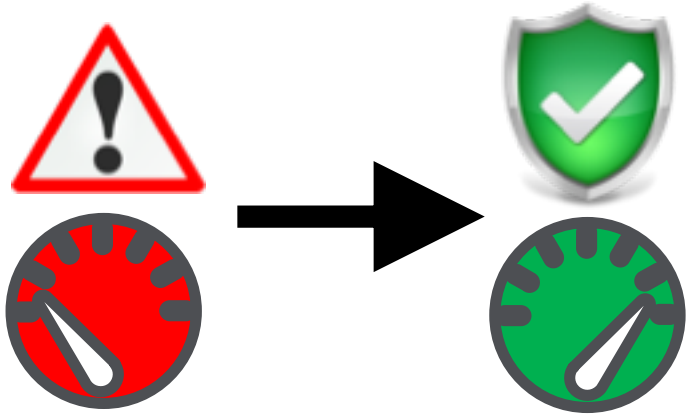

Cloud Solution
Templates

Why do I need F5's Cloud Solution Templates?



Tested & Validated

- Manual configuration of app services is time consuming and prone to error
- Templates designed and tested by F5 experts following cloud best practices.
- VE Deployments in minutes

Simple & Automated

- Templates Integrate with 3rd party automation tools such as Chef, Puppet & Ansible
- Improves efficiency while reducing cost, variability and deployment risks

Common Solutions Across Clouds

- F5 is striving towards template parity across cloud vendors
- Enabling fast & simple replication of app services across multiple cloud platforms.

General Template Information

1. These templates simplify and speed up the deployment of BIG-IP VE's in public cloud environments by packaging together all of the necessary resources and BIG-IP configuration parameters needed to launch fully functioning BIG-IP VE's in a virtual cloud network.
2. This deck contains only '*F5 supported'* templates, which are those that have been created, tested and verified by F5 Networks engineers, allowing customers to request assistance with them should they need it. There are also 'Experimental' templates on GitHub which have not been fully validated and are not subject to customer support.
3. All templates support BIG-IP v12.1.x through v13.1
4. All templates have built-in security checks, allowing customers to ensure the integrity of the template
5. All deployment times (both manual and templated times) stated in this deck are ESTIMATES, and assume the user has an intermediate level of experience with both the BIG-IP and the cloud platform in question. All times include boot time for the VE's (~20mins). Pre-req's are not included since they are required for both manual and templated deployments, but are adjudged to take around 15-20mins. It is important to note that with the more complex configurations such as the auto scaling solutions, somebody without BIG-IP or cloud experience would take much longer than the estimated times (magnitude of days to weeks) to replicate the set-up.

AWS Template Updates/Notes – Release 10

- **BIG-IQ Licensing Support for ELA / Subscription**

BIG-IP VE's launched via CFTs are now able to receive VE licenses from BIG-IQ, from either an ELA or subscription license pool - enabling quick and easy self-licensing of VE's

- **Cluster 3-NIC Same AZ**

This template launches and configures two BIG-IP VE's – each with 3 network interfaces – in a clustered, highly available configuration in a single AWS Availability Zone. The instances are deployed in an Active-Standby configuration and are used as a single device for failover

- **CFT's Now Allow Use of Custom BIG-IP Images**

Customers can now use a custom BIG-IP image with all CFT's if necessary. Tey simply add the AMI ID in the 'Custom Image ID Field', and the custom image launches, allowing greater flexibility for cloud deployments. For example, if a customer has an engineering HF, they can easily swap it out.

Azure Template Updates/Notes – Release 10

- **BIG-IQ Licensing Support for ELA / Subscription**

BIG-IP VE's launched via CFTs are now able to receive VE licenses from BIG-IQ, from either an ELA or subscription license pool - enabling quick and easy self-licensing of VE's

- **HA Cluster, Failover-API now supports multi-NIC**

This template now includes the option of launching with additional NIC's, which is useful when the BIG-IP VEs requires more than 3 network interfaces

- **ARM's Now Allow Use of Custom BIG-IP Images**

Customers can now use a custom BIG-IP image with all ARM templates if necessary. They simply add the URL to the VHD in Azure Storage, or the full resource ID to an existing Microsoft.Compute image resource, and the customer BIG-IP image launches.

- **Option of using SSH public key for authentication**

All ARM templates now give you the option of using a password or SSH public key for authentication, providing greater flexibility and security

Google Template Updates/Notes – Release 10

- *None*

OpenStack Template Updates/Notes – Release 10

- *None*

VMWare Template Updates/Notes – Release 10

- **BIG-IQ Licensing Support for ELA / Subscription**

BIG-IP VE's launched via vCenter templates are now able to receive VE licenses from BIG-IQ, from either an ELA or subscription license pool - enabling quick and easy self-licensing of VE's

Azure Stack Template Updates/Notes – Release 10

- None

Supported Public Cloud Solution Templates

- 1NIC Architecture
- 2NIC Architecture
- 3NIC Architecture
- n-NIC Architecture
- 2 Clustered BIG-IP's (Same AZ - 2NIC & 3NIC)
- 2 Clustered BIG-IP's (Across AZ - 2NIC)
- Auto Scale Cloud WAF (Gbps & vCPU)
- Auto Scale Cloud LTM (Gbps & vCPU)

Microsoft Azure

- 1NIC Architecture
- 2NIC Architecture
- 3NIC Architecture
- n-NIC Architecture
- 2 Clustered BIG-IP's (A/A - 1NIC & 3NIC)
- 2 Clustered BIG-IP's (A/S 3NIC)
- Auto Scale Cloud WAF (Gbps & vCPU)
- Auto Scale Cloud LTM (Gbps & vCPU)

Google Cloud Platform

- 1NIC Architecture
- 2NIC Architecture
- 3NIC Architecture

Supported Private Cloud Solution Templates

- 1NIC Architecture
- 2NIC Architecture
- n-NIC Architecture
- HA Pair (A/S 2NIC)

Cloud Solution Templates by Use Case

Application Security

• Auto Scale Cloud WAF	[AWS, Azure]

Advanced Traffic Management

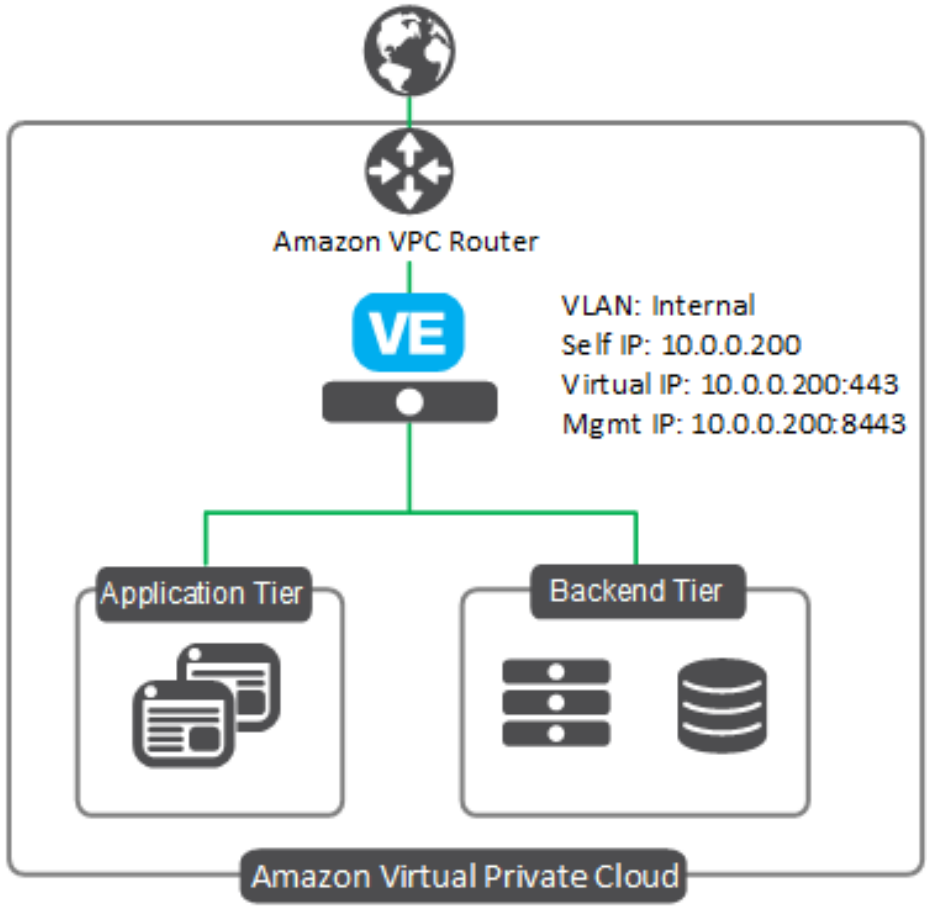
• Auto Scale Cloud LTM	[AWS, Azure]

Deployment Topologies

• 1NIC VE Deployment	[AWS, Azure, Google, OpenStack]
• 2NIC VE Deployment	[AWS, Azure, Google, OpenStack]
• 3NIC VE Deployment	[AWS, Azure, Google]
• n-NIC VE Deployment	[AWS, Azure, OpenStack]
• HA (Active/Active)	[AWS, Azure]
• HA (Active/Standby)	[Azure, OpenStack]

1-NIC BIG-IP VE Deployment on AWS

For deploying a single, standalone BIG-IP device with one network interface



Manual Deployment ~ **3+ hours**
Templated Deployment ~ **40 mins**

Deploys a standalone BIG-IP VE in a pre-existing AWS VPC, where traffic automatically flows via the VE to the application servers. The BIG-IP instance operates with 1 network interface, processing both management and data plane traffic from the internet. This is the set-up most cloud native developers are accustom to and is best for single tenant or 'per app' services.

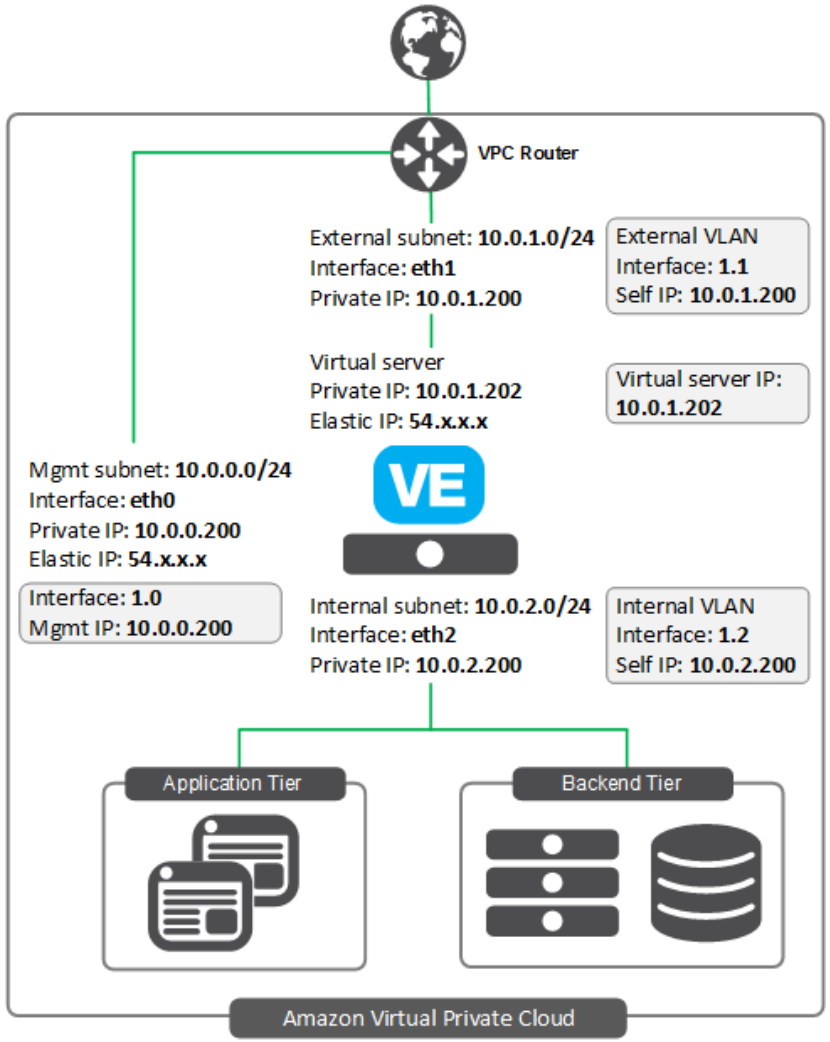
- BYOL (Perpetual, ELA & Sub) and PAYG templates available

Pre-requisites to this template can be found here

Link to GitHub

2-NIC BIG-IP VE Deployment on AWS

For deploying single, standalone BIG-IP device(s) with two network interfaces



Manual Deployment ~ **3+ hours**
Templated Deployment ~ **40 mins**

Deploys a standalone BIG-IP VE in a pre-existing AWS VPC, where traffic automatically flows via the VE to the application servers. The BIG-IP instance operates with 2 network interfaces, One for management & data-plane traffic from the internet and another for traffic from the AWS network providing greater autonomy to control the management functions

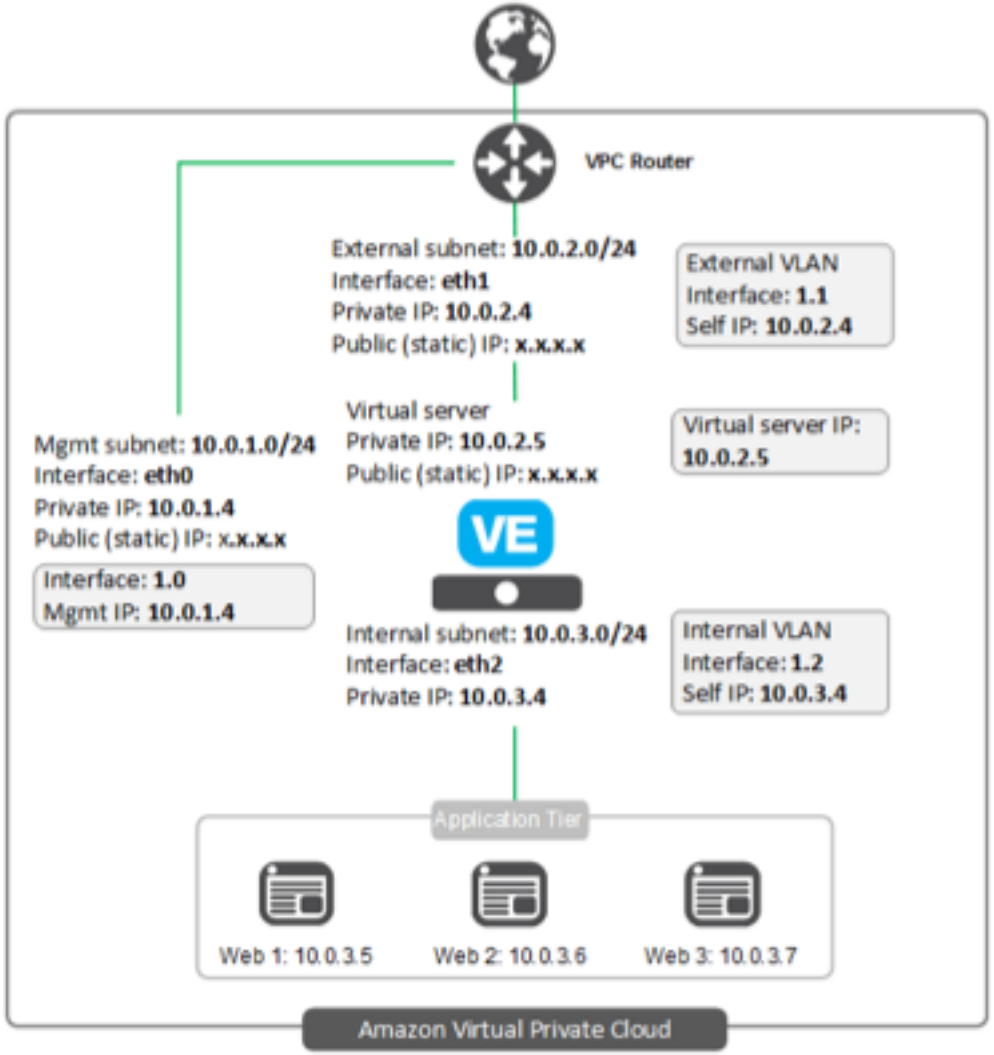
- BYOL (Perpetual, ELA & Sub) and PAYG templates available

Pre-requisites to this template can be found here

Link to GitHub

3-NIC BIG-IP VE Deployment on AWS

For deploying single, standalone BIG-IP device(s) with two network interfaces



Manual Deployment ~ **3+ hours**
Templated Deployment ~ **40 mins**

Deploys a standalone BIG-IP VE in a pre-existing AWS VPC, where traffic automatically flows via the VE to the application servers. The BIG-IP VE instance operates with 3 network interfaces and is most similar to an 'on-premise' deployment, with one interface for management, one for front-end application traffic and one for back end application traffic

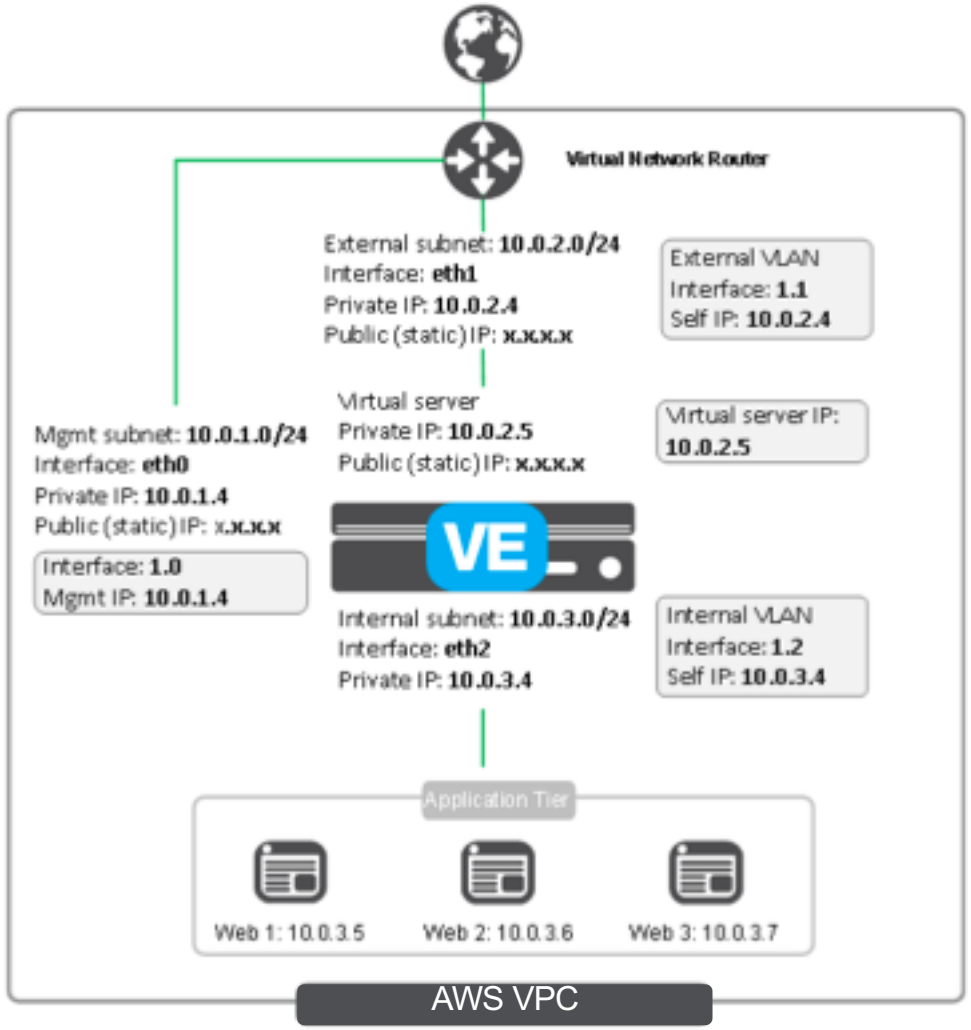
- Multi-NIC configurations are necessary when deploying multiple applications on different IP addresses, or multi-tenant configurations.
- BYOL (Perpetual, ELA & Sub) and PAYG templates available

Pre-requisites to this template can be found here

Link to GitHub

Multi-NIC BIG-IP VE Deployment in AWS

For deploying single, standalone BIG-IP device(s) with 3+ network interfaces



Manual Deployment ~ **3+ hours**
Templated Deployment ~ **40 mins**

Deploys a standalone BIG-IP VE in a new or existing AWS VPC, where traffic automatically flows via the VE to the application servers. The BIG-IP VE instance is launched with 3 network interfaces but the template has the capability to add additional interfaces (up to a total of 8). This template is useful when the VE is acting as a traffic controller requiring more than 3 interfaces.

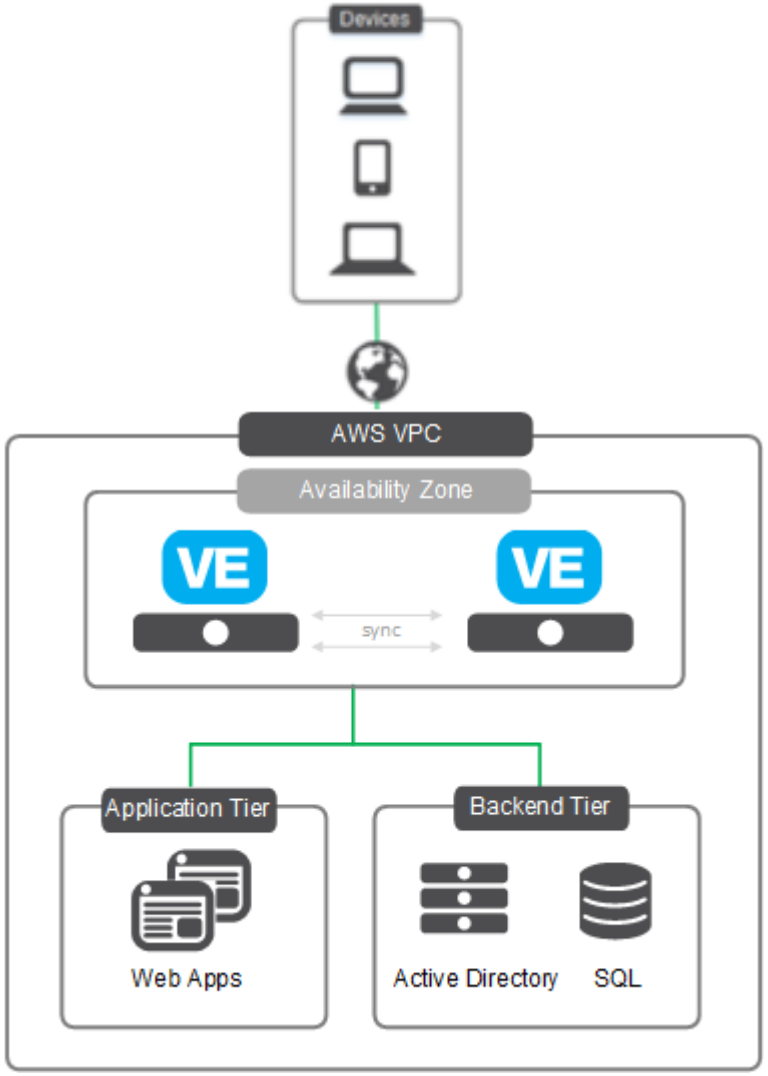
- Multi-NIC configurations are necessary when deploying multiple applications on different IP addresses, or multi-tenant configurations.
- BYOL (Perpetual, ELA & Sub) and PAYG templates available

Pre-requisites to this template can be found here

Link to GitHub

Clustered Deployment of 2 BIG-IP VE's (Same AZ – 2NIC)

For deploying BIG-IP's in parallel in the same AZ for increased availability



Manual Deployment ~ **8+ hours**
Templated Deployment ~ **40 mins**

Launches and configures two BIG-IP VE's in a single availability zone in an Active-standby arrangement for high availability, such that should one BIG-IP fail, traffic is automatically re-directed to the unaffected device until the issue is resolved.

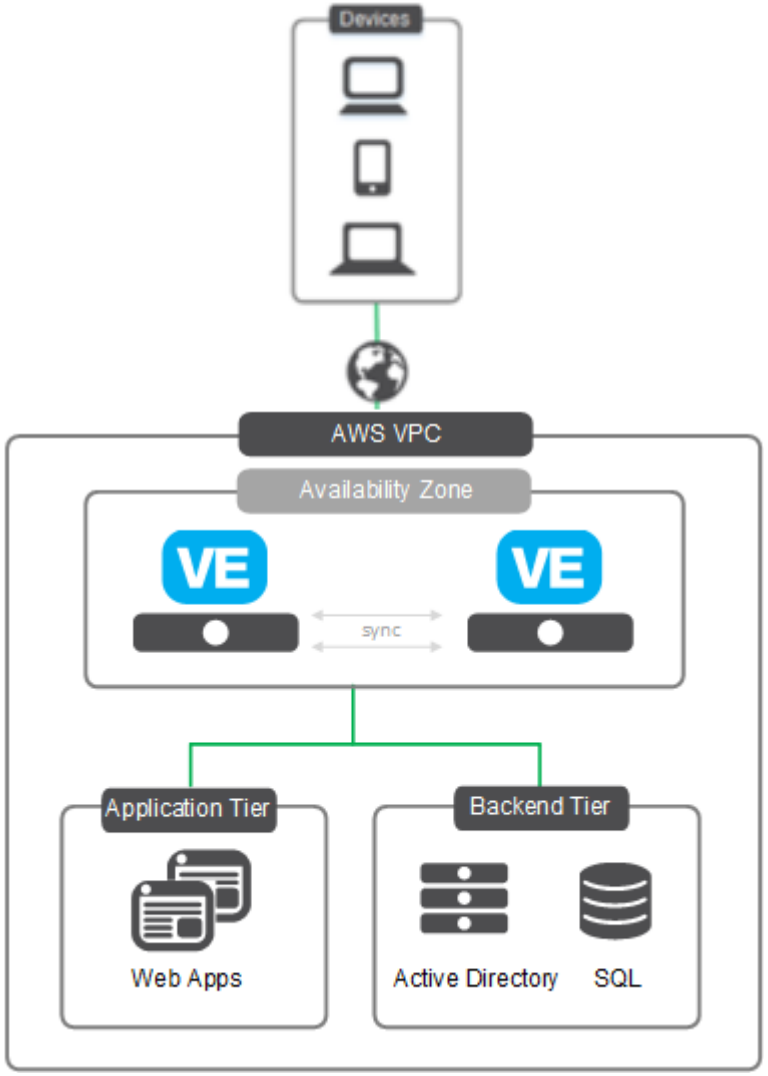
- The BIG-IP instance operates with 2 network interfaces:
  - One for management & data-plane traffic from the internet
  - Another for traffic from the AWS network
- BYOL (Perpetual, ELA & Sub) and PAYG templates available

Pre-requisites to this template can be found here

Link to GitHub

Clustered Deployment of 2 BIG-IP VE's (Same AZ – 3NIC)

For deploying BIG-IP's in parallel in the same AZ for increased availability



Manual Deployment ~ **8+ hours**
Templated Deployment ~ **40 mins**

Launches and configures two BIG-IP VE's in a single availability zone in an Active-standby arrangement for high availability, such that should one BIG-IP fail, traffic is automatically re-directed to the unaffected device until the issue is resolved.

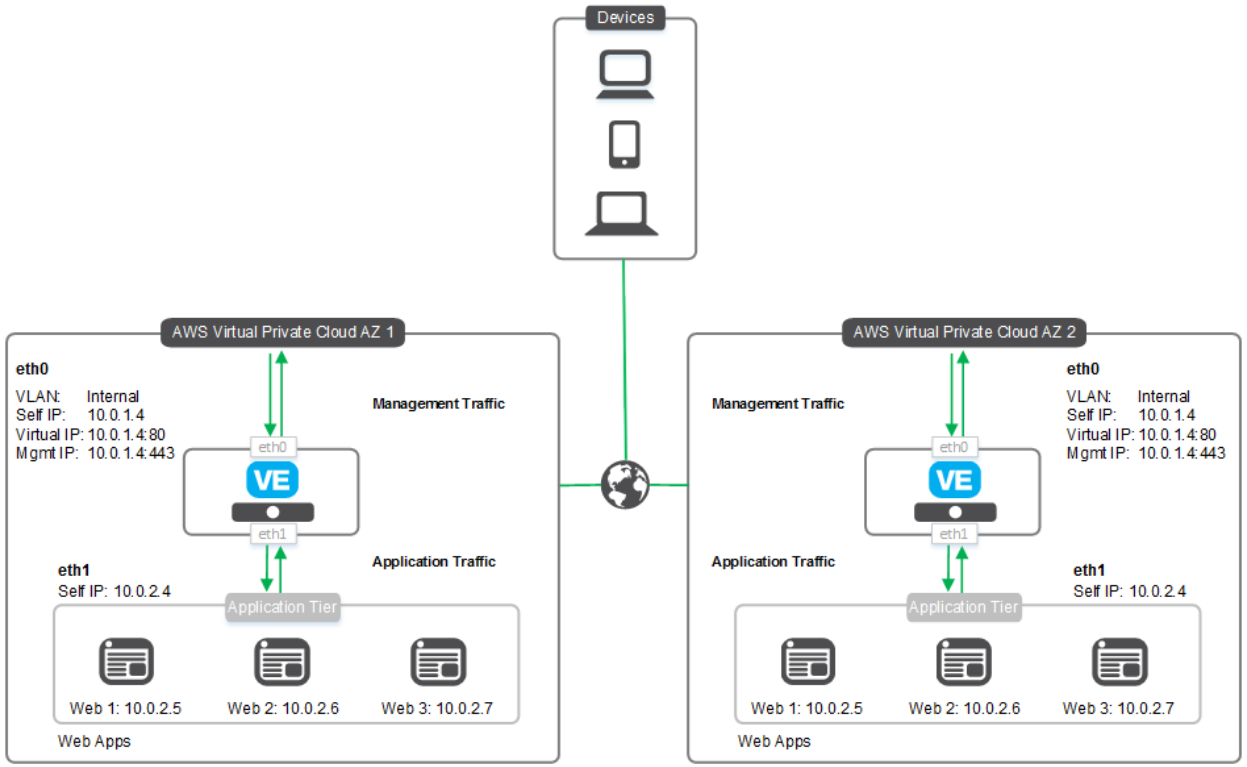
- The BIG-IP instances operate with 3 network interfaces:
  - One for management, one for front end data-plane traffic from the internet and another for back end application traffic
- BYOL (Perpetual, ELA & Sub) and PAYG templates available

Pre-requisites to this template can be found here

Link to GitHub

Clustered Deployment of 2 BIG-IP VE's on AWS (Across AZ)

For deploying BIG-IP's in parallel across AZ's for further enhanced availability



Launches and configures two BIG-IP VE's in 2 separate availability zones (AZ) in an active-standby arrangement for high availability, such that should one AZ fail, public traffic is automatically re-directed to the unaffected one.

- The BIG-IP instance operates with 2 network interfaces:
  - One for management & one for data-plane traffic from the internet
- BYOL (Perpetual, ELA & Sub) and PAYG templates available

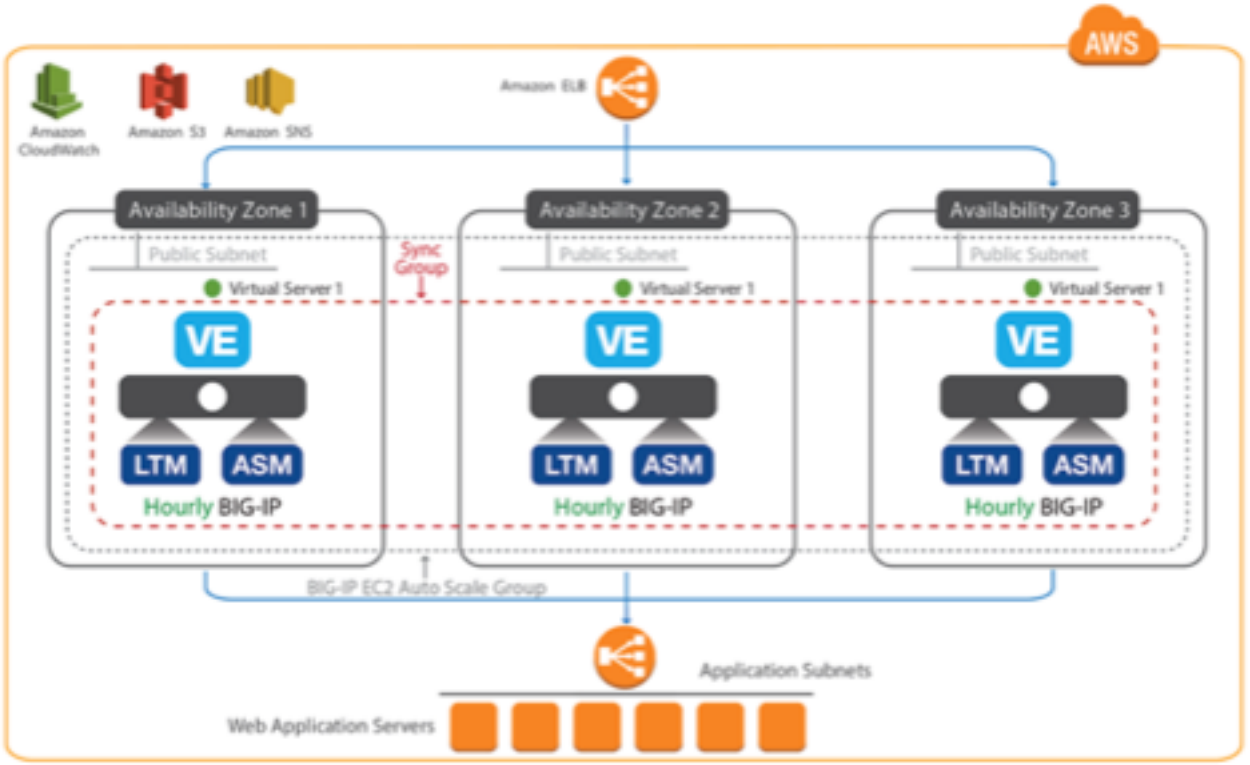
Pre-requisites to this template can be found here

Manual Deployment ~ **8+ hours**
Templated Deployment ~ **40 mins**

Link to GitHub

Auto Scale WAF deployment on AWS

For consistent application protection regardless of traffic volume or CPU utiiization



Launches a PAYG BIG-IP VE instance with LTM and ASM provisioned for intelligent traffic management and application security. As traffic or vCPU consumption fluctuates, identical instances are automatically spun up or down to provide the optimal solution for processing application traffic.

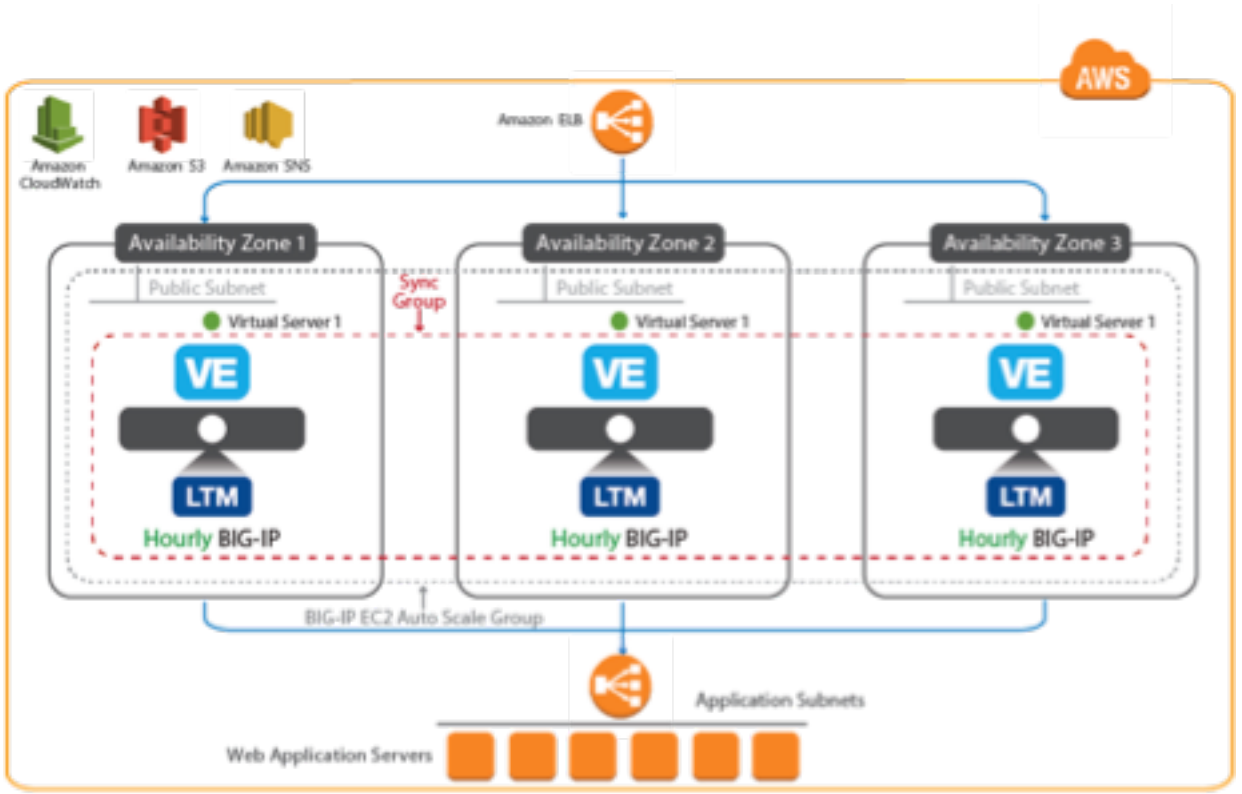
- This solution can be deployed into a **new or existing** stack.
- The BIG-IP instances operate with 1 network interface
- Scale up & Scale down events based on a pre-defined % of traffic or vCPU thresholds, typically 80% for scale up, 20% for scale down.
- AWS resources required include: S3 bucket, IAM role, CloudWatch, Auto Scale Group and SNS Topic.
- VE configurations are automatically back-up daily, in case a system restore is required.
- Available with PAYG instances or with BYOL licenses when used in conjunction with BIG-IQ.
- **Pre-requisites to this template can be found here**

Manual Deployment ~ **7+ hours**
Templated Deployment ~ **40 mins**

Link to GitHub

Auto Scale BIG-IP LTM deployment on AWS

For consistent application protection regardless of traffic volume or CPU utilization



Manual Deployment ~ **6+ hours**
Templated Deployment ~ **40 mins**

Deploys BIG-IP LTM in an Auto Scaling group, to consistently provide intelligent traffic management services to applications under varying traffic loads. As traffic or vCPU consumption fluctuates, identical instances are automatically spun up or down to provide the optimal solution for processing application traffic.

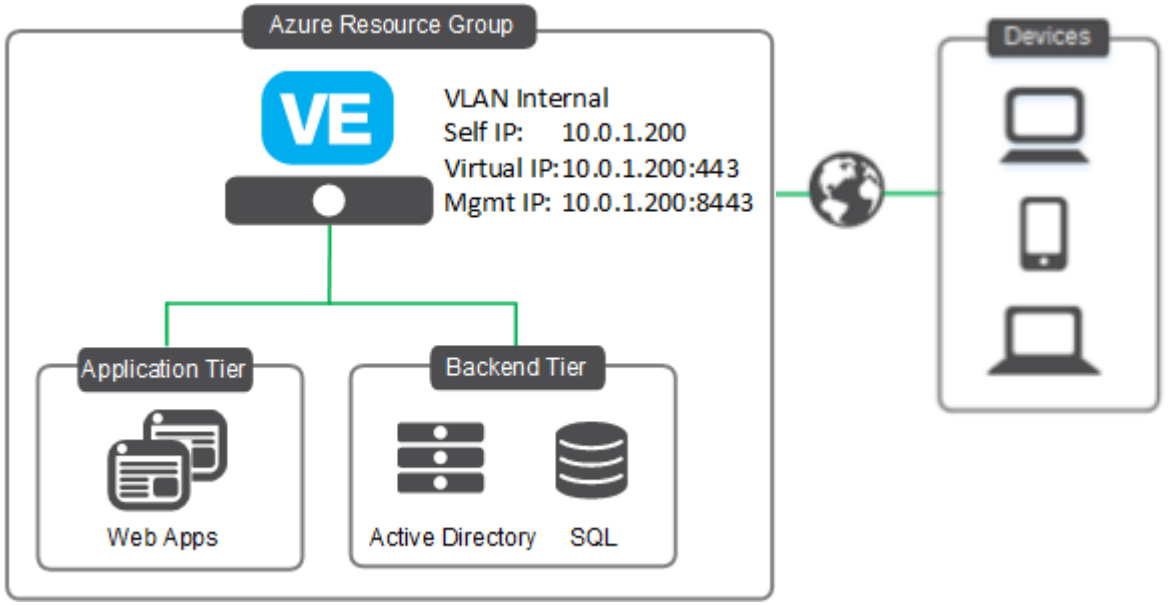
- This solution can be deployed into a **new or existing** stack.
- BIG-IP instances operate with 1 network interface
- Scale up & Scale down event triggers based on a pre-defined % of traffic or vCPU thresholds, typically 80% for scale up, 20% for scale down.
- AWS resources required include: S3 bucket, IAM role, CloudWatch, Auto Scale Group and SNS Topic.
- VE configurations are automatically back-up daily, in case a system restore is required.
- Available with PAYG instances or with BYOL licenses when used in conjunction with BIG-IQ.

Pre-requisites to this template can be found here

Link to GitHub

1-NIC BIG-IP VE Deployment in Azure

For deploying a single, standalone BIG-IP device with one network interface



Manual Deployment ~ **3+ hours**
Templated Deployment ~ **40 mins**

Deploys a standalone BIG-IP VE in a new or pre-existing Azure virtual network, where traffic automatically flows via the VE to the application servers. The BIG-IP instance operates with 1 network interface, processing both management and data plane traffic from the internet. This is the set-up most cloud native developers are accustom to and is best for single tenant or 'per app' services.

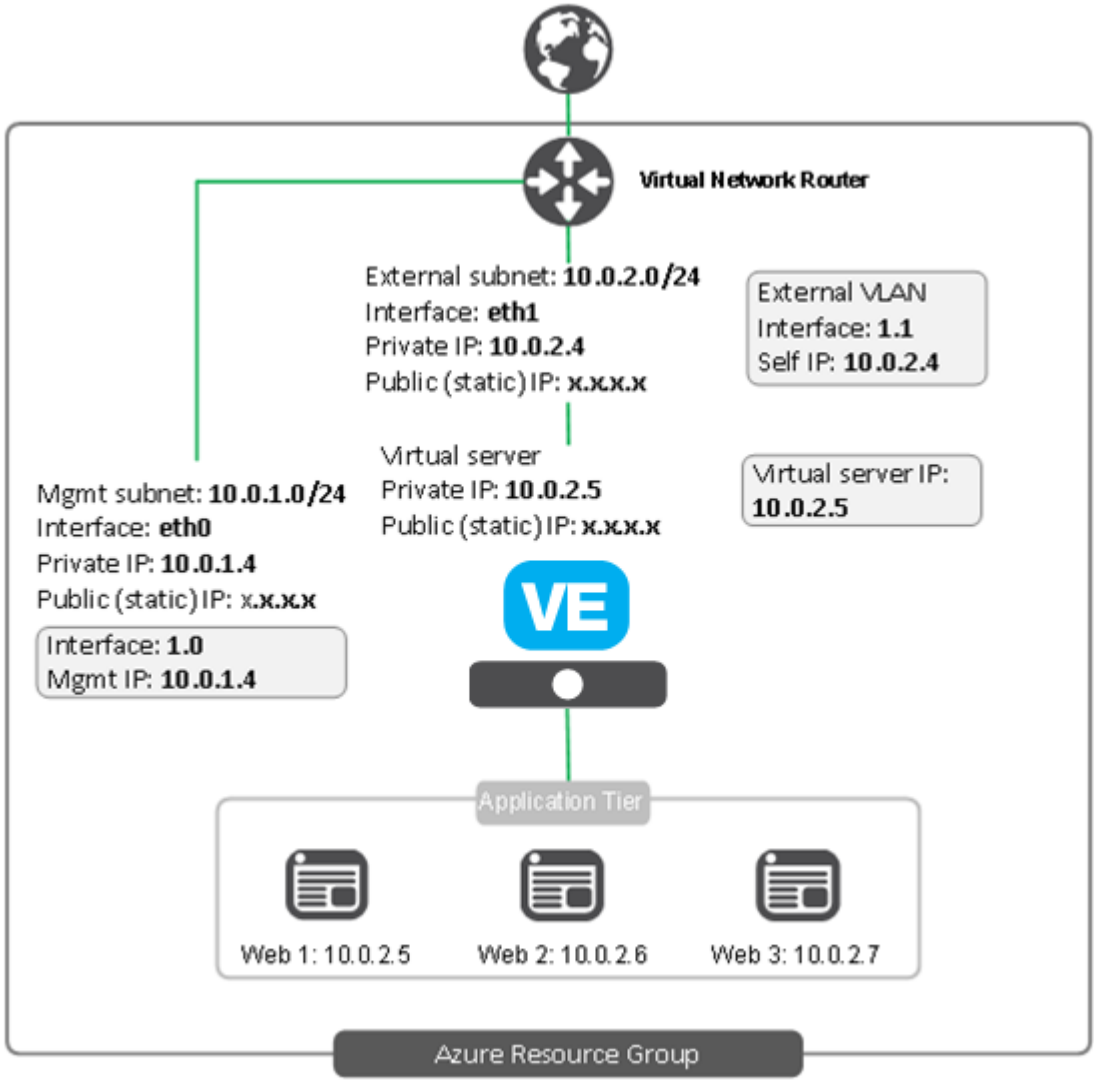
- BYOL (Perpetual, ELA & Sub) and PAYG templates available

Pre-requisites to this template can be found here

Link to GitHub

2-NIC BIG-IP VE Deployment in Azure

For deploying single, standalone BIG-IP device(s) with two network interfaces



Manual Deployment ~ **3+ hours**
Templated Deployment ~ **40 mins**

Deploys a standalone BIG-IP VE in a new or pre-existing Azure virtual network, where traffic automatically flows via the VE to the application servers. The BIG-IP instance operates with 2 network interfaces, one for management & data-plane traffic from the internet and another for traffic from the AWS network providing greater autonomy to control the management functions

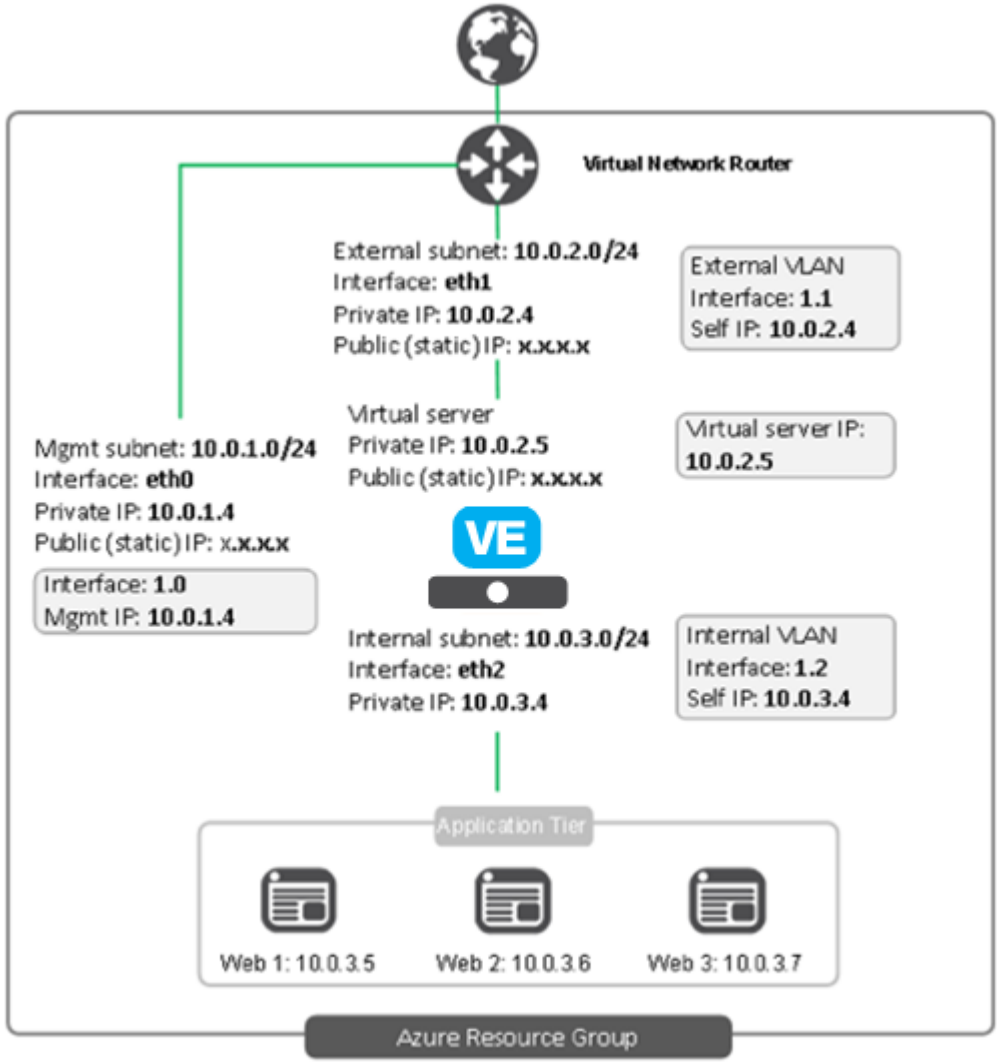
- Multiple public/private IP addresses available per NIC
- BYOL (Perpetual, ELA & Sub) and PAYG templates available

Pre-requisites to this template can be found here

Link to GitHub

3-NIC BIG-IP VE Deployment in Azure

For deploying single, standalone BIG-IP device(s) with three network interfaces



Manual Deployment ~ **3+ hours**
Templated Deployment ~ **40 mins**

Deploys a standalone BIG-IP VE in a new or pre-existing Azure virtual network, where traffic automatically flows via the VE to the application servers. The BIG-IP VE instance operates with 3 network interfaces and is most similar to an 'on-premise' deployment, with one interface for management, one for front-end application traffic and one for back end application traffic

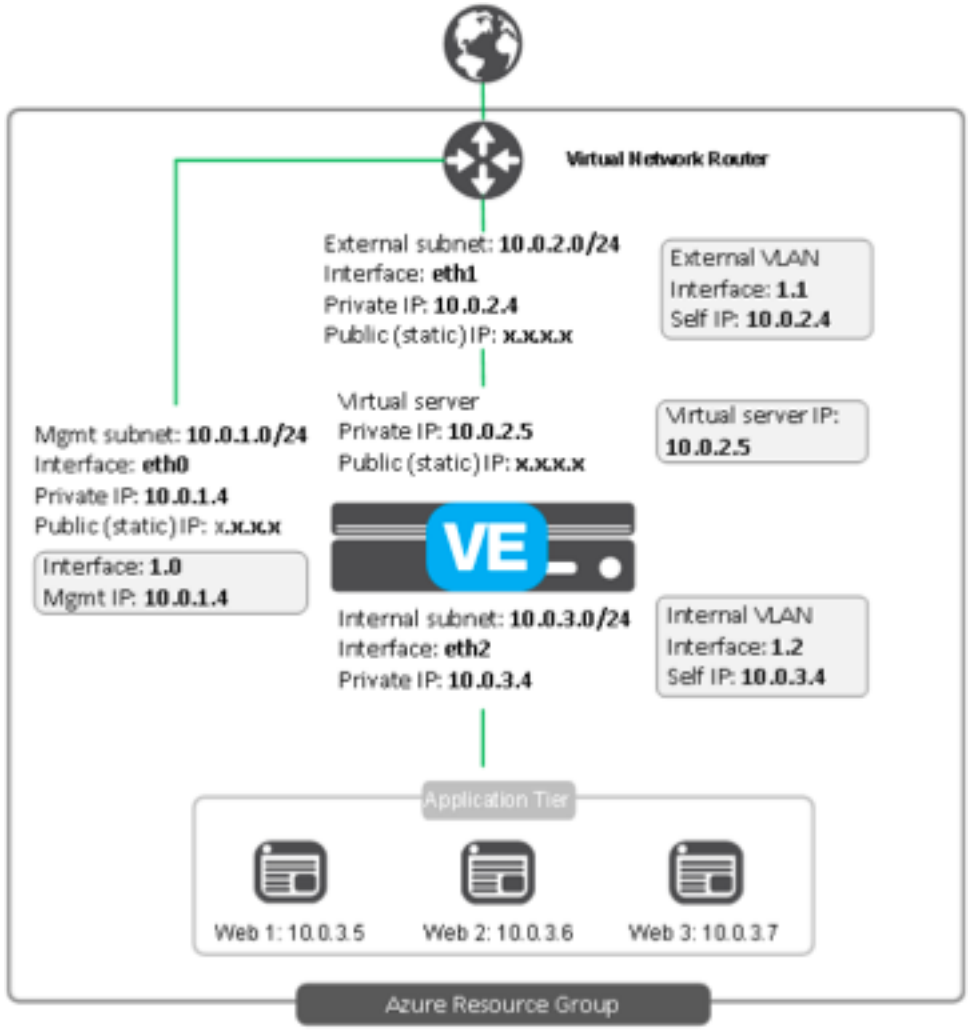
- Multi-NIC configurations are necessary when deploying multiple applications on different IP addresses, or multi-tenant configurations.
- BYOL (Perpetual, ELA & Sub) and PAYG templates available

Pre-requisites to this template can be found here

Link to GitHub

Multi-NIC BIG-IP VE Deployment in Azure

For deploying single, standalone BIG-IP device(s) with 3+ network interfaces



Manual Deployment ~ **3+ hours**
Templated Deployment ~ **40 mins**

Deploys a standalone BIG-IP VE in a new or existing Azure virtual network, where traffic automatically flows via the VE to the application servers. The BIG-IP VE instance is launched with 3 network interfaces but the template has the capability to add additional interfaces (up to a total of 8). This template is useful when the VE is acting as a traffic controller requiring more than 3 interfaces.

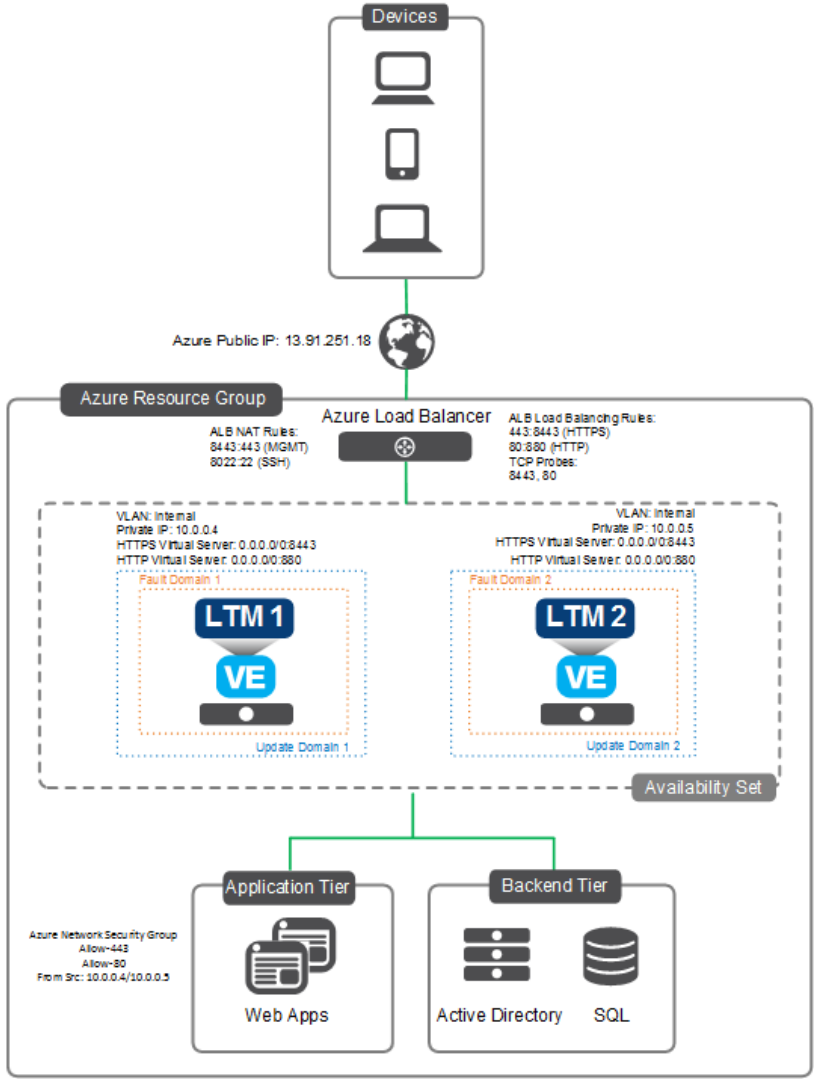
- Multi-NIC configurations are necessary when deploying multiple applications on different IP addresses, or multi-tenant configurations.
- BYOL (Perpetual, ELA & Sub) and PAYG templates available

Pre-requisites to this template can be found here

Link to GitHub

Clustered deployment of 2 BIG-IP VE's in Azure (1NIC – A/A) – Failover LB

For deploying BIG-IP VE's in parallel for increased availability



Manual Deployment ~ **8+ hours**
Templated Deployment ~ **40 mins**

Deploys two BIG-IP VE's across an Azure availability set in an Active-Active configuration for enhanced availability. The BIG-IP's are configured in front of pre-existing application servers, and thus traffic traverses the BIG-IP's to these servers. Failover in this template is executed by the Azure Load Balancer.

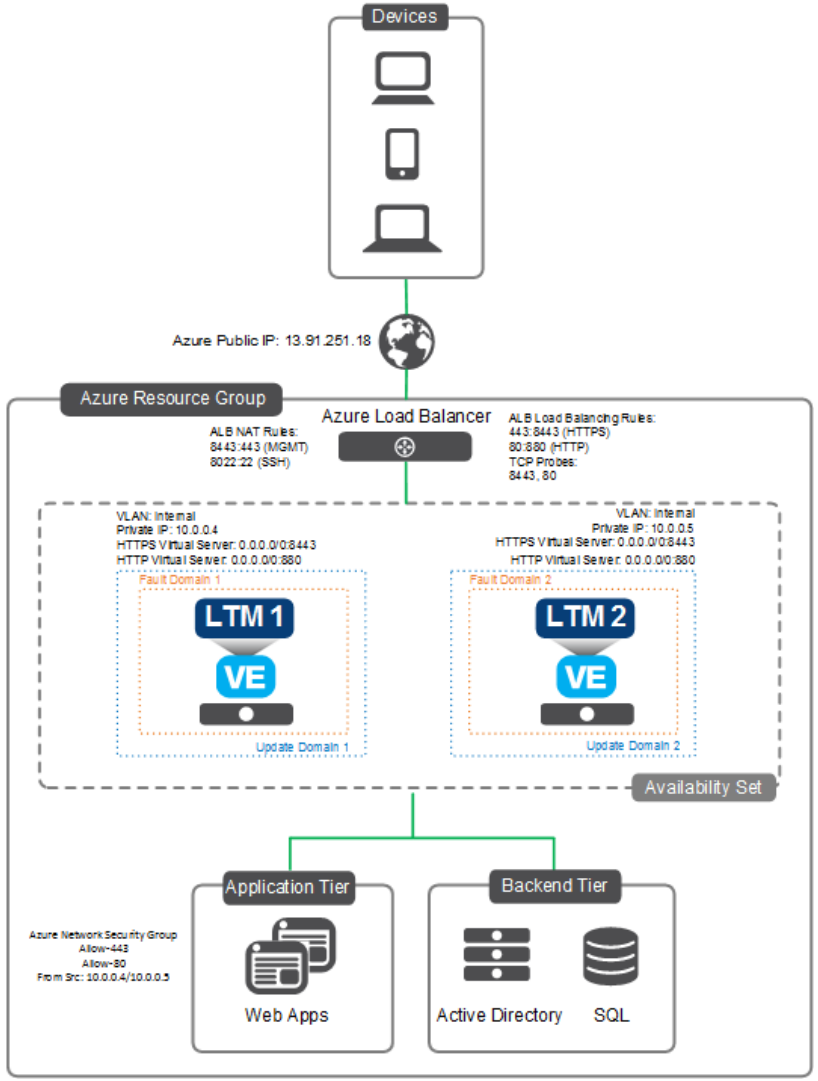
- The BIG-IP VE instance operates with 1 network interface used for both management and data plane traffic.
- Requires use of an Azure Load Balancer
- BYOL (Perpetual, ELA & Sub) and PAYG templates available

Pre-requisites to this template can be found here

Link to GitHub

Clustered deployment of 2 BIG-IP VE's in Azure (3NIC – A/A) – Failover LB

For deploying BIG-IP VE's in parallel for increased availability



Manual Deployment ~ **8+ hours**
Templated Deployment ~ **40 mins**

Deploys two BIG-IP VE's across an Azure availability set in an Active-Active configuration for enhanced availability. The BIG-IP's are configured in front of pre-existing application servers, and thus traffic traverses the BIG-IP's to these servers. Failover in this template is executed by the Azure Load Balancer.

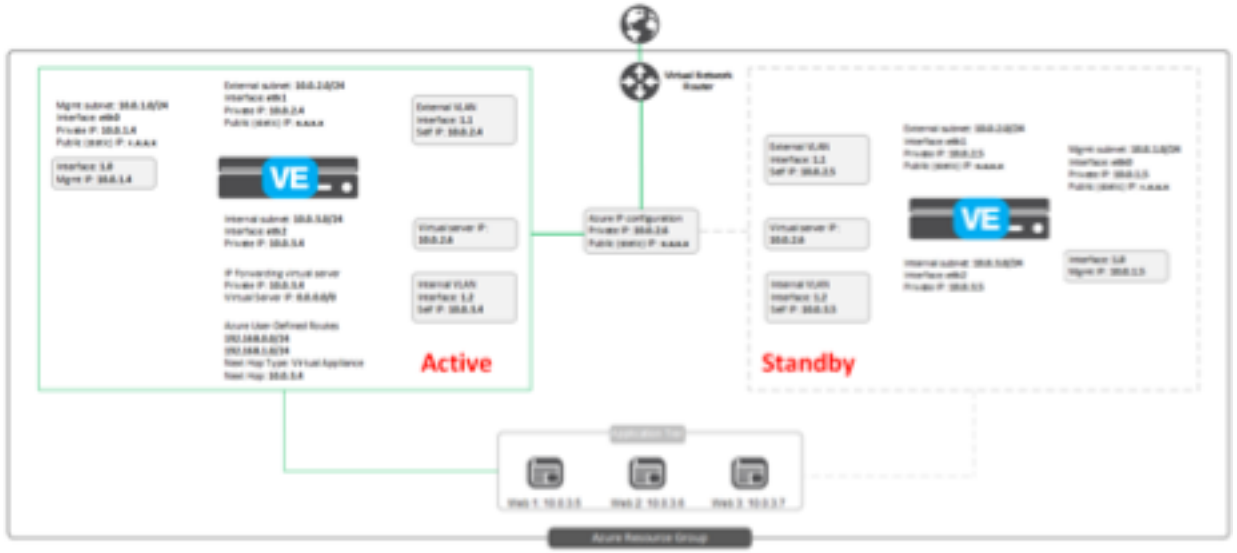
- The BIG-IP VE instance operates with 3 network interfaces, with one interface for management, one for front-end application traffic and one for back end application traffic
- Requires use of an Azure Load Balancer
- BYOL (Perpetual, ELA & Sub) and PAYG templates available

Pre-requisites to this template can be found here

Link to GitHub

Clustered deployment of 2 BIG-IP VE's in Azure (3NIC – A/S) – Failover API

For deploying BIG-IP VE's in parallel for increased availability



Manual Deployment ~ **8+ hours**
Templated Deployment ~ **40 mins**

Deploys two BIG-IP VE's across an Azure availability set in an Active-Active configuration for enhanced availability. The BIG-IP's are configured in front of pre-existing application servers, and thus traffic traverses the BIG-IP's to these servers. Failover in this template is executed via an API call.

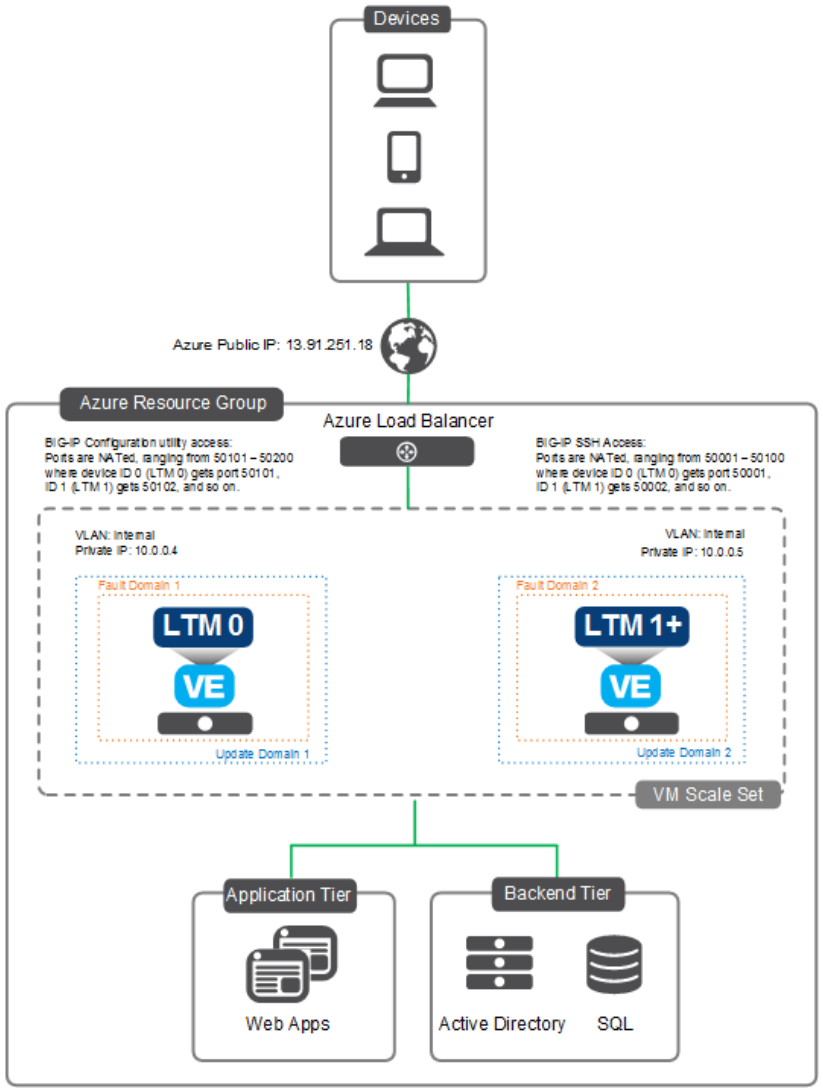
- The BIG-IP VE instance operates with 3 network interfaces, with one interface for management, one for front-end application traffic and one for back end application traffic
- Option to employ multiple-NICs with this template
- Does not require use of an Azure Load Balancer
- BYOL (Perpetual, ELA & Sub) and PAYG templates available

Pre-requisites to this template can be found here

Link to GitHub

Auto Scale BIG-IP LTM Deployment in Azure

For deploying an optimized application availability solution



Manual Deployment ~ **6+ hours**
Templated Deployment ~ **40 mins**

Deploys BIG-IP LTM in an Auto Scaling group, to consistently provide intelligent traffic management services to applications under varying traffic loads or vCPU strain. As traffic or vCPU utilization increases or decreases and crosses pre-defined thresholds, BIG-IP VE instances are either spun up or spun down, accordingly.

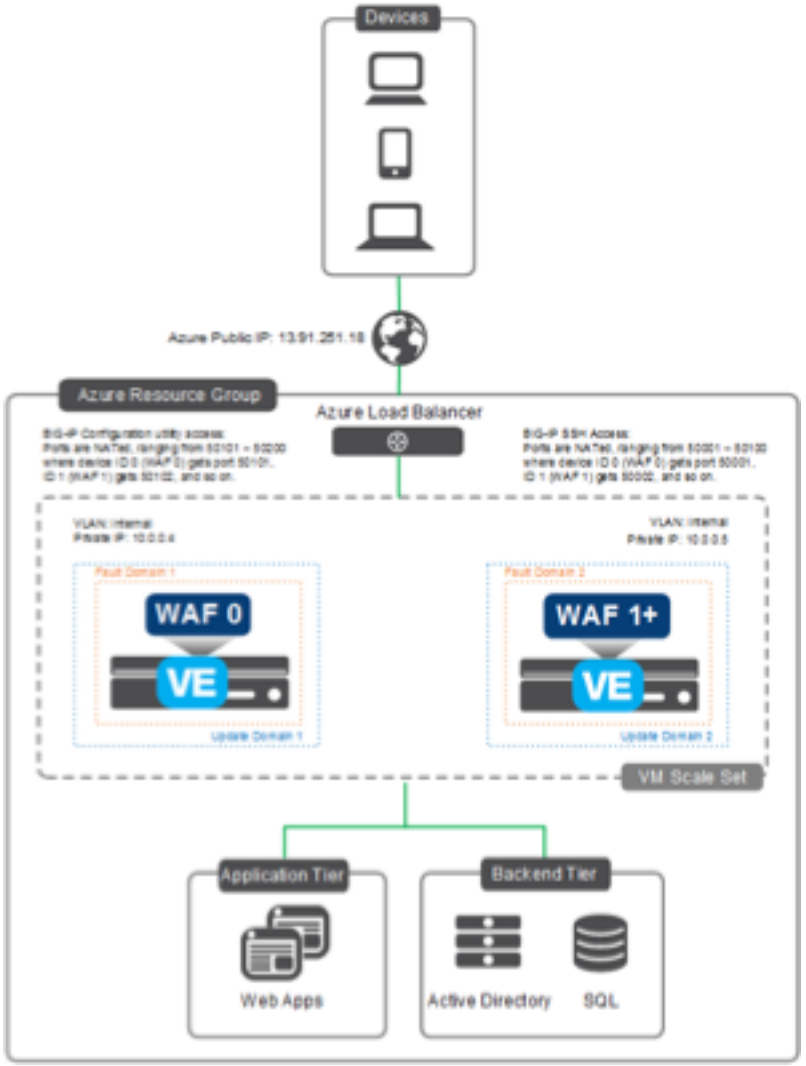
- This solution can be deployed into a **new or existing** stack.
- The BIG-IP VE instance operates with 1 network interface used for both management and data plane traffic.
- VE configurations are automatically back-up daily, in case a system restore is required.
- Available with PAYG instances or with BYOL licenses when used in conjunction with BIG-IQ.
- Requires use of an Azure Load Balancer (ALB)
- Scaling events based on either traffic throughput or vCPU consumption

Pre-requisites to this template can be found here

Link to GitHub

Auto Scale WAF Deployment in Azure

For deploying an optimized application availability solution



Manual Deployment ~ **6+ hours**
Templated Deployment ~ **40 mins**

Deploys BIG-IP with LTM/ASM provisioned in an Auto Scaling group, to consistently provide intelligent traffic management services to applications under varying traffic loads or vCPU strain As traffic or vCPU utilization increases or decreases and crosses pre-defined thresholds, BIG-IP VE instances are either spun up or spun down, accordingly.

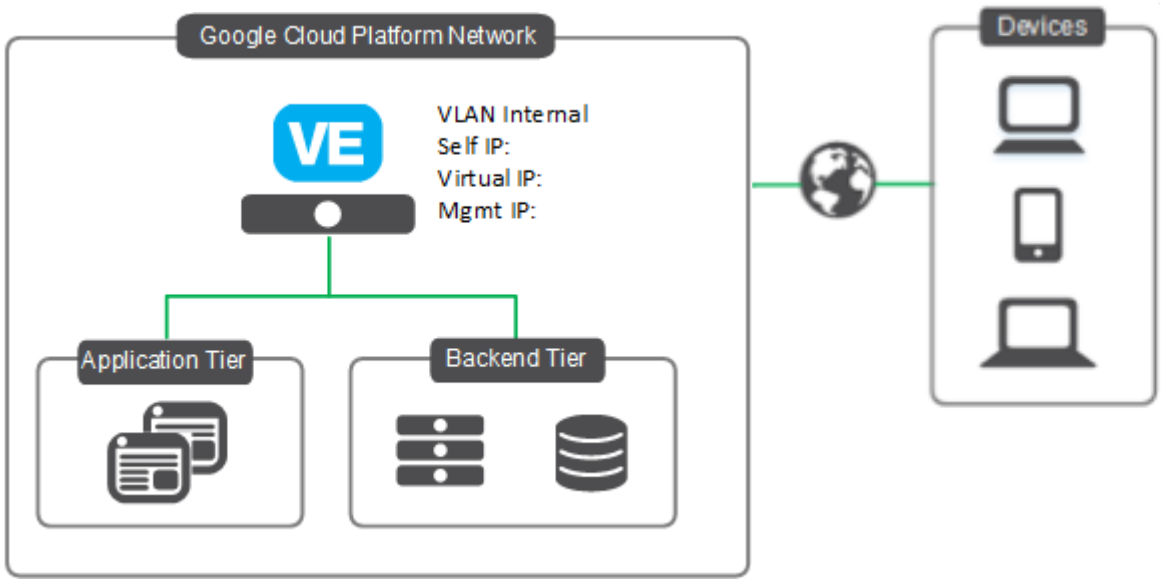
- This solution can be deployed into a **new or existing** stack.
- The BIG-IP VE instance operates with 1 network interface used for both management and data plane traffic.
- VE configurations are automatically back-up daily, in case a system restore is required.
- Available with PAYG instances or with BYOL licenses when used in conjunction with BIG-IQ.
- Requires use of an Azure Load Balancer (ALB)
- Scaling events based on either traffic throughput or vCPU consumption

Pre-requisites to this template can be found here

Link to GitHub

1-NIC BIG-IP VE Deployment in Google

For deploying a single, standalone BIG-IP device with one network interface



Deploys a standalone BIG-IP VE in a pre-existing Google virtual network, where traffic automatically flows via the VE to the application servers. The BIG-IP instance operates with 1 network interface, processing both management and data plane traffic from the internet. This is the set-up most cloud native developers are accustom to and is best for single tenant or 'per app' services.

- BYOL and PAYG templates available

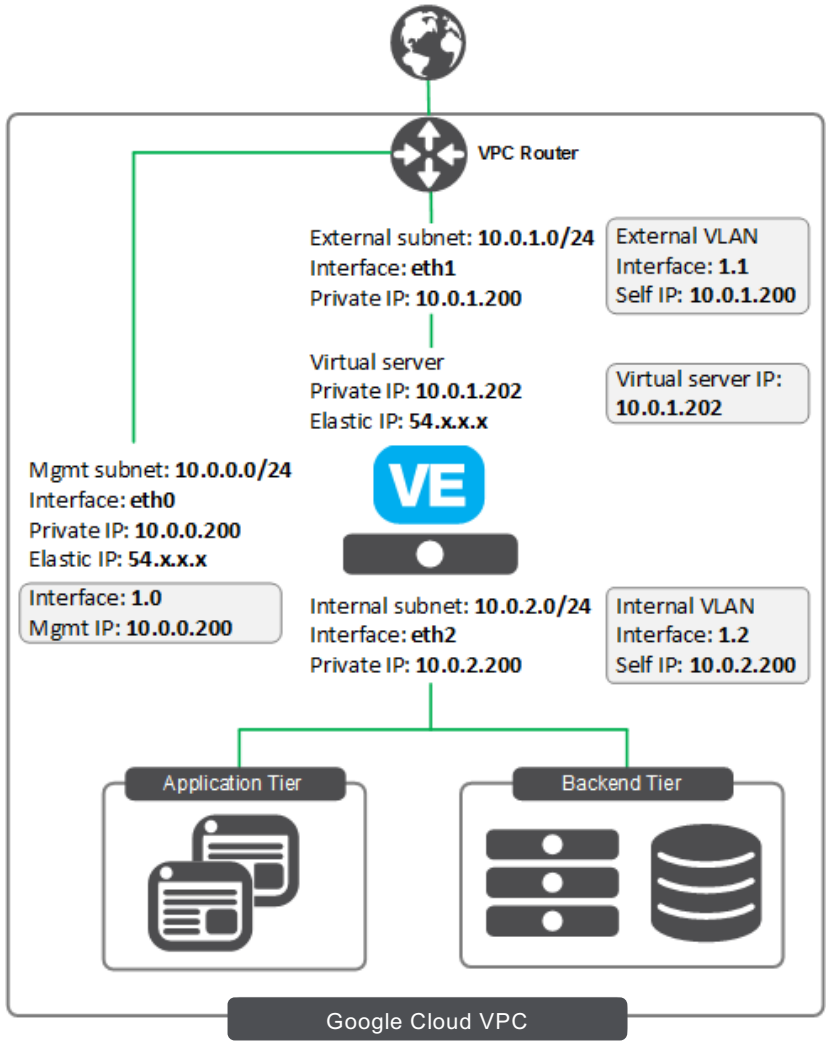
Pre-requisites to this template can be found here

Manual Deployment ~ **3+ hours**
Templated Deployment ~ **40 mins**

Link to GitHub

2-NIC BIG-IP VE Deployment on Google

For deploying single, standalone BIG-IP device(s) with two network interfaces



Manual Deployment ~ **3+ hours**
Templated Deployment ~ **40 mins**

Deploys a standalone BIG-IP VE into a Google VPC, where traffic automatically flows via the VE to the application servers. The BIG-IP instance operates with 2 network interfaces, One for management & data-plane traffic from the internet and another for traffic from the AWS network providing greater autonomy to control the management functions

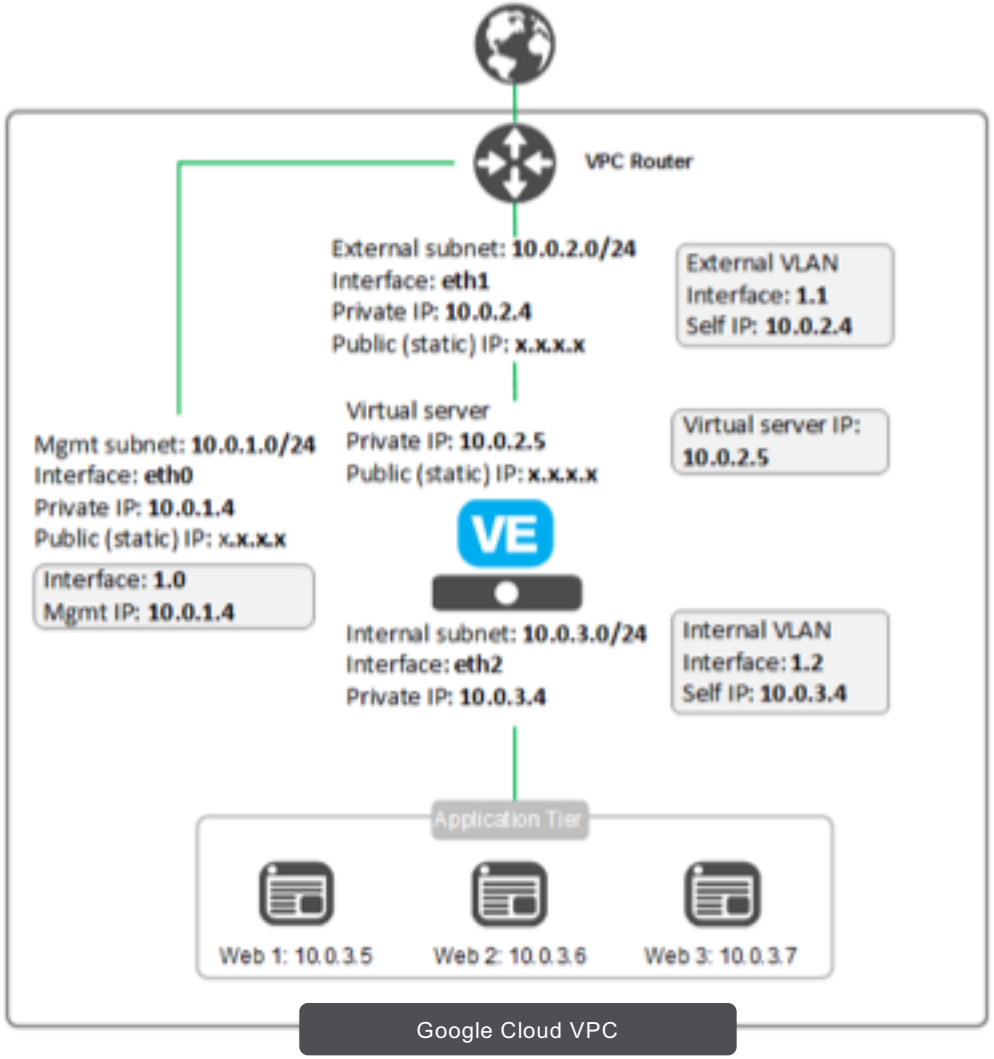
- BYOL and PAYG templates available

Pre-requisites to this template can be found here

Link to GitHub

3-NIC BIG-IP VE Deployment in Google

For deploying single, standalone BIG-IP device(s) with two network interfaces



Manual Deployment ~ **3+ hours**
Templated Deployment ~ **40 mins**

Deploys a standalone BIG-IP VE in a Google VPC, where traffic automatically flows via the VE to the application servers. The BIG-IP VE instance operates with 3 network interfaces and is most similar to an 'on-premise' deployment, with one interface for management, one for front-end application traffic and one for back end application traffic

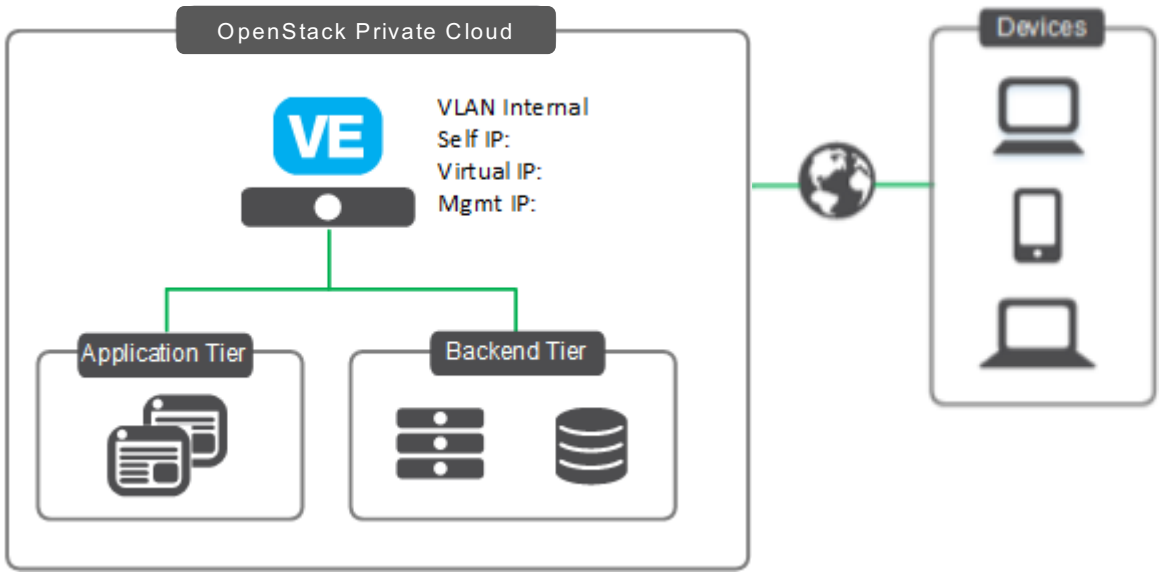
- Multi-NIC configurations are necessary when deploying multiple applications on different IP addresses, or multi-tenant configurations.
- BYOL and PAYG templates available

Pre-requisites to this template can be found here

Link to GitHub

1-NIC BIG-IP VE Deployment in OpenStack

For deploying single, standalone BIG-IP device(s) with one network interface



Deploys a standalone BIG-IP VE in a pre-existing OpenStack Private Cloud, where traffic automatically flows via the VE to the application servers. The BIG-IP instance operates with 1 network interface, processing both management and data plane traffic from the internet. This is the set-up most cloud native developers are accustom to and is best for single tenant or 'per app' services.

- Only BYOL templates available

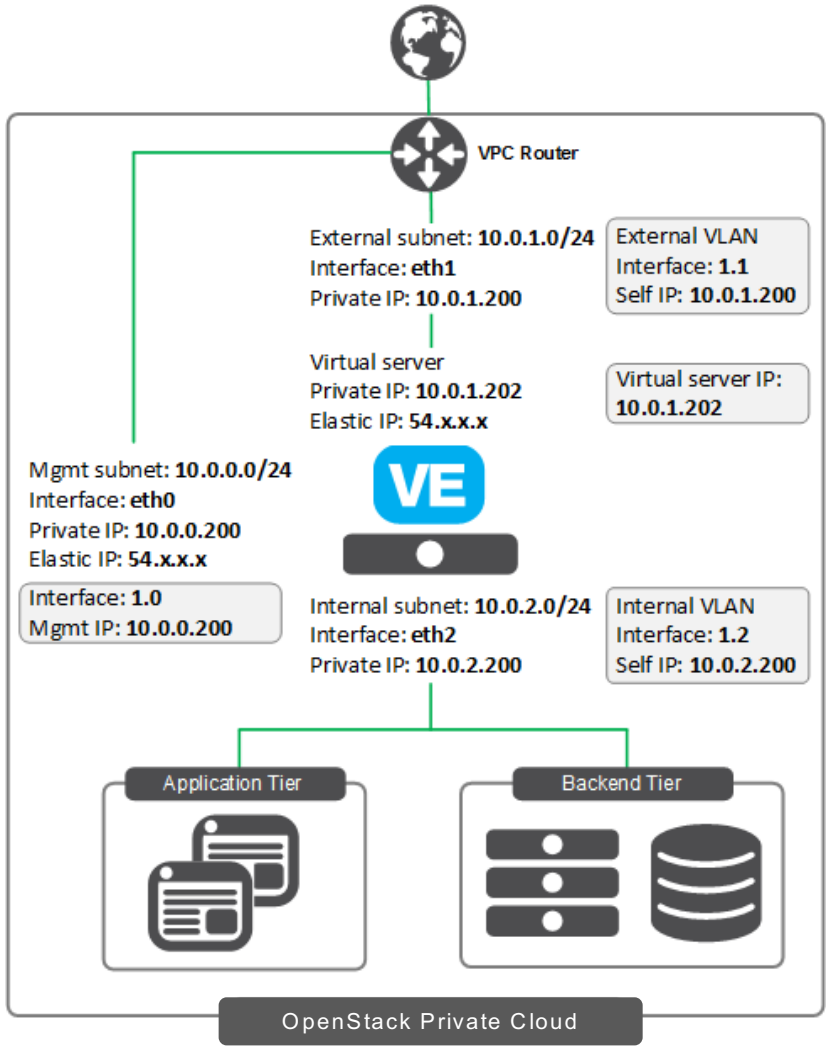
Pre-requisites to this template can be found here

Manual Deployment ~ **3+ hours**
Templated Deployment ~ **40 mins**

Link to GitHub

2-NIC BIG-IP VE Deployment in OpenStack

For deploying single, standalone BIG-IP device(s) with two network interfaces



Manual Deployment ~ **3+ hours**
Templated Deployment ~ **40 mins**

Deploys a standalone BIG-IP VE in a pre-existing OpenStack Private Cloud, where traffic automatically flows via the VE to the application servers. The BIG-IP instance operates with 2 network interfaces, one for management & data-plane traffic from the internet and another connected into the Neutron network where traffic is processed by pool members

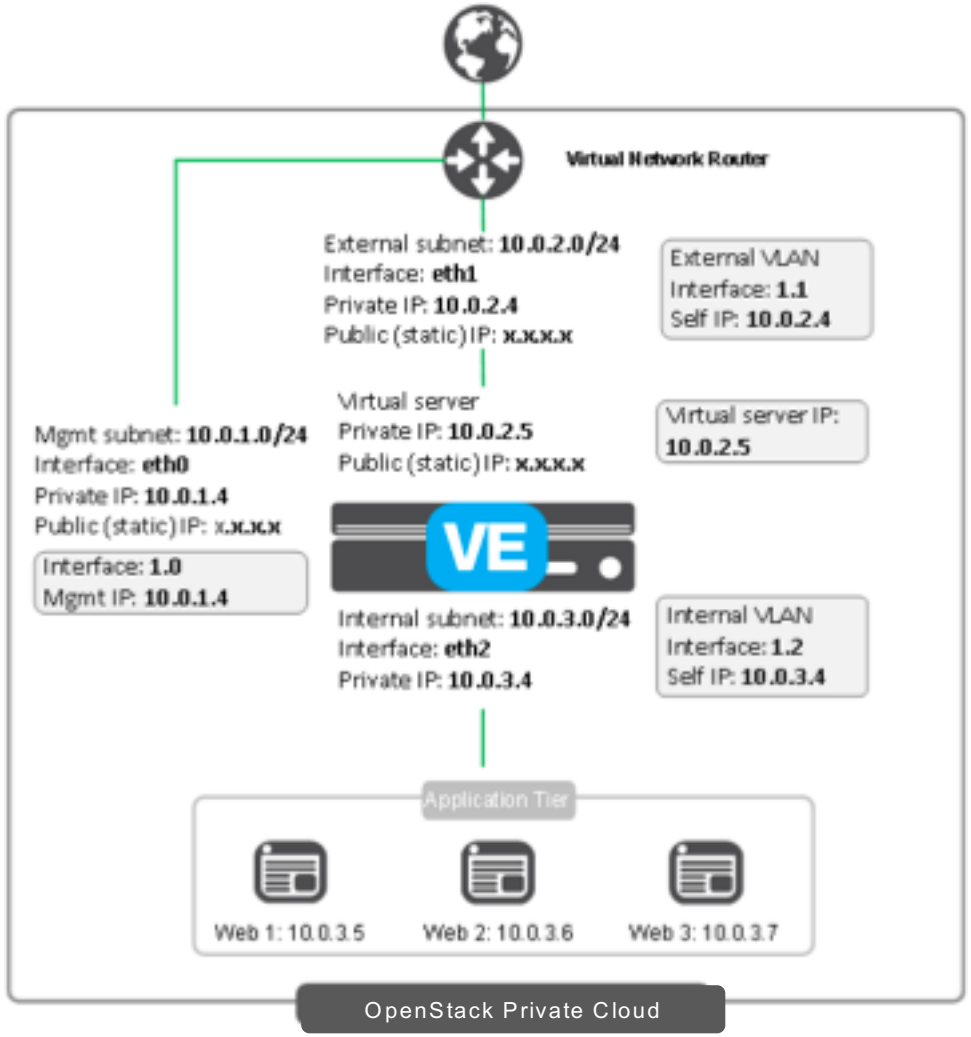
- Only BYOL templates available

Pre-requisites to this template can be found here

Link to GitHub

Multi-NIC BIG-IP VE Deployment in OpenStack

For deploying single, standalone BIG-IP device(s) with 3+ network interfaces



Manual Deployment ~ **3+ hours**
Templated Deployment ~ **40 mins**

Deploys a standalone BIG-IP VE in a new or existing virtual network, where traffic automatically flows via the VE to the application servers. The BIG-IP VE instance is launched with 3 network interfaces but the template has the capability to add additional interfaces (up to a total of 8). This template is useful when the VE is acting as a traffic controller requiring more than 3 interfaces.

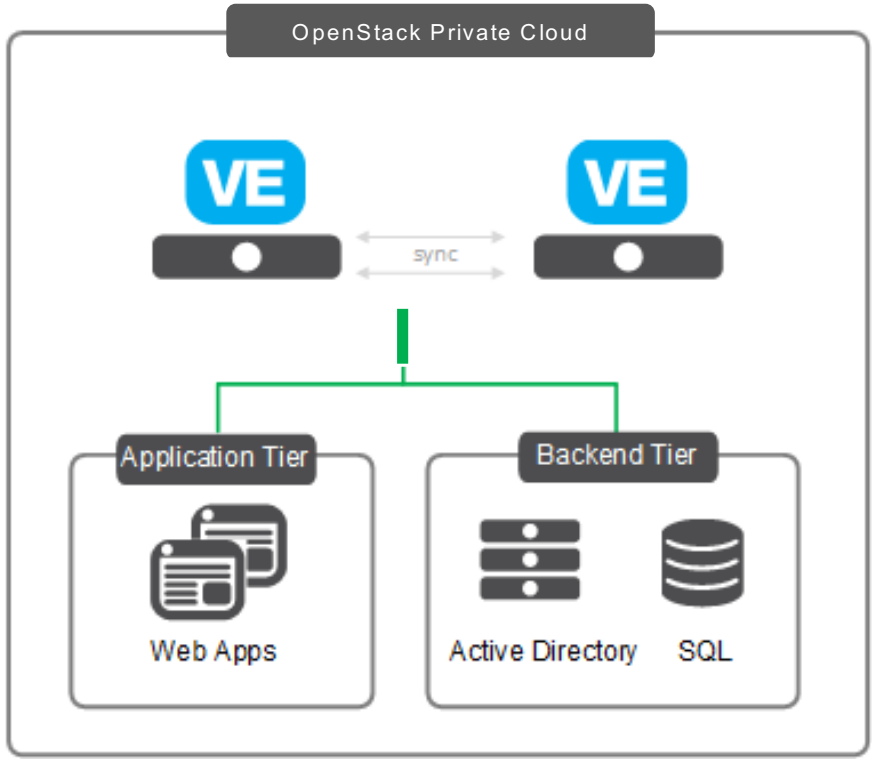
- Multi-NIC configurations are necessary when deploying multiple applications on different IP addresses, or multi-tenant configurations.
- BYOL and PAYG templates available

Pre-requisites to this template can be found here

Link to GitHub

HA Pair Deployment in OpenStack

For deploying 2 BIG-IP VE's in an active/standby configuration for increased availability



Launches and configures two BIG-IP VE's in a single availability zone in an Active-standby arrangement for high availability, such that should one BIG-IP fail, traffic is automatically re-directed to the unaffected device until the issue is resolved.

- The BIG-IP instance operates with 2 network interfaces:
  - One for management & data-plane traffic from the internet
  - Another connected into the Neutron networks where traffic is processed by pool members.
  - Only BYOL templates available

Pre-requisites to this CFT can be found here

Manual Deployment ~ **8+ hours**
Templated Deployment ~ **40 mins**

Link to GitHub


Integrated
Marketplace
Solutions

Integrated Marketplace Solutions: *The Basics*

1. These solutions are available direct from each cloud vendor's respective marketplace and run off of F5 created cloud solution templates, which essentially aggregate together all of the necessary resources and BIG-IP configuration parameters needed to launch these fully functioning F5 solutions in a customers virtual cloud network.

2. At this point, solutions are available for AWS and Azure for multiple different use case scenarios.

3. All deployment times (both manual and templated times) stated in this deck are ESTIMATES, and assume the user has an intermediate level of experience with both the BIG-IP and the cloud platform in question. All times include boot time for the VE's (~20mins). Pre-req's are not included since they are required for both manual and templated deployments, but are adjudged to take around 15-20mins

4. All solutions now support BIG-IP v13.1

Integrated Marketplace Solutions: *The Value*

- These solutions speed up the deployment of specific BIG-IP VE configurations as well as reducing complexity; deploying fully configured solutions in a matter of minutes and just a few clicks.
- Deployable direct from the marketplace for simplified consumption of F5 services
- No prior knowledge of the BIG-IP system required to implement, and allows a customer to deploy their VE's confidently, in the knowledge that the pre-configured solutions have been designed following best practices by F5 experts.
- Automate VE deployments by integrating solutions with cloud native or 3rd party automation tools

Integrated Marketplace Solutions by Use Case

Application Security

- WAF Solution (Inside Azure Security Center) [Azure]
- WAF Solution [Azure]
- Auto Scale WAF Solution [AWS, Azure]

Application Access

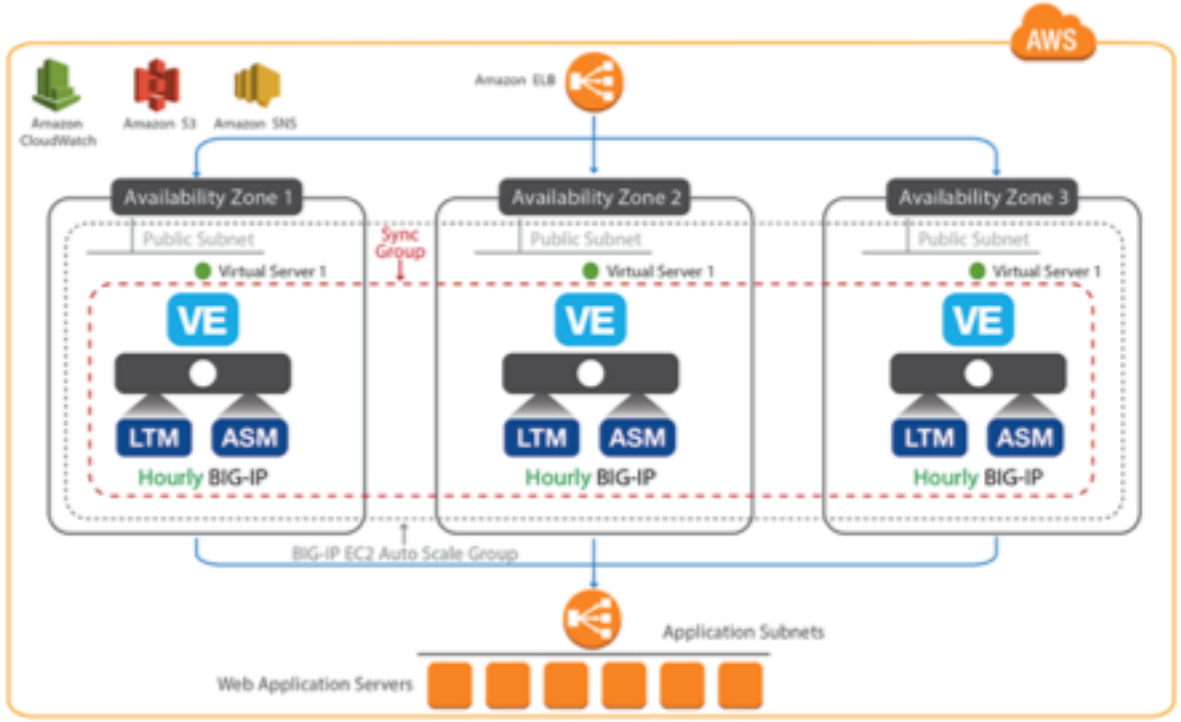
- Federated Access to Office365 Applications [Azure]

Advanced Traffic Management

- Auto Scale Cloud LTM [Azure]

Auto Scale WAF Solution for AWS

Optimize application security and operational expenditure



Manual Deployment ~ 7 hours
Templated Deployment ~ 30 mins

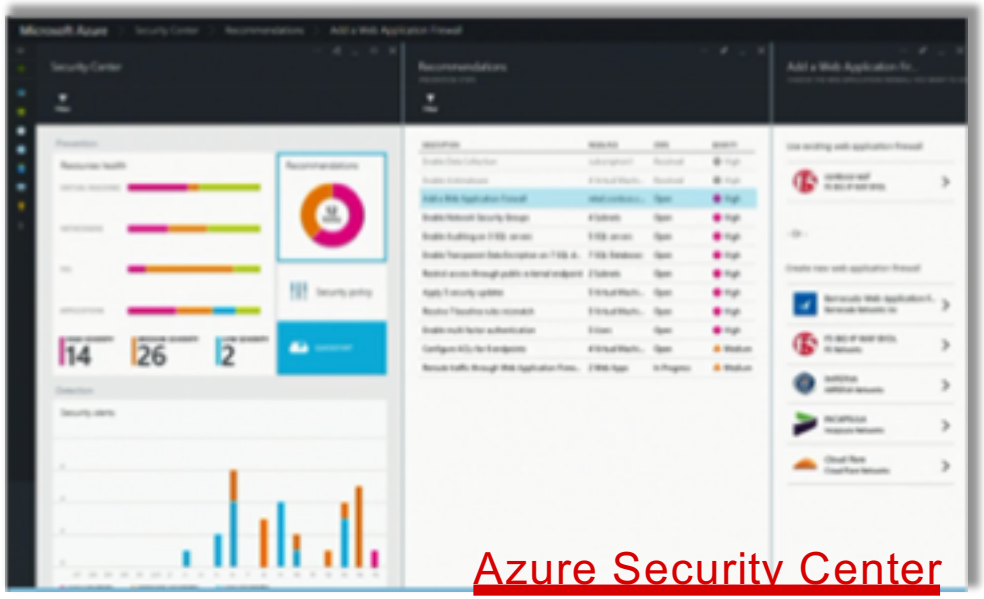
Deploys VE instances with BIG-IP LTM and ASM provisioned in an AWS auto scaling group to provide intelligent traffic management and application security services to applications under varying traffic loads. Instances scale up or down depending on traffic throughput, ensuring application security and operational expenditure are optimized. As traffic passes pre-defined thresholds, instances are spun up or down.

- Comprehensive, layer 7 application protection and guaranteed compliance with all major regulatory standards. Out-of-the-box deployment using pre-built, F5 developed, security policies – which can be customized further for more advanced policy creation.
- Additional instances are scaled across AWS availability zones, improving WAF availability
- Deployed directly from AWS marketplace via a fully integrated CloudFormation template for increased agility
- AWS resources required include: S3 bucket, IAM role, CloudWatch, Auto Scale Group and SNS Topic

Marketplace Offering

WAF Solution for Microsoft Azure (Inside ASC)

Industry leading application protection in minutes



Azure Security Center

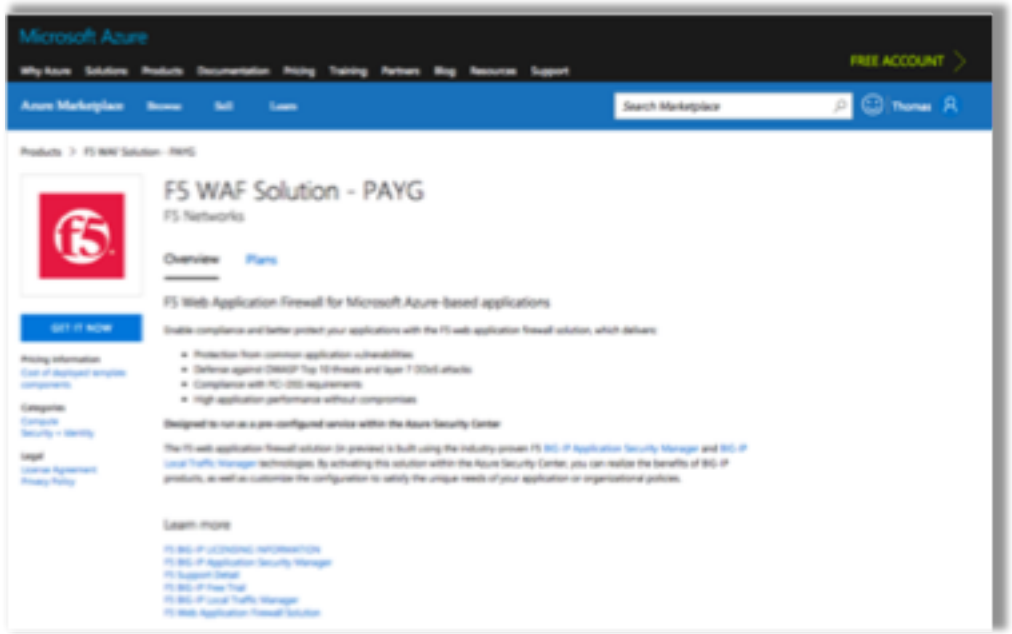
Manual Deployment ~ 9 hours
Marketplace Deployment ~ 30 mins

- Simple deployment experience integrated with Azure workflow and services
- Deploys 2 clustered WAF's for increased redundancy
- Out-of-the-box choice of security settings preconfigured by F5 experts, plus ability to make more customized settings/policies
- Comprehensive application security with advanced L7 protections
- Guaranteed compliance with all leading regulatory standards
- BYOL/PAYG deployment, inside ASC (Azure Security Centre)
- WAF Solution for ASC has Integration with Azure dashboard and alert/visualization services

Marketplace Offering

WAF Solution for Microsoft Azure (Outside ASC)

Industry leading application protection in minutes



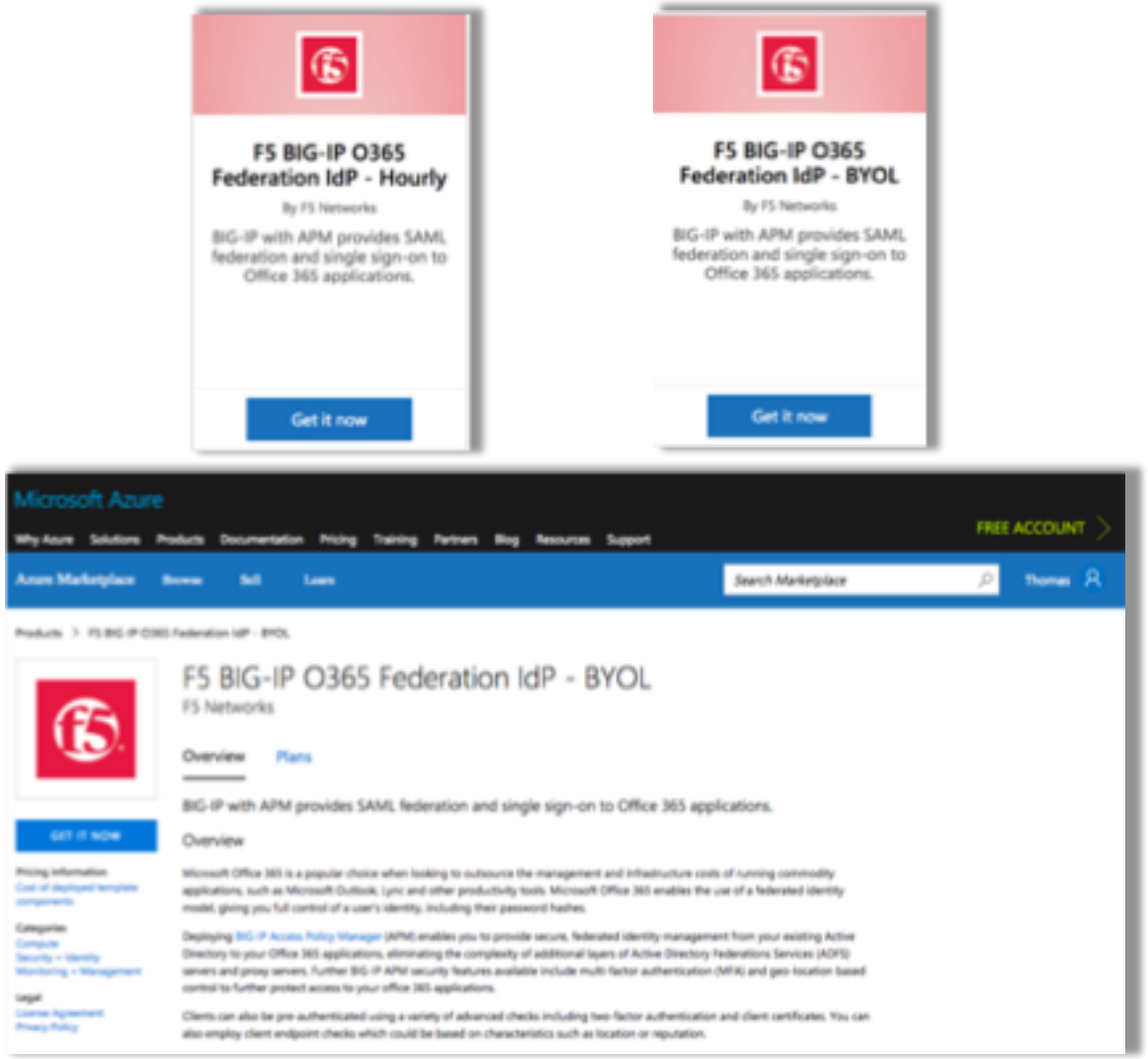
Manual Deployment ~ 9 hours
Marketplace Deployment ~ 30 mins

- Simple deployment experience integrated with Azure workflow and services
- Deploys 2 clustered WAF's for increased redundancy
- Out-of-the-box choice of security settings preconfigured by F5 experts
- Comprehensive application security with advanced L7 protections
- Guaranteed compliance with all leading regulatory standards
- Choice of pay-as-you go and BYOL to best fit business scenario, deployable outside of ASC (Azure Security Centre)
- ASC service is not required to implement this solution

Marketplace Offering

Federated Access to O365 Apps in Microsoft Azure

Secure access for Office365 Applications



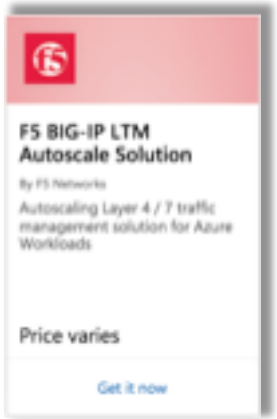
Manual Deployment ~ 4 hours
Marketplace Deployment ~ 30 mins

- Deploys an F5 built, pre-configured VE with BIG-IP APM provisioned
- Leverage an existing active directory and SAML 2.0 to provide federated access to O365 applications
- Extend security with other APM features including MFA, geo-location based control and device checks.
- Simple deployment experience direct from marketplace and integration with Azure workflow and services
- Choice of PAYG and BYOL deployments to best fit business scenario

BYOL Marketplace Offering

PAYG Marketplace Offering

Auto Scale LTM in Azure Marketplace



Manual Deployment ~ 7 hours
Templated Deployment ~ 30 mins

Deploys BIG-IP VE with LTM provisioned in an Azure VM Scale Set that has been configured for auto scaling, to consistently provide intelligent traffic management services to applications under varying traffic loads.

- As traffic increases/decreases and crosses pre-defined '*network out*' throughput thresholds, BIG-IP LTM instances are either spun up or spun down, accordingly.
- The BIG-IP VE instance operates with 1 network interface used for both management and data plane traffic.
- Deployed directly from Azure marketplace via a fully integrated Azure Resource Manager template for increased agility
- Azure resources required include: Azure load balancer and VM Scale Set

PAYG Marketplace Offering

Auto Scale WAF in Azure Marketplace

Manual Deployment ~ 7 hours
Templated Deployment ~ 30 mins

Deploys VE instances with BIG-IP LTM and BIG-IP ASM provisioned in an Azure VM Scale Set that has been configured for auto scaling, to provide intelligent traffic management and application security services to applications under varying traffic loads.

Instances scale up or down depending on traffic throughput, ensuring application security and operational expenditure are optimized. As traffic passes pre-defined thresholds, BIG-IP VE instances are spun up or down. Thresholds are based on '*network out*' throughput.

- Comprehensive, layer 7 application protection and guaranteed compliance with all major regulatory standards. Out-of-the-box deployment using pre-built, F5 developed, security policies – which can be customized further for more advanced policy creation
- Deployed directly from Azure marketplace via a fully integrated Azure Resource Manager template for increased agility
- Azure resources required include: Azure load balancer and VM Scale Set

Marketplace Offering

Additional Resources

- CST Solution Overview
- CST Video – AWS Variant
- CST Video – Azure Variant
- CST Video – Google Variant
- Public Cloud Deployment Demo's

Previous Release Summaries

- Cloud Release 2: Cloud Solution Templates: Release 2
- Cloud Release 3: Cloud Solution Templates: Release 3
- Cloud Release 4: Cloud Solution Templates: Release 4
- Cloud Release 5: Cloud Solution Templates: Release 5
- Cloud Release 6: Public Cloud Solutions: Release 6
- Cloud Release 7: Public Cloud Solutions: Release 7
- Cloud Release 8: Public Cloud Solutions: Release 8

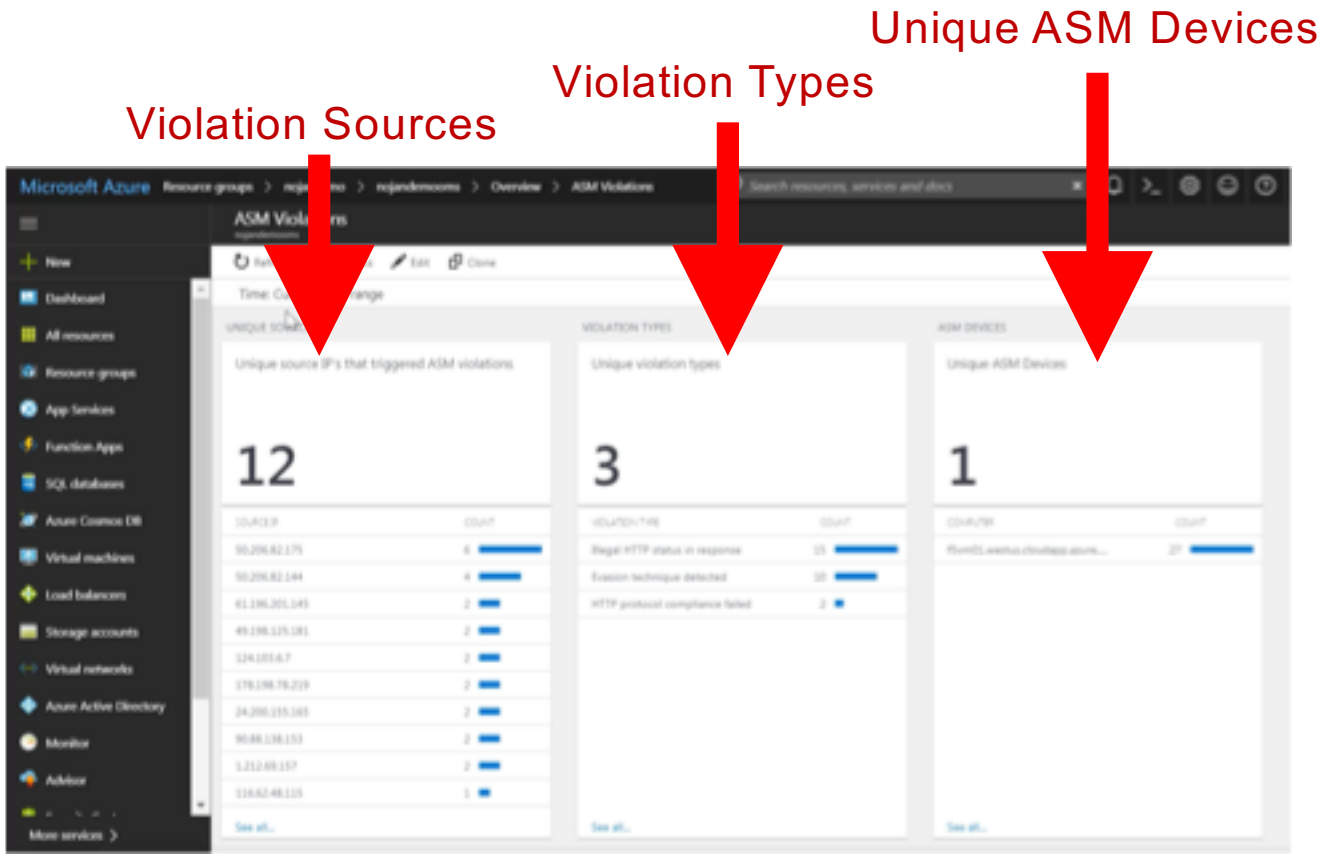
Appendix

Cloud Logging in AWS & Azure

With F5's '*Cloud-Logger*' iApp

- Automatically exports logs via json to cloud services including **Azure OMS and AWS S3**
- All CFT and ARM templates deploy BIG-IP VE's with the iApp pre-loaded
- iApp manages logging profiles for various BIG-IP services (request logging for virtual services, ASM policies, system logs, etc.)

Cloud Logger iApp on GitHub



Example - BIG-IP ASM Logs in Azure OMS

Cloud Logger iApp Template