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# Public Cloud - 202 - Secured Azure FortiGate Integrated vWAN Hub

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Helping you create a  
digitally secure future.



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Cloud Security Architects



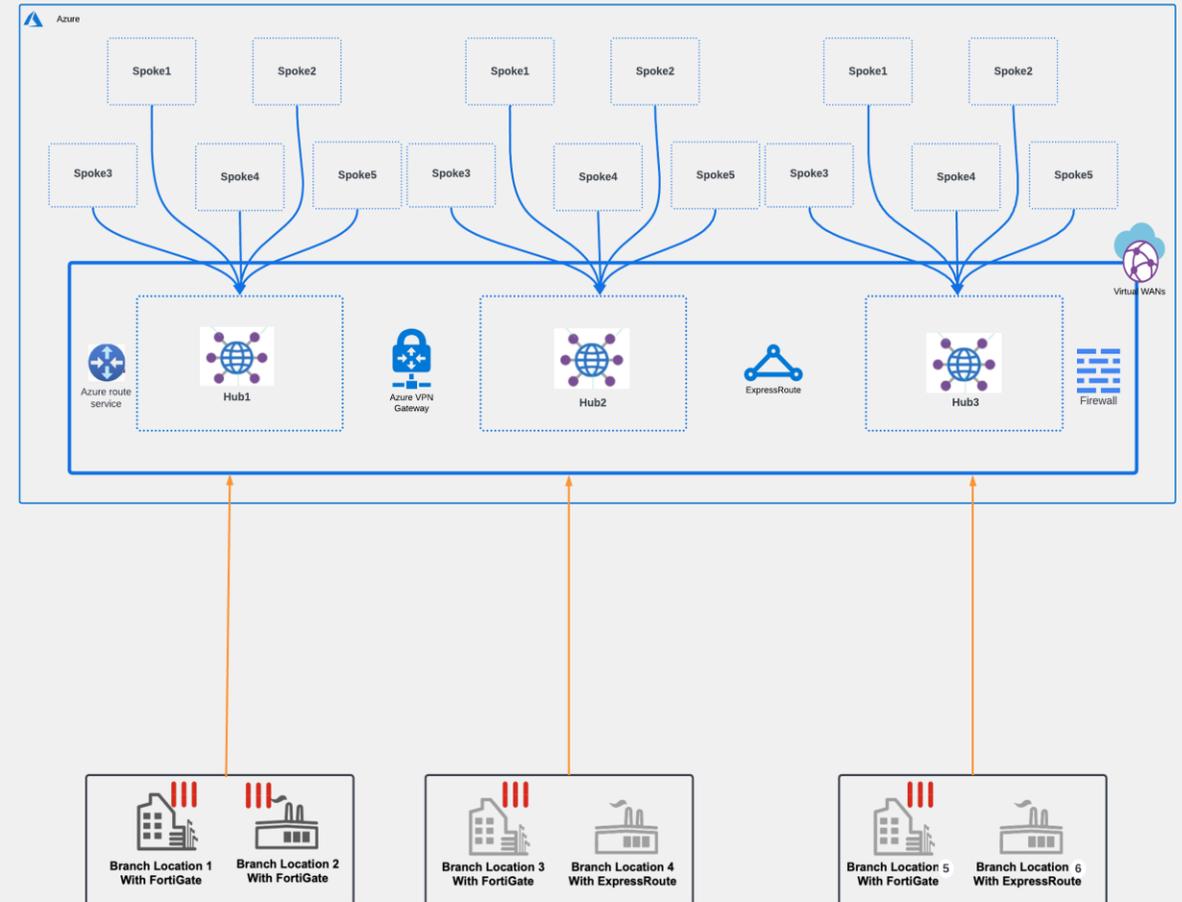
# Azure Virtual WAN

- What is vWAN
- Components of vWAN

# What is Azure Virtual WAN

Azure Virtual WAN is a networking service that brings many networking, security, and routing functionalities together to provide a single operational interface.

- 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

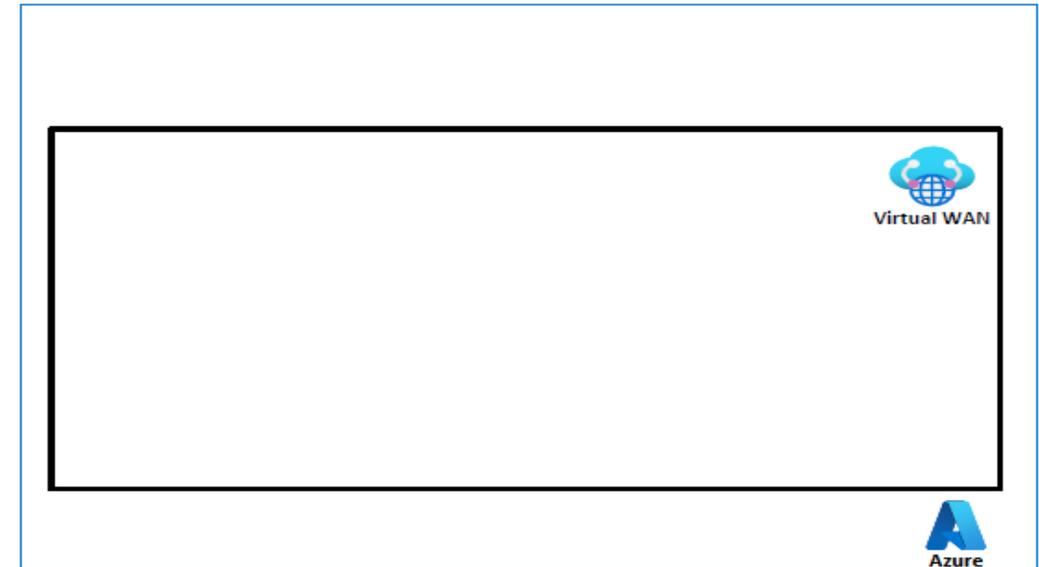


# Virtual WAN Components – Virtual WAN

- 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.

## vWAN Components – Virtual WAN

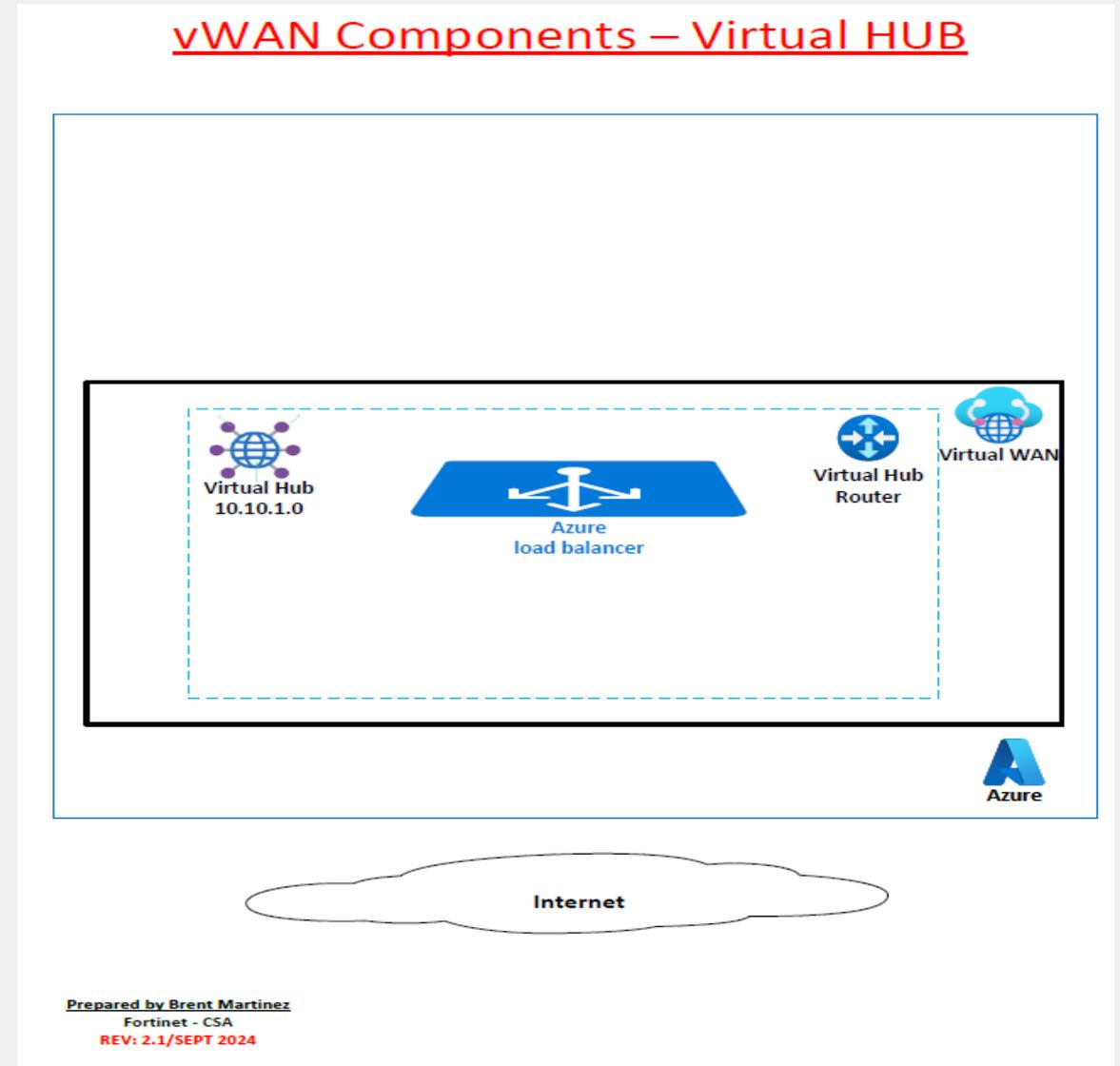


Prepared by Brent Martinez  
Fortinet - CSA  
REV: 2.1/SEPT 2024

# 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

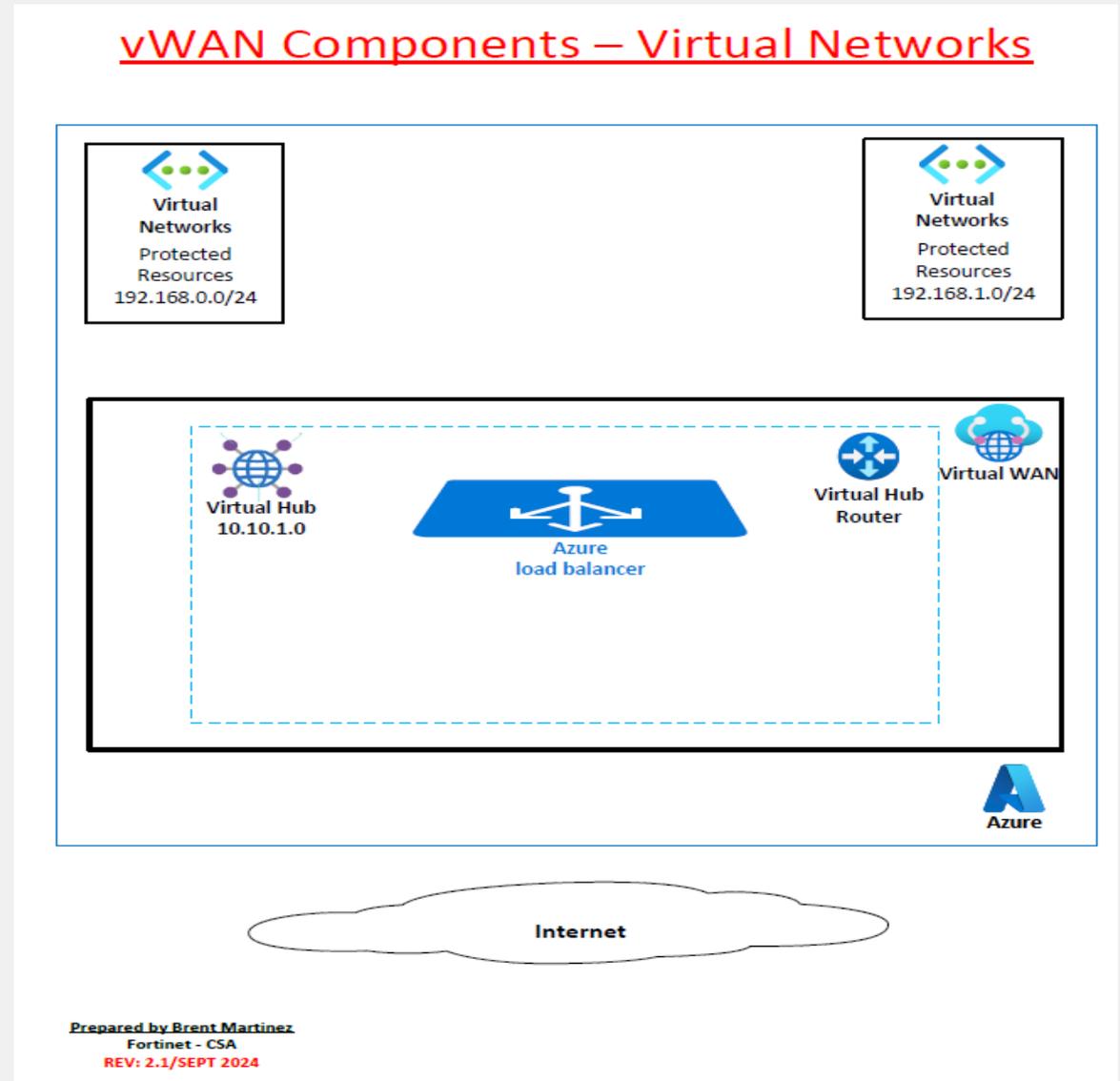
\*\*Already deployed for this lab because of time.



# Virtual WAN Components – Virtual Networks

- VNETs deployed from Azure portal
- Comprehensive deployment template
  - Name
  - Region
  - Resource Group
  - Address space
    - Subnets
- Additional Services
  - Deploy Virtual Machines

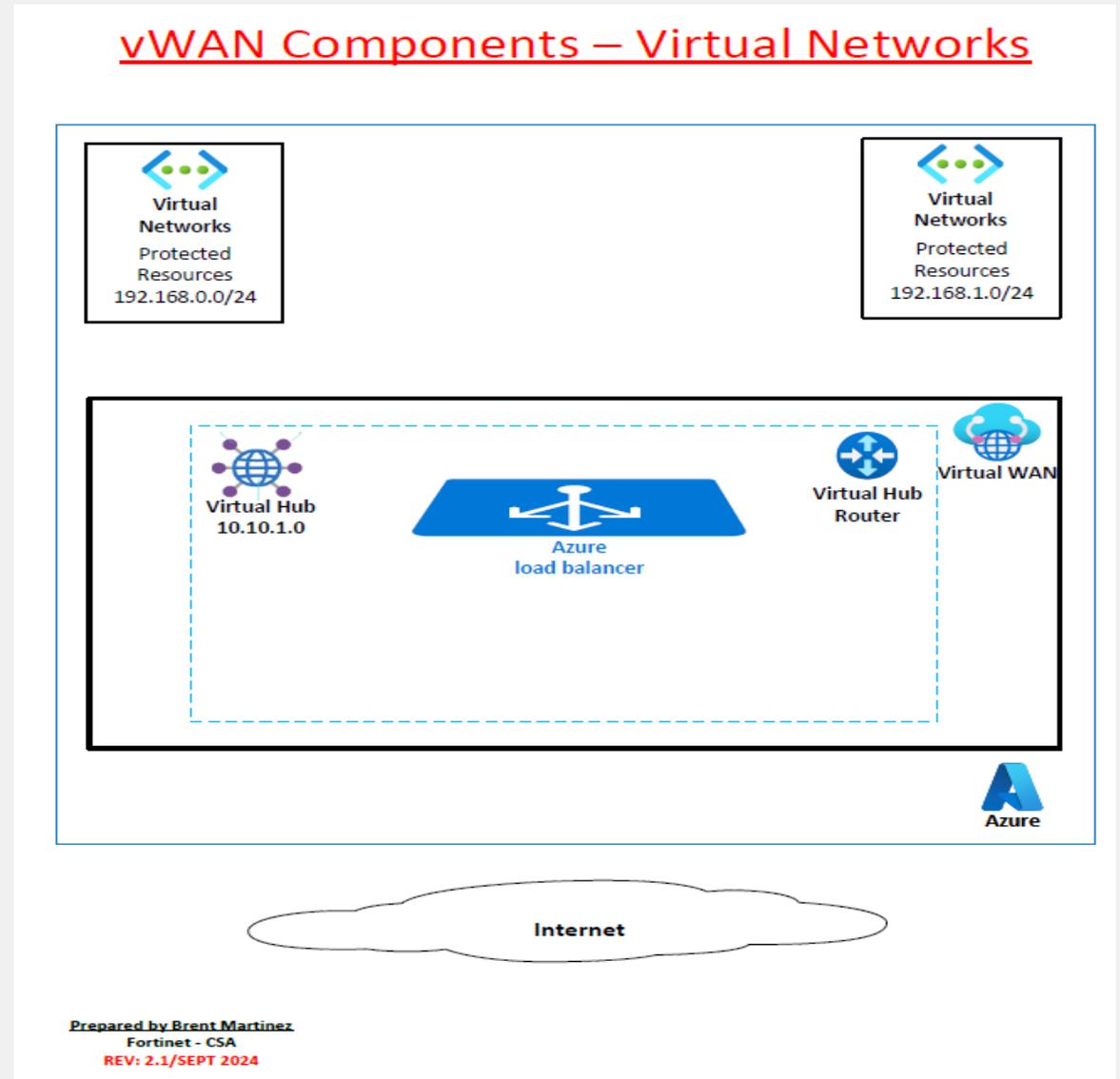
\*\*Already deployed for this lab because of time.



# 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
    - Deploy Virtual Machines

\*\*Already deployed for this lab because of time.



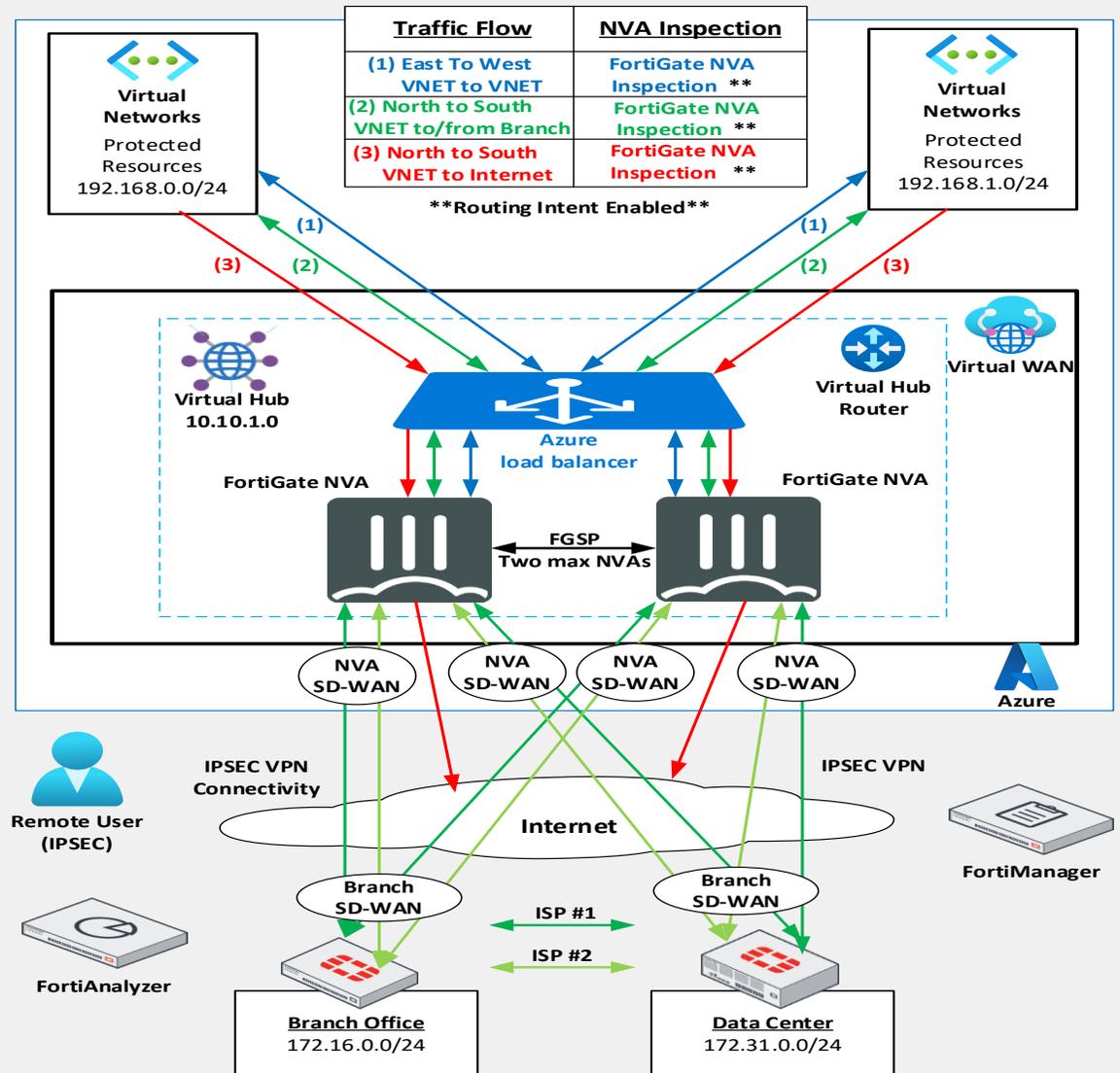
# FortiGate Integration with Azure VWAN

## SDWAN & NGFW - Plan

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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 Only
- SDWAN & NGFW

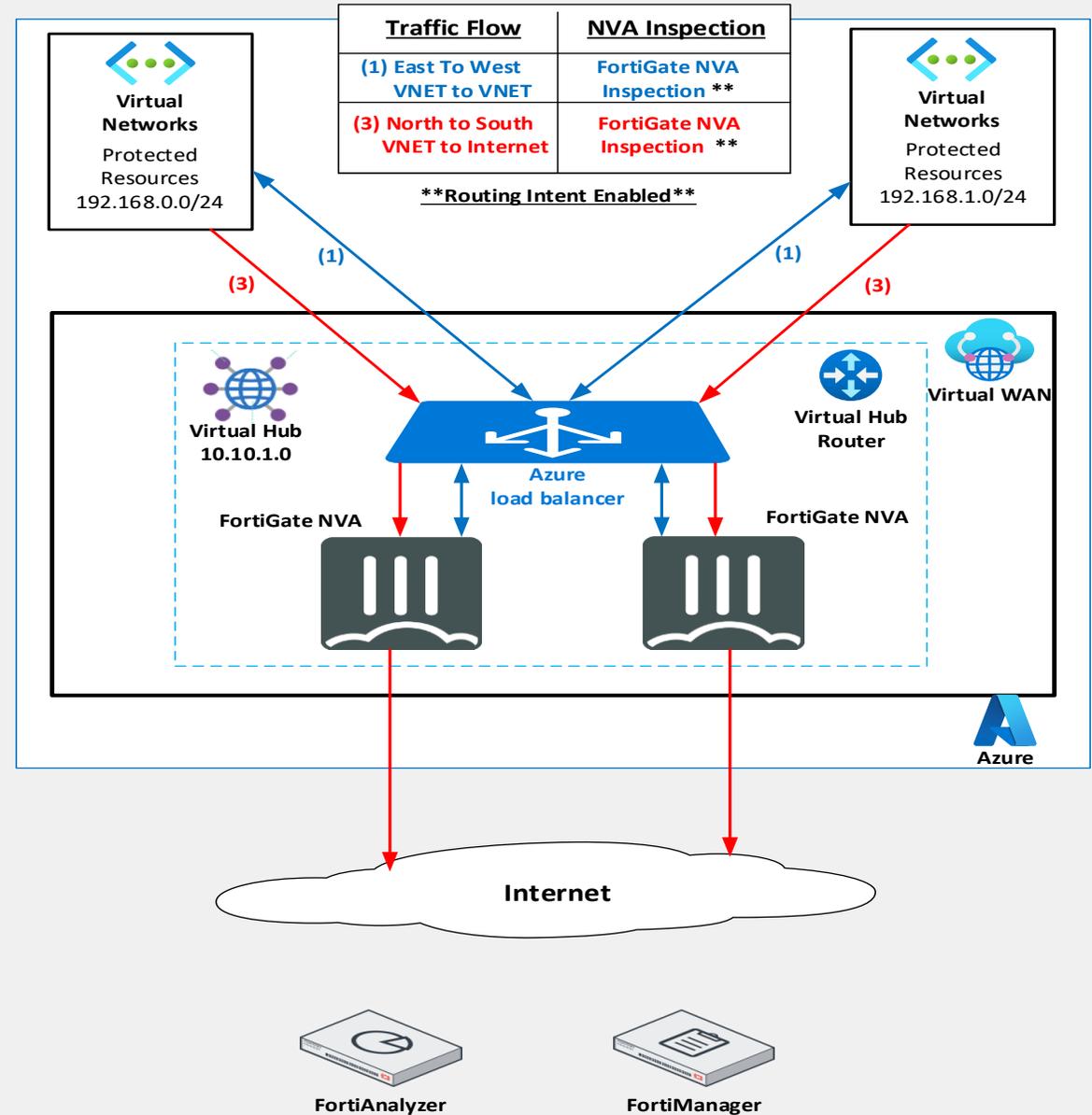


# NGFW Only - Option

- 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 – New in Q2 2024

## NGFW - Plan

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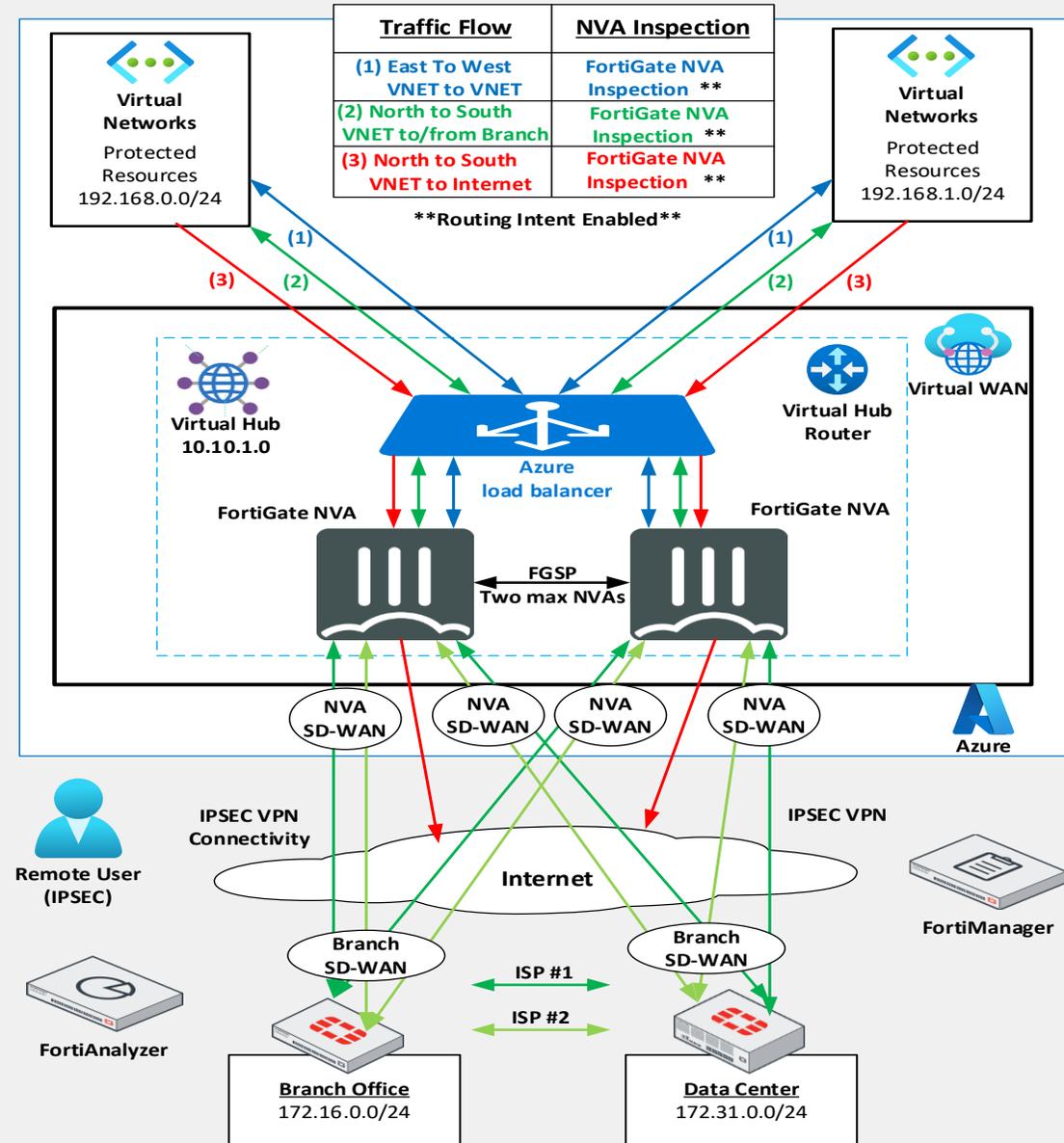


# SDWAN & NGFW - Option

- North-South and East-West inspection
  - 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 – New in Q2 2024

## SDWAN & NGFW - Plan

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# Order Types in VWAN

- Scale Units



# 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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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



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

# Questions?

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# Lab Overview





# Lab Overview



## Overview

- Connect to your Azure Environment
- Review resources



## Deploy

- Deploy FortiGate NVAs in Azure vWAN Hub
- Deploy second vWAN hub
- Deploy Linux VMs



## Configure

- Configure FortiGate NVAs
- HA / FGSP
- Firewall Policy
- Configure VNET peering



## Route

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



## Verify

- Verify Spoke to Spoke traffic
- Verify Spoke to Internet traffic
- Verify network traffic between hubs

# Getting Started

- Moderated by instructors
- Student username assignments
- Link to the course material:

Tiny URL: <https://tinyurl.com/xperts24-202/>

<https://fortinetcloudcse.github.io/azure-102-foundational/>

- Review lab material & begin

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