iMaster NCE-WAN Brochure

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Product Overview

Enterprises face tremendous challenges on the road to cloudification, including high private line costs, difficult application assurance, long service rollout period, and difficult O&M.

In response, Huawei launches iMaster NCE to implement all-scenario interconnection between enterprise branches, HQ, and clouds, and redefine enterprise private lines via intelligent traffic steering and application experience optimization.

iMaster NCE provides key capabilities such as 5G access, identification of 6000+ applications, 20+ typical networking, and simplified deployment in 3 minutes, and intelligent selection of application policies.

The architecture of iMaster NCE consists of the following layers:

- ❏ Management layer: iMaster NCE-WAN manages CPEs via NETCONF and interconnects with third-party applications via RESTful APIs, implementing full-process service interconnection management.

- ❏ Control layer: iMaster NCE-WAN works with the distributed control component (RR) to transmit routes between sites in an area and implement inter-area network interconnection.

- ❏ Network connectivity layer: Low-cost CPEs are deployed at the HQ, branches, and cloud platform, and overlay technology is used to build full-mesh connections on demand based on links such as the Internet and traditional private lines.
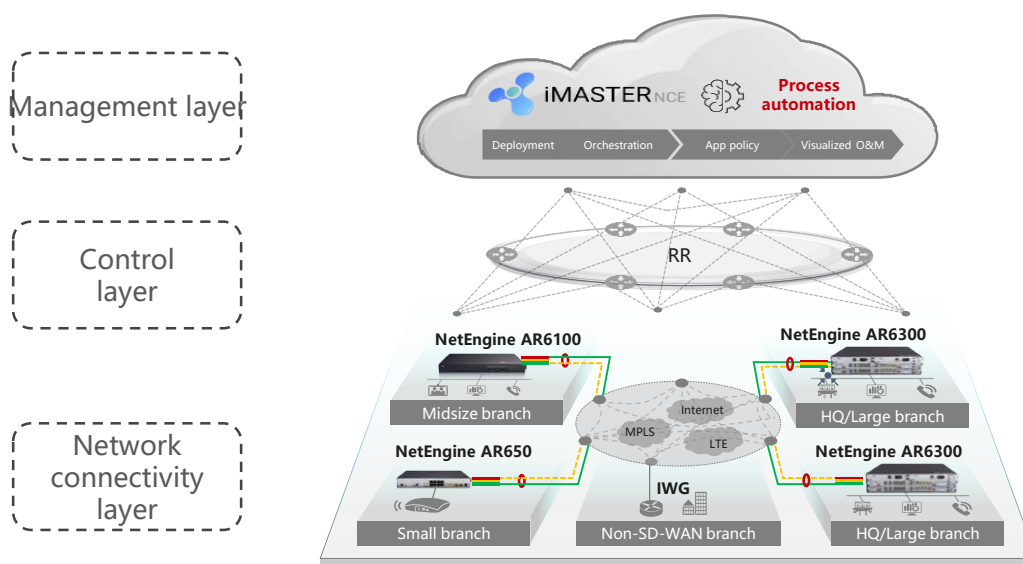
Architecture and Key Components
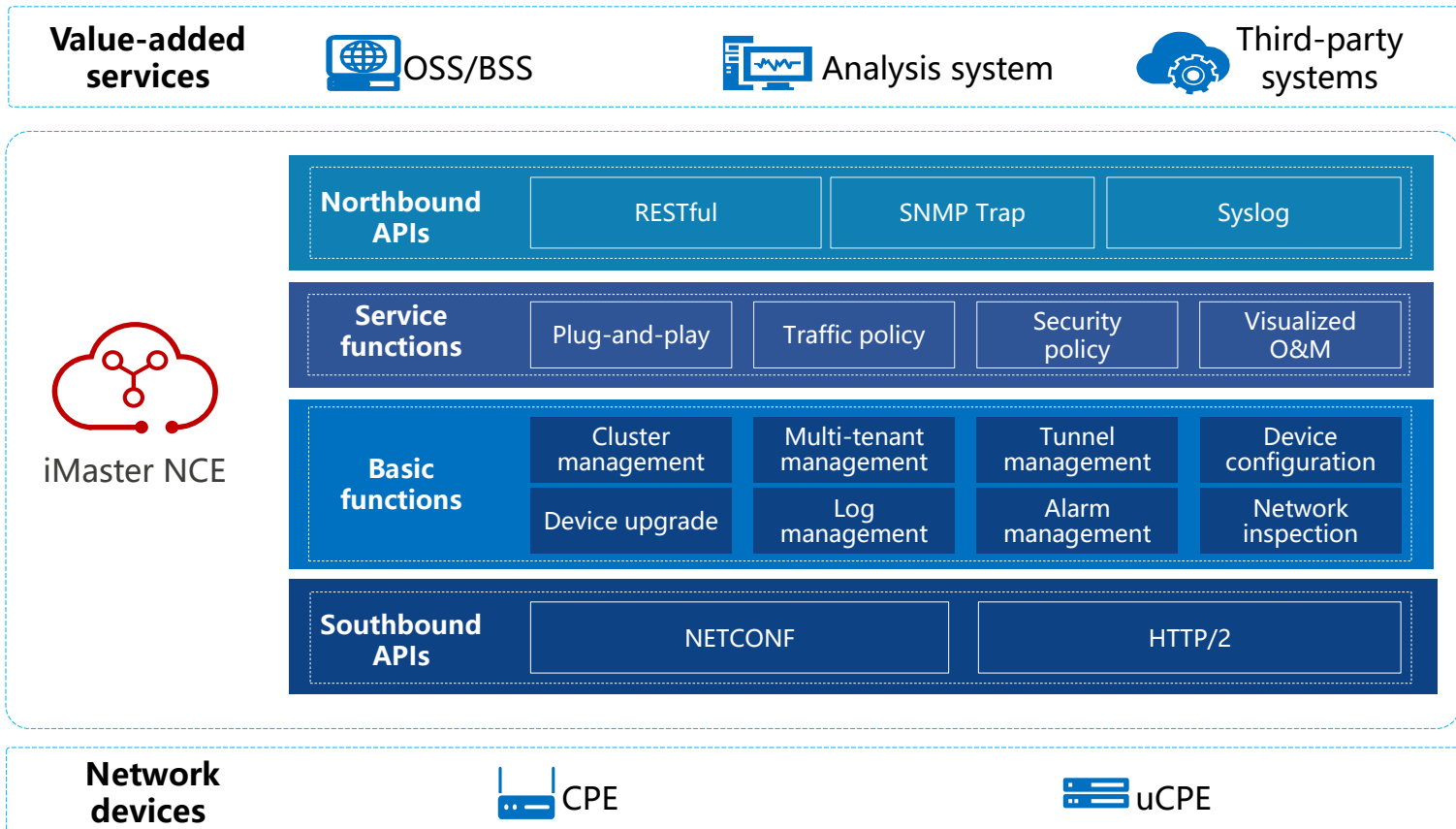
In the southbound direction, Huawei iMaster NCE-WAN connects to CPEs through HTTP/2 and NETCONF to implement unified CPE management, automatic service provisioning, and unified overlay network control.

Open northbound APIs enable upper-layer applications, such as the carrier OSS/BSS, analysis system, and third-party systems, to interconnect with iMaster NCE-WAN.

Value-added services	OSS/BSS	Analysis system	Third-party systems

iMaster NCE	**Northbound APIs**	RESTful	SNMP Trap	Syslog
	Service functions	Plug-and-play	Traffic policy	Security policy	Visualized O&M
	Basic functions	Cluster management	Multi-tenant management	Tunnel management	Device configuration
		Device upgrade	Log management	Alarm management	Network inspection
	Southbound APIs	NETCONF		HTTP/2	

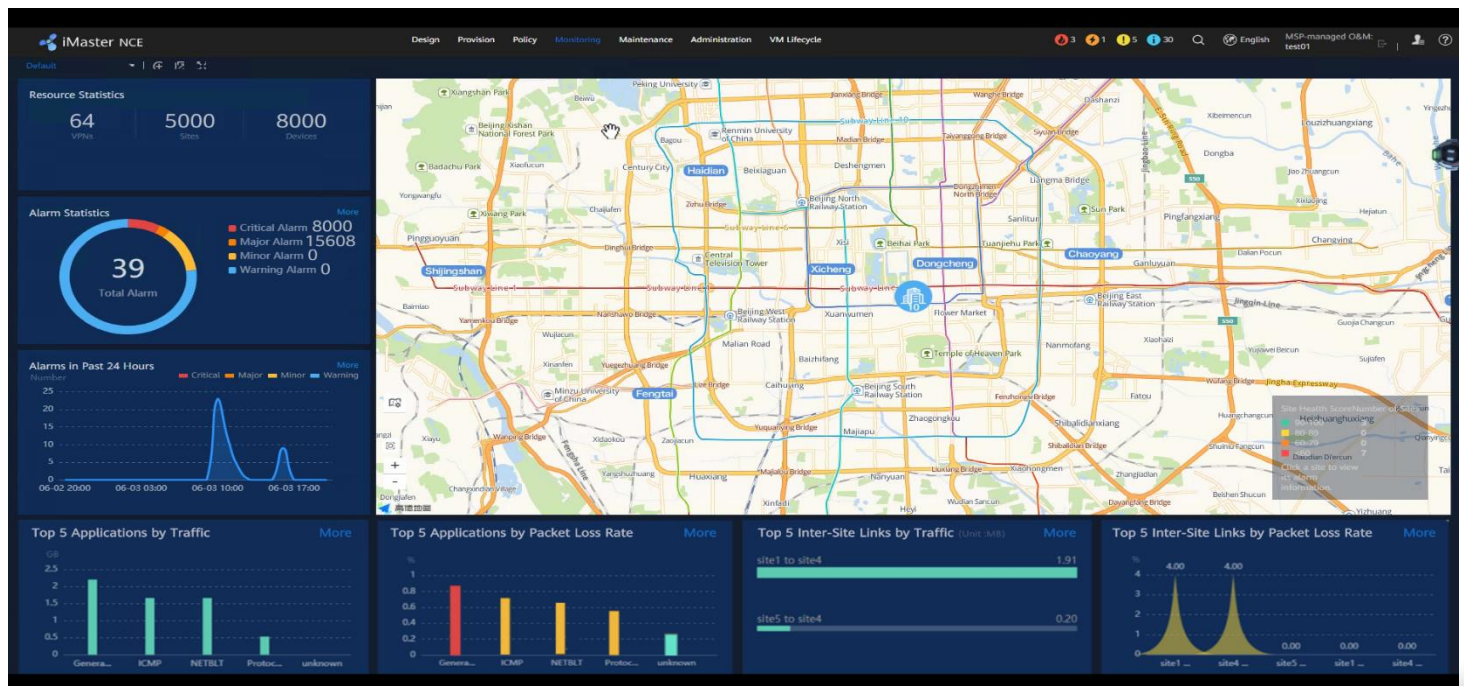| Network devices	CPE	uCPE

Benefits

Fast Service Provisioning

❑ Supports extensive WAN link access modes and orchestration of 20+ networking models for diverse sectors, such as finance, carrier 2B, and large enterprises.

❑ Offers template-based service configuration and policy delivery to improve service deployment and O&M efficiency.

❑ Uses APIs to connect to the customer's orchestrator platform for unified service management.

❑ Supports extensive ZTP modes such as rapid deployment and email-based deployment, enabling customers to bring devices online in minutes.

Application-based Experience Optimization

❑ Supports application-based intelligent traffic steering and applies multiple route selection policies based on dimensions such as bandwidth utilization and link quality, improving link utilization and application experience quality.

❑ Leverages WAN optimization technologies, such as A-FEC, to ensure video quality and smooth video conferences even at 20% packet loss rate on the underlay network.

❑ Supports per-packet load balancing to solve elephant flow issues and improve bandwidth utilization.

❑ Supports dual-fed and selective receiving to ensure zero packet loss for key services upon unstable link quality.

❑ Supports intelligent selection of application policies and automatic application experience assurance based on user intentions

Visualized O&M and Monitoring

❑ Supports a large screen with an integrated O&M and monitoring GUI, and displays the network-side status based on the topology, GIS, and 45+ reports, improving O&M efficiency and service experience.

❑ Supports agile reports, supports flexible graphical display of device, link, network performance, and alarm data, and supports report customization and export.

❑ Supports precise alarm notification by email, helping users learn about the live network status in real time.

❑ Supports statistics on intelligent traffic steering and intuitively displays TOP N steering cases and sites, optimizing the link quality or traffic steering policies.

Features

Feature	Description
Plug-and-play	• Email-based deployment • DHCP-based deployment • USB-based deployment • Rapid deployment
Tunnel management	• Configuration and orchestration of VPN network topologies • Extensive networking modes: full-mesh, hub-spoke (single, dual, or multiple hubs), partial-mesh, and customized networking • IPsec encryption
Intelligent traffic steering	• Application-based intelligent traffic steering: private lines for key services and Internet links for other services • Identification of predefined and user-defined applications • Detection of link quality based on IP FPM (including delay, jitter, and packet loss) • Configuration of route selection policies based on the delay, jitter, packet loss, and bandwidth usage
Visualized O&M	• Site-, link-, application- and device-based visualized management, facilitating troubleshooting and improving O&M efficiency • GIS-based site and link status • O&M and diagnosis from the site and device view • For network-wide sites: site health distribution, sites with the lowest health scores, and site list • For a specific site: average application quality measurement (AQM) score, bandwidth utilization, throughput trend, and applications with the worst AQM score • For network-wide links: links with the worst link quality measurement (LQM) score, top traffic, and link list • For a specific link: LQM trend, throughput trend, top application traffic, and application AQM distribution • For network-wide applications: AQM distribution, applications with the worst AQM score, top applications by traffic, and application list • For a specific application: AQM trend and throughput trend • Real-time monitoring and visibility of traffic on interfaces on site devices, inter-site link quality, and inter-site traffic data • Intuitive display of top intelligent steering sites, distribution of top steering causes, as well as export of traffic steering events in table lists.