*Activ*Chassis

On the NetVanta 1600 Series Layer 3 Gigabit Ethernet Switches

ActivChassis

ADTRAN's innovative, feature-rich ActivChassis stacking technology brings chassis-switch capability and resiliency in a build-as-you grow deployment model. ActivChassis, now available on the NetVanta® 1600 series Gigabit Ethernet switches, allows the ability to stack up to eight switches and manage them as single, logical switch. With ActivChassis, enterprises benefit from:

- **Ease of management** of up to eight stacked switches, actively managed as a single, logical chassis-like system
- **Flexibility** to configure and manage switch stacks, distributed across multiple wiring closets up to 10 km (6 miles) apart
- Ability to add **port capacity on-demand** up to 400 ports
- **Increased backplane capacity** up to 128 Gbps to support the most demanding of business applications
- Features designed for **redundancy and network high-availability** to ensure a high-performance, always-on network

Ease of Management

ActivChassis supports a variety of protocols for provisioning and control. Using a single management IP address, administrators can access the stack via HTTP, SSH, telnet, or SNMP to view statistics, access utilities, or make network changes for each switch port in the ActivChassis configuration. Each physical switch within the stack can be identified through a unique VCID number assigned to it when the switch joins the ActivChassis configuration. In addition, bulk changes can be made to up to 400 switch ports simultaneously, significantly reducing management overhead costs.

Increased Backplane Capacity

Today's business applications demand high-speed connections within the switching infrastructure to ensure data availability at all times and for all users. In addition, the proliferation of wireless devices only exacerbates the need to maximize throughput between devices through the core switching fabric.

When the NetVanta 1600 Dual Stacking XIMs are used to construct ActivChassis configurations, the 10 Gbps local stacking ports are automatically boosted to 16 Gbps of uni-directional throughput. This equates to 32 Gbps for a single port and a total of 128 Gbps when using both option modules on the NV1600 series switches. The result is an extremely efficient switching backplane that is fully capable of meeting the demands of high-bandwidth business applications.

KEY FEATURES

- Stack up to 8 switches in a single ActivChassis configuration
- Manage all switches under a single IP address using HTTP, SNMP, SSH, telnet, FTP, etc.
- Add port capacity on-demand up to 400 ports
- Increase backplane throughput up to 128 Gbps
- Configure and manage switch stacks across multiple wiring closets up to 10 km (6miles) apart
- Improve network resiliency and redundancy with ring topology
- Automatic firmware upgrade between Master switch and Line cards
- Port Mirroring and Port Aggregation across ActivChassis switches

APPLICATIONS

- Ease of Management
- Core, Distribution, or Access Layer
- Manage switches across multiple wiring closets
- Improve network resiliency and High-Availability

Applicable Products

4700568F1 - NetVanta 1638 - 48-port, Layer 3, Gigabit Switch
4700569F1 - NetVanta 1638P - 48-port, PoE, Layer 3, Gigabit Switch
4700470F1 - NetVanta 1600 Dual Stacking XIM with 0.5m Stacking Cable
4700470F2 - NetVanta 1600 Dual Stacking XIM with 2.0m Stacking Cable
4700470F5 - NetVanta 1600 Dual Stacking XIM with 5.0m Stacking Cable
1700471F1 - NetVanta 1600 Dual SFP+ XIM
1700485F1 - 10GBase-SR SFP+ Transceiver
1700486F1 - 10GBase-LR SFP+ Transceiver

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Manage Across Multiple Wiring Closets

With K-12 schools, universities, or medium size enterprises in a campus environment the distribution or access layer switches are often spread across several wiring closets to provide connectivity to all users and devices across the organization. Some buildings may only house one or two switches, all of which must be managed separately across the unified campus network. With ActivChassis, it is possible to consolidate the management of these physically-dispersed hardware platforms into a single IP address and a single configuration file. When the NetVanta 1600 Dual SFP+ XIM is installed, 10 gigabit fiber connections can be put in place making multiple switches distributed across distances up to 10,000 meters look, feel, and operate as a single, logical switch.

Network Resiliency

Using Ring Topology

Minimizing network downtime is quite often the biggest challenge faced by network administrators today. While the reliability of hardware pieces has steadily increased over the years, certain components of switching platforms such as fans and power-supply parts can still fail over an extended period of time. When these failures occur, it is essential that the impact be minimal and short-lived.

ActivChassis improves network resiliency through the use of a redundant link in the ActivChassis configuration. This ring topology creates a persistent, redundant connection across the stack that is fully utilized during normal operations to minimize the number of hops a packet has to make across an 8 unit stack. In addition, if a switch failure does occur, the redundant connection prevents the isolation of any other network users across the rest of the stack.

In addition, the NetVanta 1600 series gigabit Ethernet switches support modular power-supplies and fans. In the event of a failure, a spare power-supply/fan unit can be installed in a matter of minutes without needing to physically remove the switch from the rack. This allows network administrators to cost-effectively reduce maintenance overhead and minimize network downtime.

Using Port Aggregation

ActivChassis also allows multiple switches to look, feel, and operate like a single chassis-like system, enabling certain features such as port-mirroring and link-aggregation to be applied across multiple physical switches that comprise the stack.

Therefore, using ActivChassis, it is possible to aggregate multiple physical links that span wiring closets to create a single, logical highly-available network uplink connection. In this configuration, there is no single point of failure in the network—if one switch goes down or if one cable is disconnected, the logical link remains active and network users retain full connectivity to the network.