



## Broadcom Expands Ethernet Switch Software Suite with Industry's First Fully Open Source Software Development Kit

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### Open APIs and source code of the Ethernet Switch Software Development Kit accelerate development and deployment of networking stacks

SAN JOSE, Calif., Jan. 30, 2018 (GLOBE NEWSWIRE) -- Broadcom Limited (NASDAQ:AVGO), today announced the immediate availability of SDKLT, the industry's first fully open source Software Development Kit (SDK) for Ethernet switch ASICs. SDKLT offers a revolutionary table-driven approach to configure Ethernet switch ASICs, and is built to accelerate the software development of high-performance networking infrastructure. The release of SDKLT further establishes Broadcom's position as the market leader in not only providing Ethernet switch silicon, but also in delivering an open, scalable, and high-performance switch SDK.

By offering a complete open source SDK, Broadcom takes a significant step forward towards fulfilling the vision of an entirely open networking ecosystem. Now, hardware vendors, network OS providers, and SDN controller developers can readily build and customize their switch APIs. They can also freely redistribute their enhancements and leverage the community to quickly deliver high-quality solutions to the market.

The innovative logical table-based approach used in SDKLT greatly simplifies the task of configuring the feature-rich Ethernet switch silicon in use today. With this approach, all device physical resources such as MAC Address Tables, L3 route tables, etc. are presented to users as explicitly defined logical tables instead of specific function calls.

The new switch software approach empowers data center operators with greater control over their infrastructure resources. SDKLT introduces new ways to monitor, analyze, and provision switch resources, all through the use of industry standard automation tools. Network OS and SDN applications will benefit from this new level of operational efficiencies which are realized through the flexible transaction management, device resource visibility, and performance improvements offered by SDKLT.

"We are delighted to announce another industry first with our fully open source SDKLT to accelerate the development and deployment of Broadcom's switch silicon," said Ram Velaga, senior vice president and general manager of switching products. "SDKLT brings a fresh, state-of-the-art software development approach to the broader community of network software developers where they can now fully and directly control and monitor the rich switch feature set optimized for SDN and cloud use cases."

The first open source offering of SDKLT is based on the BCM56960 Tomahawk® switch, the industry's most popular data center ToR and fabric device, and is supported by a wide and robust group of ecosystem partners. SDKLT open source code is [now available on GitHub](#) and the logical table APIs are Apache 2.0 licensed. This enables users to build, customize, and share innovation across a wide range of switch platforms and developers.

#### Key Attributes and Benefits of the New SDKLT Software:

- Open source code and the logical table APIs are released under Apache 2.0 license
- Device behavior is managed by logical tables via small set of APIs
- Logical table APIs designed to readily support RPC-able client-server model
- Full device provisioning and control through automation (CLI, Yaml, XML, etc.)
- Performance optimized software architecture
- High visibility and control over device resources provides optimal resource management
- Flexible transaction management with comprehensive support for batched or atomic operations via single API call
- Architected for High Availability (HA) including support for Soft Error Recovery, Warmboot, and In Service Upgrade

#### Industry Support

##### Cloud Network Operators and Original Equipment Manufacturers (OEMs)

###### Dr.Han Li, Director of CMCC Network Institute, China mobile

"CMCC applauds Broadcom's decision to open source SDKLT on its flagship Tomahawk product. It is a great step forward in accelerating innovation in the SDN and datacenter use cases. We look forward to continuing our close collaboration with Broadcom in leading edge network technologies."

###### Gavin Cato, Senior Vice President Development Engineering, Dell Networking

"As pioneers and firm believers in Open Networking, we developed our Dell EMC OS10 operating system to deliver the unique flexibility necessary for a modern cloud provider. With these new SDKLT capabilities, our OS10 customers can further optimize data center infrastructure for greater efficiency and scale."

###### Yuval Bachar, Principal Engineer, LinkedIn

"Open source networking has made significant progress over the last few years, but the vendor SDK has been one of the last closed source components. It is great to see Broadcom break that barrier by providing an open source SDK. I think this is a game changing step in moving the open networking ecosystem to the next level."

###### Wen Quan, Switch product division data center product development manager, Ruijie

"Ruijie has leveraged Broadcom's industry leading switch silicon to build world class switching and routing solutions. It is great to see Broadcom open

source its innovative, high performance SDKLT on the Tomahawk device. We are convinced this step will accelerate innovation in networking and deliver more robust solutions all around."

#### **Ecosystem Partners:**

##### **Prashant Gandhi, VP and Chief Product Officer, Big Switch Networks**

"SDKLT Logical Table APIs enable Big Switch to accelerate innovations in our automation-centric and zero-touch SDN fabric solutions, which are deployed on open networking hardware platforms that leverage Broadcom switch ASICs. SDKLT being available as an open-source software is also highly synergistic with Big Switch-contributed Open Networking Linux, which together will dramatically speed up adoption of open networking solutions."

##### **JR Rivers, Co-Founder and Chief Technology Officer, Cumulus Networks:**

"As a pioneer in the development of open software for networking, Cumulus is thrilled that Broadcom is opening up its SDK. We look forward to integrating this SDK in our Cumulus Linux offerings and work closely with Broadcom to push the entire disaggregated networking ecosystem forward."

##### **Guru Parulkar, executive director of the ONF and Stanford Platform Lab**

"ONF's goal is to deliver high quality open source SDN solutions for operator networks. Broadcom has been a key contributor to ONF over the years, with contributions to multiple SDN use cases such as CORD and software-defined packet transport network (SPTN). A high performance, open source switch SDK is critical for optimized production ready networks, and we look forward to leveraging SDKLT software in current and other emerging SDN projects."

##### **Atsushi Ogata, President and CEO, IP Infusion**

"Broadcom's SDKLT offers a novel approach to device programming. As a strategic partner of Broadcom, IP Infusion is embracing this new approach as it gives the freedom to choose your own software implementation of Broadcom devices. The Logical Table APIs offered by SDKLT brings a new dimension on how we develop device-specific implementation of control plane protocols. The multi-threading and batching capabilities of SDKLT will help networks achieve higher performance and scalability, which are important for our OcnOS network operating system in the service provider market."

##### **Hannes Gerdler, CTO, rtbrick**

"From day one RtBrick has followed a declarative design pattern for our Web-scale SwitchOS 'RtBrick FullStack' (RBFS) where our developers declare the control-plane flow consisting of object, tables and table subscriptions. We are pleased to see that Broadcom is now offering a declarative style SDK for driving their Silicon. We anticipate that by using SDKLT's new style and flexibility it offers, it will help us bring out innovative products out quickly."

#### **Availability**

The SDKLT APIs and Tomahawk source code are available on [GitHub](#). For ongoing Broadcom news visit our [Newsroom](#), read our [B-Connected Blog](#), or visit us on [Facebook](#) or [Twitter](#).

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Press Contact:

David Szabados

Corporate Communications

[david.szabados@broadcom.com](mailto:david.szabados@broadcom.com)

Telephone: 1-408-433-784

 [Primary Logo](#)

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