



Is Your Campus Backbone Ready?

Cisco Catalyst 6500 Series Supervisor Engine 2T Addresses Primary Enterprise Trends

The Cisco® Catalyst® 6500 Series Supervisor Engine 2T unlocks the potential of the Cisco Catalyst 6500 Series Switch; enabling customers to address the emerging trends of bring your own device (BYOD); pervasive video; and the resulting challenges of scale, security, and management.

Is Your Campus Backbone Ready for BYOD?

The proliferation of personal mobile devices entering enterprise networks is creating challenges for enterprise IT. With more than 7 billion mobile devices predicted to enter the enterprise by 2015,¹ employees are becoming increasingly mobile. In many countries, smartphone adoption is reaching 50 percent, followed closely by tablets. Users are accessing information from multiple devices, up to 3.3 per user by 2014.² IT staff must enable and secure a much larger number of devices on the network, while making sure of compliance with regulations such as the Health Insurance Portability and Accountability Act (HIPAA), Payment Card Industry (PCI) Data Security Standard and so on.

In order to cost-effectively manage BYOD, considerations to wired/wireless integration, user segmentation, role-based access control, and visibility into user traffic are mandatory. Table 1 lists how the Supervisor Engine 2T helps IT meet these considerations.

Table 1. BYOD Considerations and Corresponding Supervisor Engine 2T Functionalities

BYOD: Mandatory Considerations	Supervisor Engine 2T Functionalities
Wired/wireless integration	Integrated Wireless Services Module 2 (WISM-2) and third-generation Virtual Switching System (VSS)
User segmentation	Easy Virtual Network (EVN)
Role-based access control	Security Group Tag (SGT)
Traffic visibility	Flexible NetFlow and Network Analysis Module 3 (NAM-3)

Traffic from the proliferation of personal mobile devices is putting a lot of pressure on the network backbone. The Supervisor Engine 2T's third-generation VSS hardens the network core to accommodate this proliferation. The WISM-2 wireless controller module supports up to 15K wireless clients 1000 access points and provides a gateway for Apple Bonjour.

In BYOD, personal devices are considered untrusted. Enterprises can segment the physical network to separate personal devices from corporate devices. Traditional network virtualization technologies, for example, Multiprotocol Label Switching (MPLS) and Virtual Routing and Forwarding Lite (VRF-Lite), are complicated and expensive to deploy. Cisco EVN, supported by the Supervisor Engine 2T, dramatically simplifies this process, enabling IT to apply this powerful technology to manage BYOD. EVN is fully compatible with standards-based approaches.

Role-based access control is needed to maintain security in BYOD environment, and SGT is an end to end solution integrated with the Cisco Identity Services Engine. It is also the first step to deploy Cisco TrustSec®, a comprehensive campus security solution. Flexible NetFlow and NAM-3 provide clear visibility into application and user traffic. This increases troubleshooting coverage for IT of the many devices and traffic on the network.

Is Your Campus Backbone Ready for Video?

Globally, business web-based videoconferencing traffic is forecasted to grow six fold from 2011 to 2016, a compound annual growth rate of 45 percent.³ This growth is being fostered by a need to promote superior collaboration between employees, customers, and partners. IT staff will need to respond to the variable, high-volume nature of video traffic. Collaborative video deployments will also require low latency in an end-to-end solution for real-time interaction. IT departments are looking for intelligent video solutions that will adapt their infrastructure to meet these requirements. The Supervisor Engine 2T supports the Medianet suite of features, which provide the following:

- Better video experience with priority queuing, metadata Quality of Service (QoS), multimedia optimized buffers, and multicast scale.
- Mediatrace and proactive performance monitoring to provide centralized real-time troubleshooting of video problems for the entire network. This benefit obviates sending IT to remote sites to rectify video problems.
- Finer application visibility with Flexible NetFlow support and NAM-3 service module.

1 ABI Research: Wi-Fi IC Market Data <http://www.instat.com/catalog/wcatalogue.asp?id=167#IN0904005WS>

2 Cisco IBSG Horizons Study, May 2012 <http://newsroom.cisco.com/press-release-content?type=webcontent&articleId=854754>

3 Cisco VNI Global IP Traffic Forecast May 2012 http://www.cisco.com/web/solutions/sp/vni/vni_forecast_highlights/index.html



Can Your Campus Backbone Scale?

The megatrends such as BYOD, mobility, and video are putting tremendous pressures and demands on the campus backbone. This triggers the need for the core of the network to scale sooner than before. The Supervisor Engine 2T delivers three times the performance and four times the scale of the Cisco Catalyst 6500 Series Supervisor Engine 720, enabling the use of higher density, higher bandwidth interface modules: up to 40 Gigabit Ethernet today, 100 Gigabit Ethernet in the future. The Supervisor Engine 2T has increased the 10 Gigabit Ethernet line-rate port density to 92.

Table 2 compares the features in various supervisor engines.

The software consistency of all the supervisor engines minimizes change management in an enterprise when migrating to the Supervisor Engine 2T. In summary, running a Cisco Catalyst 6500 Series switch with the Supervisor Engine 2T provides the greatest benefit and security and lowest TCO in managing trends such as BYOD and video.

Table 2. Supervisor Engine Feature Comparison

Trends	Features	Supervisor Engine 2T	Supervisor Engine 720	Supervisor Engine 2	Supervisor Engine 1
BYOD	Cisco TrustSec security (SGT in H/W, MACsec/encryption, SG ACL)	Y	SGT transport	N	N
	WiSM2 wireless controller (15K clients, 1K access points, Bonjour support)	Y	Y	N	N
	Network virtualization (guest/BYOD) (EVN, native VPLS/MPLS, ASA-SM)	Y	(ASA-SM)	N	N
	Application visibility (Flexible NetFlow, NAM-3)	Y	NetFlow and NAM-3	N	N
Video	Application visibility (Flexible NetFlow, NAM-3)	Y	NetFlow and NAM-3	N	N
	Medianet software suite <ul style="list-style-type: none"> Metadata QoS (priority queuing) Mediatrace Performance monitoring Multicast scale 	Y	N	N	N
	Multimedia optimized buffers	Y	Y	N	N
	Multicast live-live	Y	N	N	N
Scale	System bandwidth	2 TB	720 G	256 G	32 G
	Slot bandwidth	80 Gbps	40 Gbps	8 Gbps	
	10G density <ul style="list-style-type: none"> Oversubscribed Line rate 	180 ports 92 ports	180 ports 48 ports	N	N
	40 G	44 ports	N	N	N
	100 G ready	Y	N	N	N
	VSS	4 TB	1.4 TB	N	N
Management	"Hitless" ISSU (Quad Sup SSO)	Y	N	N	N