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Last edited by **Simon Green** 1 week ago

AWS One Click Deployers: Button to click that deploy Contrail things within AWS. The buttons are public so can be used by your customers.

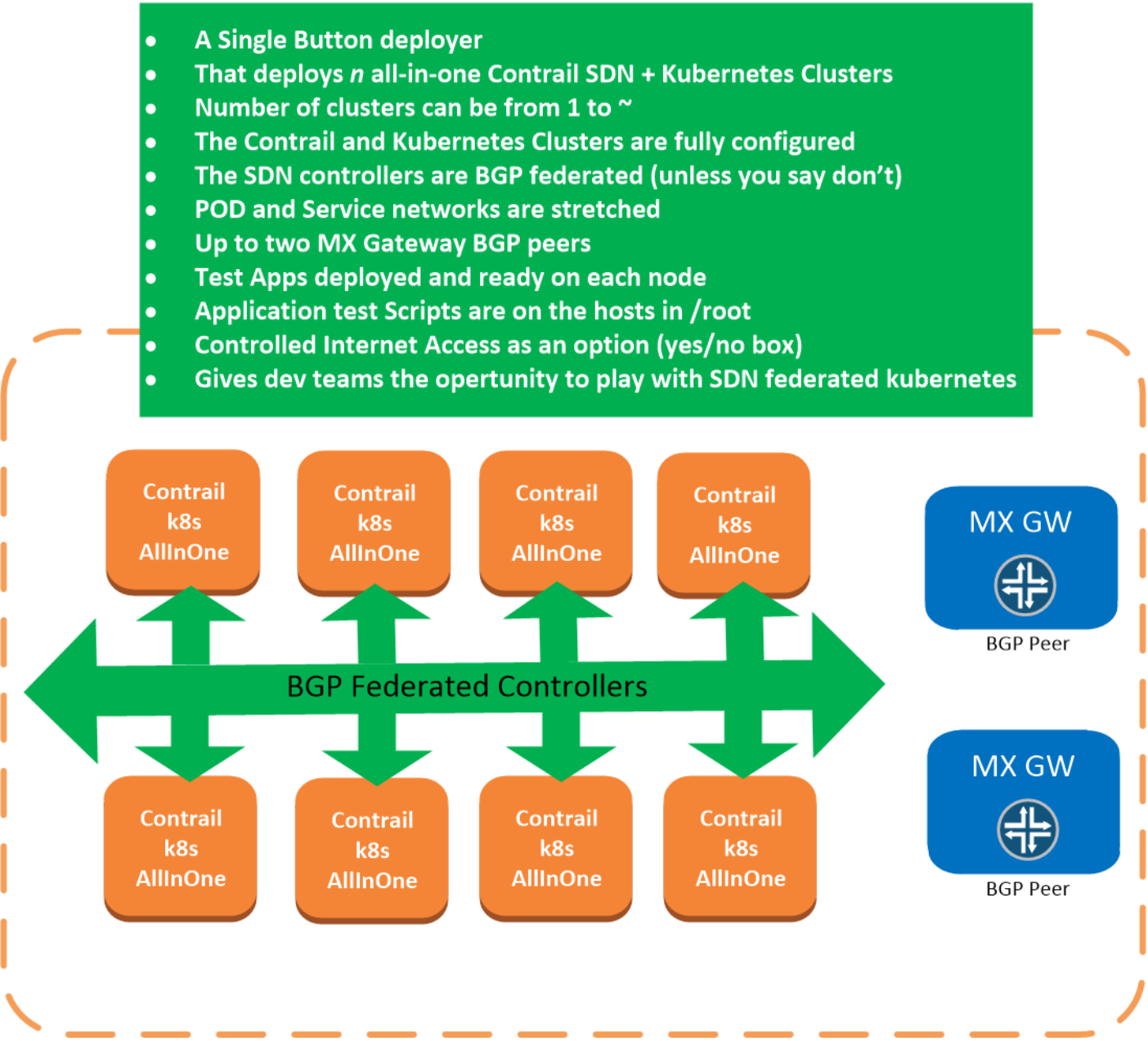
Questions to sgreen@juniper.net

Status:

- Add an auto scaling stack capable of configururing 1-250 kubernetes+contrail clusters federated.
- Add a Contrail HA controller cluster. This stack can also do non HA.
- Add a Minion VPC stack.
- Add a Red Hat OpenShift Greenfield and Brownfield stack.
- Add an OpenStack gets stack.
- Add vMX SDN gateway stacks.

Federation: Moving beyond one Kubernetes cluster with Contrail SDN

[Click to explore Kubernetes cluster federation using SDN](#)



Contrail+Red Hat OpenShift

[Click to deploy a Red Hat OpenShift with Contrail as the CNI. Worker nodes across multiple AWS VPC's and availability zones](#)



The diagram illustrates a multi-availability zone (AZ) Kubernetes cluster architecture on AWS, spanning three AZs in Frankfurt, Germany: eu-central-1a, eu-central-1b, and eu-central-1c.

Key Components and Services:

- VPC:** OneClick.ContrailBareMetalControl.eu-central-1 (100.72.100.0/23)
- EC2 Key Pair:** ContrailKey1
- AWS Time Sync Service:** For time synchronization across instances.
- Internal Network Load Balancer:** Port: 6443 Kubernetes API
- Availability Zones:** eu-central-1a (Frankfurt Germany), eu-central-1b (Frankfurt Germany), eu-central-1c (Frankfurt Germany)
- Subnets:**
 - Private Subnets:** 100.72.100.0/26 (Zone 1a), 100.72.100.64/26 (Zone 1b), 100.72.100.128/26 (Zone 1c)
 - Public Subnet:** 100.72.100.192/26 (Zone 1a)
- Network Configuration:**
 - PrivateRouteTable1, PrivateRouteTable2, PrivateRouteTable3:** Route traffic from private subnets to the internal load balancer.
 - OneClickPublicRouteTable1:** Route traffic from the public subnet to the Internet Gateway.
 - NatGW:** Network Address Translation Gateway for outbound traffic.
 - InternetGW:** Internet Gateway for external access.
 - Internet:** External network access point.
- Instances and Services:**
 - Contrail Command (EC2):** Central management instance in Zone 1a.
 - Contrail Controller (EC2):** Control plane instances in each AZ.
 - Contrail Worker Nodes (EC2):** Worker nodes in each AZ.
 - EBS Volumes:** Elastic Block Store volumes for persistent storage.
 - SN:OneClickPrivateSN1, SN:OneClickPrivateSN2, SN:OneClickPrivateSN3:** Security groups for private subnets.
 - SN:OneClickPublicSN1:** Security group for the public subnet.
 - EIP (x.x.x.x):** Elastic IP address for the public subnet.
- Access and Management:**
 - OAM Direct Access:** Contrail Command UI, Contrail UI, Rest API, SSH to all nodes.
 - NAT:** Network Address Translation for outbound traffic.

The diagram illustrates a VPC architecture across three availability zones: eu-central-1a, eu-central-1b, and eu-central-1c (Frankfurt Germany). Each zone contains a private subnet with a Minion (EC2) and an EBS Volume, and a public subnet with a NatGW. The private subnets are connected to the public subnets via PrivateRouteTables. The public subnets are connected to the Internet via OneClickPublicRouteTables. The VPC is connected to the Internet via an InternetGW.

Availability Zone: eu-central-1a (Frankfurt Germany)

- Private Subnet: SN:OneClickPrivateSN1 (100.73.100.0/26)
 - Minion (EC2): 100.73.100.11
 - EBS Volume
 - PrivateRouteTable1: 172.16.0.0, 172.16.1.0, 172.16.2.0
- Public Subnet: SN:OneClickPublicSN1 (100.72.100.192/26)
 - NatGW
 - OneClickPublicRouteTable1: 172.16.0.0, 172.16.1.0, 172.16.2.0

Availability Zone: eu-central-1b (Frankfurt Germany)

- Private Subnet: SN:OneClickPrivateSN2 (100.73.100.64/26)
 - Minion (EC2): 100.73.100.74
 - EBS Volume
 - PrivateRouteTable2: 172.16.0.0, 172.16.1.0, 172.16.2.0

Availability Zone: eu-central-1c (Frankfurt Germany)

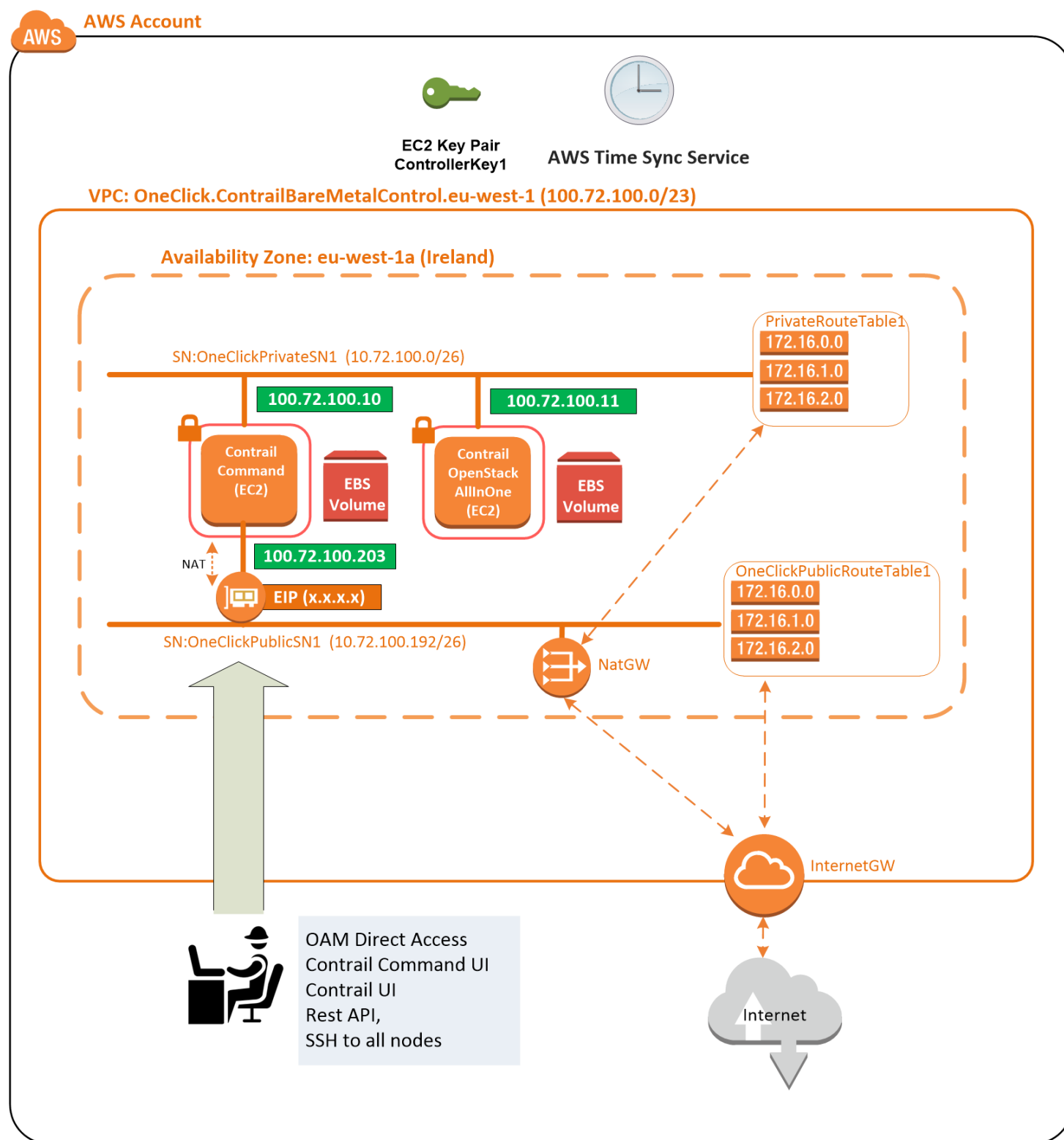
- Private Subnet: SN:OneClickPrivateSN3 (100.73.100.128/26)
 - Minion (EC2): 100.73.100.138
 - EBS Volume
 - PrivateRouteTable3: 172.16.0.0, 172.16.1.0, 172.16.2.0

Internet Connectivity:

- InternetGW connects to the Internet.
- OneClickPublicRouteTables connect to the InternetGW.
- NatGW connects to the InternetGW.

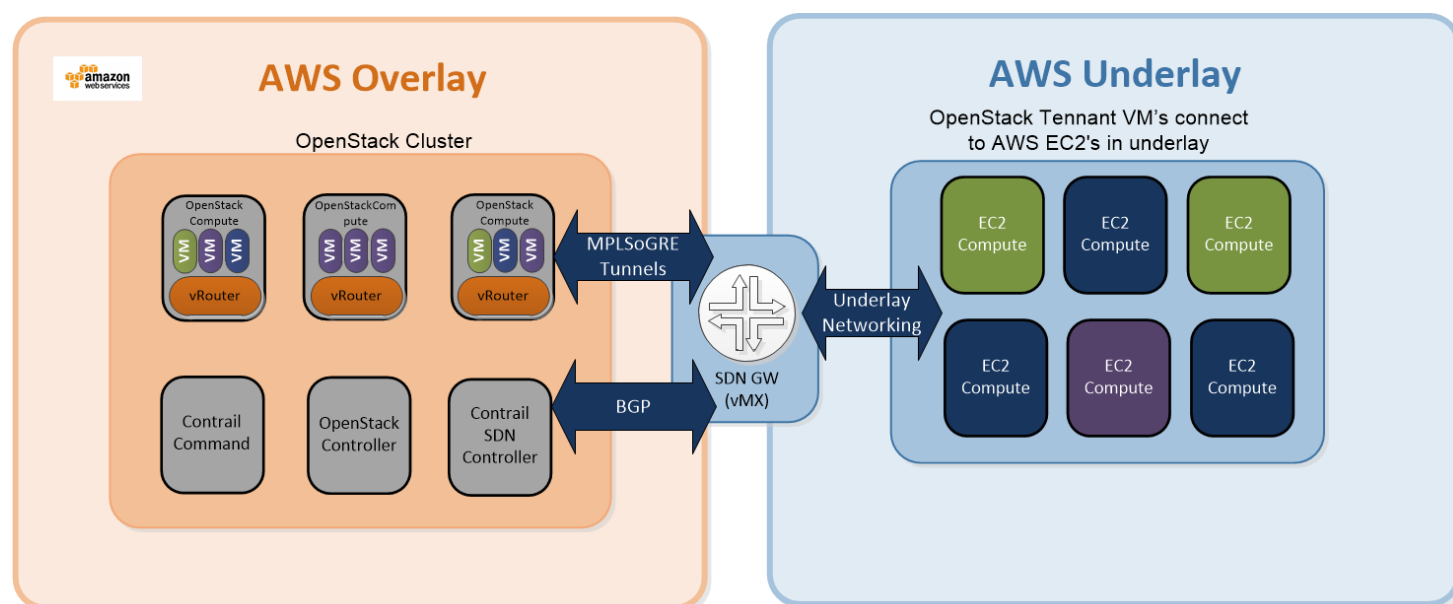
Contrail+OpenStack All-in-One using Contrail Command

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Adding a vMX SDN gateway to our AWS based All-in-one OpenStack using a CloudFormation stack. Then configuring with Contrail Fabric Manager

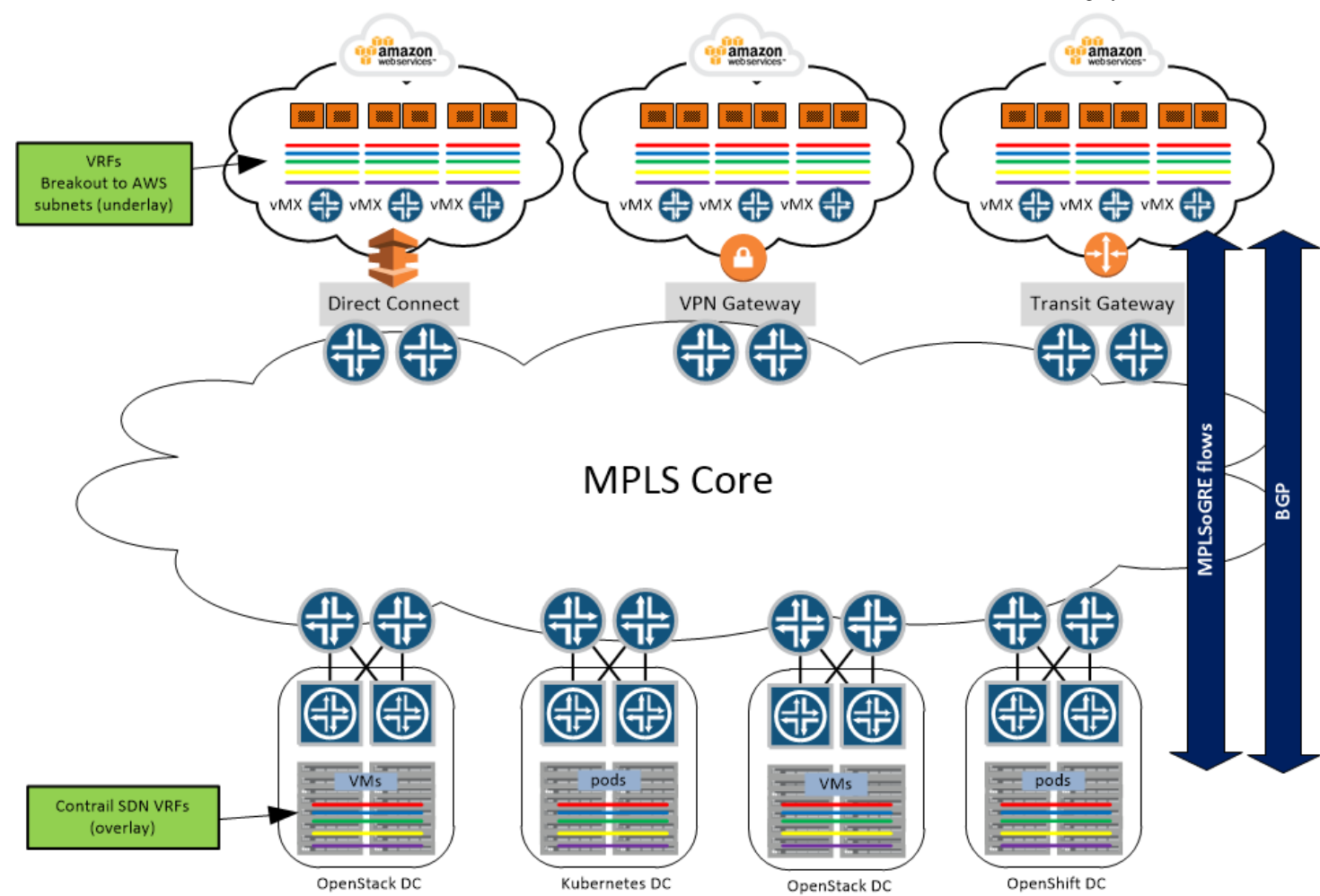
[Click to add a vMX to our AWS based All-in-one OpenStack](#)



Stretching on premise Contrail VRFs out to AWS using a vMX

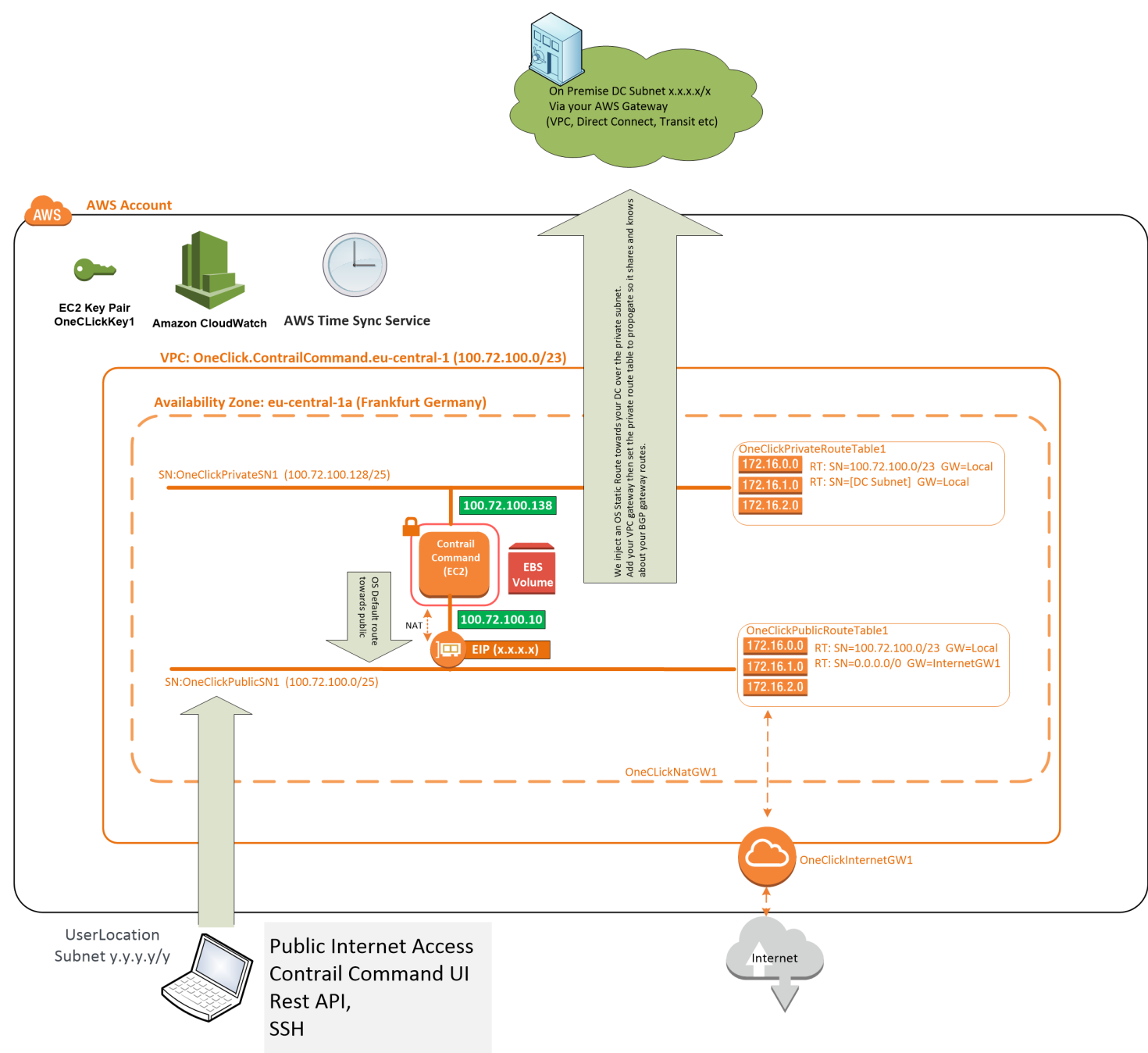
[Click to stretch your on premise SDN network out to AWS native services](#)

High Level

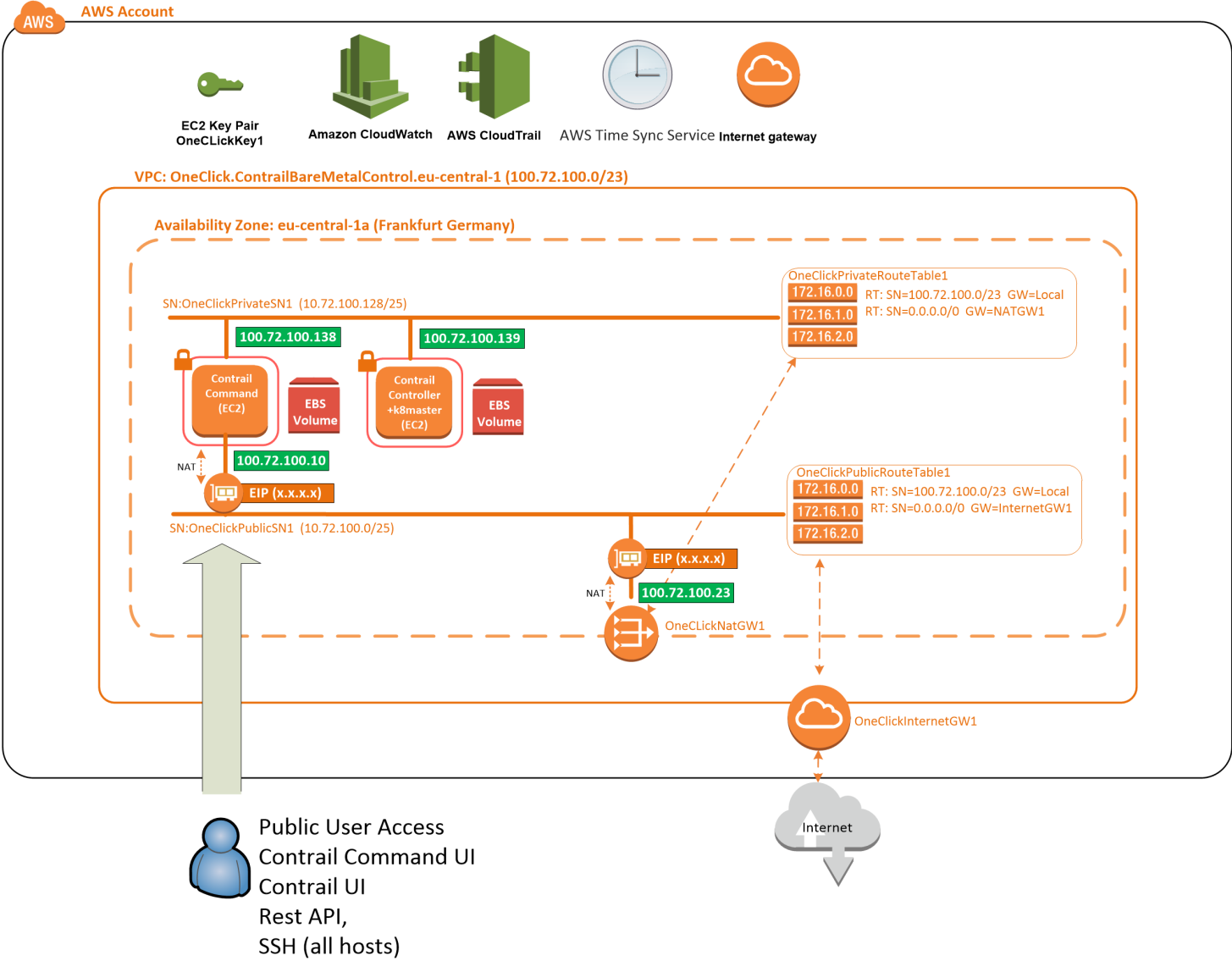


Customer specific stacks

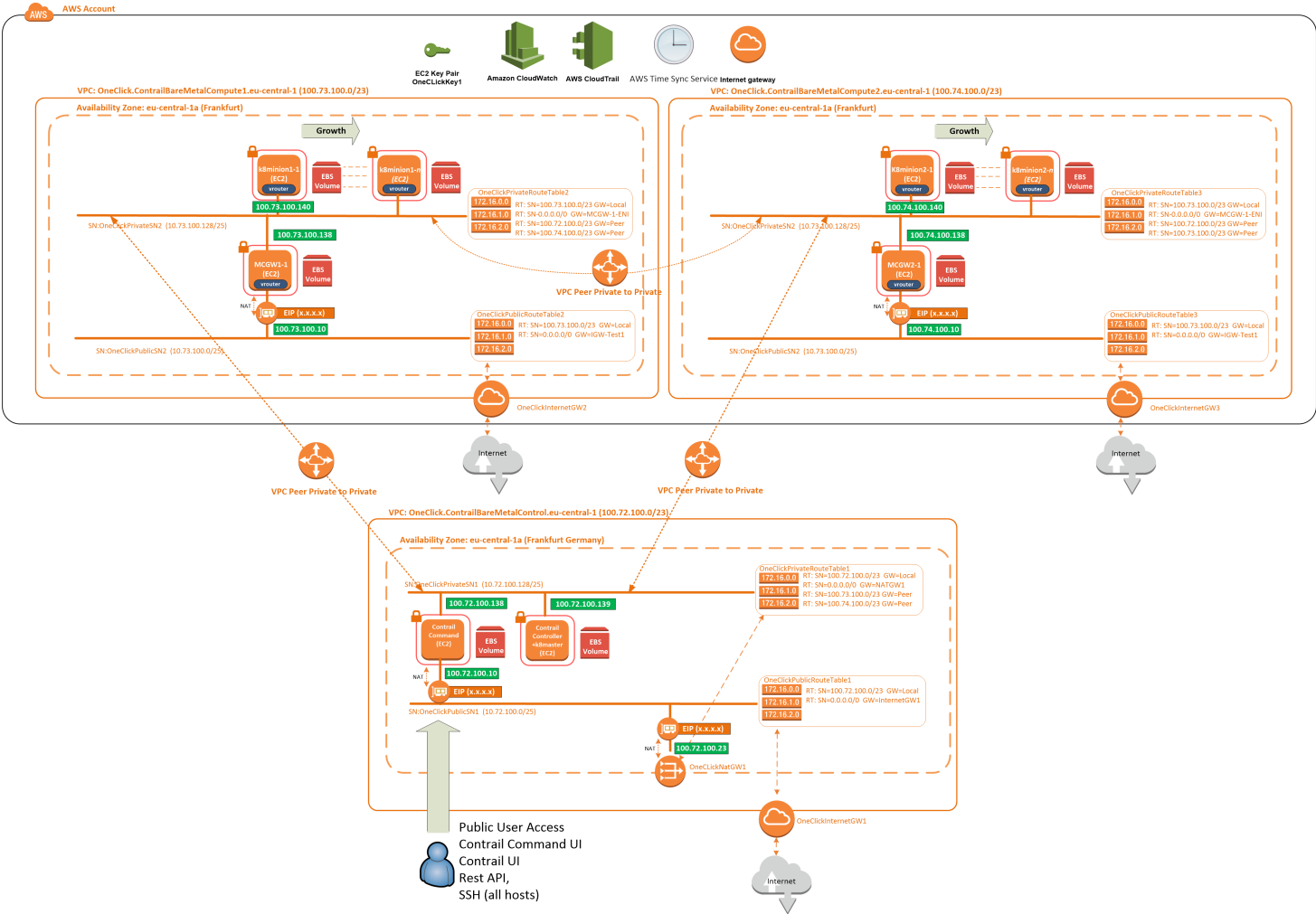
[Click to deploy Contrail Command within AWS](#)



[Click to deploy an on premise emulation in AWS: Use Contrail Command to build a simple all in one Contrail SDN plus Kubernetes](#)



[Click to deploy an on premise emulation in AWS: Use Contrail Command to build a complex three VPC Contrail SDN plus Kubernetes plus multi cloud gateways](#)



[Exposing a k8minion, load balanced and scalable app to internet without an SDN gateway \(no MX,yMX\).](#)

[prototypes are kept here](#)