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## R1000 NBS - Network Backup Switch
## R1000 NAC – Network Access Controller
## SWITCHING SYSTEM
## USERS MANUAL

Jan 2008
Part Numbers

| | | | |
|---|---|---|---|
| R1000-NAC-8 | 5101000 | R1000-NAC-4FR (ST) | 5101012 |
| R1000-NAC-16 | 5101001 | R1000-NAC-6FR (ST) | 5101013 |
| R1000-NAC-8R | 5101002 | R1000-NBS-4F (ST) | 5101030 |
| R1000-NAC-16R | 5101003 | R1000-NBS-6F (ST) | 5101031 |
| R1000-NBS-8 | 5101020 | R1000-NBS-4FR (ST) | 5101032 |
| R1000-NBS-16 | 5101021 | R1000-NBS-6FR (ST) | 5101033 |
| R1000-NBS-8R | 5101022 | R1000-NBS-4F (SC) | 5101034 |
| R1000-NBS-16R | 5101023 | R1000-NBS-6F (SC) | 5101035 |
| R1000-NAC-4F (ST) | 5101010 | R1000-NBS-4FR (SC) | 5101036 |
| R1000-NAC-6F (ST) | 5101011 | R1000-NBS-6FR (SC) | 5101037 |

* R designates SNMP capable models (i.e. R1000-NBS-8R), for “remote accessible via Ethernet”.

# Market Central, Inc.

## Contents



## 1. Specifications

**Connectors:**

| | |
|---|---|
| A/B Switches: | Shielded RJ45 – 16, 24, 32, or 48 depending on model and size |
| | Fiber optic ST or SC – 4 or 6 duplex connectors depending on model and size |
| Ethernet: | Shielded RJ45 – active only in network manageable models |
| Serial Control: | Female DB9 |
| Power: | Two-Position DC Power Entry – 2 provided for redundancy |

**Indicators:**

| | |
|---|---|
| Power supply LEDs: | (2) power supply input 1, power supply input 2 |
| Switch position LEDs: | (2) all ports position A, all ports position B |
| Network status LEDS: | (2) link, activity (active only in network manageable models) |

**Switches:**

| | |
|---|---|
| A/B Gang switch: | (1) momentary toggle switch |
| Gang Switch enable: | (1) key-lock switch |

**Power:**

9-12 VDC, 100 mA nominal (350mA nominal on network manageable models)

RJ45 8 port, additional 187 mA while switching
RJ45 16 port, additional 374 mA while switching
Fiber Optic 4 port, additional 320 mA while switching
Fiber Optic 6 port, additional 480 mA while switching

Dual inputs for redundancy

**Physical:**

1.75”(H) X 17.25”(W) X 10.5”(D) desktop chassis, steel
Mounting brackets provided for 1U, 19” rack mount configuration
5 lbs, excluding power supply

**MTBF:**

100,000 hours

**Altitude Tolerance:**

10,000 ft. (3048 m)

**Temperature Tolerance:**

Operating: 32° to 104° F (0° to 40° C)
Storage: -4° to 158° F (-20° to 70° C)

**Humidity Tolerance:**

Up to 95% non-condensing

## 2. Introduction

The R1000 Network Backup Switch and Network Access Controller connect port A or port B to COMMON, through latching relays (in the case of the R1000-NAC models, the connection is more appropriately designated ON or OFF, as they are 2 port switches, COMMON to port B (ON) Common to port A (OFF). Since the relays are latching, the state of connections will be maintained with power off.

For RJ45 models, pins 1, 2, 3 and 6 are switched, which are the standard 10/100base-T Ethernet signal locations on an RJ45 connector. While the R1000 is primarily intended to switch Ethernet, it can be used for any electronic signal switching, if the signals are passed through the supported pins. The relays are transparent to data rates, signal levels and format. The RJ45 models are available in 8 and 16 port versions.

Fiber optic models are also latching, and use precision optical mirror mechanisms to switch connections and are thus completely transparent to rates, protocols, and wavelengths. The fiber optic models are available in 4 and 6 port, ST and SC duplex versions.

Manual gang control of all ports is available through a momentary toggle switch on the front of the unit, enabled by a removable key lock. Serial RS232 control can gang or individually switch ports, as well as monitor switch status. An Ethernet port (10base-T) on network manageable models allows remote control and monitoring using TCP/IP.

The R1000 models are housed in a steel desktop chassis, with provisions for 19" rack mount (brackets supplied).

## 3. Configuration

There are no user configurable settings on the R1000 models for basic operation. There are some parameters related to TCP/IP operations which are accessed through the serial RS232 port, which are required to communicate to the unit over Ethernet. These settings are described later in this manual.

The internal jumpers and DIP switches inside the R1000 have been pre-configured at the factory and should not be changed from their default settings. They are shown here for reference only.

jumper W1 — 1-2 position = no SNMP module, serial RS232 only
2-3 position = SNMP module installed, Ethernet & serial RS232

jumper W2 — 1-2 position = no SNMP module, serial RS232 only
2-3 position = SNMP module installed, Ethernet & serial RS232

DIP SW1 — positions 1 & 2 OFF, and positions 3 & 4 ON to limit to $\leq$ 4 port operation
positions 1 & 3 OFF, and positions 2 & 4 ON to limit to $\leq$ 6 port operation
positions 1, 2 & 3 OFF, and position 4 ON to limit to $\leq$ 8 port operation
positions 1 – 4 all OFF to limit to $\leq$ 16 port operation
position 5 OFF = SNMP module installed, position 5 ON = RS232 only
position 6 OFF = non-latching fiber optic modules, position 6 ON = latching foms or relays
position 7 OFF = non-latching relays, position 7 ON = latching relays
position 8 OFF (reserved for future use)

DIP SW2 — positions 1-8 ON (reserved for future use)

## 4. Installation

1. Find a location suitable for installing the R1000 chassis, with access to AC power outlets and the connections you intend to switch through the unit.
2. If you intend to use serial control, connect a serial cable to the DB9 RS232 console port, the baud rate is fixed at 9600 baud, no parity, 8 data bits, and 1 stop. See figure 1 for connector signal assignment.

3. Connect a 12VDC power supply to either power supply connector. If you are using redundant power supplies, connect one to each power supply connector. The indicators, PS1 and PS2, on the front of the unit will indicate a power supply energized.
4. Connect RJ45 or fiber optic cables between the R1000 unit and your devices to switch. The R1000 NBS connects the COMMON ports to either A ports or B ports. For NAC models, selecting port A (OFF) disconnects COMMON ports from B ports, selecting port B (ON) connects COMMON ports to B ports.
5. The R1000 switches are completely bidirectional, and have no preference to signal direction. Note that the switch provides straight pass thru connections. If your application requires a cross-over cable, use only 1 cross-over cable in that path. Use a straight through cable on the other side of the switch.
6. Apply AC power to (each) power supply. The appropriate power supply status indicators (PS1 and/or PS2) will light. The switch position indicators (A and B) on the front of the unit may or may not light depending on the position of the switches. Indicator A lights when all switches are in position A, and likewise for indicator B.

If you are connecting the R1000 (network manageable model) to an Ethernet network, you must first set some TCP/IP related parameters using the serial port. You should set these parameters before attaching a cable to the NETWORK port, as the default parameters may not work or could interfere with your network. See section 5.3 for more information regarding TCP/IP setup.

## 5. Operation

When power is applied to the R1000 unit, the appropriate power supply status indicators (PS1 and/or PS2) will light. The switch position indicators (A and B) on the front of the unit may or may not light depending on the position of the switches. Indicator A lights when all switches are in position A, and likewise for indicator B. If some switches are in position A and some in position B then neither light will be on.

For RJ45 models, The R1000 NBS connects the COMMON ports to either A ports or B ports. For NAC models, selecting port A (OFF) disconnects COMMON ports from B ports, selecting port B (ON) connects COMMON ports to B ports. Ports 2-N, depending on the model size, is similarly switched.

For fiber optic models, the switching uses duplex connections per channel. For ST models, the two connectors labeled 1 and 2 form the channel 1 path, connectors 3 & 4 form the channel 2 path, and so on. The fiber paths are bidirectional, with COMMON port 1 switched to A port 1 or B port 1 (or COMMON port 1 to B port 1/open), etc. Note that if COMMON port 1 is used as an input, for example, A/B port 1 is then the switched output. For SC models, the COMMON duplex connector labeled 1 is switched to either A port 1 or B port 1 (R1000-NAC models, selecting port A (OFF) disconnects COMMON ports from B ports, selecting port B (ON) connects COMMON ports to B ports. Ports 2-N, depending on the model size, is similarly switched. All R1000 connections are straight through. Be sure to connect the fiber optic RX/TX appropriately for your application.

## 5.1 Manual Switching

All R1000 models can be switched (all ports simultaneously) from a manual switch located on the front of the unit. This switching action is enabled by the front panel key switch, which must be in the position labeled ENABLE for manual switching to occur. When “gang” switching all ports, the switch position indicator will light to the appropriate state (A or B).

## 5.2 Serial RS232 Switching

All R1000 models can be switched using commands over a serial communications line. The parameters of the console port are fixed at 9600 baud, no parity, 8 data bits, and 1 stop (commonly abbreviated as 9600, N, 8, 1).

When the R1000 powers up, it will send a sign-on message followed by a prompt character “>” to your serial device. After each command, and any associated response from the unit, it will again issue a prompt character. For systems where the console port is being commanded by software, the software should wait for this prompt character

before sending each and every command to the R1000.

It is possible to switch any or all of the ports to either A or B from serial commands. It is also possible to query the position of any or all of the ports from serial commands. Serial command functionality is NOT affected by the position of the front panel key switch. See section 7 for a complete list of commands for the network manageable models.

### RS232 versions only

The following commands are available from the console prompt of the unit. All commands are case insensitive, although several variable parameters are case sensitive (read/write community names and web password). GET, SET and PORT can all be abbreviated by the first letter of the command. This allows shorthand entry of switching commands.

HELP Displays a list of commands. An example output is shown here.

```
        >help
help
R1000 Rev. D
Commands:
get all
get port y (y = port, 1 to 16)
set all X (X = A or B)
set port y X (y = port, 1 to 16, X = A or B)
help or ? (displays this list)
>
```

get all - shows the status of all ports ex. AAAAAAAA
get port y – shows the status of a specific port ex. port 1 A
set all X – sets all ports to either A or B
set port y x – sets a specific port to either A or B ex. set port 4 A
help or ? shows a list of commands available from the console prompt of the unit

## 5.3 Ethernet Switching **(SNMP network manageable units only)**

In order to use the Ethernet Network port you must set the IPADDRESS and SUBNETMASK and GATEWAY address of the R1000 before connecting to your network. See section 6 for more details

The R1000 can be switched using SNMP commands over a TCP/IP Ethernet network. See the MIB path summary in the appendix for a list of SNMP variables and their functions. The R1000 also supports telnet access, and can be controlled via a telnet session using the same commands as used by the RS232 serial interface. The R1000 also includes a built in http server that allows all of the commands available via the RS232 serial port to be accessed via a web browser interface. See section 8 for more details about this feature.

The NETWORK port is 10base-T only. There are two status indicators which function as follows. The LINK led is on whenever the R1000 network interface is ready for communication. This should happen very shortly after power on, and should go out if there is some problem with the interface detected by the unit. Note that it does not indicate that a valid network connection is made. The ACT led will blink whenever the R1000 receives a command from the network interface. Note that only access to variables on the 'private' branch will trigger the ACT led (OID 1.3.6.1.4…). In addition the ACT led will blink when a switching command is issued via the serial port.

After setting up the system and powering up for the first time (see Network Setup section), you may need to change other parameters for your application. These parameters are stored in non-volatile memory, although they are immediately active when a change is made they will not become permanent until the SAVE command, followed by the RESET command are performed.

## 6. Network Setup (SNMP network manageable units only)

To perform initial setup of the unit you will need a serial terminal capable of 9600 baud, no parity, 8 data bits, and 1 stop bit. Connect this terminal to the DB9 console connector as follows (Use a straight thru M/F cable to connect to an IBM PC standard DB9 serial port).

Table 6.1 – DB9 Pin Assignment

| DB9 | SIGNAL | DIRECTION |
|---|---|---|
| 2 | RECEIVED DATA | TO TERMINAL |
| 3 | TRANSMITTED DATA | FROM TERMINAL |
| 5 | GROUND | |

Apply power to the system.

After this process is complete you will see a sign-on message displayed on the serial console, i.e.

```
R1000 Network Agent Version 2.6c Jan 2009
Copyright (C) 2006 Market Central, Inc.
All rights reserved
www.mctech.com

System starting ...
console ready.
>
```

At this point the console is ready for some low level configurations necessary before you will be able to communicate with the unit using TCP/IP. You will need to enter an IP address and subnet mask, as well as read and write SNMP community names if using SNMP, or a web password for browser access. These parameters will be saved into non-volatile memory, and the system will be reset to allow it to reconfigure with the new settings. Any time one or more of these parameters is changed; they must be saved followed by a system reset in order for the changes to become permanent. The following shows a typical setup session. Change the entered parameters to suit your application requirements. All the console level commands available are described in detail in section 7.

```
>set ipaddress 192.168.1.200
OK
>set subnetmask 255.255.255.0
OK
>set readcommunityname public
OK
>set writecommunityname private
OK
>save
OK
>reset
restarting …
```

After the system reinitializes, you will again be greeted by the sign-on message as before. At this time you can connect a 10 base-T CAT5 cable to the network port on the R1000 and an available port on your hub. The unit will respond to SNMP and HTTP messages at the assigned IP address. See the MIB Path Summary for a list of SNMP variables and their functions.

## 7. Console Commands (SNMP network manageable units only)

The following commands are available from the console prompt of the unit. All commands are case insensitive, although several variable parameters are case sensitive (read/write community names and web password). GET, SET, SYSTEM, and PORT can all be abbreviated by the first letter of the command. This allows shorthand entry of switching commands.

GET ALL

Displays all parameters and settings. An example output is shown here.

```
System Status: B
IP Address: 192.168.1.200
Subnet Mask: 255.255.255.0
Gateway IP Address: 192.168.1.1
Web Enable: Enabled
Web Password: mctech
Web Timeout: 300
Web Port: 80
Telnet Enabled: Enabled
Telnet Password: dataman
Telnet Timeout: 80
Telnet Port: 23
Read Community Name: public
Write Community Name: private
Authentication Trap: Disabled
R1000: 2.6c Jan 2009, R1000 Rev.D
SNMP Manager Table:
1: 192.168.1.113
2: 192.168.1.115
```

GET VERSION

Displays the software revision of the system.

```
R1000: 2.6c Apr, R1000 Rev. D
```

GET SYSTEM

Displays the system status. This is the same as the status returned by the SNMP variable r1000GangPort. It will report “A” if any switches are in position A, and “B” if all switches are in position B. This is meaningful only when using system level switching commands.

```
System Status: A
```

SET SYSTEM A[B]

Sets the system to position A or B.

GET RACK

- Displays status of unit. This is the same as the status returned by the SNMP variable r1000Channels. It displays a 16 character string showing the status of each switch. Models with less than 16 ports will display X in place of A or B when querying status.

  ```
  Rack Status: AAABAABAAAABAAAA
  ```

GET PORT N

Displays the status of switch N (1-16). The response will be “A” or “B”.

```
Port 4: B
```

SET PORT N A[B]

Sets the addressed switch N (1-16) to position A or B.

SET IPADDRESS X.X.X.X
GET IPADDRESS

Set or display the current IP address of the network module. Any change will not become permanent until a SAVE and RESET operation sequence is performed.

SET SUBNETMASK X.X.X.X
GET SUBNETMASK

Set or display the current subnet mask of the network module. Any change will not become permanent until a SAVE and RESET operation sequence is performed.

SET GATEWAY X.X.X.X
GET GATEWAY

Set or display the current gateway IP address of the network module Any change will not become permanent until a SAVE and RESET operation sequence is performed.

SET READCOMMUNITYNAME string
GET READCOMMUNITYNAME
SET READCOMMUNITYNAME string
GET READCOMMUNITYNAME

Set or display the current read or write community name as specified. Note that in general these are case sensitive fields. Any change will not become permanent until a SAVE and RESET operation sequence is performed.

SET WEBENABLE ON[OFF]
GET WEBENABLE

Set or display the current state of web based access. The network module will not accept any HTTP requests when web enable is off. Any change will not become permanent until a SAVE and RESET operation sequence is performed.

SET WEBPASSWORD string
GET WEBPASSWORD

Set or display the current web password. Note that this is a case sensitive field. Any change will not become permanent until a SAVE and RESET operation sequence is performed.
SET WEBTIMEOUT seconds
GET WEBTIMEOUT

Set or display the current web timeout in seconds. After a period of inactivity of this many seconds, the network module will request a login. Note that the web timeout cannot be disabled any change will not become permanent until a SAVE and RESET operation sequence is performed.

SET TELNETENABLE ON[OFF]
GET TELNETENABLE

Set or display the current state of telnet based access. The network module will not accept any telnet requests when telnet enable is off. Any change will not become permanent until a SAVE and RESET operation sequence is performed.

SET TELNETPASSWORD string
GET TELNETPASSWORD

Set or display the current telnet password. Note that this is a case sensitive field. Any change will not become permanent until a SAVE and RESET operation sequence is performed.

SET TELNETTIMEOUT seconds
GET TELNETTIMEOUT

Set or display the current telnet timeout in seconds. After a period of inactivity of this many seconds, the network module will disconnect any current telnet session. Note that the telnet timeout cannot be disabled, it can however, be set arbitrarily large. Any change will not become permanent until a SAVE and RESET operation sequence is performed.

SET TELNETPORT N
GET TELNETPORT

Set or display the current telnet port number. Changing the telnet port number from the default can be used to provide an additional level of security. Any change will not become permanent until a SAVE and RESET operation sequence is performed.

SET AUTHENTICATIONTRAP ON[OFF]
GET AUTHENTICATIONTRAP

Set or display the current state of authentication error traps. Authentication traps will be generated when this parameter is set to ON, and not when OFF. Note that this setting only affects the trap generation, and not how the network module handles an authentication failure. An authentication failure generally means that an SNMP access was attempted with an incorrect community name. Any change will not become permanent until a SAVE and RESET operation sequence is performed.

SET MANAGER N X.X.X.X

Set SNMP manager N (1-16) IP address.

Up to 16 SNMP MANAGER IP addresses can be entered for destinations of trap messages. Trap messages will be sent to all enabled MANAGER IP addresses. To remove an entry from the list, set the IP address to 0.0.0.0. Any change will not become permanent until a SAVE and RESET operation sequence is performed.

```
SNMP Manager Table:
1: 192.168.1.113
2: 192.168.1.115
3: 192.168.1.149
4: 192.168.1.100
```

GET MANAGER N

Display SNMP manager N (1-16) IP address.

GET MANAGER

Display all SNMP manager IP addresses.

SAVE

Save settings for next startup. All settings are stored in NV memory and restored upon power on. Any change will not become permanent until a SAVE and RESET operation sequence is performed.

RESET

Causes a network system reboot and reloads all parameters from stored settings.

HELP

Displays a list of commands.

>help

```
R1000 CONSOLE COMMANDS:
GET         ALL (display all parameters)
GET         VERSION (display software versions)
GET[SET]    SYSTEM [A/B] (control all system ports)
GET         RACK (display all ports)
GET[SET]    PORT N [A/B] (control single port)
GET[SET]    IPADDRESS [X.X.X.X]
GET[SET]    SUBNETMASK [X.X.X.X]
GET[SET]    GATEWAY [X.X.X.X]
GET[SET]    READCOMMUNITYNAME [string]
GET[SET]    WRITECOMMUNITYNAME [string]
GET[SET]    WEBENABLE [ON/OFF]
GET[SET]    WEBPASSWORD [string]
GET[SET]    WEBTIMEOUT [N] (seconds)
GET[SET]    WEBPORT [N]
GET[SET]    TELNETENABLE: [on/off]
GET[SET]    TELNETPASSWORD [string]
GET[SET]    TELNETTIMEOUT N: (seconds)
GET[SET]    TELNETPORT (N)
GET[SET]    AUTHENTICATIONTRAP [ON/OFF]
GET[SET]    MANAGER N [X.X.X.X] (0.0.0.0 to disable an entry)
GET         MANAGER (display all SNMP managers)
SAVE        save settings for next startup
RESET       restart (use after SAVE)
```

Notes:

- Commands can be entered in upper or lower case.
- Models with less than 16 ports will display X in place of A or B when querying status.
- All commands should be terminated with a carriage return (ASCII 13) or (hex 0x0D).
- Set/get all and set/get port commands can be abbreviated using just first letters, i.e. “g a” for “get all” or “s p 4 a” for “set port 4 a”.
- * Remote (network) models use “get system” and “set system X” for “get/set all” commands. The command “get all” returns all parameter settings (to be compatible with R5000 and R6000 command structures).

## 8. Web Interface (SNMP capable models only)

The network module provides access to console commands through a web browser interface. When enabled (see SET WEBENABLE command) accessing the default page on the modules IP address (index.html) will present the following page (or similar).
**Note:** If using a pop up blocker on your web browser, be sure to allow pop ups from the IP address of the R1000, otherwise you cold experience trouble receiving a response through the interface.

Web Interface Version 1.0
Copyright (c) 2003, Market Central Inc.
All rights reserved.
www.mctech.com

**Please logon:**

Password:

Submit

Figure 8.1 Logon Screen

After successfully entering the correct web password (see SET WEBPASSWORD command) you will get the following page (or similar).

Web Interface Version 1.0
Copyright (c) 2003, Market Central Inc.
All rights reserved.
www.mctech.com

**Command console:**

---

Enter new command:

Send Command | Logoff

Figure 8.2 Initial Command Screen

At this point you may enter any valid command into the text box and click “Send Command” to execute. The following is an example result of the GET ALL command.

Web Interface Version 1.0
Copyright (c) 2003, Market Central Inc.
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www.mctech.com

**Command console:**
Output from last command...

---

System Status: B
IP Address: 192.168.1.30

Subnet Mask: 255.255.255.0
Gateway IP Address: 192.168.1.1
Web Enable: Enabled
Web Password: mctech
Web Timeout: 300
Web Port: 80
Telnet Enable: Enabled
Telnet Password: dataman
Telnet Timeout: 80
Telnet Port: 23
Read Community Name: public
Write Community Name: private
Authentication Trap: Disabled
R1000: 2.6c Jan 2009, R1000 Rev. D
SNMP Managers:

---

Enter new command:

Send Command | Logoff

Figure 8.3 Example Command Results Screen

The Ethernet version of Controller Card will only allow 1 telnet or web access session. To free up a session without waiting for the web timeout, click “Logoff”. For this reason, the web timeout should be set to a workable time. Resetting the unit will clear the current web session.

## 9. SNMP MIB Path Summary

NOTE: The MIB contains definitions that do not apply to every product in the R1000 family.

[internet] – 1.3.6.1
[private] – 1.3.6.1.4
[enterprises] – 1.3.6.1.4.1
[mctech] – 1.3.6.1.4.1.9477

[mctech] – 1.3.6.1.4.1.9477
Market Central, Inc. private enterprise number

[mcAgent] – 1.3.6.1.4.1.9477.1
Market Central, Inc. SNMP Agent

The following is a list of the A/B Switch System SNMP variables corresponding to:
R1000 NBS/NAC Switch

[r1000] – 1.3.6.1.4.1.9477.1.6
R1000 Switch

[r1000GangControl] – 1.3.6.1.4.1.9477.1.6.1
[r1000KeyStat] – 1.3.6.1.4.1.9477.1.6.2
[r1000PowerStat] – 1.3.6.1.4.1.9477.1.6.3
[r1000SoftwareVersion] – 1.3.6.1.4.1.9477.1.6.4
[r1000Name] – 1.3.6.1.4.1.9477.1.6.5
[r1000Channels] – 1.3.6.1.4.1.9477.1.6.6

[r1000ChannelTable] – 1.3.6.1.4.1.9477.1.6.7
[r1000ChannelIndex] – 1.3.6.1.4.1.9477.1.6.7.1.1. ChannelIndex
[r1000ChannelControl] – 1.3.6.1.4.1.9477.1.6.7.1.2. ChannelIndex
[r1000ChannelName] – 1.3.6.1.4.1.9477.1.6.7.1.3. ChannelIndex

[mcIpRequester] – 1.3.6.1.4.1.9477.2

Traps generated by the system

| | |
|---|---|
| coldStart | generic trap 0 |
| authenticationFailure | generic trap 4 |
| | |
| r1000KeyLockChange | Specific trap 1 |
| r1000GangswitchChange | Specific trap 2 |
| r1000SwitchPortChange | Specific trap 4 |
| r1000PowerStatChange | Specific trap 7 |

**R1000 Switch SNMP Variable Definitions:**

[r1000GangControl] – 1.3.6.1.4.1.9477.1.6.1
R1000 Switch gang control. This variable is used to control all channels in a unit. A unit may contain 4, 6, 8, or 16 channels depending on model. On a "GET" of this variable, the unit will respond as follows. If any of the channels in the unit are at position A, the status will be A. If all of the channels in the unit are at position B, the status will be B.

[r1000KeyStat] – 1.3.6.1.4.1.9477.1.6.2
R1000 Key-Lock Switch Status. This is a read only variable. This variable can be used to determine if the Key-Lock Switch is in the OFF or ON position.

[r1000PowerStat] – 1.3.6.1.4.1.9477.1.6.3
R1000 Power Status. This is a read only variable. If power is applied to both power entry connectors, the Power Status will report "TwoSupplies". If power is applied to only one of the power entry connectors, the Power Status will report "One Supply Down".

[r1000SoftwareVersion] – 1.3.6.1.4.1.9477.1.6.4
R1000 Software Version. This is a read only variable, and is limited to a maximum of 14 characters.

[r1000Name] – 1.3.6.1.4.1.9477.1.6.5
R1000 Identification String. The string is limited to a maximum of 14 characters.

[r1000Channels] – 1.3.6.1.4.1.9477.1.6.6
R1000 channel status, One character for (up to) sixteen channels in the unit. Channels which are not used will be represented by an X character. This is a READ ONLY variable.

[r1000ChannelTable] – 1.3.6.1.4.1.9477.1.6.7
R1000 channel variable table. This variable is not directly accessible.

[r1000ChannelIndex] – 1.3.6.1.4.1.9477.1.6.7.1.1. ChannelIndex
R1000 channel number.

[r1000ChannelControl] – 1.3.6.1.4.1.9477.1.6.7.1.2. ChannelIndex
R1000 channel control. This variable is used to control the addressed channel.
NBS version - When set to A, the switch will connect channel A to C. When set to B, the switch will connect channel B to C.
NAC version- A is the off position, B to common is on

[r1000ChannelName] – 1.3.6.1.4.1.9477.1.6.7.1.3. ChannelIndex
R1000 channel Identification String. The string is limited to a maximum of 14 characters.

[mcIpRequester] – 1.3.6.1.4.1.9477.2
The IP address of the remote entity that last accessed branch 1.3.6.1.4.1.9477.1. This variable can be used to identify the last IP address to access any mcAgent variable. It is returned in the authenticationFailure message.

R1000 Switch System SNMP Trap Definitions:

All traps carry the sysObjectId (1.3.6.1.2.1.1.2) variable, whose value is 1.3.6.1.4.1.9477.1.

coldStart – generic trap 0
This trap is sent during a power on initialization and reboot of the SNMP controller. It carries the sysDescr variable (1.3.6.1.2.1.1.1).

authenticationFailure – generic trap 4
This trap is sent as a result of an authentication failure in processing an SNMP request. Generally an authentication failure occurs as a result of an SNMP request with an invalid community name. It carries the mcIpRequester variable.

r1000KeyLockChange - Specific trap 1
This trap is sent any time the keylock changes state, It carries the r1000KeyStat variable.

r1000GangswitchChange - Specific trap 2
This trap is sent when a system level switch occurs. It carries the r1000 GangControl variable.

r1000SwitchPortChange - Specific trap 4
This trap is sent when a single port is switched. It carries the r1000. It carries the r1000 channel control variable.

r1000PowerStatChange - Specific trap 7
This trap is sent whenever power is connected or removed from either power connection. It carries the r1000 power Stat variable.

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