

EDR-G9010 系列

8 個 GbE 銅纜 + 2 個 GbE SFP 多埠工業安全路由器



特色與優點

- 10 埠 Gigabit 多合一防火牆/NAT/VPN/路由器/交換器
- 具備入侵防護/偵測系統 (IPS/IDS) 的下一代工業防火牆
- 使用 MXsecurity 管理軟體視覺化 OT 安全性
- 透過 VPN 建立安全遠端存取通道
- 使用深度封包檢測 (DPI) 技術檢查工業通訊協定資料
- 透過網路位址轉譯 (NAT) 輕鬆設定網路
- RSTP/Turbo Ring 備援通訊協定增強了網路備援性
- 支援安全開機以檢查系統完整性
- 通過海事網路安全認證 (IACS UR E27 Rev.1 & IEC 61162-460 Ed.3.0) , 支援 460 閘道、轉發器和交換器角色
- 通過 IEC 62443-4-2 安全等級 2 認證
- -40 至 75°C 操作溫度範圍 (-T 型號)

認證



簡介

EDR-G9010 系列是一套高度整合的工業多埠安全路由器，具備防火牆/NAT/VPN 和託管第 2 層交換器功能。這些裝置專為關鍵遠端控制或監控網路中基於乙太網路的安全應用所設計。這些安全路由器提供電子安全邊界，以保護關鍵網路資產，包括電力應用中的變電站、水站中的抽水與處理系統、石油和天然氣應用中的分散式控制系統，以及工廠自動化中的 PLC/SCADA 系統。此外，加上 IDS/IPS，EDR-G9010 系列是一款工業下一代防火牆，配備了威脅偵測和預防功能，可進一步保護關鍵基礎設施免受網路安全攻擊。

通過 IEC 62443-4-2 安全等級 2 認證

EDR-G9010 系列型號通過 IEC 62443-4-2 安全等級 2 認證 (<https://certificates.iecee.org/#/deliverables/CERT/1667679/view>)。內嵌防火牆使用政策規則來控制受信任區域之間的網路流量，而網路位址轉譯 (NAT) 則保護內部網路免受外部主機的未經授權存取。虛擬私人網路 (VPN) 功能進一步為使用者從公共網際網路存取私人網路時提供安全的通訊通道。為了幫助保護您的 OT 資產免受網路攻擊，EDR-G9010 系列支援深度封包檢測 (DPI) 來檢查網路封包的資料部分，以識別各種 OT 特定通訊協定。

MX-ROS 應對不斷增長的網路安全威脅

Moxa 的 MX-ROS 是用於工業安全路由器和防火牆的軟體平台。該平台透過簡化的 Web 和 CLI 介面，支援安全路由器的強大安全性和使用者易用的操作。MX-ROS 裝置在每個版本中都提供了豐富的最新跨產業營運技術 (OT) 網路管理功能，可保護您的硬體和軟體。

透過使用者友善的介面和快速設定簡化組態

EDR-G9010 系列的設定精靈提供了一種簡單的方法，使用者只需四個步驟即可設定 WAN、LAN 和橋接埠以實現路由功能。此外，基於物件的防火牆管理功能為工程師提供了一種簡單的方式來設定和維護針對 IP 位址和子網路、網路服務、工業應用服務以及使用者定義服務的防火牆過濾。

工業等級設計確保不間斷的網路連線能力

EDR-G9010 系列的堅固硬體使這些安全路由器成為惡劣工業環境的理想選擇，其寬溫型號專為在危險條件和 -40 至 75°C 的極端溫度下可靠操作所設計。此外，EDR-G9010 系列支援全面的第 2 層和第 3 層備援機制，可確保您的網路始終保持連線。

虛擬修補與智慧型威脅防護功能

修補在 OT 環境中仍是一項重大挑戰，因為 OT 應用無法承受關閉系統來中斷應用以進行修補的代價。虛擬修補技術可屏蔽已知和未知的安全漏洞，進而彌補現有修補管理程序的不足。此外，EDR-G9010 具有智慧型 IPS 功能，可利用基於模式的偵測來識別和阻擋已知攻擊，進而持續防禦網路威脅。

規格

Input/Output Interface

Alarm Contact Channels	Resistive load: 1 A @ 24 VDC
Buttons	Reset button
Digital Input Channels	+13 to +30 V for state 1 -30 to +3 V for state 0 Max. input current: 8 mA

Ethernet Interface

10/100/1000BaseT(X) Ports (RJ45 connector)	8
1000/2500BaseSFP Ports	2
Standards	IEEE 802.1Q for VLAN Tagging IEEE 802.3 for 10BaseT IEEE 802.3ab for 1000BaseT(X) IEEE 802.3ad for Port Trunk with LACP IEEE 802.3u for 100BaseT(X) IEEE 802.3x for flow control IEEE 802.3z for 1000BaseSX/LX/LHX/ZX IEEE 802.1X for authentication
DMZ	User-configurable DMZ ports

Ethernet Software Features

Broadcast Forwarding	IP directed broadcast, broadcast forwarding
Management	Back Pressure Flow Control DDNS DHCP Server/Client Web Console (HTTP/HTTPS) LLDP QoS/CoS/ToS SNMPv1/v2c/v3 Telnet TFTP HTTPS SSH
Redundancy Protocols	RSTP STP Turbo Ring v2 Turbo Chain
Routing Throughput	Max. 350K packets per second / 2 Gbps (based on RFC 2544)
Routing Table	Max. 4K routing rules
Concurrent Connections	Max. 400K (based on RFC 3511)
Connections Per Second	Max. 20K (based on RFC 3511)
Routing Redundancy	VRRP
Security	Secure Boot IPsec L2TP (server) RADIUS Trust access control TACACS+ SCP SFTP NTP authentication Syslog Authentication
Time Management	NTP Server/Client

	SNTP
Unicast Routing	OSPF RIPv1/V2 Static Route
Multicast Routing	Static Route
Filter	IGMP v1/v2/v3

Switch Properties

VLAN ID Range	VID 1 to 4094
IGMP Groups	1000
Max. No. of VLANs	32

LED Interface

LED Indicators	PWR1, PWR2, STATE, MSTR/H.TC, CPLR/T.TC, VRRP/HA, VPN, USB
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DoS and DDoS Protection

Technology	ARP-Flood FIN Scan ICMP Flood TCP Sessions Without SYN NMAP-ID Scan NMAP-Xmas Scan Null Scan SYN/FIN Scan SYN/RST Scan SYN-Flood Xmas Scan
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Firewall

Filter	DDoS Ethernet protocols ICMP IP address MAC address Ports
Stateful Inspection	Router firewall Transparent (bridge) firewall
Deep Packet Inspection	DNP3 EtherNet/IP IEC 60870-5-104 IEC 61850 MMS MELSEC Modbus TCP Modbus UDP Omron FINS OPC UA Siemens S7 Comm. Siemens S7 Comm. Plus Additional protocols will be supported through future firmware updates.
Intrusion Prevention System	Requires an additional license.
Throughput	Firewall: Max. 350K packets per second / 2 Gbps (based on RFC 2544) IPS: Max. 200K packets per second / 2 Gbps (based on RFC 2544)

IPsec VPN

Authentication	MD5 and SHA (SHA-512) RSA (key size: 1024-bit, 2048-bit) X.509 v3 certificate
Concurrent VPN Tunnels	Max. 250 IPsec VPN tunnels
Encryption	DES 3DES AES-128 AES-192 AES-256 AES-256-GCM
Protocols	IPsec L2TP (server) PPTP (client)
Throughput	Conditions: AES-256, SHA-256 Max. 100K packets per second / 800 Mbps (based on RFC 2544)

NAT

Features	1-to-1 N-to-1 NAT loopback Port forwarding
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Real-Time Firewall / VPN Event Log

Event Type	Firewall event VPN event
Media	Local storage SNMP Trap Syslog server

Serial Interface

Console Port	RS-232 (TxD, RxD, GND), 3-pin (115200, n, 8, 1)
Connector	USB Type-C

Power Parameters

Connector	Removable terminal block
Input Voltage	EDR-G9010-VPN-2MGSFP(-T, -CT, -CT-T) models: 12/24/48 VDC, redundant dual inputs (DNV-certified for 24 VDC) EDR-G9010-VPN-2MGSFP-HV(-T) models: 120/240 VDC/VAC, redundant dual inputs
Operating Voltage	non-HV(-T) models: 9.6 to 60 VDC -HV(-T) models: 88 to 300 VDC, 90 to 264 VAC
Input Current	EDR-G9010-VPN-2MGSFP(-T, -CT, -CT-T) models: 1.51 A @ 12 VDC 0.70 A @ 24 VDC 0.35 A @ 48 VDC EDR-G9010-VPN-2MGSFP-HV(-T) models: 0.28 A @ 120 VAC 0.18 A @ 240 VAC 0.15 A @ 120 VDC 0.08 A @ 240 VDC
Reverse Polarity Protection	Supported

Physical Characteristics

Housing	Metal
IP Rating	IP40
Dimensions	EDR-G9010-VPN-2MGSFP(-T, -CT, -CT-T) models: 58 x 135 x 105 mm (2.28 x 5.31 x 4.13 in) EDR-G9010-VPN-2MGSFP-HV(-T) models: 64 x 135 x 105 mm (2.52 x 5.31 x 4.13 in)
Weight	EDR-G9010-VPN-2MGSFP(-T, -CT, -CT-T) models: 1030 g (2.27 lb) EDR-G9010-VPN-2MGSFP-HV(-T) models: 1150 g (2.54 lb)
Installation	DIN-rail mounting (DNV-certified) Wall mounting (with optional kit)
Protection	-CT models: PCB conformal coating

Environmental Limits

Operating Temperature	Standard models: -10 to 60°C (14 to 140°F) Wide temp. models: -40 to 75°C (-40 to 167°F) EDR-G9010-VPN-2MGSFP(-T, -CT-, CT-T) models: DNV-certified for -25 to 70°C (-13 to 158°F)
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)

Standards and Certifications

Safety	IEC 62368-1 UL 62368-1 IEC 60950-1 UL 60950-1
EMC	EN 55032/35
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 4 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Cybersecurity	IEC 62443-4-2 Security Level 2
Railway	EDR-G9010-VPN-2MGSFP(-T, -CT, -CT-T) models: EN 50121-4
Traffic Control	EDR-G9010-VPN-2MGSFP(-T, -CT, -CT-T) models: NEMA TS2
Maritime	EDR-G9010-VPN-2MGSFP(-T, -CT, -CT-T) models: CCS CCS Guidelines for Inspection of Ship Network Firewall CCS IACS UR E27 Rev.1 DNV, DNV IEC 61162-460 Edition 3.0 460-gateway, 460-forwarder and 460-switch, DNV security profile 2, IACS UR E27 Rev.1, KR KR IACS UR E27 Rev.1 KR IEC 61162-460 Edition 3.0 460-gateway, 460-forwarder and 460-switch IEC 60945
Power Substation	IEEE 1613 IEC 61850-3 Edition 2.0

Hazardous Locations	EDR-G9010-VPN-2MGSFP(-T, -CT, -CT-T) models: ATEX, Class I Division 2
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6

MTBF

Time	EDR-G9010-VPN-2MGSFP(-T, -CT, -CT-T) models: 1,080,807 hrs EDR-G9010-VPN-2MGSFP-HV(-T) models: 509,714 hrs
Standards	Telcordia (Bellcore), GB

Warranty

Warranty Period	5 years
Details	See www.moxa.com/tw/warranty

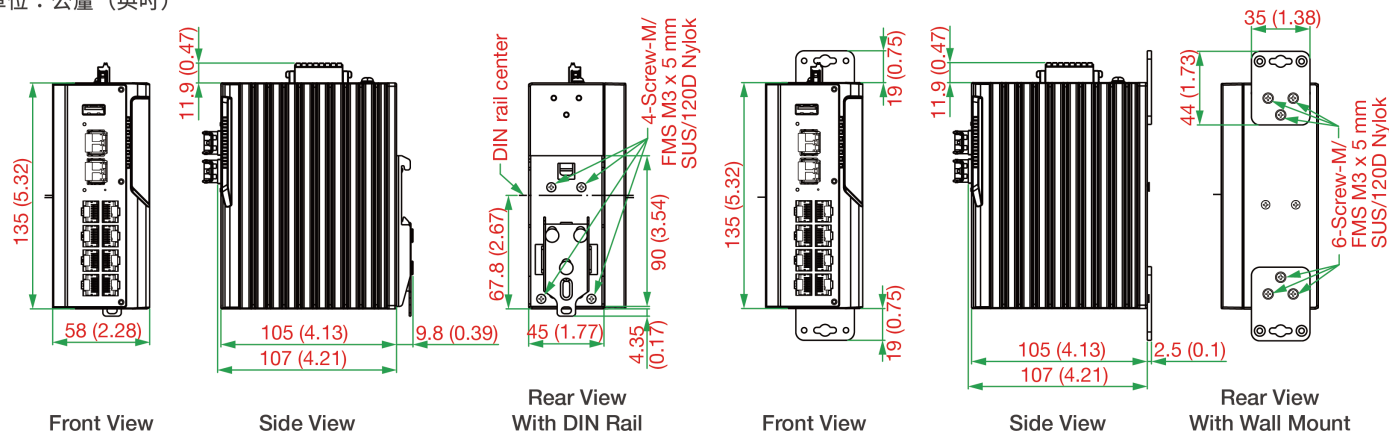
Package Contents

Device	1 x EDR-G9010 Series secure router
Cable	1 x DB9 female to USB Type-C
Installation Kit	4 x cap, plastic, for RJ45 port 2 x cap, plastic, for SFP slot
Documentation	1 x quick installation guide 1 x warranty card
Note	SFP modules need to be purchased separately for use with this product.

尺寸

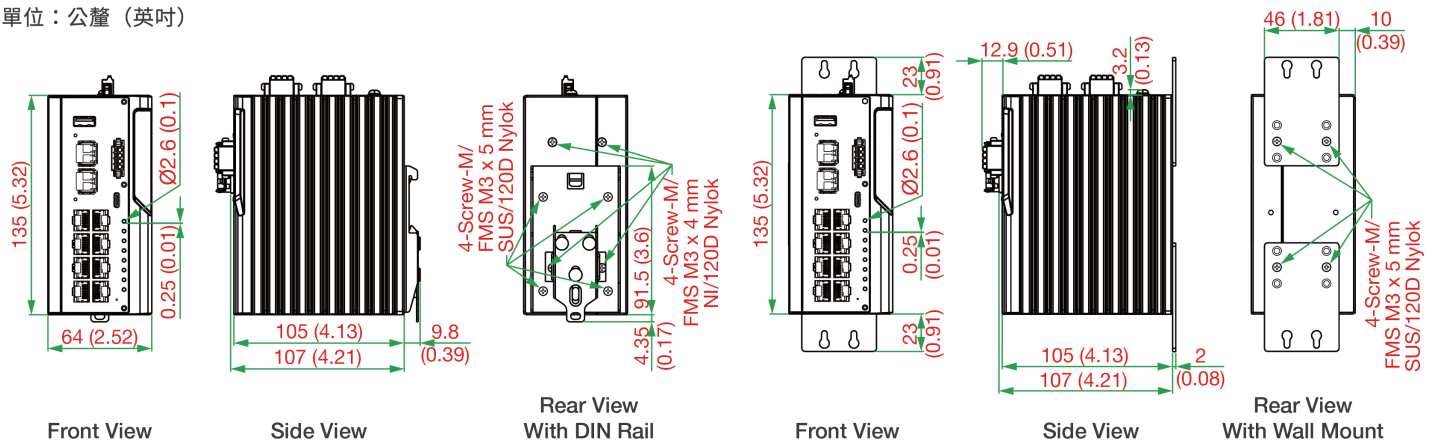
標準型號

單位：公釐（英吋）



HV 型號

單位：公釐（英吋）



訂購資訊

Model Name	10/100/1000BaseT(X) Ports (RJ45 Connector)	10002500 BaseSFP Slots	Firewall	NAT	VPN	Input Voltage	Conformal Coating	Operating Temp.
EDR-G9010-VPN-2MGSFP	8	2	P	P	P	12/24/48 VDC	–	-10 to 60°C (DNV-certified)
EDR-G9010-VPN-2MGSFP-T	8	2	P	P	P	12/24/48 VDC	–	-40 to 75°C (DNV-certified for -25 to 70°C)
EDR-G9010-VPN-2MGSFP-HV	8	2	P	P	P	120/240 VDC/VAC	–	-10 to 60°C
EDR-G9010-VPN-2MGSFP-HV-T	8	2	P	P	P	120/240 VDC/VAC	–	-40 to 75°C
EDR-G9010-VPN-2MGSFP-CT	8	2	P	P	P	12/24/48 VDC	P	-10 to 60°C
EDR-G9010-VPN-2MGSFP-CT-T	8	2	P	P	P	12/24/48 VDC	P	-40 to 75°C

配件（選購）

Storage Kits

ABC-02-USB	Configuration backup and restoration tool, firmware upgrade, and log file storage tool for managed Ethernet switches and routers, 0 to 60°C operating temperature
ABC-02-USB-T	Configuration backup and restoration tool, firmware upgrade, and log file storage tool for managed Ethernet switches and routers, -40 to 75°C operating temperature

SFP Modules

SFP-1G10ALC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1310 nm, RX 1550 nm, 0 to 60°C operating temperature
SFP-1G10ALC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1310 nm, RX 1550 nm, -40 to 85°C operating temperature
SFP-1G10BLC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1550 nm, RX 1310 nm, 0 to 60°C operating temperature
SFP-1G10BLC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1550 nm, RX 1310 nm, -40 to 85°C operating temperature
SFP-1G20ALC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1310 nm, RX 1550 nm, 0 to 60°C operating temperature

SFP-1G20ALC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1310 nm, RX 1550 nm, -40 to 85°C operating temperature
SFP-1G20BLC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1550 nm, RX 1310 nm, 0 to 60°C operating temperature
SFP-1G20BLC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1550 nm, RX 1310 nm, -40 to 85°C operating temperature
SFP-1G40ALC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1310 nm, RX 1550 nm, 0 to 60°C operating temperature
SFP-1G40ALC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1310 nm, RX 1550 nm, -40 to 85°C operating temperature
SFP-1G40BLC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1550 nm, RX 1310 nm, 0 to 60°C operating temperature
SFP-1G40BLC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1550 nm, RX 1310 nm, -40 to 85°C operating temperature
SFP-1GEZXLC	SFP module with 1 1000BaseEZ port with LC connector for 110 km transmission, 0 to 60°C operating temperature
SFP-1GEZXLC-120	SFP module with 1 1000BaseEZ port with LC connector for 120 km transmission, 0 to 60°C operating temperature
SFP-1GLHLC	SFP module with 1 1000BaseLH port with LC connector for 30 km transmission, 0 to 60°C operating temperature
SFP-1GLHLC-T	SFP module with 1 1000BaseLH port with LC connector for 30 km transmission, -40 to 85°C operating temperature
SFP-1GLHXL	SFP module with 1 1000BaseLH port with LC connector for 40 km transmission, 0 to 60°C operating temperature
SFP-1GLHXL-T	SFP module with 1 1000BaseLH port with LC connector for 40 km transmission, -40 to 85°C operating temperature
SFP-1GLSXL	SFP module with 1 1000BaseLS port with LC connector for 1km/2km transmission, 0 to 60°C operating temperature
SFP-1GLSXL-T	SFP module with 1 1000BaseLS port with LC connector for 1km/2km transmission, -40 to 85°C operating temperature
SFP-1GLXL	SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, 0 to 60°C operating temperature
SFP-1GLXL-T	SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, -40 to 85°C operating temperature
SFP-1GSXL	SFP module with 1 1000BaseSX port with LC connector for 300m/550m transmission, 0 to 60°C operating temperature
SFP-1GSXL-T	SFP module with 1 1000BaseSX port with LC connector for 300m/550m transmission, -40 to 85°C operating temperature
SFP-1GZXLC	SFP module with 1 1000BaseZX port with LC connector for 80 km transmission, 0 to 60°C operating temperature
SFP-1GZXLC-T	SFP module with 1 1000BaseZX port with LC connector for 80 km transmission, -40 to 85°C operating temperature
SFP-1GTXRJ45-T	SFP module with 1 1000BaseT port with RJ45 connector for 100 m transmission, -40 to 75°C operating temperature
SFP-2.5GSLC-T	SFP module with 1 2.5GBaseFX port with LC connector, single-mode, for 5 km transmission, -40 to 85 °C operating temperature
SFP-2.5GSLHLC-T	SFP module with 1 2.5GBaseFX port with LC connector, single-mode, for 45 km transmission, -40 to 85 °C operating temperature
SFP-2.5GMLC-T	SFP module with 1 2.5GBaseFX port with LC connector, multi-mode, for 170, 200, 550, 600 m transmission, -40 to 85 °C operating temperature
SFP-2.5GSLC-T	SFP module with 1 2.5GBaseFX port with LC connector, single-mode, for 20 km transmission, -40 to 85 °C operating temperature

Mounting Kits

WK-35-01	Wall-mounting kit with 2 plates (35 x 44 x 2.5 mm) and 6 screws
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WK-46-01	Wall-mounting kit, 2 plates, 8 screws, 46 x 66.8 x 2 mm
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Software

LIC-MXviewOne-NEW-XN-SR	MXview One node license with customizable node quantity (minimum 1 node)
LIC-MXviewOne-ADD-SECURITY-MR	MXview One add-on license to enable MXview Security module functionality
LIC-MXsecurity-NEW-XN-SR	MXsecurity perpetual node license with customizable node quantity (minimum 1 node)
LIC-IPS-MGMT-[X]Point-SR	IPS license for MXsecurity or MXview Security add-on management software with customizable point balance (minimum 365 points).
LIC-IPS-DEVICE-365Point(1Y)-MR	1-year (365 points) device-based IPS license for a single device without management software.
LIC-IPS-DEVICE-730Point(2Y)-MR	2-year (730 points) device-based IPS license for a single device without management software.
LIC-IPS-DEVICE-1095Point(3Y)-MR	3-year (1095 points) device-based IPS license for a single device without management software.
LIC-IPS-DEVICE-1460Point(4Y)-MR	4-year (1460 points) device-based IPS license for a single device without management software.
LIC-IPS-DEVICE-1825Point(5Y)-MR	5-year (1825 points) device-based IPS license for a single device without management software.

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