# MSG-400
## COMMANDO RouteX, Multi-Gig 6x2.5G, 512AP/400, Multi-Service Cloud Gateways

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# Product Overview

COMMANDO RouteX MSG-400 is a Cloud base Multi-Service Wired Gateway with 6x10/100/1000/2500Mbps configurable LAN/WAN Ports, with functions such as Gateway, Wireless Controller, Multi-WAN Load Balancer, Firewall with Captive portal along with Standard Wireless Roaming Mechanism (802.11r), Authentication Server to Integrate and Simplify the Traditional Networking Mode, AC Management, Portal Authentication, Deep Packet Inspection (DPI) Seven-Layer flow Control, Supports Intelligent Networking (SD-WAN), 3200+ Application Protocol Identification. It is standard 1U rack-mountable device.

It has excellent data processing capability and multiple powerful functions including Multi-WAN Load Balance, Access Control, Bandwidth Control, Session Limit, IM/P2P Blocking, VPN server, PPPoE Server, auto WAN failover recovery and captive portal to access infrastructure from anywhere via internet. It meets the needs of small and medium enterprise, Commercial set up where no down time affordable due to network issue, hotels and communities with Up to 400 users demanding a efficient and always UP network with high security. It is basically 6 in 1 Multi-Service device having feature like Multi-WAN load balancer with auto fail-over mechanism for recovery due fault in connected multiple WAN links, Firewall, VPN Server, Wireless Controller for COMMANDO AirX Series AP/APO and serves as a controller up to 512 COMMANDO AirX Series AP/APO, Cloud-based 10 different kinds of authentication Configuration and monitoring along with SD-WAN for Enterprise Wired gateway with features like static, Default and Dynamic connected route.

RouteX, MSG-400 adopts a new generation of high-performance hardware platform and is fully upgraded to 2.5GE interface. It is mainly suitable for medium and large-scale application scenarios and brings richer integrated services at the same time. It is mainly designed for corporate offices, schools, shopping malls, commercial residences and other scenarios. Multi-service gateway. In addition, with high computing power and large memory hardware design, multi-service gateway provides rich SaaS service in the cloud, creating an edge computing platform at the network edge.

# Product Highlights

- 6x2.5Gbps configurable LAN/WAN Ports
- Standard Wireless Roaming Mechanism (802.11r)
- DPI (Deep Packet Inspection) Seven Layer Flow Control
- Supports One Click Flow Control and Manual Flow Control
- 3200+ Application Protocol Identification, for more Accurate Flow Control, Improved Bandwidth Utilization
- Multi-WAN load balance with auto failover recovery for reliable and efficient access
- Access Point Management via Easy Web-GUI, Telnet and Cloud-based Portal Authentication
- Built-in High-Performance Processor Suitable for Deployment of Large-scale Commercial Scenarios
- Supports wireless marketing function and 10 kinds of authentication methods to meet the needs of different users and scenarios
- AC Intelligent Management Function, works together with COMMANDO AirX Series indoor and outdoor Access Points, easy Access Point Management
- Supports COMMANDO Platform Management, Centralized Management and Maintenance via lifetime free Cloud base account
- Supports intelligent networking (SD-WAN) to manage and optimize the performance of WAN's.
- VPN for Encrypted Communication, Ensure Remote Access Security
- Supports Multi-Vendor WAN Line simultaneous Access, WAN load sharing and balancing by different ISP, Rational use, Load Balancing with failover , Reduce Bandwidth Costs
- Wireless Marketing Function, Various Authentication Methods to meet the needs of Different Users and Scenarios
- Tag based and port based VLANs to group control and relocate traffic pattern
- Fully protocol stack for both IPv4 and IPv6, afford up to concurrent users and 100,00 concurrent sessions
- Supports IPsec, PPTP and L2TP VPN support
- QoS and Bandwidth Management for optimal bandwidth usage
- With Zero Touch Provisioning: Plug and play and no setup.
- High Availability for mission critical application with muti-WAN load balance
- WLAN controller can manage up to 512 APs and 400 users, with Discovery, Configuration, and Monitoring Functions.
- User certification by X.509 and authentication by Radius/AD/LDAP server for user and group management.
- Supports Multiple WANs, Failover/ Load Balance with configurable Ethernet

- Supports DHCP based dynamic IP, Static IP, PPPoE, PPTP, L2TP
- IPv6 with Dual Stack, 6-in-4, 6-to-4, Dynamic, Static, PPPoE
- Supports VLAN Port Based, Tag- based
- NAT: ALG, Special AP, DMZ Host, Virtual Server/ Computer, PPTP/ L2TP/IPSec Pass-through, Up to 100,000 Sessions
- Supports Routing with Static, Default and Dynamically learn connected route
- Client and Server for DHCP, DDNS, IGMP
- Management Features with Web, Simple Telnet CLI, SNMP
- AP Auto Discovery, Monitoring and Alerting, Profile based Configuration, AP Load balance, AP Blacklisting and Whitelisting
- User Accounts, User Grouping, Bound Services
- Firewall, Access Control with Packet Filters, URL Blocking, Web Content Filters, Application Filters, MAC filter
- Supports One Click Flow Control and Manual Flow Control
- 3200+ Application Protocol Identification, for more Accurate Flow Control, Improved Bandwidth Utilization
- Access Point Management with Cloud Portal Authentication, Connected LAN PC Web-GUI and Telnet.
- Built-in High-Performance Processor Suitable for Deployment of Large-scale commercial Scenarios
- Comes with one-year default warranty – optionally extendable up to 3 years.

# Features and Benefits

## Cloud Base Wired gateway

It has 6*10/100/1000/2500Mbps, RJ45 based Ports configurable and interchangeable LAN/WAN Ports which support 400 Users with standard Wireless Roaming Mechanism (802.11r) with DPI (Deep Packet Inspection) Seven Layer Flow Control along with Portal based web access from anyone having credential via internet from any place. Support COMMANDO Cloud Platform Management, Centralized Management and Maintenance VPN for Encrypted Communication. Ensure Remote and cloud Access with security.

## Multi-WAN load balancing with auto Fail over Mechanism

Support up to 5 WAN's and 5 LAN's, Multi-WAN Access, Simultaneous WAN access provided by different (ISP) Operators with all used at a time via load balancing and preventing network outage automatically via fail-over mechanism , Rational use, Reduce Bandwidth Costs.

## Wireless Marketing Function

High Authentication Methods via Cloud-based, time based, ticket based to meet the needs of different Users and Scenarios, Multi-functional Fusion. The COMMANDO  Integrates Functions Such as DPI Flow Control, Load Balancing, AC Controller, VPN, and Authentication Server to Integrate and Simplify the Traditional Networking Mode. Equivalent to Integrating Multiple Devices and a Unified Network Management Platform into one Device, greatly reducing Networking and Maintenance costs

## Deep Packet Inspection (DPI)

COMMANDO RouteX MSG-400 supports 7-Layer Deep Packet Inspection (DPI) advanced method of analyzing and managing network traffic by examining the data within each packet transmitted across a network. Unlike basic packet filtering that only looks at header information, G150 DPI inspects the payload of the packet to make decisions based on content. It supports Multi-line; Each line is backed up with Each other. It has new Generation of DPI-based Traffic Identification Mechanism, and Fine Traffic Control with Link Balancing and Application Offloading to offload Core Applications.

## Wireless Access Point Controller

It acts as Controller for COMMANDO AirX AP/APO, Support AirX AP/APO Centralized Management. AirX AP/APO can be configured as Virtual Antenna available with this controller without any Configuration and connection to Controller. It automatically Read Wireless Configuration after accessing the Network, AP/APO Zero-based Networking, Expansion at any time, Support Standard Wireless Roaming Mechanism (802.11r), to achieve Seamless Roaming between AP/APOs, Live streaming of Games, Video, Movies, voice, etc. is Uninterrupted.

## Network Security

Built-efficient Behavior Management Routing and Firewall Modules, Support Flexible user Access Control Policies, Network Security, Network security to meet Different Customer needs. MAC Filtering function to block the access of illegal hosts. Supporting One-Click IP-MAC Binding to avoid ARP spoofing.

## VPN (Virtual Private Network

Support IPsec, PPTP, L2TP and Open VPN, Allowing Offices in Different Regions of the Enterprise to Access ERP, CRM, Internal Server and other Production Systems of the company's Local Area Network at Any Time to Improve Work Efficiency. Out-of-office Employees can Access the Company's internal Network Resources through Secure Channels anytime and anywhere via COMMANDO Cloud access.

## SD-WAN

SD-WAN enables to securely connect users, applications and data across multiple locations while providing improved performance, reliability and scalability. Virtual WAN architecture that allows enterprises to leverage any combination of transport services and provides centralized control and visibility over the entire network.

## Online Behavior Management

Access Rules can permit or deny user for applications of FTP downloading, Email, Web browsing and so on. Supporting URL Filtering to prevent potential hazards from visiting the malicious Web sites. Bandwidth Control with flexible bandwidth management to automatically control the bandwidth of the host in bi-direction to avoid bandwidth over occupation, as well as optimize bandwidth usage. Session Limit to avoid few people to access resource.

## Auto MDIX Capabilities

Auto sensing 10/100/100/2500Mbps ports with auto MDIX capabilities which also removes speed and duplex mismatches automatically.

## Compact and Silent Performance

It comes fan less models with Small form-factor, operates quietly, making it ideal for use in virtually any room or office. Perfect for noise sensitive environments.

## Support uninterrupted critical network infrastructure

It has AC input power which protect from power surges through their inline power supply automatically. With this feature protect on cost and the impact to your business by losing these network devices and thus the users/servers connected to them.

## User-Friendly Interface

COMMANDO RouteX MSG-400 Gateway is Web-GUI based easy to use and manage device. It requires minimal configuration, so setup is simple and hassle-free. Auto MDI/MDI-X crossover on all ports eliminate the need for crossover cables or uplink ports. Auto-Negotiation on each port senses the link speed of a network device (Either 10, 100, 1000 and 2500 Mbps) and smartly adjusts for compatibility and optimal performance. Its compact size makes it ideal for desktops as well as 19-inch standard 1U rackmount with limited space. Dynamic LED lights provide real-time work status display and basic fault diagnosis. Administrators to monitor the whole network status and take actions to remotely according to the recorded log information.

## Green Technology

It features the energy-efficient Ethernet that can save power. It automatically adjusts power consumption according to the link status to limit the carbon footprint of your network. It also complies with RoHS, prohibiting the use of certain hazardous materials. Besides that, most of the packaging material can be recycled and reused.

# Software

COMMANDO RouteX MSG-400 Cloud-based Multi-Service Wired G ateway supports software functions as follows.

## Monitoring

Interface, Terminal, Protocol, Policy, System, Flow Control.

## System Setup

Basic Setting, Disk management, Cloud Account, Advanced Settings like ALG Set, Administration, Upgrading, Reboot.

## Network

Interfaces, DHCP, DNS, IP/MAC Group, Static Routes, VLAN,VPN Client, UPNP NAT, Port Mapping, IPv6, IGMP Agent.

## Flow Control

Multi-WAN features Load Balancing/Protocol/Port Forward/Domain Name/Upload/Download, Smart Flow Control, IP/MAC Limiters, Protocol Library.

## Access Controller

Wireless Overview, AP Configuration, AP group, AP Firmware Upgrades, Wireless blacklist and whitelist, User Information.

## Authentication

Captive Portal, VPN Server, Authentication Account, Push Notification.

## Behavior

Behavior Audit with Mark MAC Address, MAC Control, Website Control, URL Control, Application Protocol Control, Secondary Routing, QQ, Blacklist/Whitelist.

## Firewall

ACL Rules, ARP binding, Connection Limiter, Advanced Firewall.

## Advanced application

Dynamic DNS, SNMP, Application across three layers, Wake on LAN, FTP Server, HTTP Server, UDPXY Set.

## Services

Ping Test, Capture Packet, Trace Route, IP Subnetting, Speed Test, Diagnostics, Watchdog.

## Log

User Logs, Function Logs, System Logs.

## Table 1 Software functions

| Software Features | Software Functions |
|---|---|
| Routing Function | Support IPv4 and IPv6 dual protocol stack. |
| | Support PPPoE, static IP, DHCP and other commonly used access methods. |
| | Support LAN/WAN custom settings, support VLAN. |
| | Support bandwidth superposition, such as accessing multiple WANs at the sametime, using multi-threaded tools to download, can realize bandwidth superposition. |
| | Supports load balancing based on IP, port, number of connections, and traffic. |
| | **Line backup:** one is the main line and the other is the backup line. When the mainline is dropped, the backup line will take over. |
| | **Data diversion:** Line allocation can be performed according to source IP, destination IP, source port, destination port, domain name, and application protocol, or the direction can be automatically allocated according to the number ofInternet users and supports uplink and downlink separation and diversion. |
| | **Policy routing:** It can access different operators at the same time and supports custom operators. Support policy routing function to solve the bottleneck problem of network access between different operators; support static routing. |
| | Support one-line multi-dialing and wan extension. |
| | Support port mapping, DMZ, UPnP, NAT rules, IGMP proxy. |
| | Support PPTP/L2TP/IPSec VPN/Open VPN function. |
| | Gateway and bypass deployments supported. |
| Traffic Control | **One-click intelligent flow control:** You only need to select the flow control scenario and set the WAN bandwidth. The device optimizes bandwidth resources in real time according to the bandwidth usage to ensure key applications and improve bandwidth utilization. In addition, it supports manual flow control mode to support customer personalization, Customize specific flow control policies. |
| | **Flow control module:** It can accurately identify more than 3,200 application protocols, assign priorities and line directions to various application protocols, and the database supportsreal-time online updates to achieve accurate flow control based on application protocols. |

| | |
|---|---|
| | Supports line-based flow control for time periods based on source IP, port, domainname, and time. |
| Behavior Management | Supports time-based and group-based PC and mobile APP application management strategies, supports domain name blacklist and whitelists, URL redirection, URL keyword and parameter substitution. |
| | Supports network sharing control, such as secondary routing. |
| | Support behavior management log viewing, including URL log, IM software onlineand offline records, terminal online and offline records. |
| Authentication and Accounting | Support cloud platform portal authentication, support more than 10 authentication methods, including applet, WeChat, mobile phone, QQ, Microblog, user, password,countdown, coupon, trial, one-key authentication. |
| | Support a variety of authentication template options, support custom scrolling pictures and logos. |
| | Supports authentication-free settings based on mac, IP, and domain name. |
| | Support local PPPoE Server, support connection to third-party authenticationserver. |
| | Support batch import and export, support custom packages, support coupon management, support account password self-service password modification. |
| | Support notification function, including real-time notification, periodic notification,account expiration reminder, PPPoE expiration reminder. |
| | Support bypass authentication, support multiple device authentication roaming. |
| Network Security | Support global connection limit, which can be set separately based on time and IP |
| | Supports defense against ARP attacks and improves intranet security. |
| | Support DDOS defense and traffic attack defense, support internal and externalnetwork prohibition of Ping, prohibit internal network client Tracert. |
| | Supports ACL rules based on IP, protocol, port, time period, data direction, andinterface. |
| Cloud Management | Through cloud configuration and management, unified configuration, distributionand management of managed gateway devices and AP devices. |
| | Supports batch delivery of wireless rules from the cloud, including SSID, SSIDhiding and isolation, AP balance mode, and wireless security settings. |
| | Support configuration cloud backup. |

| | |
|---|---|
| | Through the cloud, the device name, device online status, user data, onlineduration, and the number of terminals under the device are realized. |
| AC Management | Support terminal fast roaming, 5G priority. |
| | Automatically discover wireless device APs in the network, and manage thenetwork uniformly through the wireless controller. |
| | Support for AP upgrade, restart, and factory reset, support for radio frequencyshutdown and AP timing restart. |
| | Support to view the online/offline status of AP. |
| | Support wireless blacklist and whitelist. |
| | Support setting AP isolation, SSID isolation. |
| Applications | Support dynamic domain name, including 3322, oray, dnspod, aliyun, huaweicloud.com, cloudflare.com. |
| | Support Port Mirroring, Wake-on-LAN, FTP, HTTP Static Service, UDPXY. |
| | Support line speed measurement, route physical examination, health monitoring,subnet conversion, and packet capture tools. |
| System Management | Support cross three-layer application, support cross three-layer authentication,mac address filtering, etc. |
| | Support SNMP, Telnet, ssh, http, https, Console management. |
| | Support Ping, Tracert. |
| | Support multi-level login account permission settings. |
| | Support scheduled restart and shutdown. |
| | Support user log, function log, system log record. |

# Hardware

## Solid performance with non-blocking architecture

- RAM 4G, FLASH 16G
- All ports capable of 2.5GE speed. Full speed of data transferring with (Auto-Negotiation/Auto MDI/MDIX).
- Solid performance with non-blocking architecture.

### Physical Ports and Networking Interfaces

- Up to 6 x 10/100/1000 Mbps RJ-45 Ethernet Ports with configurable LAN/WAN ports.
- USB Ports:    2*USB 3.0
- LED Indicators :Power, Link/Act, SYS, NET, USB

### Extra Long operational life

- High Quality PCB Circuit Board and PCB Surface Treatment Using Gold Sinking Process.
- Support temperature range 0° C to 45° C
- Desktop, Rack and Wall mount design that enables to mounts in an EIA - Standard 19-inch telco rack or equipment cabinet along with Rack-mounting kit available with device which enables horizontal surface mounting, wall mounting and also having durable robust metal body.

### Noise-free Operation

- The ports support reduced power modes so that ports not in use can move into a lower power utilization state. Small form-factor, fanless for silent operation. Perfect for noise sensitive environments.

## Table 2 Hardware Specifications

| Parameter | Hardware Specification |
|---|---|
| RAM | 8G |
| FLASH | 16G |
| WAN | 5/1 |
| LAN | 1/5 |
| USB | 2xUSB 3.0 |
| Interface | 6x10/100/1000/2500Mbps, RJ-45 Ports |
| Size | (440mm x 250mm x 44mm)  19-inch standard 1U |

| | |
|---|---|
| Power Consumption | ≤25W |
| Power | AC 100~240V 50/60Hz |
| Throughput(1500 Bytes) | 3500Mbps |
| Packet Forwarding Rate | 400kpps |
| Maximum Number of Concurrent users | 400 |
| AP Number | 512 |
| User capacity | 400 users |
| Working Temp | 0℃~45℃ |
| Storage Temp | 50~80℃ |
| Humidity | 5%~95%（Non-condensing) |
| Lightning Protection | 4KV |
| Reset | Hardware and Software Reset button |
| Protection Level | IP30 |
| Warranty Period | 1 Year |

# Specifications

It supports IEEE 802.3x along with TCP/ IP, DHCP Server, ICMP, NAT, PPPoE, SNTP, HTTP, DNS with acceleration, Multi DNS DDNS, UPnP, NTP protocols. It has 6 x 10/100/1000/2500M Auto-Negotiation LAN/WAN RJ45 port with Auto MDI/MDIX with four adjustable 10/100/1000/2500Mbps, Auto-Negotiation WAN/LAN RJ45 ports.

## Table 3. Specification

| Specification | Information |
|---|---|
| Interface | 6 x 10/100/1000Mbps Port |
| Throughput | 3500Mbps |
| RAM | 8GB |
| Flash | 16GB |
| Power | AC 100~240V 50/60Hz |
| Max Power Consumption | 25W |
| User Capacity | 400 |
| Protection Level | IP30 |
| Material | 19-inch 1U Iron Shell |
| Indicator light | Power, SYS, USB, NET, Link/ACT |
| Working Temperature | 0℃ to +45℃ |
| Working Humidity | 5% ~ 95%RH ( Non-condensing ) |
| Dimension | 440mm*250mm*44mm |

## Table 4. LED Indication

| LED Indication | LED Status |
|---|---|
| Power | **Green  OFF:** No power on the switch.<br>**Green  ON:** The switch powered on |
| Link/Act | **LINK/ACT bi-color LED:**<br>**OFF:** Port disconnected or link fail.<br>**Green ON:** 1000/2500Mbps connected.<br>**Amber ON:** 10/100Mbps connected.<br>**Green Flashing:** 1000/2500Mbps connected and Data in transit<br>**Amber Flashing:** 10/100Mbps connected and Data in transit |
| System | **Green  OFF:** The system is starting, please wait<br>**Green  ON:** The system is up and running |
| NET | **OFF:** Internet is not provided on port<br>**Green ON:** Internet is provided on port |
| USB | **OFF:** USB not connected<br>**Green ON:** USB connected |

### Included in the bundle/box

All COMMANDO RouteX, MSG-400 are made available for use globally along with accessories in the bundle to facilitate for enhance operations.

The switch box comes included with the following accessories:

• 1× COMMANDO RouteX, MSG-400, Multifunctional Cloud gateway

• 1x Console cable

• 1x Rack/Wall mountable kit

# Support and Warranty

- Same-day assistance
- Comprehensive 24-hour support using common communication/chat platforms, Email and Telephone.
- Provide FAQs and troubleshooting help online (self-service) through cloud-based solutions.
- Highly technical and trained representatives to resolve issues.
- One-year default warranty with option of warranty extension up to 3 years

## Table 5. Support and Warranty

| Warranty and Support | |
|---|---|
| Products covered | COMMANDO RouteX, 6x2.5G, 512AP/400, DPI, IDS/IPS, Cloud Multi-Service Gateway |
| Warranty duration | One Year RTB (Return To Base) replacement warranty – optionally extendable up to 3 years. |
| Hardware replacement | COMMANDO, its resellers or its service center will use commercially reasonable efforts to replace the product subject to stock availability. Otherwise, a replacement will be arranged within 15 working days after receipt of the Return Materials Authorization (RMA) request. |
| End-of-life policy | In case of discontinuation of the product, support is limited to 3 years from announcement date. |
| Effective date | Hardware warranty commences from the date of shipment to customer (and in case of resale by a COMMANDO reseller, not more than 90 days after original shipment by COMMANDO). |
| Support duration | Lifetime support. |
| COMMANDO Care | COMMANDO will provide 24x7 support for basic configuration, diagnosis, and troubleshooting of device-level problems for up to one year from the date of shipment of the originally purchased product. This support does not include solution or network-level support beyond the specific device under consideration. |
| Online Portal Access | Warranty allows guest access to commandonetworks.com for all available technical queries. |

# Ordering Information

Ordering information for the COMMANDO RouteX, MSG-400. To place an order, please contact your local reseller/distributor or COMMANDO Sales Representative at www.commandonetworks.com/rfq

Table 6.  Ordering Information

| Product Code | Product Description |
|---|---|
| MSG-150 | COMMANDO RouteX, Multi-Gig 1x2.5G, 5GE, 128AP/150, Multi-Service Cloud Gateways |
| MSG-250 | COMMANDO RouteX, Multi-Gig 2x2.5G, 5GE, 256AP/250, Multi-Service Cloud Gateways |
| MSG-400 | COMMANDO RouteX, Multi-Gig 6x2.5G, 512AP/400, Multi-Service Cloud Gateways |
| MSG-1200 | COMMANDO RouteX, Multi-Gig 4x2.5G, 2x10G SFP+, 1024AP/1200, Multi-Service Cloud Gateways |

# Document History

| Release | New or Revision | Described in | Date |
|---|---|---|---|
| Release 1 | First Release | First Release | September 1, 2024 |