QUANTUM

25 May 2025

INSTALLING AND REMOVING LINE CARDS IN CHECK POINT APPLIANCES

CHECK POINT™

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Important Information

Latest Software

We recommend that you install the most recent software release to stay up-to-date with the latest functional improvements, stability fixes, security enhancements and protection against new and evolving attacks.

Certifications

For third party independent certification of Check Point products, see the Check Point Certifications page.

Installing and Removing Line Cards in Check Point Appliances

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Feedback

Check Point is engaged in a continuous effort to improve its documentation.
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Revision History

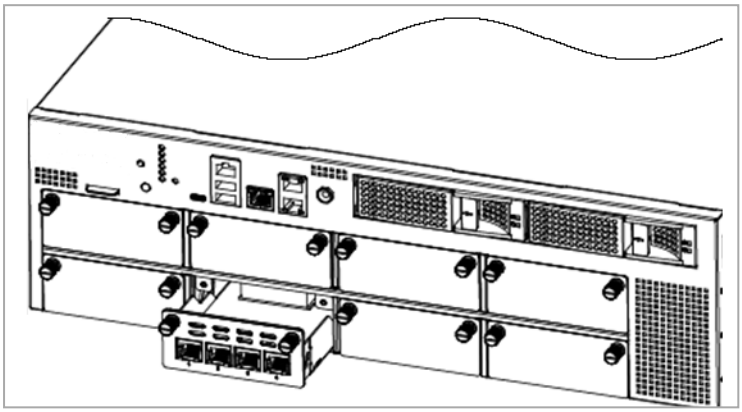
Date	Description
25 May 2025	Updated for Smart-1 7000-L, Smart-1 7000-XL, Smart-1 7000-UL Appliances: ■ *"40/100 Gb Line Card (QSFP28)" on page 35* Updated for Smart-1 7000-L, Smart-1 7000-XL, Smart-1 7000-UL, Smart-1 700-S, and Smart-1 700-M Appliances: ■ *"10/25 Gb Line Card (SFP28)" on page 76* ■ *"1/10 Gb Line Card (SFP+)" on page 80*
21 May 2025	Updated: ■ *"4-Port 10/25G SFP28 Card with Acceleration" on page 53*
14 August 2024	Updated: ■ *"1/10 Gb Line Card (SFP+)" on page 80* - added a note that in Maestro configuration only the 10 Gb speed is supported ■ *"1 Gb Line Cards (SFP and RJ45)" on page 88* - added a note that this line card is not supported in Maestro configuration ■ *"Bypass (Fail-Open) Line Cards" on page 93* - added a note that this line card is not supported in Maestro configuration
15 April 2024	Improved formatting and layout
20 March 2024	Updated: ■ *"40/100 Gb Line Card (QSFP28)" on page 35* - updated *"Mapping of 40/100G Ports and Interface Names in Gaia OS" on page 39* for 9400, 9700, 9800, 19100 Security Appliances
20 February 2024	Updated for 19100, 9100, 9200, 9300, 9400, 9700, and 9800 Security Appliances
25 December 2023	Updated: ■ *"40/100 Gb Line Card (QSFP28)" on page 35* - updated *"Mapping of 40/100G Ports and Interface Names in Gaia OS" on page 39* with interface names in Maestro configuration
31 October 2023	Updated: ■ *"40/100 Gb Line Card (QSFP28)" on page 35* - added *"Mapping of 40/100G Ports and Interface Names in Gaia OS" on page 39*

Date	Description
29 October 2023	Updated: ■ *"Appendix - NIC Slot Population Guidelines" on page 97* - improved instructions and formatting
19 October 2023	Updated for the 19200, 29100, and 29200 Security Appliances
12 June 2023	Updated for the LightSpeed Appliance MLS200
04 June 2023	■ Changed the line card name from "NVIDIA ConnectX 100G (QSFP28)" to "2-Port Dual-Width 10/25/40/100G" ■ Added information for 6000, 7000, 16000, 26000, and 28000 appliances
15 February 2023	Updated: ■ *"Introduction" on page 8*
01 December 2022	Updated: ■ *"Mapping of 100G Ports and Interface Names in Gaia OS" on page 24*
21 February 2022	Rebranding - New Check Point logo
19 January 2022	Updated for LightSpeed Appliances (QLS250, QLS450, QLS650, QLS800)
28 July 2020	Updated bypass cards SKUs: CPAC-4-1C-BP-C and CPAC-2-10FSR-BP-C
30 April 2020	Updated for 7000 and 28000 appliances
31 March 2014	First release of this document

Table of Contents

Introduction

Important - Before installing or removing an Expansion Line Card, you must use a ground strap. Without proper grounding with a wrist strap, ESD (electrostatic discharge) can damage the Security Appliance.



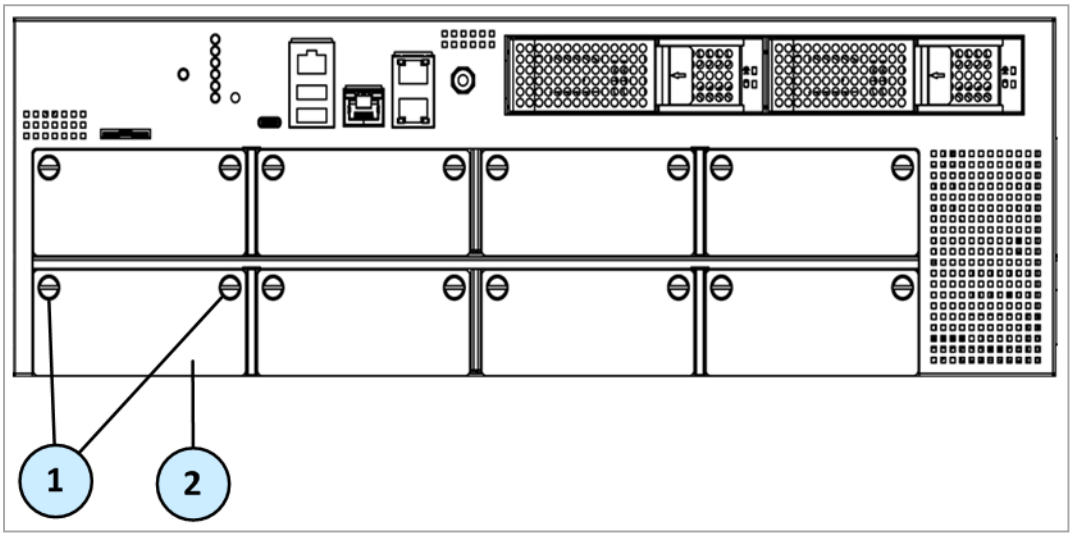
Supported Check Point Appliances

This document applies to these Check Point Appliances:

Appliance Model	SK Article
Quantum Force Appliances - 19100, 19200, 29100, 29200	sk180520
Quantum Force Appliances - 9100, 9200, 9300, 9400, 9700, 9800	sk181698
LightSpeed Appliances - QLS250, QLS450, QLS650, QLS800, MLS200	sk176466
28000 Series (excluding 28600HS)	sk152733
26000 Series	sk152733
23000 Series	sk107516
16000 Series (excluding 16600HS)	sk152733
15000 Series	sk107516
7000 Series	sk139932
6000 Series	sk139932
5000 Series	sk110053

Appliance Model	SK Article
Smart-1 3050, Smart-1 3150	sk98931
Threat Emulation Appliances - TE100X, TE250X, TE1000X, TE2000X	sk106210
Smart-1 700-S, Smart-1 700-M, Smart-1 7000-L, Smart-1 7000-XL, Smart-1 7000-UL	sk182601

Refer to this illustration when you install, remove, or replace expansion line cards in Check Point Security Appliances.



Legend

Item	Description
1	Captive screws
2	Dummy panel for the expansion slot

Supported Line Cards

These line cards are available for Check Point Appliances:

- 2-Port Dual-Width 10/25/40/100G QSFP28
- 40/100 Gb (2-Port Single-Width 10/25/40/100G QSFP28)
- 25/100 Gb
- 40 Gb
- 10/25 Gb
- 1/10 Gb
- 10 Gb
- 1 Gb

Important - For a list of supported line cards in each Quantum Appliance, see the Datasheet document for your appliance model in the Check Point Product Catalog.

2-Port Dual-Width 10/25/40/100G QSFP28 Card

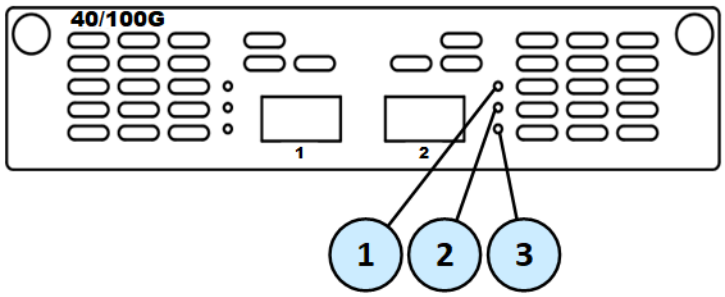
This section uses these abbreviations:

Full Name	Description	Abbreviation
2-Port Dual-Width 10/25/40/100G QSFP28 Card	A dual-width NIC that takes two slots in the appliance (specific pairs of slots).	100G Card
10/25/40/100G QSFP28 Port	Port type on the dual-width NIC.	100G Port

These appliance models use the 2-Port Dual-Width 10/25/40/100G QSFP28 Card:

Appliance Model	Hardware Acceleration	Software Requirements
QLS800, QLS650, QLS450, QLS250	Supported	sk176466
MLS200	Supported	sk176466
28000	*Not supported*	sk152733
26000	*Not supported*	sk152733
16200, 16000	*Not supported*	sk152733
7000	*Not supported*	sk139932
6900	*Not supported*	sk139932

Front Panel



Legend

Item	LED	Description
1	Link Speed LED	■ Off - No link ■ On (Green) - 100 Gbit/s data rate is selected
2	Link Speed LED	■ Off - No link ■ On (Blue) - 40/25/10 Gbit/s data rate is selected
3	Port Activity	■ Off - No activity ■ On (Amber) - Link exists ■ Blinking (Amber) - Activity

Installing a 2-Port Dual-Width 10/25/40/100G QSFP28 Card

Note - In the MLS400 model, these ports are built-in.

Procedure

1. Turn off the Appliance.

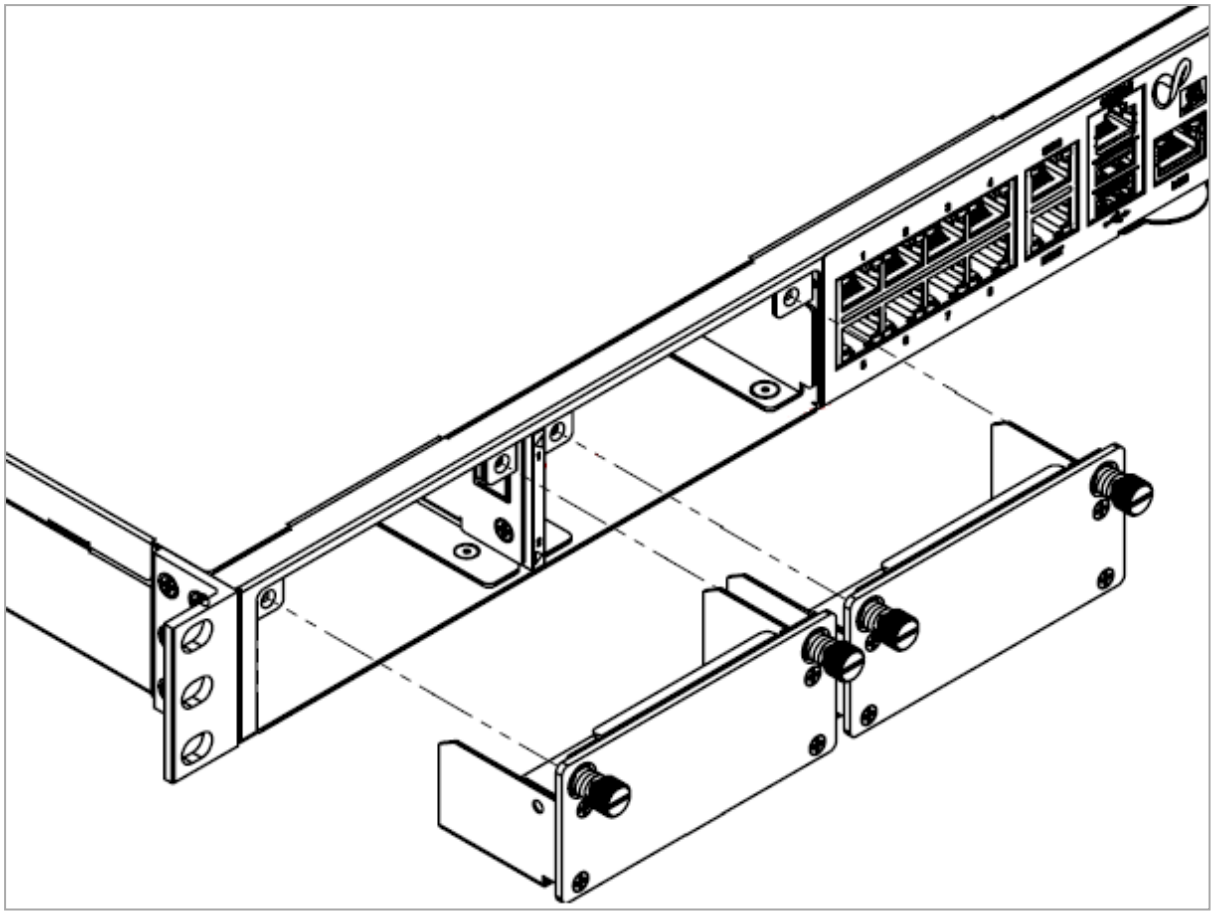
   See the Getting Started Guide for your model:

   - *Quantum LightSpeed Appliances Getting Started Guide*
   - *26000 and 28000 Getting Started Guide*
   - *16000 Appliances Getting Started Guide*
   - *6000 and 7000 Appliance Getting Started Guide*
2. Remove the power cords from the Power Supply Units.
3. Loosen the screws on two horizontally adjacent dummy panels on the front of the Appliance.

   Important - See the mapping of supported adjacent slots.

4. Remove the two horizontally adjacent dummy panels.

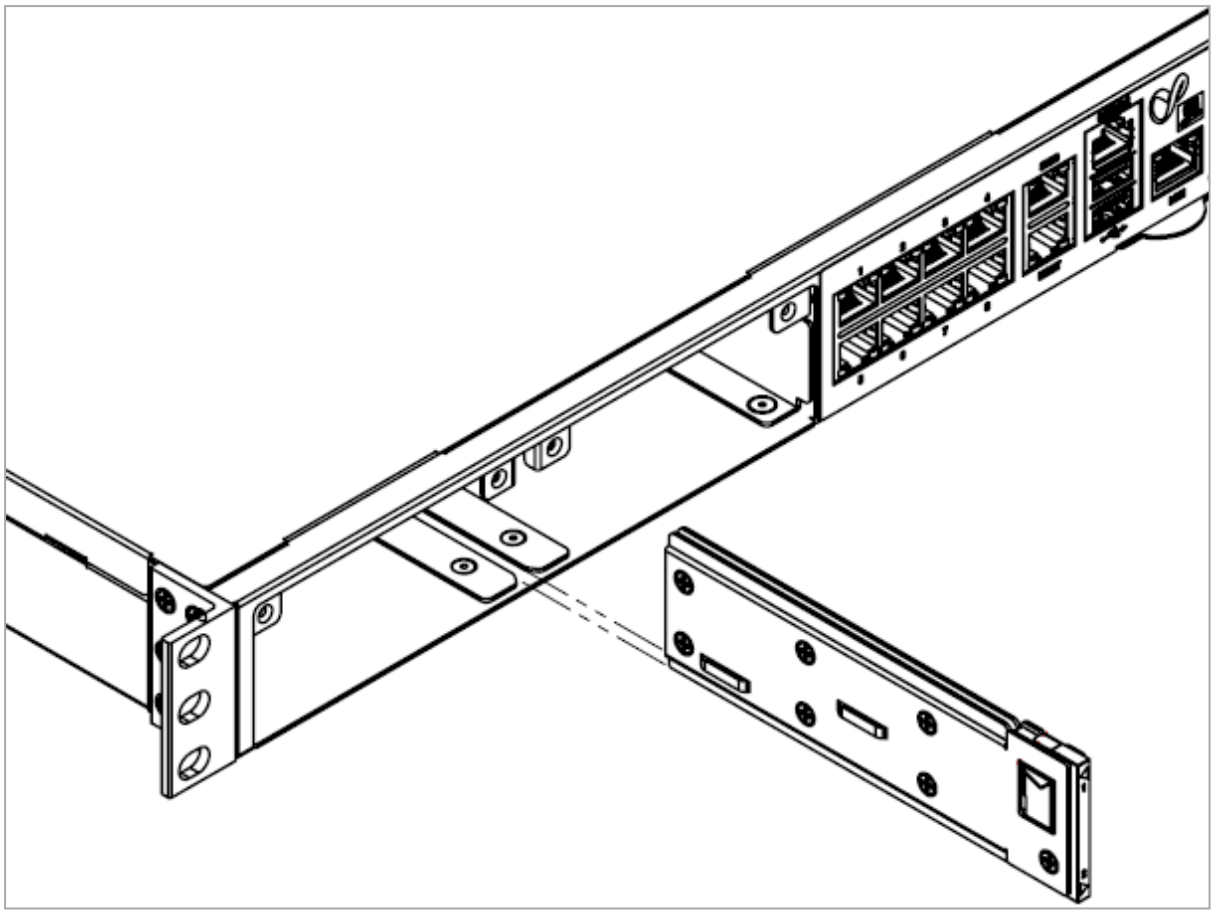
   Example for a 1U Appliance:



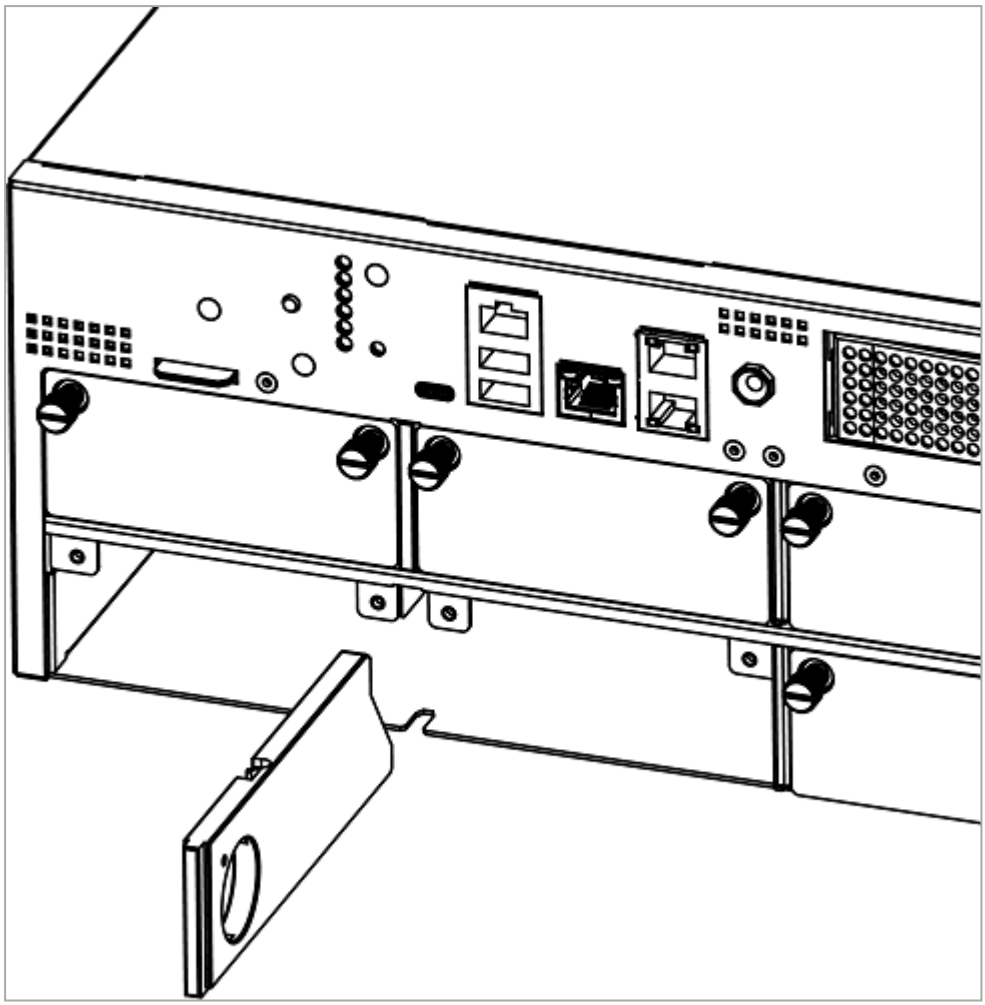
5. Remove the slot divider.

In a 1U Appliance	In 2U and 3U Appliances
a. Squeeze the recessed tabs on the front left side of the slot divider to release the latching mechanism. b. Pull the slot divider to remove it.	a. Insert a finger into the slot divider hole. b. Push the latch trigger with your finger tab inside the hole to release the latching mechanism. c. Pull the slot divider with your finger to remove it.

Example for a 1U Appliance:

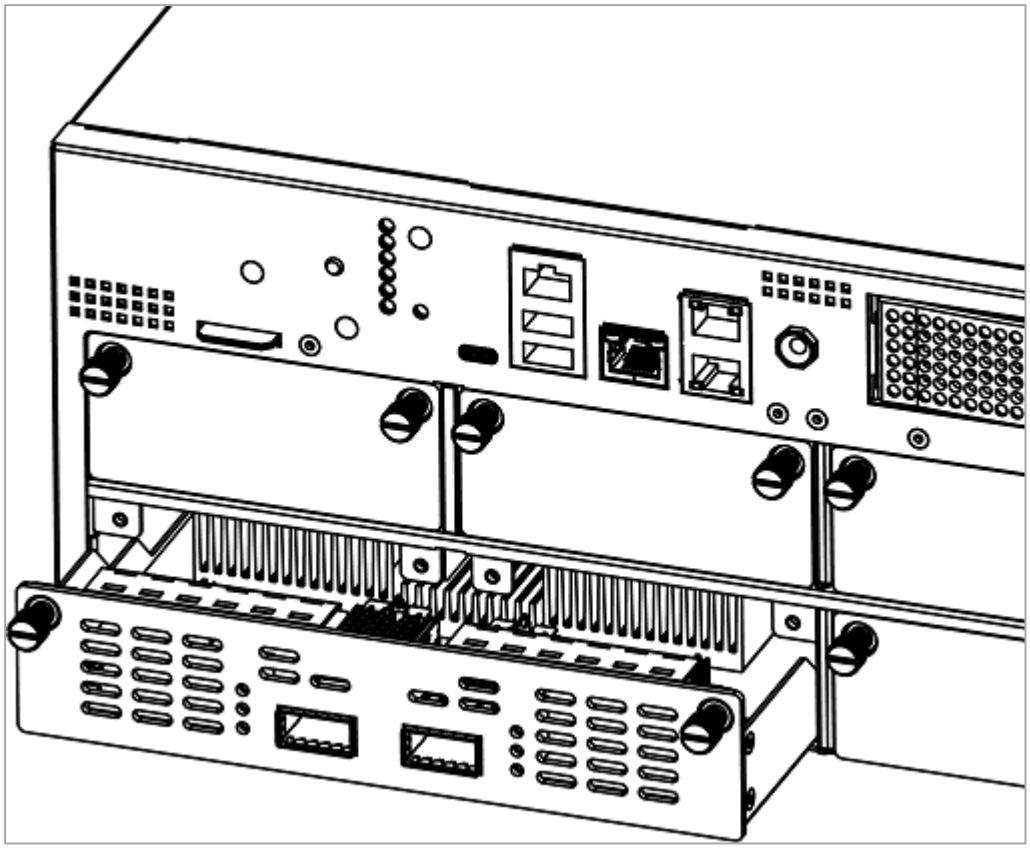


Example for a 3U Appliance:



6. Insert the 100G Card into the expansion slot.

   Example for a 3U Appliance:



7. Push until the card clicks into position.

   Note - Make sure the card is firmly inserted on all sides and that the 100G Card front panel is flat against the appliance's front panel.

8. Tighten the screws on the 100G Card.
9. Turn on the Appliance.

   See the Getting Started Guide for your model:

   - *Quantum LightSpeed Appliances Getting Started Guide*
   - *26000 and 28000 Getting Started Guide*
   - *16000 Appliances Getting Started Guide*
   - *6000 and 7000 Appliance Getting Started Guide*

Removing a 2-Port Dual-Width 10/25/40/100G QSFP28 Card

Note - In the MLS400 model, these ports are built-in.

Procedure

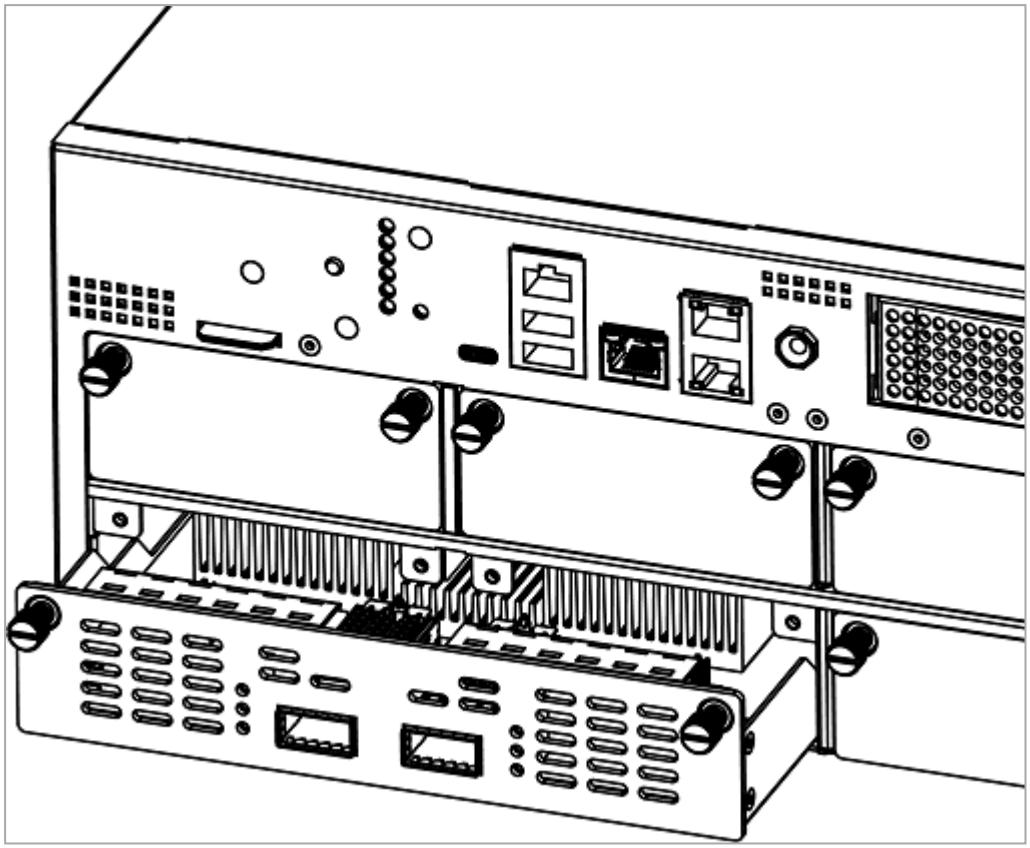
1. Turn off the Appliance.

   See the Getting Started Guide for your model:

   - *Quantum LightSpeed Appliances Getting Started Guide*
   - *26000 and 28000 Getting Started Guide*
   - *16000 Appliances Getting Started Guide*
   - *6000 and 7000 Appliance Getting Started Guide*
2. Remove the power cords from the Power Supply Units.
3. Loosen the captive screws on the 100G Card.

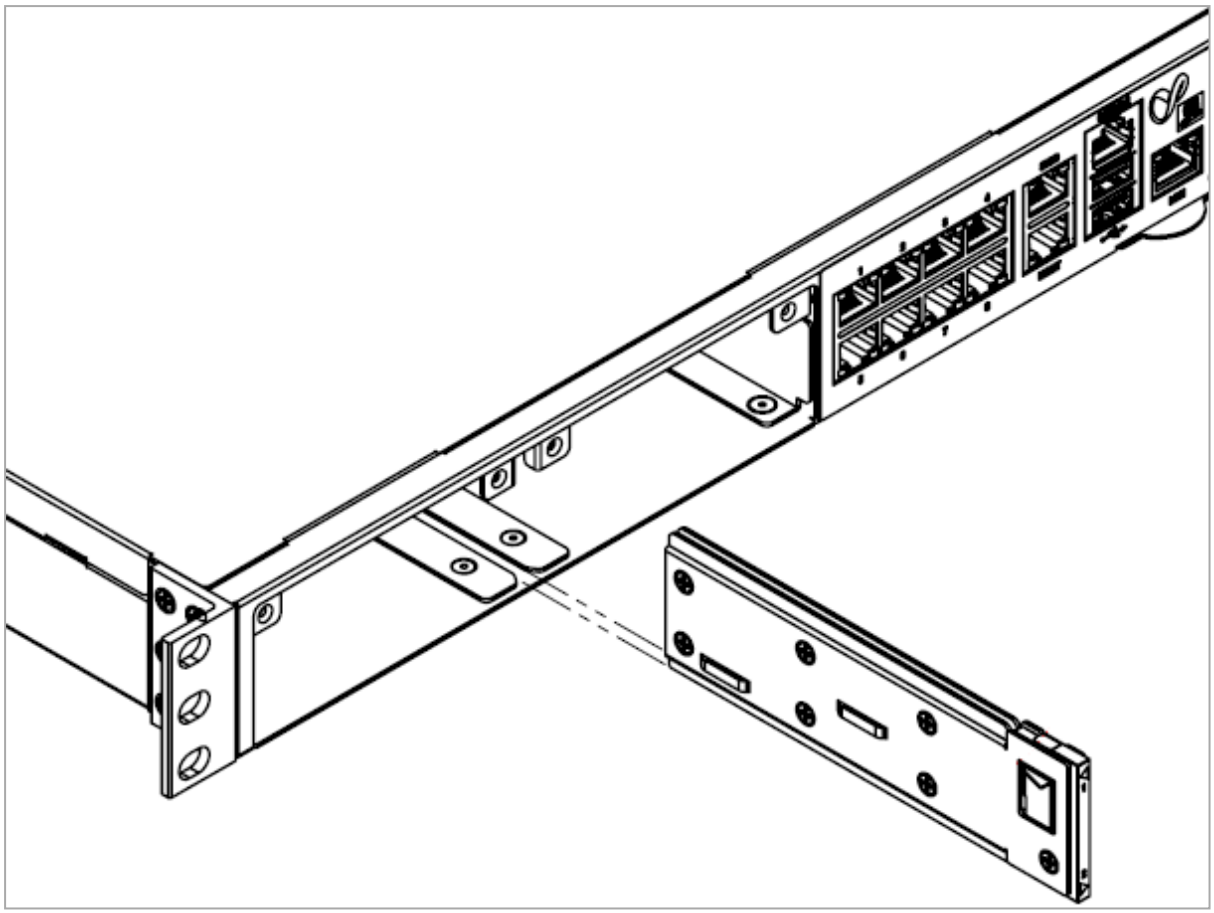
4. Holding the screws, pull the 100G Card out of the expansion slot.

   Example for a 3U Appliance:

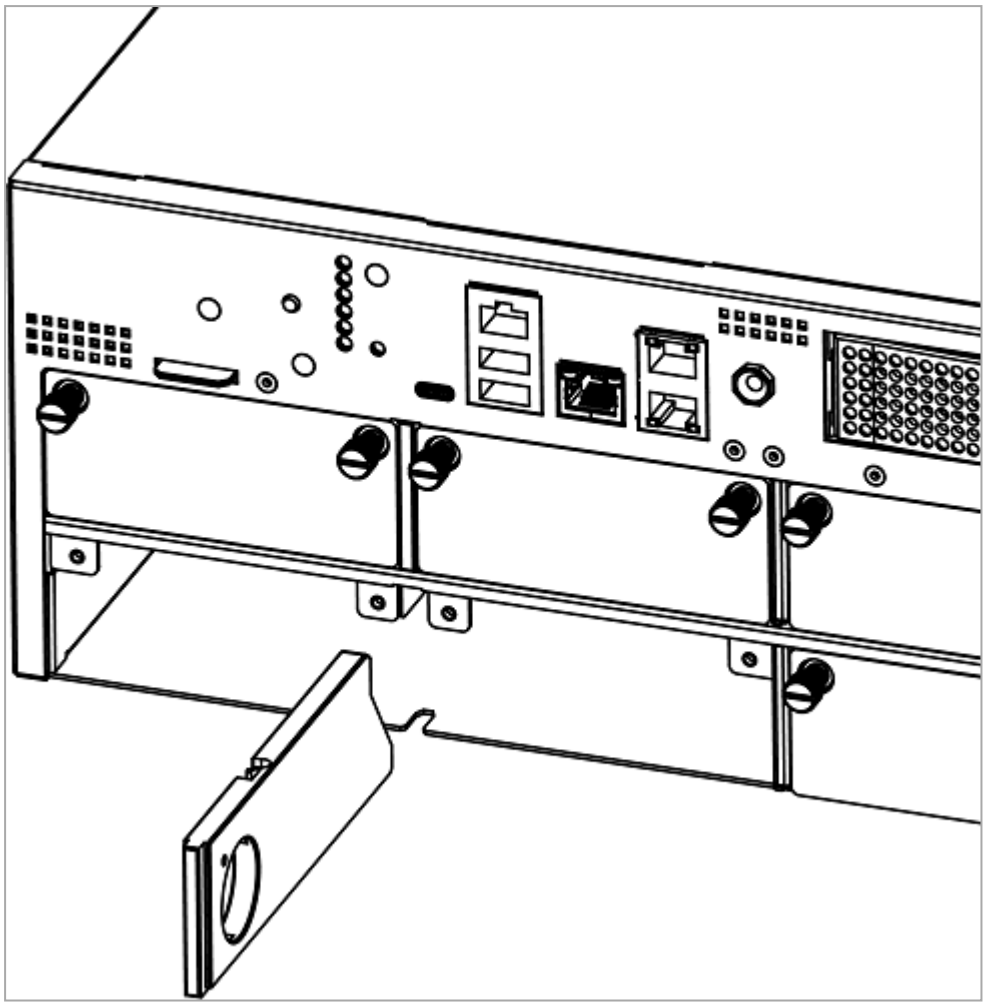


5. Insert the slot divider and push it until its latching mechanism clicks.

Example for a 1U Appliance:

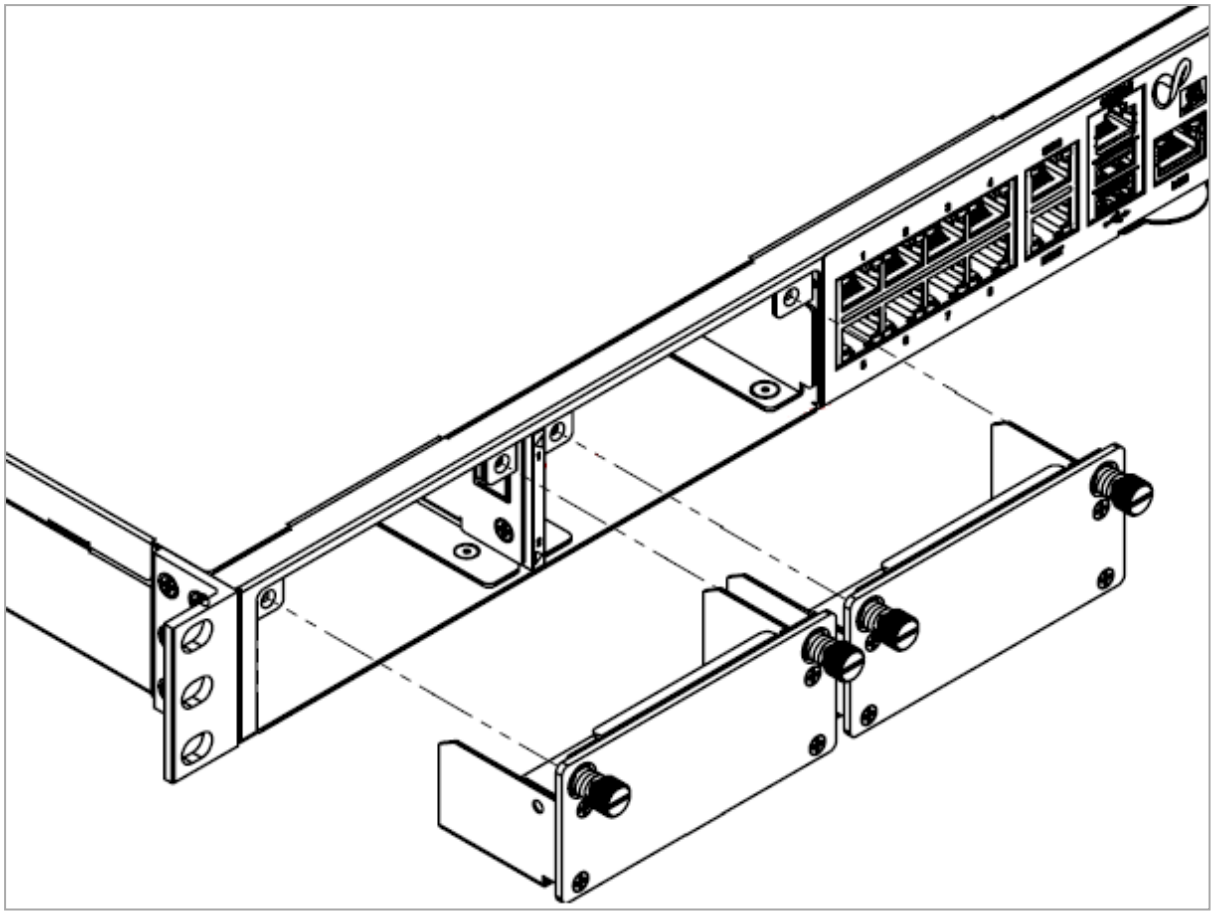


Example for a 3U Appliance:



6. Put the two dummy panels on the expansion slot.

   Example for a 1U Appliance:



7. Tighten the screws on each dummy panel.
8. Turn on the Appliance.

   See the Getting Started Guide for your model:

   - *Quantum LightSpeed Appliances Getting Started Guide*
   - *26000 and 28000 Getting Started Guide*
   - *16000 Appliances Getting Started Guide*
   - *6000 and 7000 Appliance Getting Started Guide*

Configuring and Monitoring the 100G Ports

- For QLS800, QLS650, QLS450, QLS250, and MLS200 Appliances:

  See the *LightSpeed 10/25/40/100G QSFP28 Ports Administration Guide*.

- For 28000, 26000, 16200, 16000, 7000, and 6900 Appliances:

  See sk181064.

Mapping of 100G Ports and Interface Names in Gaia OS

Important Notes for 2-Port Dual-Width 10/25/40/100G QSFP28 Cards

- The 100G Card takes two consecutive interface names in Gaia OS.

  In addition, the 100G Card reserves the second NIC slot's numbering.

  See the slot diagram in the corresponding section for your appliance model.

  If this card is installed in a LightSpeed Appliance in Slots 1+2 of the appliance, then in Gaia OS, the names of ports are `eth1-01` and `eth1-02`.

  If this card is installed in a LightSpeed Appliance in Slots 3+4 of the appliance, then in Gaia OS, the names of ports are `eth3-01` and `eth3-02`.

- You can move the installed cards from their default slots to different slots.

  The 100G Card supports only specific pairs of slots.

- Non-Maestro configuration refers to the connection of Security Appliances directly to your network and to the Check Point Management Server.

- Maestro configuration refers to the connection of Security Appliances to a Quantum Maestro Orchestrator that in turn connects to your network and to the Check Point Management Server.

  To connect to Quantum Maestro Orchestrators, you must use **only** the 100G Ports.

  It is **not** supported to connect other ports to Orchestrators.

  It is not necessary to remove other cards from the appliance.

  The appliance ignores other cards when it operates as a Maestro Security Group Member.

LightSpeed QLS800

Note - On this appliance model, hardware acceleration of traffic forwarding is supported.

Slot Diagram for Line Cards on the Front Panel (from left to right, from top to bottom):

1	2	3	4
5	6	7	8

Interface Names in Gaia OS:

By default, this appliance model has these cards installed:

Slots	Card	Names of Ports in Gaia OS - Non-Maestro configuration

1 + 2	100G Card	`eth1-01`
		`eth1-02`
		(`eth2-01:0<Y>` are reserved)

3 + 4	100G Card	`eth3-01`
		`eth3-02`
		(`eth4-01:0<Y>` are reserved)

5 + 6	100G Card	`eth5-01`
		`eth5-02`
		(`eth6-01:0<Y>` are reserved)

7 + 8	100G Card	`eth7-01`
		`eth7-02`
		(`eth8-01:0<Y>` are reserved)

LightSpeed QLS650

Note - On this appliance model, hardware acceleration of traffic forwarding is supported.

Slot Diagram for Line Cards on the Front Panel (from left to right, from top to bottom):

1	2	3	4
5	6	7	8

Interface Names in Gaia OS:

By default, this appliance model has these cards installed:

Slots	Card	Names of Ports in Gaia OS - Non-Maestro configuration

1 + 2	100G Card	`eth1-01`
		`eth1-02`
		(`eth2-01:0<Y>` are reserved)

3 + 4	100G Card	`eth3-01`
		`eth3-02`
		(`eth4-01:0<Y>` are reserved)

5 + 6	100G Card	`eth5-01`
		`eth5-02`
		(`eth6-01:0<Y>` are reserved)

7	10G Card	`eth7-01`
		`eth7-02`
		`eth7-03`
		`eth7-04`

8	10G Card	`eth8-01`
		`eth8-02`
		`eth8-03`
		`eth8-04`

LightSpeed QLS450

Note - On this appliance model, hardware acceleration of traffic forwarding is supported.

Slot Diagram for Line Cards on the Front Panel (from left to right, from top to bottom):

1	2	3	4
5	6	7	8

Interface Names in Gaia OS:

By default, this appliance model has these cards installed:

Slots	Card	Names of Ports in Gaia OS - Non-Maestro configuration	Names of Ports in Gaia OS - Maestro configuration (*)

1 + 2	100G Card	`eth1-01`
		`eth1-02`
		(`eth2-01:0<Y>` are reserved)
			`ethsBP1-01`
			`ethsBP1-02`

3 + 4	100G Card	`eth3-01`
		`eth3-02`
		(`eth4-01:0<Y>` are reserved)
			`ethsBP1-03`
			`ethsBP1-04`

5	10G Card	`eth5-01`
		`eth5-02`
		`eth5-03`
		`eth5-04`
			These ports are **not** supported

6	10G Card	`eth6-01`
		`eth6-02`
		`eth6-03`
		`eth6-04`
			These ports are **not** supported

7	Empty	N / A	N / A
8	Empty	N / A	N / A

(*) If there are two Quantum Maestro Orchestrators on a Maestro Site, then you must connect each 100G Card on a Security Appliance to each Orchestrator on the same Site.

Important - You can connect a maximum of two 100G Cards at the same time to each Orchestrator.

Example for two 100G Cards in Slots 1 + 2 and Slots 3 + 4:

- The first port on the first card (Slots 1 + 2) connects to one of the Downlink ports on the first Orchestrator
- The second port on the first card (Slots 1 + 2) connects to one of the Downlink ports on the second Orchestrator
- The first port on the second card (Slots 3 + 4) connects to one of the Downlink ports on the first Orchestrator
- The second port on the second card (Slots 3 + 4) connects to one of the Downlink ports on the second Orchestrator

LightSpeed QLS250

Note - On this appliance model, hardware acceleration of traffic forwarding is supported.

Slot Diagram for Line Cards on the Front Panel (from left to right):

1	2	3	4

Interface Names in Gaia OS:

By default, this appliance model has these cards installed:

Slots	Card	Names of Ports in Gaia OS - Non-Maestro configuration	Names of Ports in Gaia OS - Maestro configuration (*)

1 + 2	100G Card	`eth1-01`
		`eth1-02`
		(`eth2-01:0<Y>` are reserved)
			`ethsBP1-01`
			`ethsBP1-02`

3	10G Card	`eth3-01`
		`eth3-02`
		`eth3-03`
		`eth3-04`
			These ports are **not** supported

4	10G Card	`eth4-01`
		`eth4-02`
		`eth4-03`
		`eth4-04`
			These ports are **not** supported

(*) If there are two Quantum Maestro Orchestrators on a Maestro Site, then you must connect each 100G Card on a Security Appliance to each Orchestrator on the same Site.

- The first port on the card connects to one of the Downlink ports on the first Orchestrator
- The second port on the card connects to one of the Downlink ports on the second Orchestrator

LightSpeed MLS200

Note - On this appliance model, hardware acceleration of traffic forwarding is supported.

Slot Diagram for the Front Panel (from left to right):

1	2	On-board ports (x8)

Interface Names in Gaia OS:

By default, this appliance model has these cards installed and ports:

Slots	Card / Port Type	Names of Ports in Gaia OS - Non-Maestro configuration	Names of Ports in Gaia OS - Maestro configuration (*)

1 + 2	100G Card	`eth1-01`
		`eth1-02`
		(`eth2-01:0<Y>` are reserved)
			`ethsBP1-01`
			`ethsBP1-02`

On-board	On-board (x8)	`eth1`
		`eth2`
		`eth3`
		`eth4`
		`eth5`
		`eth6`
		`eth7`
		`eth8`
			These ports are **not** supported

(*) If there are two Quantum Maestro Orchestrators on a Maestro Site, then you must connect each 100G Card on a Security Appliance to each Orchestrator on the same Site.

- The first port on the card connects to one of the Downlink ports on the first Orchestrator
- The second port on the card connects to one of the Downlink ports on the second Orchestrator

28000 and 26000

Note - On this appliance model, hardware acceleration of traffic forwarding is not supported.

Slot Diagram for Line Cards on the Front Panel (from left to right, from top to bottom):

1	2	3	4
5	6	7	8

This appliance model supports a maximum of **four** cards.

Interface Names in Gaia OS:

Slots	Card	Names of Ports in Gaia OS - Non-Maestro configuration	Names of Ports in Gaia OS - Maestro configuration (*)

1 + 2	100G Card	`eth1-01`
		`eth1-02`
		(`eth2-01:0<Y>` are reserved)
			`ethsBP1-01`
			`ethsBP1-02`

3 + 4	100G Card	`eth3-01`
		`eth3-02`
		(`eth4-01:0<Y>` are reserved)
			`ethsBP1-03`
			`ethsBP1-04`

5 + 6	100G Card	`eth5-01`
		`eth5-02`
		(`eth6-01:0<Y>` are reserved)
			`ethsBP1-05`
			`ethsBP1-06`

7 + 8	100G Card	`eth7-01`
		`eth7-02`
		(`eth8-01:0<Y>` are reserved)
			`ethsBP1-07`
			`ethsBP1-08`

(*) If there are two Quantum Maestro Orchestrators on a Maestro Site, then you must connect each 100G Card on a Security Appliance to each Orchestrator on the same Site.

Important - You can connect a maximum of two 100G Cards at the same time to each Orchestrator.

Example for two 100G Cards in Slots 1 + 2 and Slots 3 + 4:

- The first port on the first card (Slots 1 + 2) connects to one of the Downlink ports on the first Orchestrator
- The second port on the first card (Slots 1 + 2) connects to one of the Downlink ports on the second Orchestrator
- The first port on the second card (Slots 3 + 4) connects to one of the Downlink ports on the first Orchestrator
- The second port on the second card (Slots 3 + 4) connects to one of the Downlink ports on the second Orchestrator

16200 and 16000

Note - On this appliance model, hardware acceleration of traffic forwarding is not supported.

Slot Diagram for Line Cards on the Front Panel (from left to right):

1	2	3	4

This appliance model supports a maximum of **two** cards.

Interface Names in Gaia OS:

Slots	Card	Names of Ports in Gaia OS - Non-Maestro configuration	Names of Ports in Gaia OS - Maestro configuration (*)

1 + 2	100G Card	`eth1-01`
		`eth1-02`
		(`eth2-01:0<Y>` is reserved)
			`ethsBP1-01`
			`ethsBP1-02`

3 + 4	100G Card	`eth3-01`
		`eth3-02`
		(`eth4-01:0<Y>` is reserved)
			`ethsBP1-03`
			`ethsBP1-04`

(*) If there are two Quantum Maestro Orchestrators on a Maestro Site, then you must connect each 100G Card on a Security Appliance to each Orchestrator on the Site. You must use at least two 100G Ports.

Example:

- The first port on the first card (Slots 1 + 2) connects to one of the Downlink ports on the first Orchestrator
- The second port on the first card (Slots 1 + 2) connects to one of the Downlink ports on the second Orchestrator
- The first port on the second card (Slots 3 + 3) connects to one of the Downlink ports on the first Orchestrator
- The second port on the second card (Slots 3 + 4) connects to one of the Downlink ports on the second Orchestrator

7000 and 6900

Note - On this appliance model, hardware acceleration of traffic forwarding is not supported.

Slot Diagram on the Front Panel (from left to right):

1	2	On-board ports (x8)

This appliance model supports only **one** card.

Interface Names in Gaia OS:

Slots	Card / Port Type	Names of Ports in Gaia OS - Non-Maestro configuration	Names of Ports in Gaia OS - Maestro configuration (*)

1 + 2	100G Card	`eth1-01`
		`eth1-02`
		(`eth2-01:0<Y>` are reserved)
			`ethsBP1-01`
			`ethsBP1-02`

On-board	On-board (x8)	`eth1`
		`eth2`
		`eth3`
		`eth4`
		`eth5`
		`eth6`
		`eth7`
		`eth8`
			These ports are **not** supported

(*) If there are two Quantum Maestro Orchestrators on a Maestro Site, then you must connect the two 100G Ports on a Security Appliance to each Orchestrator on the Site:

- The first port on the card connects to one of the Downlink ports on the first Orchestrator
- The second port on the card connects to one of the Downlink ports on the second Orchestrator

40/100 Gb Line Card (QSFP28)

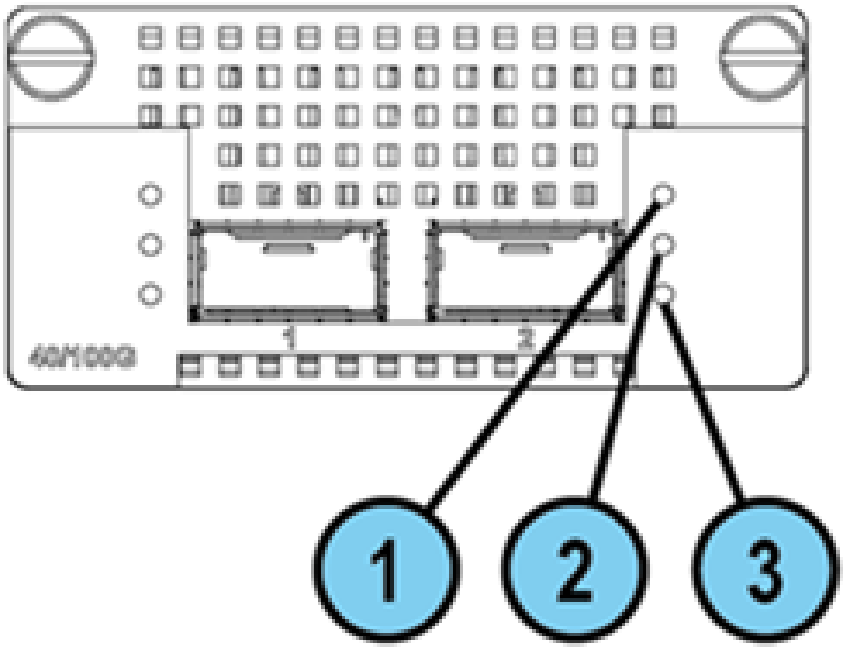
This section uses these abbreviations:

Full Name	Description	Abbreviation
2-Port Single-Width 10/25/40/100G QSFP28 Card	A single-width new acceleration NIC with 4 SFP28 ports that support 10/25G throughput.	100G Card
10/25/40/100G QSFP28 Port	Port type on the single-width NIC.	100G Port

These appliance models use the 2-Port Single-Width 10/25/40/100G QSFP28 Card:

Appliance Model	Software Requirements	Hardware Requirements
29100, 29200	sk180520	For 29100 and 29200 appliances, see *"Appendix - NIC Slot Population Guidelines" on page 97*
19100, 19200	sk180520	None
9400, 9700, 9800	sk181698	None
Smart-1 7000-L, Smart-1 7000-XL, Smart-1 7000-UL	sk182601	None

Front Panel



Legend

Item	Component	Description
1	Port activity LED	■ Off - No activity ■ On (Green) - Link exists ■ Blinking (Green) - Activity
2	Link speed LED	■ Off - Lower data rate is selected ■ On (Blue) - 100 Gbit/s data rate is selected
3	Link Speed LED	■ Off - Lower data rate is selected ■ On (Amber) - 10/25/40 Gbit/s data rate is selected

Line Card Slot Population

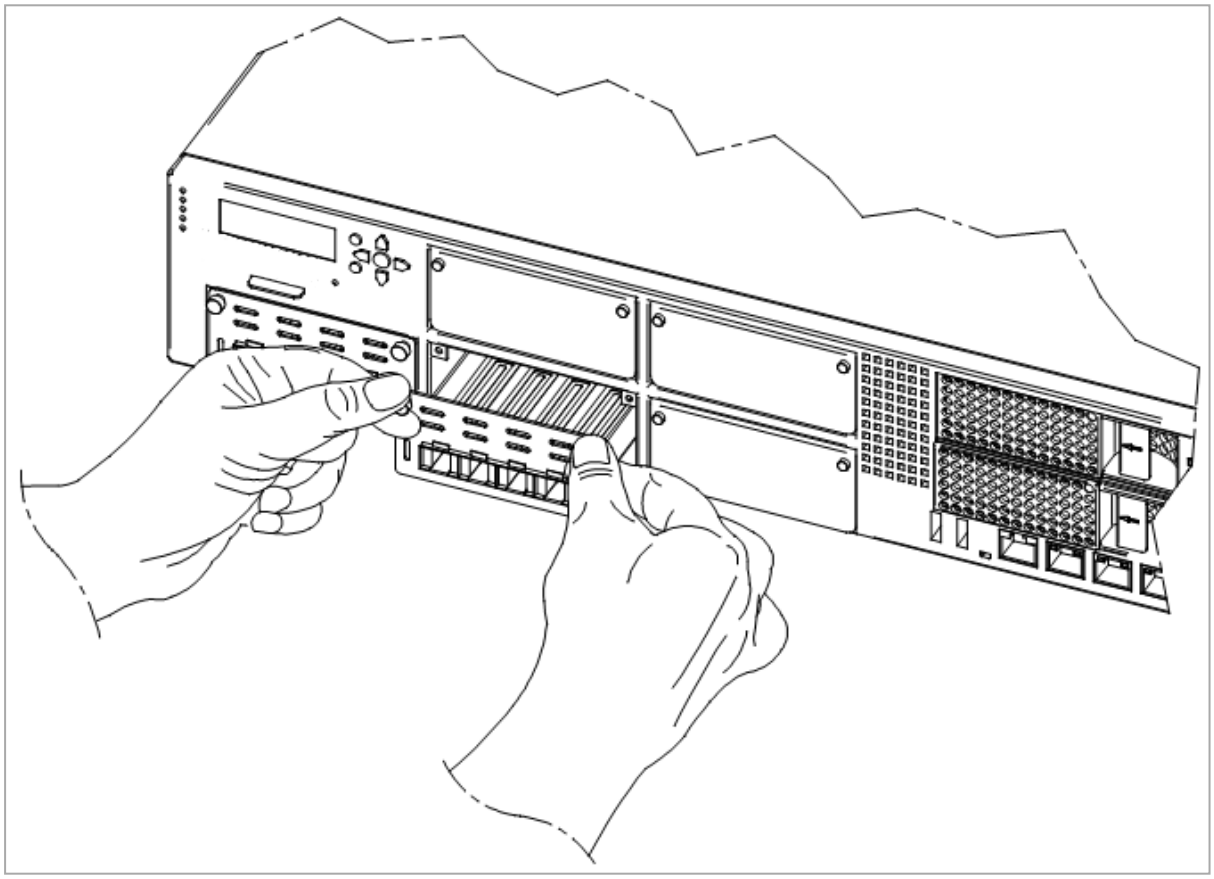
Follow the instructions in *"Appendix - NIC Slot Population Guidelines" on page 97* for the preferred placement of this line card inside Quantum 29100 and 29200 appliances.

Installing and Removing Expansion Line Cards

Installing an Expansion Line Card

See the relevant Getting Started Guide for your model (sk96246).

1. Turn off the Appliance.
2. Remove the power cords from the Power Supply Units.
3. Loosen the screws on the dummy panel on the front of the Appliance.
4. Remove the dummy panel.
5. Insert the Expansion Line Card into the expansion slot.



6. Push until the card clicks into position.

   Note - Make sure the card is firmly inserted on all sides and that the Expansion Line Card panel is flat against the appliance's front panel.

7. Tighten the screws on the Expansion Line Card.
8. Turn on the Appliance.

Removing an Expansion Line Card

See the Getting Started Guide for your model (sk96246).

1. Turn off the Appliance.
2. Remove the power cords from the Power Supply Units.
3. Loosen the captive screws on the Expansion Line Card.
4. Holding the screws, pull the Expansion Line Card out of the expansion slot.
5. Put the dummy panel on the Expansion Line Card.
6. Tighten the screws on the dummy panel.
7. Turn on the Appliance.

Configuring and Monitoring the 100G Ports

See the *LightSpeed 10/25/40/100G QSFP28 Ports Administration Guide*.

Mapping of 40/100G Ports and Interface Names in Gaia OS

Important Notes for 2-Port Single-Width 10/25/40/100G QSFP28 Cards

- In Gaia OS, port names of the installed cards start from the name "`eth<X>-01`".

  If a card has several ports, then the port names are from `eth<X>-01` to `ethX-0<Y>`, where:

  - `<X>` is the slot number (see the slot diagram in the corresponding section for your appliance model).
  - `<Y>` is the port number on the card.

  Examples: `eth1-01`, `eth3-02`

- Non-Maestro configuration refers to the connection of Security Appliances directly to your network and to the Check Point Management Server.
- Maestro configuration refers to the connection of Security Appliances to a Quantum Maestro Orchestrator that in turn connects to your network and to the Check Point Management Server.

  To connect to Quantum Maestro Orchestrators, you must use **only** the 100G Ports.

  It is **not** supported to connect other ports to Orchestrators.

  It is not necessary to remove other cards from the appliance.

  The appliance ignores other cards when it operates as a Maestro Security Group Member.

Quantum Force 29200

Important - You must follow the guidelines in sk181465 to insert the line cards in a specific order.

Slot Diagram for Line Cards on the Front Panel (from left to right, from bottom to top):

	5	6	7
1	2	3	4

Interface Names in Gaia OS:

Note - The table below shows the **possible** slot population with 100G Cards. For the default configuration, refer to Check Point Product Catalog.

Slot	Names of Ports in Gaia OS - Non-Maestro configuration	Names of Ports in Gaia OS - Maestro configuration (*)
1	eth1-01 eth1-02	ethsBP1-01 ethsBP1-02
2	eth2-01 eth2-02	ethsBP2-01 ethsBP2-02
3	eth3-01 eth3-02	ethsBP3-01 ethsBP3-02
4	eth4-01 eth4-02	ethsBP4-01 ethsBP4-02
5	eth5-01 eth5-02	ethsBP5-01 ethsBP5-02
6	eth6-01 eth6-02	ethsBP6-01 ethsBP6-02
7	eth7-01 eth7-02	ethsBP7-01 ethsBP7-02

(*) If there are two Quantum Maestro Orchestrators on a Maestro Site, then you must connect each 100G Card on a Security Appliance to each Orchestrator on the same Site.

Important - You can connect a maximum of two 100G Cards at the same time to each Orchestrator.

Example for two 100G Cards in Slot 1 and Slot 2:

- The first port on the first card (Slot 1) connects to one of the Downlink ports on the first Orchestrator
- The second port on the first card (Slot 1) connects to one of the Downlink ports on the second Orchestrator
- The first port on the second card (Slot 2) connects to one of the Downlink ports on the first Orchestrator
- The second port on the second card (Slot 2) connects to one of the Downlink ports on the second Orchestrator

Quantum Force 29100

Important - You must follow the guidelines in sk181465 to insert the line cards in a specific order.

Slot Diagram for Line Cards on the Front Panel (from left to right, from bottom to top):

	5	6	7
1	2	3	4

Interface Names in Gaia OS:

Note - The table below shows the **possible** slot population with 100G Cards. For the default configuration, refer to Check Point Product Catalog.

Slot	Names of Ports in Gaia OS - Non-Maestro configuration	Names of Ports in Gaia OS - Maestro configuration (*)
1	eth1-01 eth1-02	ethsBP1-01 ethsBP1-02
2	eth2-01 eth2-02	ethsBP2-01 ethsBP2-02
3	eth3-01 eth3-02	ethsBP3-01 ethsBP3-02
4	eth4-01 eth4-02	ethsBP4-01 ethsBP4-02
5	eth5-01 eth5-02	ethsBP5-01 ethsBP5-02
6	eth6-01 eth6-02	ethsBP6-01 ethsBP6-02
7	eth7-01 eth7-02	ethsBP7-01 ethsBP7-02

(*) If there are two Quantum Maestro Orchestrators on a Maestro Site, then you must connect each 100G Card on a Security Appliance to each Orchestrator on the same Site.

Important - You can connect a maximum of two 100G Cards at the same time to each Orchestrator.

Example for two 100G Cards in Slot 1 and Slot 2:

- The first port on the first card (Slot 1) connects to one of the Downlink ports on the first Orchestrator
- The second port on the first card (Slot 1) connects to one of the Downlink ports on the second Orchestrator
- The first port on the second card (Slot 2) connects to one of the Downlink ports on the first Orchestrator
- The second port on the second card (Slot 2) connects to one of the Downlink ports on the second Orchestrator

Quantum Force 19200

Slot Diagram for Line Cards on the Front Panel (from left to right):

Not Used			
1	2	3	4

Interface Names in Gaia OS:

Note - The table below shows the **possible** slot population with 100G Cards. For the default configuration, refer to Check Point Product Catalog.

Slot	Names of Ports in Gaia OS - Non-Maestro configuration	Names of Ports in Gaia OS - Maestro configuration (*)
1	eth1-01 eth1-02	ethsBP1-01 ethsBP1-02
2	eth2-01 eth2-02	ethsBP2-01 ethsBP2-02
3	eth3-01 eth3-02	ethsBP3-01 ethsBP3-02
4	eth4-01 eth4-02	ethsBP4-01 ethsBP4-02

(*) If there are two Quantum Maestro Orchestrators on a Maestro Site, then you must connect each 100G Card on a Security Appliance to each Orchestrator on the same Site.

Important - You can connect a maximum of two 100G Cards at the same time to each Orchestrator.

Example for two 100G Cards in Slot 1 and Slot 2:

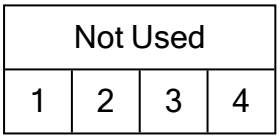
- The first port on the first card (Slot 1) connects to one of the Downlink ports on the first Orchestrator
- The second port on the first card (Slot 1) connects to one of the Downlink ports on the second Orchestrator
- The first port on the second card (Slot 2) connects to one of the Downlink ports on the first Orchestrator
- The second port on the second card (Slot 2) connects to one of the Downlink ports on the second Orchestrator

Quantum Force 19100

(*) You can connect **all** available 100G Ports on a Security Appliance to Quantum Maestro Orchestrators on the Maestro Site.

- The first 100G Card connects to each Orchestrator on the same Site:
  - The first port on the card connects to one of the Downlink ports on the first Orchestrator
  - The second port on the card connects to one of the Downlink ports on the second Orchestrator
- The second 100G Card connects to each Orchestrator on the same Site:
  - The first port on the card connects to another Downlink port on the first Orchestrator
  - The second port on the card connects to another Downlink port on the second Orchestrator

Slot Diagram for Line Cards on the Front Panel (from left to right):



Interface Names in Gaia OS:

Note - The table below shows the **possible** slot population with 100G Cards. For the default configuration, refer to Check Point Product Catalog.

Slot	Names of Ports in Gaia OS - Non-Maestro configuration	Names of Ports in Gaia OS - Maestro configuration (*)
1	eth1-01 eth1-02	ethsBP1-01 ethsBP1-02
2	eth2-01 eth2-02	ethsBP2-01 ethsBP2-02
3	eth3-01 eth3-02	ethsBP3-01 ethsBP3-02
4	eth4-01 eth4-02	ethsBP4-01 ethsBP4-02

(*) If there are two Quantum Maestro Orchestrators on a Maestro Site, then you must connect each 100G Card on a Security Appliance to each Orchestrator on the same Site.

Important - You can connect a maximum of two 100G Cards at the same time to each Orchestrator.

Example for two 100G Cards in Slot 1 and Slot 2:

- The first port on the first card (Slot 1) connects to one of the Downlink ports on the first Orchestrator
- The second port on the first card (Slot 1) connects to one of the Downlink ports on the second Orchestrator
- The first port on the second card (Slot 2) connects to one of the Downlink ports on the first Orchestrator
- The second port on the second card (Slot 2) connects to one of the Downlink ports on the second Orchestrator

Quantum Force 9800

Slot Diagram for the Front Panel (from left to right):

1	2	On-board ports (x4)	On-board ports (x4)

Interface Names in Gaia OS:

Slot	Card / Port Type	Names of Ports in Gaia OS - Non-Maestro configuration	Names of Ports in Gaia OS - Maestro configuration (*)
1	100G Card	`eth1-01` `eth1-02`	`ethsBP1-01` `ethsBP1-02`
2	100G Card	`eth2-01` `eth2-02`	`ethsBP2-01` `ethsBP2-02`

On-board	On-board (x4)	`eth1`
		`eth2`
		`eth3`
		`eth4`
			These ports are **not** supported

On-board	On-board (x4)	`eth5`
		`eth6`
		`eth7`
		`eth8`
			These ports are **not** supported

(*) If there are two Quantum Maestro Orchestrators on a Maestro Site, then you must connect each 100G Card on a Security Appliance to each Orchestrator on the same Site.

Important - You can connect a maximum of two 100G Cards at the same time to each Orchestrator.

Example for two 100G Cards in Slot 1 and Slot 2:

- The first port on the first card (Slot 1) connects to one of the Downlink ports on the first Orchestrator
- The second port on the first card (Slot 1) connects to one of the Downlink ports on the second Orchestrator
- The first port on the second card (Slot 2) connects to one of the Downlink ports on the first Orchestrator
- The second port on the second card (Slot 2) connects to one of the Downlink ports on the second Orchestrator

Quantum Force 9700

Slot Diagram for the Front Panel (from left to right):

1	2	On-board ports (x4)	On-board ports (x4)

Interface Names in Gaia OS:

Slot	Card / Port Type	Names of Ports in Gaia OS - Non-Maestro configuration	Names of Ports in Gaia OS - Maestro configuration (*)
1	100G Card	`eth1-01` `eth1-02`	`ethsBP1-01` `ethsBP1-02`
2	100G Card	`eth2-01` `eth2-02`	`ethsBP2-01` `ethsBP2-02`

On-board	On-board (x4)	`eth1`
		`eth2`
		`eth3`
		`eth4`
			These ports are **not** supported

On-board	On-board (x4)	`eth5`
		`eth6`
		`eth7`
		`eth8`
			These ports are **not** supported

(*) If there are two Quantum Maestro Orchestrators on a Maestro Site, then you must connect each 100G Card on a Security Appliance to each Orchestrator on the same Site.

Important - You can connect a maximum of two 100G Cards at the same time to each Orchestrator.

Example for two 100G Cards in Slot 1 and Slot 2:

- The first port on the first card (Slot 1) connects to one of the Downlink ports on the first Orchestrator
- The second port on the first card (Slot 1) connects to one of the Downlink ports on the second Orchestrator
- The first port on the second card (Slot 2) connects to one of the Downlink ports on the first Orchestrator
- The second port on the second card (Slot 2) connects to one of the Downlink ports on the second Orchestrator

Quantum Force 9400

Slot Diagram for the Front Panel (from left to right):

1	On-board ports (x4)	On-board ports (x8)

Interface Names in Gaia OS:

Slot	Card / Port Type	Names of Ports in Gaia OS - Non-Maestro configuration	Names of Ports in Gaia OS - Maestro configuration (*)
1	100G Card	`eth1-01` `eth1-02`	`ethsBP1-01` `ethsBP1-02`

On-board	On-board (x4)	`eth1`
		`eth2`
		`eth3`
		`eth4`
			These ports are **not** supported

On-board	On-board (x8)	`eth5`
		`eth6`
		`eth7`
		`eth8`
		`eth9`
		`eth10`
		`eth11`
		`eth12`
			These ports are **not** supported

(*) If there are two Quantum Maestro Orchestrators on a Maestro Site, then you must connect each 100G Card on a Security Appliance to each Orchestrator on the same Site:

- The first port on the card connects to one of the Downlink ports on the first Orchestrator
- The second port on the card connects to one of the Downlink ports on the second Orchestrator

Smart-1 7000-L, Smart-1 7000-XL, and Smart-1 7000-UL

Slot Diagram for the Front Panel (from left to right):

On-board ports (x4)	1

Interface Names in Gaia OS:

Slot	Card / Port Type	Names of Ports in Gaia OS - Non-Maestro configuration

On-board	On-board (x4)	`eth1`
		`eth2`
		`eth3`
		`eth4`

1	100G Card	`eth1-01` `eth1-02`

4-Port 10/25G SFP28 Card with Acceleration

Warning
Before you install the 4-Port 10/25G SFP28 Card with Acceleration (CPAC-4-10/25F-DA) in a 9000, 19000, or 29000 Series Security Appliance, you must install the minimum required Take of the R81.20 Jumbo Hotfix Accumulator.
Failure to follow this step could result in a crash of the Security Appliance.
For more information, see **sk183092**:
https://support.checkpoint.com/results/sk/sk183092

This section uses these abbreviations:

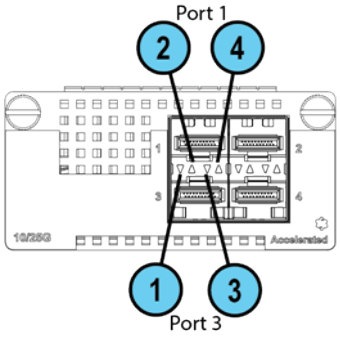
Full Name	Description	Abbreviation
4-Port 10/25G SFP28 Card with Acceleration	A single-width new acceleration NIC with 4 SFP28 ports that support 10/25G throughput.	25G Card

These appliance models use this card:

Appliance Model	Software Requirements	Hardware Requirements
19100, 19200, 29100, 29200	sk180520	For 29100 and 29200 appliances, see *"Appendix - NIC Slot Population Guidelines" on page 97*
9100, 9200, 9300, 9400, 9700, 9800	sk181698	None

Front Panel

The LEDs are located in a row between the paired top and bottom ports.



Legend

Item	Component	Description
1	Port activity LED (bottom port)	■ Off - No activity ■ On (Green) - Link exists ■ Blinking (Green) - Activity
2	Port activity LED (top port)	
3	Link speed LED (bottom port)	■ Off - 1 Gbit/s or lower data is selected ■ On (Amber) - 10 Gbit/s data rate is selected ■ On (Blue) - 25 Gbit/s data rate is selected
4	Link speed LED (top port)	

Line Card Slot Population

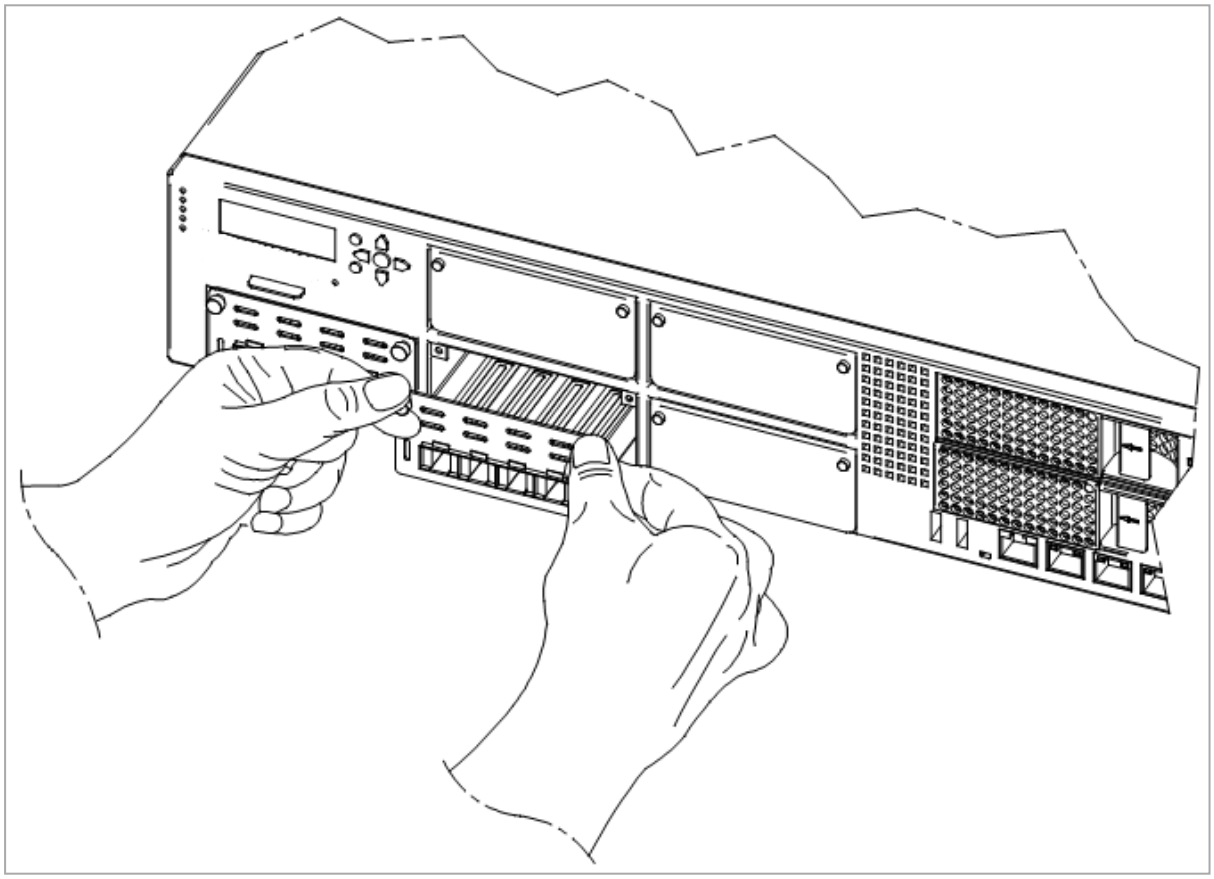
Follow the instructions in *"Appendix - NIC Slot Population Guidelines" on page 97* for the preferred placement of this line card inside Quantum 29100 and 29200 appliances.

Installing and Removing Expansion Line Cards

Installing an Expansion Line Card

See the relevant Getting Started Guide for your model (sk96246).

1. Turn off the Appliance.
2. Remove the power cords from the Power Supply Units.
3. Loosen the screws on the dummy panel on the front of the Appliance.
4. Remove the dummy panel.
5. Insert the Expansion Line Card into the expansion slot.



6. Push until the card clicks into position.

   Note - Make sure the card is firmly inserted on all sides and that the Expansion Line Card panel is flat against the appliance's front panel.

7. Tighten the screws on the Expansion Line Card.
8. Turn on the Appliance.

Removing an Expansion Line Card

See the Getting Started Guide for your model (sk96246).

1. Turn off the Appliance.
2. Remove the power cords from the Power Supply Units.
3. Loosen the captive screws on the Expansion Line Card.
4. Holding the screws, pull the Expansion Line Card out of the expansion slot.
5. Put the dummy panel on the Expansion Line Card.
6. Tighten the screws on the dummy panel.
7. Turn on the Appliance.

Configuring and Monitoring the 25G Ports

See the *LightSpeed 10/25/40/100G QSFP28 Ports Administration Guide*.

Mapping of 25G Ports and Interface Names in Gaia OS

Important Notes for 4-Port 10/25G SFP28 Cards with Acceleration

- In Gaia OS, port names of the installed cards start from the name "`eth<X>-01`".

  If a card has several ports, then the port names are from `eth<X>-01` to `ethX-0<Y>`, where:

  - `<X>` is the slot number (see the slot diagram in the corresponding section for your appliance model).
  - `<Y>` is the port number on the card.

  Examples: `eth1-01`, `eth3-02`

- Non-Maestro configuration refers to the connection of Security Appliances directly to your network and to the Check Point Management Server.

Quantum Force 29200

Important - You must follow the guidelines in sk181465 to insert the line cards in a specific order.

Slot Diagram for Line Cards on the Front Panel (from left to right, from bottom to top):

	5	6	7
1	2	3	4

Interface Names in Gaia OS:

Note - The table below shows the **possible** slot population with 25G Cards. For the default configuration, refer to Check Point Product Catalog.

Slot	Names of Ports in Gaia OS - Non-Maestro configuration
1	eth1-01 eth1-02 eth1-03 eth1-04
2	eth2-01 eth2-02 eth2-03 eth2-04
3	eth3-01 eth3-02 eth3-03 eth3-04
4	eth4-01 eth4-02 eth4-03 eth4-04
5	eth5-01 eth5-02 eth5-03 eth5-04
6	eth6-01 eth6-02 eth6-03 eth6-04
7	eth7-01 eth7-02 eth7-03 eth7-04

Quantum Force 29100

Important - You must follow the guidelines in sk181465 to insert the line cards in a specific order.

Slot Diagram for Line Cards on the Front Panel (from left to right, from bottom to top):

	5	6	7
1	2	3	4

Interface Names in Gaia OS:

Note - The table below shows the **possible** slot population with 25G Cards. For the default configuration, refer to Check Point Product Catalog.

Slot	Names of Ports in Gaia OS - Non-Maestro configuration
1	eth1-01 eth1-02 eth1-03 eth1-04
2	eth2-01 eth2-02 eth2-03 eth2-04
3	eth3-01 eth3-02 eth3-03 eth3-04
4	eth4-01 eth4-02 eth4-03 eth4-04
5	eth5-01 eth5-02 eth5-03 eth5-04
6	eth6-01 eth6-02 eth6-03 eth6-04
7	eth7-01 eth7-02 eth7-03 eth7-04

Quantum Force 19200

Slot Diagram for Line Cards on the Front Panel (from left to right):

Not Used			
1	2	3	4

Interface Names in Gaia OS:

Note - The table below shows the **possible** slot population with 25G Cards. For the default configuration, refer to Check Point Product Catalog.

Slot	Names of Ports in Gaia OS - Non-Maestro configuration
1	eth1-01 eth1-02 eth1-03 eth1-04
2	eth2-01 eth2-02 eth2-03 eth2-04
3	eth3-01 eth3-02 eth3-03 eth3-04
4	eth4-01 eth4-02 eth4-03 eth4-04

Quantum Force 19100

Slot Diagram for Line Cards on the Front Panel (from left to right):

Not Used			
1	2	3	4

Interface Names in Gaia OS:

Note - The table below shows the **possible** slot population with 25G Cards. For the default configuration, refer to Check Point Product Catalog.

Slot	Names of Ports in Gaia OS - Non-Maestro configuration
1	eth1-01 eth1-02 eth1-03 eth1-04
2	eth2-01 eth2-02 eth2-03 eth2-04
3	eth3-01 eth3-02 eth3-03 eth3-04
4	eth4-01 eth4-02 eth4-03 eth4-04

Quantum Force 9800

Slot Diagram for the Front Panel (from left to right):

1	2	On-board ports (x4)	On-board ports (x4)

Interface Names in Gaia OS:

Slot	Card / Port Type	Names of Ports in Gaia OS - Non-Maestro configuration

1	25G Card	`eth1-01`
		`eth1-02`
		`eth1-03`
		`eth1-04`

2	25G Card	`eth2-01`
		`eth2-02`
		`eth2-03`
		`eth2-04`

On-board	On-board (x4)	`eth1`
		`eth2`
		`eth3`
		`eth4`

On-board	On-board (x4)	`eth5`
		`eth6`
		`eth7`
		`eth8`

Quantum Force 9700

Slot Diagram for the Front Panel (from left to right):

1	2	On-board ports (x4)	On-board ports (x4)

Interface Names in Gaia OS:

Slot	Card / Port Type	Names of Ports in Gaia OS - Non-Maestro configuration

1	25G Card	`eth1-01`
		`eth1-02`
		`eth1-03`
		`eth1-04`

2	25G Card	`eth2-01`
		`eth2-02`
		`eth2-03`
		`eth2-04`

On-board	On-board (x4)	`eth1`
		`eth2`
		`eth3`
		`eth4`

On-board	On-board (x4)	`eth5`
		`eth6`
		`eth7`
		`eth8`

Quantum Force 9400

Slot Diagram for the Front Panel (from left to right):

1	On-board ports (x4)	On-board ports (x8)

Interface Names in Gaia OS:

Slot	Card / Port Type	Names of Ports in Gaia OS - Non-Maestro configuration
1	25G Card	eth1-01 eth1-02 eth1-03 eth1-04
On-board	On-board (x4)	eth1 eth2 eth3 eth4
On-board	On-board (x8)	eth5 eth6 eth7 eth8 eth9 eth10 eth11 eth12

Quantum Force 9300

Slot Diagram for the Front Panel (from left to right):

1	On-board ports (x8)

Interface Names in Gaia OS:

Slot	Card / Port Type	Names of Ports in Gaia OS - Non-Maestro configuration

1	25G Card	`eth1-01`
		`eth1-02`
		`eth1-03`
		`eth1-04`

On-board	On-board	`eth1`
		`eth2`
		`eth3`
		`eth4`
		`eth5`
		`eth6`
		`eth7`
		`eth8`

Quantum Force 9200

Slot Diagram for the Front Panel (from left to right):

1	On-board ports (x8)

Interface Names in Gaia OS:

Slot	Card / Port Type	Names of Ports in Gaia OS - Non-Maestro configuration

1	25G Card	`eth1-01`
		`eth1-02`
		`eth1-03`
		`eth1-04`

On-board	On-board	`eth1`
		`eth2`
		`eth3`
		`eth4`
		`eth5`
		`eth6`
		`eth7`
		`eth8`

Quantum Force 9100

Slot Diagram for the Front Panel (from left to right):

1	On-board ports (x8)

Interface Names in Gaia OS:

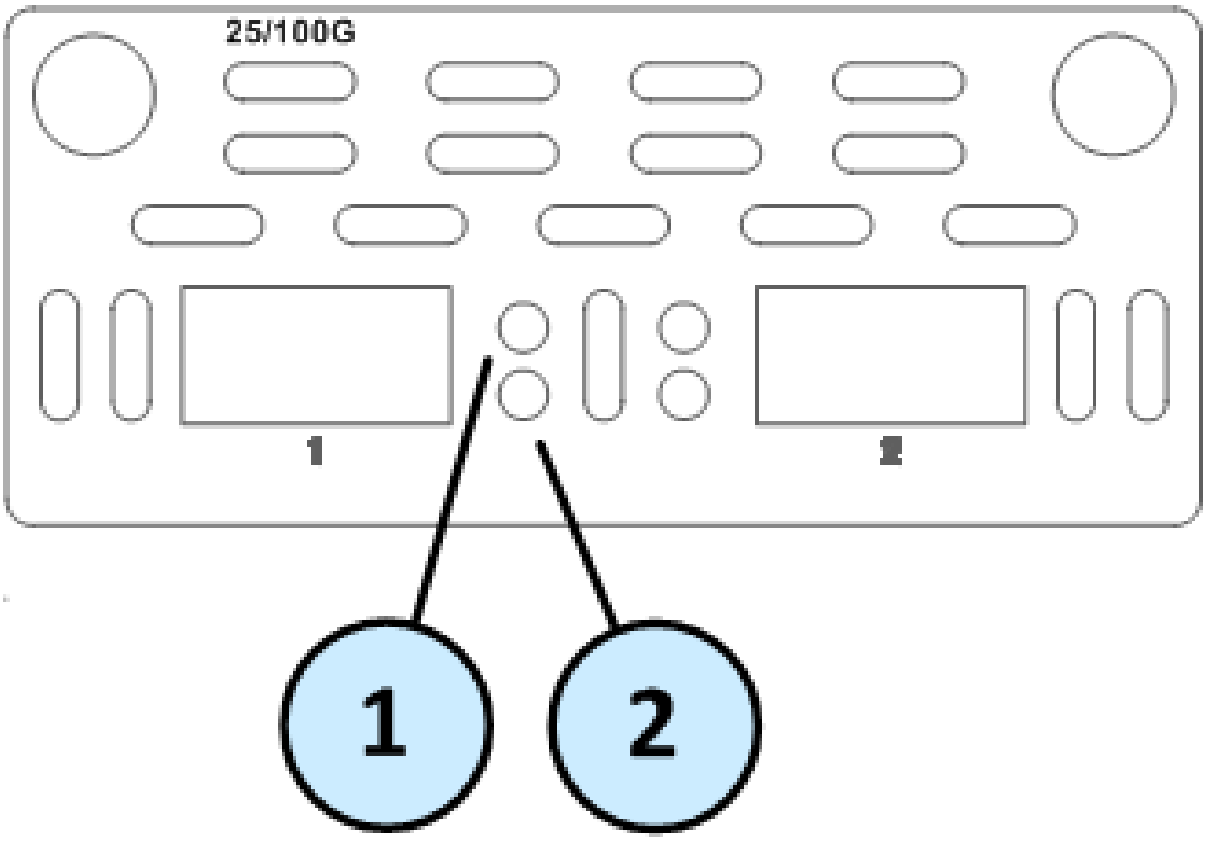
Slot	Card / Port Type	Names of Ports in Gaia OS - Non-Maestro configuration

1	25G Card	`eth1-01`
		`eth1-02`
		`eth1-03`
		`eth1-04`

On-board	On-board	`eth1`
		`eth2`
		`eth3`
		`eth4`
		`eth5`
		`eth6`
		`eth7`
		`eth8`

25/100 Gb Line Card (QSFP28)

Front Panel



Legend

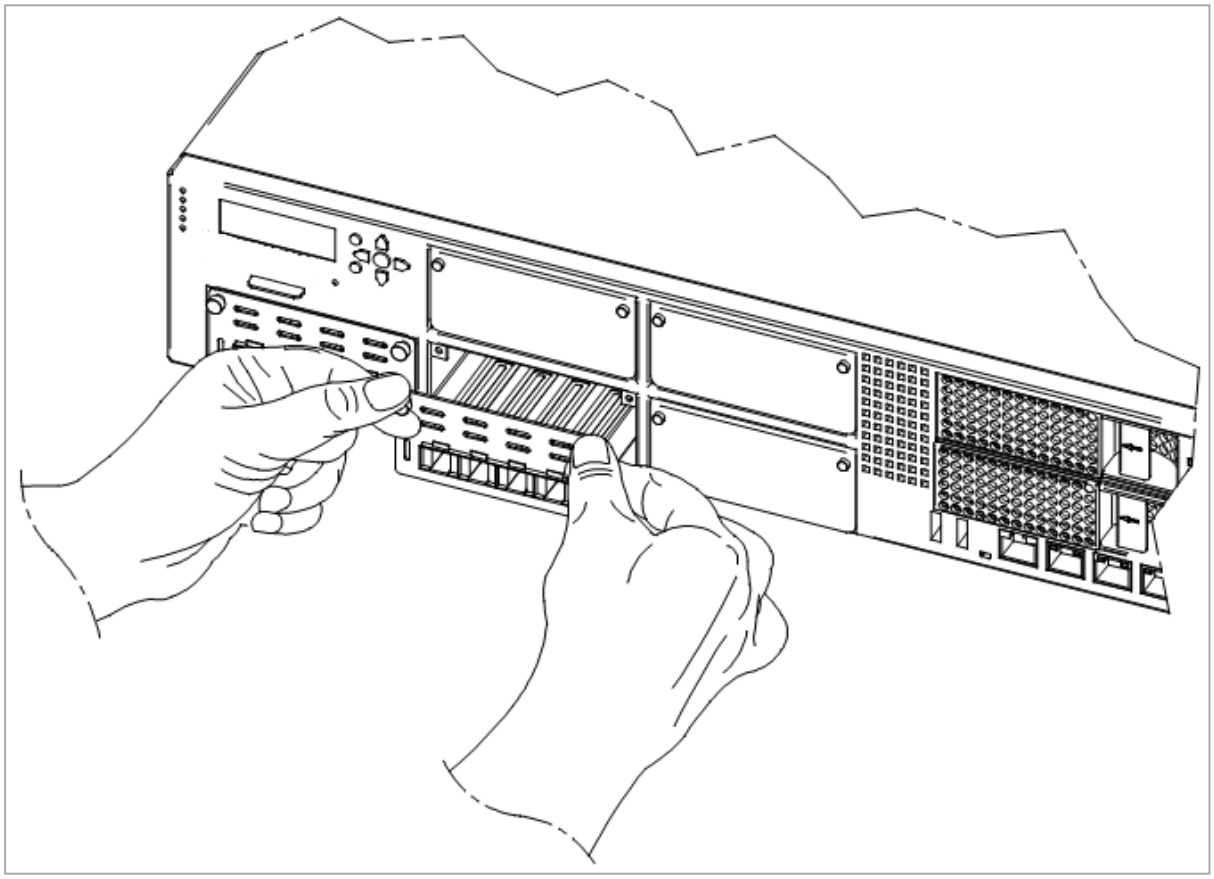
Item	Component	Description
1	Link speed LED	■ Off ■ On (Green) - 100/25 Gbit/s data rate is selected
2	Port activity LED	■ Off - No activity ■ On (Amber) - Link exists ■ Blinking (Amber) - Activity

Installing and Removing Expansion Line Cards

Installing an Expansion Line Card

See the relevant Getting Started Guide for your model (sk96246).

1. Turn off the Appliance.
2. Remove the power cords from the Power Supply Units.
3. Loosen the screws on the dummy panel on the front of the Appliance.
4. Remove the dummy panel.
5. Insert the Expansion Line Card into the expansion slot.



6. Push until the card clicks into position.

   Note - Make sure the card is firmly inserted on all sides and that the Expansion Line Card panel is flat against the appliance's front panel.

7. Tighten the screws on the Expansion Line Card.
8. Turn on the Appliance.

Removing an Expansion Line Card

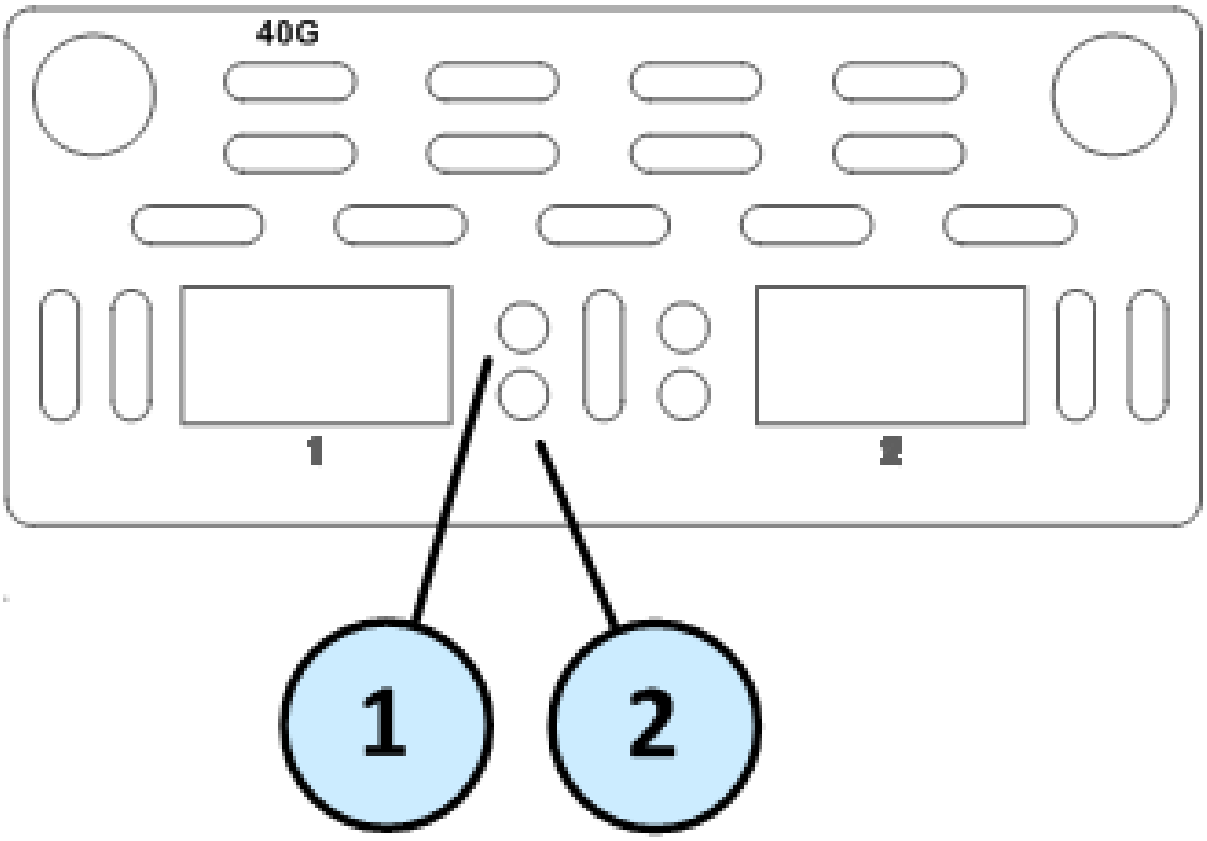
See the Getting Started Guide for your model (sk96246).

1. Turn off the Appliance.
2. Remove the power cords from the Power Supply Units.
3. Loosen the captive screws on the Expansion Line Card.
4. Holding the screws, pull the Expansion Line Card out of the expansion slot.
5. Put the dummy panel on the Expansion Line Card.
6. Tighten the screws on the dummy panel.
7. Turn on the Appliance.

For more information, see sk116742.

40 Gb Line Card (QSFP+)

Front Panel



Legend

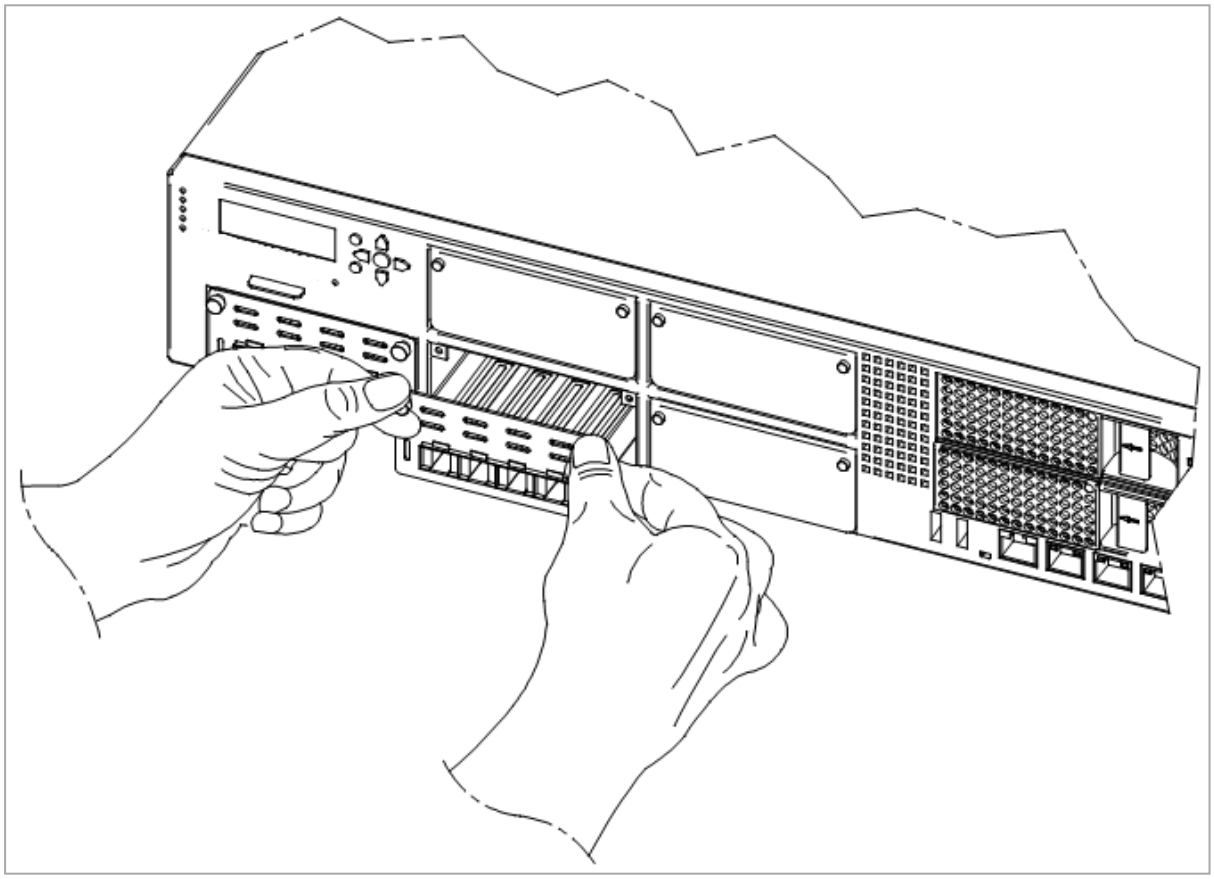
Item	Component	Description
1	Link speed LED	■ Off ■ On (Green) - 40 Gbit/s data rate is selected
2	Port activity LED	■ Off - No activity ■ On (Amber) - Link exists ■ Blinking (Amber) - Activity

Installing and Removing Expansion Line Cards

Installing an Expansion Line Card

See the relevant Getting Started Guide for your model (sk96246).

1. Turn off the Appliance.
2. Remove the power cords from the Power Supply Units.
3. Loosen the screws on the dummy panel on the front of the Appliance.
4. Remove the dummy panel.
5. Insert the Expansion Line Card into the expansion slot.



6. Push until the card clicks into position.

   Note - Make sure the card is firmly inserted on all sides and that the Expansion Line Card panel is flat against the appliance's front panel.

7. Tighten the screws on the Expansion Line Card.
8. Turn on the Appliance.

Removing an Expansion Line Card

See the Getting Started Guide for your model (sk96246).

1. Turn off the Appliance.
2. Remove the power cords from the Power Supply Units.
3. Loosen the captive screws on the Expansion Line Card.
4. Holding the screws, pull the Expansion Line Card out of the expansion slot.
5. Put the dummy panel on the Expansion Line Card.
6. Tighten the screws on the dummy panel.
7. Turn on the Appliance.

For more information, see sk116742.

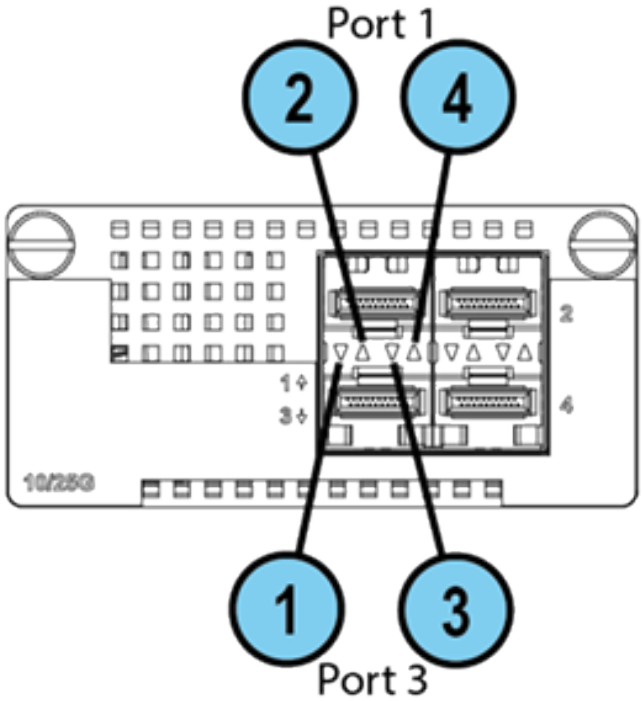
10/25 Gb Line Card (SFP28)

These appliance models use the this card:

Appliance Model	Software Requirements	Hardware Requirements
19100, 19200, 29100, 29200	sk180520	For 29100 and 29200 appliances, see *"Appendix - NIC Slot Population Guidelines" on page 97*
9100, 9200, 9300, 9400, 9700, 9800	sk181698	None
Smart-1 700-S, Smart-1 700-M, Smart-1 7000-L, Smart-1 7000-XL, Smart-1 7000-UL	sk182601	None

Front Panel

The LEDs are located in a row between the paired top and bottom ports.



Legend

Item	Component	Description
1	Port activity LED (bottom port)	■ Off - No activity ■ On (Green) - Link exists ■ Blinking (Green) - Activity
2	Port activity LED (top port)	
3	Link speed LED (bottom port)	■ Off - 1 Gbit/s or lower data is selected ■ On (Amber) - 10 Gbit/s data rate is selected ■ On (Blue) - 25 Gbit/s data rate is selected
4	Link speed LED (top port)	

Line Card Slot Population

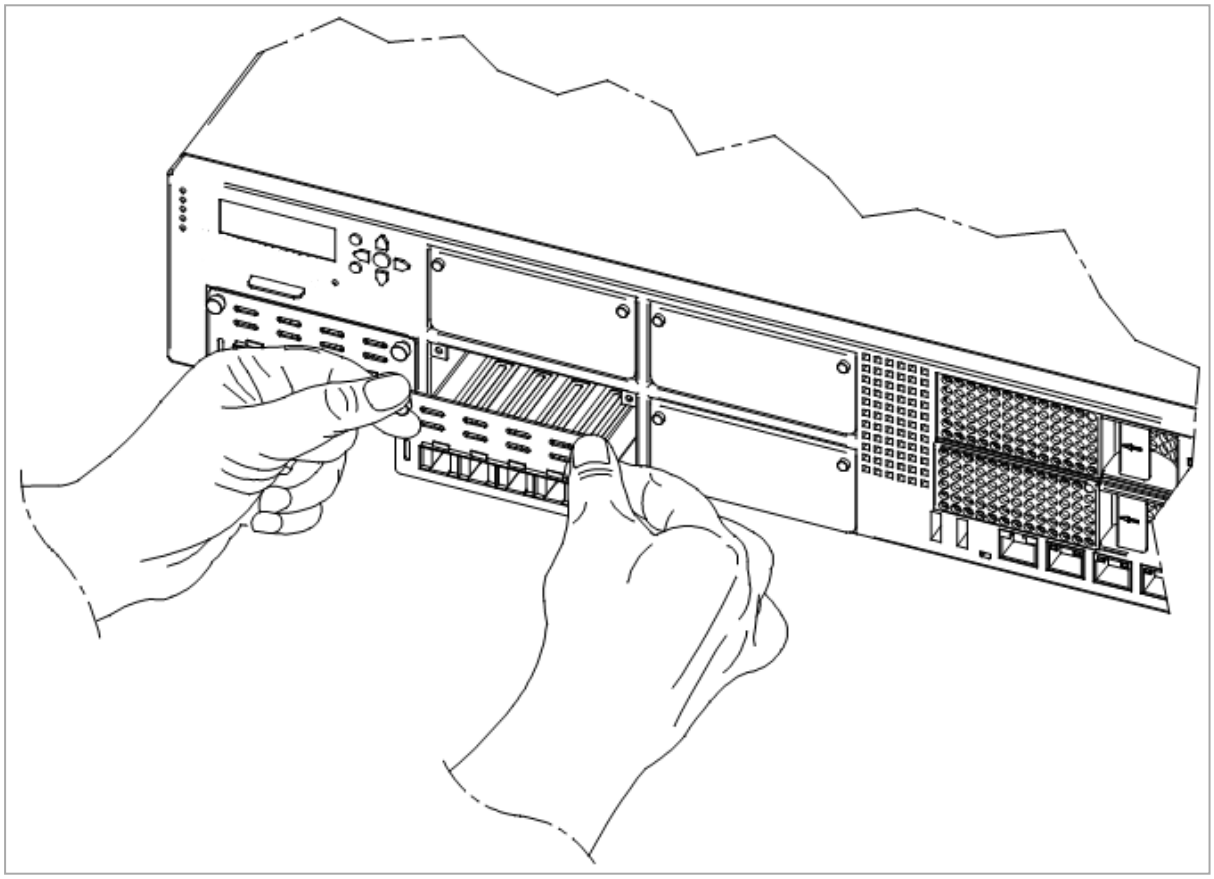
Follow the instructions in *"Appendix - NIC Slot Population Guidelines" on page 97* for the preferred placement of this line card inside Quantum 29100 and 29200 appliances.

Installing and Removing Expansion Line Cards

Installing an Expansion Line Card

See the relevant Getting Started Guide for your model (sk96246).

1. Turn off the Appliance.
2. Remove the power cords from the Power Supply Units.
3. Loosen the screws on the dummy panel on the front of the Appliance.
4. Remove the dummy panel.
5. Insert the Expansion Line Card into the expansion slot.



6. Push until the card clicks into position.

   Note - Make sure the card is firmly inserted on all sides and that the Expansion Line Card panel is flat against the appliance's front panel.

7. Tighten the screws on the Expansion Line Card.
8. Turn on the Appliance.

Removing an Expansion Line Card

See the Getting Started Guide for your model (sk96246).

1. Turn off the Appliance.
2. Remove the power cords from the Power Supply Units.
3. Loosen the captive screws on the Expansion Line Card.
4. Holding the screws, pull the Expansion Line Card out of the expansion slot.
5. Put the dummy panel on the Expansion Line Card.
6. Tighten the screws on the dummy panel.
7. Turn on the Appliance.

1/10 Gb Line Card (SFP+)

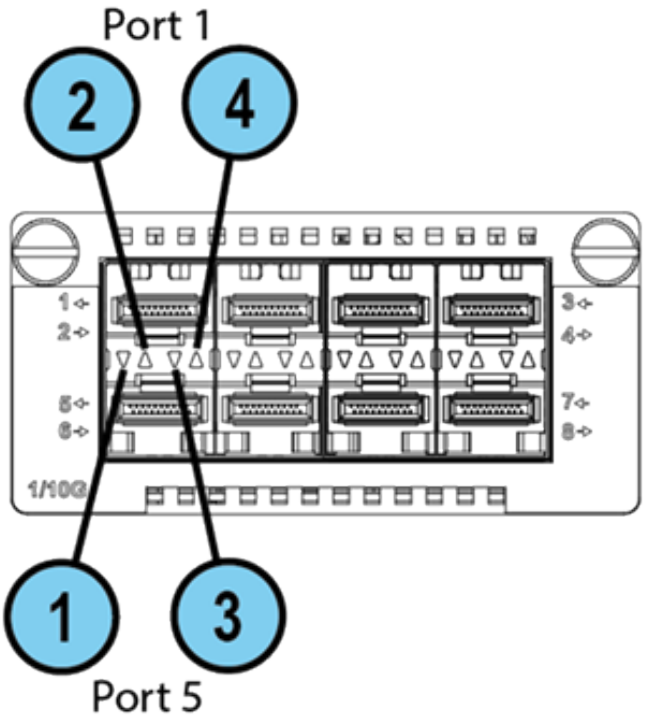
Important - In Maestro configuration, the minimum supported speed is 10 Gb.

These appliance models use the this card:

Appliance Model	Software Requirements	Hardware Requirements
19100, 19200, 29100, 29200	sk180520	For 29100 and 29200 appliances, see *"Appendix - NIC Slot Population Guidelines" on page 97*
9100, 9200, 9300, 9400, 9700, 9800	sk181698	None
Smart-1 700-S, Smart-1 700-M, Smart-1 7000-L, Smart-1 7000-XL, Smart-1 7000-UL	sk182601	None

Front Panel

The LEDs are located in a row between the paired top and bottom ports.



Legend

Item	Component	Description
1	Port activity LED (bottom port)	■ Off - No activity ■ On (Green) - Link exists ■ Blinking (Green) - Activity
2	Port activity LED (top port)	
3	Link speed LED (bottom port)	■ Off ■ On (Amber) - 1 Gbit/s data rate is selected ■ On (Blue) - 10 Gbit/s data rate is selected
4	Link speed LED (top port)	

Line Card Slot Population

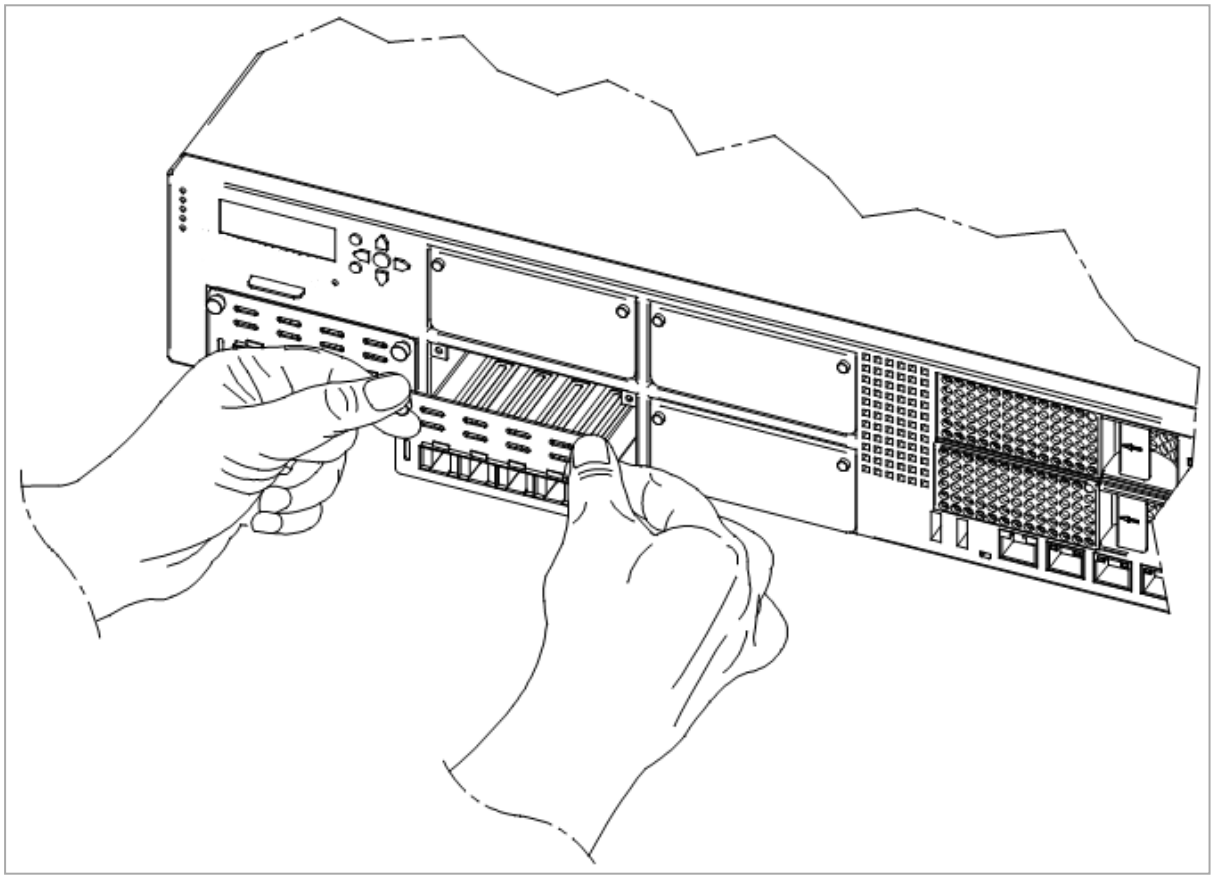
Follow the instructions in *"Appendix - NIC Slot Population Guidelines" on page 97* for the preferred placement of this line card inside Quantum 29100 and 29200 appliances.

Installing and Removing Expansion Line Cards

Installing an Expansion Line Card

See the relevant Getting Started Guide for your model (sk96246).

1. Turn off the Appliance.
2. Remove the power cords from the Power Supply Units.
3. Loosen the screws on the dummy panel on the front of the Appliance.
4. Remove the dummy panel.
5. Insert the Expansion Line Card into the expansion slot.



6. Push until the card clicks into position.

   Note - Make sure the card is firmly inserted on all sides and that the Expansion Line Card panel is flat against the appliance's front panel.

7. Tighten the screws on the Expansion Line Card.
8. Turn on the Appliance.

Removing an Expansion Line Card

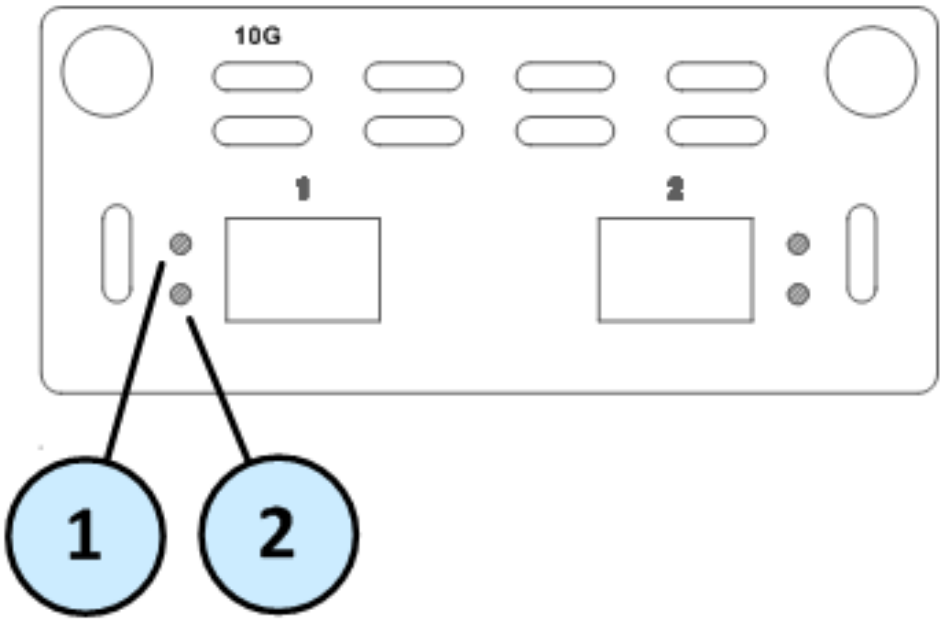
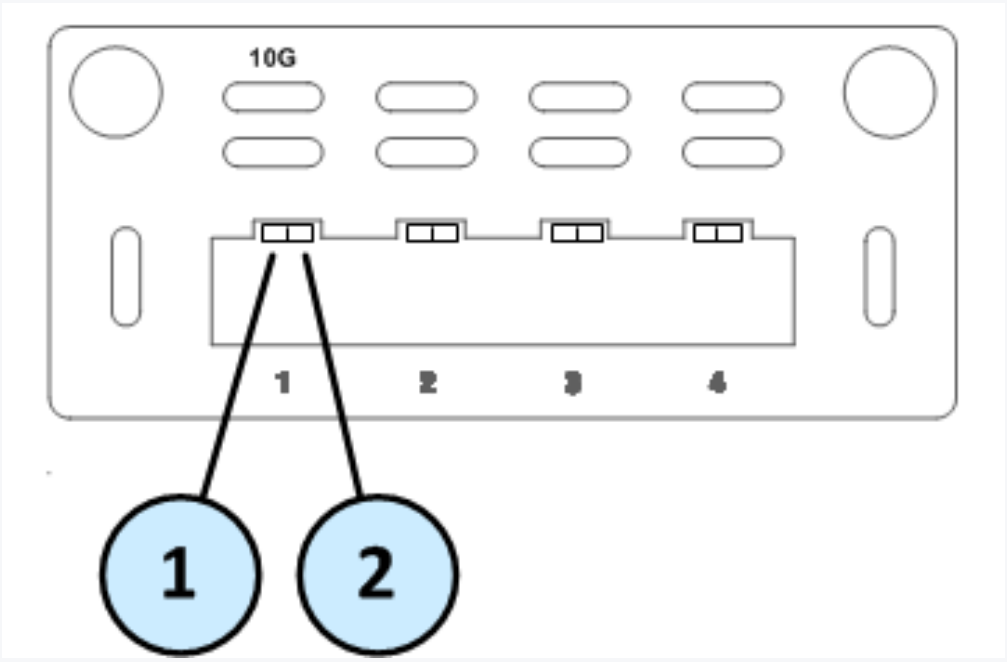
See the Getting Started Guide for your model (sk96246).

1. Turn off the Appliance.
2. Remove the power cords from the Power Supply Units.
3. Loosen the captive screws on the Expansion Line Card.
4. Holding the screws, pull the Expansion Line Card out of the expansion slot.
5. Put the dummy panel on the Expansion Line Card.
6. Tighten the screws on the dummy panel.
7. Turn on the Appliance.

10 Gb Line Cards (SFP+)

Front Panel

Legend

Line Card	Description
	2 x 10 GbE SFP+
	4 x 10 GbE SFP+

Legend

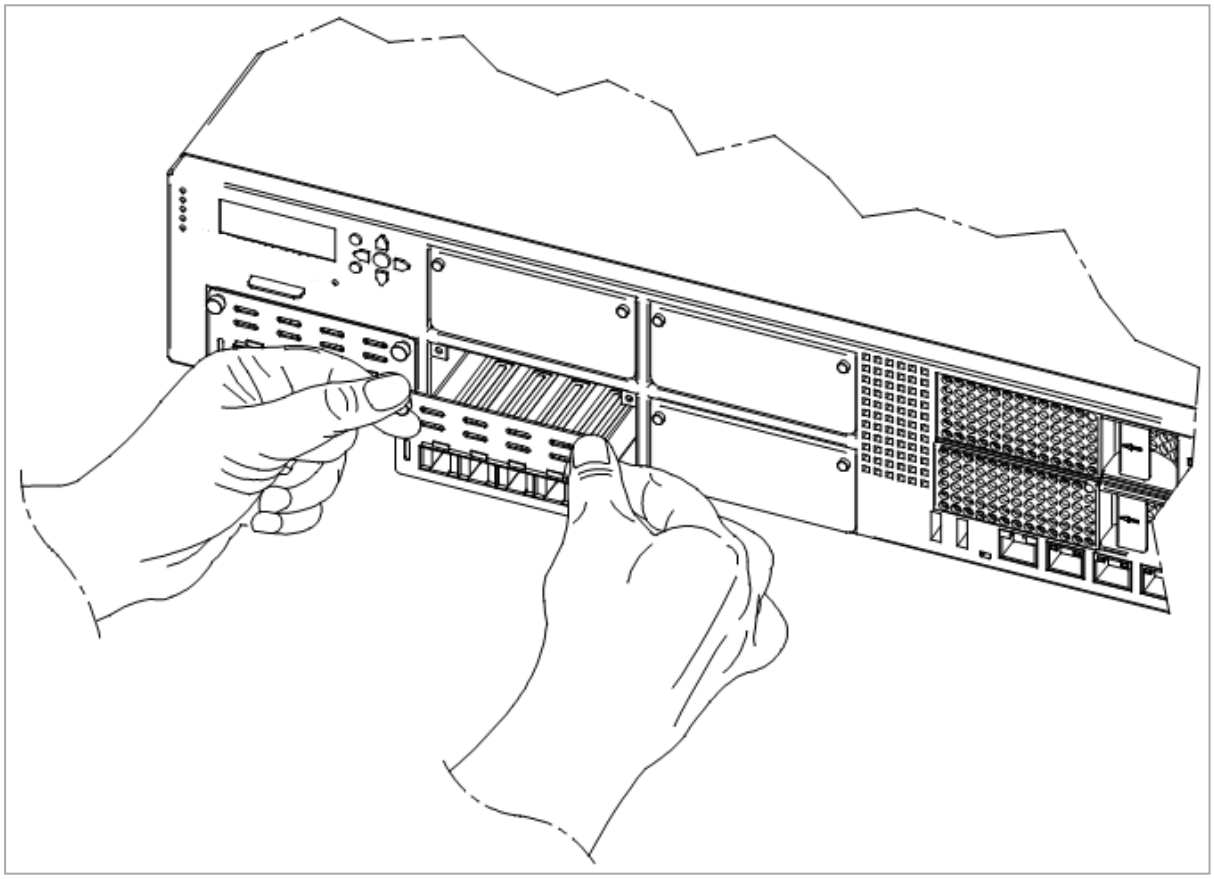
Item	Component	Description
1	Port activity LED	■ Off - No activity ■ On (Green) - Link exists ■ Blinking (Green) - Activity
2	Link speed LED	■ Off ■ On (Blue) - 10 Gbit/s data rate is selected ■ On (Amber) - 1 Gbit/s data rate is selected (supported on select cards that use a dual rate of 10 Gbit and 1 Gbit rates)

Installing and Removing Expansion Line Cards

Installing an Expansion Line Card

See the relevant Getting Started Guide for your model (sk96246).

1. Turn off the Appliance.
2. Remove the power cords from the Power Supply Units.
3. Loosen the screws on the dummy panel on the front of the Appliance.
4. Remove the dummy panel.
5. Insert the Expansion Line Card into the expansion slot.



6. Push until the card clicks into position.

   Note - Make sure the card is firmly inserted on all sides and that the Expansion Line Card panel is flat against the appliance's front panel.

7. Tighten the screws on the Expansion Line Card.
8. Turn on the Appliance.

Removing an Expansion Line Card

See the Getting Started Guide for your model (sk96246).

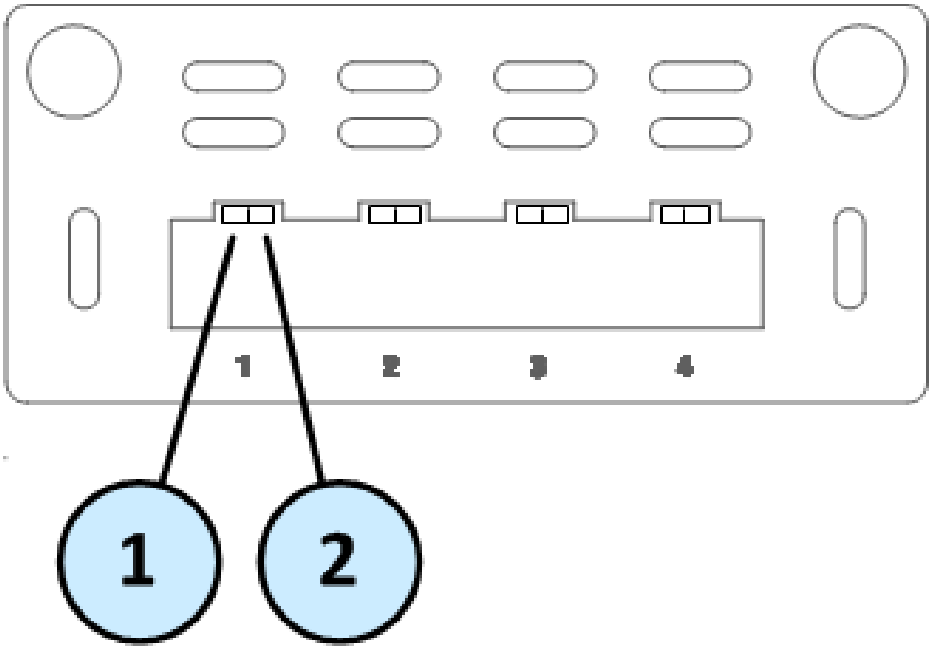
1. Turn off the Appliance.
2. Remove the power cords from the Power Supply Units.
3. Loosen the captive screws on the Expansion Line Card.
4. Holding the screws, pull the Expansion Line Card out of the expansion slot.
5. Put the dummy panel on the Expansion Line Card.
6. Tighten the screws on the dummy panel.
7. Turn on the Appliance.

1 Gb Line Cards (SFP and RJ45)

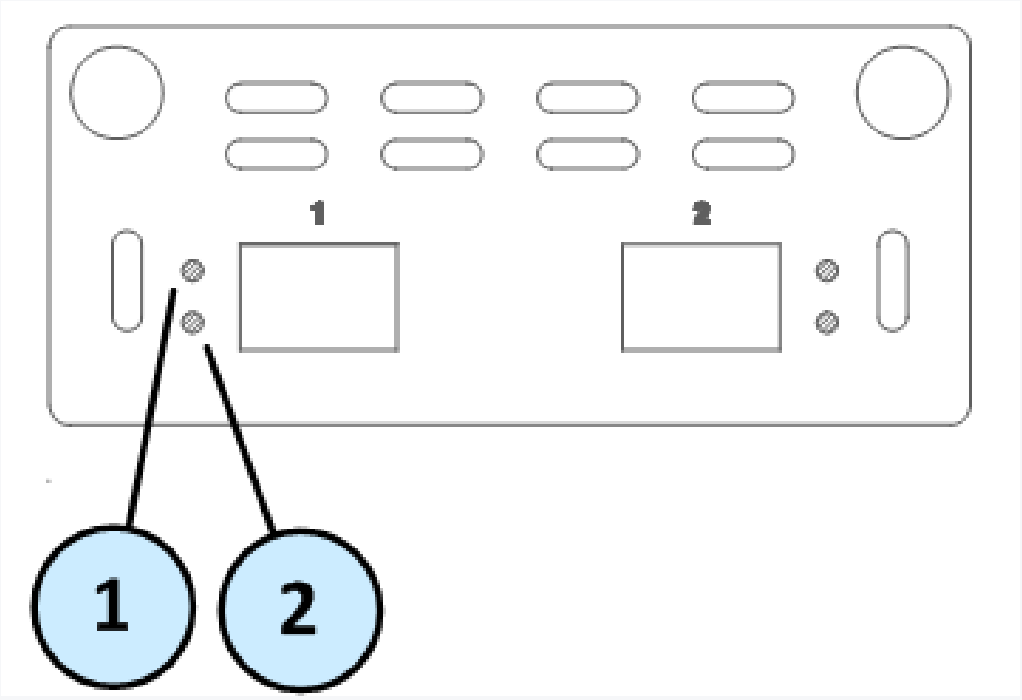
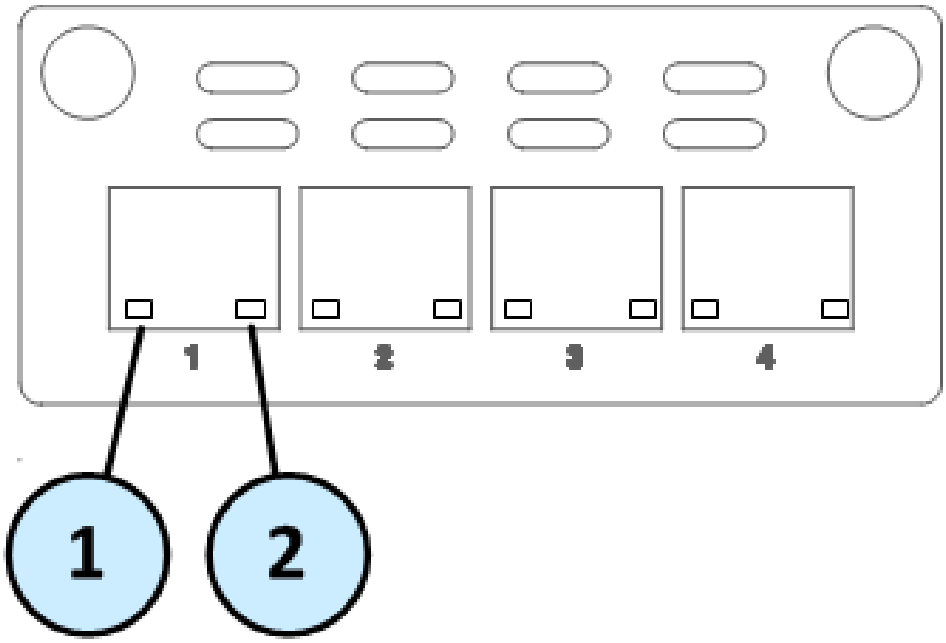
Important - This 1 Gb line card is not supported in Maestro configuration.

Front Panel

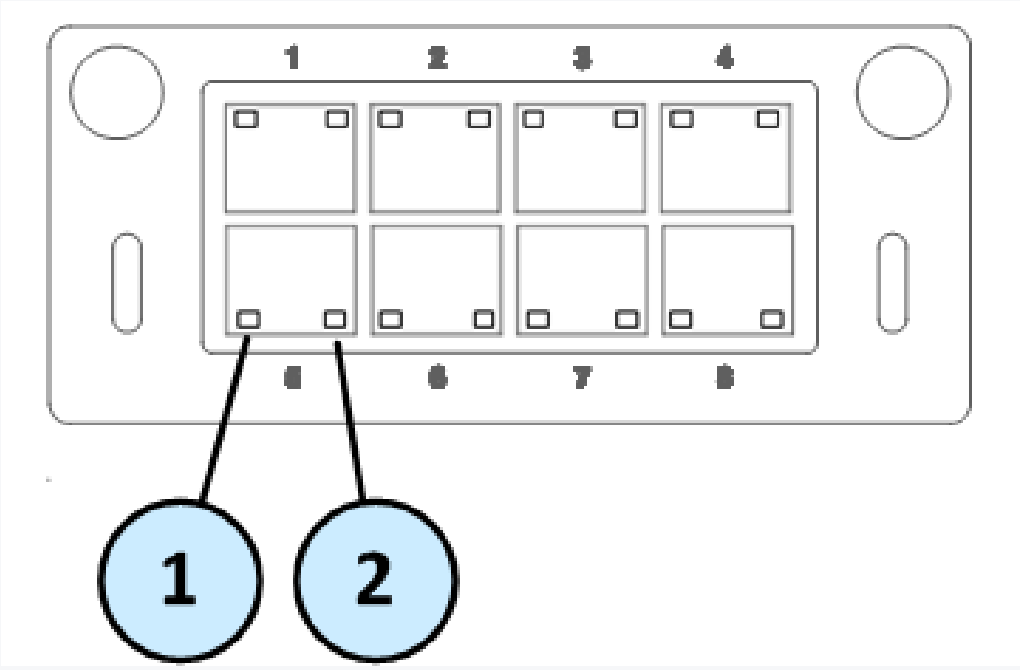
Legend

Line Card	Description
	4 x 1 GbE SFP

Legend(continued)

Line Card	Description
	2 x 1 GbE SFP
	4 x 1 GbE RJ45

Legend(continued)

Line Card	Description
	8 x 1 GbE RJ45

Legend

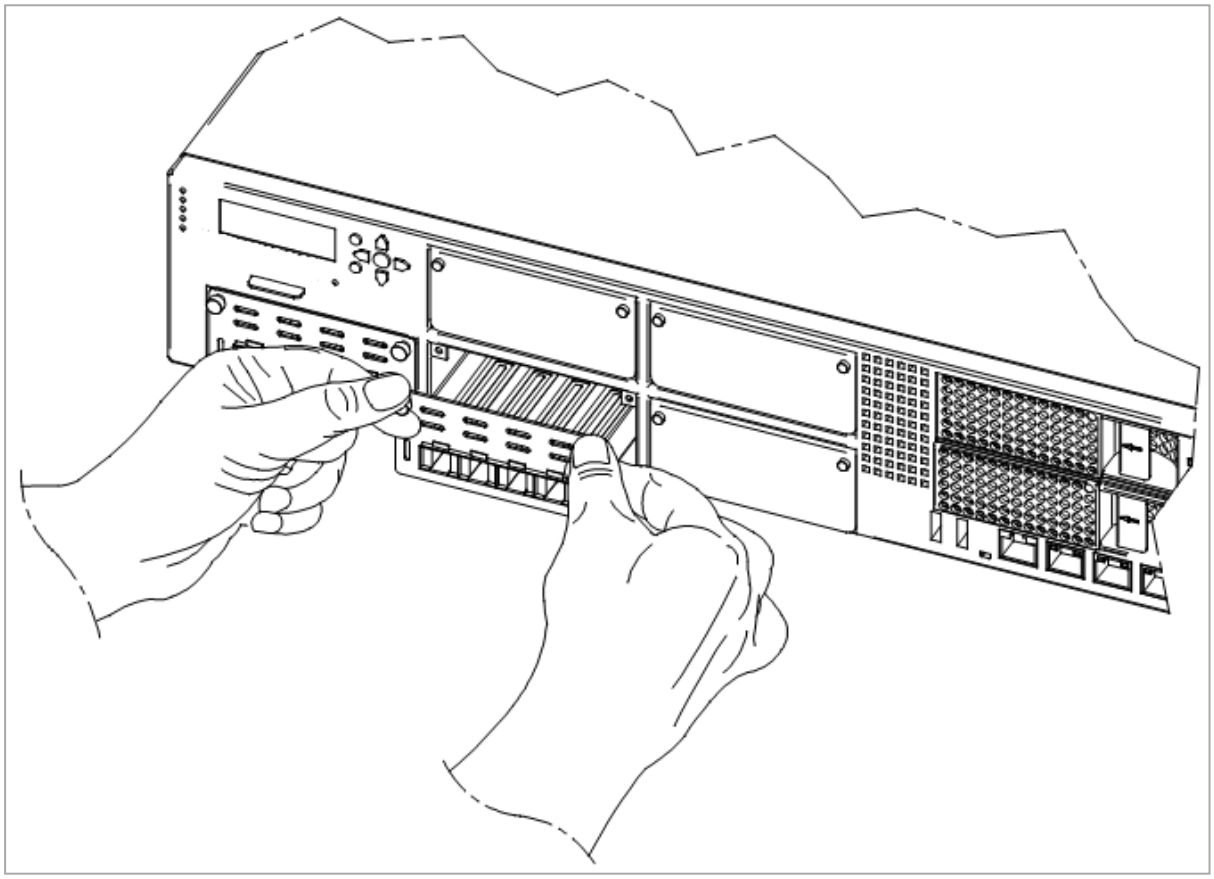
Item	Component	Description
1	Port activity LED	■ Off - No activity ■ On (Green) - Link exists ■ Blink (Green) - Activity
2	Link speed LED	For RJ45 ports: ■ Off - 10 Mbit/s data is selected ■ On (Green) - 100 Mbit/s data is selected ■ On (Amber) - 1000 Mbit/s data is selected For SFP ports: ■ Off ■ On (Amber) - 1 Gbit/s data rate is selected

Installing and Removing Expansion Line Cards

Installing an Expansion Line Card

See the relevant Getting Started Guide for your model (sk96246).

1. Turn off the Appliance.
2. Remove the power cords from the Power Supply Units.
3. Loosen the screws on the dummy panel on the front of the Appliance.
4. Remove the dummy panel.
5. Insert the Expansion Line Card into the expansion slot.



6. Push until the card clicks into position.

   Note - Make sure the card is firmly inserted on all sides and that the Expansion Line Card panel is flat against the appliance's front panel.

7. Tighten the screws on the Expansion Line Card.
8. Turn on the Appliance.

Removing an Expansion Line Card

See the Getting Started Guide for your model (sk96246).

1. Turn off the Appliance.
2. Remove the power cords from the Power Supply Units.
3. Loosen the captive screws on the Expansion Line Card.
4. Holding the screws, pull the Expansion Line Card out of the expansion slot.
5. Put the dummy panel on the Expansion Line Card.
6. Tighten the screws on the dummy panel.
7. Turn on the Appliance.

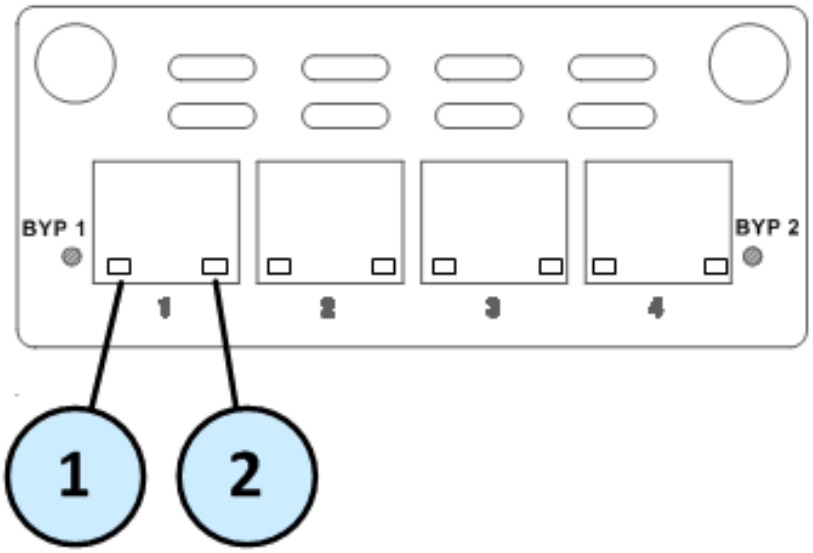
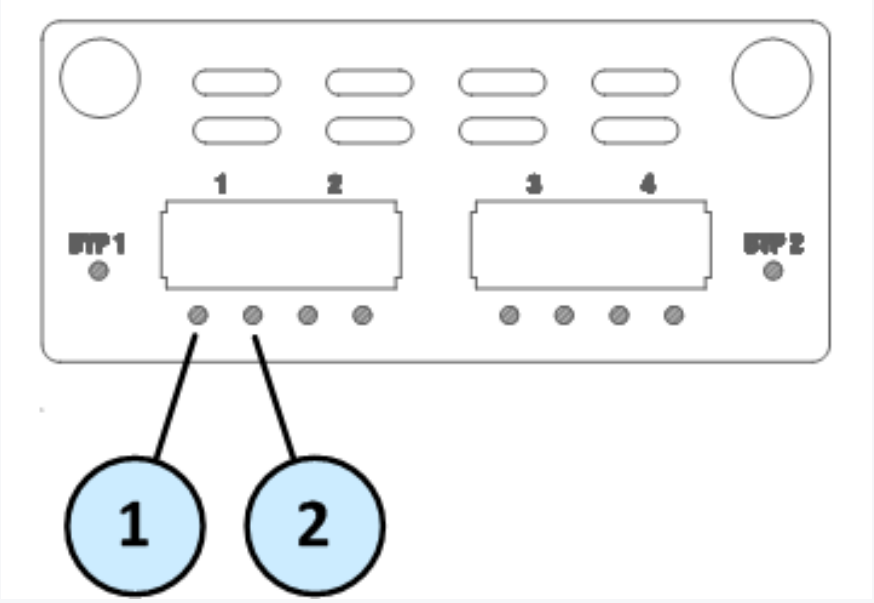
Bypass (Fail-Open) Line Cards

To install and configure a bypass line card in a Security Appliance, refer to the instructions in sk85560.

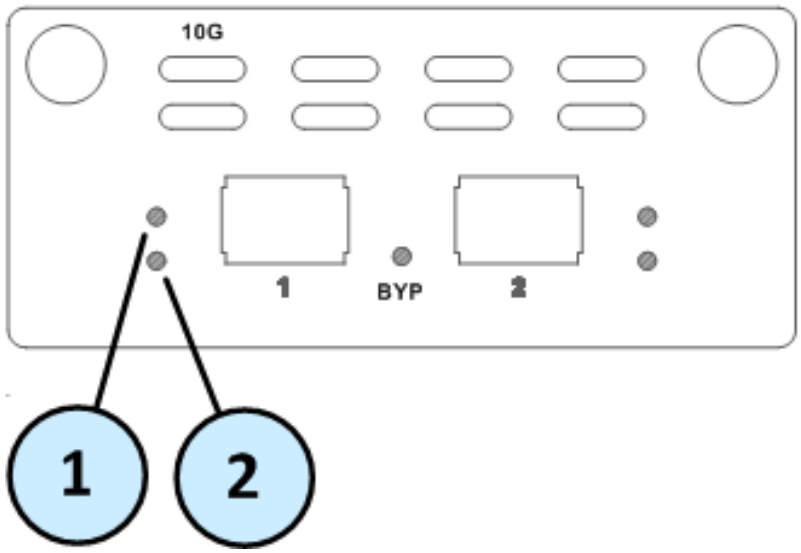
Important - This bypass line card is not supported in Maestro configuration.

Front Panel

Legend

Line Card	Description
	4 x 1 GbE RJ45 Bypass
	4 x 1 GbE SFP SR Bypass 4 x 1 GbE SFP LR Bypass

Legend(continued)

Line Card	Description
	2 x 10 GbE SFP+ SR Bypass
	2 x 10 GbE SFP+ LR Bypass

Legend

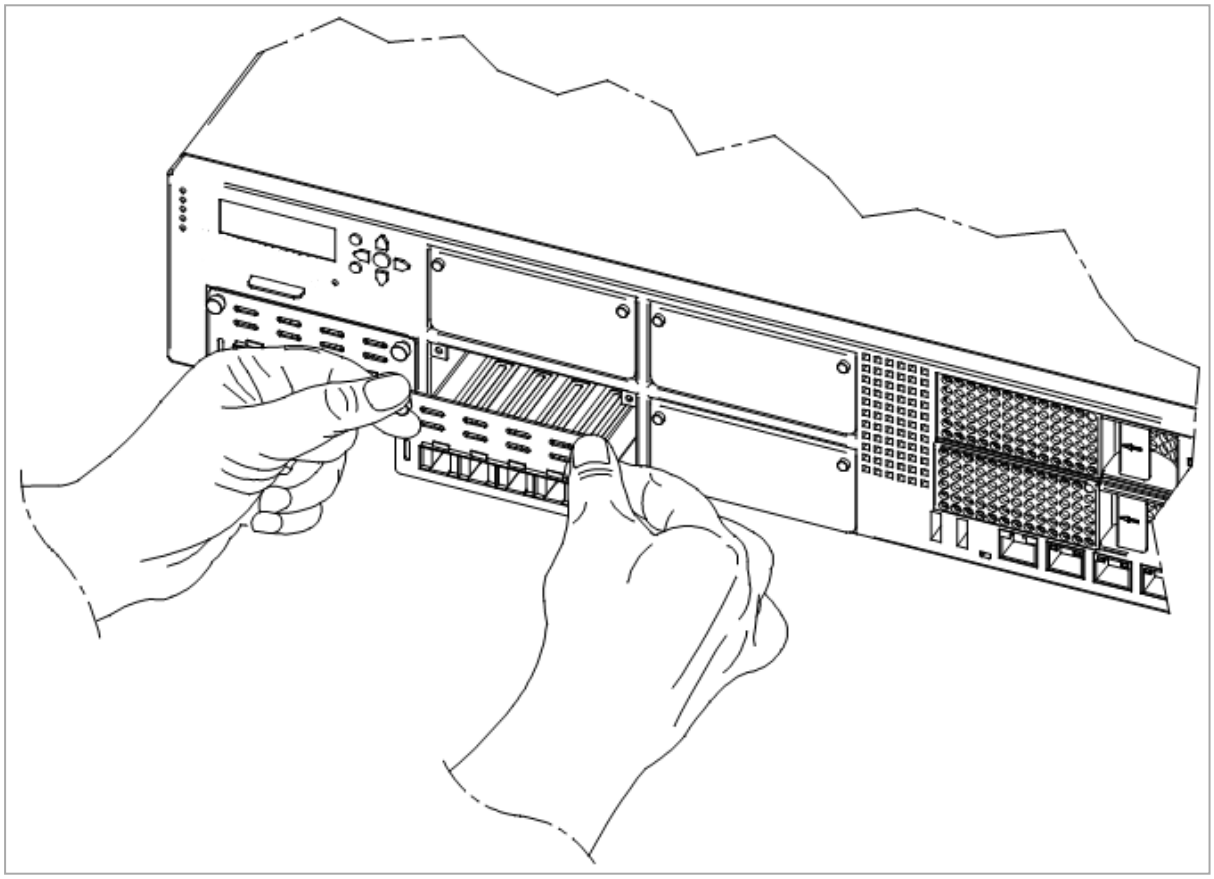
Item	Component	Description
1	Port activity LED	■ Off - No activity ■ On (Green) - Link exists ■ Blink (Green) - Activity
2	Link speed LED	For 1 GbE RJ45 ports: ■ Off - 10 Mbit/s data is selected ■ On (Green) - 100 Mbit/s data is selected ■ On (Amber) - 1000 Mbit/s data is selected For 10 GbE SFP ports: ■ Off ■ On (Amber) - 1 Gbit/s data rate is selected For 10 GbE SFP+ ports: ■ Off ■ On (Blue) - 10 Gbit/s data rate is selected ■ On (Amber) - 1 Gbit/s data rate is selected (supported on select cards that use a dual rate of 10 Gbit and 1 Gbit rates)

Installing and Removing Expansion Line Cards

Installing an Expansion Line Card

See the relevant Getting Started Guide for your model (sk96246).

1. Turn off the Appliance.
2. Remove the power cords from the Power Supply Units.
3. Loosen the screws on the dummy panel on the front of the Appliance.
4. Remove the dummy panel.
5. Insert the Expansion Line Card into the expansion slot.



6. Push until the card clicks into position.

   Note - Make sure the card is firmly inserted on all sides and that the Expansion Line Card panel is flat against the appliance's front panel.

7. Tighten the screws on the Expansion Line Card.
8. Turn on the Appliance.

Removing an Expansion Line Card

See the Getting Started Guide for your model (sk96246).

1. Turn off the Appliance.
2. Remove the power cords from the Power Supply Units.
3. Loosen the captive screws on the Expansion Line Card.
4. Holding the screws, pull the Expansion Line Card out of the expansion slot.
5. Put the dummy panel on the Expansion Line Card.
6. Tighten the screws on the dummy panel.
7. Turn on the Appliance.

Appendix - NIC Slot Population Guidelines

The following guidelines direct the user on the preferred placement of Line Cards (NICs) within the slots of the Quantum 29000 appliances.

This slot population distributes the ports and traffic in a balanced manner.

Appliance Models

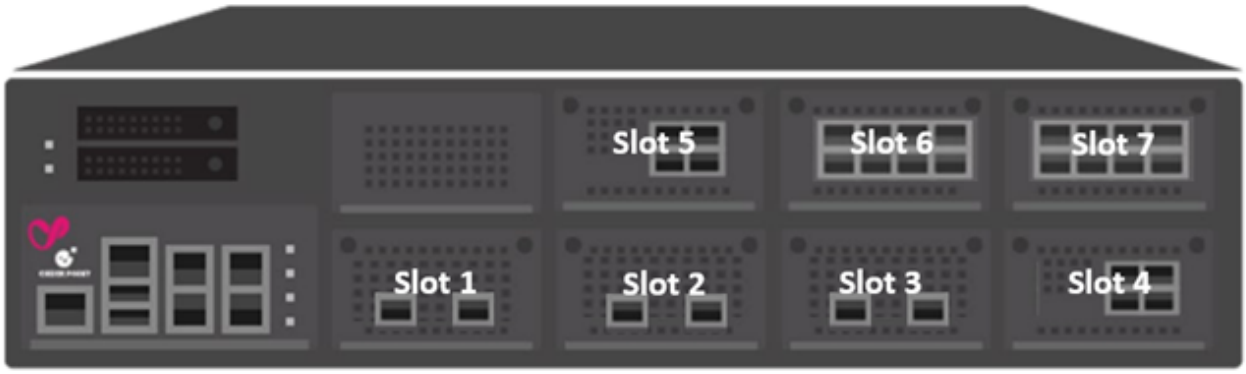
Appliance	Regulated Model	Model	Base Hardware SKU
29100 Base	RR1-CP-10	RH-10	BASEHW-CPAP-29100
29100 Plus	RR1-CP-10	RH-10	BASEHW-CPAP-29100-PLUS
29200 Base	RR1-CP-20	RH-20	BASEHW-CPAP-29200
29200 Plus	RR1-CP-20	RH-20	BASEHW-CPAP-29200-PLUS

Line Cards (NICs)

Description	SKU
8-Port 1/10G	CPAC-8-1/10F-D
4-Port 10/25G	CPAC-4-10/25F-D
2-Port 40/100G (single-width card)	CPAC-2-40/100F-D
4-Port 10/25G with acceleration	CPAC-4-10/25F-DA

Slot Population Guidelines for Line Cards

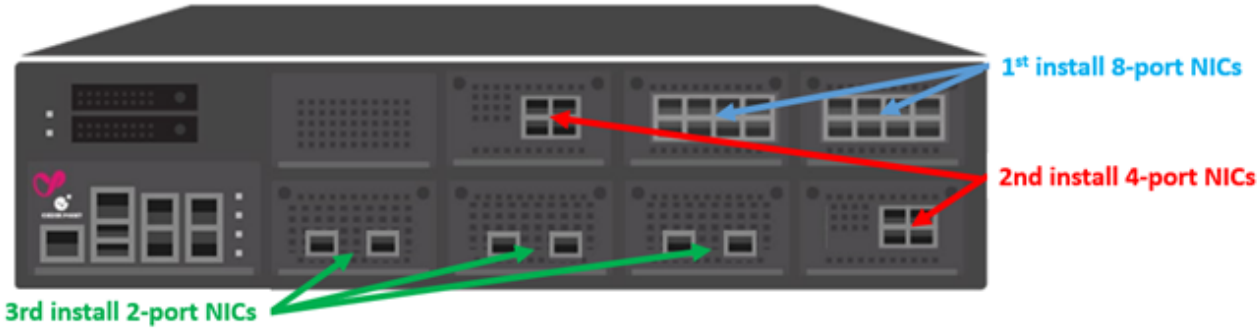
1. Install the 8-Port 1/10G line cards in the descending order - Slot 7, then Slot 6, Slot 5, and so on.
2. If there are empty slots left, then continue to install the 4-Port 10/25 line cards in the descending order - starting in the next slot after the last 8-port NIC.
3. If there are empty slots left, then continue to install the 2-Port 40/100G or 4-port 10/25G with acceleration line cards in the ascending order - Slot 1, then Slot 2, Slot 3, and so on.



Slot Population Example

The diagram below illustrates how to apply the slot population guidelines for the following line card configuration:

- 2 x 8-Port 1/10G line cards - must be installed in Slot 7 and Slot 6
- 2 x 4-port 10/25G line cards - must be installed in Slot 5 and Slot 4
- 3 x 2-port 40/100G line cards - must be installed in Slot 1, Slot 2, and Slot 3



Default Slot Population in 29000 Appliance Bundles

For reference, the table below shows the default line cards and their placement in the 29000 Appliance Base and Plus SKU bundles:

Appliance	Slot 1	Slot 2	Slot 3	Slot 4	Slot 5	Slot 6	Slot 7
29100 Base	None	None	None	None	None	None	CPAC-8-1/10F-D
29100 Plus	None	None	None	None	CPAC-4-10/25F-D	CPAC-8-1/10F-D	CPAC-8-1/10F-D
29200 Base	None	None	None	None	None	None	CPAC-8-1/10F-D
29200 Plus	CPAC-2-40/100F-D	None	None	None	CPAC-4-10/25F-D	CPAC-8-1/10F-D	CPAC-8-1/10F-D