

Helping you create a
digitally secure future.

Public Cloud 202: Azure Networking with vWAN Internet Inbound

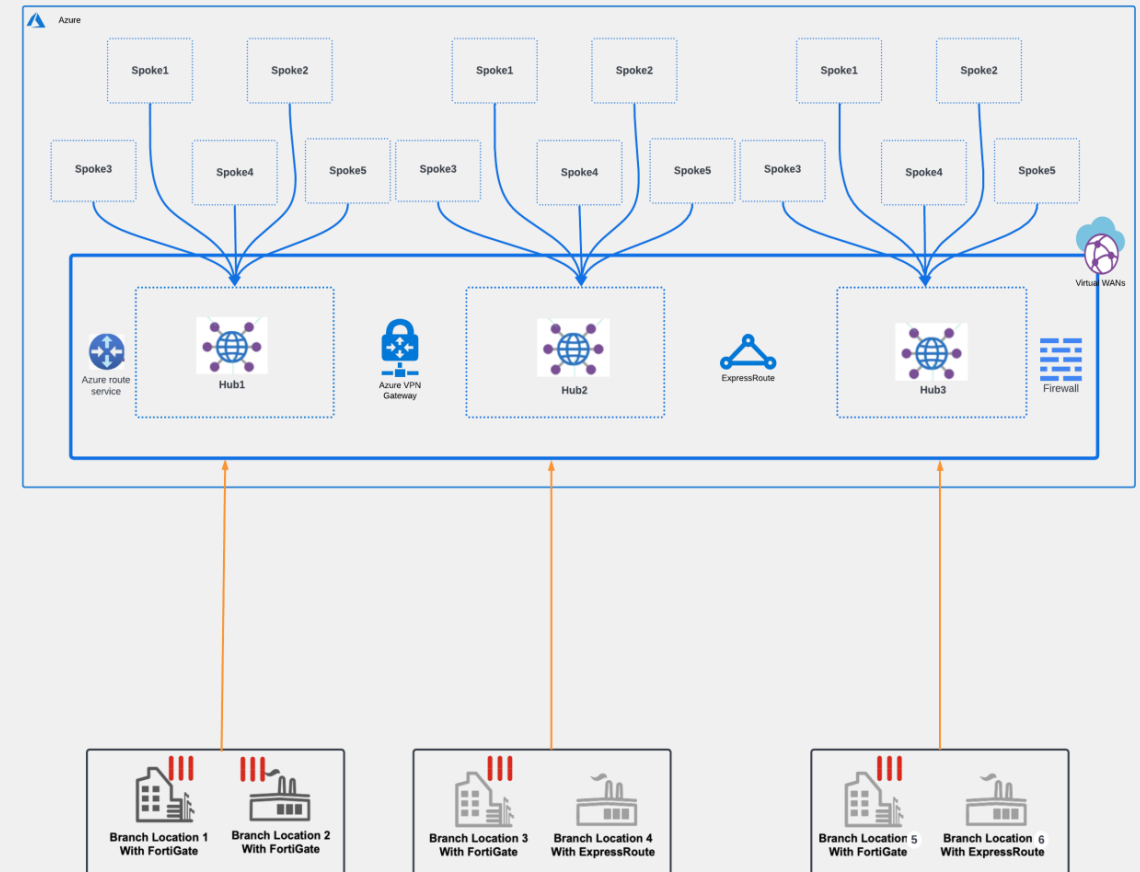
John McDonough / Srija Reddy Allam
Cloud Security Architects

Azure Virtual WAN

- What is vWAN
- Components of a vWAN

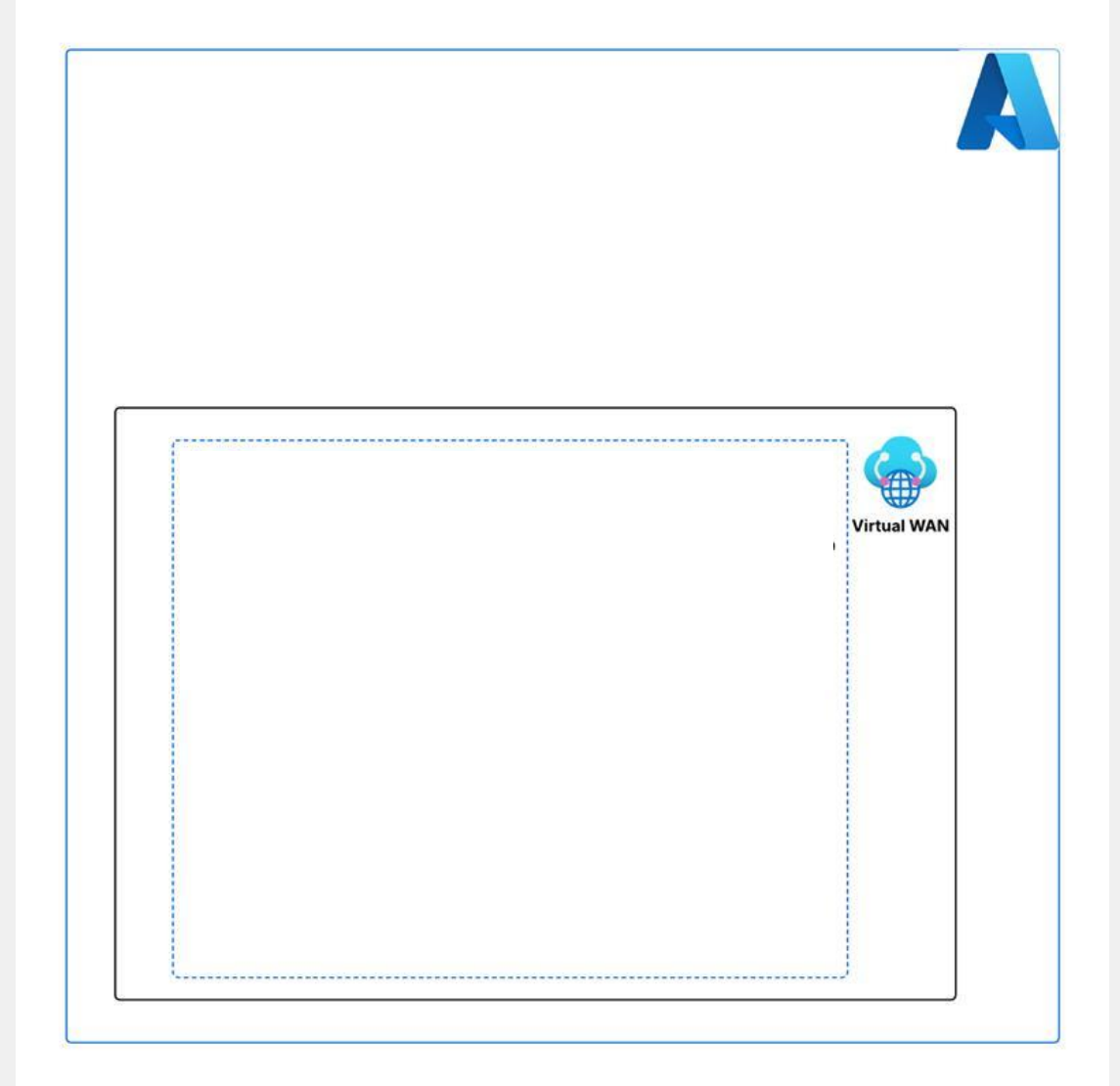
What is Azure Virtual WAN

- Simplifies management of various hub and spoke deployments providing centralized security
- Automated large-scale branch connectivity using VPN and Express Route services
- Unified network and policy management
- Optimized routing using the Microsoft global network
- Provides advanced routing enhancements – BGP and Routing Intent
- Ability to integrate with Fortinet FortiGate solutions providing SD-WAN and NGFW services



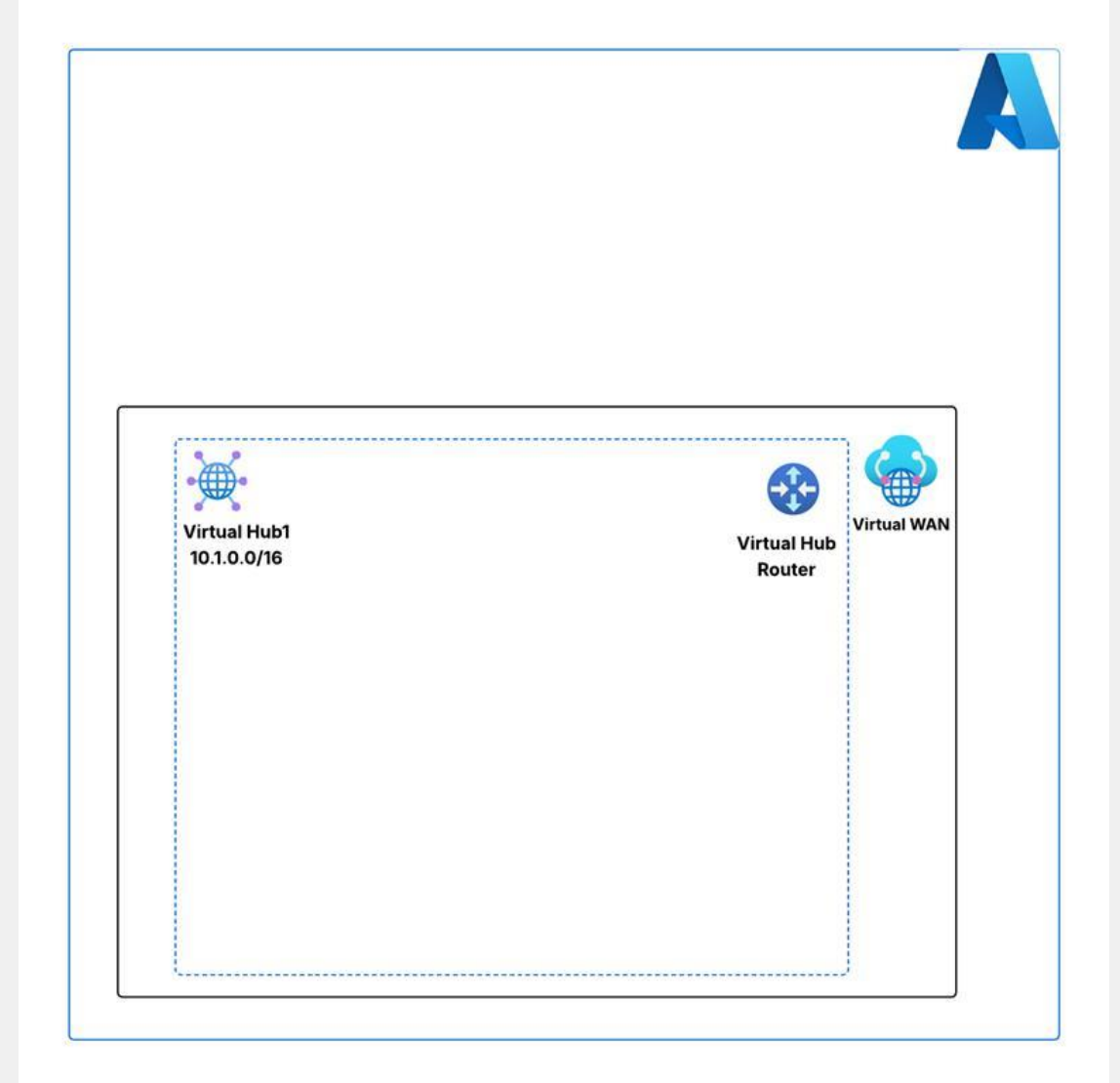
Virtual WAN Components – Virtual WAN

- Managed Service deployed from Azure portal
- Simple deployment template
 - Name
 - Region
 - Resource Group
 - Type (connectivity options)
 - Standard
 - Basic
- **Already deployed for this lab because of time.



Virtual WAN Components – Virtual Hub

- Managed Service deployed from Azure portal
- Simple deployment template
 - Name
 - Region
 - Resource Group
 - Address space
 - Capacity (Scale Units)
 - Routing Preference
 - AS Path
 - Express Route
 - VPN
 - Additional Services
- **Already deployed for this lab because of time.



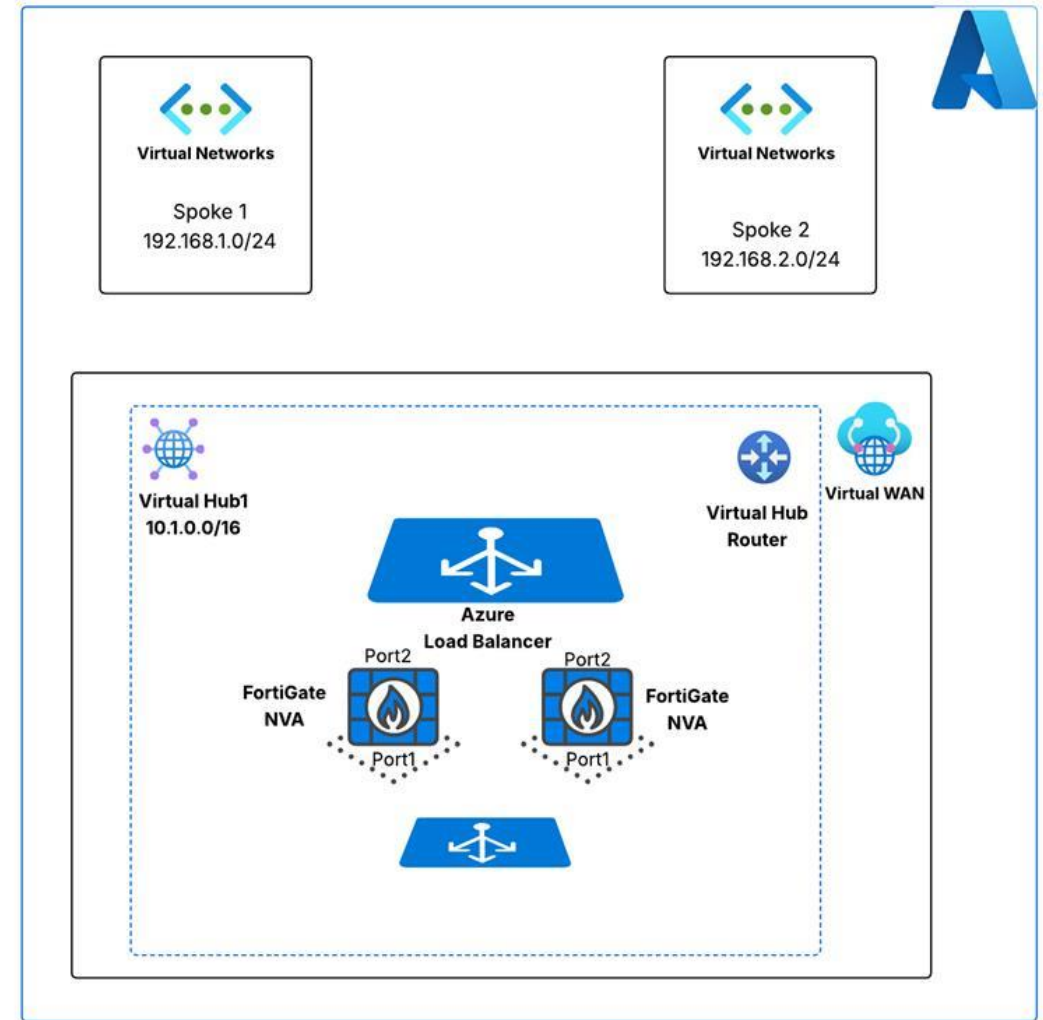
Virtual WAN Components – Virtual Networks

- VNETS deployed from Azure portal
- Comprehensive deployment template
 - Name
 - Region
 - Resource Group
 - Address space
 - Subnets
 - Additional Services
 - Virtual Machines
- **Already deployed for this lab because of time.



Virtual WAN Components – FortiGate NVA

- FortiGate NVAs deployed from Azure portal - VWAN Hub page
- Simple deployment template
 - Name
 - Region
 - Resource Group
 - Address space
 - Subnets
 - Additional Services
 - Ingress Public IP
 - Ingress External Load Balancer
 - Virtual Machines
- **Attendee will deploy



Getting Started

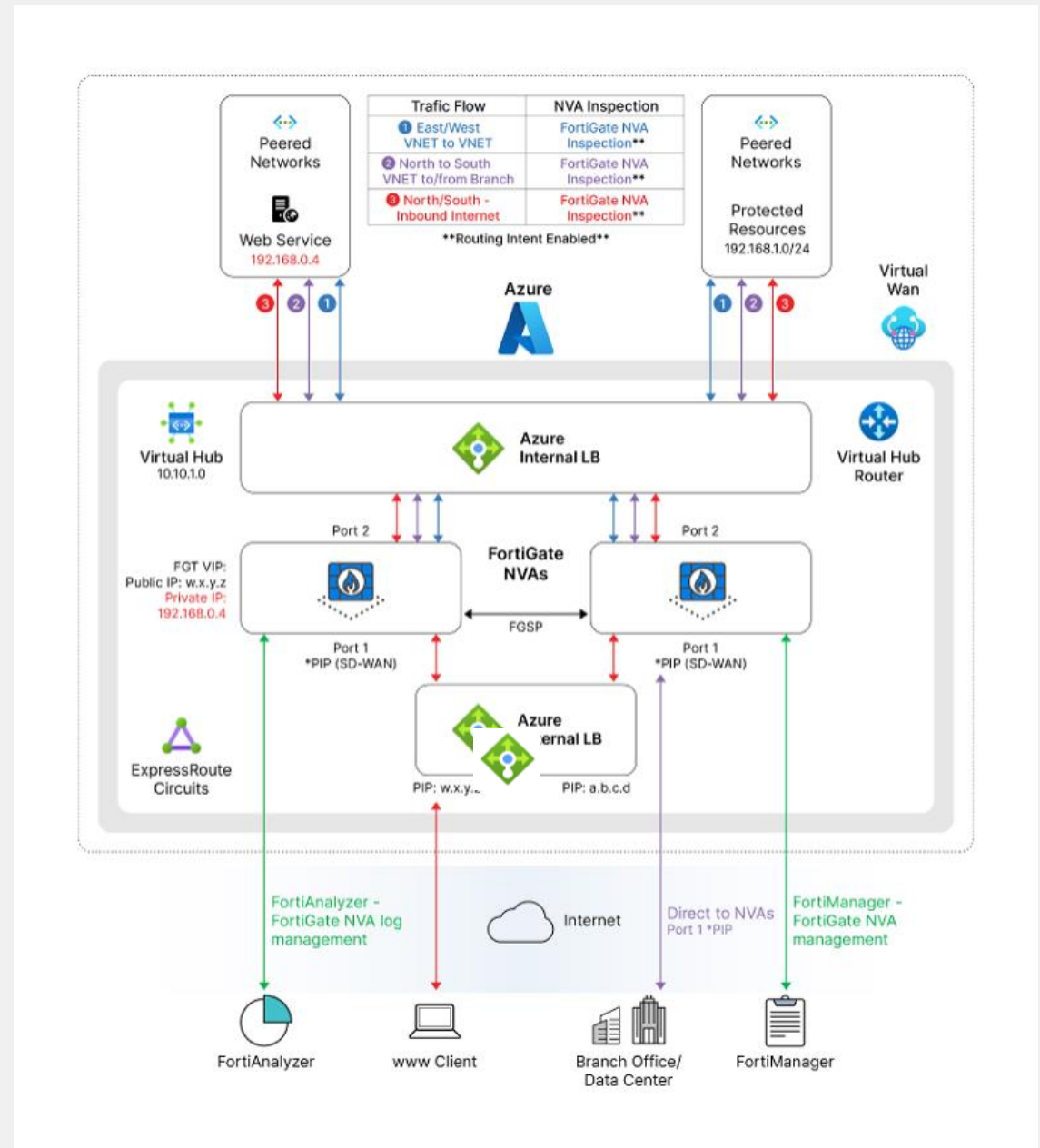
- Moderated by instructors
- Username assignments
- <https://fortinetcloudcse.github.io/azure-202-advanced>
- Review lab material



FortiGate Integration with Azure VWAN

The industry's first fully Integrated network virtual appliance providing **Secure SDWAN AND Next Generation Firewall Services**

- Simple and structured deployment model
 - Deployed via Azure portal – Managed service
 - SDWAN and/or NGFW deployment options
- High Availability and Resiliency
 - Active-Active – up to 5 FortiGates (NGFW)
- Performance and Scale
- Dynamic Routing Capabilities
- Single management interface – FortiManager – Appliance / VM
- Centralized logging – FortiAnalyzer – Appliance / VM
- Flexible licensing options
 - BYOL / FortiFlex
 - PAYG – New in Q2 2024



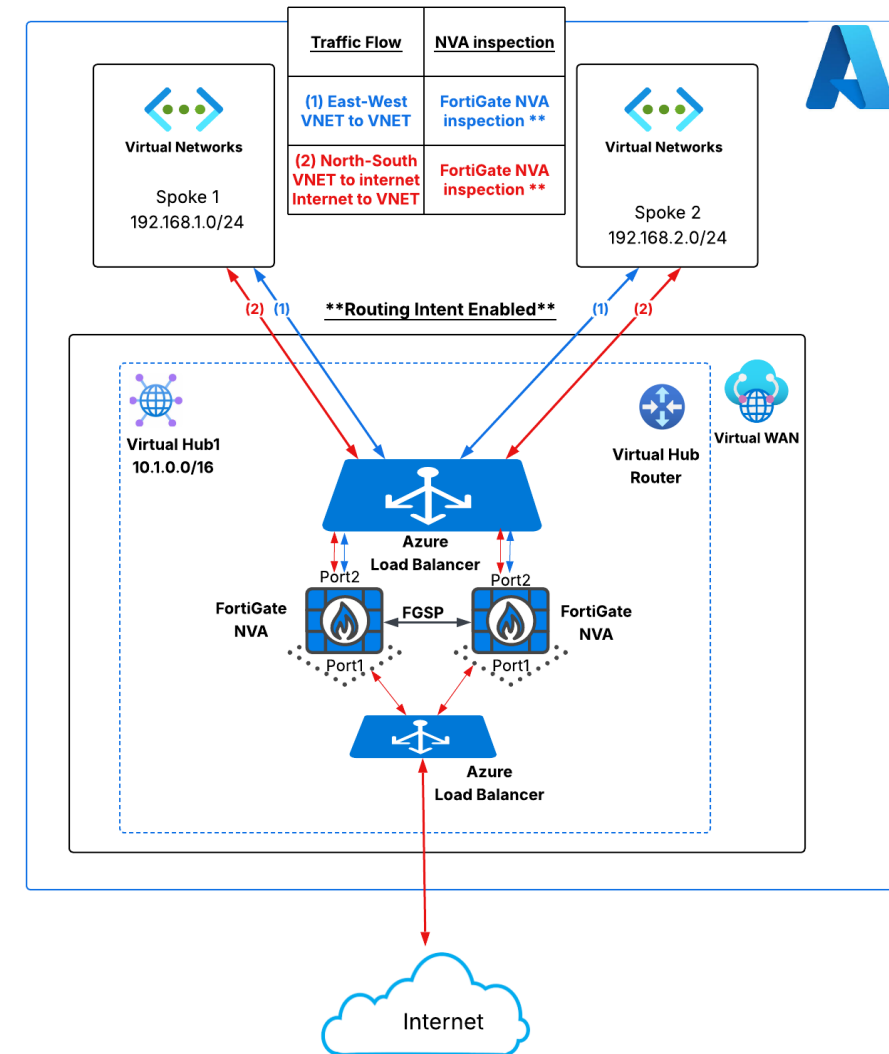
Azure Marketplace Plan

- NGFW
- SD-WAN & NGFW

NGFW Only - Option

- Inspects East-West and Internet bound traffic
 - Network inspection across VNETs connected to the Virtual WAN
 - Internet bound traffic inspection
- High Availability and resiliency
 - Active-Active - supports up to 5 VMs and 80 Gbps
- Performance and Scale
- Dynamic Routing Capabilities
- Single management interface – FortiManager – Appliance / VM
- Centralized logging – FortiAnalyzer – Appliance / VM
- Flexible licensing options
 - BYOL / FortiFlex
 - PAYG

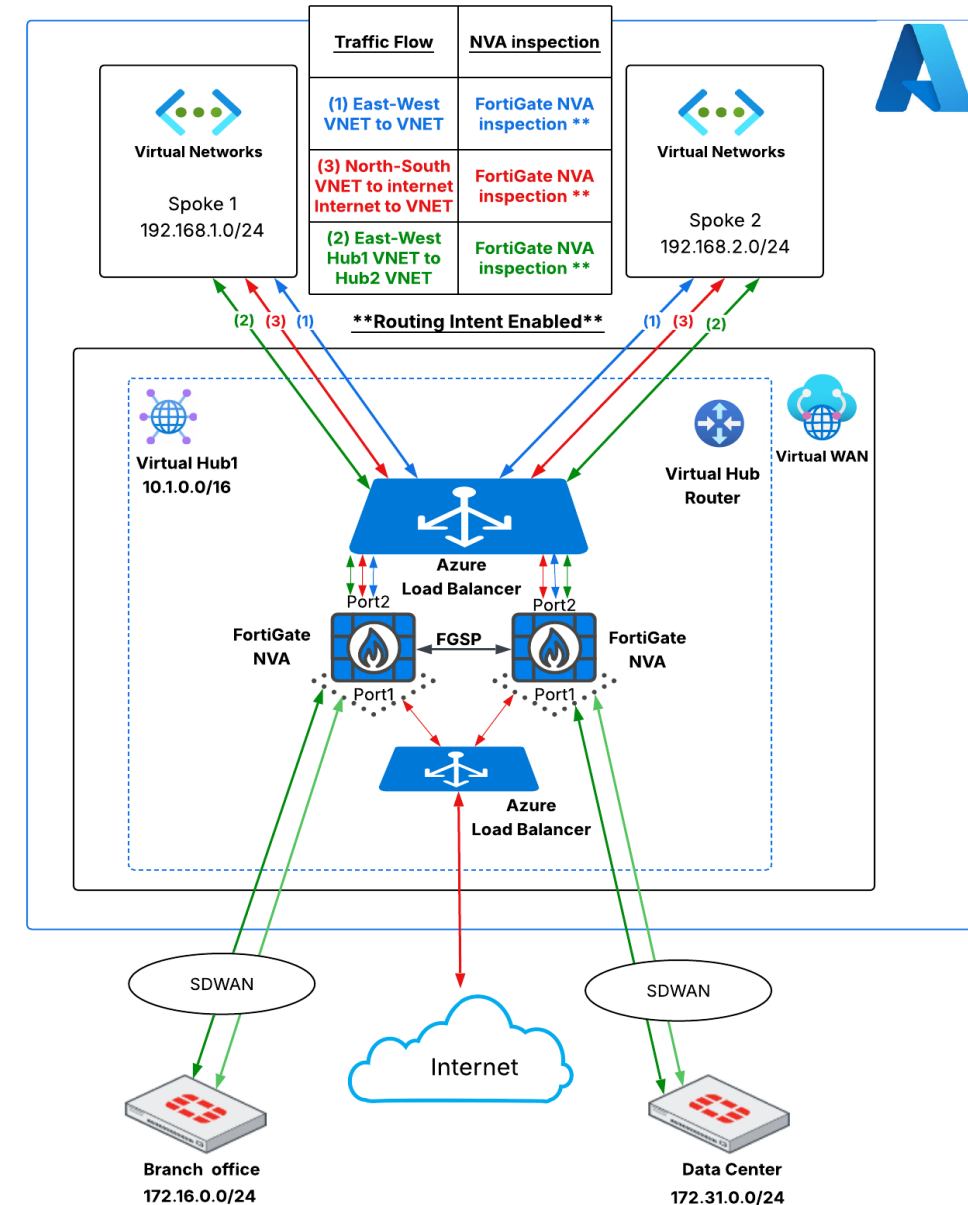
Azure vWAN-Single Hub



SDWAN & NGFW - Option

- North-South inspection for traffic destined to the Internet or the SDWAN connected networks. (See red & green traffic flows on the diagram)
- Inspection across vNETs connected to the virtual WAN (See blue traffic flow on the diagram)
- High Availability and resiliency
 - Active-Active – supports 2 VMs up to 10Gbps
- Performance and Scale
- Dynamic Routing Capabilities
- Single management interface – FortiManager – Appliance / VM
- Centralized logging – FortiAnalyzer – Appliance / VM
- Flexible licensing options
 - BYOL / FortiFlex
 - PAYG

Azure vWAN-Single Hub



Order Types in VWAN

NGFW Only – Scale Units

The following table summarizes FortiGate vWAN license options:

Scale units	Bandwidth	Suggested license SKU	Security service (support included)	Instance count
2	1 Gbps	FortiGate-VM (2 CPU)	UTP Bundle	2
4	2 Gbps	FortiGate-VM (4 CPU)	UTP Bundle	2
10	5 Gbps	FortiGate-VM (8 CPU)	UTP Bundle	2
20	10 Gbps	FortiGate-VM (16 CPU)	UTP Bundle	2
40	20 Gbps	FortiGate-VM (16 CPU)	UTP Bundle	3
60	30 Gbps	FortiGate-VM (16 CPU)	UTP Bundle	4
80	40 Gbps	FortiGate-VM (16 CPU)	UTP Bundle	5



Scale units cannot change dynamically. If you want to use a different scale unit after deploying the NVAs, you must redeploy the NVAs.

SDWAN & NGFW – Scale Units

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20	10 Gbps	FortiGate-VM (16 CPU)	UTP Bundle	2



Scale units cannot change dynamically. If you want to use a different scale unit after deploying the NVAs, you must redeploy the NVAs.

Questions

Lab Overview



5x columns

Paragraph Text



Overview

- Connect to Azure Environment
- Review Resources



Deploy

- Deploy FortiGate NVAs in Azure VWAN Hub
- Deploy 2nd vWAN
- Deploy Linux VMs



Configure

- Configure FortiGates
- Configure FGSP
- Firewall Policies
- Configure VNET peering



Route

- Configure FortiGate Static Routes
- Ensure BGP peering
- Configure Azure Routing Intent
- Configure Internet Ingress



Verify

- Verify Spoke to Spoke
- Verify Spoke to Internet
- Verify Internet to Spoke
- Verify Hub to Hub

FORTINET

