

Cisco 7304 NSE-150 Network Services Engine

PB377197

Product Overview

The Cisco® 7304 Router is designed for the network edge where high-performance IP services are required to enable profitability, service differentiation, and business agility. It is widely positioned as a WAN aggregation router in enterprise and high-end customer-premises-equipment (CPE) deployments or as a low-end provider-edge router in service provider deployments (Figure 1).

Figure 1. Cisco 7304 NSE-150 Network Services Engine



The Cisco 7304 NSE-150 is the forwarding engine or route processor for the Cisco 7304; it uses Parallel Express Forwarding (PXF) technology to deliver hardware-accelerated network services with up to 3.5-Mpps forwarding rate; it also has an 800-MHz microprocessor CPU to support a rich feature set in Cisco IOS® Software with high performance and scalability. With the four onboard Gigabit Ethernet ports, it also increases the overall port density of the platform and maximizes the value of customers' investments. Detailed features are described in Table 1.

Table 1. Features of Cisco 7304 NSE-150

Feature	Description
Hardware-accelerated features with up to 3.5-Mpps forwarding rate	<ul style="list-style-type: none"> Cisco Express Forwarding, Turbo ACL, NetFlow v8, Multiprotocol Label Switching (MPLS), MPLS VPN, Network Address Translation (NAT), generic routing encapsulation (GRE), quality of service (QoS), IP Multicast, etc.
High performance and scalability of control-plane features	<ul style="list-style-type: none"> 800-MHz microprocessor that allows non-PXF accelerated features to run at 800 kpps Increased scalability of control-plane features with 2-Gb memory
Backward compatibility	<ul style="list-style-type: none"> Provides investment protection through backward compatibility <p>Note: Products that reached end-of-sale status before Cisco IOS Software Release 12.2(31)SB2 will not be supported on the NSE-150.</p>
Support for Cisco IOS Software	<ul style="list-style-type: none"> Supports a wide range of IP and non-IP network services, including QoS, MPLS, IPv6, IP Multicast, etc.
High availability	<ul style="list-style-type: none"> Provides optional redundant-processor support for the industry's most compact, fully redundant, high-availability solution, improving network resiliency, management, and costs
Four fixed onboard Gigabit Ethernet ports	<ul style="list-style-type: none"> Maximizes LAN connectivity and performance without taking up slot capacity
2 GB of synchronous dynamic RAM (SDRAM)	<ul style="list-style-type: none"> Offers more scalability on features: routing table, Forwarding Information Base (FIB) table, IPv6 features, etc.
Modularity	<ul style="list-style-type: none"> Enables maximum investment protection and flexibility by allowing customers to upgrade to the NSE-150 network services engine or future Cisco 7304 processors
Dedicated management for 10-/100-Mbps Ethernet	<ul style="list-style-type: none"> Reduces costs and protects port density of the chassis

Feature	Description
Two USB ports	<ul style="list-style-type: none"> Provides a large, removable storage for files (not enabled at first-customer-shipment [FCS] time, and the support will be available in future releases)
Digital diagnostics on Small Form-Factor Pluggable (SFP) interface	<ul style="list-style-type: none"> Provides a powerful tool that monitors many manageable parameters, including optical transmit and receive power, voltage and temperature measurement, and factory parameters
Mean time between failure (MTBF)	<ul style="list-style-type: none"> 89,718 hours

New Features

With the introduction of the Cisco NSE-150, the following is offered (refer to Table 1 for details):

- Improved processing power for the control-plane functions (for example, routing protocols and statistics collection)
- Improved processing power for route processor-processed data traffic (for example, traditional protocol traffic such as X.25)
- Increased route-processor and PXF memory to enable more scalability (routing table, FIB table, etc.)
- Additional port density through onboard Gigabit Ethernet ports (two more onboard Gigabit Ethernet ports compared to NSE-100)
- USB interfaces to provide a large removable file storage
- Support for up to 16,000 IDBs, whereas NSE-100 supports 4,000 IDBs and NPE-G100 supports 8,000 IDBs

Upgrade Paths

The Cisco 7304 NSE-150 is part of the Cisco Technology Migration Program (TMP). Customers are encouraged to review their networking requirements and to use the TMP to upgrade from previous generations of Cisco 7304 Series network processing engines to the Cisco 7304 NSE-150. Refer to <http://www.cisco.com/go/TMP> and contact your local Cisco account representative related to the TMP.

Availability

The Cisco 7304 Series NSE-150 is available and supported as of Cisco IOS Software Special Release 12.2(31)SB2.

The Cisco 7304 Series NSE-150 is supported in the Cisco 7304 chassis.

Ordering Information

Table 2 gives ordering information for the Cisco 7304 NSE-150.

Part Number	Description
7300-NSE-150	Cisco 7304 NSE-150 w/2 GB SDRAM, 256MB Flash, (4)GE (offered through system bundle only)
7300-NSE-150=	Cisco 7304 NSE-150 w/2 GB SDRAM, 256MB Flash, (4)GE, spare
7300-NSE-150/2	Redundant Cisco 7304 NSE-150 w/2 GB SDRAM, 256MB Flash, (4)GE
CISCO7304-NSE-150	4-slot chassis, Cisco 7304 NSE-150, 1 Power Supply, 2GB Memory
CISCO7304CH-NSE150	Channel bundle:chassis,NSE-150,PWR-AC, IOS IP PLUS,FAN
7304-I/O-CFM-256M	Cisco 7304 Compact Flash Memory, 256MB
7304-I/O-CFM-256M=	Cisco 7304 Compact Flash Memory, 256MB, SPARE

Part Number	Description
GLC-SX-MM	Gigabit Ethernet SFP, LC connector SX transceiver
GLC-SX-MM=	Gigabit Ethernet SFP, LC connector SX transceiver, spare
GLC-LH-SM	Gigabit Ethernet SFP, LC connector LH transceiver
GLC-LH-SM=	Gigabit Ethernet SFP, LC connector LH transceiver, spare
GLC-ZX-SM	Gigabit Ethernet SFP, 1000BASE-ZX
GLC-ZX-SM=	Gigabit Ethernet SFP, 1000BASE-ZX, spare
CWDM-SFP-1470=	1000BASE-CWDM 1470 nm SFP (single mode only), spare
CWDM-SFP-1490=	1000BASE-CWDM 1490 nm SFP (single mode only), spare
CWDM-SFP-1510=	1000BASE-CWDM 1510 nm SFP (single mode only), spare
CWDM-SFP-1530=	1000BASE-CWDM 1530 nm SFP (single mode only), spare
CWDM-SFP-1550=	1000BASE-CWDM 1550 nm SFP (single mode only), spare
CWDM-SFP-1570=	1000BASE-CWDM 1570 nm SFP (single mode only), spare
CWDM-SFP-1590=	1000BASE-CWDM 1590 nm SFP (single mode only), spare
CWDM-SFP-1610=	1000BASE-CWDM 1610 nm SFP (single mode only), spare
GLC-BX-D	1000BASE-BX SFP, 1490NM
GLC-BX-D=	1000BASE-BX SFP, 1490NM, spare
GLC-BX-U	1000BASE-BX SFP, 1310NM
GLC-BX-U=	1000BASE-BX SFP, 1310NM, spare
SFP-GE-S	Cisco 1000BASE-SX SFP (with DOM)
SFP-GE-S=	Cisco 1000BASE-SX SFP (with DOM), spare
SFP-GE-L	Cisco 1000BASE-LX/LH SFP (with DOM)
SFP-GE-L=	Cisco 1000BASE-LX/LH SFP (with DOM), spare
SFP-GE-Z	Extended Temperature ZX SFP
SFP-GE-Z=	Extended Temperature ZX SFP, spare
GLC-T	1000BASE-T SFP
GLC-T=	1000BASE-T SFP, spare

For More Information

For more information about the Cisco 7304 NSE-150, visit

<http://www.cisco.com/en/US/products/hw/routers/ps352/ps353/index.html> or contact your local Cisco account representative.

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