

### Managed Ethernet Switches for Network Connectivity



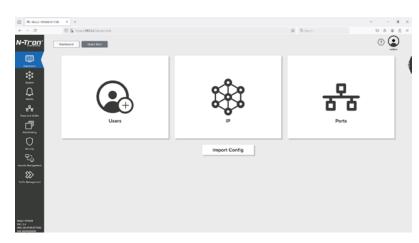


### Designed for ease of use

### Configuration Wizard

The modern graphical user interface features a quick start wizard that walks administrators through switch configuration for fast deployment.

The NT5000 also supports text-based configuration files, making it easy to retrieve the configuration from one device for redistribution to other NT5000 devices on the network.





### Graphical Dashboard

The graphical dashboard includes a logical view of the switch, showing active ports and errors.

Port traffic and event counters are presented in easy-to-read, color-coded gauges so administrators can quickly identify issues that may disrupt network stability.

The port configuration and event log buttons, prominently featured on the dashboard, make it easy to access valuable information.

The logical view of the switch can be displayed on any NT5000 web page by simply clicking the  $\langle$  symbol located in the upper right corner of the page.





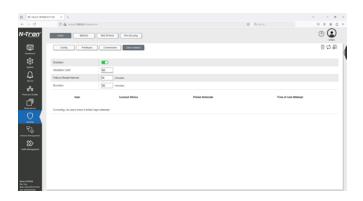
Clicking the > symbol removes the logical view and returns the page to its original format.

Designed to keep your network connected and protected, the N-Tron® Series NT5000 switches provide ease of use, reliability, and security features to maximize operating performance and system uptime.

### Protect your network from unauthorized access

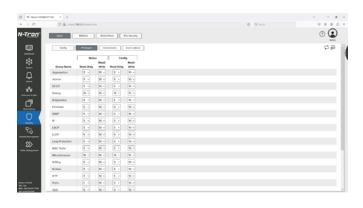
The NT5000 is loaded with security features to help administrators protect the network from unauthorized access.

- Password encryption
- MAC security
- Configurable password length and multilevel user access
- Ability to disable unused protocols
- Event log / syslog
- Ability to automatically disable user or port credentials after "x" failed attempts
- IEEE 802.1X
- RADIUS



Use the event log or syslog to receive notifications about access attempts or changes in the switch configuration — either by locally tracking them in the event log or by sending messages to a remote syslog server — so you are always up to date on the state of the network.

Administrators also have the ability to disable user or port credentials automatically after a defined number of failed access attempts.



The NT5000 supports IEEE 802.1X with RADIUS remote server authentication, which allows port and user authentication from a centralized RADIUS server on the network. This makes it easier to quickly remove access without needing to log in to each device.

Multi-level user privileges can also be defined to restrict access to specific features.

### Advanced management features

The NT5000 includes VLAN ease-of-use enhancements for more complex configurations, too.





#### **VLAN**

VLAN configuration is easier than ever with a graphical display of port and tag configuration.

### N-RING™ Technology

N-Ring configuration is as simple as connecting cables to the NT5000 pre-configured N-Ring ports and configuring one of the switches in the ring to be the manager.

The N-Tron Series NT5000 provides the following benefits!



High reliability in harsh environments



Supports seamless integration with existing systems and networks.



Accommodating growing industrial needs without significant overhauls.



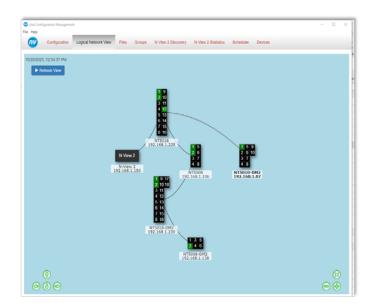
End-to-end support – from design through to maintenance

## Troubleshooting / firmware management

#### N-VIEW™ 2

Implementing the latest firmware is an important step in securing your network and maximizing its performance. The NT5000 includes N-View 2 software for multi-unit device monitoring and firmware management.

- N-View 2 discovery quickly identifies
   N-View-enabled devices
- Easy-to-read monitoring pages display switch status, port traffic, and other indicators that point to potential cabling or configuration issues
- Duplicate IP addresses are automatically detected and highlighted, and can be changed directly from the N-View 2 discovery window
- N-View 2 simplifies firmware updates by allowing individual switches or user-defined groups to be updated immediately or scheduled for a future date and time





### **Port Mirroring**

Use port mirroring to duplicate the packets from one switch port to a network connection on another switch port. This gives both network engineers and administrators the ability to troubleshoot issues and keep a closer eye on network performance.

### A durable design for every application

The NT5000 gigabit switches are designed to provide years of reliable operation in harsh industrial applications.

#### Features Include:

- Compact metal enclosure
- Wide operating temperature range from -40° C to 85° C (model dependent)
- Redundant power inputs (10-49 VDC)
- Vibration: 5 Hz to 200 Hz, 15 g, Triaxial; IEC 68-2-6: operational; bulkhead mounted
- Shock: 200 g, 10 ms, Triaxial; IEC 68-2-27: nonoperational; bulkhead mounted

- Fast boot (traffic passes <20 seconds)
- Configurable alarm contact
- Configurable bi-color fault status LED
- LED port status indicators
- Reverse polarity protection
- ESD and surge protection



The NT5000 is available in 6, 8, 10, 16 and 18 port configurations in a variety of copper and fiber options to meet specific installation requirements.

Model	10/100/1000Base T RJ45 Ports	Dual Mode (100/1000Base) SFP Ports	100Base Fiber Ports	1000Base Fiber Ports
NT5006	6			
NT5006-DM2	4	2		
NT5008	8			
NT5008-DM2	6	2		
NT5008-FX2	6		2	
NT5008-GX2	6			2
NT5010-DM2	8	2		
NT5010-FX2	8		2	
NT5010-GX2	8			2
NT5016	16			
NT5018-DM2	16	2		
NT5018-FX2	16		2	
NT5018-GX2	16			2

### **Industry Certifications**

The NT5000 carries extensive compliance certifications, making it ideal for use in most industrial applications, including factory automation, robotics, food and beverage, oil and gas, alternative energy, water/wastewater, marine, rail, and many more.



















### Feature Summary

#### Ease of Use

- Modern graphical web interface
- Configuration wizard
- Switch logical view
- Graphical dashboards
- Cabling diagnostics
- Full command line interface

### **Network Redundancy**

- STP/RSTP/MSTP
- N-Ring™ Technology with
   ~30ms healing
- Port trunking/LACP

### **Switch Management**

- IGMP v1, v2, v3 auto configuration
- SNMP v1, v2, v3
- Port mirroring
- Event log/syslog
- Network time protocol (NTP)
- 802.1Q tag VLAN and port VLAN
- IEEE 801.2p QoS and port QoS
- DHCP Server, Option 82 relay,
   Option 61, IP fallback
- Text-based config file
- N-View™ 2 monitoring and firmware management software

### Security

- HTTPS, SSH, SSL
- IEE 802.1X port and user authentication (RADIUS)
- MAC port security
- SNMPv3
- Port/user lock after failed attempts
- Password encryption



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