![HIRSCHMANN logo]

# Managed Switch Quick Start Guide

**Note**:  The purpose of this guide is to help you get your Hirschmann managed switch "up & running" as quickly as possible and recommend switch settings that are suitable for many industrial Ethernet applications.  This is only a general reference; your particular network may require different settings. The applicable switches covered by this guide are the Rail (RS20 & RS30) and the MICE (MS20 & MS30).  Also note that *none* of the configuration settings in this guide are required for switch operation; only make changes if your application will benefit from them. For more detailed information, review the manuals available on the CD-ROM that shipped with the switch; these include the Installation Manual, Basic Configuration Manual, Web Interface Manual, Redundancy Manual, and Command Line Interface (CLI) Manual.

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**Need more help?**

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|---|---|
| Website: | www.hirschmann-usa.com |
| FTP site: | ftp.hirschmann-usa.com (manuals, firmware, software, etc.) |
| Technical Support: | (717) 217-2200 option 4 |

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## First…

- Provide 24 VDC power to both +24V terminals of the switch (#1 & #6 on Rail and #1×2 on MICE).  If redundant power supplies are not being used, then a jumper can be used between these terminals to prevent a fault (indicated by solid red LED).  Also connect the 0 V common (#3 or #4 on Rail and #2×2 on MICE) and optionally, the fault contact (normally-closed for indication of alarm such as lost power supply, redundancy active, lost link, or temperature out of range).
- All DIP switches should initially be set to OFF (located on the front (RS20/30) or bottom side (MICE MS20/30) of switch).
- To set the IP address of the switch and logon to the switch's web configuration page, use **HiDiscovery**:
    - Install HiDiscovery (available on the switch's CD-ROM or at ftp.hirschmann-usa.com).
    - Connect an Ethernet cable between your computer and any port on the switch.
    - Run HiDiscovery.  It will scan the network and list all connected Hirschmann managed switches.  (If no switches are shown, make sure the correct network interface is shown in the pull down list.)
    - Select the switch to be configured.  Use the "Signal" button to flash the switch's LEDs for identification.
    - Click on the "Properties" button (or just double-click on the switch address) to open a window to set the name (e.g., Panel #1 Switch), IP address, and subnet mask.  Click OK.
    - Click on the "WWW" button to launch the switch's web configuration page in Internet Explorer (no internet connection is required).
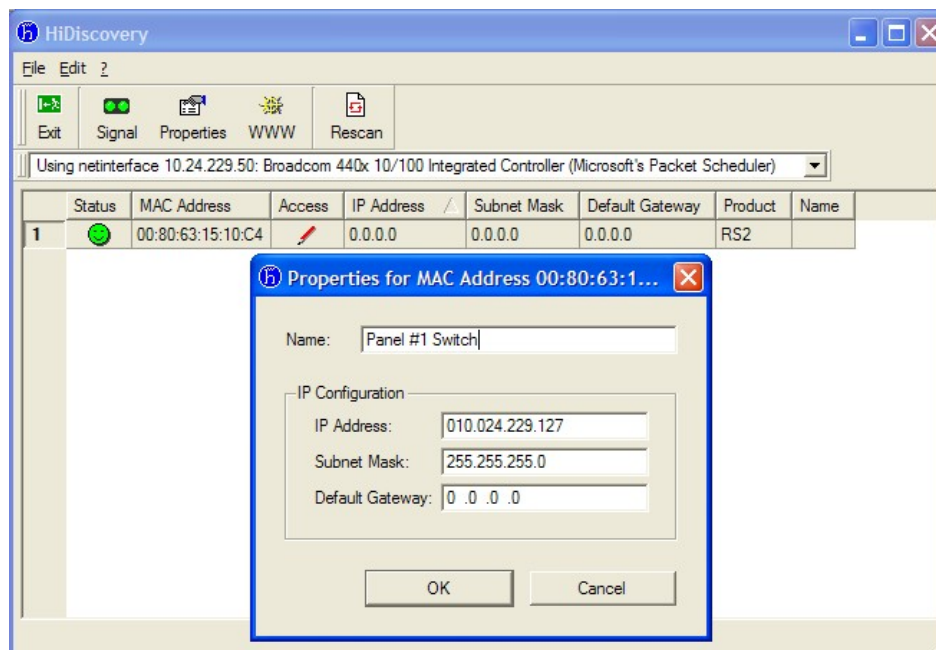
**Login Page**
- The login for read/write access is "admin"; the password is "private". This password may be changed.
- If you are unable to see this page:
    - Make sure you have Java installed (available on the switch's CD-ROM or from www.sun.com)
    - Make sure your computer is in the same subnet as the switch. For example, if the switch's IP address is 10.10.10.5 and its subnet mask is 255.255.255.0, then your computer's IP address should be between 10.10.10.0 and 10.10.10.255). To set the IP address of your computer, open the "Network Connections" folder (Windows XP), right-click on "Local Area Connection" and select "Properties". Next, scroll down to "Internet Protocol (TCP/IP)" and click on "Properties".
    - There is a several second delay after the switch finishes its self-test before the web page is displayed.
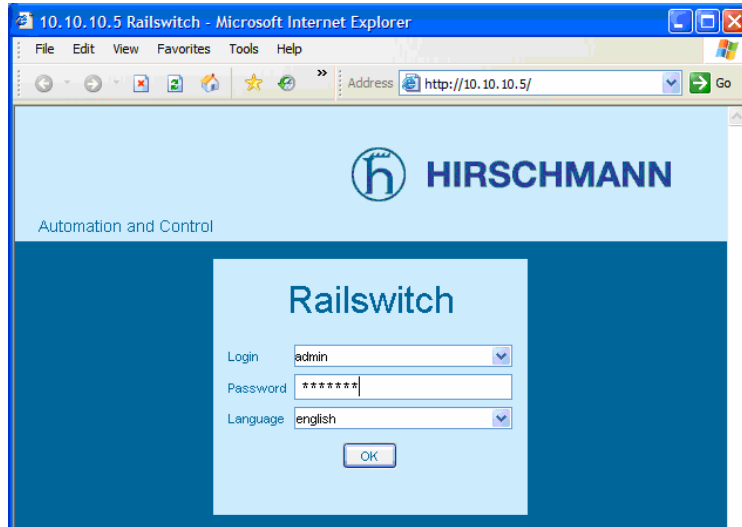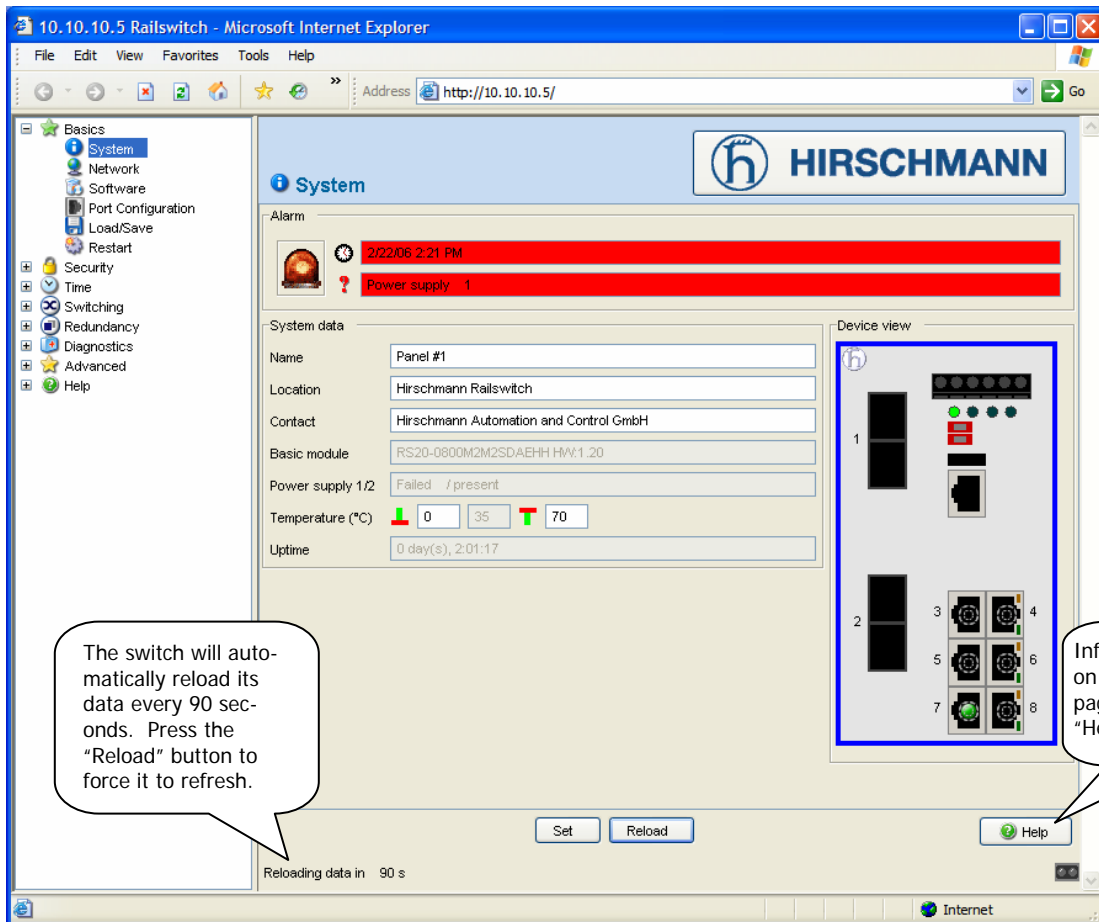


- Logging in will take you to the **Basics>System** page.

**Important**: When making configuration changes, be sure to click on the "Set" button on each page. When all configuration changes are complete, go to the **Basics>Load/Save** page and then "Save configuration" to "Local". This will save all changes to the switch's nonvolatile memory. To reset the switch to factory default settings, select "Delete – current configuration and local" and then click on the "Delete configuration" button (the IP address will be reset as well).
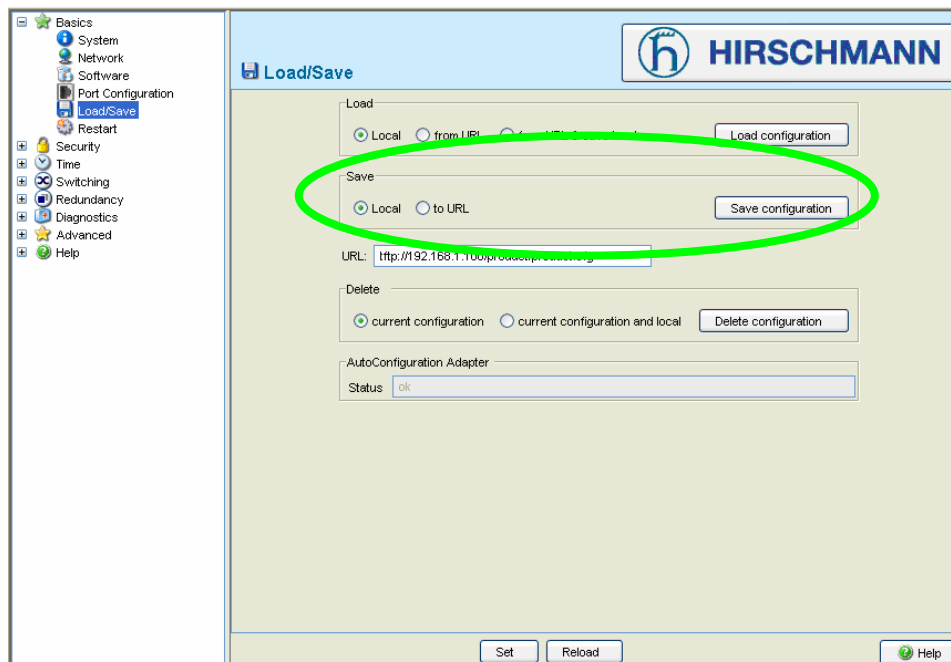
## Basics>System Page
- This page provides basic information about the switch.
  - o Name, location, and contact information may be changed
  - o Temperature limits may be modified ("temperature out of range" can be used as an alarm)
  - o "Basic module" provides the switch's part number
- The "Device View" will change depending on what switch you are using. Hover your cursor over a port to get information about it. The port graphics will change if the port is connected, turned off, etc.
- If an alarm is shown for a power supply (as in the screenshot below), then redundant power supplies are not being used or the +24VDC inputs are not jumpered. Alternatively, you can tell the switch to ignore this alarm by going to the **Diagnostics>Signal Contact** page -- click "Ignore" for Power supply 1 & 2 and then click Set. Go back to the **Basics>System** page and click on the Reload button to refresh the alarm data (it should now be cleared).



The switch will automatically reload its data every 90 seconds. Press the "Reload" button to force it to refresh.

Information is available on most configuration pages by clicking on the "Help" button
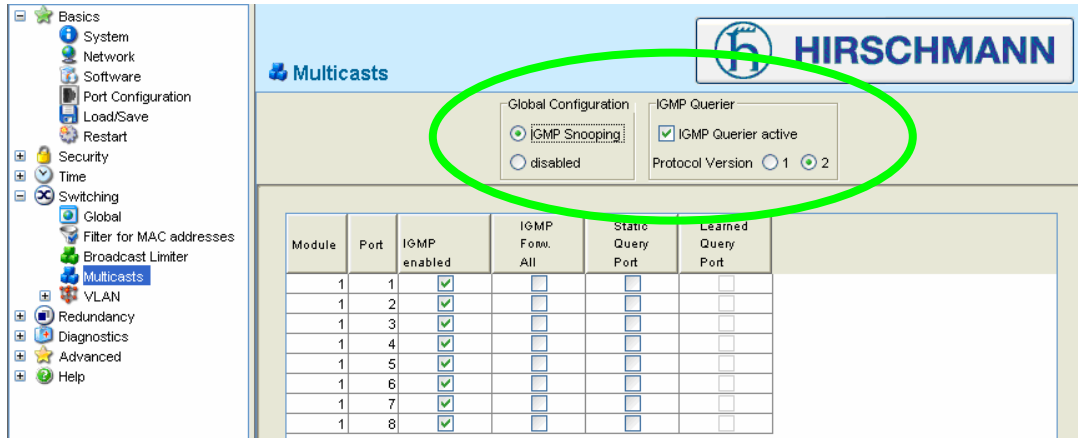
## Redundancy Configuration (if applicable)
- **HiperRing:** Turn ON the RM (redundancy manager) DIP switch on exactly ONE of the switches in the network (on MICE, also turn ON DIP switch 4/Configuration). Daisy chain the switches' ring ports together and then connect the last switch to the first to create a ring. No software configuration changes are required.
  Alternatively, the **Redundancy>HIPER-Ring** web page can be used to configure HiperRing. On the Rail switches, the ring ports can be custom configured (RM DIP switch is ON). On the MICE, turn all DIP switches OFF; the ring ports can be custom configured and Redundancy Manager can be turned on. With either configuration, redundancy status may be monitored via the web page, RM LED, fault contact, SNMP, or OPC.
- **RSTP** (Rapid Spanning Tree Protocol): Go to the **Redundancy>Rapid Spanning Tree** page for a description of RSTP operation. Enable RSTP by going to the **Redundancy>Rapid Spanning Tree>Global** page and selecting "Operation – On". When using RSTP on a MICE MS20/MS30, all DIP switches should be OFF; on a Rail RS20/RS30, both DIP switches should be ON.

**Switching>Multicasts Page** (if switch is on an Ethernet/IP network)
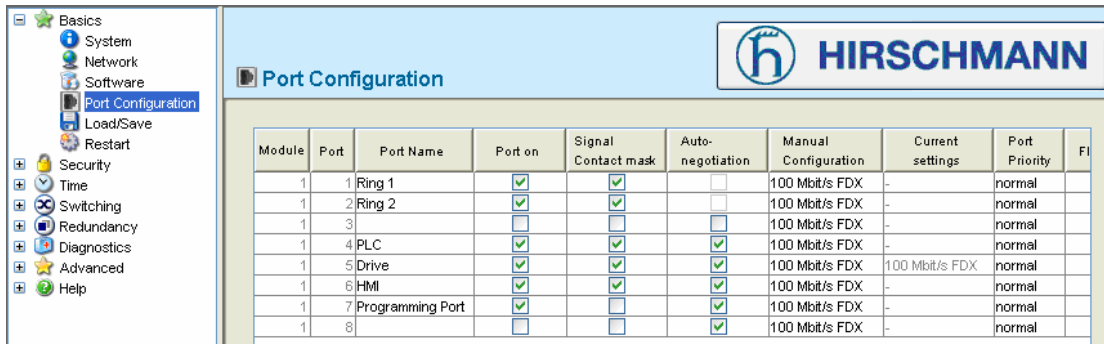
- Select "IGMP Snooping"
- "IGMP Querier active" and "Protocol Version 2" should already be turned on
- Click on the "Set" button
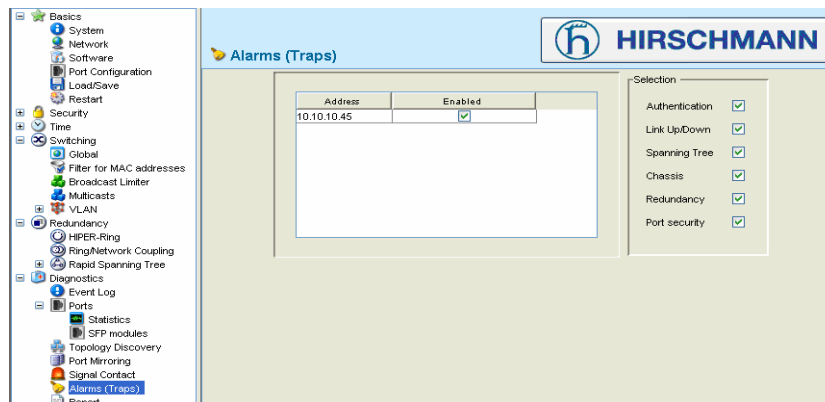


**Basics>Port Configuration Page**

- All copper ports should normally be set for auto-negotiation (except ring ports if HiperRing redundancy is being used).
- If link status alarming is desired, check the box in the "Signal Contact Mask" column for all ports that have a full-time connection. On the **Diagnostics>Signal Contact** page, turn on monitoring for "Connection error".
- Ports may be given a name to specify what is connected to each port.
- Unused ports may be turned off by unchecking the "Port on" box; this can limit unauthorized access to the network.



**Diagnostics>Alarms (Traps) Page**

- If HiVision, HiOPC, or another network management software tool will be used to monitor the network, click on the "Create entry" button, enter the IP address of the computer(s) that will be running the software, and then check the "Enabled" box. The switch's SNMP (Simple Network Management Protocol) alarms will now be sent to that computer.

## Diagnostics

- **Diagnostics>Ports>Statistics page**: This table can be used to check for collisions, CRC errors, or fragments. If the data in these three columns is not zero, check the Port Configuration table to see if there are any ports connected at half-duplex (HDX under "Current settings"). If the device at that port supports full-duplex, turn off auto-negotiation on that port and select either 10 or 100 Mbit/s **FDX** from the "Manual configuration" pull down list. The statistics table can be reset via the **Basics>Restart** page ("Reset port counters").

- **Diagnostics>Signal Contact page**: Configure the normally-closed signal contact to provide indication of a lost power supply, temperature out of range, module removal (MICE), ACA removal, connection error, HiperRing status, and/or ring/network coupling. For example, this contact could provide indication that a control panel's temperature is too high or that there is a break in the HiperRing or that the connection to a PLC was lost. Check the "generate Trap" box to have the switch create alarms based on these events that will be logged and can be monitored remotely. The MICE (MS20/30) switches have two signal contacts that can be configured independently.

- **Diagnostics>Event Log page**: Provides a time stamped log that includes switch alarms/traps.

# Appendix: Backing Up and Restoring the Switch Configuration

## Backing up & restoring switch configuration using an ACA21 Auto-Configuration Adapter or USB drive

- To backup the switch's configuration & IP address, insert an ACA21 or USB drive (not all drives are supported) into the switch's USB port and then go to the **Basics>Load/Save** page. Select "Save - Local" and then click on "Save Configuration". The configuration will be stored in both the ACA21 and the switch's memory. Press the "Reload" button to refresh the display. The "AutoConfiguration Adapter" message will give you the current status of the ACA21:
    - o notPresent: ACA21 is not inserted
    - o notInSync: The configuration in the ACA21 does not match the one in the switch
    - o ok: The configuration in the ACA21 matches the one in the switch
- To restore the switch's configuration & IP address, plug the ACA21 into the USB port, and then power on the switch. The configuration and IP address will automatically be loaded into switch memory. This can be used in the event of a switch failure, to correct a misconfigured switch, or to "copycat" the configuration to multiple switches.
- When not in use, unplug the ACA21 from the switch and attach it to the panel near the switch or store it in a safe place.
- The ACA21 or USB drive may be inserted into a computer to archive the switch configuration file "switch.cfg".
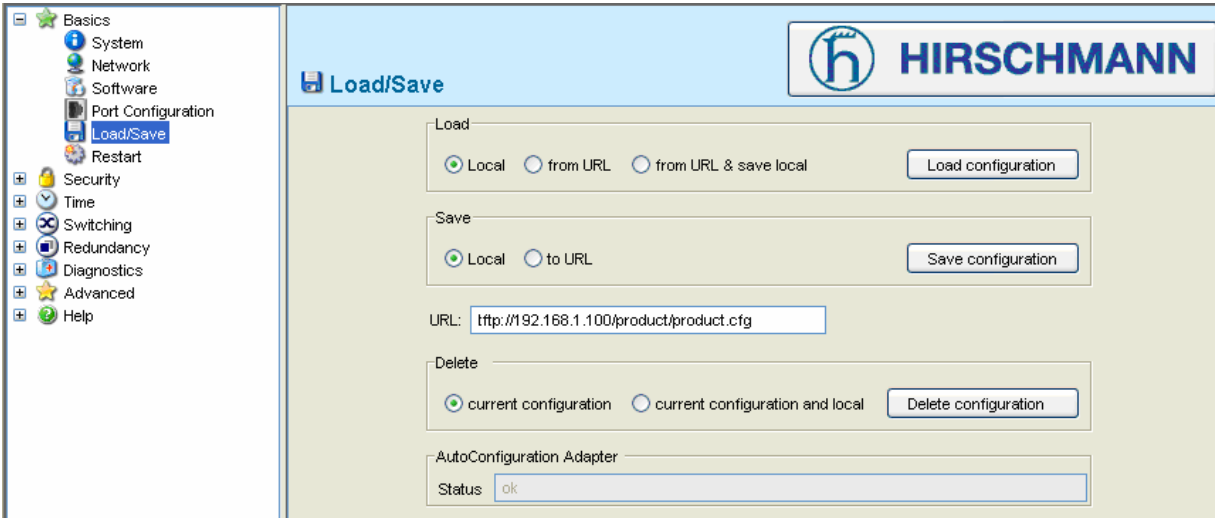


## Backing up & restoring switch configuration to a computer using TFTP (Trivial File Transfer Protocol)

- Download and install a TFTP server. TFTPD32 can be downloaded from ftp.hirschmann-usa.com.
- Run the application and set the default (current) directory. This directory will be where files are saved to or loaded from by the switch (for example, your "My Documents" directory).
- On the switch's **Basics>Load/Save** page, enter the URL of the TFTP server. This will be in the format of "tftp://<computeripaddress>/<configfilename>.cfg"; for example, if the IP address of the computer running the TFTP server is 10.24.229.50, then the URL would be: tftp://10.24.229.40/switch.cfg. Click on "Set".
- To save the switch's configuration to the computer or to load a previously saved configuration, click on "Save – to URL" or "Load – from URL & save local".