



Getting Started Guide

Version 2019.1.0, 28 January 2020

Registered Address	Support	Sales
26, Kingston Terrace, Princeton, New Jersey 08540, United States		
		+91 80 4850 5445
http://www.rtbrick.com	support@rtbrick.com	sales@rtbrick.com

©Copyright 2020 RtBrick, Inc. All rights reserved. The information contained herein is subject to change without notice. The trademarks, logos and service marks ("Marks") displayed in this documentation are the property of RtBrick in the United States and other countries. Use of the Marks are subject to RtBrick's Term of Use Policy, available at <https://www.rtbrick.com/privacy>. Use of marks belonging to other parties is for informational purposes only.

Table of Contents

- 1. Overview of RtBrick BNG (Border Network Gateway) 3
 - 1.1. Deployment at Scale 3
- 2. RtBrick BNG PoD architecture 5
- 3. Management and Operations 6

1. Overview of RtBrick BNG (Border Network Gateway)

RtBrick's disaggregated BNG brings these same benefits to carrier access networks, by using agile methodologies and the same battle-hardened DevOps cloud automation tools that have been adopted by the world's biggest cloud providers.

The RtBrick BNG is delivered as a software container, packaged out-of-the-box with the Open Network Linux (ONL) provided by the hardware SKU manufacturers, which handles peripherals such as LEDs, temperature sensors, and so on. There are no dependencies on either the kernel or the hardware platform components, so RtBrick's containers can be run on the Linux version of your choice.

The RtBrick BNG software can run on either an x86 processor as a vBNG, or for most carrier-scale deployments, on low-cost but powerful bare-metal switches.

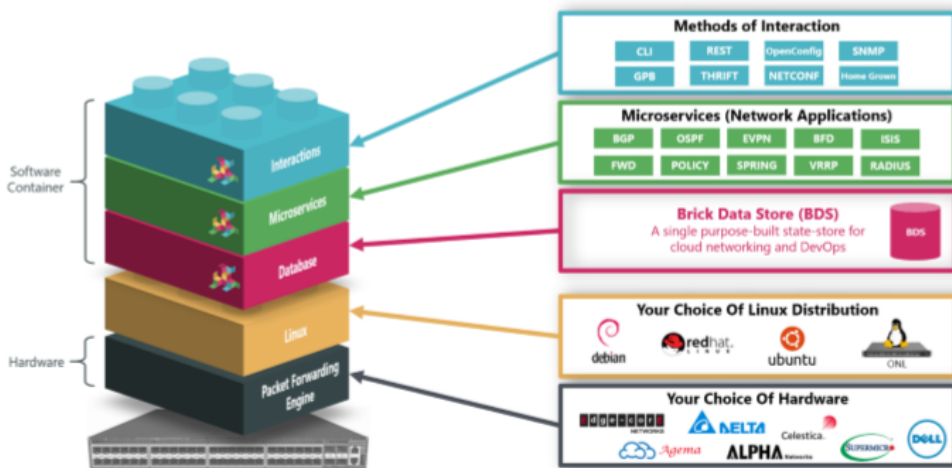


Figure 1. RtBrick BNG Software

1.1. Deployment at Scale

The BNG's subscriber management capacity is provided in a scale-out architecture called the Point-Of-Deployment (PoD). A large-scale PoD consists of Access Leaf Routers and Border Leaf Routers aggregated by a layer of Spine Leaf Routers in an auto-provisioned CLOS topology (see Figure 2). The Access Leaves deliver subscriber management functionality and the Border Leaves provide connectivity to the core of the provider network.

The leaves can be scaled out horizontally to increase the number of subscribers supported on the PoD, providing a pay-as-you-grow architecture. For smaller PoDs, Spine and Border Leaf functionality can be collapsed onto a single hardware platform, depending upon the hardware platform used.

PPPoE Subscribers can be terminated on the Access Leaf Routers or tunneled to an

LNS over L2TPv2. L2 Cross Connect (L2X) allows subscriber traffic to be tunneled out of the PoD at Layer 2, providing wholesale connectivity.

The RtBrick BNG software can also run on an x86 processor or in a cloud compute environment.

2. RtBrick BNG PoD architecture

You can re-use your existing infrastructure to continue to provide lower volume legacy services, and optimize the rest of the network for the bulk of your traffic - providing large volumes of high bandwidth services at a lower cost-point with a web-scale operating environment.

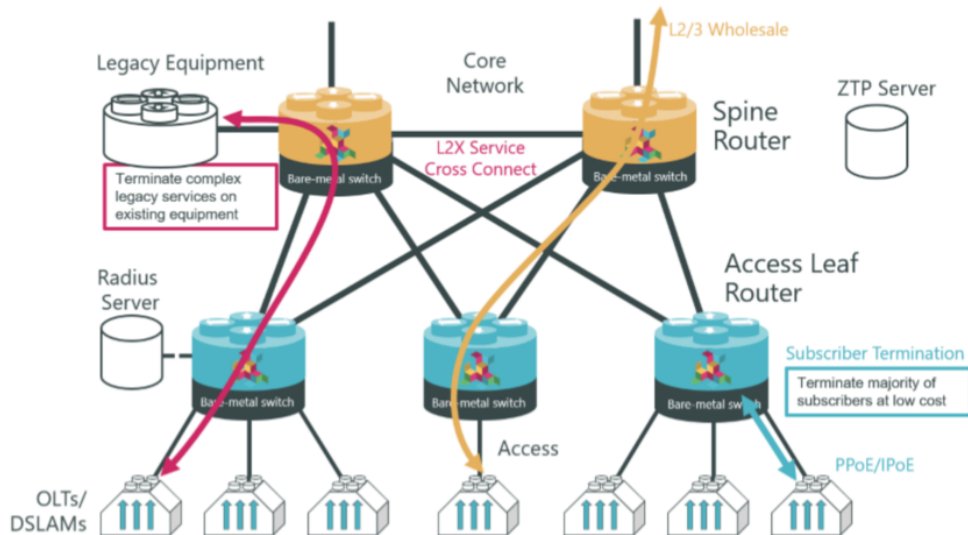


Figure 2. RtBrick BNG PoD architecture

So your RtBrick BNG can also act as a service cross-connect, routing each subscriber to the appropriate network infrastructure and extending the life of your high-cost legacy BRAS or BNG systems, for example.

3. Management and Operations

Along with the traditional CLI and SNMP, more 'cloud-native' means of interactions are also supported, such as gNMI and Netconf.

RtBrick's Management System, RBMS, takes this a step further, by providing network level workflows such as Image Lifecycle Management, Network Upgrades and Event and Log Management. RBMS actions are available through REST APIs making them easy to integrate into existing OSS systems. RBMS provides a single point of interaction for operations staff – from provisioning and management to monitoring and debugging.

The result is a BNG that can be managed using the latest Web2.0 tools through a 'single pane of glass', with Zero-Touch-Provisioning.

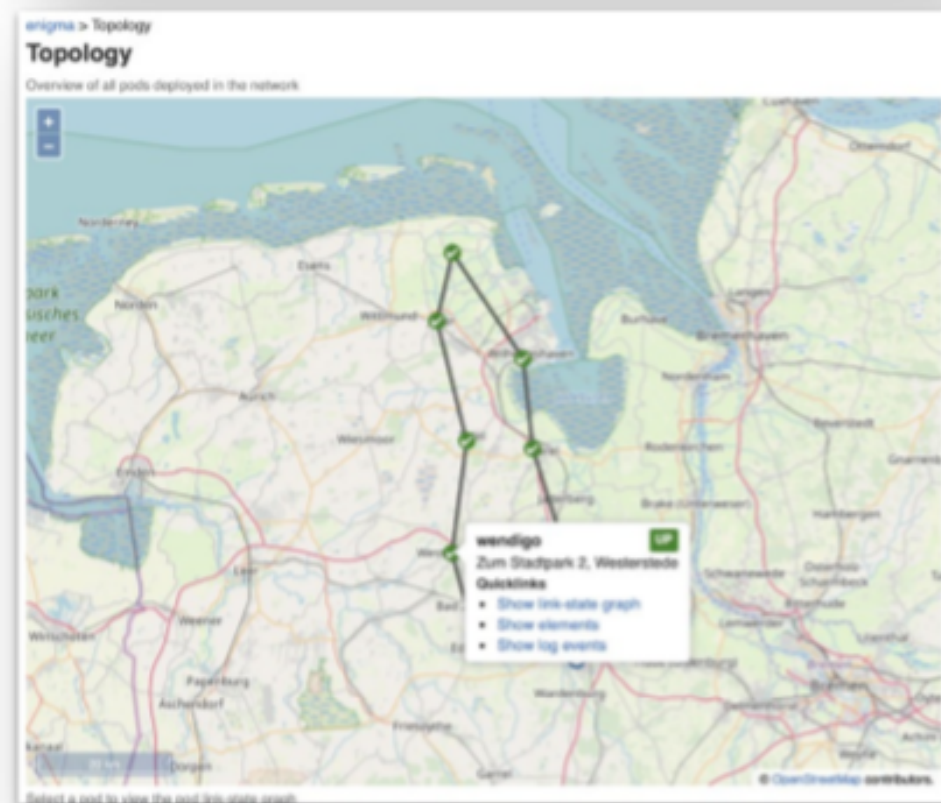
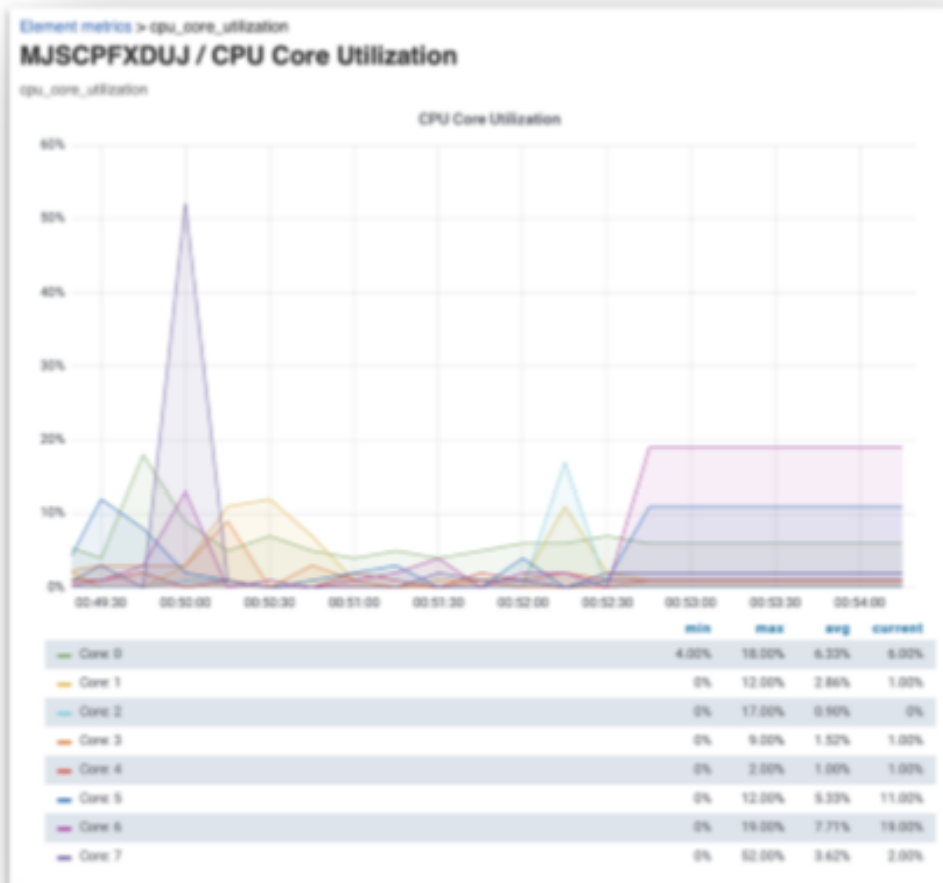


Figure 3. RtBrick Management System example