I2500M Series

Infinique Networks Layer3 Distribution Switch

High Density Ports and up to 10/40G Uplinks for Campus Applications

Overview

Infinique's 2500M Series Chassis based high performance Layer-3 Network Switches are designed to provide network administrators the flexibility to customize or scale their network architecture as the demands increase or change over time. These Switches come with high port density providing support for a large number of network connections in one unit making it an excellent choice where network efficiency is important and installation space is a constraint. They offer excellent high speed performance through line-rate forwarding on all ports, and have advance redundancy and reliability features that are implemented through the industry standard protocols like the Ethernet Ring Protection Switching Protocol (ERPS), and the Virtual Router Redundancy Protocol (VRRP) which increases the availability through uplink backup capabilities.

These switches come with line card options that can support many different combination of interfaces for 1G, 10G and 40G connections, and provide uplink of 10G and 40G offering great flexibility and the ability to scale the bandwidth and throughput. Improved fault tolerance and reliability via the Virtual Stacking Technology the 2500M switches help network administrators simplify network management and expansion.

Built with security and advance features, the switches can be used as Distribution Switch in large campus networks or they can also be used as a Core Switch in smaller or medium sized campus network installations.

Product Highlights

- High performance Gigabit and 10G Ports for Fast Connections
- Supports high density interfaces of 192x 1G, 128x 10G and 32x 40G making it suitable for campus network requirements
- From 10G to 40 Gigabit Uplink Ports for High Bandwidth Connections
- Excellent Reliability through redundant Main Processing Units working in 1+1 backup mode and redundant Switch Fabric Unit in 1+1 balance mode
- Redundant Fan Tray and N+1 hot backup of Power Supplies
- Two 2500 series units can be combined to create a Single Virtual Switch or Logical Device
- Supports advanced Routing protocols such as OSPF, BGP, IS-IS
- Standard Spanning Tree Protocols support ensures seamless connectivity and high availability
- Effectively access and manage network switches from remote locations using Cloud reducing management costs
- Zero Touch Provisioning for easy and quick deployment
- Effectively manage network bandwidth by traffic prioritization and resource allocation using advanced QoS
- Control network access with a range of features that provide user and device authentication and ensure network security
- Robust Aluminum metal alloy enclosure with Fan or Fan-less design for excellent heat dissipation
- Supports Industry Standards such as IEEE 802.3, IEEE 802.3u, IEEE 802.3z, IEEE 802.3ab, IEEE 802.3x, IEEE 802.3az, IEEE 802.3ah and more.

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Series Snapshot

Chassis Model	I2510C-2E4S-1F-2P		I2520C-2E2S-4L-2F-4P		
Available Port Size	1G	10G	1G	10G	40G
Max No. of Ports	192	64	192	128	64
Switching Capacity	1.28Tbps		2.56Tbps		
Control Engine Slots	2		2		
Switching Fabric Slots	NA		2		
Line Card Slots	4		4		
Power Slots	2		4		
Fan Slots	1		2		

Line Card Options for Chassis Model - I2510C-2E4S-1F-2P							
Max Ports/Line Card	16	52			52		52	
Port-Type	SFP+	RJ45	SFP	SFP+	SFP	SFP+	RJ45	SFP+
Bandwidth	10G	1G	1G	10G	1G	10G	1G	10G
Ports	16	24	24	4	48	4	48	4

Line Card Options for Chassis Model - I2520C-2E2S-4L-2F-4P											
Max Ports/Line Card	8	32	18		16	52			52		52	
Port-Type	QSFP+	SFP+	SFP+	QSFP+	SFP+	RJ45	SFP	SFP+	SFP	SFP+	RJ45	SFP+
Bandwidth	40G	10G	10G	40G	10G	1G	1G	10G	1G	10G	1G	10G
Ports	8	32	16	2	16	24	24	4	48	4	48	4

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Salient Features

High density ports and up to 40G Uplinks

As the application servers bandwidth moves upwards from 1G to 10G range, Infinique's I2500M series switches feature high density 1G, 10G ports with 40G or 10G uplinks to provide routing and extremely low latency making them suitable to be used as Distribution or Core Switches.

Flexible Modular Design

The I2500M series Chassis based switches are available in two different models, each with redundant Control Engine, Switching Fabric Unit, Line Cards, Power Supply and Fan ensuring high system availability. The system has two slots for redundant control engine modules and other open slots to accommodate user selectable line cards. Two slots house redundant power supplies, and a single slot or two slots for a fan depending on the model. This modular system architecture allows modules or cards to be added as and when network system requirements arise meeting the demands of the future.

High Availability

The I2500M series switches offer excellent feature of redundancy and reliability and cater to very diverse networking requirements. In addition to supporting traditional spanning tree protocols such as STP, RSTP, and MSTP, the switches also comply with the ITU-T G.8032 international standard, the Ethernet Ring Protection Switching (ERPS) protocol which enables rapid failover within Ethernet ring network topologies, ensuring seamless connectivity and minimal downtime. Additionally it incorporates the Virtual Router Redundancy Protocol (VRRP), which helps increase the availability through uplink backup capabilities.

Stack together for Bandwidth and Management

The I2500M series switches can be combined together to form a single virtual stack or logical unit. The stacking is achieved by connecting multiple switches together through the 10G SFP+ ports to form a single virtual switch that helps improve the switches link reliability, increase bandwidth and provide simple configuration and management, and ease of network expansion.

Quality of Service ensuring Performance

The Quality of Service (QoS) capabilities of switches guarantees the network traffic of various applications, such as streaming video, VoIP calls, and data transfer, is prioritized correctly and with the right resource allocation as per the requirements of the application. This is achieved with the advanced scheduling algorithms such as SP, WRR, WFQ, SP+WRR and SP+WFQ and diverse priority mapping techniques such as 802.1p and DSCP, that enable control over traffic classification and prioritization.

Zero Touch Provisioning for Quick Setup

Infinique's I2500M series provide advanced ZTP features for easy deployment. Using this feature the switches can discover and install necessary version files from a file server eliminating the need for manual setup during the initial setup. This helps reduce the configuration errors and accelerates the deployment process, while enhancing the overall network efficiency, making these switches an ideal choice for network administrators.

Management Options for Easy Administration

The I2500M series offer a comprehensive set of management features and options to provide an easy way to manage tasks. Available features include network management protocols like Cloud and SNMP, Configuration and Control options using Web and CLI, Monitoring and Diagnostics tools such as RMON and SYSLOG, help network administrators to monitor and maintain the network for optimum performance.

Authentication and Secure Access

These series of network switches offer a comprehensive suite of security features that provide both user and device authentication and protection. The features include user authentication, port security, Access Control Lists (ACL), Loopback Detection and 802.1x Authentication. Robust security functions such as IP Source Guard, DHCP Snooping, Dynamic ARP Inspection and PPPoE+ ensure excellent protection for network access. These network switches also support MAC binding, and counter measure against network storm, ARP snooping and protocol packet attacks making it an ideal access network switch.

Industry Standards Compliance

The I2500M series switches are designed for industry standards and include various IEEE standards such as IEEE 802.3, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3x, and IEEE 802.3az. These standards make sure that your network operates with the latest technologies and is compatible with a wide range of networking equipment, providing interoperability and future-proofing your infrastructure investment.

NETWORK MANAGEMENT FEATURES

Ports and Interface

Basic Port Configuration	Auto MDI/MDIX, Port Type UNI/NNI Port Speed, Port Duplex, Port MTU(Jumbo Frame), Port Isolation, Port Loopback, Port Energy Control
MAC Address Management	MAC Address Aging Time, MAC Address Learning ON|OFF, MAC Address Learning Limitation, Static MAC Address, MAC Address Filter, MAC address VLAN Binding, MAC Debug
Storm Control	Storm, Flood Control and Shutdown Control for BUM
Logical	Loop-back, Tunnel, Null, L2/L3 VLAN and L3 Ethernet interfaces

Ring Protection

Spanning Tree Protocols	STP/RSTP/MSTP, BPDU Guard, BPDU Filter, Flap Guard, Loop Guard, Root Guard, TC Guard, BPDU L2protocol Tunnel
Other Protocols	VIST/VIST+, G.8032 (Ethernet Ring Protection Switching) v1, v2

Link Aggregation

LACP Configuration	LACP Link Aggregation, LACP Port Priority, LACP Load Balance, LACP Rate Monitor, LACP Debug

VLAN

VLAN Management	VLAN, VLAN PVID, VLAN Trunk, VLAN Hybrid, VLAN Interface, MAC VLAN, Protocol VLAN, IP Subnet VLAN, Super VLAN, Voice VLAN, Private VLAN, Guest VLAN, GVRP, Basic QinQ, Selective QinQ, 802.1ad, VLAN Mapping, VLAN Debug, VLAN Isolation

IP Services

IP Protocol	ARP, DNS, NTP Server/Client, ICMP, ECMP, GRE, IPIP, IPv6 over IPv4, ISATAP, IPv4 over IPv6, IPv6 over IPv6
Routing Protocol	Static Routing v4/v6, RIP/RIPng, OSPF v2/v3, BGP/BGP+, ISIS/ISIS v6, VRRP/VRRP v3, VBRP, PBR/PBR v6, IP-VRF
DHCP Service	DHCP v4/v6 Server, DHCP v4/v6 Client, DHCP v4/v6 Relay, DHCP Snooping, DHCP Option 51/82

Multicast

L2 Multicast Protocols	IGMP v1/v2/v3 Snooping, Fast Leave, IGMP Snooping Proxy, MLD Snooping, MVR, MVP
L3 Multicast Protocols	IGMPv1/v2/v3, PIM v4/v6-SM, PIM v4/v6-SSM, PIM-DM, PIM-SDM,

Quality of Service (QoS)

Flow Classification	802.1P Priority, DSCP Priority, VLAN ID, MAC Prefix, IP Subnet, Protocol, IP Precedence, IPv6 Traffic Class, Ethernet Type
Traffic Control	Rate Limit and Port based Bandwidth, Traffic Shaping
Traffic Classification	Three Color Marker, Priority Remark, Traffic Redirect/Meter/Mirror
Scheduling	Port-based Priority, SP, WRR, WFQ, SP+WRR, SP+WDRR, SP+WFQ
Congestion Management	Tail-drop, RED, WRED

Error Handling and Fault Detection

Error-Disable Configuration	Error-Disable Based on BPDU-guard, Loopback-detect, Port Security; Error-Disable Recovery
Fault Detection	UDLD, Loop-back Detection, CFM, Monitor Link (MTLK)

Multi Protocol Label Switching (MPLS)

MPLS L3 VPN	LDP, MPLS BGP, MPLS Option-A & Option-B, Multi-VRF
MPLS OAM	MPLS Ping/Traceroute, MPLS QoS, MPLS TE

Security

Port Security	Rule Based On IP/MAC/MAX/Sticky, Violation (Protect/Restrict/Shutdown), Recovery
Network Access Control	IP Source Guard (ISG), DHCP Snooping, ND Snooping, Host Guard
Access Control List	Standard IP ACL, Extended IP ACL, Standard MAC ACL, Extended MAC ACL, Standard Hybrid ACL, Extended Hybrid ACL, Standard IPv6 ACL, Extended IPv6 ACL, Time-based ACL
Threat Prevention	Dynamic ARP Inspection (DA), ARP Check, AARF ARP-Guard, ARP Speed Limit, ARP Source Suppression, PPPoE+

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AAA	Local Authentication, Radius (Authentication, User Login Authorization and Accounting), TACACS+ (Authentication, User Login Authorization and Accounting, Command Authorization and Accounting)
802.1x	Port-based 802.1X, MAC-based 802.1X, MAC-Authentication, Guest-VLAN, VLAN Distribution (Auto-VLAN), ACL Distribution
Anti Attack	Anti-Attack Detect/Drop/Flood/Log, URPF, White List, Black List

Configuration and Management

Monitoring and Diagnostics	1:1 SPAN, N:1 SPAN, RSPAN, Flow-based Mirror, Ping, Tracert, DDM, VCT
Device Management	SNMP v1/v2/v3, SNMP Trap, RMON, SYSLOG (Logging to Terminal/Logging to Server/CLI Operation to Server), LLDP, WEB(HTTP), Console, Telnet, SSH, Cloud, System Upgrade (TFTP/FTP/SFTP/WEB), Configuration Management (Backup/Restore), Factory Reset, Password Reset, ISSU, Hot Patch, Keep-Alive Gateway, Cloud Management
Zero Touch Provisioning	ZTP Through DHCP Server, USB and Flash Disk

High Availability

Device Virtualization	H-VST, M-VST
Detection Mechanism	MAD LACP, MAD BFD, MAD Fast-Hello, MAD LACP
Protocols	HA, ULFD, UDLD, G.8032, ULPP, Monitor Link, VRRP, VRRPv3, VBRP, EEP, BFD with Static/RIP/OSPF/BGP/ISIS

Network Virtualization

VXLAN/EVPN	IPv4/IPv6 VXLAN Tunnel, VXLAN Distributed and Static Centralized Gateway, VXLAN QoS, BGP-EVPN
Data Center Interconnect	END-TO-END VXLAN, VLAN Hand-Off, Cross As Segment VXLAN

Stacking

Physical Stacking	Yes
Max No. of Switches	4 (recommended 2)
Bandwidth	320Gbps (I2510C-2E2S-4L-2F-4P); 80Gbps (I2520C-2E4S-1F-2P)

Standards Compliance

IEEE Standard	802.1D Bridging and Spanning Tree Protocol
	802.1p Quality of Service and Class of Service Priority
	802.1Q Virtual LAN tagging
	802.1ad Double Tagging of Data
	802.1w Rapid Spanning Tree Protocol
	802.1s Multiple Spanning Tree Protocol
	802.1ag Connectivity Fault Management
	802.1x Port-Based Network Access Control
	802.1AB Link Layer Discovery Protocol
	802.3 10BASE-T
	802.3u 100BASE-T
	802.3z 1000BASE-X
	802.3ab 1000BASE-T
	802.3ae 10G BASE-X
	802.3by 25G BASE-X
	802.3ba 40G BASE-X
	802.3ah Ethernet in the First Mile Operations, Administration, and Maintenance
	802.3ad Link Aggregation
	802.3x Flow Control
	RFC 2460 Internet Protocol, Version 6 (IPv6) Specification
	RFC 4861 Neighbor Discovery for IP Version 6 (IPv6)
	RFC 4862 IPv6 Stateless Address Auto configuration
	RFC 4443 Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6)

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TECHNICAL SPECIFICATIONS

Non-POE Models

	I2510C-2E4S-1F-2P	I2520C-2E2S-4L-2F-4P
General		
Max Interfaces 1G	192	192
Max Interfaces 10G	64	128
Max Interfaces 40G	NA	32
Control Engine Slots	2	2
Switching Engine Slots	NA	2
Line Card Slots	4	4
Power Slots	2	4
Fan Slots	1	2
Hot Swappable	Yes	
Console Ports	1x RJ-45, 1x USB	
Out-Of-Band Interface	1x RJ45	
Host Support	IPv4 / IPv6 ready	
Fan	Single Modular	Dual Modular
Performance		
Switching Bandwidth	1.28Tbps	2.56Tbps
Forwarding Rate	952.32mpps	1904.64mpps
MTBF	300,000 hours	
Power Management		
Power Supply Type	Dual Modular	Dual Modular
Power Redundancy	Supported (1+1)	
Power Input	AC 100~240V 50~60Hz	
Power Surge	±6KV@1.2/50us	
Power Modules	500W	800W/1600W
Environment		
Temperature (Celsius)	Operating: -5 °C to +45 °C; Storage: -40 °C to +70 °C	
Humidity	Operating: 10% to 90% non-condensing; Storage: 5% to 95% non-condensing	
Physical		
Dimensions (WxDxH) mm	441×434.8×222	441×434.8×488
Weight (Chassis)	13.32Kg	26.8Kg
Weight (Fully Loaded)	33.6Kg	60.72Kg
Mounting Options	Rack	
Standards and Compliance		
Safety	CE/LVD EN 62368-1 RoHS	
EMC/EMI	EN 55032, EN 55035, EN 61000-3-2, EN 61000-3-3	
Green Energy (EEE)	IEEE802.3az Energy Efficient Ethernet Task Force	
Lighting Protection	6KV	

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Ordering Information

Part Number	Description
Host Chassis - I2510C	
I2510C-2E4S-1F-2P	Infinique I2500M Series Layer 3 10G Cloud Managed Distribution Switch Chassis, 2x Control Engine Slots, 4x Service Slots, 1x Fan Slot, 2x Power Slots
I2510C-CE	Infinique I2500M Series Layer 3 10G Cloud Managed Distribution Switch, Control Engine, Supports Active and Backup Function (1x Mandatory, 1+1 Redundancy)
I2510C-FAN	Infinique I2500M Series Layer 3 10G Cloud Managed Distribution Switch, Fan Module
I2510C-AC-500-PWR	Infinique I2500M Series Layer 3 10G Cloud Managed Distribution Switch, 500W AC Power Module
Line Cards For I2510C	
I2510C-16X-LC	Infinique I2500M Series Layer 3 10G Cloud Managed Distribution Switch, Line Card 16x 10G SFP+ Ports
I2510C-24T-24G-4X-LC	Infinique I2500M Series Layer 3 10G Cloud Managed Distribution Switch, Line Card 24x 1G Base-T Ethernet, 24x 1G SFP, 4x 10G SFP+ Ports
I2510C-48G-4X-LC	Infinique I2500M Series Layer 3 10G Cloud Managed Distribution Switch, Line Card 48x 1G SFP, 4x 10G SFP+ Ports
I2510C-48T-4X-LC	Infinique I2500M Series Layer 3 10G Cloud Managed Distribution Switch, Line Card 48x 1G Base-T Ethernet, 4x 10G SFP+ Ports
Host Chassis - I2520C	
I2520C-2E2S-4L-2F-4P	Infinique I2500M Series Layer 3 10/40G Cloud Managed Distribution Switch, Chassis, 2x Control Engine Slots, 2x Switching Fabric Slots, 4x Service Slots, 2x Fan Slots, 4x Power Slots
I2520C-CE	Infinique I2500M Series Layer 3 10/40G Cloud Managed Distribution Switch, Control Engine, Supports Active and Backup Function (1x Mandatory, 1+1 Redundancy)
I2520C-SE-S	Infinique I2500M Series Layer 3 10/40G Cloud Managed Distribution Switch, Standard Switching Engine, Supports Active and Backup Function (1x Mandatory, 1+1 Redundancy)
I2520C-SE-E	Infinique I2500M Series Layer 3 10/40G Cloud Managed Distribution Switch, Enhanced Switching Engine, Supports Active and Backup Function (1x Mandatory, 1+1 Redundancy)
I2520C-FAN	Infinique I2500M Series Layer 3 10/40G Cloud Managed Distribution Switch, Fan Module
I2520C-AC-800-PWR	Infinique I2500M Series Layer 3 10/40G Cloud Managed Distribution Switch, 800W AC Power Module
I2520C-AC-1600-PWR	Infinique I2500M Series Layer 3 10/40G Cloud Managed Distribution Switch, 1600W AC Power Module

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Ordering Information

Part Number	Description
Line Cards For I2520C	
I2520C-8Q-LC	Infinique I2500M Series Layer 3 10/40G Cloud Managed Distribution Switch, Line Card 8x 40G QSFP+ Ports (Configure 2x I2520C-SE-E Switching Engines)
I2520C-32X-LC	Infinique I2500M Series Layer 3 10/40G Cloud Managed Distribution Switch, Line Card 32x 10G SFP+ Ports (Configure 2x I2520C-SE-E Switching Engines)
I2520C-16X-2Q-LC	Infinique I2500M Series Layer 3 10/40G Cloud Managed Distribution Switch, Line Card 16x 10G SFP+ Ports and 2x 40G QSFP+ (Configure 2x I2520C-SE-E Switching Engines)
I2520C-16X-LC	Infinique I2500M Series Layer 3 10/40G Cloud Managed Distribution Switch, Line Card 16x 10G SFP+ Ports, (Configure 2x I2520C-SE-S Switching Engines)
I2520C-24T-24G-4X-LC	Infinique I2500M Series Layer 3 10/40G Cloud Managed Distribution Switch, Line Card 24x 1G Base-T Ethernet, 24x 1G SFP, 4x 10G SFP+ Ports (Configure 2x I2520C-SE-S Switching Engines)
I2520C-48G-4X-LC	Infinique I2500M Series Layer 3 10/40G Cloud Managed Distribution Switch, Line Card 48x 1G SFP, 4x 10G SFP+ Ports (Configure 2x I2520C-SE-S Switching Engines)
I2520C-48T-4X-LC	Infinique I2500M Series Layer 3 10/40G Cloud Managed Distribution Switch, Line Card 48x 1G Base-T Ethernet, 4x 10G SFP+ Ports (Configure 2x I2520C-SE-S Switching Engines)

Customer Support, Service and Warranty

Infinique network switches come with a standard one-year limited hardware warranty that covers repair or replacement of parts.
Cloud and Software: 90 days, can be extended with support contract

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