1 CheatSheet: SDN & NSX-T VMware

- PDF Link: cheatsheet-sdn-A4.pdf, Category: VMware
- Blog URL: `https://cheatsheet.dennyzhang.com/cheatsheet-sdn-A4`
- Related posts: CheatSheet: Cloud Virtualization, #denny-cheatsheets

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1.1 SDN

1.1.1 SDN Basic Concepts

Name	Command
SDN(Software-defined networking)	
NAT(Network address translation)	Allow you to hide the IP addresses.
DNAT	For ingress traffic, hide your server IP
SNAT	For egress traffic, hide your server IP
VLAN (Virtual LAN)	Group hosts together even if not directly connected to same network switch
East/West traffic	Traffic within a data center. Usually depict local area network (LAN) traffic horizontally
North/South traffic	Traffic coming into and out of the network into Internet space
BGP(Border Gateway Protocol)	Among autonomous systems (AS) **on the Internet**. eBGP vs iBGP
Overlay networks	
vnet(a virtual network)	allows instances to migrate among compute nodes without changing networking conf
Floating IP Pool	

1.1.2 SDN More Concepts

Name	Command
VNIC (Virtualized Network Interface Card)	A virtual NIC based on a physical one, then added to a network bridge
VIF (Virtual Network Interface)	
VTEP (VXLAN Tunnel Endpoint)	
LAG(Link aggregation)	
Transport Network	
BFD(Bidirectional Forwarding Detection)	BFD can be used for BGP peers but also for static routes
DFW(Distributed Firewall)	
NFV(Network function virtualization)	
L2 networking	L2 bridge
L3 networking	
L7 networking	
GRE(Generic Routing Encapsulation)	

1.1.3 Switch - L2 layer

Name	Command
VLAN (Virtual LAN)	Group hosts together even if they are not directly connected to same network switch
VXLAN (Virtual Extensible LAN)	
Geneve	
Logical Switch	Spin up isolated logical L2 networks
OVS (Open vSwitch)	
VNI(Virtual Network Instance)	
TEP table	

https://raw.githubusercontent.com/dennyzhang/cheatsheet.dennyzhang.com/master/cheatsheet-sdn-A4/open-vswitch.png

1.1.4 Router - L3 layer

Name	Command
LR(Logical Router)	Create multiple routing domains with a single router. It composes: DR and SR
Two-tier routing	T0-router(physical routing infra), T1-router(per tenant first hop router)
Uplink	Used to connect to physical infrastructure
Router Link	Used to interconnect Tier0 and Tier1 Logical routers
Downlink	Used to connect logical switches
Static Routing/Dynamic Routing	
DR(Distributed Router)	
SR(Service Router)	
LRP	

https://raw.githubusercontent.com/dennyzhang/cheatsheet.dennyzhang.com/master/cheatsheet-sdn-A4/two$_{\text{routers.png}}$

1.2 VMWare NSX-T

https://raw.githubusercontent.com/dennyzhang/cheatsheet.dennyzhang.com/master/cheatsheet-sdn-A4/nsxt-topology-nat.png

1.2.1 NSX-T Components

Name	Command
NSX Manager node	hosts API services.
NSX Controller	host the central control plane cluster daemons.
NSX-T Edge	Provides routing services and connectivity to networks external to NSX-T deployment

1.2.2 NSX-T In PKS

NSX-T Component	Summary
NSX Manager Appliance	1 instance; 16 GB RAM per Instance; 4 vCPU per instance; 140GB Disk per Instance
NSX Controllers	3 instance; 16 GB RAM per Instance; 4 vCPU per instance; 120GB Disk per Instance
NSX-T Edge	1 up to 8 instance; 16 GB RAM per Instance; 8 vCPU per instance; 120GB Disk per Instance

1.2.3 NSX-T Concepts

Name	Command
NCP	NSX-T container plugin CNI. Link: Overview of NSX-T Container Plug-in
N-VDS	NSX Virtual Distributed Switch
LCP(Local Control Panel)	
CCP(Central Control Panel)	
ASGs(Application Security Groups)	
Link	VMware Products, NSX-T Container Plug-in for Kubernetes
Transport nodes	host local control plane daemons and forwarding engines.
Plane agent	Every node hosts a management plane agent.

1.2.4 NSX-T Commands

Name	Command
nsxcli in PKS	`/var/vcap/jobs/ncp/bin/nsxcli -c get ncp-master status`
ncp log	`/var/vcap/sys/log/ncp/`
NSX-T networking in PKS	`https://docs.pivotal.io/runtimes/pks/1-1/nsxt-prepare-env.html`

1.3 More Resources