BIG-IQ Cloud
DATASHEET

Automate Application Networking Services in the Cloud

F5® BIG-IQ™ Cloud automates and orchestrates the deployment of F5 BIG-IP® devices across traditional and cloud infrastructures. BIG-IQ Cloud supports dynamic provisioning of devices in VMware, Amazon, and OpenStack cloud environments.*

A key component in the F5 Synthesis™ architecture, BIG-IQ enables organizations to seamlessly provision, manage, and scale a rich set of application services irrespective of form factor (hardware, software, cloud) or deployment model (on-premises, private/public cloud, hybrid). BIG-IQ also supports integration with other ecosystem participants such as public cloud providers and orchestration engines through cloud connectors and through a comprehensive set of open APIs. Complementing the orchestration capability of BIG-IQ is a multi-tenant approach to management. This allows organizations to move closer to IT as a Service without concern that it might affect the stability or security of the services fabric.

Key benefits

Simplify provisioning and consolidate management
Reduce provisioning time from weeks to minutes using an integrated provider portal through which you can manage devices, tenants, connectors, and applications, and offer tenants a self-serve provisioning portal to manage ADC services.

Integrate flexibly
Use cloud connectors to connect with third-party orchestration tools.

Enable cloud bursting
Extend to the public cloud infrastructure using the BIG-IQ Cloud REST API.

Gain cloud visibility
Get a view into application health with health status visibility across private, public, and hybrid clouds.

*Automatic deployment to VMware and OpenStack environments to be available later in 2014.

What Is BIG-IQ Cloud?

BIG-IQ Cloud a key component of the F5 Synthesis architecture, providing orchestration of software defined application services™ (SDAS™) throughout data center, cloud, and hybrid environments.

BIG-IQ Cloud automates and orchestrates the deployment of BIG-IP devices across traditional and cloud infrastructures. The product helps deploy and manage application delivery services in a fast, consistent, and repeatable manner, regardless of the underlying infrastructure.

BIG-IQ Cloud integrates with existing cloud orchestration engines such as VMware vCloud Suite/NSX and OpenStack through cloud connectors or to others such as those from IBM, HP, Microsoft, and more through the BIG-IQ Cloud comprehensive set of RESTful APIs.
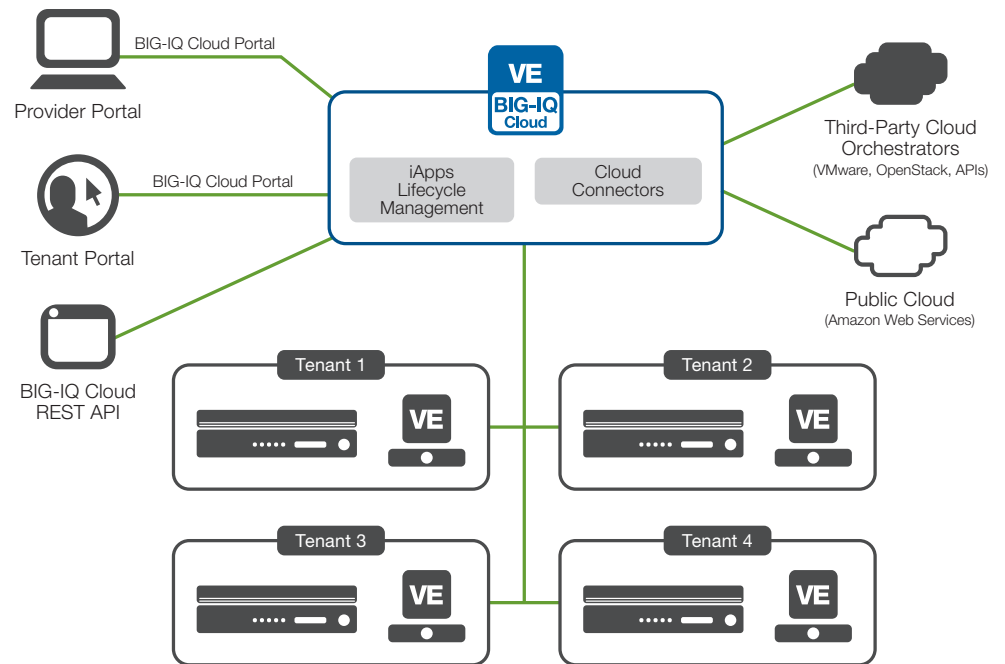
F5 BIG-IQ Cloud components integrate and collaborate to provide consistent, cross-environment management of application network services.

Key Features

The following table lists BIG-IQ Cloud key features for providers and tenants.

For Providers	For Tenants
• Define and catalog F5 iApps® to supply tenants with self-service access to resources, including servers, storage, applications, and services.	• View and deploy applications from a pre-defined catalogue of iApp applications.
• View and track BIG-IP resources and devices both locally and in the cloud.	• Automatically provision BIG-IP VE in cloud environments.
• Monitor the health and performance of BIG-IP devices.	• Start and stop application servers automatically (burst) based on health and performance metrics.
• Use license management to grant and revoke BIG-IP licenses as resource demands change.	• Enable discovery of BIG-IP devices and comprehensive view of BIG-IP devices across multiple clouds.
• View all tenants, applications, and devices through a single web portal.	• View server health and performance metrics and troubleshoot problem with Service Health and Performance Monitoring.
• Get role-based access control for multiple tenants.	• Integrate with VMware NSX, Amazon EC2, and OpenStack.
• Integrate into management and orchestration systems through the BIG-IQ comprehensive set of RESTful APIs.	
• Integrate with private and public cloud connectors for VMware, OpenStack, and Amazon.	

Reference Architectures: How to Use BIG-IQ Cloud

How you use BIG-IQ Cloud is limited only by your imagination. To get you started, F5 suggests two reference architectures to consider: Cloud migration and cloud bursting.

Cloud migration

BIG-IQ Cloud federates management of BIG-IP products across both traditional and cloud infrastructures, helping enterprises to deploy and manage application delivery services in a fast, consistent, and repeatable manner. Integration with cloud environments from VMware, Amazon, and OpenStack provides extensive options for migrating data center functions into the cloud.

Cloud bursting

Many applications have unpredictable usage requirements. Bursts of capacity might be needed to meet sudden business or technical needs. BIG-IQ Cloud can monitor application performance and spin up or spin down compute resources in private or public clouds to meet spikes in demand.

Learn more about F5 reference architectures.

Simplified Provisioning

As your IT department transitions to cloud deployment models, users need to be able to provision applications and services in the cloud without relying on IT. Otherwise, cloud advantages are negated by inefficient, costly operational processes.

iApps Lifecycle Management

BIG-IQ Cloud Lifecycle Management performs create, read, update, and delete (CRUD) operations on iApps Templates, and through iApps, you can discover and customize apps, allow for application configuration changes, and also decommission an application service. BIG-IQ Cloud maintains a catalog of F5 iApps® Templates—flexible, app-centric templates that enable you to quickly deploy services using optimal configurations. With iApps Templates, an administrator uses a central interface to easily deploy apps in multiple tenants, and can attach different services to each application. Once an iApp has been customized for the tenant's needs, it can be easily deployed across tenants on multiple BIG-IP devices.

Consolidated Management

Without the appropriate network integration, administrators will have to toggle between multiple management consoles to provision end-to-end services, wasting valuable time and expertise. BIG-IQ Cloud can be integrated with other third-party management and orchestration systems through cloud connectors for VMware, OpenStack, or Amazon or through its REST-based API. System administrators can efficiently configure self-serve application-related services through a single console—eliminating errors and boosting productivity.

Provider and tenant self-service portals

BIG-IQ Cloud provides a web-based portal that offers application networking self-services across multiple tenants and devices. The portal provides a comprehensive view into all available BIG-IP devices (virtual or physical), apps, tenants, and cloud connectors in a single UI. There are two different views: a provider view and a tenant view.

The provider view includes a comprehensive list of services, including:

- A catalog of application networking services.
- Deployed tenants.
- Available applications to service from.
- A list of available customized connectors.
- An inventory of BIG-IP devices.

The tenant view contains a subset of the provider view. Tenants can further customize ADC services within limits set by the provider.

### Service health and performance monitoring

BIG-IQ Cloud provides a view into application health with health status visibility across private, public, and hybrid clouds. The provider and tenant views indicate application health status through red and green indicators. This enhanced visibility enables you to proactively monitor application health.

Integrate with Existing Cloud Tools

As cloud administrators leverage the public cloud to reduce CapEx, they need central visibility and control of what is moving from their private cloud into the public cloud. This saves significant administration time and consolidates cloud management and monitoring tools into a single dashboard for full visibility into cloud orchestration.

Cloud connectors

BIG-IQ Cloud connects with third-party orchestration tools. For instance, F5 created a customized private cloud connectors from BIG-IQ Cloud to VMware, OpenStack, and Amazon's EC2 public cloud environment. This connector enables two-way communication between BIG-IQ Cloud and these orchestration systems so that BIG-IQ Cloud can also interface with any third-party cloud orchestrator that can use REST-based APIs.
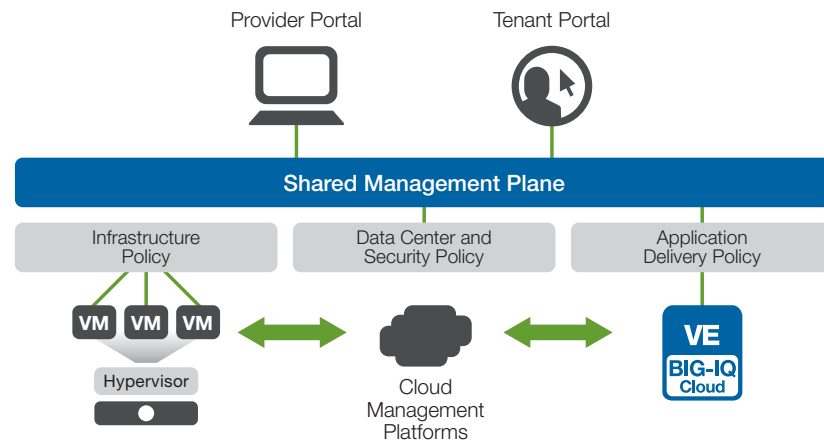
BIG-IQ Cloud enables integrated management of the application network services required to deliver applications in the cloud.

BIG-IQ Cloud REST API

The BIG-IQ Cloud REST API enables integration with third-party cloud orchestrators and supports cloud bursting. It is exposed through port 443 and offers RBAC, SSL, and basic authentication support. The BIG-IQ Cloud REST API includes several categories:

Minimum Requirement	Recommended
Provider interface	Licensing functionality
Connector	Create custom cloud connections with third-party cloud orchestrators
Tenant	Create, modify, and delete tenants
iApps Management Service	Create, delete, and retrieve statistics and health of application services
Tenant Services	Create, delete, and retrieve tenant service instances

Enable Cloud Bursting

Your cloud strategy can comprise both private and public clouds, so interoperability between these discrete environments is crucial. When demand for computing capacity spikes, you may "burst" through to a public cloud to take advantage of additional resources. You may also fluctuate between types of resources—sometimes using virtual servers, other times physical. With your application hosting infrastructure distributed across multiple clouds and multiple types of resources, having the appropriate application networking service intelligence for provisioning is a necessity.

Cloud bursting to Amazon Web Services

BIG-IQ Cloud Connectors for the public cloud assist in bursting application capacity. Cloud connectors use the REST-based API to provision a secure tunnel between private and public clouds to establish a secure control session between BIG-IQ Cloud and the BIG-IP virtual editions in the public cloud. A secure data session between BIG-IP devices in the private cloud and BIG-IP virtual editions in the public cloud accelerates the data traffic between BIG-IP devices in private and public clouds.
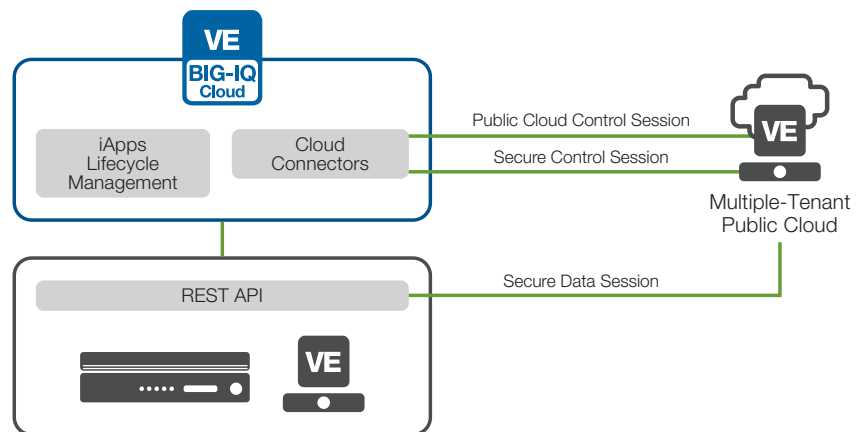
The F5 BIG-IQ Cloud Connector architecture shortens the provisioning process for application delivery via both private and public clouds.

Better Visibility in the Cloud

Your IT department needs to be able to migrate apps and services in and out of the cloud, to integrate with on-premises infrastructure, and to achieve cloud federation. The ability to port applications and services to different cloud environments is key to taking advantage of the flexibility of the cloud. To that end, BIG-IQ Cloud offers maximum efficiency by enabling you to centrally provision, manage, and gain insight into service usage through a central interface.

BIG-IQ 7000 Platform

BIG-IQ Cloud is available as a virtual edition or on an appliance-based management device shipped on a dedicated enterprise-grade platform. Providing single vendor accountability and consistent BIG-IP hardware for non-virtualized environments, the BIG-IQ 7000 platform provides the same quality and reliability of F5's purpose-built hardware platforms to manage your BIG-IP devices.

Specifications	7000
Intelligent Traffic Processing:	L7 requests per second: 800K; L4 connections per second: 390K L4 HTTP requests per second: 3.5M; Throughput: 40 Gbps/20 Gbps L4/L7
Hardware SSL:	Included: 15,000 TPS (2K keys) Maximum: 15,000 TPS (2K keys); 18 Gbps bulk encryption*
FIPS SSL:	N/A
Hardware DDoS Protection:	20M SYN cookies per second
Hardware Compression:	N/A
Software Compression:	Included: 9 Gbps; Maximum: 9 Gbps
Software Architecture:	64-bit TMOS
On-Demand Upgradable:	Yes
Processor:	1 quad core Intel Xeon processor (total 8 processing cores)
Memory:	32 GB
Hard Drive:	Two 1 TB (RAID 1)
Gigabit Ethernet CU Ports:	4
Gigabit Fiber Ports (SFP):	Optional SFP
10 Gigabit Fiber Ports (SFP+):	8 SR or LR (sold separately, 2 SR included)
40 Gigabit Fiber Ports (QSFP+):	N/A
Power Supply:	Two 400W included (80 Plus Gold Efficiency), DC optional
Typical Consumption:	205W (dual supply, 110V input)
Input Voltage:	90-240 VAC, 50/60hz
Typical Heat Output:	700 BTU/hour (dual supply, 110V input)
Dimensions:	4.45" (8.76 cm) H x 17.3" (43.94 cm) W x 21.4" (54.36 cm) D 2U industry standard rack-mount chassis
Weight:	40 lbs. (18.14 kg) (dual power supply)
Operating Temperature:	32° to 104° F (0° to 40° C)
Operational Relative Humidity:	10 to 90% @ 40° C
Safety Agency Approval:	ANSI/UL 60950-1-2011, CSA 60950-1-07, including Amendment 1:2011 Low Voltage Directive 2006/95/EC, CB Scheme
Certifications/ Susceptibility Standards:	EN 60950-1:2006+A11:2009+A1:2010+A12:2011, IEC 60950-1:2005, A1:2009 EN 300 386 V1.5.1 (2010-10); EN 55022:2010; EN 61000-3-2:2006+A1:2009+A2:2009; EN 61000-3-3:2008; EN 55024:2010; EN 55022:2010; EN 61000-3-3:2008; EN 55024:2010; USA FCC Class A

*Maximum throughput.

F5 Global Services

F5 Global Services offers world-class support, training, and consulting to help you get the most from your F5 investment. Whether it's providing fast answers to questions, training internal teams, or handling entire implementations from design to deployment, F5 Global Services can help ensure your applications are always secure, fast, and reliable. For more information about F5 Global Services, contact consulting@f5.com or visit f5.com/services.

More Information

To learn more about BIG-IQ Cloud, visit f5.com to find these and other resources.

Solution profile

Automate Configuration of Application Networking Services in the Cloud

White paper

Managing the Cloud with BIG-IQ Cloud

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Solutions for an application world.