



**SUNDRAY**



# iBrain Network Management Center

## Datasheet

NMC-8620, NMC-8630, NMC-8650, NMC-8660

NMC-8820, NMC-8830, NMC-8850, NMC-8860

## Product Overview

Sundray iBrain Network Management Center (iBrain NMC) is a platform for centralized management and intelligent operation and maintenance of network equipment. The platform supports APs, V-Sec Switches, Neuron Sense Switch, Turbo Fusion Gateways, and NAC and other devices, and can realize fast deployment, policy configuration, troubleshoot, security alarms, intelligent operation and maintenance of the entire network equipment. With the unified authentication and AI operation and maintenance technology, iBrain provides the one-stop solution to reduce the difficulty of network management. Sundray iBrain NMC integrates Sundray's next-generation network control module, authentication service module, network terminal status visual analysis module, Internet behavior management module, Internet behavior audit module, firewall module, wired and wireless management module, and then realize the SD-Branch networking solution integrating SD-WAN, SD-LAN, SD-WLAN, and SD-IOT.

The SD-Branch Solution is suitable for large-scale and multi-branch networking scenarios such as chain enterprises, supermarket chains, chain hotel, hospital, government, finance and other scenarios.

As one of the most important software function modules of iBrain NMC, AI Networking 2.0 is committed to providing users with a new generation of autopilot network solution capabilities, which can be used in all scenarios of the campus networks. Through five AI capabilities, namely, i-Sense, i-Think, i-Choose, i-Do, and i-Show, it can help to reach level 3 auto-driving networking, bringing a smoother user experience and a more enjoyable IT network O&M.

# Product Photo



NMC-8620



NMC-8630



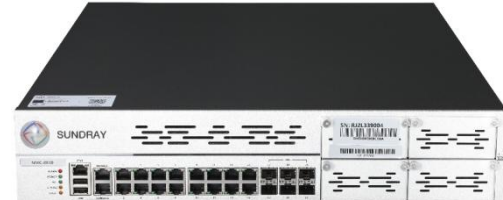
NMC-8650



NMC-8660



NMC-8820



NMC-8830



NMC-8850



NMC-8860

## Product Characteristics

### Built-in complete authentication service

Sundray iBrain NMC has built-in Portal and Radius services to connect to all devices that support Portal2.0 and Radius protocols, and connect to external standard Microsoft AD domains, Oracle, MySQL, MS-SQL, and AS services through Portal2.0 and Radius protocols. To quickly and easily build a set of highly reliable and certified network. It can easily implement a variety of authentication methods, including 802.1X, CA certificate authentication, Portal, SMS self-registration, WeChat applet, SMS, APP authentication, QR code approval, Facebook and other authentication methods, and support two-factor security authentication. A variety of patented

technologies are used to meet the authentication management requirements of various scenarios on the user side, and ensure network security at same time. It provides a unified authentication control solution for SD-Branch scenarios such as SD-WAN, SD-LAN, SD-WLAN, etc

## **Comprehensive network management capabilities**

Sundray iBrain NMC has a built-in application identification library and a tens of millions of URL libraries, which can accurately identify more than 6,500 applications, so different Internet access policies can be allocated based on factors such as users, access locations, time periods, and terminal types. At the same time, it supports the audit function, which can record and keep the user's online behavior, and the storage time can be as long as 180 days. Sundray iBrain NMC supports innovative application identification and management solutions in the bridge forwarding mode, which maximize the value of the SD-Branch solution.

## **Unique traffic security management**

Sundray iBrain NMC innovatively integrates access control, traffic management, Internet behavior auditing, positioning and blocking of virus-infected terminals on the intranet , and supports unified management of V-Sec Switches, one-stop service, greatly reduce network construction costs and operation and maintenance management costs. Combining V-Sec Switches and AP to build an overall east-west traffic security system for both wired and wireless networks.

## **An unprecedented wireless experience**

Sundray iBrain NMC equipment supports layer 2 and layer 3 seamless roaming, can automatically adjust AP's the signal strength and channel, with load balancing between access points, it effectively improves bandwidth utilization. The time fairness algorithm is adopted to allow terminals with different negotiated rates to occupy the same air time, which improves the user's Internet experience. Sundray iBrain NMC can allocate different flow control strategies based on factors such as application, user, time, etc., flexibly allocate bandwidth resources, and maximize the value of bandwidth. In order to avoid the user's possible bad experience during roaming, Sundray has combined its own patented technology to greatly improve the user's roaming experience.

## **Simple network management and maintenance**



Sundray iBrain NMC provides a friendly web management interface to centrally manage the entire network of NAC, APs, V-Sec Switches, and Turbo Fusion Gateways. Through the decentralization and classification of administrators, the precise granularity of network management operation and maintenance can be enhanced in a flexible and grid-based management manner, the operation and maintenance complexity of a single administrator can be reduced. In addition, Sundray iBrain NMC can be operated and maintained through a mobile APP, which can be conveniently managed through the Internet, which effectively improves the efficiency of network administrators.

Through the unified management of AP, NAC, SFG, and V-Sec Switch, Sundray iBrain NMC supports integrated SD-Branch networking including SD-WAN, SD-LAN, SD-WLAN, etc, which further achieving unified management and easy maintenance

## AI Networking 2.0 Operation and Maintenance Capability

SUNDRAY iBrain NMC supports the AI Networking 2.0 O&M capability, which provides five AI capabilities from i-Sense, i-Think, i-Choose, i-Do, and i-Show to provide users with simpler, smarter, and more organized O&M service capabilities.

- i-Sense: This function module combines Turbo Sense series APs, Turbo Fusion series gateways, and RS series V-Sec switches and NS Neuron Sense switches, which can realize six major sense functions, namely, wireless environment sense, authentication quality sense, network quality sense, service quality sense, edge security sense, and WAN quality sense.
- i-Think: Based on the data from the i-Sense layer, this function module carries out an all-around accurate analysis of the network, based on independent AI active 0-impact inspection, ordered service chain framework, abnormal feature library, path chain imaging, and other technologies, assisting the user to carry out network inspection and orderly troubleshooting.
- i-Choose: Based on the built-in anomaly disposal model, it analyzes the root cause of anomaly problems with accurate matching and assists users in rapid problem delimitation.
- i-Do: Based on the anomaly expert database model and Air-Auto wireless intelligent network optimization system, it matches 1:1 targeted suggestions for network problems, solving the network issues ASAP.
- i-Show: Based on the AI insight engine, it provides users with a page intelligent wizard, event center, report center and other functional modules, which provides users with more intuitive and convenient operation and

maintenance tools for daily operation and maintenance, and simplifies the complexity of users' operation and maintenance..

## Products Specifications

Specifications of iBrain NMC								
Hardware specifications								
Model	NMC-8620	NMC-8630	NMC-8650	NMC-8660	NMC-8820	NMC-8830	NMC-8850	NMC-8860
Service ports	3 GE ports; 1 slot	5 GE ports 1 slot	8 GE 2 SFP+ ports 1 slot	16 GE 6 SFP+ ports; 2 slots	16 GE 6 SFP+ ports; 2 slots	7 GE 2 SFP+ ports;	4 GE 4 SFP 4 SFP+ ports 3 slots	4 GE 4 SFP 4 SFP+ ports 3 slots
Weight	4kg	4kg	6.5kg	12kg	12kg	16.5kg	18kg	18kg
Power	<25w	<40w	<180w	<210w	<210w	<210w	<310w	<310w
	Single Power	Optional Dual Power supply		Dual power redundancy by default				
Input voltage	Rated voltage range: 100V~240V AC; 50/60Hz Maximum voltage range: 90V~264V AC; 47/63Hz							
Console ports	1*RJ45 Port							
IPMI ports	/			1				
Other ports	2* USB 2.0 Ports							
Size	430*400*44.5 (L*W*H mm)			430*600*88 (L*W*H mm)				
Environment	Operating/storage temperature: -10°C~55°C/-40°C~70°C							
	Operating/storage humidity: 5%~95% (non-condensation)							
Hard disk	128G SSD		480G SSD	128G SSD MSATA+960G SSD			128G SSD MSATA+1.92T SSD	
Capacity Specification of maximum managed devices and concurrent user								
Model	NMC-8620	NMC-8630	NMC-8650	NMC-8660	NMC-8820	NMC-8830	NMC-8850	NMC-8860
AP	288	560	880	1600	2600	3600	8880	14400
Switch	72	140	220	400	650	900	1200	1200
Gateway	144	240	360	800	1000	1800	3840	4000
NAC	14	24	36	800	1000	2000	4000	4000
User	4,000	8,000	15,000	35,000	75,000	95,000	150,000	250,000

### Software specifications

Software specifications		
SD-WAN	License Step	1
	DHCP/NAT/IPv6	Support
	ISP connection type	Static IP, DHCP, PPPoE
	Static routing	Support

	VPN	Support
	Dual WAN	Support
	DNS agent	Support
	Layer3 link state detection	Support
	Unified management	Support
	NAC series management	Support
	Turbo Fusion gateway management	Support
SD-LAN	License Step	1
	Visible Switch Status Checking	Support
	Unified Switch Configuration	Support
	One-click replacement	Support
	East-west traffic security	Support
	LAN access authentication	Support
	Graphical switch ports panel	Support
	Ports disconnection records	Support
	Security events records	Support
	Terminal type abnormal records	Support
	Terminal migration records	Support
	Link aggregation	Support
	Anti-loop	Support
	HA link	Support
	Routing status	Support
	VRRP	Support
	V-Sec Switch management	Support
SD-WLAN	License step	1
	ESSID.	65535
	IEEE802.11 protocols	Support IEEE802.11a/b/g/n/ac/Wave2/ax/e/i/h/k/v, etc.
	vAP/Chinese/Hidden SSID	Support
	Country code	Support
	User separation	Support
	Online user checking	Support
	Force user disconnection	Support
	No-traffic user aging	Support
	80MHz, 160MHz channel	Support
	20MHz/40MHz channel auto change	Support
	WDS	Support
	Auto/manual channel and power strength adjustment	Support
	Timing RF	Support
	AP Load balances	Support
5G priority	Support	
Signal dead spot detect and RF analysis	Support	
Bridge mode forwarding	Support	

	EAP encryption	Support
	Roaming between NAC/Gateway	Support
	Broadcast/multicast/HD scenario optimization	Support
	Time fairness/ reject low speed terminal	Support
	Layer2/layer3 roaming optimization	Support
	Devices Discovery	Support layer2, layer3, DHCP Option43, DNS, Webagent, Cloud Discovery
	AP remote management/grouping/ Webagent	Support
	AP VPN	Support
	Flow controller in bridge mode	Support
	Air interface management	Support
	802.11e/WMM	Support
SD-IOT	IOT Devices management	Optional
Smart network topology	Real-time network topology of AP, Switch and Gateway	Support
Authentication Center Authentication Center	Account number	65535
	Blacklist and Whitelist	Support
	Self-service account password changes	Support
	Account and terminal binding	Support
	802.1X authentication	Support
	Built-in Portal/portal2.0	Support
	API to radius/LDAP/Microsoft AD	Support
	WAPI	Support
	Enterprise WeChat authentication	Support
	Ding Talk authentication	Support
	MOA authentication	Support
	Authentication type	Support WPA-PSK, WPA2-PSK, and WPA-PSK/WPA2-PSK/WPA3 mixed encryption, open + web authentication, WPA-PSK/WPA2-PSK+web authentication, WPA/WPA2 /WPA3 (enterprise)
	Portal authentication	Support
	QR code approval	Support
	WeChat Mini-APP Authentication	Support
	Questionnaire	Support
	SMS Authentication	Support
Temporary visitor authentication	Support	
Free user authentication	Support	

	CA certificate authentication	Support
	Local account authentication	Support
	The external authentication database	Support related external RADIUS, LDAP, Active Directory, achieve authentication of 802.1 x, Portal, etc.
	The user's name and MAC binding	Support
	Data encryption	Support TKIP and AES (CCMP)
	EAP Protocol categories	Support EAP TLS, EAP PEAP, EAP - MD5, EAP - MSCHAPv2, etc.
	MAC static black and white list	Support
	The dynamic blacklist	Support
	Redirection after authentication	Support
Access Control	APP and URL filtering	Support
	Terminal type identification	Support
	Role based authorization	Support
	Dynamic VLAN assignment	Support
	ACL	Support
	Bandwidth management for LAN and WAN	Support
	End-to-end QoS	Support
	East-west traffic security	Support
Internet activity management and report center	Web URL audit	Support
	Application audit	Support
	Email audit	Support
	BBS audit	Support
	FTP audit	Support
Internet activity management and report center	Telnet audit	Support
	Audit-free policy	Support
	Built-in/external report center	Support
	Bridge mode audit	Support
	Integration to external audit platform	Support
Security defense	WIDS	Support
	WIPS	Support
	WLAN Anti-phishing	Support
	WLAN Anti-spoof	Support
	WLAN ARP defense	Support
	Switch ARP defense	Support
	Gateway ARP defense	Support
	WLAN DHCP defense	Support
	Switch DHCP defense	Support
	Gateway DHCP defense	Support
	WLAN east-west traffic security	Support
	WLAN east-west traffic security	Support
WLAN DOS defense	Support	

	Gateway DOS defense	Support	
	POE terminal security	Support	
	Hierarchical admin management	Support	
	Switch port protection and isolation	Support	
	DHCP Snooping	Support	
	Private IP defense	Support	
	Transmission security	Support	
	Edge security	Support	
Unified visual operation and maintenance management	Unified visual management	Support	
	System status visibility	Support	
	Gateway status visibility	Support	
	Switch status visibility	Support	
	AP status visibility	Support	
	Security status visibility	Support	
	Gateway working status profiling	Support	
	Switch working status profiling	Support	
	User status visibility	Support	
	Online user status visibility	Support	
	Portal/Radius user status visibility	Support	
	Wired terminal status visibility	Support	
	Wireless terminal status visibility	Support	
	Wireless terminal status network quality visibility	Support	
	Wireless user network quality visibility	Support	
	Unified visual operation and maintenance management	Network security status visibility	Support
		Account security visibility	Support
Terminal traffic analysis visibility		Support	
Area-based mutual access traffic map		Support	
Service access logs visibility		Support	
AP heatmap analysis		Support	
HA		Support	
Offsite redundancy		Support	
Disaster backup		Support	
Off-site vertical backup		Support	
Off-site horizontal backup		Support	
Authentication server backup		Support	
Management methods		Support Web, CLI, Telnet, SSH.	
SNMP v1/v2/v3/Traps		Support	
Visitor density		Support	
System alarm		Support	
User quantity trends		Support	

Application traffic trends	Support
Traffic history	Support
Firmware update	Support
Configuration backup/restore	Support
System logs checking and export	Support
Troubleshoot tool	Support
Cluster management	Support
Centralized /distributed authentication	Support
APP mobile management	L2 and L3 discovery, DHCP option 43 and DNS domain name discovery are supported, SDP for Switch auto discovery
Link aggregation/ status detection	Support.

# Ordering Information

Model	Description
NMC-8620	Sundray iBrain intelligent network management center, supports 3 Gigabit electrical ports, built-in SD-WAN, SD-LAN, SD-WLAN, authentication center, security modules, it support IoT application expansion, management of gateways, switches, APs and other devices; support to manage 288 devices and 4K concurrent users. By default, it has 8 free gateway management licenses, 8 AP management licenses, and 8 switch management licenses, built-in 128G SSD hard disk.
NMC-8630	Sundray iBrain intelligent network management center, supports 5 Gigabit electrical ports, built-in SD-WAN, SD-LAN, SD-WLAN, authentication center, security modules, it support IoT application expansion, management of gateways, switches, APs and other devices; supports to manage 560 devices and 8K concurrent users. By default, it has 16 free gateway management licenses, 16 AP management licenses, and 16 switch management licenses, built-in 128G SSD hard disk.
NMC-8650	Sundray iBrain intelligent network management center, supports 8 GE 2 SFP+ ports; built-in SD-WAN, SD-LAN, SD-WLAN, authentication center, security modules, it support IoT application expansion, management of gateways, switches, APs and other devices; support to manage 880 devices and 15K concurrent users. By default, it has 32 free gateway management licenses, 32 AP management licenses, and 32 switch management licenses, built-in 480G SSD hard disk.
NMC-8660	Sundray iBrain intelligent network management center, supports 16 GE 6 SFP+ ports, supports dual power redundancy; built-in SD-WAN, SD-LAN, SD-WLAN, authentication center, security modules, it supports IoT application expansion, management of gateways, switches, APs and other devices; support to manage 1600 devices, support 35K online users, and built-in 960 GB SATA SSD hard disk. By default, it has 32 free gateway management licenses, 32 AP management licenses, and 32 switch management licenses
NMC-8820	Sundray iBrain intelligent network management center, supports 16 GE 6 SFP+ ports, supports dual power redundancy; built-in SD-WAN, SD-LAN, SD-WLAN, authentication center, security modules, it supports IoT application expansion, management of gateways, switches, APs and other devices; support manage 2600 devices, support 75K online users, and built-in 960 GB SATA SSD. By default, it has 64 free gateway management licenses, 64 AP management licenses, and 64 switch management licenses
NMC-8830	Sundray iBrain intelligent network management center, supports 16 GE 6 SFP+ ports, supports dual power redundancy; built-in SD-WAN, SD-LAN, SD-WLAN, authentication center, security modules, it supports IoT application expansion, management of gateways, switches, APs and other devices; support to manage 3600 devices, support 95K online users, and built-in 960 GB SATA SSD hard disk. By default, it has 64 free gateway management licenses, 64 AP management licenses, and 64 switch management licenses
NMC-8850	Sundray iBrain intelligent network management center, supports 4 GE, 4 SFP, 4 SFP+ ports, supports dual power redundancy; built-in SD-WAN, SD-LAN, SD-WLAN, authentication center, security modules, it supports IoT application expansion, management of gateways, switches, APs and other devices; support to manage 8880 devices, support 150K online users, and built-in 1.92 TB SATA SSD hard disk. By default, it has 128 free gateway management licenses, 128 AP management licenses, and 128 switch management licenses
NMC-8860	Sundray iBrain intelligent network management center, supports 4 GE, 4 SFP, 4 SFP+, supports dual power redundancy; built-in SD-WAN, SD-LAN, SD-WLAN, authentication center, and security modules, it supports IoT application expansion, management of gateways, switches, APs, and other devices; support to manage 14400 devices, support 250K online users, and built-in 1.92 TB SATA SSD hard disk. By default, it has 128 free gateway management licenses, 128 AP management licenses, and 128 switch management licenses



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