

# ESSENTIALS



© Contemporary Control Systems, Inc.

## SwitchInfo — Free Ethernet Troubleshooting Tool

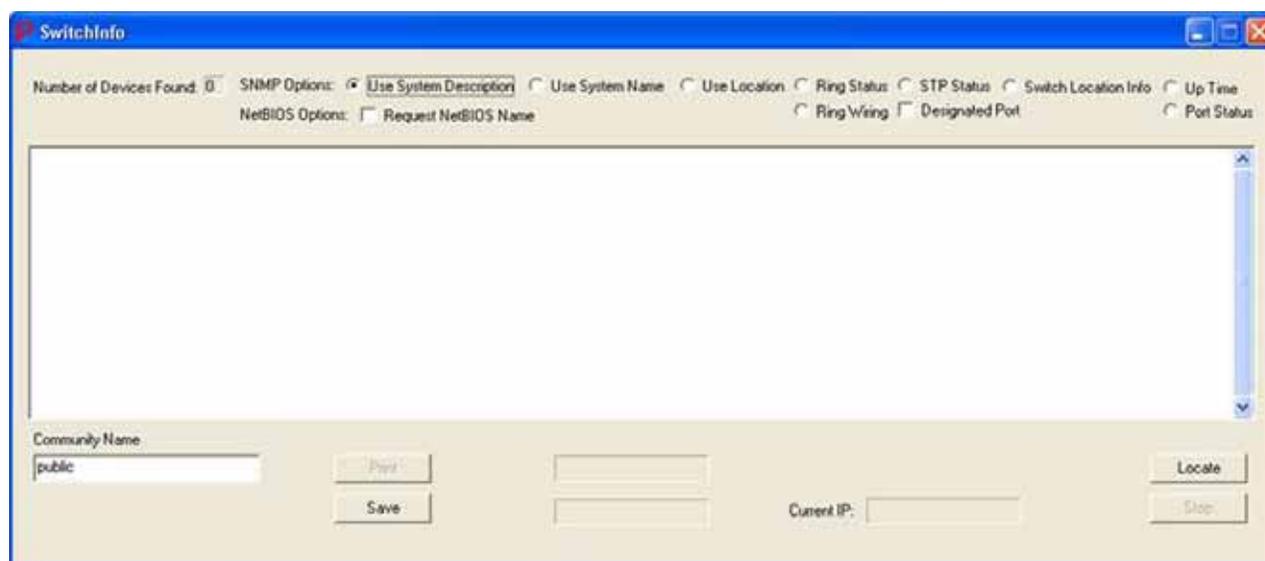
**SwitchInfo** is a free Ethernet troubleshooting tool available from the Contemporary Controls website. Although it is primarily used to extract information from the Simple Network Management Protocol (SNMP), it is also useful with unmanaged switch networks. There are various tools you can use for troubleshooting — each appropriate to a certain level of Ethernet communications. For unmanaged switches, Ethernet port LEDs give quick and simple information. Of course managed switches also have LEDs, but managed switches also offer detailed port information — typically viewable with a web browser. You can use a protocol sniffer to get more detailed information, but **SwitchInfo** can reveal a lot about your network — and is much easier to use than a sniffer.

**SwitchInfo** can be especially useful when there are many switches in your system. Would you want to look at the web pages of 100 switches? When you are dealing with redundant ring networks, such as **RapidRing**®, it may be difficult to determine if the ring is wired correctly and if the entire network is problem-free.

### Before Using SwitchInfo

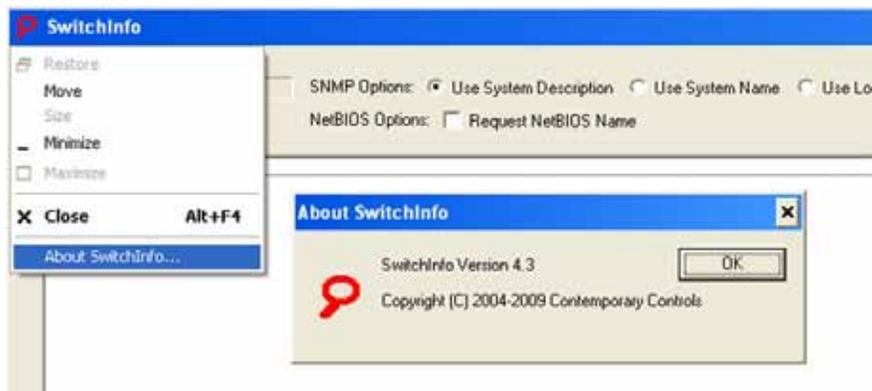
First make sure each device of interest is currently functioning and accessible. If the host computer has more than one Ethernet card, **SwitchInfo** will select one without your input. Therefore, you may need to disable one of the cards before running the application. If the host has only one card, there will be no problem.

**SwitchInfo** operates under Microsoft Windows® — either Windows XP or Windows 7. Under Windows 7, be sure to run the program as an administrator — otherwise it will run but it will not report any discovered devices. To launch with administrator privileges, right click the application and select Run as administrator. After initiating **SwitchInfo**, the following screen appears. To find the switch status of all switches in the network, select the Use System Description radio button as shown below:



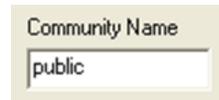
## Version Information

Click on the magnifying glass located in the upper-left corner — and in the drop-down menu select *About SwitchInfo...* to see which version you are using as shown to the right:



## Setup

In the lower-left corner, enter the SNMP Community Name. This is “public” by default. Each device discovered by **SwitchInfo** must use the **same** community name.



In the lower-right portion of the screen, press Locate.



You will be prompted for the IP range you want to scan. Enter the smallest and largest IP address of the range of addresses for all switches — for example:

Start IP address      10.0.0.1  
End IP address        10.0.0.254



The range can include devices that are not of interest to you. If other devices fall within this range, they will simply report a MAC address but no SNMP status — or they will not show up at all.

## Scanning

After entering the IP range, **SwitchInfo** will begin to scan the network. The MAC and IP addresses of the host PC is then displayed. And a progress bar appears over Current IP (the address currently being scanned).



## Scan Results

The upper-left corner of the screen will display the number of devices found and the middle portion of the screen will display the results for each device contacted.



**SwitchInfo** first uses Ping — then tries to communicate via SNMP. If Ping is the only successful method, the IP address and MAC address of the device will appear. If SNMP is successful, you will see the SNMP information received. Double-clicking any entry will launch your default browser and display the device web page — if the device supports web pages (our managed switches do) — otherwise, an Internet 404 error shows in the browser window.



If desired, you can save your scan by clicking the Save button near the bottom of the screen.

A file named **SwitchInfoFile.txt** is then created in the same folder where the **SwitchInfo** application resides. The *Print* button is currently reserved for future use.



## SNMP Options

When communicating with devices on the network, you can use these options to indicate what kind of information that **SwitchInfo** will seek. By default, *Use System Description* is checked.



The screenshot shows a configuration interface for SNMP options. It is divided into two sections: 'SNMP Options' and 'NetBIOS Options'. In the 'SNMP Options' section, there are several radio button options: 'Use System Description' (which is selected), 'Use System Name', 'Use Location', 'Ring Status', 'STP Status', 'Switch Location Info', and 'Up Time'. In the 'NetBIOS Options' section, there are three checkbox options: 'Request NetBIOS Name', 'Ring Wiring', and 'Designated Port'. The 'Port Status' option is also visible but not checked.

**Use System Description** — good to learn what is on the network. It will show you the name assigned by the manufacturer of each SNMP-supported device — such as servers, switches, some PCs, etc.

**Use System Name** — a name you can assign. Many devices may not have this field assigned.

**Use Location** — an SNMP field you can set to indicate the location of a device.

**NetBIOS Name** — useful when scanning computers running Microsoft Windows.

**Ring Status** — displays the status of each **RapidRing**<sup>®</sup> (RR) switch. This is a good way to confirm that every switch is configured for RR and each switch's RR status (*ring complete* or *ring incomplete*).

**Ring Wiring** — asks each switch which port has knowledge of the PC running **SwitchInfo**. You will then see a single port for each switch. This is only useful for confirming proper RR network connections. Connect your PC to the RR master switch. If the ring is complete, all switches should show the even ring port (8 or 2), except for the switch to which you are directly connected. If the ring is broken, you will see even ring ports on one side of the break and odd ring ports (7 or 1) on the other.

**STP Status** — displays the STP or RSTP status of each switch in the network. This is useful when diagnosing large RSTP systems.

**Designated Port** — for STP Status requests, choose this to learn the MAC address of the designated device connected to each port.

**Switch Location Info** — learns the MAC address of each switch in the scanned IP address range. It then asks each switch which of its ports has knowledge of this MAC address. This will reveal the *network topology* (how the switches are interconnected) and can confirm customer documentation. This may not function properly if a non-CCSI managed switch is within the scanned range.

**Up Time** — displays the number of seconds each switch has been powered up. This is good to know when diagnosing large systems. For example: If a few switches have a very short *Up Time*, perhaps some region of the system has recently experienced a power failure.

**Port Status** — shows the status of each port of the switch — even if it is not performing RSTP.

**SwitchInfo can be downloaded from:**

[www.ccontrols.com/sd/switchinfo.htm](http://www.ccontrols.com/sd/switchinfo.htm)