



Platform Guide

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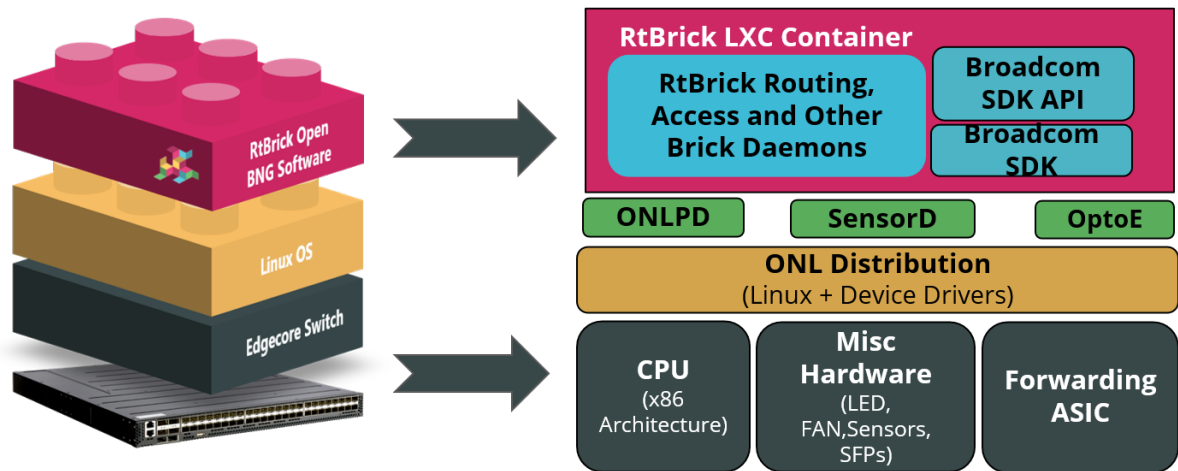
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1. Platform Overview

The RtBrick FullStack (RBFS) software runs as a LXC container on a Linux host operating system in the Edgecore switches, which are capable of Layer 2 and Layer 3 switching. Multiple switches can be combined to support several subscribers using a leaf and spine architecture or deployed as a standalone using the consolidated BNG approach. Additionally, the ZTP (Zero-Touch-Provisioning) and REST-based APIs that expose the state of the system are also supported.

The image below shows a high-level overview of the platform architecture.



The platform consists of hardware based on forwarding ASIC and host operating system based on Open Network Linux (ONL). An RBFS container that resides on top of this software includes all necessary packages to deliver access and routing protocols.

This guide looks at the platform features, the different supported hardware platforms, and features that are supported on each hardware platform.

1.1. Supported Platforms

RtBrick's software has been validated on the following hardware platforms.

- Edgecore AS7316-26XB
- Edgecore AS5916-54XKS

1.2. Brick Daemon (BD)

RBFS runs multiple Brick Daemons (BD). Every application that runs within RBFS is fundamentally a brick daemon. For example, forwarding daemon (fibd), configuration daemon (confd), BGP (bgp.iod or bgp.appd), or interface management daemon (ifmd).

1.2.1. Brick Daemon (BD) Restartability

If a brick daemon fails (for a limited number of times), RBFS will restart it automatically. If the automatic restart does not succeed, you can use the Ubuntu system control to start a daemon.

For more information about troubleshooting the Brick Daemons, see section "2.2. Brick Daemons" of the *RBFS NOC Troubleshooting Guide*.

2. RBFS on Edgecore AS7316-26XB Platform

RtBricks' open BNG software running as a Consolidated BNG, that provides full BNG functionality on an EdgeCore AS7316-26XB based on a Broadcom QAX chip, which is suitable for deployments in low-density areas and hardened platforms at cell-sites.

The Edgecore AS7316-26XB is an open design cell site gateway platform that provides a combination of 1/10 Gbps, 25 Gbps, and 100 Gbps interfaces, utilizing merchant silicon and an x86 processor with optimized performance for service provider access and aggregation networks.

2.1. Switch Silicon: Broadcom Qumran-AX BCM88470

Broadcom Qumran-AX BCM88470 platform which is delivered on a single 1RU device provides a Consolidated BNG. The QAX platform has a lower form factor chipset from Broadcom Jericho-1 family.

2.2. Hardware Specification

Table 1. Edgecore AS7316-26XB Hardware Specification

Model	Edgecore AS7316-26XB
Form-factor	1RU, 19 Inch, Rack-Mountable
Switch Silicon	Broadcom Qumran-AX BCM88470
CPU	Intel Broadwell-DE D-1519 1.5G 4C
System Memory	DDR4 SO-DIMM 2x 8GB SDRAM with ECC support
Configuration	<ul style="list-style-type: none"> • 16 x SFP+ (each supporting 10 GbE or 1 GbE) • 8 x SFP28 (each supporting 10 GbE or 25 GbE) • 2 x 100G QSFP28 (each supporting 1 x 40/100 GbE or 4 x 10/25 GbE or 2 x 50 GbE)

For more information, click the link below.

<https://www.edge-core.com/productsInfo.php?cls=291&cls2=342&cls3=343&id=603>

2.3. Supported Features

The table below lists the features that are supported by RBFS on Broadcom

Qumran-AX (QAX) Platform.

Supported	Unsupported
Routing Protocols: BGP, IS-IS, OSPFv2, Policy	Subscriber Management: LI
Subscriber Management: PPPoE, L2TPv2, RADIUS Services, DHCP Relay	
Forwarding: OAM, LAG	
Infrastructure: LLDP, Logging, LED Control, NTP	
Security: Securing the Management Plane, Securing the Control Plane, Local User Management	
Telemetry: Resmon, TSDB	
Multicast: IGMPv2/v3, PIM	
Forwarding: HQoS, L2X	

3. RBFS on Edgecore AS5916-54XKS Platform

RtBricks' open BNG software running as a spine-leaf architecture, that provides full BNG functionality on an EdgeCore AS5916-54XKS based on a Broadcom QMX chip. RtBricks supports spine as well access-leaf images for the AS5916-54XKS platform.

The Edgecore AS5916-54XKS is based on Broadcom StrataDNX Qumran MX switch silicon, capable of line-rate 800 Gbps Layer 2 and Layer 3 switching. The switch can be deployed either as a top-of-rack switch in a data center, or as a carrier access/aggregation switch, and edge router.

3.1. Switch Silicon: Broadcom Qumran-MX BCM88375

Broadcom Qumran-MX BCM88375 platform can help build fixed form factor, feature-rich, deep-buffered switches to enable cloud-scale networking and Carrier network applications. The BCM88375 device processes up to 800 Gbps traffic, supporting up to six 100G full-duplex ports at Layer 2 through Layer 4 with integrated deep-buffer traffic management capabilities, and a fabric interface.

3.2. Hardware Specification

Table 2. Edgecore AS5916-54XKS Hardware Specification

Model	Edgecore AS5916-54XKS
Form-factor	1RU
Switch Silicon	Broadcom Qumran-MX BCM88375
CPU	Intel Xeon D-1548 processor 8 cores 2.0 GHz
System Memory	DDR4 SO-DIMM 16 GB x 2
Configuration	<ul style="list-style-type: none">• 48 x SFP+ each supporting 10 GbE or 1 GbE• 6 x 100G QSFP28 each supporting 1 x 40/100 GbE

For more information, click the link below.

<https://www.edge-core.com/productsInfo.php?cls=291&cls2=327&cls3=328&id=753>.

3.3. Supported Features

The table below lists the features that are supported by RBFS on Broadcom Qumran-MX (QMX) Platform.

Supported	Unsupported
<p>Routing Protocols: BGP, IS-IS, OSPFv2, Policy</p> <p>Multicast: IGMPv2/v3, PIM</p> <p>Subscriber Management: PPPoE, L2TPv2, RADIUS Services, LI, DHCP Relay</p> <p>Forwarding: HQoS, L2X, OAM</p> <p>Infrastructure: LLDP, Logging, LED Control, NTP</p> <p>Security: Securing the Management Plane, Securing the Control Plane, Local User Management</p> <p>Telemetry: Resmon, TSDB</p>	<p>Forwarding: LAG</p>