a GPI-1501

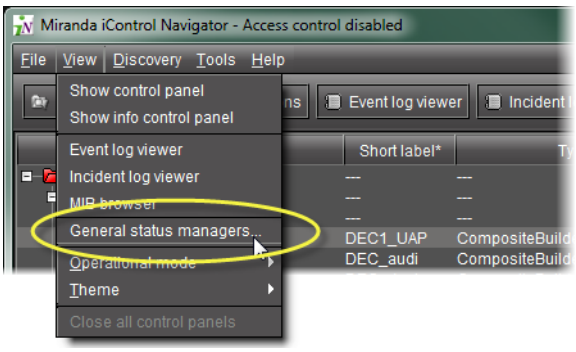
This procedure allows you to configure the GPI outputs on a GPI-1501 to respond to alarms triggered on another card on the iControl network.

**REQUIREMENT**

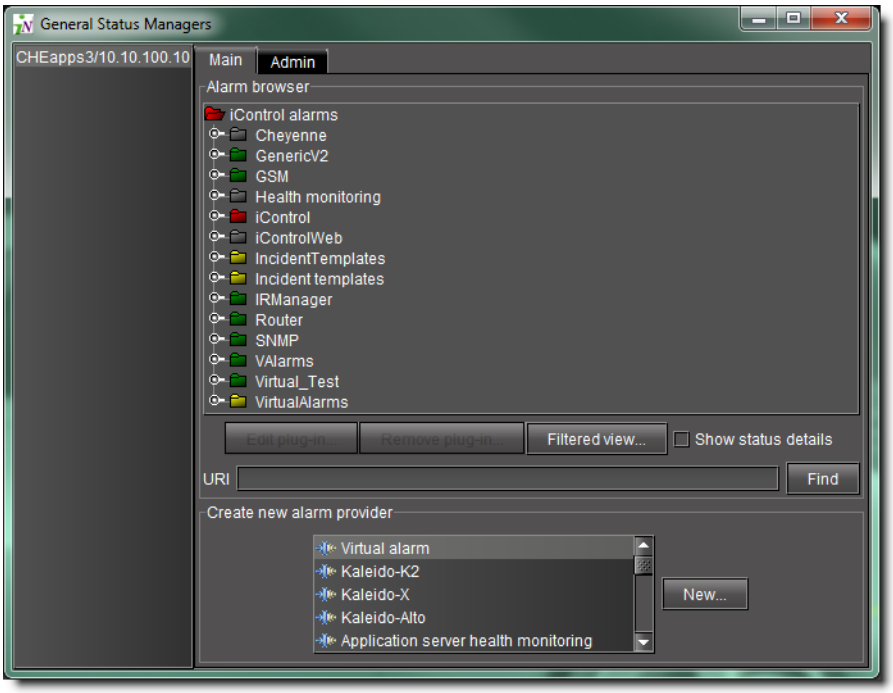
Before beginning this procedure, make sure you have opened iC Navigator.

**To configure GPI outputs on a GPI-1501**

1. In iC Navigator, on the **View** menu, click **General status managers**.



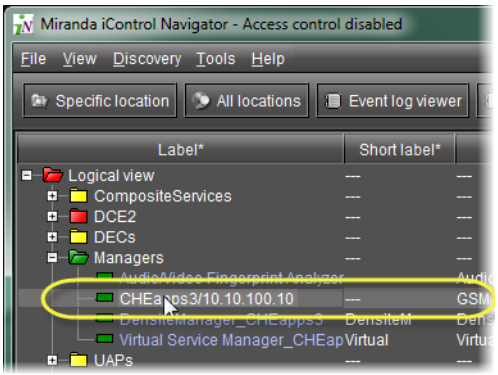

The **General Satus Managers** window appears.

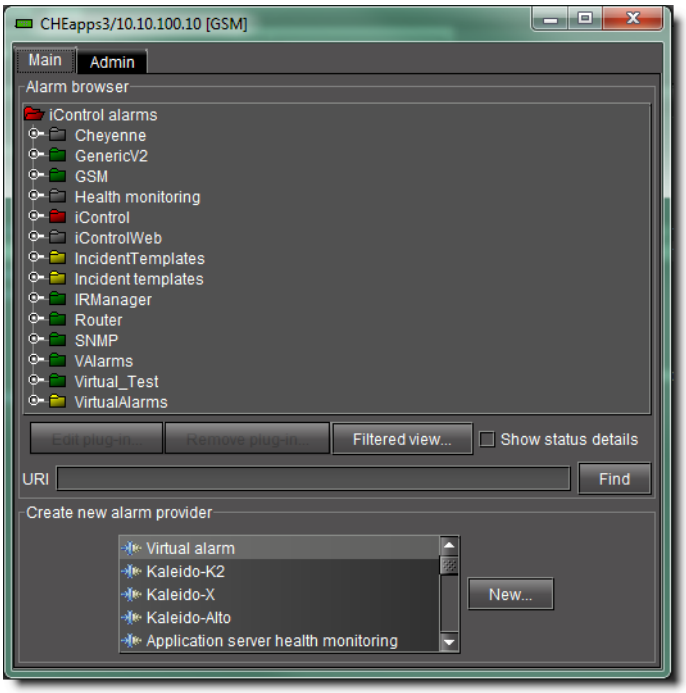



2. Select one of the GSMs from the list in the left pane of the window.

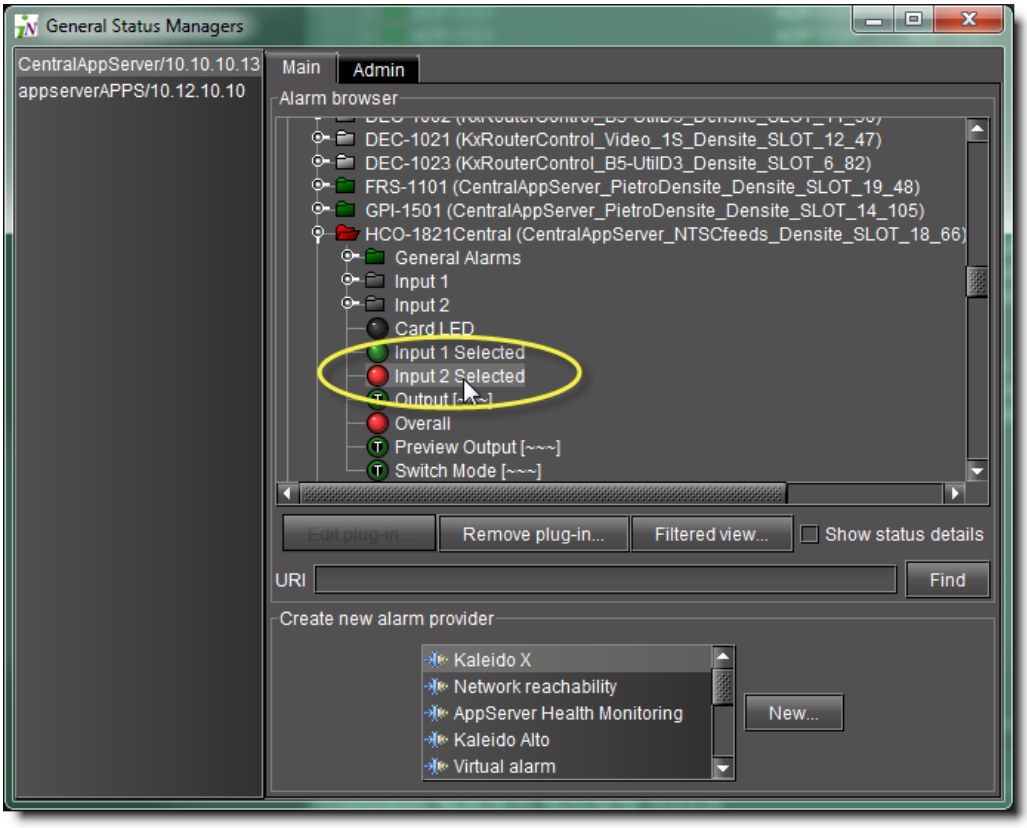
   The Alarm Browser (under the **Main** tab) displays the devices and services associated with the selected GSM in a hierarchy of folders, subfolders, and alarms.

> **Note:** You can, alternatively, open the Alarm Browser for a specific GSM by double-clicking its name in the iC Navigator window. This opens the Alarm Browser in a smaller window.

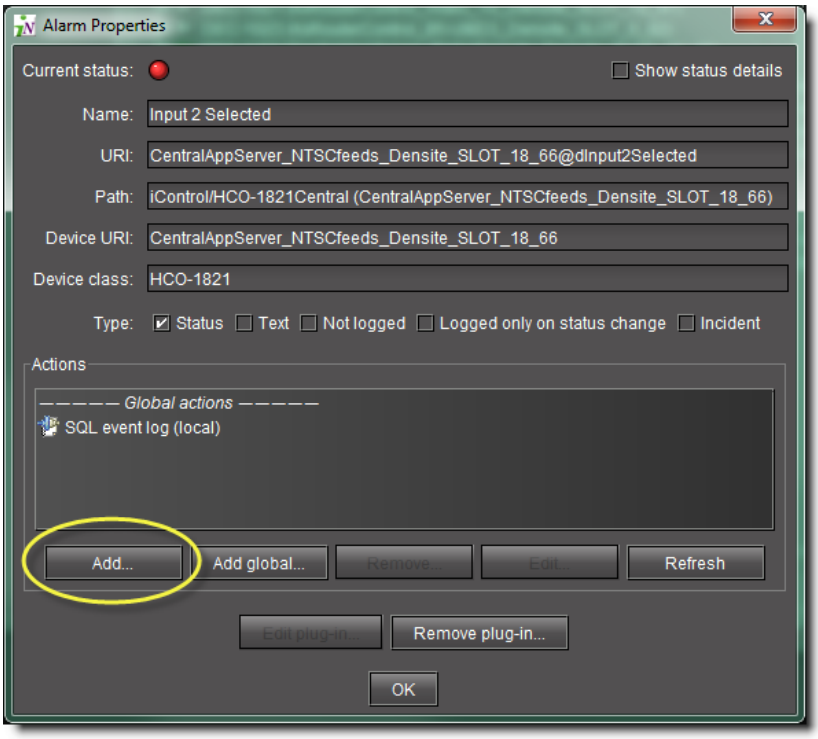




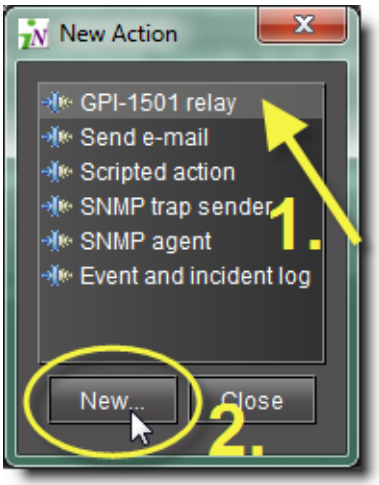

3. Use the vertical scroll bar to find the alarm for which you would like to trigger a GPI output on a GPI-1501 card.



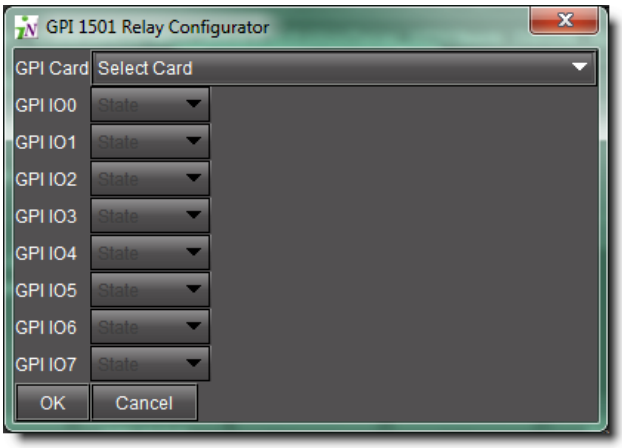
4. Double-click the alarm.
   The **Alarm Properties** window appears.



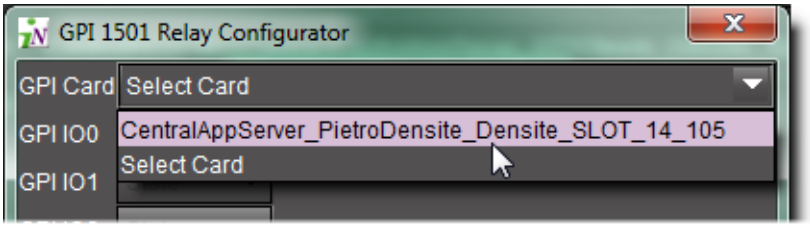

5. Click **Add**.
   The **New Action** window appears.
6. Click **GPI-1501 relay** to select it.
7. Click **New**.




The **GPI-1501 Relay Configurator** window appears.



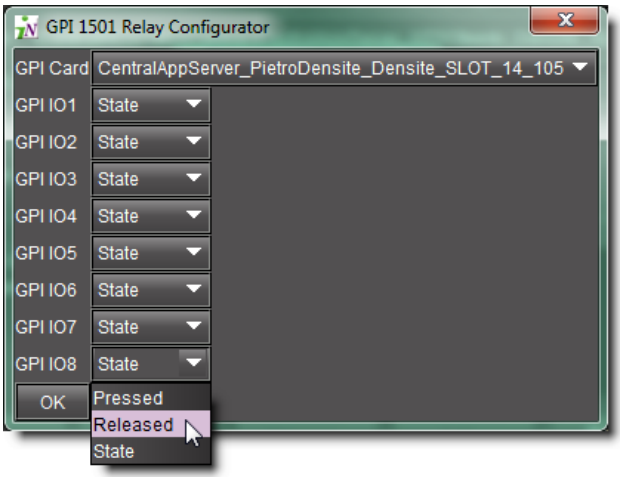

8. In the **GPI Card** list, select the GPI-1501 card whose GPI outputs you would like to control from this alarm.




> **Note:** Only configurable GPIs that are configured as OUT on the GPI-1501 card itself can be operated in this manner.

The eight output relays on the selected card are shown. The names of the GPIs are set in the GPI I/O Config panel of the GPI card itself.

9. You may program one or more GPI outputs on this card or on other cards to respond to this alarm.



Each GPI out on this GPI-1501 card can be programmed to respond to a different alarm from a different card. The eight output relays on the selected card are shown. The names of the GPIs are set in the GPI I/O Config panel of the GPI card itself.

- **Pressed** = high
- **Released** = low

**Notes**

- If you leave it at State, the GPI is not programmed to respond to this alarm, and can be assigned to a different alarm.
- You can use the labels to identify the alarm source once it is set.

10. Click **OK** when done, or **Cancel** to leave the status unchanged

    This new event appears in the **Actions** window in the **Alarm Properties** panel.

**Note:** You can edit or delete the event by selecting the GPI-1501 action and clicking **Edit** or **Remove**, respectively.

**See also**

For more information, see the *Densité Series GPI-1501 General Purpose Interface I/O Module Guide to Installation and Operation* (**M906-9900-100**).

# Task 7: Connecting & Configuring Devices

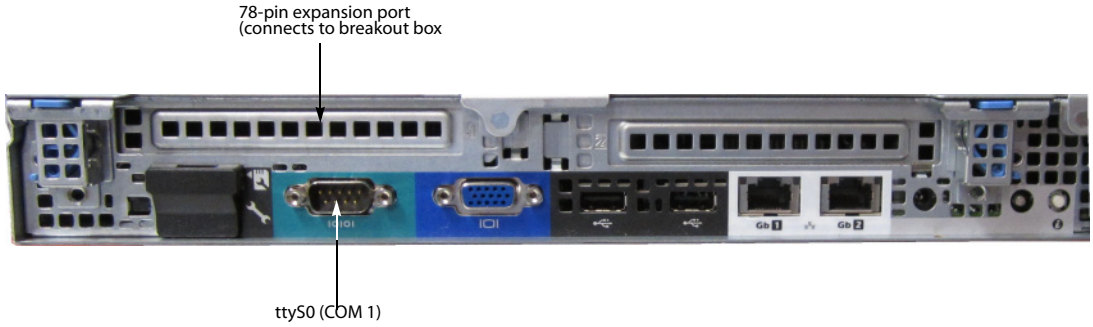
The iControl Application Server communicates with devices in your network over both serial and TCP/IP connections. Once these connections are made physically (using the appropriate cabling), the corresponding ports must be configured.

## Configuring Serial Ports

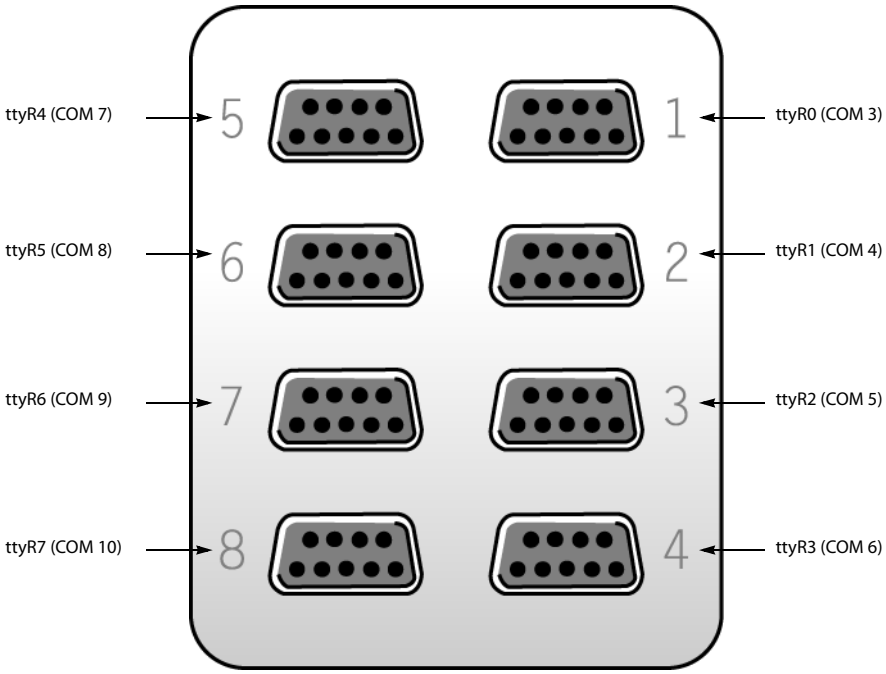
In its standard configuration, the iControl Application Server has two built-in RS-232 ports (one internal, one external). An 8-port expansion card with breakout box optionally can be purchased to accomodate eight RS-422 serial ports.

| Port Designation | | Protocol |
|---|---|---|
| TTY | COM | |
| R0 | 3 | RS-422 |
| R1 | 4 | |
| R2 | 5 | |
| R3 | 6 | |
| R4 | 7 | |
| R5 | 8 | |
| R6 | 9 | |
| R7 | 10 | |

| Port Designation | | Protocol | Connector Location |
|---|---|---|---|
| S0 | COM 1 | RS-232 | rear panel |
| S1 | COM 2 | RS-232 | internal |




*Dell PowerEdge R310 with optional 8-port serial expansion card*




*RocketPort 8-port serial breakout box*

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

## Configuring Serial Ports for a Specific Application Server

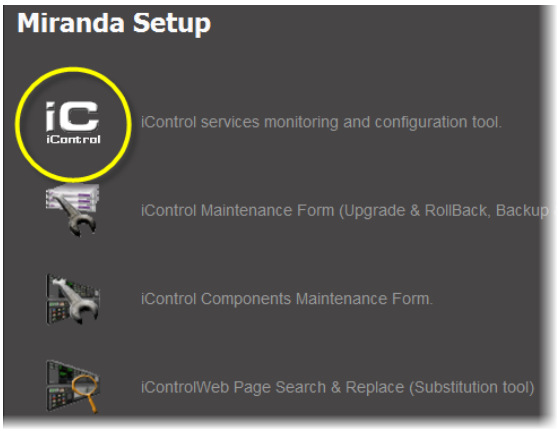
**REQUIREMENTS**

Make sure you meet the following conditions before beginning this procedure:

- You have opened iControl.
- You are logged on to iControl Webmin (see page 23).

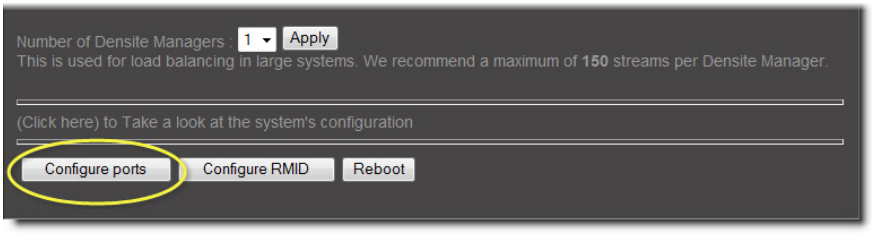
**To configure serial ports for an Application Server**

1. On iControl's Webmin page, click **Miranda iControl Management Tool**.
   The Miranda Setup page appears.
2. Click the icon beside **iControl services monitoring and configuration tool**.

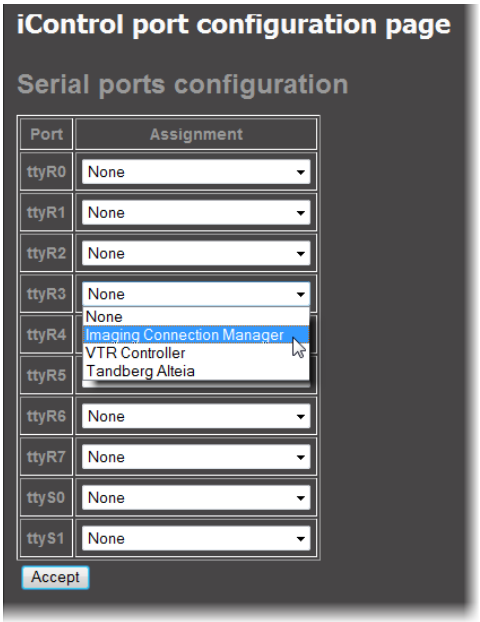



The Miranda Monitoring page appears.

3. Click **Configure Ports**.




The iControl port configuration page appears, showing all available ports and their current assignments. Some ports may be assigned, even if this is the first time the Application Server has been configured.




4. Choose an assignment for each active port from its drop down menu.

| Port Assignment | Description |
|---|---|
| None | Configures the port to communicate with standard RS-422 devices (usually used for routers) |
| Imaging Connection Manager | Configures the port to communicate with Miranda'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 |

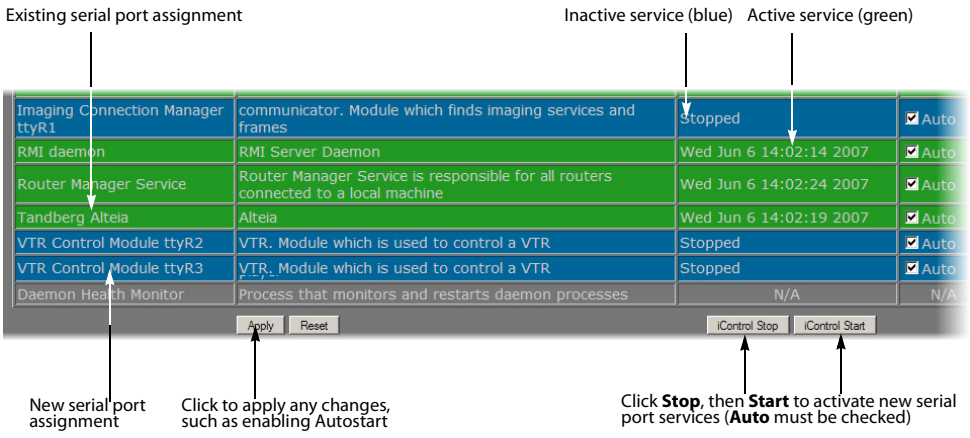
**Note:** It is good practice to activate only the required ports, since the Application Server will unnecessarily monitor active ports that are not in use.

5. When you have finished assigning ports, click **Accept**.

   The Miranda Monitoring page reappears, with new rows in the list of services for each of the newly assigned ports.

   If more than one port has been assigned to an Imaging Connection Manager or VTR Connection service, there will be a new row for each, identified by the port number. Only one row for the Tandberg Alteia service will be created, even if more than one port has been assigned to that service.

   A green background indicates a service that is running. Blue indicates a service that is stopped.




*New rows in list on iControl Services Monitoring and Configuration Tool page*

6. In the **AutoStart** column, select the Auto check box for each of the services corresponding to the newly assigned serial ports.

   This will cause the services to start automatically if the Application Server is rebooted.

7. In the **Start/Stop/Restart** column, click **Start** for each of the services corresponding to the newly assigned serial ports.

8. Click **Apply**.

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

## Task 8: Configuring System Time

Application Servers have both a *system time* and *hardware time*. The system time reflects the time set in the operating system. The hardware time reflects the time set in the Application Server's own BIOS.

You may choose to peg the system time or hardware time (or both) to the system time of another server. The other server must be either running an NTP (Network Time Protocol) server, or have the time protocol enabled in the *inetd* super-server daemon.

> **Note:** For your system to use NTP for synchronization you must have the `ntpdate` NTP client program installed.

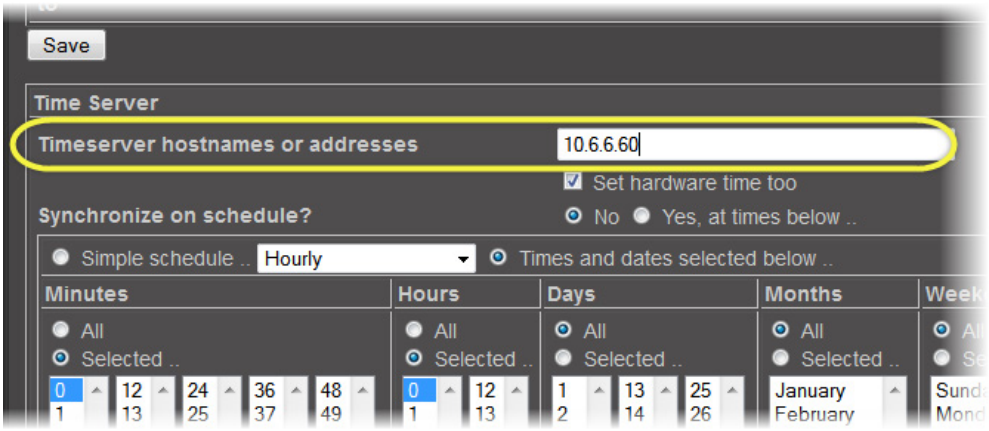
**REQUIREMENTS**

Make sure you meet the following conditions before beginning this procedure:

- The remote Application Server whose system time you would like to synchronize to, is online and functioning.
- On the Application Server whose system time you would like to configure, you are logged into iControl and you have navigated to the System Time page.

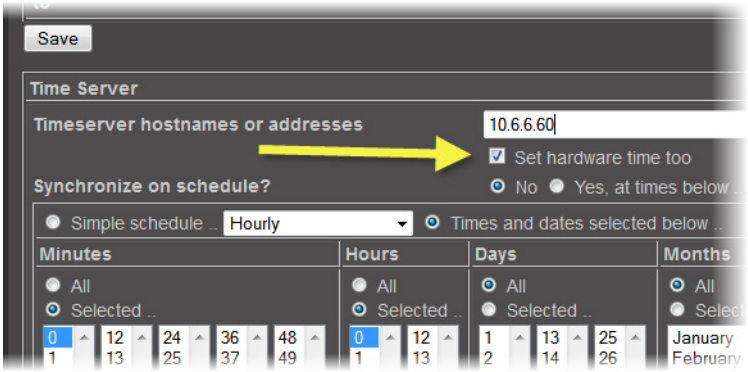
**To synchronize an Application Server's system time to that of another server**

1. On the System Time page in iControl, in the **Time Server** area, type the host name or IP address of the remote NTP server in the **Timeserver hostnames or addresses** box.

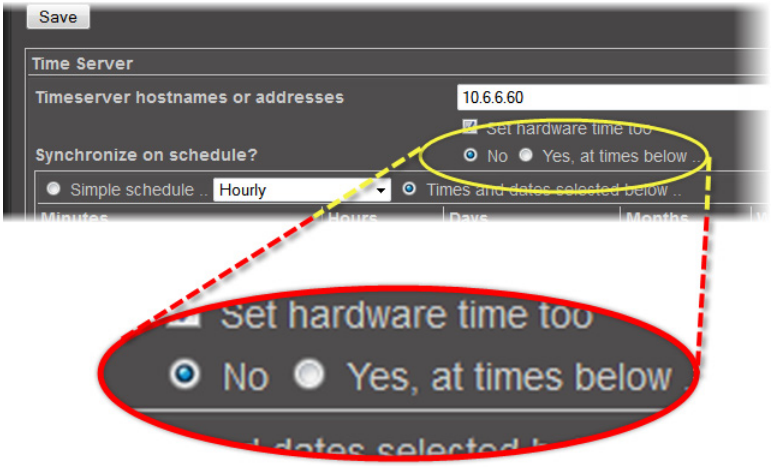



2. Select **Set hardware time too**.

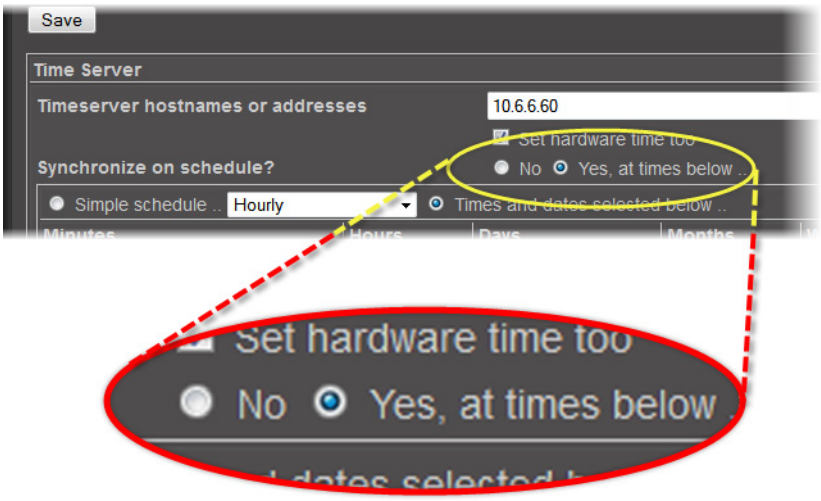
> **Note:** This check box should always be selected as Miranda recommends pegging hardware time to system time.



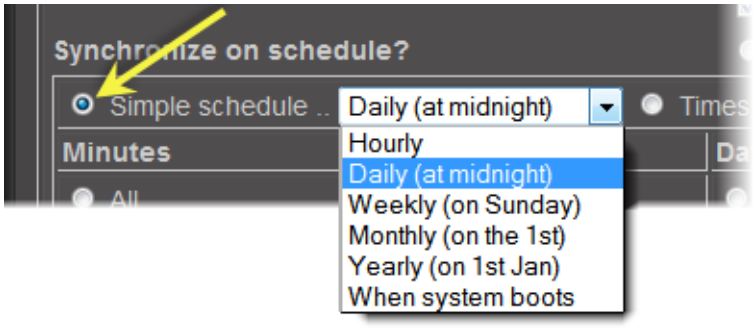

3. If you would like to synchronize just this one time and **NOT** perform scheduled synchronization sessions in future, select **No** next to **Synchronize on schedule**, and then proceed to step 7.




4. If you would like to schedule recurring synchronization sessions, select **Yes** next to **Synchronize on schedule**.

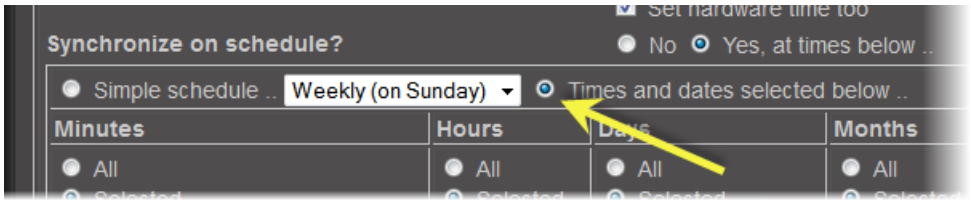


5. If you would like to configure a simple recurring schedule, perform the following sub-steps:
   a) Select **Simple schedule**.

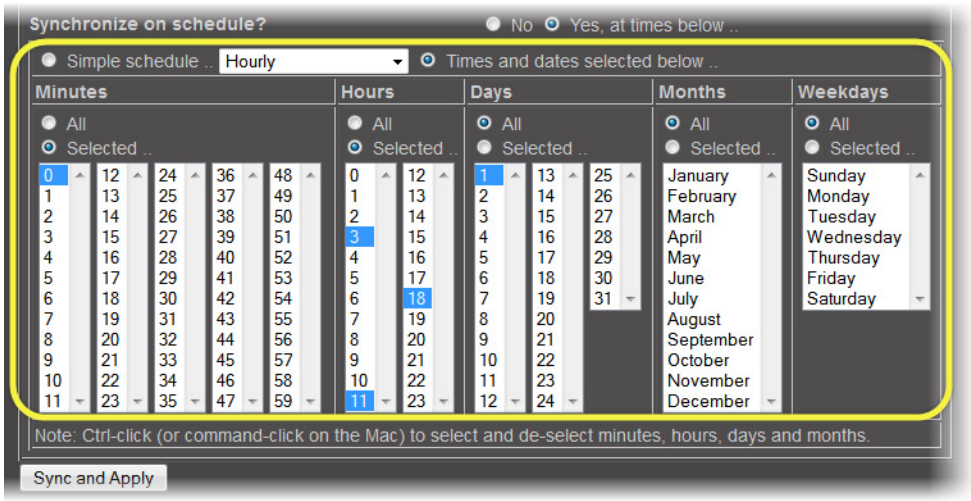



   b) In the list, select the desired synchronization frequency.

6. If you would like to configure specific times and dates for synchronizing, perform the following sub-steps:
   a) Select **Times and dates selected below**.



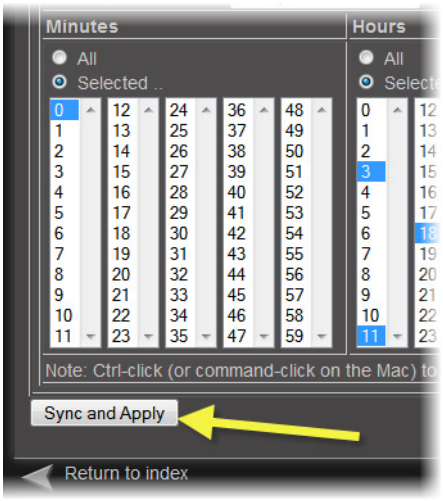

   b) In the **Minutes** area, select specific minutes (in conjunction with the **Ctrl** key) by first selecting **Selected**, or else select **All** to choose every minute.




   c) In the **Hours** area, select specific hours or all hours, as required.
   d) In the **Days** area, select specific days or all days, as required.
   e) In the **Months** area, select specific months or all months, as required.

f) In the **Weekdays** area, select specific days or all days, as required.

7. Click **Sync and Apply**.



# Contact Us!

## Miranda Technical Support

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