

Product Overview

Product Description

The PowerConnect 6200 series is a family consisting of 2 switches: PowerConnect 6224 and PowerConnect 6248. These switches are 24-port and 48-port Gigabit Ethernet Layer 3 switches, with 10GE uplinks, resilient stacking, and IPv6 (Internet Protocol Version 6) capabilities.

The PowerConnect 6200 series is Dell's first 10 Gigabit Ethernet product, PowerConnect's first 48-port high density Gigabit Ethernet switch, and the first IPv6 capable switch in the portfolio. In addition, the product family supports resilient stacking up to 12 systems at 48Gbps, low 10GE latency, advanced security including 802.1x port authentication and advanced QoS (Quality of Service) that make it ideal for applications such as VoIP (Voice Over Internet Protocol), Layer 3 routing, High Performance Cluster Computing (HPPC) and iSCSI (Internet Small Computer Interface) storage.



Important Features & Benefits

- **Maximum Rack Density**

The PowerConnect 6200 series offers 24 and 48 ports of 10/100/1000BASE-T Gigabit Ethernet, so that you have the flexibility of maximizing server and workstation connectivity in a 1U form factor, delivering significant rack density. In addition, up to 576 servers and/or clients can be connected in a stack of 6200 series switches so that you have maximum rack density, flexibility, and manageability.
- **High Performance Stacking**

The PowerConnect 6200 supports high performance stacking up to 12 systems, with each switch supporting up to 232Gbps in switch capacity, the customer can have almost 3 Terabytes of capacity in a single stack! Resilient stacking provides the customer additional benefits, such as high availability, scalability, and manageability. In the unlikely event of a switch failure, the stacking algorithm will automatically pick another switch in the stack to take over the Ethernet traffic without affecting the overall network. Stacking also allows the customer to pay as they grow, adding switches to increase capacity without affecting the performance of the network. Finally, with up to 12 systems in a stack the customer easily manage up to 576 ports as a single switch.
- **Advanced Layer 3 Capabilities**

The PowerConnect 6200 series supports advanced layer 3 routing and multicast protocols to reduce congestion and manage traffic in the network. The PowerConnect 6200 supports frequently used LAN routing protocols, such as

 - RIPv1/v2 (Routing Information Protocol) - allows routers to exchange routing table information.
 - OSPFv2 (Open Shortest Path First) - sends information to all nodes in the network to calculate the shortest path to each hop.
 - VRRP (Virtual Router Redundancy Protocol) - used to replicate routing tables between routers. VRRP dynamically assigns responsibility for one or more virtual routers to the VRRP routers on a LAN allowing several routers on a multi-access link to utilize the same virtual IP address.

- IGMP (Internet Group Management Protocol) - allows a host to inform its local router, using Host Membership Reports, that it wants to receive messages addressed to a specific multicast group.
- DVMRP (Distance Vector Multicast Routing Protocol) - allows networks to advertise the shortest-path for multicasting (in terms of hop counts).
- PIM (Protocol Independent Multicast) - a family of multicast routing protocols that can provide one-to-many and many-to-many distribution of data over the Internet using routing information supplied by other routing protocols such as BGP (Border Gateway Protocol) . The PowerConnect 6200 supports both PIM-SM (Sparse Mode) and PIM-DM (Dense Mode).

- **Advanced QoS**

The PowerConnect 6200 offers flexibility in QoS by allowing customers the ability to prioritize traffic based on a variety of user-defined criteria including L2 and L3 information. QoS helps ensure that time-critical network traffic is delivered as per network administrator's prioritization needs. The customer can expedite traffic based on L2 or L3 information, such as IP ToS (Type of Service) and provide greater control over traffic flow within the network.

In addition, the PowerConnect 6200 supports Port-based and Flow-based QoS, as well as MAC-based CoS (Class of Service) assignments that allow the user to classify data based on source and/or destination MAC addresses.

- **Advanced Security**

The PowerConnect 6200 offers very advanced security features including L2-L4 ACLs (Access Control Lists), 802.1x port authentication and DoS (Denial of Service) attack prevention.

The PowerConnect 6200 supports up to 1024 ACLs. L2-L4 ACLs on the switch allows the user to perform deep packet inspection (up to 128 bytes) and can be MAC-based, IP-based or even TCP/UDP-based. ACLs provide added security to the switch and serves as the basis for QoS mechanisms.

The PowerConnect 6200 also supports a variety of Port Authentication 802.1x protocols.

802.1x authentication offers both single and multiple host access. In single host access, each host is individually allowed/denied port access based upon the authentication reply associated with the host MAC address. This provides for hubs or wireless access points to be connected directly to a single switch port and still allow/deny traffic based upon each host's authentication credentials. Multiple-host access allows for a single authentication request to open the port for all users who may be connected to the port. In addition, the PowerConnect 6200 supports:

- 802.1x voice authorization - support for directing voice traffic to a voice VLAN (Virtual Local Area Network) regardless of the authentication state of the port
- 802.1x with Microsoft Active Directory Authentication - authenticate devices against the MS Active Directory database using IEEE 802.1x Extensible Authentication Protocol (EAP), Protected EAP (PEAP), and MD5 challenges
- Web-based authentication - provides a browser-based environment to authenticate clients that do not support a 802.1x supplicant

Further security is provided on the PowerConnect 6200 through Denial of Service (DoS) attack prevention. The switch can protect against common network attacks such as Blat, Land, Smurf, Ping of Death, Xmascan, Nullscan, Scan SYNFIN. The switch allows for dynamic configuration for virus/worm detection and checking for specific data patterns in each packet to detect current viruses and worms. In addition, the switch can protect against CPU attacks such as VLAN flooding, TCP SIM, TCP port scan, IP address Spoofing, and MAC address spoofing.

SNMPv3 also increases the security of the switch by allowing SNMP management traffic between the switch and host to be encrypted.

- **10 Gigabit Ethernet**

The PowerConnect 6200 will add 10 Gigabit Ethernet capabilities to the 6xxx Layer 3 family. The switch will be able to support up to four 10 Gigabit Ethernet uplinks for connectivity directly to core equipment such as 10GE routers, Enterprise Backbones and Data Centers.

- **IPv6**

The PowerConnect 6200 series will be the first Dell product to be "IPv6 certified". This means that IPv6 software has been installed and tested by University of New Hampshire to be able to manage and pass IPv6 traffic at the Layer 3 level.

- **Jumbo Frames**

The PowerConnect 6200 supports jumbo frames up to 9216 bytes. Jumbo frames are non-

standard ethernet frames above 1518, typically used in applications such as iSCSI storage and streaming multimedia.

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PowerConnect 6224/6248
(Kinnick)

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Product Overview

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Technical Specifications

The following table outlines the major features of the PowerConnect 62xx series Ethernet switches.

PowerConnect 6224/6248 (Kinnick) Features	
Feature	Description
Total Switch Capacity	PowerConnect 6224 - 136Gbps; PowerConnect 6248 - 232Gbps
Maximum Forwarding Rate	PowerConnect 6224 - 95Mpps; PowerConnect 6248 - 131Mpps
Management Interfaces	Telnet/CLI, Web, SNMPv1/v2c/v3
Gigabit Ethernet Ports	24 or 48 Copper GbE ports or 4 optional Fiber GbE via SFP transceiver
10 Gigabit Ethernet	Optional: up to 4x10GE, SR/LR/CX-4
Stacking Ports	Stacking up to 12 systems, 48Gbps each
Layer 3 Protocols	RIPv1/v2, OSPF v1/v2 with ECMP routing, VRRP, IGMP, static routes
Edge Authentication via 802.1x	Supports single and multiple host access, guest access, voice authorization, and MSFT Active Directory

Management Access Profiles	Yes
802.1Q VLAN	Up to 4096 Industry-Standard VLANs; private VLANs
GVRP	Yes
Quality of Service	Yes, L2/L3/L4, flow-based and port-based QoS
Priority Queues	8, WRR and strict priority scheduling, and DRR (deficit priority queue)
Link Aggregation	Yes, LACP and manual (IEEE 802.3ad)
Multicast Support	IGMP Snooping v1/v2/v3, DVMRP, IGMP Proxy, PIM-DM, PIM-SM
Spanning Tree Support	Spanning Tree and Rapid Spanning Tree w/FastLink and Multiple Spanning Tree
Remote Management	Yes
Authentication Support	Yes, 802.1x w/ voice authorization, MAC address authentication
ACLs	Yes, L2/L3/L4
Management Traffic Encryption	Yes, SSH/SSL
IPv6	IPv6 management supported
Dual Firmware Image Support	Yes
Industry-standard CLI	Yes

Cable and Transceiver Diagnostics	Yes
Redundant Power Supply	Optional RPS-600