

Azure Virtual Data Centre Architecture

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Cloud Solution Architect



Before we start, kick off the lab build process!

[Aka.ms/citadel/vdc](https://aka.ms/citadel/vdc)

What is a VDC and why do we need it?





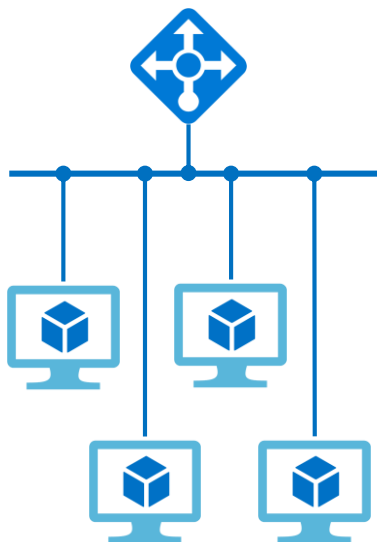
Internet



Internet Edge



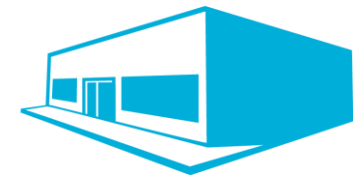
DMZ



Hub / Shared Services



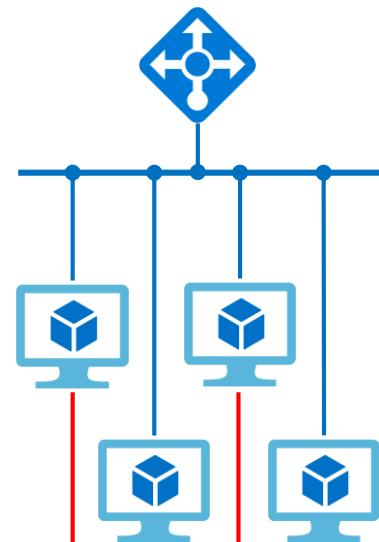
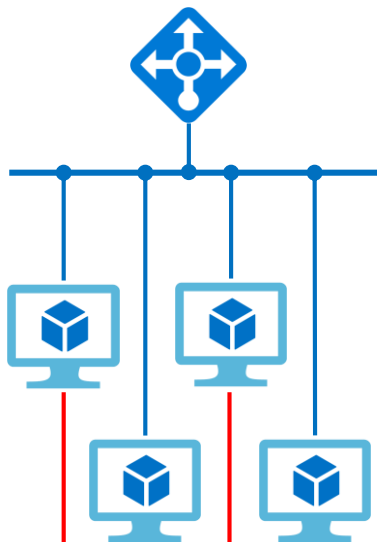
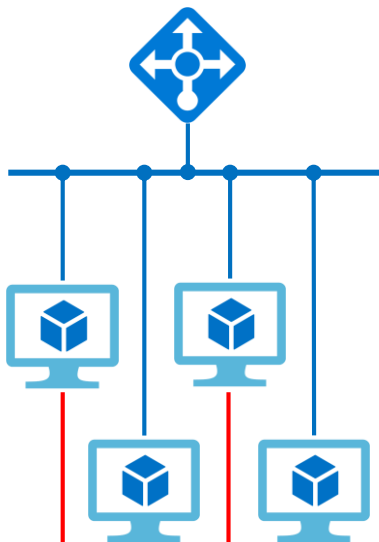
WAN Edge



Remote Offices



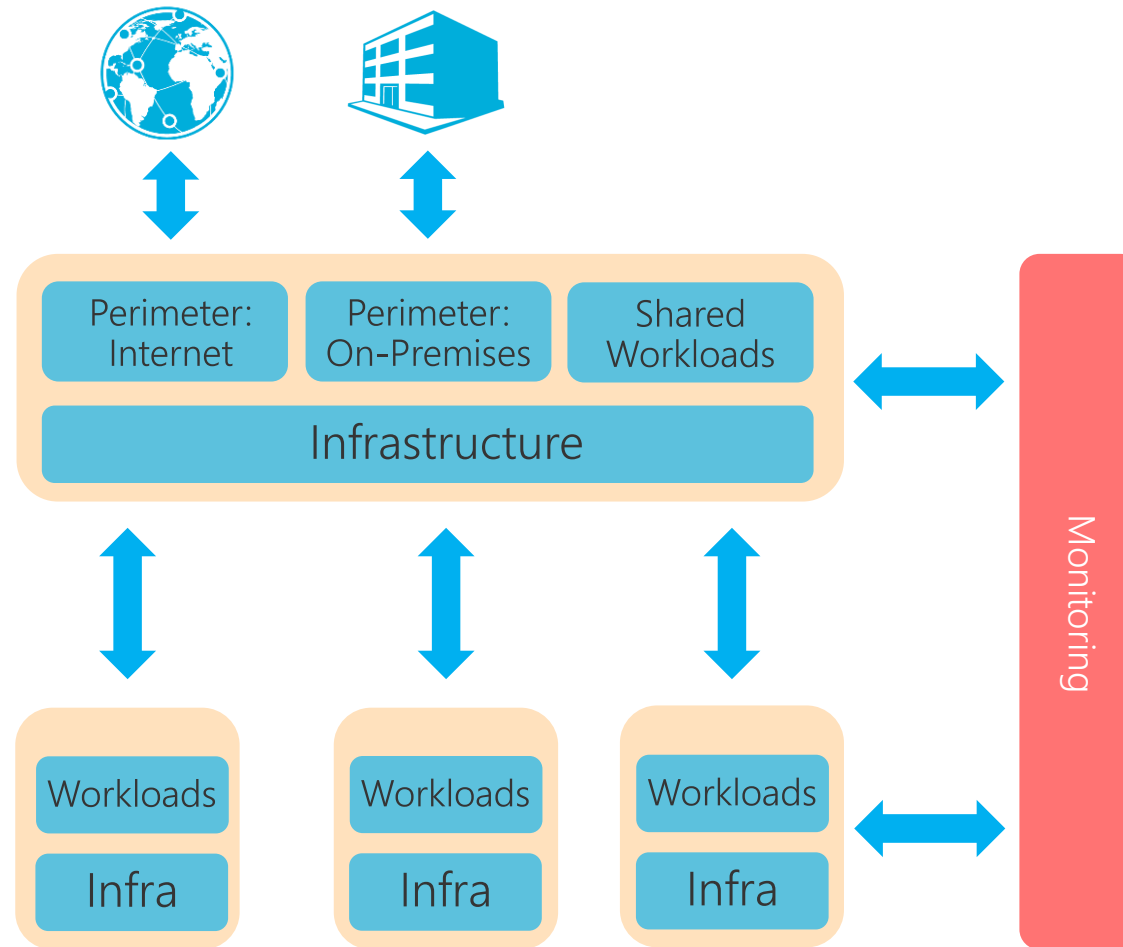
3rd Party Connections



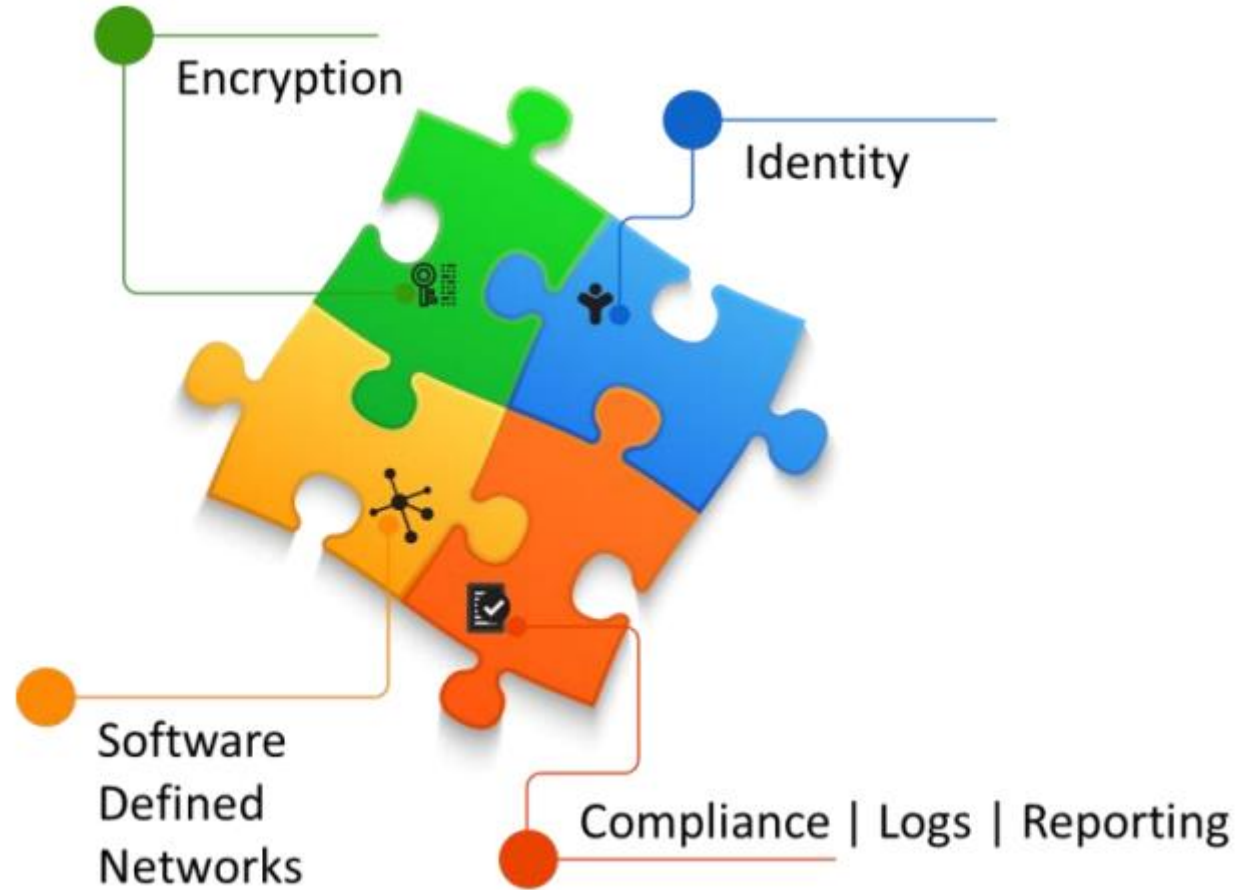
Management / Monitoring Network



Customers want the same levels of isolation, security policy, monitoring and identity that they have in their DCs today.

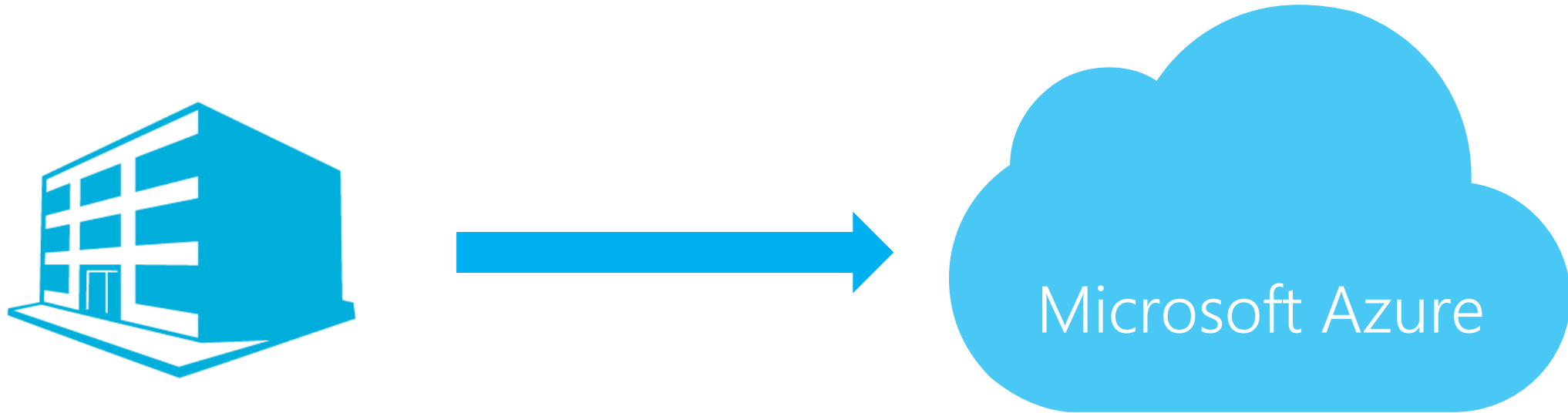


Azure VDCs bring together networking, security, management and identity to meet these requirements.



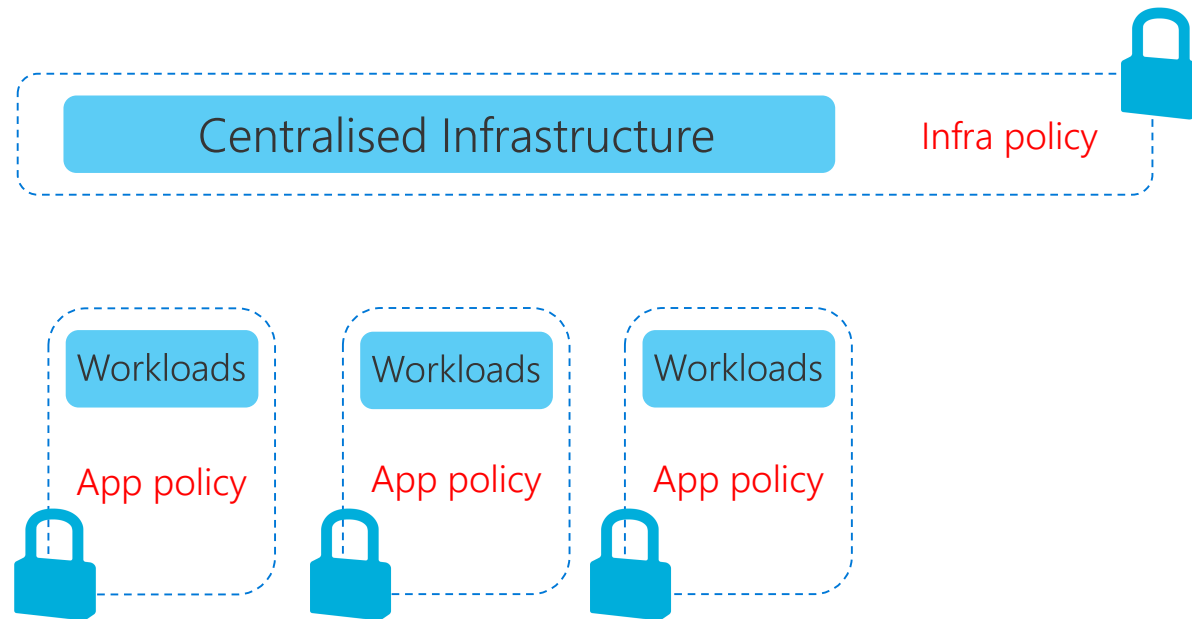
How can VDCs help?

Migrating on-premises workloads into Azure



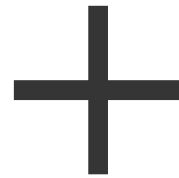
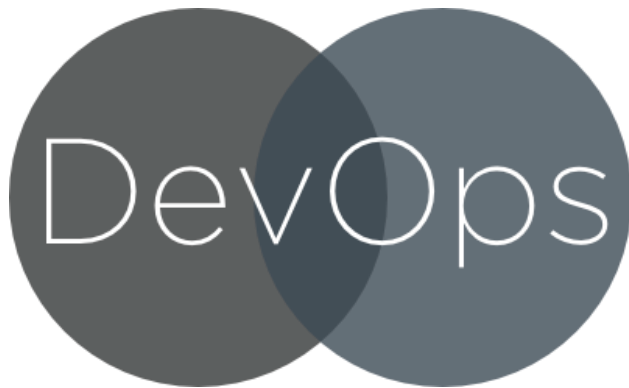
How can VDCs help?

Implementing centralised security and access policies for workloads

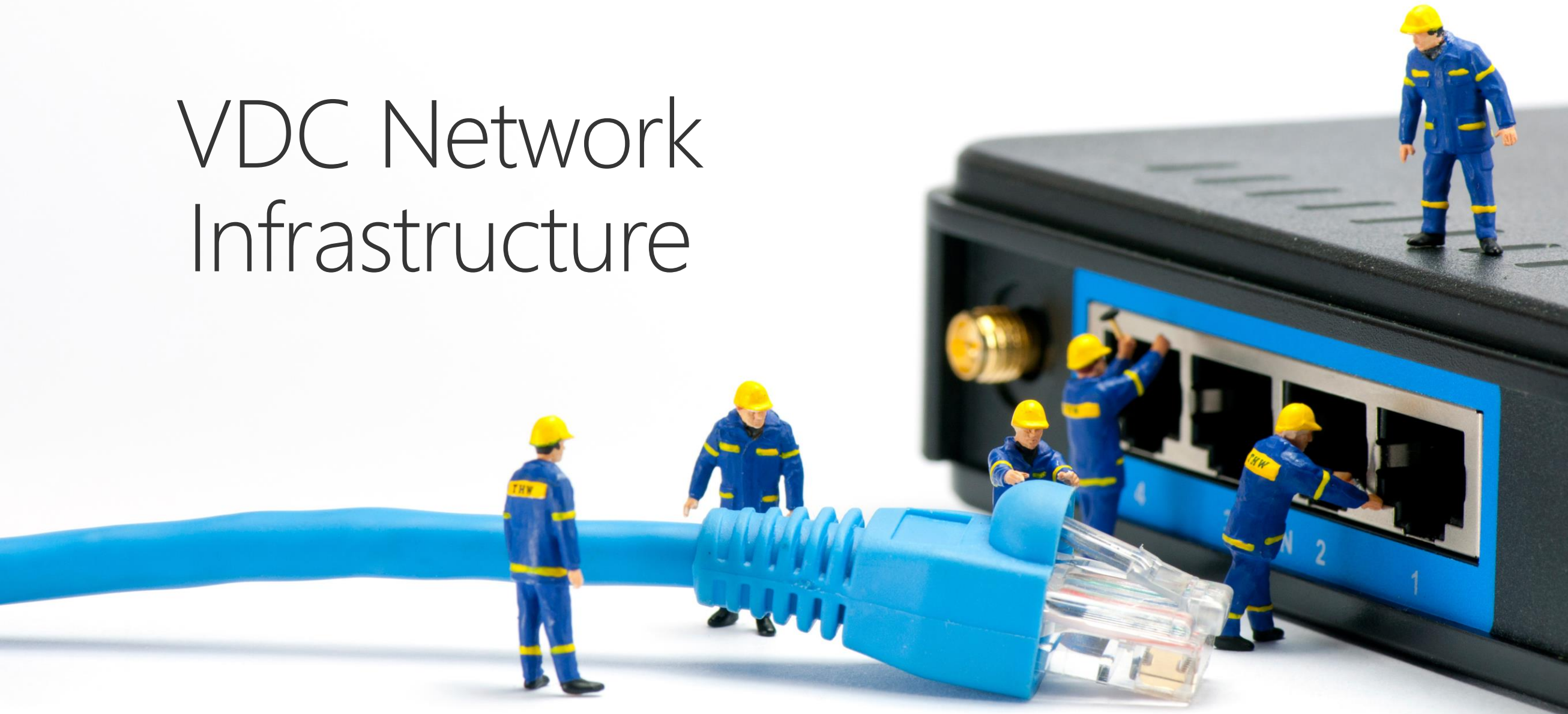


How can VDCs help?

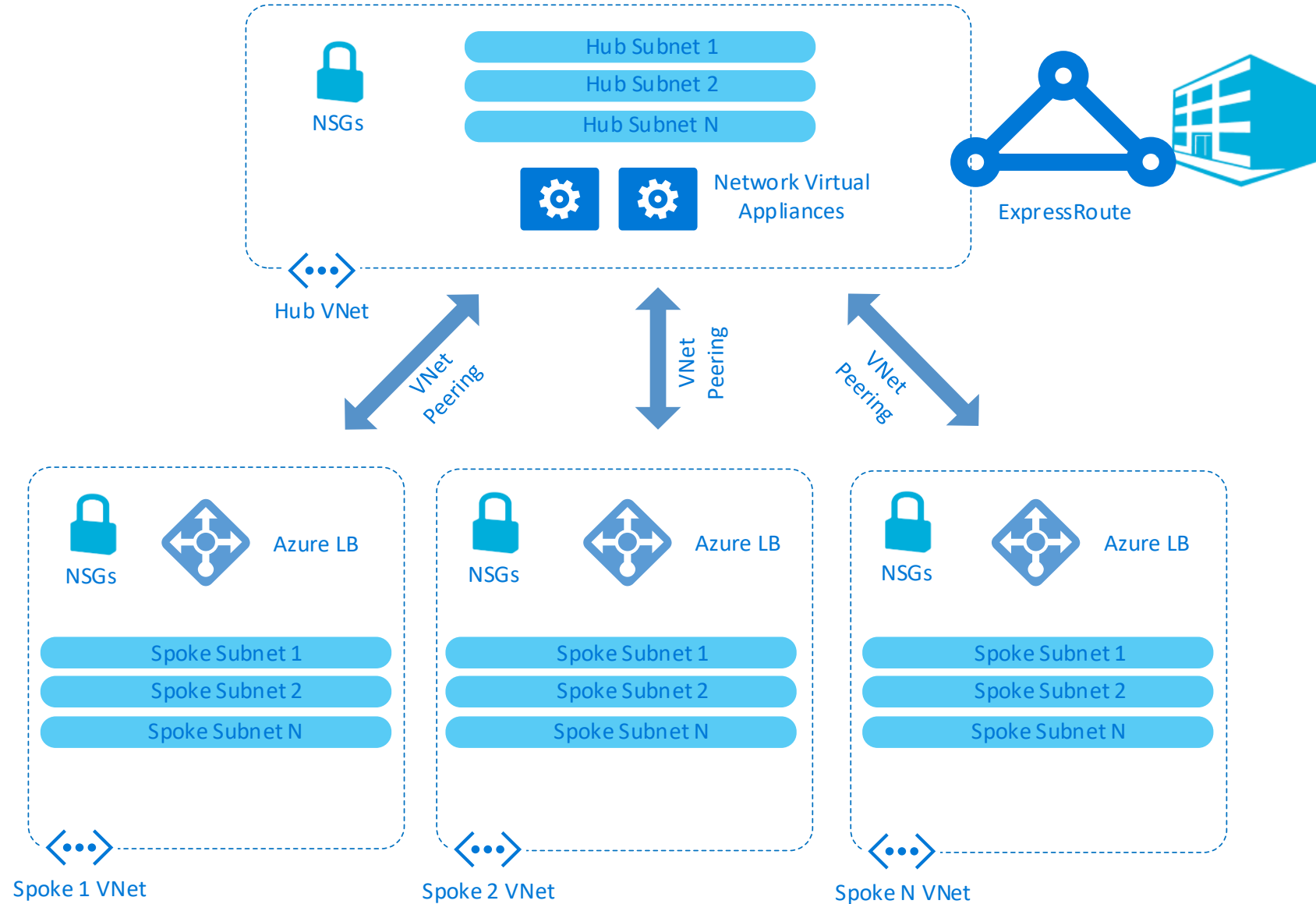
Mix DevOps and centralised IT



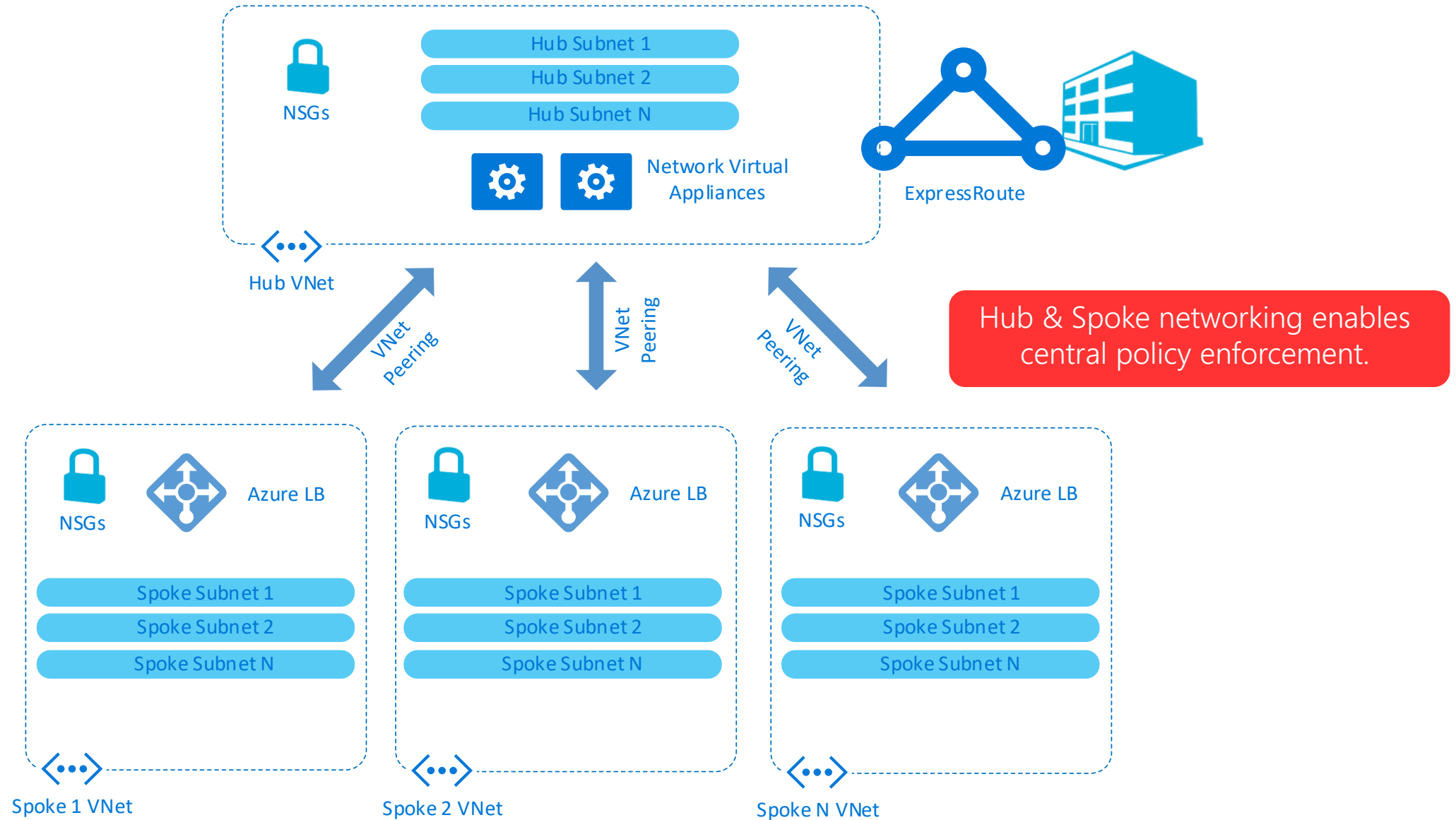
VDC Network Infrastructure



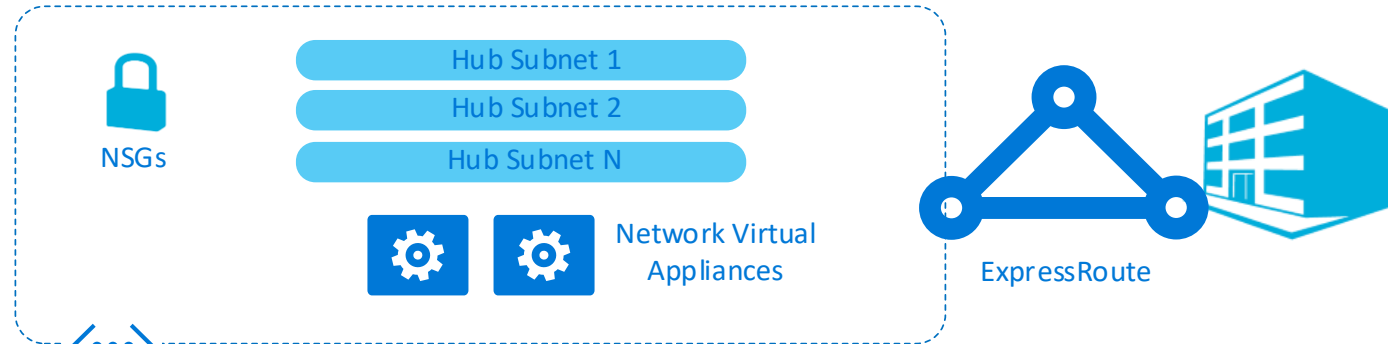
Network Infrastructure



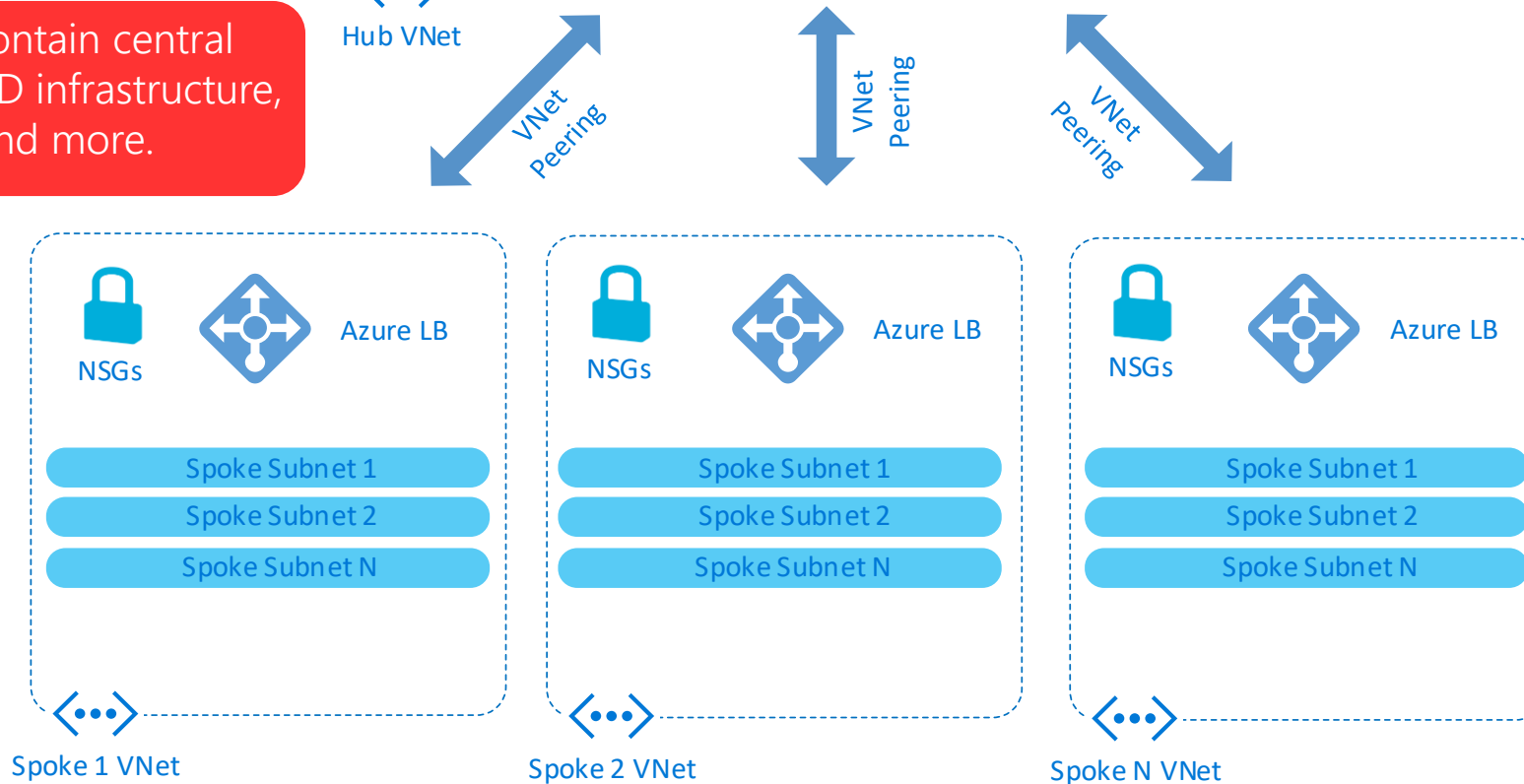
Network Infrastructure



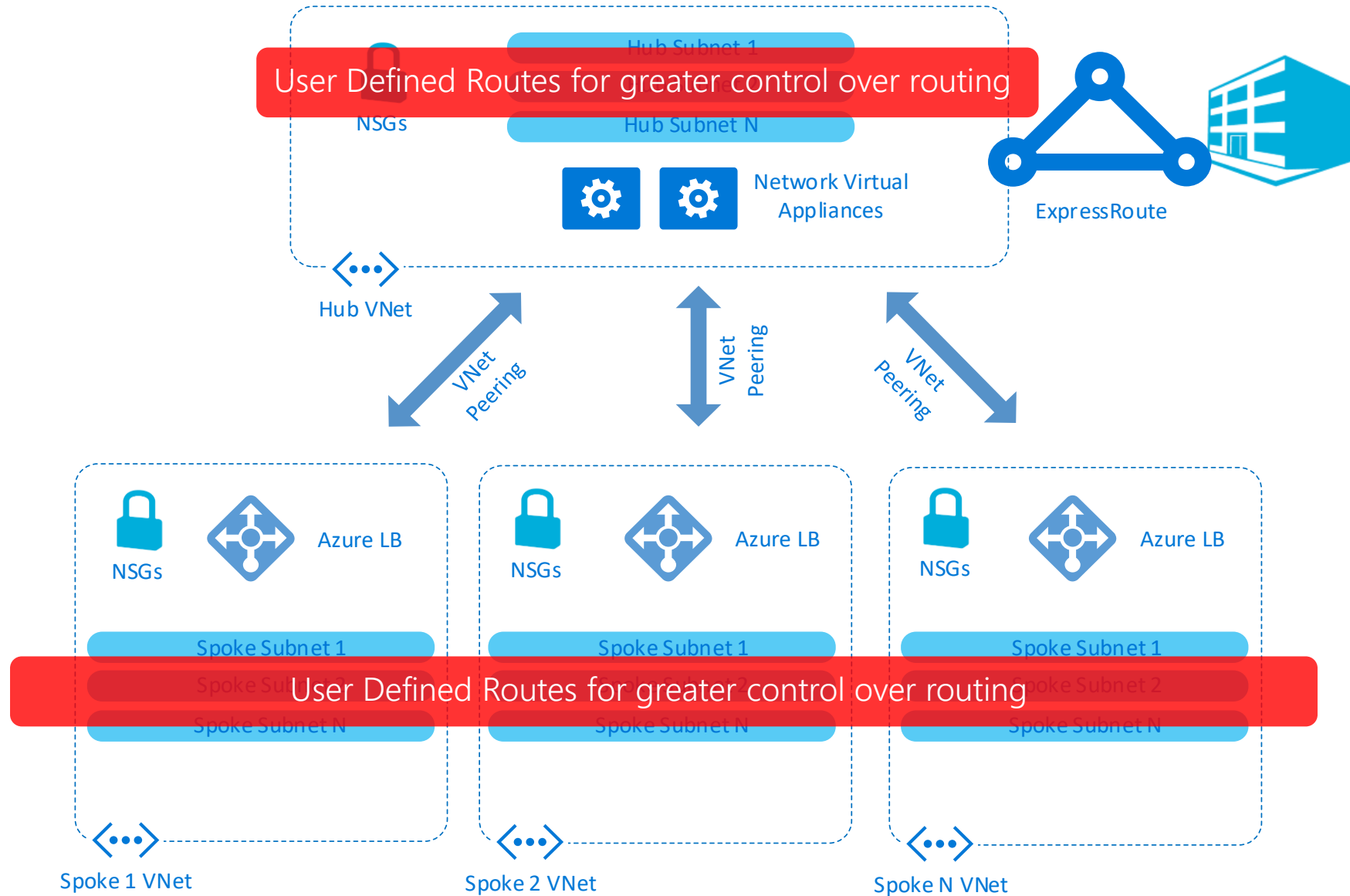
Network Infrastructure



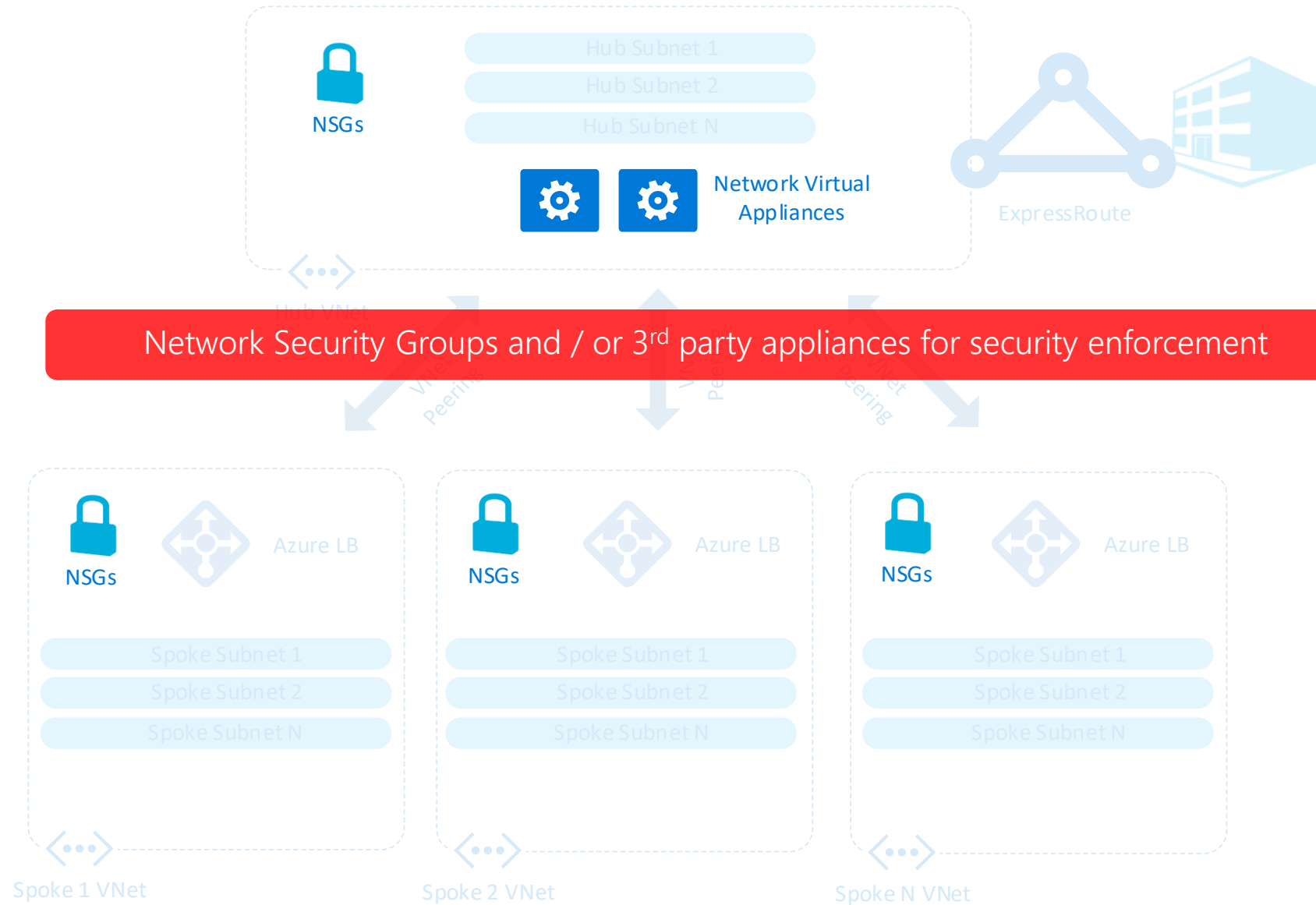
The hub may contain central services such as AD infrastructure, DNS, PKI and more.



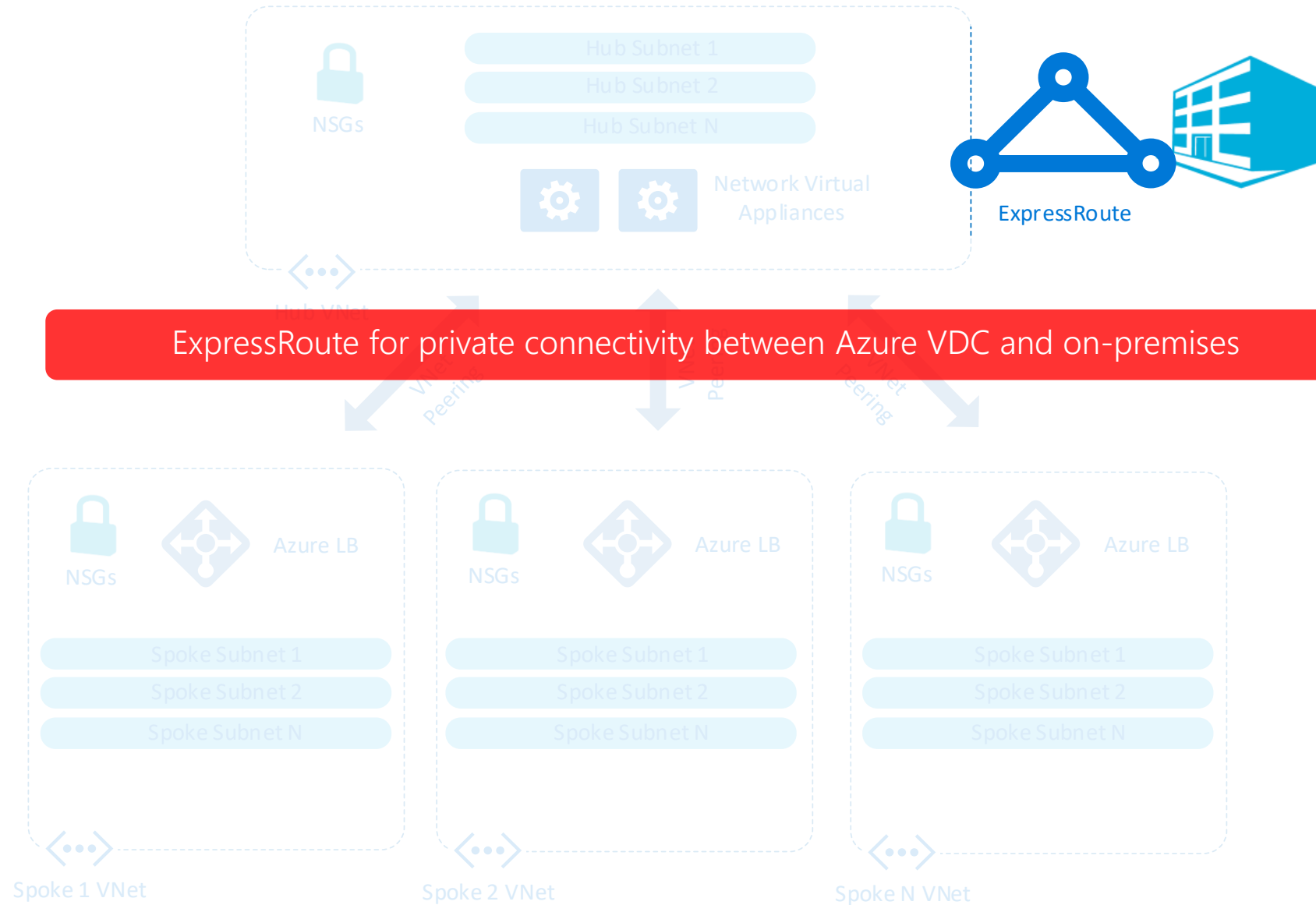
Network Infrastructure



Network Infrastructure



Network Infrastructure



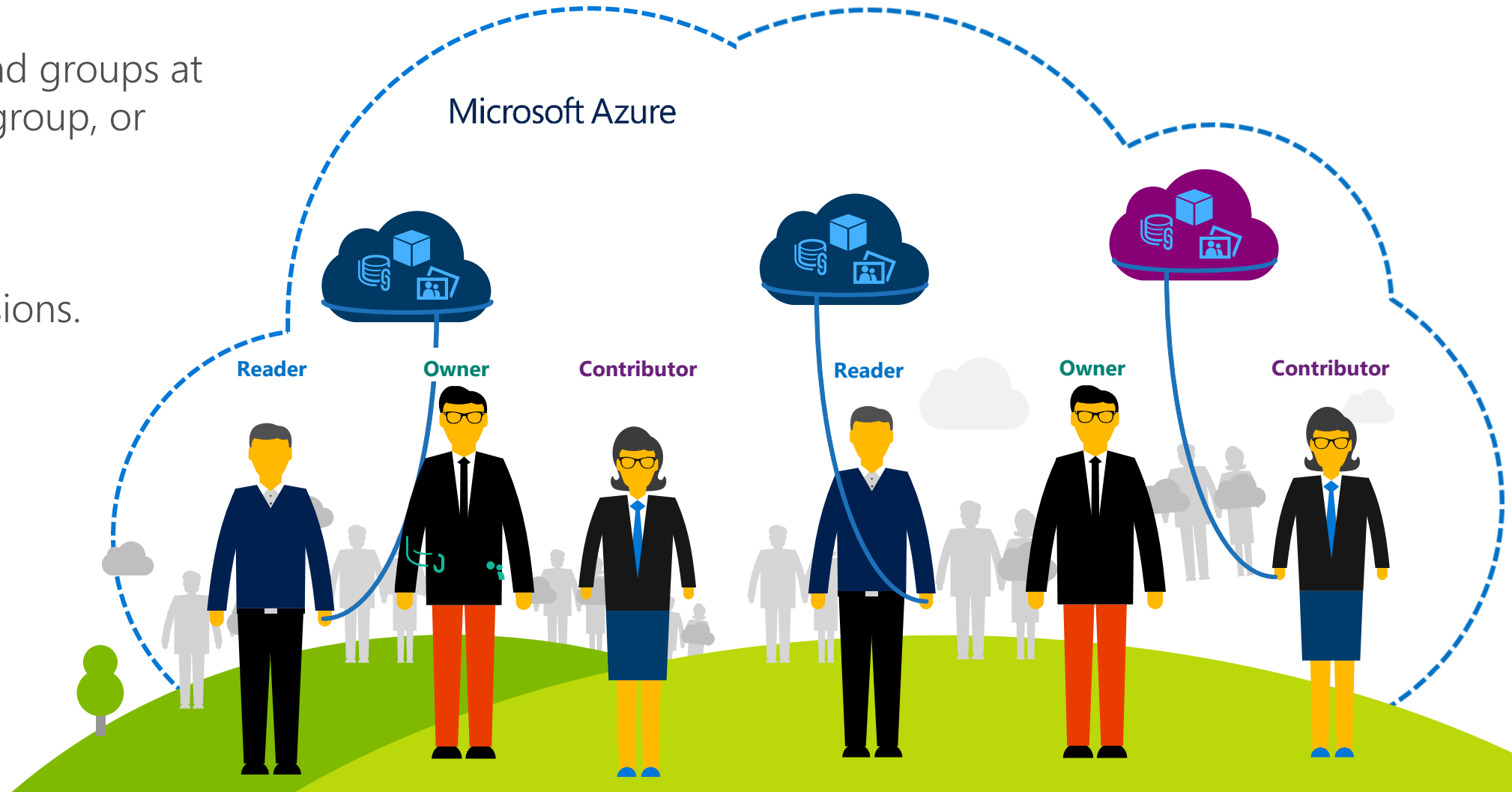


Identity and Security in the VDC Environment

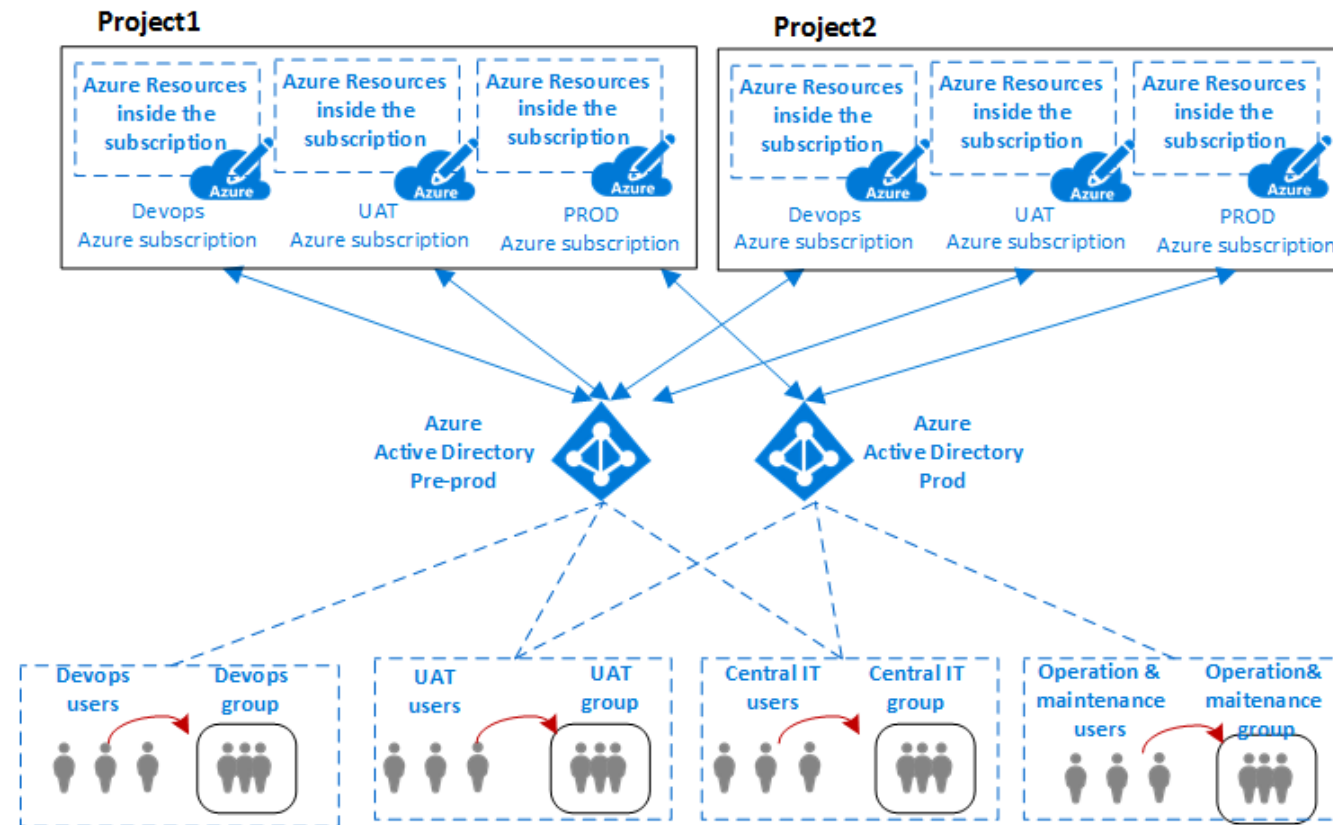
Trust through isolation

Assign roles to users and groups at subscription, resource group, or resource level.

Use built-in roles with pre-configured permissions.

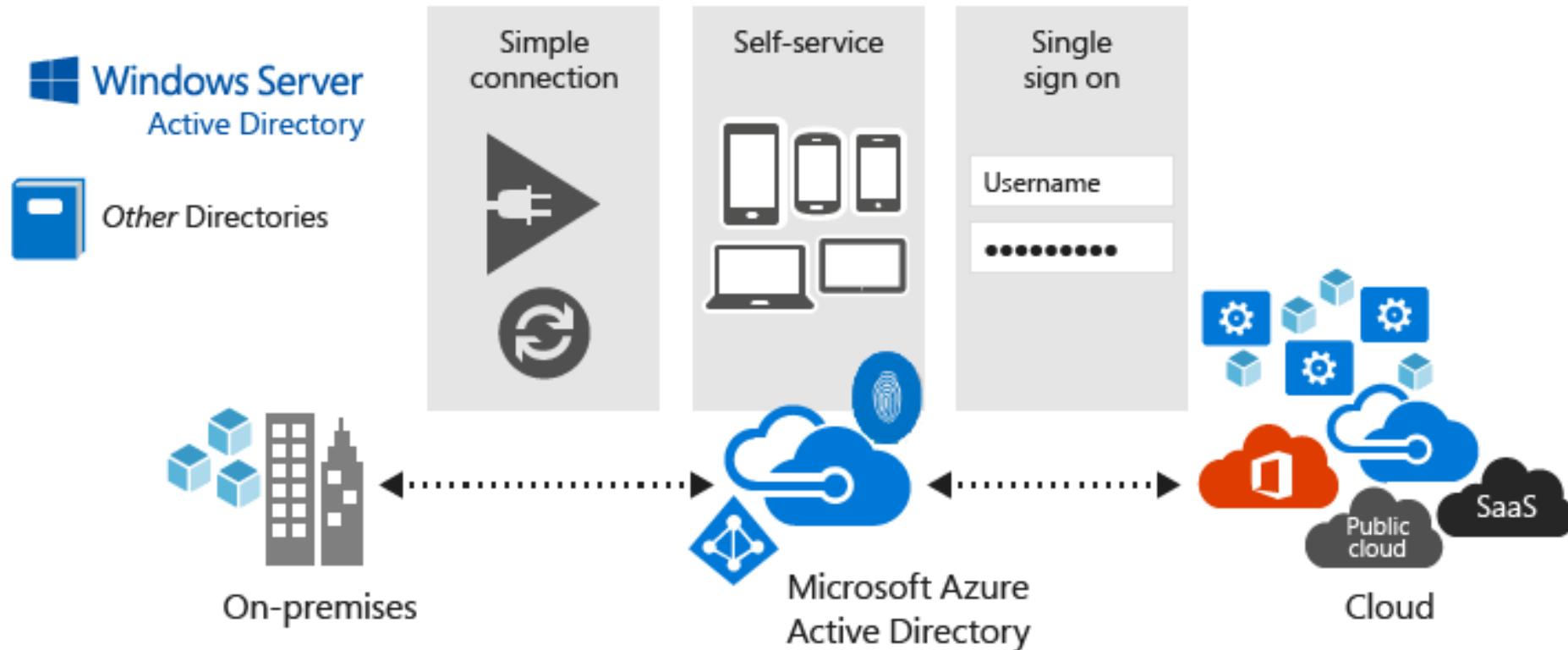


A VDC can be partitioned to securely host multiple projects.



This can be achieved using either subscriptions or resource groups.

Azure AD: a multi-tenant, cloud based directory service.



Azure Security Center

Security Center - Overview

Search (Ctrl+*/*)

GENERAL

Overview

Security policy

Quickstart

Events

Onboarding to advanced security

Search

PREVENTION

Recommendations

Security solutions

Compute

Networking

Storage & data

Applications

Identity & Access

DETECTION

Security alerts

Custom alert rules (Preview)

Threat intelligence

ADVANCED CLOUD DEFENSE

Adaptive application controls (P...

Just in time VM access (Preview)

AUTOMATION & ORCHESTRATION

Playbooks (Preview)

Subscriptions Log Integration

Your security experience may be limited. Click here to learn more →

Overview

Recommendations

5 Total

Security solutions

1 Total

New alerts & incidents

0 0

Events - last week

13 Total

Prevention

Compute

8 Total

Networking

0 Total

Storage & data

5 Total

Applications

0 Total

Detection

Security alerts

No security alerts

Most attacked resources

No attacked resources to display

Advanced cloud defense

Just in time VM access - last week (Preview)

PROTECTED 0 VMs

APPROVED REQUESTS 0 Total

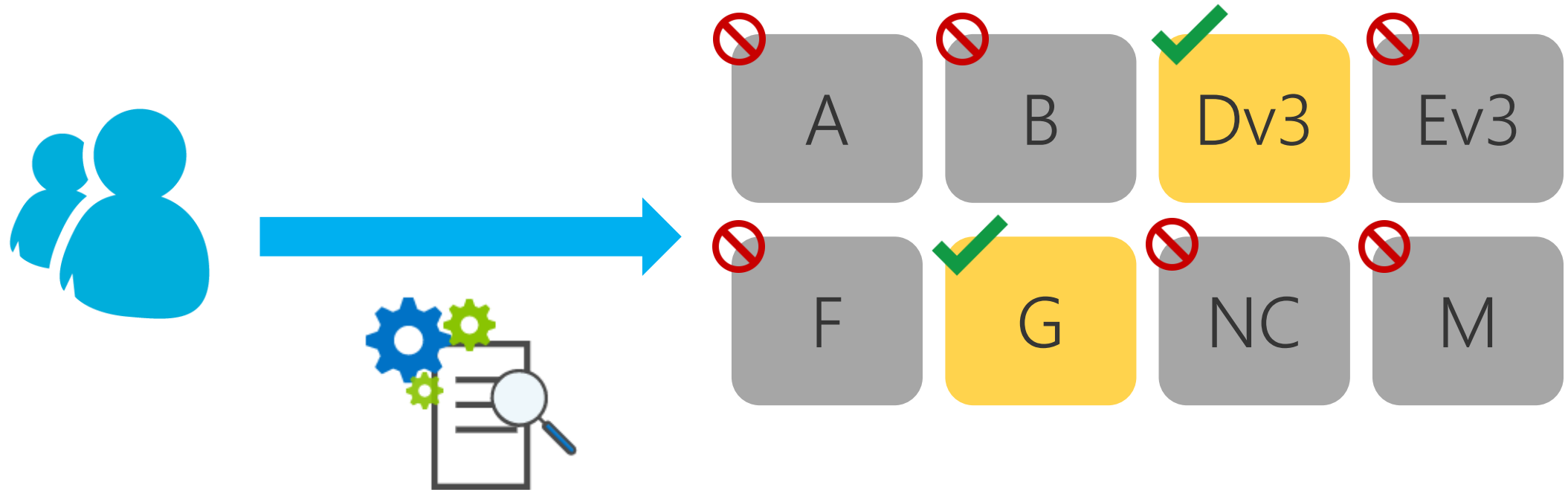
Adaptive application controls (Preview)

0 of 0 VMs configured

No issues

Azure Policy

How do I stay compliant in my environment?



Monitoring





Service Health



Azure Monitor

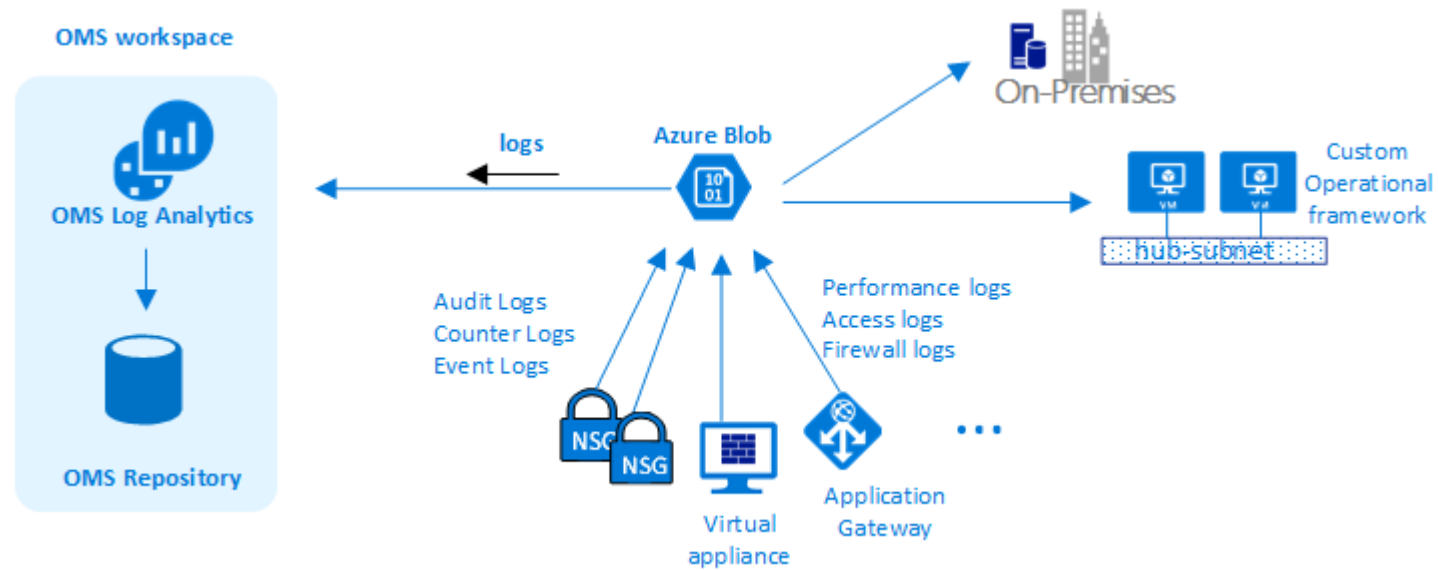


Network Watcher



Operations Management Suite

Monitoring is key in a VDC environment – Azure offers many logging and monitoring services.



Logs can be sent to Azure storage or to OMS (log analytics).



What's covered in the lab?



VDC-Hub



VDC-Spoke1



VDC-Spoke2



VDC-NVA



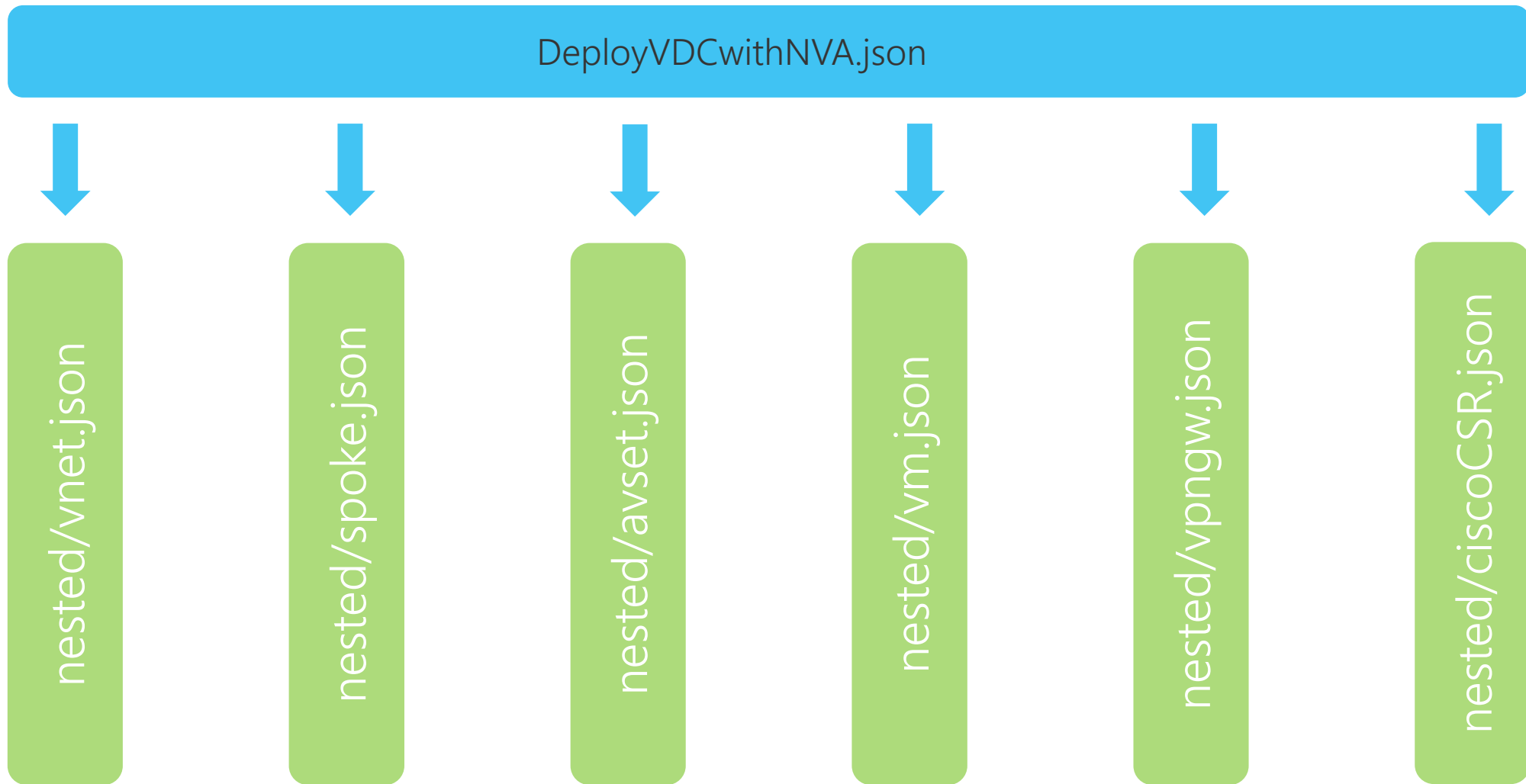
VDC-OnPrem



Resources deployed
into multiple
resource groups.

ARM templates are used
to build out the initial
'base' environment.

```
{...} DeployVDCwithNVA.json x
1  {
2    "$schema": "https://schema.management.azure.com/schemas/
3    "contentVersion": "1.0.0.0",
4    "parameters": {
5      "createVPNGateway": {
6        "defaultValue": true,
7        "type": "bool",
8        "metadata": {
9          "description": "Controls whether VPN gateway
10      }
11    }
12  },
13  "variables": {
14    "vnetUri": "[uri(deployment().properties.templateLink
15    "spokeUri": "[uri(deployment().properties.templateLi
16    "avsetUri": "[uri(deployment().properties.templateLi
17    "vpngwUri": "[uri(deployment().properties.templateLi
18    "vmUri": "[uri(deployment().properties.templateLink.
19    "csrUri": "[uri(deployment().properties.templateLink
20    "hub": {
21      "resourceGroup": "VDC-Hub",
22      "vnet": {
23        "name": "Hub-vnet",
24        "addressPrefixes": [ "10.101.0.0/16" ]
25      },
26      "subnets": [
27        { "addressPrefix": "10.101.0.0/24", "name":
28        { "addressPrefix": "10.101.1.0/24", "name":
29        { "addressPrefix": "10.101.2.0/24", "name":
30      ],
31    "vpnGwName": "Hub-vpn-gw"
```



A 'master' ARM template runs which in turn calls a number of other templates.

Part 1: Explore the Lab

Part 2: Networking

Site-to-Site VPN
Cisco CSR1000V Configuration
User Defined Routes

Network Security Groups
Azure Security Center
Azure Resource Policies

Part 3: Security

Part 4: Monitoring

Network Watcher

NSG Flow Logs

Metrics, Alerts & Diagnostics with Azure Monitor

Users and Groups
Role Based Access Control

Part 5: Identity

