NE40E Service Processing Units
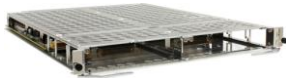
Product Overview

Huawei ® NE40E Series Service Processing Units handle the NAT and IPSec service tasks of Huawei NE40E series universal service routers.

NE40E Series routers support three kinds of service processing units, VSUF-160 Series and VSUF-80 Series and VSUI-20-A Series.

Figure 1. Service Process Units

Flexible Card Versatile Service Unit 160 (VSUF-160)

Versatile Service Flexible Card (SP160)

Flexible Card Value-Added Service Processing Unit (VSUF-80)

Versatile Service Flexible Card (SP80)

Product Features

The main engine of the NE40E Series Service Processing Units is the Huawei Solar3.0 series chip, which is programmable and application-aware, enables the NE40E Series routes to support the following functions and features with high performance:

- Support Carrier Grade NAT (CGN) function. The NAT (Network Address Translation) is a technology for sharing IP addresses. It is used to address the lack of valid IPv4 addresses in the growing Internet. Based on NAT, multiple users can share a small number of valid IPv4 addresses to access the Internet. Moreover, such accesses to the Internet are transparent to most applications, and no additional configuration needs to be performed on clients. The NE40E Series Service Processing Units support multiple CGN solutions, such as, DS-Lite, NAT44, NAT64, which helps IPv4 users and services to be transitioned to IPv6.
- Support 160 Gbps NAT capacity and 64M NAT sessions.
- Support inter-board hot backup of CGN services in single-chassis scenarios and inter-chassis hot backup in dual-chassis scenarios (Note: inter-chassis hot backup of CGN services is only supported in V600R008; not supported in V800R008; and V800R008 supports inter-chassis cold backup).

- In single chassis scenarios, inter-board 1:1 backup can be used to ensure high reliability. When NAT services are backed up in real time on the master and slave NAT service boards on the same router and the master board becomes faulty, services can be automatically switched to the other board, ensuring uninterrupted services. Alternatively, inter-board 1+1 backup can be used. When NAT services are balanced among two NAT service boards on one router and one board becomes faulty, NAT services can be automatically switched to the other board. In inter-board 1+1 backup mode, the NAT capability of the router is the sum of the two NAT service boards' capabilities.

- In multi-chassis scenarios, NAT services can be backed up in real time on NAT service boards of two routers to implement device-level protection. If one service board becomes faulty, services are automatically switched to the other device, ensuring uninterrupted services and not affecting users. Alternatively, NAT services can be balanced among NAT service boards on two routers to ensure high reliability and provide large NAT capabilities. In this case, the effective NAT capability is the sum of all the NAT service boards' capabilities.

- Support Internet Protocol Security (IPSec), which provides high-quality, interoperable, and password-based security for IP data packets. Based on encryption and data source authentication at the IP layer between the specific communicating parties, IPSec ensures the privacy, completeness, authenticity, and anti-relay of data packets when they are transmitted over the network.

- VSUI service processing units support for online insertion and removal (OIR) without system impact. VSUF service processing units support for online insertion and removal (OIR) without system impact, and support flexible cards. The flexible cards also support for OIR without system impact.

Product Compatibility

Table 1. Series Service Process Units("●" indicates supported items, "-" indicates unsupported items).

BOM	Order Name	Description	X3	X8	X16	X3A	X8A	X16A
03054421	CR5DVSUFD010	Flexible Card Versatile Service Unit 160(VSUF-160)	-	●	●	-	●	●
03030PTF	CR5D00SPD010	Versatile Service Flexible Card(SP160)	-	●	●	-	●	●
03054425	CR5DVSUF8010	Flexible Card Versatile Service Unit 80(VSUF-80)	●	●	●	●	●	●
03030PLN	CR5D00SP8010	Versatile Service Flexible Card(SP80)	●	●	●	●	●	●

Product Specifications

Table 2. Flexible Card Versatile Service Unit 160(VSUF-160) Specifications

Item	Specification
Order Name	CR5DVSUFD010
Silkscreen	VSUF-160
Dimensions (H x W x D)	40.1 mm x 399.2 mm x 535.6 mm (1.58 in. x 15.72 in. x 21.09 in.)
Weight	7.4 kg (16.43 lb)
Typical power consumption	312.0 W
Typical heat dissipation	1012.3 BTU/hour
Ambient temperature	Long terms: 0 °C to 45 °C (32°F to 113°F) Short terms: -5 °C to 55 °C (23°F to 131°F)
Reliability and availability	Hot swappable

Table 3. Versatile Service Flexible Card(SP160) Specifications

Item	Specification
Order Name	CR5D00SPD010
Silkscreen	SP-160
Dimensions (H x W x D)	37.2 mm x 178.7 mm x 193.3 mm (1.46 in. x 7.04 in. x 7.61 in.)
Weight	1 kg (2.2 lb)
Typical power consumption	81.0 W
Typical heat dissipation	262.8 BTU/hour
Ambient temperature	Long terms: 0 °C to 45 °C (32°F to 113°F) Short terms: -5 °C to 55 °C (23°F to 131°F)
Reliability and availability	Hot swappable

Table 4. Flexible Card Versatile Service Unit 80(VSUF-80) Specifications

Item	Specification
Order Name	CR5DVSUF8010

Item	Specification
Silkscreen	VSUF-80
Dimensions (H x W x D)	40.1 mm x 399.2 mm x 535.6 mm (1.58 in. x 15.72 in. x 21.09 in.)
Weight	7.4 kg (16.43 lb)
Typical power consumption	182.0 W
Typical heat dissipation	590.5 BTU/hour
Ambient temperature	Long terms: 0 °C to 45 °C (32°F to 113°F) Short terms: -5 °C to 55 °C (23°F to 131°F)
Reliability and availability	Hot swappable.

Table 5. Versatile Service Flexible Card(SP80) Specifications

Item	Specification
Order Name	CR5D00SP8010
Silkscreen	SP-80
Dimensions (H x W x D)	37.2 mm x 178.7 mm x 193.3 mm (1.46 in. x 7.04 in. x 7.61 in.)
Weight	1 kg (2.2 lb)
Typical power consumption	81.0 W
Typical heat dissipation	262.8 BTU/hour
Ambient temperature	Long terms: 0 °C to 45 °C (32°F to 113°F) Short terms: -5 °C to 55 °C (23°F to 131°F)
Reliability and availability	Hot swappable.

Product Performance

Table 6. Performance of the VSUF-160

Feature	Specification
IPv4 NAT sessions	VSUF-160 with two SP160 cards: up to 64 M VSUF-160 with one SP160 card: up to 48 M VSUF-160 with no SP160 card: up to 32 M
IPSec tunnels	Up to 20,000 tunnels

Table 7. Performance of the VSUF-80

Feature	Specification
IPv4 NAT sessions	VSUF-80 with one SP80 card: up to 32 M VSUF-80 with no SP80 card: up to 16 M
IPSec tunnels	Up to 20,000 tunnels

For More Information

For more information about the Huawei NE40E Series Routers, visit http://e.huawei.com or contact us in the following ways:

- Global service hotline: http://e.huawei.com/en/service-hotline
- Logging into the Huawei Enterprise technical support web: http://support.huawei.com/enterprise/
- Sending an email to the customer service mailbox: support_e@huawei.com

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