

# NBAD Switch

## A Powerful Netflow Switch for Anomaly Detection

### Overview

NBAD Switch is a 24/48 port Ethernet & Fast-Ethernet Layer 2+/4 switch featured with 10/100Mbps, IEEE802.3 auto MDI-X & half/full duplex auto detection. Build in chipset enable NBAD Switch be a Plug and Play device.

Functions like packet switch, TCP/UDP on line statistic and anomaly detection are provided by hardware. It also supports hierarchical intelligent security control, generic functions of Layer 2+, Network Management , Intelligence, multiple port trunking, 802.1x, and functions of Layer 4.

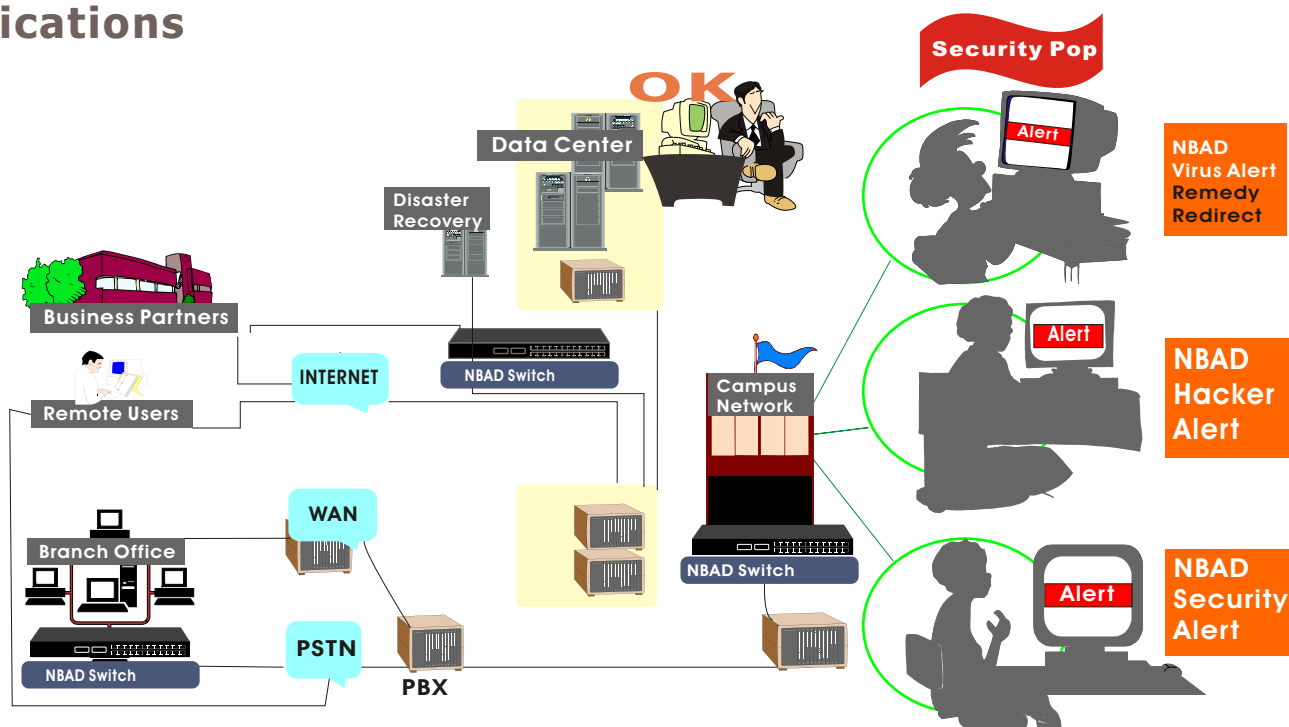


NBAD Switch is created with generic functions of Layer 2+. It covers Intelligence Network Management, multiple port trunking group ( by 2, 4, or 8 ports), 802.1x authentication, spanning tree and port mirroring /monitor. Layer 4 session accounting capability enables NBAD switch be an Edge Switch and a L4 flow sensor. Combining with flow analyzer and central monitor software provided by NBAD manager becomes an excellent solution for Network Behavior Anomaly Detection.

### Advantages of NBAD Switch

Features	NBAD Switch
MAC/IP Binding Security	YES
Rogue DHCP Prevention	YES
DoS/DDoS Filtering	YES
Hardware Netflow v1/v5/v9	YES
Session Anomaly Detection	YES
Rate Limit	YES
Quarantine Malicious MAC	YES
Pop Up Virus Remedy Redirection	YES
Pop Up Virus Alert	YES

### Applications



## Features and Benefits

<b>Chassis</b>	24/48 port Ethernet/Fast Ethernet 1U chassis with 2 Combo gigabit uplink
<b>Advanced L2-L4 Service</b>	Distributed L2+ switching and L4 services processing
<b>High Performance</b>	Provide up to 13.6Gbps non-blocking switching fabric which supports wire-speed L2 packet switching and wire-speed L3 network access security L4 application flow statistics/anomaly detection
<b>L2 Network Access Security</b>	*Support port security *Support IEEE 802.1Q standard VLAN *Support up to concurrent 255 VLANs tag value *Support up to 4,094 802.1Q standard VLANs -TBD *Support IEEE 802.1x authentication
<b>L3 Network Access Security</b>	*Support Port+IP/MAC+IP IP locking, to avoid IP address conflict by other user *Support DoS/DDoS, avoid to be attacked by outsider *Support DoS/DDoS filter, avoid user to attack outside network. Enhance Image
<b>L4 Network Security Monitor</b>	*Use ASIC mechanism to support netflow v1/v5/v9 format output ( Enhance Image ) *Can display 200 lines log about L4 netflow information, which include time, source/destination IP address, TCP/UDP port# , protocol byte count. *Network Flow Anomaly Detection can define and detect anomalous netflow
<b>L2-4 Network Operation Control</b>	*Quarantine -support MAC based network quarantine *Rate Limit-support up and down stream speed limitation *Redirection-can redirect network flow path from one port to another port
<b>Advanced QoS -TBD</b>	L2, L3, L4 Classification of Service ( CoS )
<b>Network Management</b>	In-band SNMP, SNMP Trap, RMON I/II 4 Group ( Statistic, History, Alarms, Events ) , RS232 console and Telnet CLI out-of-band, Web management, policy management, port mirroring, port mapping, TFTP upgrade
<b>Network Intelligence</b>	*802.3ad link aggregation with port failure recovery at 4 port trunk and 4Gbps max *Supports DNS lookup and NTP network time synchronization *Event logging and remote SYSLOG support

## Specification

<b>Hardware Features</b>	24/48 10/100 Mbps Ethernet auto-sensing and auto-negotiation, full duplex plus 2G uplink architecture.
<b>Chassis</b>	Fixed 24 or 48 port units with 2 Gigabit uplink Build-in 2 Combo ports with 1000BaseX (Fiber) and 10/100/1000BaseT (Copper)
<b>Switch Capacity</b>	13.6Gbps Max
<b>Flash/DRAM Memory</b>	16/32 MB
<b>Table Size</b>	Up to 8K MAC address
<b>Connector Types/Dimension</b>	RJ-45, 1.5U with 19 Rack mount kit
<b>Cable Type</b>	Unshielded twisted pair(100 ohms), Shielded twisted pair (100 ohms)
<b>Unit LED Indicator</b>	Physical Status, Operation Status, Primary Power, Secondary Power, Temperature, Console, Demo Display, Setting (Speed/ Duplex). Diagnostics
<b>Port LED Indicator</b>	Link integrity and activity, TX/RX, Full/Half Duplex
<b>Safety &amp; EMI/EMC Standards</b>	FCC Class A, CE Mark
<b>Power Supply</b>	85-270 VAC auto-sensing, 47~63Hz
<b>Operating Temp</b>	0~45 degree C
<b>Operating Humanity</b>	5%~95%

