Anuta NCX - NFV Support
Why NFV (Network Functions Virtualization)

- Accelerated Time-to-Market
- Reductions in OpEX and CapEX
- Elasticity
- Resilience, speed and agility
- Applicable to any data plane packet processing and control plane function
- Standard virtualization technology and commodity hardware used
- Resource optimization
NFV Challenges

Service Definition
- Service Models
- Service Design

Service Orchestration
- Multi-vendor
- On-Demand
- Capacity and Network Awareness

Dynamic Loads
- Scaling based on
  - Network
  - Service
  - End-User action

VNF Lifecycle Management
- Image Management
- License Management
- Placement
- Hybrid Architectures

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NCX Virtual Appliance Life Cycle Management

- Customize VA Config
- License Activation
- Scale-Up & Down
- NCX VALM
- Service Orchestration
- Service Assurance
- Service Monitoring
# Virtual CPE

## Physical Topology

- **ESXi Host**
- **Nexus 1000v or VMware vSwitch**
- **Cisco CSR1000v**
- **Juniper vSRX - Firefly**
- **vWAAS /Virtual Steelhead**
- **User Access Switch (Physical)**

## Logical Topology

- **VDC**
- **L3**
- **L3 Zone**
- **WAN Optimizer**
- **Firewall**
- **Virtual Network**

## Use cases

- **Support for CPE Functions**
  - L3 Termination
  - DMVPN, L3 VPN, FlexVPN
  - Zone based Firewall
  - Wan Optimization
  - Web Security

- **Vendors Supported**
  - Cisco CSR 1000V
  - Juniper Firefly Perimeter, Firefly Host
  - Riverbed Virtual Steelhead
  - Checkpoint VSG
## Virtual MPLS Backbone and Edge

<table>
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| ![Physical Topology Diagram](image1.png) | ![Logical Topology Diagram](image2.png) | • Support for Virtual  
  • PEs  
  • CEs  
  • Route Reflectors  
  • Vendors Supported  
  • Cisco CSR 1000V |

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## Virtual Data Center

### Physical Topology

- ESXi Host
- Nexus 1000v or VMware vSwitch
- Cisco CSR 1000v
- Juniper vSRX - Firefly
- BIG IP LTM VE Or Citrix
- Juniper vGW or Cisco VSG

### Logical Topology

### Use cases

- Support for Virtual
  - Router
  - Firewall
  - Load Balancer
  - WAN optimization
  - Switch
- Vendors Supported
  - Cisco CSR 1000V
  - F5 LTM VE
  - F5 GTM VE
  - Citrix NetScaler
  - Radware ADC-VX
NCX Solution Benefits

- Orchestration across Physical and Virtual Appliances
- Virtual Appliance Life Cycle Management
- Orchestration across Branch, Campus, Data Center & Carrier Networks
- Multi-vendor VNF Support
- OPEX Reduction, Improved Customer Satisfaction
- Complete Analytics for the Network