

Product Highlights

Performance

- 7170B-64C: 64x QSFP100
- Flexible 10G to 100G support
- Wirespeed MACSec Encryption
- Up to 130 x 10G, or 128 x 25/50G using breakout cables
- Up to 6.4 terabits per second
- Up to 3.2 billion packets per second
- Wire speed L2 and L3 forwarding
- Latency from 1us
- 64MB integrated packet buffer

Data Center Optimized Design

- 64 QSFP100 ports in 2RU
- Over 93% efficient power supplies
- 1+1 redundant & hot-swappable power
- N+1 redundant & hot-swappable fans
- Front-to-rear cooling
- Tool-less rails for simple installation

Resilient Control Plane

- High Performance x86 CPU
- 64GB DRAM , 120GB SSD
- User applications can run in a VM

Advanced Provisioning & Monitoring

- CloudVision
- Zero Touch Provisioning (ZTP)
- LANZ for microburst detection
- DANZ Advanced Mirroring for visibility
- Self-configure and recover from USB

Flexible & Programmable Architecture

- Integrated and flexible packet forwarding
- Flexible resource allocation
- P4 Programmable pipeline profiles
- Advanced telemetry with packet traces and user defined triggers

Arista Extensible Operating System

- Single binary image for all products
- Fine-grained truly modular network OS
- Stateful Fault Containment (SFC)
- Stateful Fault Repair (SFR)
- Full Access to Linux shell and tools
- Extensible platform - bash, python, C++ , GO, OpenConfig

Overview

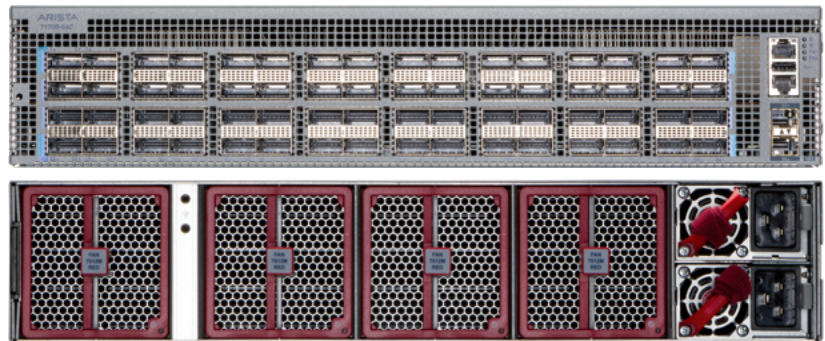
Significant growth in the scale, performance and complexity of data centre networks has created new challenges for designers. Network functions that traditionally required dedicated appliances are no longer able to keep pace with the required data rates in an economical fashion.

The Arista 7170B Series are second-generation purpose built, high density, fixed configuration 100GbE systems with up to 6.4 Tbps performance in a compact, low power form factor.

Built around a fully P4 programmable data plane, the packet processor architecture allows for complete definition of packet parsing, lookups, traffic scheduling, packet modification and traffic monitoring. The 7170 harnesses this flexibility to deploy complex functions, usually only available in CPU based appliances, at wire speed directly in the network layer providing orders of magnitude performance improvements and power/space reduction.

Arista provides multiple user selectable pipeline profiles that focus on use cases including high scale tunneling, address translation and server load balancing combined with scalable L2 and L3 resources and rich EOS features. The unique flexibility means new pipeline features and applications can be developed and deployed without replacing the underlying hardware.

The Arista 7170B-64C offers 64 QSFP ports for dense 40/100 GbE deployments and can support flexible combinations of 10, 25, 40, 50 and 100 GbE.



Arista 7170B-64C: 64 x 40/100GbE QSFP100 ports, 2 x SFP+ ports

Arista EOS

The Arista 7170B series runs the same Arista EOS software as all Arista products, simplifying network administration. Arista EOS is a modular switch operating system with a unique state sharing architecture that cleanly separates switch state from protocol processing and application logic. Built on top of a standard Linux kernel, all EOS processes run in their own protected memory space and exchange state through an in-memory database. This multi-process state sharing architecture provides the foundation for in-service-software updates and self-healing resiliency.

With Arista EOS, advanced monitoring and automation capabilities such as Zero Touch Provisioning, VMTracer and Linux based tools can be run natively on the switch with its powerful x86 CPU subsystem.

Model Overview

The **7170B-64C** is a 2RU system with 64 100G QSFP ports offering wire speed performance with an overall throughput up to 6.4 Tbps. Each QSFP port is capable of a choice of 40/100GbE, with support for up to 128 10/25G ports when using breakouts. Two integrated SFP+ ports provide support for additional lower speed 1/10G interfaces.

High Availability and Flexibility

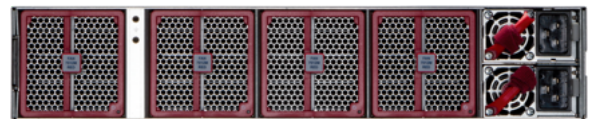
The Arista 7170 Series were designed for flexible deployment and continuous operations with system wide monitoring of both hardware and software components, simple serviceability and provisioning to prevent single points of failure.

Key features include:

- AC and DC power supply options
- Front to Rear cooling with dynamic temperature control.
- Redundant, color coded, field serviceable power and cooling subsystems:
 - 1+1 hot-swappable platinum rated power supplies
 - N+1 hot-swappable fans
- Live software patching
- Self healing software with Stateful Fault Repair (SFR)



*Arista 7170B-64C:
64x 100GbE QSFP100 ports, 2 SFP+ ports*

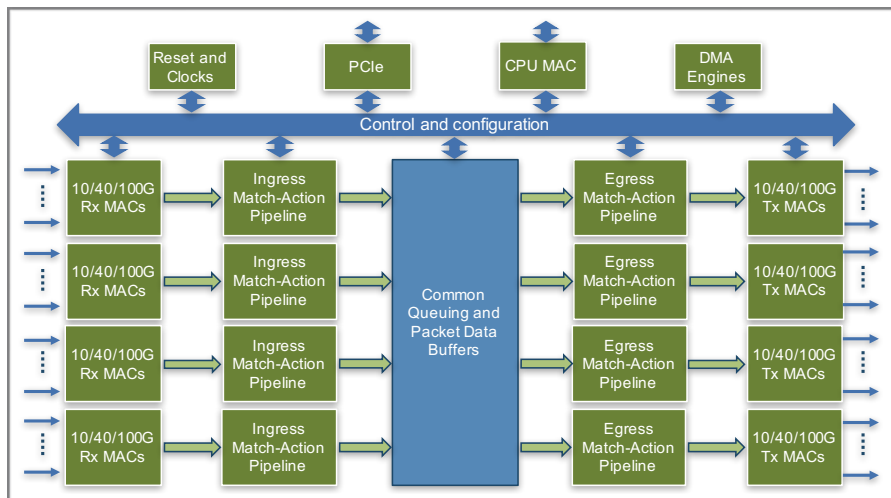


7170 2RU Rear View

Programmable Architecture

The 7170B series offers a protocol independent switch architecture with a highly programmable packet pipeline that allows the addition of new protocols, encapsulation and tunneling features to the packet processor through simple software upgrades without changes to the underlying hardware. With up to 80 programmable stages, the 7170B series provides more than twice as much pipeline capacity as the previous generation 7170, enabling new profiles with more complex functionality and greater scalability.

Arista leverages P4 to define advanced forwarding profiles for the 7170 packet pipeline to deliver custom behavior, change lookups performed on the packets or rapidly develop and test new functionality. This flexibility provided by multiple forwarding profiles written in P4 and compiled into Arista EOS, addresses multiple real world requirements for scale, advanced telemetry, security and encapsulation and can be further customized to specific customer use-cases. The Enhanced feature license enables use of specialist profiles.



Arista 7170 Series Packet Pipeline Architecture

Match-Action Units

The 7170 series packet processor pipeline consists of identical blocks of pipeline stages or Match-Action Units. The pipeline program, known as a profile, defines the functions implemented by each Match-Action Unit, matching specific information extracted from packet headers and performing lookups in the resource tables which then define modifications and forwarding decisions. This architecture results in a configurable data plane with very high throughput, broad range of packet processing functionality and application visibility.

Flexible and Scalable Resources

Network scalability is directly impacted by a switch's forwarding tables. Programmable profiles enable the 7170 Series to provide flexibility on how memory resources are allocated among the different tables and features. The architecture allows for flexible and programmable allocation of available resources to achieve maximum efficiency for a given customer application. The unique level of pipeline programmability enables deployment of the 7170 Series in traditional roles with standard scale requirements as well as a wide range of use cases with unique resource requirements.

Intelligent Packet Buffers

The Arista 7170B Series switches offer up to 64 MB of unified packet buffer that is shared dynamically across all ports. The packet buffer can be allocated programmatically across multiple classes of applications to optimize performance for custom applications along with standard data center applications designed to avoid congestion from micro-bursts or fan-in packets. Unlike architectures with small per-port packet memory, or small shared memory pools the 7170 Series use a scheme to allocate memory intelligently based on a combination of traffic class, queue depth and quality of service policy ensuring fair allocation to all ports.

Application Profiles

The 7170 series with Arista EOS support a rich set of both data plane and control plane features and capabilities with a programmable SDK that address the deployment in either a leaf or spine role in two-tier networks. In addition, configurable application specific profiles provide a targeted set of data plane and control plane features with the feature scale tailored to address specific deployment scenarios.

Some examples of solutions the 7170 Series can enable:

- **Bare-metal Integration with Network Overlays and Virtualization:** Enables large scale integration of bare metal compute into virtualized overlays, offloading network functions such as traffic segmentation or tunnel encapsulation from bare metal servers freeing up compute resources and accelerating applications.
- **Large Scale Network Address Translation:** Provides highly scalable static and dynamic network address and port translation (NAT) at line rate with synchronization for gateway redundancy.
- **IPv4 to v6 transition with MAP-T:** Implements line-rate, high scale, stateless translation between IPv4 and IPv6 enabling service providers to remove IPv4 from core networks without the need for complex CGNAT deployments.
- **Stateless Load Balancing:** Delivers high bandwidth, low latency load balancing for distributed applications including cloud, web and containerized workloads.
- **Broadcast Media Workflows:** Provides in-network support for broadcast specific requirements including clean switching, stream reconstruction and advanced address translation.

For further information about available pipeline profiles or new profile development, please contact your Arista representative.

Layer 2 Features ¹

- 802.1w Rapid Spanning Tree
- 802.1s Multiple Spanning Tree Protocol
- Rapid Per VLAN Spanning Tree (RPVST+)
- 4096 VLANs
- Q-in-Q
- 802.3ad Link Aggregation/LACP
 - 128 ports/channel
- Multi-Chassis Link Aggregation (MLAG)
 - 64 ports per MLAG
- 802.1AB Link Layer Discovery Protocol
- 802.3x Flow Control
- Jumbo Frames (9216 Bytes)
- IGMP v1/v2/v3 snooping
- Storm Control

Layer 3 Features ¹

- Routing Protocols: OSPF, OSPFv3, BGP, MP-BGP, IS-IS, and RIPv2
- Static Routes
- Equal Cost Multipath Routing (ECMP)
- Resilient ECMP Routes
- VRF
- Bi-Directional Forwarding Detection (BFD)
- Route Maps
- IGMP v2/v3
- PIM-SM / PIM-SSM
- Anycast RP (RFC 4610)
- VRRP
- Virtual ARP (VARP)
- Policy Based Routing (PBR)
- uRPF
- Network Address Translation
 - Source/Destination NAT
 - Source/Group Multicast NAT

Advanced Monitoring and Provisioning ¹

- Zero Touch Provisioning (ZTP)
- Latency Analyzer and Microburst Detection (LANZ)
 - Configurable Congestion Notification (CLI, Syslog)
 - Streaming Events (GPB Encoded)
 - Capture/Mirror of congested traffic
- Advanced Monitoring and Aggregation
 - Port Mirroring
 - L2/3/4 Filtering on Mirror Sessions
 - Port Channel source and destination
 - Mirror to CPU
- Advanced Event Management suite (AEM)
 - CLI Scheduler
 - Event Manager
 - Event Monitor
 - Linux tools

- Integrated packet capture/analysis with TCPDump
- RFC 3176 sFlow
- Restore & configure from USB
- Blue Beacon LED for system identification
- eAPI
- OpenStack Neutron Support
- IEEE 1588 PTP (Transparent Clock and Boundary Clock)

Virtualization Support ¹

- VXLAN Routing and Bridging
- VM Tracer VMware Integration

Security Features ¹

- Control Plane Protection (CPP)
- Ingress ACLs using L2, L3, L4 fields
- ACL Deny Logging
- ACL Counters
- DHCP Relay / Snooping
- MACsec (802.1AE)
- TACACS+
- RADIUS

Quality of Service (QoS) Features ¹

- Up to 8 queues per port
- 802.1p based classification
- DSCP based classification and remarking
- Explicit Congestion Notification (ECN)
- QoS interface trust (COS / DSCP)
- Strict priority queueing
- Weighted Round Robin (WRR) Scheduling
- Per-Priority Flow Control (PFC)
- Data Center Bridging Extensions (DCBX)
- 802.1Qaz Enhanced Transmissions Selection (ETS)
- Per port MMU Configuration
- Policing/Shaping
- Rate limiting

1. Due to the highly programmable nature of the packet processor, available functionality and scale varies by the current active profile

Network Management

- CloudVision
- Configuration rollback and commit
- 100/1000 Management Port
- RS-232 Serial Console Port
- USB Port
- SNMP v1, v2, v3
- Management over IPv6
- Telnet and SSHv2
- Syslog
- AAA
- Industry Standard CLI
- Beacon LED for system identification
- System Logging
- Environment monitoring

Extensibility

- Linux Tools
 - Bash shell access and scripting
 - RPM support
 - Custom kernel modules
- Software Defined Networking (SDN)
 - eAPI
 - OpenStack Neutron Support
- Programmatic access to system state
 - Python
 - Chef
 - Puppet
 - C++
 - eAPI
 - GO
 - OpenConfig
 - OpenStack Neutron Plug-in support
- Native KVM/QEMU support

Standards Compliance ¹

- 802.1D Bridging and Spanning Tree
- 802.1p QOS/COS
- 802.1Q VLAN Tagging
- 802.1w Rapid Spanning Tree
- 802.1s Multiple Spanning Tree Protocol
- 802.1AB Link Layer Discovery Protocol
- 802.3ad Link Aggregation with LACP
- 802.3x Flow Control
- 802.3ab 1000BASE-T
- 802.3z Gigabit Ethernet
- 802.3ae 10 Gigabit Ethernet
- 802.3by 25 Gigabit Ethernet
- 802.3ba 40 Gigabit Ethernet
- 802.3ba 100 Gigabit Ethernet
- 802.3bs 200 Gigabit Ethernet
- RFC 2460 Internet Protocol, Version 6 (IPv6)
- RFC 2461 Neighbor Discovery for IP Version 6 (IPv6)
- RFC 2462 IPv6 Stateless Address Autoconfiguration
- RFC 2463 Internet Control Message Protocol (ICMPv6)
- IEEE 1588-2008 Precision Time Protocol

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SNMP MIBs

- RFC 3635 EtherLike-MIB
- RFC 3418 SNMPv2-MIB
- RFC 2863 IF-MIB
- RFC 2864 IF-INVERTED-STACK-MIB
- RFC 2096 IP-FORWARD-MIB
- RFC 4363 Q-BRIDGE-MIB
- RFC 4188 BRIDGE-MIB
- RFC 2013 UDP-MIB
- RFC 2012 TCP-MIB
- RFC 2011 IP-MIB
- RFC 2790 HOST-RESOURCES-MIB
- RFC 3636 MAU-MIB
- RMON-MIB
- RMON2-MIB
- HC-RMON-MIB
- LLDP-MIB
- LLDP-EXT-DOT1-MIB
- LLDP-EXT-DOT3-MIB
- ENTITY-MIB
- ENTITY-SENSOR-MIB
- ENTITY-STATE-MIB
- ARISTA-ACL-MIB
- ARISTA-QUEUE-MIB
- RFC 4273 BGP4-MIB
- RFC 4750 OSPF-MIB
- ARISTA-CONFIG-MAN-MIB
- ARISTA-REDUNDANCY-MIB
- RFC 2787 VRRPv2MIB
- MSDP-MIB
- PIM-MIB
- IGMP-MIB
- IPMROUTE-STD-MIB
- SNMP Authentication Failure trap
- ENTITY-SENSOR-MIB support for DOM (Digital Optical Monitoring)
- User configurable custom OIDs

See EOS release notes for latest supported MIBs

Specifications

Switch Model	7170B-64C ^E
Ports	64x QSFP100 2x SFP
Max 100GbE Ports	64
Max 50GbE Ports ¹	128
Max 40GbE Ports	64
Max 25GbE Ports	128
Max 10GbE Ports	130
Max 1GbE Ports	2
MACSec ¹	All QSFP Ports
Throughput (Full Duplex)	6.4 Tbps (12.8 Tbps)
Packets/Second ²	Up to 3.2 Bpps
Latency ²	From 1 us
Programmable Pipeline Stages ¹	Up to 80
CPU	Multi-core x86
System Memory	64 GB
Flash Storage Memory	120 GB
Packet Buffer Memory	64 MB
10/100/1000 Mgmt Ports	1
RS-232 Serial Ports	1 (RJ-45)
USB Ports	1
Hot-swap Power Supplies	2 (1+1 redundant)
Hot-swappable Fans	4 (N+1 redundant)
Reversible Airflow Option	Front to Rear only
Typical/Max Power Draw ³	772 W / 980 W Max. (excl. transceivers)
Rack Units	2 U
Size (WxHxD)	17.55 x 3.46 x 23.42 inches (44.58 x 8.8 x 59.5 cm)
Weight	39.4 lbs (17.9 kg)
Power Supplies	PWR-2411-AC / PWR-2411-DC
EOS Feature Licenses	Group 3
Minimum EOS	4.29.1

1. Subject to support in EOS and pipeline profile installed

2. Performance rated over operation with average packets larger than 230 bytes with a medium complexity profile installed

3. Typical power consumption measured at 25C ambient with 50% load

E. Product is subject to an End of Sale notice

Power Supply Specifications

Power Supply	PWR-2411-AC	PWR-2411-DC
Input Voltage	200-240V AC	-48 to -60 VDC
Typical Input Current	14A	55A Max (-48V)
Input Frequency	50/60Hz	DC
Output Power	2400W	2400W
Input Connector	IEC 60320 C20	AWG #6 Max
Efficiency (Typical)	93% Platinum	94%

Standards Compliance

EMC	FCC Class A, ICES-003, EN 55032, EN IEC 61000-3-2:2019, EN 61000-3-3
Immunity	EN 55035 EN 300 386
Safety	EN 62368-1:2014 + A11:2017 IEC 62368-1:2014
Certifications	BSMI (Taiwan) CE (European Union) KCC (South Korea) NRTL (North America) RCM (Australia/New Zealand) UKCA (United Kingdom) VCCI (Japan)
European Union Directives	2014/35/EU Low Voltage Directive 2014/30/EU EMC Directive 2012/19/EU WEEE Directive 2011/65/EU RoHS Directive 2015/863/EU Commission Delegated Directive
Further Information	Product Certification Portal

Environmental Characteristics

Operating Temperature	0 to 40°C (32 to 104°F)
Storage Temperature	-40 to 70°C (-40 to 158°F)
Relative Humidity	5 to 95%
Operating Altitude	0 to 10,000 ft, (0-3,000m)

Arista Optics and Cables

The Arista 7170B Series supports a wide range of 10G, 25G, 50G, and 100G pluggable optics and cables in the QSFP ports. For details about the different optical modules and the minimum EOS Software release required for each of the supported optical modules, visit <https://www.arista.com/en/products/transceivers-cables>.

Supported Optics and Cables

Interface Type	40G QSFP ports
10GBASE-CR	QSFP+ to 4xSFP+: 0.5m-5m lengths
40GBASE-CR4	QSFP+ to QSFP+: 0.5m-5m lengths
40GBASE-AOC	3m to 100m lengths
40GBASE-UNIV	150m OM3 / 150m OM4, 500m SM
40GBASE-SRBD	100m OM3 / 150m OM4 Duplex MMF
40GBASE-SR4	100m OM3 / 150m OM4 Parallel MMF
40GBASE-XSR4	300m OM3 / 400m OM4 Parallel MMF
40GBASE-PLRL4	1km (1km 4x10G LR/LRL)
40GBASE-PLR4	10km (10km 4x10G LR/LRL)
40GBASE-LRL4	1km Duplex SM
40GBASE-LR4	10km Duplex SM
40GBASE-ER4	40km Duplex SM
100GbE	100G QSFP ports
100GBASE-SR4	70m OM3 / 100m OM4 Parallel MMF
100GBASE-XSR4	150m OM3 / 300m OM4 Parallel MMF
100GBASE-SWDM4	70m OM3 / 100m OM4 Duplex MMF
100GBASE-SRBD	70m OM3 / 100m OM4 Duplex MMF
100GBASE-LR	10km Duplex SM
100GBASE-LR4	10km Duplex SM
100GBASE-LRL4	2km Duplex SM
100GBASE-XCWDM4	10km Duplex SM
100GBASE-CWDM4	2km Duplex SM
100GBASE-FR	2km Duplex SM
100GBASE-DR	500m Duplex SM
100GBASE-PSM4	500m Parallel SM
100GBASE-AOC	1m to 30m lengths
100GBASE-ERL4	40km Duplex SM
100GBASE-CR4	QSFP to QSFP: 1m to 5m lengths
50GBASE-CR2	QSFP to 2xQSFP: 1m to 5m lengths
25GBASE-CR	QSFP to SFP25: 1m to 5m lengths

Supported Optics and Cables

10GbE	SFP+ ports
10GBASE-CR	SFP+ to SFP+: 0.5m-5m lengths
10GBASE-AOC	SFP+ to SFP+: 3m-30m lengths
10GBASE-SRL	100m OM3 / 150m OM4 Duplex MMF
10GBASE-SR	300m OM3 / 400m OM4 Duplex MMF
10GBASE-LRL	1km Duplex SM
10GBASE-LR	10km Duplex SM
10GBASE-ER	40km Duplex SM
10GBASE-ZR	80km Duplex SM
10GBASE-T	Up to 30m over Cat6a
10GBASE-DWDM	80km Duplex SM
1GbE SX/LX/TX	550m / 10km / 100m

Product Number	Product Description
DCS-7170B-64C-F	Arista 7170B, Programmable 64 x 100GbE QSFP switch, front to rear air, 2 x AC
DCS-7170B-64C#	Arista 7170B, Programmable 64 x 100GbE QSFP switch, configurable fans and psu
LIC-FIX-3-E	Enhanced L3 License for Arista Group 3 Fixed switches, (BGP, OSPF, ISIS, PIM, NAT)
LIC-FIX-3-V	Virtualization license for Group 3 Arista Fixed switches (VMTracer and VXLAN)
LIC-FIX-3-V2	EOS Extensions, Security and Partner Integration license for Arista Group 3 Fixed switches
LIC-FIX-3-Z	Monitoring & Automation license for Arista Group 3 Fixed switches (ZTP, LANZ, TapAgg, OpenFlow)
LIC-FIX-3-FLX-L	FLX-Lite License for Arista Fixed switches Group 3 - Full Routing Up to 256K Routes, EVPN, VXLAN, SR, base MPLS LSR (no TE or link/node protection)
LIC-FIX-3-FLX	FLX License for Arista Fixed switches Group 3 - Full Routing Up to 2M Routes, >24K ACL, EVPN, VXLAN, SR, Adv MPLS LSR with TE or link/node protection
LIC-FIX-ENH1	Enhanced License Group 1 for 7170 platforms - All non-default profiles. Includes E, V2, Z, FLX.
LIC-FIX-3-MACSEC	MACsec Encryption License for Arista Group 3 Fixed switches, MACsec capable ports

Optional Components and Spares

PWR-2411-AC-RED	Arista PSU, 1RU, AC/DC, 2400W, FORWARD, 73.5MM
PWR-2411-DC-RED	Arista PSU, 1RU, DC/DC, 2400W, FORWARD, 73.5MM
FAN-7012H-RED	Spare fan module for Arista 7000 Series 2RU High Speed Fan (front-to-read airflow)
KIT-7202	Spare tool-free accessory kit (v2) for Arista 2RU switches. 4-post mount. (2x C19-C20, 2m)

Warranty

The Arista 7170 series switches come with a one-year limited hardware warranty, which covers parts, repair, or replacement with a 10 business day turn-around after the unit is received.

Service and Support

Support services including next business day and 4-hour advance hardware replacement are available. For service depot locations, please see: <http://www.arista.com/en/service>

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