NETGEAR®

Switches—the Heart of the Network

Switches serve as an efficient central point for your LAN, allowing the exchange of information between various devices on the network, such as computers, servers, routers, printers, and firewalls. Switches are offered with many different features and capabilities. Do you need unmanaged or managed? Gigabit or Fast Ethernet? Uplink capabilities? Power over Ethernet (PoE)? All of these are valid concerns, and often what determines the final choice is heavily influenced by price and vendor reputation.

Choosing the right switch—whether upgrading or starting a new—can have a dramatic effect on your network, and even on business operations. To support growth, sophisticated applications may be needed to enhance efficiencies, manage administrative processes, and meet the needs of an expanding customer base. In the process, network traffic will likely increase, often substantially. Adding more employees increases network usage. If too much traffic is added, a network can become overtaxed, with users no longer able to rapidly access essential business applications or information. Congestion also diminishes a network's reliability, causing data to be lost during transmission or system crashes. Switches are the heart of the LAN, and choosing the right one optimizes productivity while maximizing return on investment.

NETGEAR makes a complete line of business-class switches, offering a wide range of features and performance options. Ultra-affordable unmanaged Fast Ethernet switches help start or expand your business. High-performance managed, Gigabit Ethernet switches offer robust features for configuring, managing, and troubleshooting larger and more demanding networks. Targeted at businesses from 2 to 250+ users, these high-performance products provide a reliable, cost-effective solution that are a compelling value for any network environment.

SELECTING A SWITCH

Switches come in a wide range of features, capabilities, and performance options, with a choice of 5-, 8-, 12-, 16-, 24-, and 48-port versions. Switches work by examining packet address information as data passes through it. From this information, the switch determines the packet's destination on the network and sends the packet there.

Fast Ethernet

Fast Ethernet supports a maximum data rate of 100 Mbps, as well as existing 10-Mbps network installations. Fast Ethernet switches sense the speed of the line automatically and adjust accordingly. An excellent value, Fast Ethernet switches are used throughout small, medium, and large enterprises, and are available as unmanaged or managed devices.

Gigabit Ethernet

Gigabit Ethernet is an easy and inexpensive solution for networks straining under the weight of increased network traffic. Gigabit Ethernet offers high-speed 1000 Mbps operation, which is 10 times faster than the 100-Mbps speed of Fast Ethernet. All network services and protocols written for 10- and 100-Mbps Ethernet networks work unchanged over Gigabit Ethernet.

These similarities allow Gigabit Ethernet to be easily implemented into, and coexist with, existing Ethernet and Fast Ethernet networks. Gigabit Ethernet is an excellent value, priced only modestly higher while offering 10 times the bandwidth and performance. Gigabit Ethernet uses standard Cat-5, Cat5e, or Cat-6 cabling. Some Gigabit switches offer Small Form-factor Pluggable (SFP) GBIC ports, which provide optional fiber optic connec-

tivity for greater distance and interference-free connections in high RF environments. Stacking ports enable administrators to connect switches to each other, providing scalability and redundancy.

MANAGED AND UNMANAGED SWITCHES

There are two classes of switches: unmanaged and managed switches. As well, NETGEAR pioneered a new category—Smart Switches—that offers essential management functionality, fills a gap when growing from unmanaged to a fully management switch.

Unmanaged Switch

These are typically plug-and-play devices used for smaller networks in place of hubs. Unmanaged switches are ideal for small, simple networks. While easy to set up and configure—take them out of the box and plug them in—unmanaged switches do not have the facilities to help determine problems or manage growth as the number of users increase.

Managed Switches

Adding management capabilities to a network switch can optimize network configuration and performance, as well as assist in diagnosing problems. NETGEAR offers two types of managed switches: Smart Switches with basic management capabilities and high-performance managed switches.

- Configuration: Management features enable networks to be precisely configured according to business goals and resource requirements. Administrators can tune switch ports to accommodate each application or device. Users get the network capabilities they need while businesses maximize network capabilities.
- Troubleshooting: Management features isolate and track troubles in the network. Packet errors, faulty transmissions, port status, and traffic congestion can affect all users. Support for SNMP and RMON means these devices can automatically signal when there's trouble, to either local or remote locations. NETGEAR managed switches help keep small problems from becoming big ones.
- Planning and Status: Business networks are dynamic. Managed switches analyze workloads, traffic patterns, and reserve capacity—information that can be used to estimate future requirements or the viability of new applications. NETGEAR managed switches help businesses stay ahead of their networking needs, justifying purchases as required, and configuring solutions more efficiently.
- Scalability: Using stacking capabilities, the switching backbone can expand as needed, connecting switches with dedicated stacking ports to increase the number of available ports. Stacked switches may be managed as a single switch, simplifying administration.

Smart Switches

Smart Switches fill the gap between unmanaged and fully managed switches, providing unparalleled value. Smart Switches are designed for growing businesses that want control over their networks, without the cost and complexity of a full Layer 2 (L2)/Layer 3 (L3) management implementation. Priced like unmanaged switches, they offer popular features like centralized control, monitoring, and troubleshooting capabilities traditionally found on more expensive, fully managed switches.

Smart Switches offer the features that most growing networks need as they move from dozens to hundreds of users. These include remote monitoring and troubleshooting, port configuration, port trunking, virtual LAN (VLAN) capability, and prioritization. These features work to extend existing managed network, too. Smart Switch port trunking, VLAN, and packet prioritization capabilities extend the capacity and performance of any managed network.

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