

NETWORK VIRTUALIZED. POTENTIAL REALIZED.

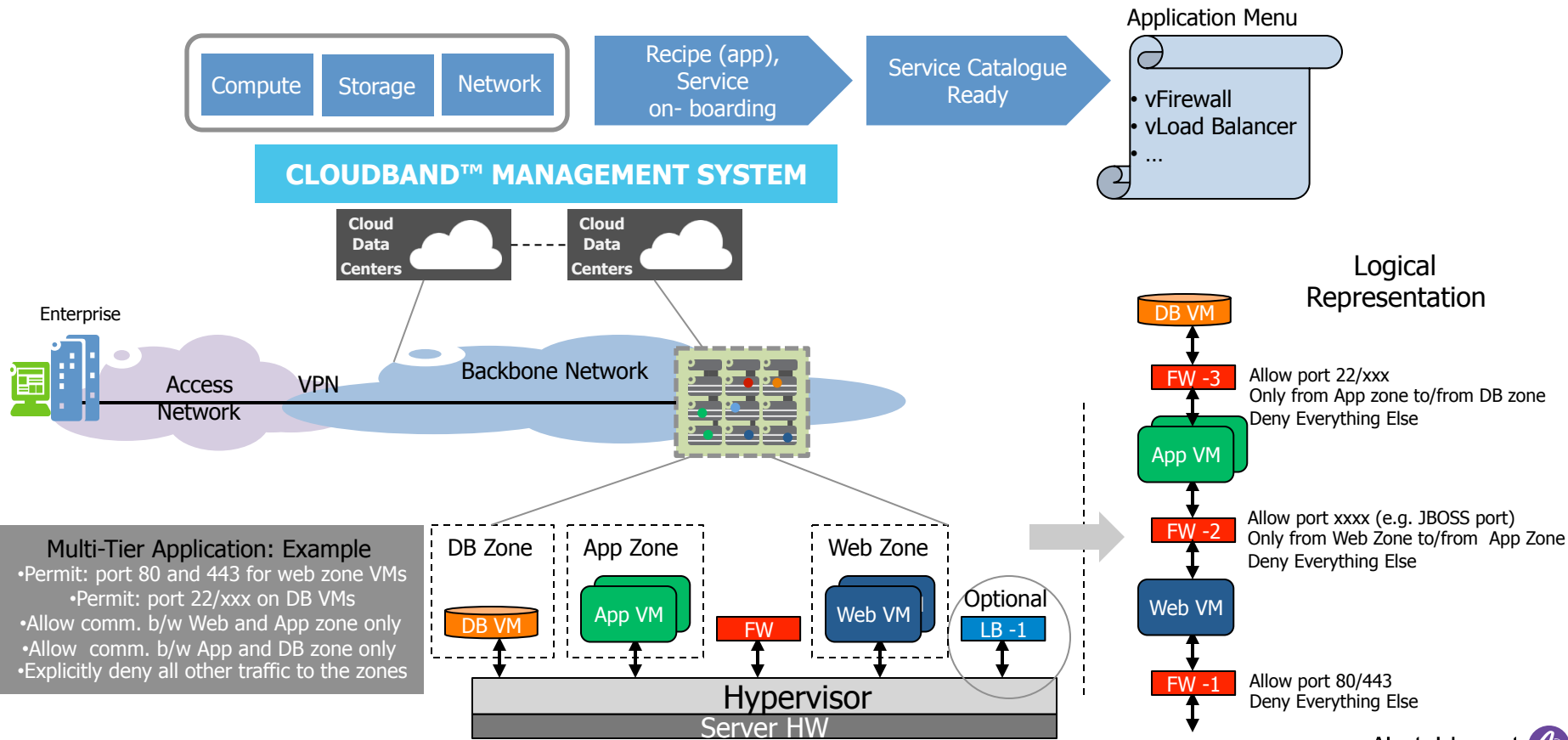
Let Alcatel-Lucent help you realize your cloud's full potential.



FIREWALL - NETWORK FUNCTION VIRTUALIZATION

June 2013

FIREWALL USE-CASE: MULTI-TIER APPLICATION



FIREWALL CLOUDIFICATION BENEFITS: OPERATIONAL ASPECTS

Attribute	Conventional	CloudBand
Appliance	Hardware appliance of software application on generic server (bare-metal) architected for peak capacity	Virtualized software appliance on cloud infrastructure architected for current capacity
Deployment	Site engineer investigates, deployment engineer installs, configures and provisions the system and monitors health	Management and Orchestration system deploys new instance with standard configuration and automatically monitors health
Scale	Add new cards/blades/servers into the system hardware and perform re-configuration (re-architect with capacity planning)	Orchestration system adds additional instances of the appliance and automatically adds them to the load-balanced pool
Upgrade	Replace new upgraded blade with existing blade	Upgrade a new virtual instance and just switch traffic to it. Delete old instance
Operations	Hardware, OS, Application, Alarms	OS, Hypervisor, Application, Alarms
Multi-tenancy	Service partitioning of hardware based systems can be quite cumbersome – or deploy multiple, parallel hardware/software systems	Simply create a new service slice by deploying new application instance and service chain with other NFV components

CloudBand NFV Platform: Virtual Firewalls

Firewall as Virtualized Network Function (VNF) Use Case

Load Balance VNF

Virtualized, Software-based firewall deployed as VNFs on CloudBand NFV Platform to create a distributed, scalable, highly-available and secure cloud based application delivery solution

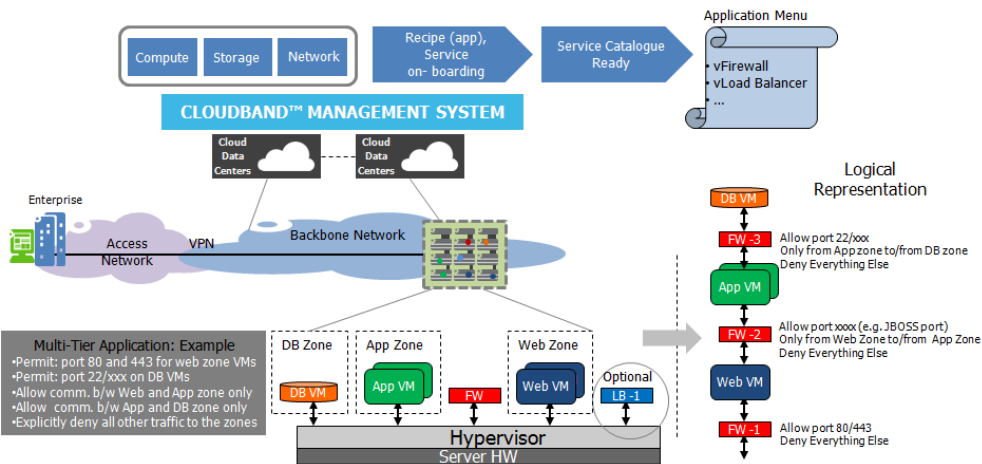
- Automated, one-touch deployment of firewall VNF Application
- Single mode or VRRP based High Availability deployment mode for reliability
- VNF Self-healing with upto date configuration state
- Full Life Cycle Management of the Application
- Service Chaining with other VNF Applications

Value Proposition: Vyatta FW on NFV Platform

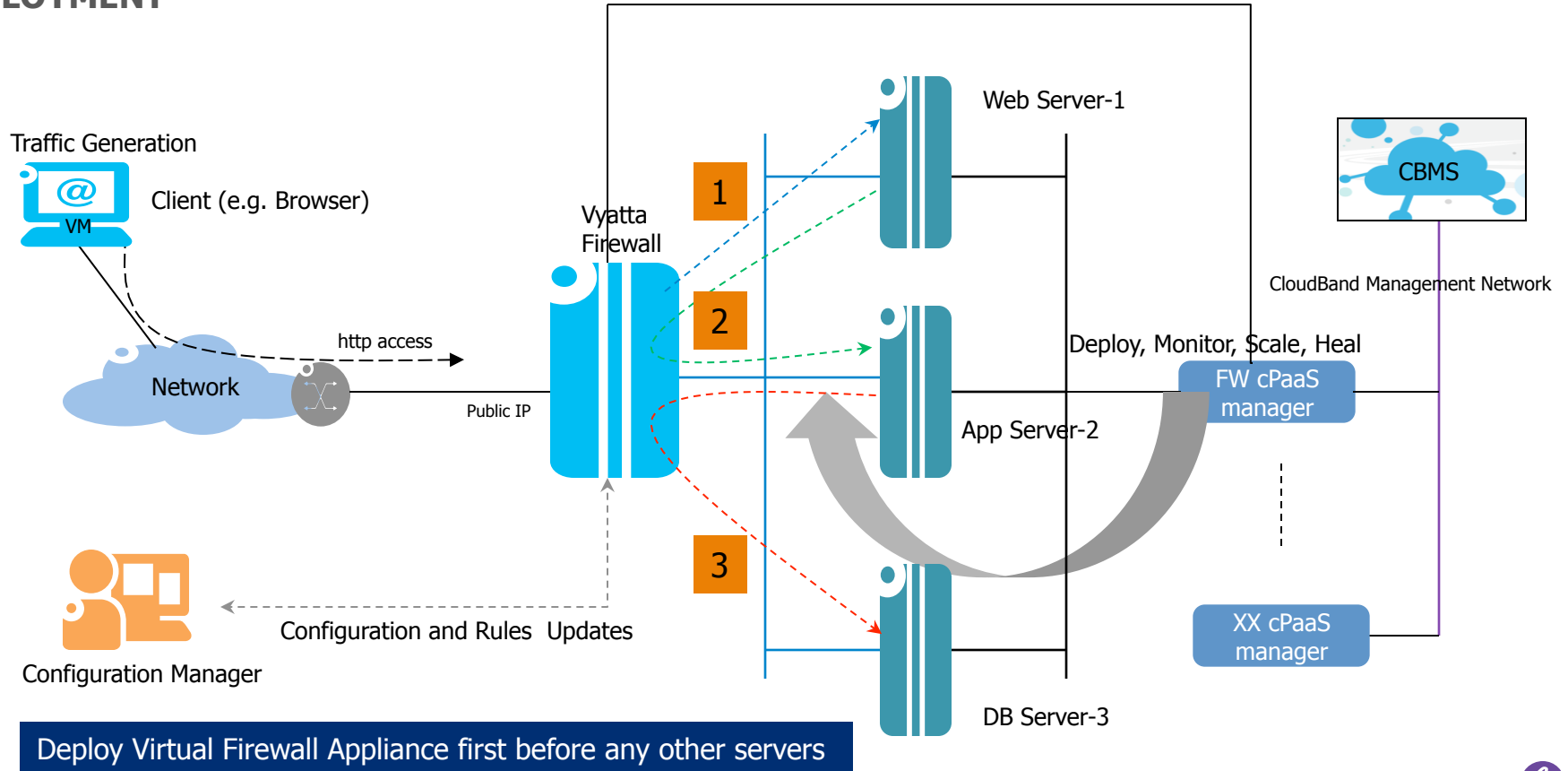
New Business Models & Offerings	Ability to create new service offerings and business models such as "FW as a service" with multi-tenancy- new revenue stream.
Elastic, Scalable and high-performance	Built-in mechanisms for rapid and infinite scalability, elasticity and performance based on demand – all on a multi-version, multi-tenant deployment
Service Agility	Accelerated service realization through rapid instance deployments dramatically reduces time to market. Service chaining with other NFV components creates new services easily
Lower TCO	Streamlined operations and processes with cookie cutter deployments on high-volume, COTS hardware

CloudBand NFV Platform: Benefits/Differentiators

Versatile NFV Platform	Industry leading NFV platform with development since 2011 – even before NFV was formed. Fully automated, distributed deployment for NFV apps with cPaaS control
Central management & Orchestration	Centralized management and orchestration framework for provisioning, deploying, configuring and operating of NFV applications
Multi-Tenancy	Multi-tenant deployment with per-tenant monitoring, auditing and reports
Service Provisioning	Rapid, cookie-cutter based service provisioning and configuration of isolated multiple instances in a multi-tenant deployment



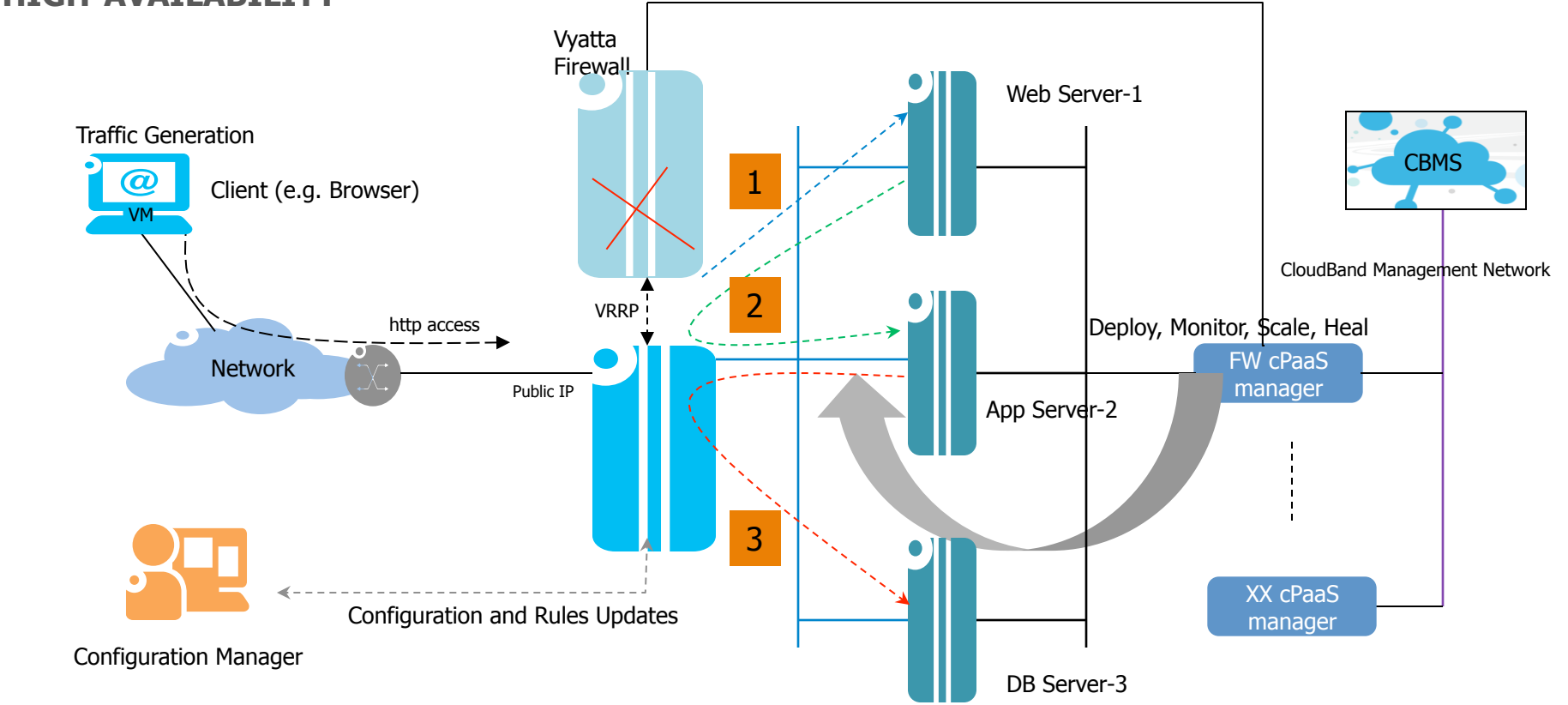
VYATTA FIREWALL ON CLOUDBAND DEPLOYMENT



Deploy Virtual Firewall Appliance first before any other servers

VYATTA FIREWALL ON CLOUDBAND

HIGH-AVAILABILITY



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