Cisco AppNav™

Product Overview

Concepts like Bring-your-own-device (BYOD) initiatives and solutions such as virtual desktop infrastructure (VDI) have increased traffic growth in organizations. To handle the exponential traffic growth, customers are adopting WAN optimization more rapidly than ever.

For example, until a few years ago, users in organizations had only desktop PCs or laptop computers for their day-to-day functions. Today, the same users also have smart phones, and perhaps tablet devices, too. They use combinations of these devices to access their applications such as email and their virtual desktops. As a result, the amount of traffic between branch offices and data centers using the existing set of applications has increased by 300 percent.

Organizations are in the process of building virtualized data centers while continuing to use their existing physical data centers. To optimize application traffic in these newly built virtual data centers, organizations want to provision virtual WAN optimization resources elastically, and at the same time they want to continue to use their existing physical WAN optimization devices.

Additionally, customers want to bind their applications to WAN optimization resources for better control and isolation and to increase the benefits of WAN optimization. To add WAN optimization capacity, currently available solutions require close coordination between the network team and other IT teams because network topology changes are needed.

To address these customer needs and challenges, Cisco® AppNav technology and associated modules offer dedicated, purpose-built hardware that enables on-demand elastic provisioning and pooling of WAN optimization resources, providing more robust virtualization, control, and management capabilities and enabling a more natural migration to the cloud, with the simplicity of an in-path solution and the scalability of an off-path solution. With Cisco AppNav and Cisco Wide Area Application Services (WAAS) Software 5.0, the agile and optimized WAN has cloud connectivity and end-to-end standards-based secure application delivery.

Features and Benefits of Cisco AppNav

Table 1 lists the main features and benefits of the Cisco AppNav solution.

Table 1. Cisco AppNav's Main Features and Benefits

Features	Benefits
Inline simplicity and off-path scalability	Cisco AppNav enables you to easily add WAN optimization capacity to the data center without having to make any changes to network configurations (for example, you do not need to modify flow masks) or topologies. Cisco AppNav allows to expand WAN optimization capacity without any service disruption, regardless of whether it is deployed inline or off the path.
Ease of enterprise wide deployment for both physical and virtual form factors	Cisco AppNav enables on-demand provisioning of physical and virtual WAN optimization resources, in any network topology, in one elastic pool without the exponential cost increase or configuration complexity of other solutions.
Smaller footprint and lower total cost of ownership (TCO)	Cisco AppNav enables virtualization of WAN optimization resources into a WAN optimization cloud, eliminating redundant and support-intensive infrastructure, resulting in less need for maintenance, streamlined operations, and cost savings.
Cisco WAAS intelligence in load distribution	The exchange of load indicators between Cisco WAAS devices and Cisco AppNav module helps ensure that all available Cisco WAAS devices share the load appropriately.
High availability	Each Cisco AppNav module synchronizes its TCP connection state with all other Cisco AppNav modules in the same cluster. Thus, in the event of a Cisco AppNav module failure, the other Cisco AppNav modules take over, helping ensure that application traffic is not disrupted.
Native handling of asymmetric traffic and preservation of the original traffic path	Cisco AppNav can be deployed both inline and off the path, and it natively supports asymmetric traffic flow while preserving the original traffic path to adhere to existing LAN and WAN load-balancing characteristics.
Hardware processing	Dedicated hardware processing helps ensure reliable and consistent performance.

Table 2 shows the Cisco AppNav module form factors and lists the features of each.

Table 2. Cisco AppNav Module Form Factors

Cisco AppNav Module Form Factor	Features
	• WAVE-APNV-10GE • Support for up to 1 million concurrent TCP connections • 12-Gbps LAN throughput; up to 8 modules can be clustered for higher throughput • Four 10Gigabit Ethernet Enhanced Small Form-Factor Pluggable (SFP+) fiber ports (short reach) for traffic distribution and cluster management • 2 onboard Gigabit Ethernet ports for management • Support for both inline and off-path deployment models • Dual power supplies for redundancy
	• WAVE-APNV-GE-12T • Pluggable I/O module for Cisco WAVE694, 7541, 7571, and 8541 Wide Area Virtualization Engines • Support for up to 1 million concurrent TCP connections • 12-Gbps LAN throughput per module; up to 8 module scan be clustered for higher throughput • Twelve 1 Gigabit Ethernet copper ports • Support for both inline and off-path deployment models • Fail-to-block capability in inline deployment with link-state propagation
	• WAVE-APNV-GE12SFP • Pluggable I/O module for Cisco WAVE694, 7541, 7571, and 8541 • Support for up to 1 million concurrent TCP connections • 12-Gbps LAN throughput per module; up to 8 modules can be clustered for higher throughput • Twelve 1 Gigabit Ethernet SFP ports for fiber connectivity • Support for both Inline and off-path deployment models • Fail-to-block capability in inline deployment with link-state propagation

Hardware Specifications

Table 3 lists the hardware specifications for Cisco AppNav modules.

Table 3. Hardware Specifications

	Cisco AppNav 10 Gigabit Ethernet Bundle	Cisco AppNav 1 Gigabit Ethernet I/O Module
Hardware Features		
Network interfaces	Two 1 Gigabit Ethernet onboard ports	-
I/O module	Four ports 10 Gigabit Ethernet SFP+ module	• Twelve ports 1 Gigabit Ethernet copper module • Twelve ports 1 Gigabit Ethernet SFP module
Power	Two 450-watt (W) AC power supplies	-
Fan	Redundant 40-mm fans; hot-swappable	-
Rack units (RUs)	1RU	-
Console	USB, mini-USB, and RJ-45 serial console; auto-detection	-
Dimensions		
Height	1.69 in. (42 mm)	1.5 in. (38 mm)
Width	16.89 in. (429 mm)	4.75 in. (121 mm)
Depth	20.33 in. (516 mm); includes power-supply handles	10.38 in. (264 mm)
Maximum weight	22.51 lb (10.21 kg)	2.14 lb (973g)
Operating Specifications		
Universal input	Line voltage: • 90 to 132 VAC • 180 to 264 VAC	-
Operating temperature	50 to 95ºF (10 to 35ºC)	50 to 95ºF (10 to 35ºC)
Nonoperating temperature	-40 to 140ºF (-40 to 60ºC)	-40 to 140ºF (-40 to 60ºC)
Humidity	Non-operating: 8 to 80%	Non-operating: 8 to 80%
Altitude	Operating: 10,000 ft (3050m) Non-operating: 15,000 ft (4572m)	Operating: 10,000 ft (3050m) Non-operating: 15,000 ft (4572m)
Regulatory Compliance		
Compliance	CE marking	CE marking
EMC	• 47 CFR Part 15 Class A • AS/NZS CISPR22 Class A • CISPR22 Class A • EN 55022 Class A • ICES 003 Class A • VCCI Class A • EN 55024 • EN 61000-3-2 • EN 61000-3-3 • CISPR24 • GB9254-2008 • KN22 Class A • KN24 (all platforms)	• 47 CFR Part 15 Class A • AS/NZS CISPR22 Class A • CISPR22 Class A • EN 55022 Class A • ICES 003 Class A • VCCI Class A • EN 55024 • EN 61000-3-2 • EN 61000-3-3 • CISPR24 • GB9254-2008 • KN22 Class A • KN24 (all platforms)
Safety	• UL 60950-1(second edition) • 21 CFR 1040 • CSA22.2-No. 60950-1 (second edition) • IEC/EN 60950-1 (second edition) • AS/NZS 60950 • GB4943-1995 (all platforms)	• UL 60950-1(second edition) • 21 CFR 1040 • CSA22.2-No. 60950-1 (second edition) • IEC/EN 60950-1 (second edition) • AS/NZS 60950 • GB4943-1995 (all platforms)

Ordering Information

Table 4 lists ordering information for the Cisco AppNav solution.

Table 4. Ordering Information

Part Number	Description
WAVE-APNV-10GE	4 *10 GigE IO module bundled with WAVE-594 and redundant power supply unit
WAVE-APNV-GE-12T	AppNav 12 *1 GigE copper module
WAVE-APNV-GE-12SFP	AppNav 12 *1 GigE SFP module for fiber connectivity
WAVE-APNV-GE-12T=	Spare unit - AppNav 12 *1 GigE copper module
WAVE-APNV-GE-12SFP=	Spare unit - AppNav 12 *1 GigE SFP module for fiber connectivity

Only Cisco SFP modules are supported. When an unsupported SFP module is plugged into an interface, the interface will be put into the Error Disabled state.

Table 5 lists the Cisco SFP modules supported.

Table 5. Supported Cisco SFP Modules

I/O Module Type	SFP Type	Part Number
Twelve 1 Gigabit Ethernet	1000BASE-SX short wavelength; without digital optical monitoring (DOM)	GLC-SX-MM
Twelve 1 Gigabit Ethernet	1000BASE-LX/LH long wavelength; without DOM	GLC-LH-SM
Twelve 1 Gigabit Ethernet	1000BASE-SX short wavelength; with DOM	GLC-SX-MMD
Twelve 1 Gigabit Ethernet	1000BASE-LX/LH long wavelength; with DOM	GLC-LH-SMD
Four 10 Gigabit Ethernet	Cisco 10GBASE-SR SFP+ module for multimode fiber (MMF)	SFP-10G-SR
Four 10 Gigabit Ethernet	Cisco 10GBASE-LR SFP+ module for single-mode fiber (SMF)	SFP-10G-LR
Four 10 Gigabit Ethernet	10GBASE-CU SFP+ cable, 3m, passive	SFP-H10GB-CU3M
Four 10 Gigabit Ethernet	10GBASE-CU SFP+ cable, 5m, passive	SFP-H10GB-CU5M

Services and Support

Cisco offers a wide range of services to accelerate customer success, delivered through a unique combination of people, processes, tools, and partners, resulting in high levels of customer satisfaction. Cisco Services help you protect your network investment, optimize network operations, and prepare your network for new applications to extend network intelligence and the power of your business. For more information about Cisco Services, visit Cisco Technical Support Services or Cisco Advanced Services.

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