7100G-Series

High Performance Gigabit Ethernet Data Center and LAN Edge Switch Family

BENEFITS

BUSINESS ALIGNMENT

- Standards-based architecture to support secure, reliable deployment of business-critical applications.

- Flexible, high speed connectivity support for 1,10, and 40 Gbps Ethernet to scale with growth in your data center.

OPERATIONAL EFFICIENCY

- Integral element of Extreme Networks' OneFabric edge-to-edge network architecture reduces deployment and maintenance costs.

- High-density, small form system in a single rack unit, significantly reducing footprint costs.

- Virtual Switch Bonding for building high performance, high availability virtual chassis systems.

- Management automation and built in resiliency reduce Total Cost of Ownership.

- Virtual Machine (VM) mobility tracking across multiple systems with dynamic policy.

- Automatically identifies and provisions devices and services, reducing IT deployment time.

SECURITY

- Reduces risk and simplifies network administration with integrated security.

SUPPORT AND SERVICE

- Industry leading customer satisfaction and first call resolution rates.

- Versatile high performance solution for the data center and LAN edge

- Line rate 296 Gbps throughput with 220 Mpps packet forwarding

- Automated network provisioning

- Flexible connectivity options for 10/100Mb, Gigabit, 10 Gigabit and 40 Gigabit Ethernet, copper, fiber, and PoE

Product Overview

The Extreme Networks 7100G-Series is part of the 7100-Series family of high density, high-performance Data Center Ethernet switches. The 7100G-Series are Gigabit Ethernet switches that are ideally suited for the demands of today's Enterprise data center and high performance LAN edge access applications.

The 7100-Series offers flexible connectivity options for integrated Gigabit copper with high Power over Ethernet and modular 100Mb/1Gb SFP optical ports. 10/100Mb, Gigabit, 10 Gigabit, and 40 Gigabit ports are supported. In addition to the 48 Gigabit access ports in each model, up to 8 line rate 10 Gigabit Ethernet ports or 2 10Gb Ethernet ports with 2 40Gb Ethernet port configurations are supported. Configurable air flow allows for adaptation to the specific hot-aisle / cold-aisle configuration of your data center or LAN wiring closet.

The 7100G-Series Family Ethernet switches are available in the following configurations:

- 7148G-T - 48 ports 10/100/1000Mb RJ45 with PoE+, 2 1/10Gb SFP+ and 2 10/40Gb QSFP+ ports

- 7124G/24-TF - 24 ports 10/100/1000Mb RJ45 with PoE+, 24 ports 100Mb/Gb SFP, 2 1/10Gb SFP+ and 2 10/40Gb QSFP+ ports

All systems support redundant modular power supplies and fan modules and Entera-sys Virtual Switch Bonding (VSB) to configure highly available system configurations for mission critical data center environments. VSB systems are managed and config-ured as a single virtual switch. 7100G-Series systems use Virtual Switch Bonding to create high performance, high availability virtual chassis configurations of up to 8 sys-tems consisting of any mix of 7100G-Series Gigabit switches and 7100K-Series 10Gi-gabit switches. VSB is supported over any 40Gb media options using direct connect cables, multi-mode, or single mode fiber optic transceivers.

The 7100-Series Family is an integral element of the Extreme Networks OneFabric network architecture. OneFabric is designed to help enterprises maintain an integrated end user experience while migrating towards a virtualized network environment.

Virtualization awareness addresses the need for visibility and awareness as virtual servers get deployed and adapt to Virtual Machine mobility. Data Center Bridging effectively supports the convergence of LAN I/O and storage traffic in the data center fabric. High performance virtual switching increases the available bandwidth in the data center and enables resilient network topologies to servers and aggregation switches.

7100G-Series Features / Standards and Protocols

SWITCHING/VLAN SERVICES

802.3ab Gigabit Ethernet (copper)

802.3z Gigabit Ethernet (fiber)

802.3ae 10 Gigabit Ethernet (fiber)

802.3ba 40 Gigabit Ethernet

802.3af PoE

802.3at High power over Ethernet

802.3az Energy Efficient Ethernet (EEE)

802.1Q VLANs

802.1D MAC Bridges

802.1w Rapid re-convergence of Spanning Tree

802.1s Multiple Spanning Tree - up to 16 instances

802.1t – Path Cost Amendment to 802.1D

802.1AX-2008 LACP

- 802.3ad Link Aggregation
- Up to 64 groups with up to 8 ports in a group

802.3x Flow Control

Jumbo Packet (9216 bytes)

RFC 1191 Path MTU Discovery

Link Flap Detection

Dynamic Egress (Automated VLAN Port Configuration)

IGMP v1/v2/v3

IGMP snooping

IGMP querier

IPv6 Multicast Listener Discovery (MLD)

MLD snooping

MLD querier

GARP VLAN Registration Protocol (GVRP)

802.1ak Multiple VLAN Registration Protocol (MVRP/MRP)

802.1ad Provider Bridges Q-in-Q

DATA CENTER BRIDGING

802.1Qaz

- Enhanced Transmission Selection (ETS)
- Data Center Bridge Exchange Protocol (DCBx)
- Application Priority

802.1Qbb Priority Flow Control (PFC)

802,1Qau Congestion Notification (CN)

QOS

Strict Priority Queuing

Weighted Round Robin

8 Transmit Queues per Port

ToS/DSCP Marking/Remarking

802.1p – Class of Service

802.1D Priority-to-Transmit Queue Mapping

Ingress rate limiting

Transmit queue shaping

IP Service Level Agreements (IPSLA)

SECURITY

802.1X Port-based Authentication

Port Web-based Authentication (PWA)

MAC-based Authentication

Extreme Networks dynamic policy

Convergence Endpoint (CEP) Discovery with Dynamic Policy Mapping (Siemens HFA, Cisco VoIP, H.323, and SIP)

Multiple Authentication Types per Port Simultaneously

Multiple Authenticated users per Port with unique policies per user/End System (VLAN association independent)

Anti-Spoofing Suite

- DHCP Snooping
- Dynamic ARP Inspection (DAI)
- IP Source Guard

RFC 3580 IEEE 802.1 RADIUS Usage Guidelines, with VLAN to Policy Mapping

Broadcast Suppression

RADIUS snooping

MAC-to-Port Locking - static and dynamic

Span Guard (Spanning Tree Protection)

Host CPU Denial of Service (DoS) protection

MSCHAP RADIUS authentication

IPsec RADIUS connection

802.1AE MACsec Hardware Capable

IPV4 / IPV6 ROUTING

Base System:

- IPv4/IPv6 Static Routing
- RIPv2
- RIPng
- VRRP
- IPv4 Policy Based Routing (PBR)
- DVMRP

Advanced L3 Routing License:

- OSPFv2/v3
- ISIS
- PIM-SM
- PIM-DM
- PIM-SSM
- BGP
- Fabric Routing

HIGH AVAILABILITY

Virtual Switch Bonding (VSB)

- Up to 8 systems in a VSB stack with 40Gb interconnects
- VSB mix of 7100G and 7100K systems
- VSB supported over any supported 40Gb media options

High Availability Firmware Upgrade (HAU)

Redundant hot swappable fan modules

Redundant hot swappable power supplies

EXTREME NETWORKS NETWORK MANAGEMENT

NMS Console

NMS Policy Manager

NMS Inventory Manager

NMS Automated Security Manager

NMS NAC Manager

Data Center Manager (DCM)

NETWORK MANAGEMENT

SNMP v1/v2c/v3

WebView Management Interface

Industry Common Command Line Interface

Configurable Login Banner

Dual IPv4/IPv6 Management Support

Multiple local user account management

Multiple Software Image Support with Revision Roll Back

Multi-configuration File Support

Editable Text-based Configuration File

COM Port Boot Prom and Image Download

Telnet Server and Client

Secure Shell (SSHv1/v2) Server and Client

Cabletron Discovery Protocol

Cisco Discovery Protocol v1/v2

802.1ag Connectivity Fault Management (CFM)

802.1ab LLDP, LLDP-MED

802.3-2008 Clause 57 (Ethernet OAM – Link Layer OAM)

Syslog

Audit Trail Logging

FTP/TFTP Client

Secure Copy Protocol (SCP)

RFC 2030 Simple Network Time Protocol (SNTP)

RFC 2865 RADIUS

RFC 2866 RADIUS Accounting

RADIUS Server Load Balancing

TACACS+

Management VLAN

RMON – Statistic, History, Alarms, Events

RFC 2613 SMON

Port Mirroring - one to one, many to one

Unidirectional Link Detection (ULD)

DHCP server

Environmental Monitoring

STANDARD MIB SUPPORT

RFC 1156 MIB

RFC 1213 MIB-II

RFC 1493 Bridge MIB

RFC 1659 RS-232 MIB

RFC 1724 RIPv2 MIB

RFC 1850 OSPF MIB

RFC 2012 TCP MIB

RFC 2013 UDP MIB

RFC 2096 IP Forwarding Table MIB

RFC 2233 The Interfaces Group MIB using SMIv2

RFC 2576 SNMP-Community MIB

RFC 2578 SNMPv2 SMI

RFC 2579 SNMPv2-TC

RFC 2613 SMON MIB

RFC 2618 RADIUS Client MIB

RFC 2620 RADIUS Accounting MIB

RFC 2674 802.1p/q MIB

RFC 2787 VRRP MIB

RFC 2819 RMON MIB (Groups 1-4)

RFC 2863 IF MIB

RFC 2864 IF Inverted Stack MIB

RFC 2922 Physical Topology MIB

RFC 2934 PIM MIB for IPv4

RFC 3273 HC RMON MIB

RFC 3291 INET Address MIB

RFC 3411 SNMP Framework MIB

RFC 3412 SNMP-MPD MIB

RFC 3413 SNMPv3 Applications

RFC 3413 SNMP Notifications MIB

RFC 3413 SNMP Proxy MIB

RFC 3413 SNMP Target MIB

RFC 3414 SNMP User-Based SM MIB

RFC 3415 SNMP View Based ACM MIB

RFC 3417 SNMPv2-TM

RFC 3418 SNMPv2 MIB

RFC 3433 Entity Sensor MIB

RFC 3621 Power Ethernet MIB

RFC 3635 EtherLike MIB

RFC 4022 MIB for the Transmission Control Protocol (TCP)

RFC 4113 MIB for the User Datagram Protocol (UDP)

RFC 4133 ENTITY MIB

RFC 4188 Bridge MIB

RFC 4268 Entity State MIB

RFC 4268 Entity State TC MIB

RFC 4292 IP Forwarding MIB

RFC 4293 MIB for Internet Protocol (IP)

RFC 4444 MIB for IS-IS

RFC 4560 DISMAN-PING-MIB

RFC 4560 DISMAN-TRACEROUTE-MIB

RFC 4560 DISMAN-NSLOOKUP-MIB

RFC 4750 OSPFv2 MIB

RFC 4836 MAU-MIB

RFC 4836 IANA-MAU-MIB

RFC 4878 DOT3-OAM-MIB

RFC 5060 PIM MIB

RFC 5240 PIM Bootstrap Router MIB

RFC 5519 MGMD-STD-MIB

RFC 5643 OSPFv3 MIB

IEEE 8023 LAG MIB

RSTP MIB

USM Target Tag MIB

U Bridge MIB

SNMP-REARCH MIB

IANA-address-family-numbers MIB

IEEE 802.1PAE MIB

7100G-Series Switch Model Specifications - Gigabit Ethernet Models

	7148G-T	7124/24G-TF
PERFORMANCE		
Switching Throughput Mpps	220 Mpps	17.86 Mpps
Switching Capacity	296 Gbps	24.0 Gbps
Max Gb Ethernet Ports	48	48
Max 10Gb Ethernet Ports	8	8
Max 40Gb Ethernet Ports	2	2
MAC Address Table	128K	128K
VLANs Supported	4,094	4,094
Packet Buffers	4MB	4MB
PHYSICAL SPECIFICATIONS		
Dimensions (H x W x D), Rack Units	• 1 Rack Unit high • 4.37 cm H x 44.73cm W x 43.40cm D • 1.72" H x 17.61" W x 17.086" D	• 1 Rack Unit high • 4.37 cm H x 44.73cm W x 43.40cm D • 1.72" H x 17.61" W x 17.086" D
Physical Ports	• (48) 10/100/1000Mb Base-T ports with 802.3at PoE+ support • (2) 1Gb/10Gb SFP+ ports • (2) 10Gb/40Gb QSFP+ ports • (1) Console port • (1) Micro-USB port	• (24) 10/100/1000Mb Base-T ports with 802.3at PoE+ support • (24) 100Mb/1Gb SFP ports • (2) 1Gb/10Gb SFP+ ports • (2) 10Gb/40Gb QSFP+ ports • (1) Console port • (1) Micro-USB port
POWER		
Power Supplies	Up to two load sharing redundant 800W power supplies	Up to two load sharing redundant 800W power supplies
Normal Input Voltage	100 - 240 VAC	100 - 240 VAC
Input Frequency	50 - 60 Hz	50 - 60 Hz
Max Power Consumption	96W	81W
Available Power PoE	1 Power Supply - 700W 2 Power Supplies - 1400W	1 Power Supply - 700W 2 Power Supplies - 1400W
ENVIRONMENTAL		
Operating Temperature	5° to 40° C (41° to 104° F)	5° to 40° C (41° to 104° F)
Non-Operating Temperature	-30° to 73° C (-22° to 164° F)	-30° to 73° C (-22° to 164° F)
Operating Relative Humidity	5% to 95% (non-condensing)	5% to 95% (non-condensing)
AGENCY SPECIFICATIONS		
Safety	UL 60950-1, FDA 21 CFR 1040.10 and 1040.11, CAN/CSA C22.2, No. 60950-1, EN 60950-1, EN 60825-1, EN 60825-2, IEC 60950-1, 2006/95/EC (Low Voltage Directive)	
Electromagnetic Compatibility	FCC 47 CFR Part 15 (Class A), ICES-003 (Class A), EN 55022 (Class A), EN 55024, EN 61000-3-2, EN 61000-3-3, AS/NZ CISPR-22 (Class A). VCCI V-3. CNS 13438 (BSMI), 2004/108/EC (EMC Directive)	
Environmental	2002/95/EC (RoHS Directive), 2002/96/EC (WEEE Directive), Ministry of Information Order #39 (China RoHS)	

7100G-Series Supported Port Configurations

The 7100G-Series supports a wide range of 10/100Mb, Gigabit, 10 Gigabit, and 40 Gigabit port configurations. The dual QSFP+ ports must both be configured as 40Gb Ethernet / VSB interconnect ports or both as 4 x 10Gb Ethernet ports. When the two QSFP+ ports are configured as 4 x 10Gb Ethernet ports, the two SFP+ ports are not available for use. Supported port configurations are shown in the table below.

7100G-SERIES MODEL	RJ45 TRIPLE SPEED POE+ PORTS	SFP 100MB/1GB PORTS	SFP+ 1/10GB ETHERNET PORTS	QSFP+	
				10GB ETHERNET PORTS	40GB ETHERNET OR VSB PORTS
7148G-T	48	–	2	–	2
	48	–	–	8	–
7124/24G-TF	24	24	2	–	2
	24	24	–	8	–

Model Number Information

PART NUMBER	DESCRIPTION
7100G-SERIES SWITCHES - 1 GIGABIT MODELS	
71G21K2L2-48P	7148G-T, 48 10/100/1000 PoE (.at + .af capable) RJ45 ports, 2 1/10Gb SFP+ ports, 2 10/40Gb QSFP+ ports , includes reversible redundant fan module and a two post rack mount kit. Power supplies ordered separately.
71G21K2L2-24P24	7124/24G-TF, 24 10/100/1000 PoE (.at + .af capable) RJ45 ports, 24 100Mb/1Gb SFP ports, 2 1/10Gb SFP+ ports, 2 10/40Gb QSFP+ ports ,includes reversible redundant fan module and a two post rack mount kit. Power supplies ordered separately.
POWER SUPPLIES - FOR 71G21K2L2-48P AND 71G21K2L2-24P24 MODELS ONLY	
71A-POE-A	7100G PoE Power Supply, 100-240VAC input, system I/O side air exhaust
71A-POE-B	7100G PoE Power Supply, 100-240VAC input, system I/O side air intake
OPTIONAL LICENSES	
71A-EOS-G-ADVL3	7100G-Series (1Gb models) Advanced Routing License - OSPFv2, OSPFv3, ISIS, PIM-SM, PIM-DM, PIM-SSM, BGP, Fabric Routing
SPARES AND ACCESSORIES	
71A-71GFAN	7100G Fan Module Spare with redundant fans, reversible air flow, for 71G systems only
71A-RACK-U	7100 Universal rack mount kit for four post rack mount options

Extreme networks®

Transceivers

Extreme Networks transceivers provide flexible connectivity options for Ethernet. All Extreme Networks transceivers meet the highest quality for extended life cycle and the best possible return on investment. For detailed specifications, compatibility and ordering information please go to http://www.extremenetworks.com/products/transceivers-ds.pdf

Warranty

The Extreme Networks 7100G-Series 1Gb models come with a limited lifetime hardware warranty. Power supplies and fan modules for the 7100G-Series models have a 5 year hardware warranty.

For full warranty terms and conditions please go to http://www.extremenetworks.com/support/warranty.aspx

Service and Support

Extreme Networks provides comprehensive service offerings that range from Professional Services to design, deploy and optimize customer networks, customized technical training, to service and support tailored to individual customer needs. Please contact your Extreme Networks account executive for more infor-mation about Extreme Networks Service and Support.