Design, Build, Migrate

Initial Courses:-

**Azure Migration – 5 modules – 3 hours**

<https://docs.microsoft.com/en-us/learn/browse/?products=azure-migrate>

**Design a hybrid network Architecture in Azure – 47mins**

<https://docs.microsoft.com/en-gb/learn/modules/design-a-hybrid-network-architecture/>

**Azure vnet/VPN Gateway / ExpressRoute (1hr 34) - Intro**

<https://docs.microsoft.com/en-gb/learn/modules/configure-network-for-azure-virtual-machines/>

**Connect your on-premises network to Azure with VPN Gateway (39 min) – Exercise Site-to-site VPN**

<https://docs.microsoft.com/en-gb/learn/modules/connect-on-premises-network-with-vpn-gateway/>

**Azure NSG (restrict access service endpoints) – 43 mins exercise**

<https://docs.microsoft.com/en-gb/learn/modules/secure-and-isolate-with-nsg-and-service-endpoints/>

**Azure Routing – 50 mins – Manage and control traffic flow in your Azure deployment with routes**

<https://docs.microsoft.com/en-gb/learn/modules/control-network-traffic-flow-with-routes/>

**Monitor and troubleshoot your end-to-end Azure network infrastructure by using network monitoring tools – 37mins**

<https://docs.microsoft.com/en-gb/learn/modules/troubleshoot-azure-network-infrastructure/>

**Protect your virtual machines by using Azure Backup – 35min**

<https://docs.microsoft.com/en-gb/learn/modules/protect-virtual-machines-with-azure-backup/>

**Protect your Azure infrastructure with Site Recovery – 59min - exercise**

<https://docs.microsoft.com/en-gb/learn/modules/protect-infrastructure-with-site-recovery/>

**Azure Monitor querying – 34min**

<https://docs.microsoft.com/en-gb/learn/modules/analyze-infrastructure-with-azure-monitor-logs/>

<https://app.pluralsight.com/library/courses/microsoft-azure-migrating-physical-virtual-servers-update/table-of-contents>

What we need to look at/build (Hyper-V)

* Active Directory / DNS
* Web Vms
* App Vms
* SQL Vms
* Server 2003 VM

Azure related tools

* Azure Migration assistant
* Azure Migrate
* Azure Service Map

Azure building

* Landing zone with vnet peering (azure firewall on perimeter?)
* NSG/ASG definitions
* Review service map output to build NSG

 new discovery tools

 migration workflows (things like on prem, cloud to cloud)

 improvements on 2003 migrations

Making the scripts work, were to run them from, what they check for etc.

Making them modular is the key though so a script for each:

Check Azure Backup enabled

Check ASR enabled

Remove VMWare

Check Static IP

Landing zone

Core VNET that will include:-

* Azure Bastion
* Azure Firewall

Azure Services

* Log analytics
* Azure Recovery Services (VM Backup – DR ASR?)
* NSG/ASG

Service Map/querying/how to

Automation

* Automate Azure VM post-migration tasks
  + VM backup policy
  + Log analytics correct account
  + Private Static IP
  + ASG Check

Additional Tasks

* Routing via Azure Firewall? (Configure Azure RouteTables per subnet)
* Upgrade WAF to AGW WAF?
* Policy/Governance?

Prep/material etc

4-5 Days workshop

How long to prep:- Week/2 weeks

How long to effectively deliver outcomes, full remote (4-8 people)

Whiteboard sessions/theory

SQL Server 2008 IIS/Sharepoint

VM backup/discovery

VPN Host to Azure

* Create a DC, what a DC is etc
* DNS

Exercise1:- Deploy Landing Zone

* Azure DevOps Pipeline:- Terraform/PowerShell/ARM base build
  + vNET/Subnets
  + Azure related resources (Log analytics etc)
  + Azure Firewall

Exercise2:- Discover and assess the on-premise environment

* Azure Migrate:- Server Assessment (creating migration assessment and using Azure migrate dependency visulisation)
  + Setup Azure Migrate Server
  + Setup dependency agent on each VM (Windows & linux)
  + Dependency view/Service map to notice ports for NSG/ASG Work

Exercise3:- DomainController2 creation and setup DC Promo

* Deploy VM in Azure
* Configure as DC with promo setup
* Part of this will understand routing including Gateway VPN setup (Azure RouteTables and Routing service on Windows to be configured)
* Sites & Services setup

Exercise 4:- Migrate the application stack using Azure Migrate: Server Migration

* Setup Servers and migrate using Azure Migrate (enabling replication etc)
* Review and proprose NSG/ASG rules taken from exercise 2 dependency

Exercise 5:- Server Migration

* Perform server migrations to Azure
* Post-migration tasks on each VM (Log Analytics setup, static IP etc – to possibly get them to create script(s) for this)
* Confirm domain activity
* Power off Hyper-V environment
* Configure ASG/NSG configuration taken from exercise 4 review

Exercise 6:- VM Backup and DR

* Enable VM backup for each VM
* Setup Azure Site Recovery for VMs (ASR)

Exercise 7: Azure Additional configurations

* Azure Bastion:- To allow team to RDP to VMs etc
* Azure Firewall:-
  + Will be perimeter firewall, can look at routing all outbound traffic via it
  + NAT rule for external user to access WAF on port 80 (WAF has a simple redirect to web VM1 using nginx)
* Review recommendations from Azure Advisor and Security centre
* Azure Policy?
* Ensure network/VMs are secured

Exercise 8: Perform DR test

* ASR test to another region
* Would need to have landing zone cloned to another region etc as well