

Brocade Workflow Composer

Powered by StackStorm

HIGHLIGHTS

- Improves IT agility by automating the entire network lifecycle—including initial provisioning, configuration, validation, and troubleshooting/ auto-remediation—with event-driven automation
- Improves business agility by integrating network automation with tool chains and processes from other IT domains for true end-to-end IT workflow automation
- Allows organizations to implement automation at their own pace with turnkey, customizable, or do-it-yourself network workflow automation, all supported in multivendor network environments
- Leverages the power of DevOps methodologies, popular open source technologies that embrace industry best practices, and a thriving technical community for collaboration and innovation

Improving IT and Business Agility through Automated Network Operations

Unlike compute, storage, or application domains, network infrastructure continues to be a barrier to improving IT and business agility and transitioning to a digital business. But with 66 percent of IT organizations aspiring to emulate successful cloud provider architectures, automation, and agility, it is clear that the network and the operational model must transform.¹

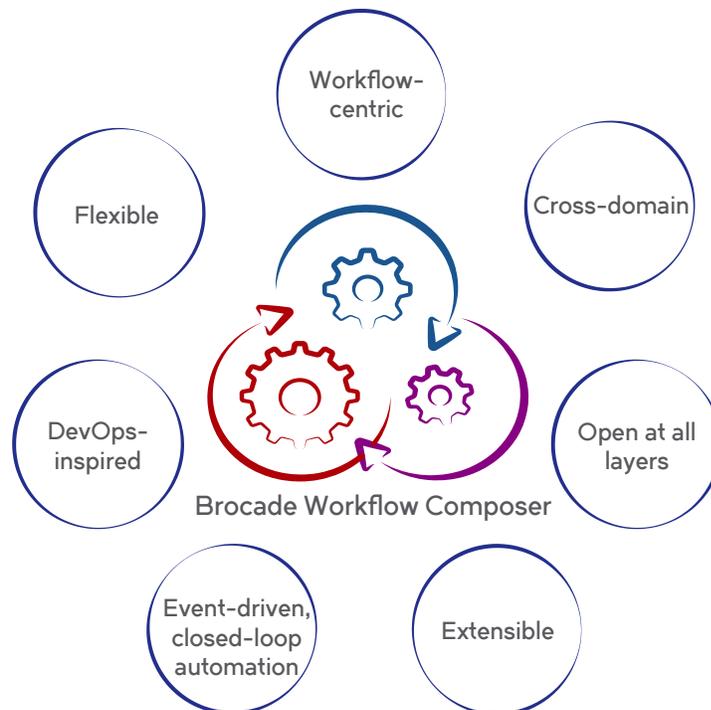


Figure 1: Brocade Workflow Composer design principles.

¹ Enterprise Strategy Group, ESG Research Report: Trends in Data Center Networking, February 2016.

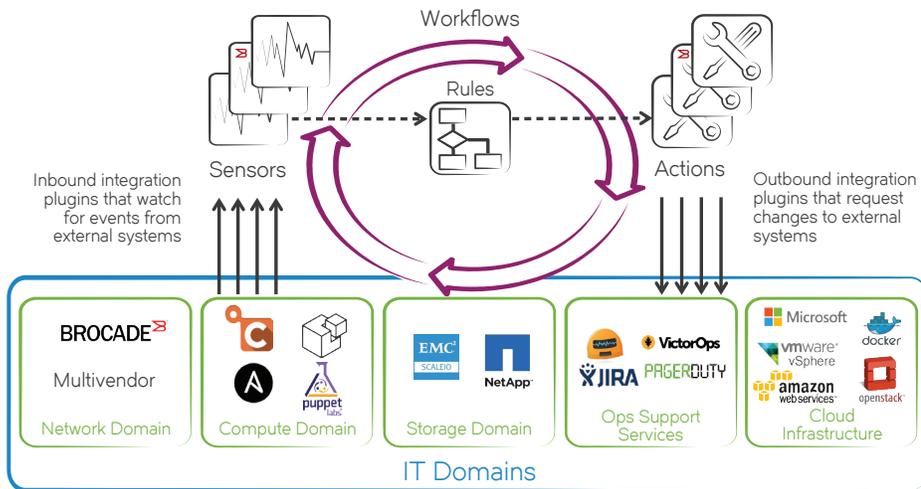


Figure 2: Anatomy of Brocade Workflow Composer.

For this to happen, organizations need a workflow-centric, cross-domain automation solution that leverages the power of DevOps methodologies, popular open source technologies, industry best practices, and a thriving technical community for peer collaboration and innovation. Brocade® Workflow Composer™ is a network automation platform built on the powerful and widely used StackStorm open source project. It is designed to automate the entire network lifecycle and enable cross-domain workflows to deliver split-second, cross-domain automation for improved IT and business agility.

Workflow-Centric Automation

To enable network lifecycle and cross-domain automation, organizations must think in terms of workflows.

A workflow is a series of steps and logic assembled and executed to accomplish a business or technical objective. More important, workflows are a proven mechanism for converting manual operations and business rules into IT services delivery at scale. They also can vary in complexity. Workflows can be single-domain, such as provisioning a network device or service, or they can

be cross-domain, such as detecting a network device issue and automatically creating and assigning a help desk ticket if the issue cannot be resolved automatically.

Brocade Workflow Composer provides turnkey, customizable, or do-it-yourself network workflow automation. Turnkey workflows ease the transition to automation by automating frequently performed tasks, such as provisioning and configuring an entire network fabric from scratch, adding a device to an existing network architecture, configuring BGP, validating a network configuration, or even troubleshooting common issues. Do-it-yourself workflows are created by organizations and executed through Brocade Workflow Composer to meet unique customer requirements, such as automating multivendor network platforms or other technologies.

Cross-Domain Workflow Automation Powered by StackStorm

Built on the StackStorm open source project, Brocade Workflow Composer can integrate with and automate cross-domain technologies to provide cross-domain workflow automation. The StackStorm open source project is an event-driven,

cross-domain automation platform already in use by many mega-scale service providers and IT organizations.

Brocade Workflow Composer, leveraging StackStorm components and architecture, accomplishes this cross-domain integration by using customizable sensors and actions (see Figure 2).

Sensors and Actions

Sensors are inbound integration points that watch for specific events from external systems. When an event occurs, the sensor triggers the corresponding workflow based on rules. Rules also provide the ability to tie cross-domain workflows together. For example, when a new leaf switch registers, a sensor detects that event and then triggers the “Configure IP Fabric Leaf” workflow. Or, when a compute platform sensor detects storage capacity shrinking below thresholds, it triggers a remediation workflow to archive log files. Additionally, this sensor can trigger a Slack message to notify the user of the condition and that the condition has been remediated.

POWERED BY STACKSTORM

Brocade Workflow Composer leverages the StackStorm event-driven automation platform to provide network lifecycle and cross-domain workflow automation. This free open source project has a growing community of users and contributors. To date, StackStorm provides nearly 2,000 points of integration with commonly used platforms such as Amazon, Azure, VMware, Docker, and OpenStack. To learn more about the StackStorm open source project, supported integrations, the StackStorm community, or to download StackStorm, visit www.stackstorm.com.

Actions are outbound integration points that request changes to external systems. Actions are invoked either by users via the Brocade Workflow Composer Admin UI, a Command Line Interface (CLI), a

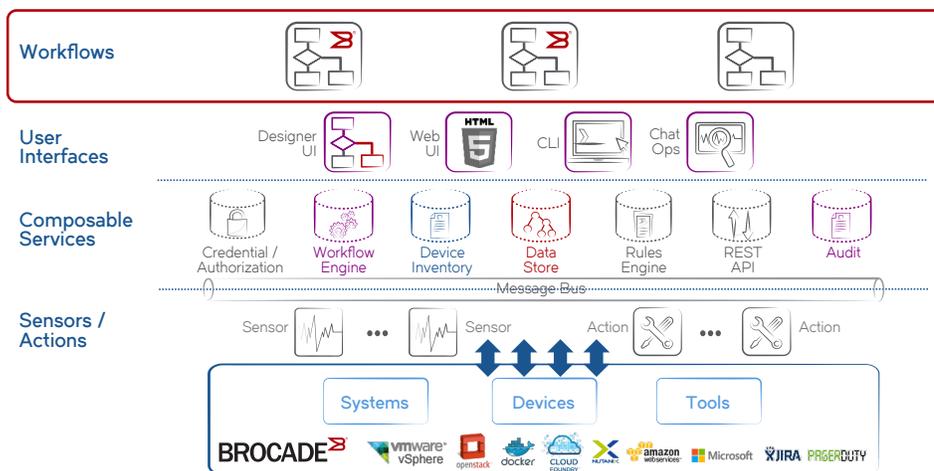


Figure 3: The Brocade Workflow Composer architecture is open at all layers.

ChatOps window, or by workflows. For example, when a “Configure IP Fabric Leaf” workflow is run, it uses a Network Configuration Protocol (NETCONF) action to configure the IP, Border Gateway Protocol (BGP), and other settings on the switch.

With this unique, open, and customizable approach, workflows can respond to events and execute actions in a programmatic way on virtually any network device, cross-domain platform, or application.

Open at All Layers

Brocade Workflow Composer is open at all layers, enabling customization to meet unique requirements and to foster innovation and collaboration from the community and automation ecosystem (see Figure 3). At the top of the Brocade Workflow Composer architecture are turnkey workflows, which are open and customizable. Organizations can also choose to develop their own workflows from scratch. The Composable Services layer lists examples of the microservice-based framework that is at the heart of Brocade Workflow Composer. Each service is either openly accessible via APIs or open-sourced for greater extensibility.

Finally, the Sensors and Actions layer represents the open points of integration provided by Brocade, StackStorm, or the community, and are needed to enable cross-domain workflow automation. With a highly extensible architecture that is open at all layers, the Brocade Workflow Composer automation platform can integrate with virtually any IT technology or platform.

GETTING STARTED

Brocade Workflow Composer is available as a free 90-day evaluation.

To download an evaluation copy, select the Free Trial option from www.brocade.com/workflowcomposer and follow the instructions.

Ordering Information

Brocade Workflow Composer comprises the Brocade Workflow Composer network automation platform and various automation suites. The network automation platform includes all required microservices, LDAP and RBAC security, the Brocade Workflow Composer Web-based Admin UI for managing Brocade

Workflow Composer components, and the Brocade Workflow Composer Designer UI for creating new workflow code using drag-and-drop methods. Each automation suite consists of related actions, sensors, and turnkey workflows. All automation suite components are engineered, documented, and tested to work seamlessly with the Brocade Workflow Composer automation platform to provide specific automation capability. And because Brocade Workflow Composer is open at all layers, all components are open and extensible to meet unique requirements.

Brocade Workflow Composer 2.0 includes the Brocade Workflow Composer network automation platform and the Brocade IP Fabric Automation Pack. The IP Fabric Automation Pack can provision a Layer 3 IP fabric and BGP-EVPN on any Brocade VDX® switching platform running Brocade Network OS 7.0.1 (or later versions) to ensure a seamless out-of-the-box experience and help IT organizations more easily transition to Layer 3 fabrics and automation. Future automation packs will be provided for provisioning Brocade VCS® fabrics, provisioning data center tenants, troubleshooting and remediating BGP, and supporting additional hardware such as the Brocade SLX and Brocade MLXe platforms.

Brocade Global Services

Brocade Global Services has the expertise to help organizations build scalable, efficient cloud infrastructures. Leveraging 20 years of expertise in storage, networking, and virtualization, Brocade Global Services delivers world-class professional services, technical support, and education services, enabling organizations to maximize their Brocade investments, accelerate new technology deployments, and optimize the performance of networking infrastructures.

Acquisition Options That Match Balance Sheet Objectives

Successful network deployments drive business forward, providing technical and financial agility. Brocade offers the broadest financing models, from traditional leasing to Brocade Network

Subscription. Network-as-a-Service allows organizations to subscribe to network assets today then upgrade on demand, scale up or down, or return them with 60-day notification. Brocade Network Subscription plans can be structured to meet IASC guidelines for OpEx or CapEx treatment to align with financial goals. Learn more at www.nonetworkcapex.com.

Maximizing Investments

To help optimize technology investments, Brocade and its partners offer complete solutions that include professional services, technical support, and education. For more information, contact a Brocade sales partner or visit www.brocade.com.

Brocade Workflow Composer Ordering Information

Part Number	Description
BR-BWC-Ent2.0-1yr-S-01	Includes one-year subscription for the Brocade Workflow Composer 2.0 network automation platform per data center or admin domain, Brocade IP Fabric Provisioning Automation Pack, and Brocade Technical Support

Brocade Workflow Composer Specifications

Server OS	<ul style="list-style-type: none">• RHEL 6.x, 7.x, CentOS 6.x, 7.x, Ubuntu 14.04
Server CPU	<ul style="list-style-type: none">• Testing: 2×CPU cores• Production: 4×CPU cores
Server memory	<ul style="list-style-type: none">• Testing: 1 GB RAM• Production: >16 GB RAM
Server storage	<ul style="list-style-type: none">• Testing: 10 GB• Production: 40 GB
Programming languages	<ul style="list-style-type: none">• Puppet, Python, Mistral, Ansible, Ruby
Network devices	<ul style="list-style-type: none">• Brocade VDX 6740, 6740T, 6740T-1G; 6940; 8770• Brocade Network OS 7.0.1• Brocade SLX 9850, Brocade SLX-OS (Fall 2016)• Brocade MLXe, Brocade NetIron® OS 5.8 (Fall 2016)
Language models and APIs	<ul style="list-style-type: none">• YANG, NETCONF, YAML, REST

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