AZ-140 Agenda

9⁰⁰ – 17⁰⁰ — handwritten: $9^{00} - 17^{00}$
12³⁰ – 13³⁰ — handwritten: $12^{30} - 13^{30}$

Learning Path 1

1. Azure Virtual Desktop Architecture
2. Design the Azure Virtual Desktop architecture
3. Design for user identities and profiles

Learning Path 2

4. Implement and manage networking for AVD
5. Implement and manage storage for AVD
6. Create and configure host pools and session hosts for AVD
7. Create and manage session host image for AVD

Learning Path 3

8. Manage access for AVD
9. Manage security for AVD

Learning Path 4

10. Implement and manage FSLogix
11. Configure user experience settings
12. Install and configure apps on a session host

Learning Path 5

13. Monitor and manage performance and health
14. Plan and implement updates, backups, and
    disaster recovery

Microsoft

Azure Virtual Desktop Architecture

Introduction

App Streaming
thin Client

WS Core: No GUI
Regedit ✓
Notepad ✓

WS Nano: Cmd line
sconfig
→ Docker

- Azure Virtual Desktop for the enterprise
- Azure Virtual Desktop components
- Personal and pooled desktops
- Service updates for Azure Virtual Desktop
- Azure limitations for Azure Virtual Desktop
- VM sizing
- Azure Virtual Desktop pricing

Terminal Server
↓
Remote Desktop Services
↓
Azure virt. Desktop

VDI

Citrix

AVD
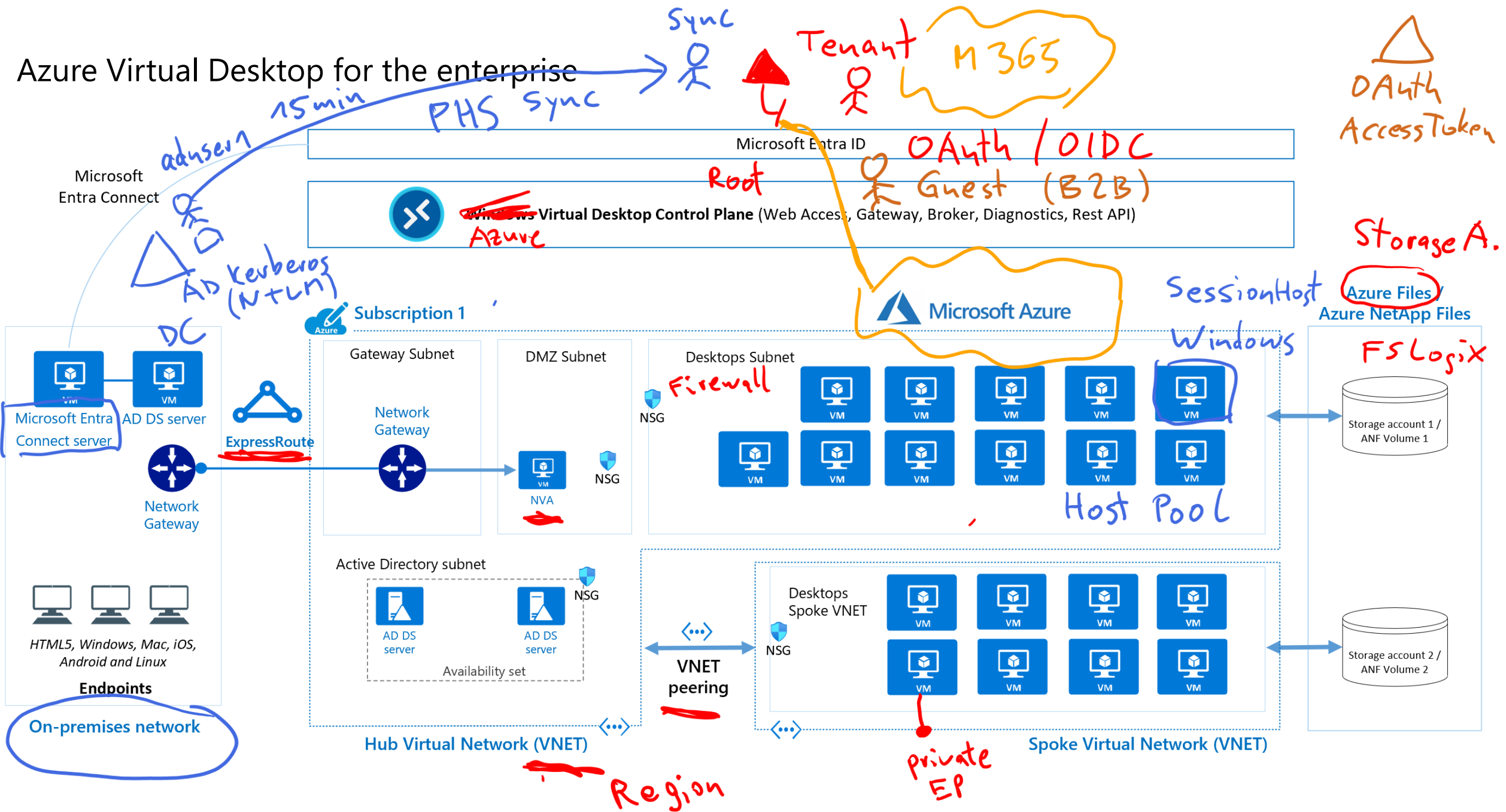
Azure Virtual Desktop for the enterprise

Azure Virtual Desktop is a desktop and application virtualization service that runs in Azure.

Common use cases:

- **Security and regulation applications**: financial services, healthcare, and government.

- **Elastic workforce**: remote workers, contractors, and partner access.

- **Employees**: *bring your own device* (BYOD), mobile users, call centers, and branch workers.

- **Specialized workloads**: design and engineering, legacy apps, and software development test.

Azure Virtual Desktop for the enterprise

Sync

15min

PHS Sync

adserv

Tenant

M365

OAuth
AccessToken

Microsoft
Entra Connect

Microsoft Entra ID

OAuth / OIDC

Root

Guest (B2B)

~~Windows~~ Virtual Desktop Control Plane (Web Access, Gateway, Broker, Diagnostics, Rest API)

Azure

Microsoft Azure

SessionHost   Azure Files
Windows   Azure NetApp Files

Storage A.

AD kerberos
(NTLM)

DC

Subscription 1

FSLogix

Gateway Subnet

DMZ Subnet

Desktops Subnet

Firewall

Microsoft Entra
Connect server

AD DS server

ExpressRoute

Network
Gateway

Network
Gateway

NVA

NSG

NSG

Host Pool

Storage account 1 /
ANF Volume 1

Active Directory subnet

AD DS
server

AD DS
server

NSG

Availability set

Desktops
Spoke VNET

NSG

HTML5, Windows, Mac, iOS,
Android and Linux

Endpoints

On-premises network

Hub Virtual Network (VNET)

VNET
peering

Region

private
EP

Storage account 2 /
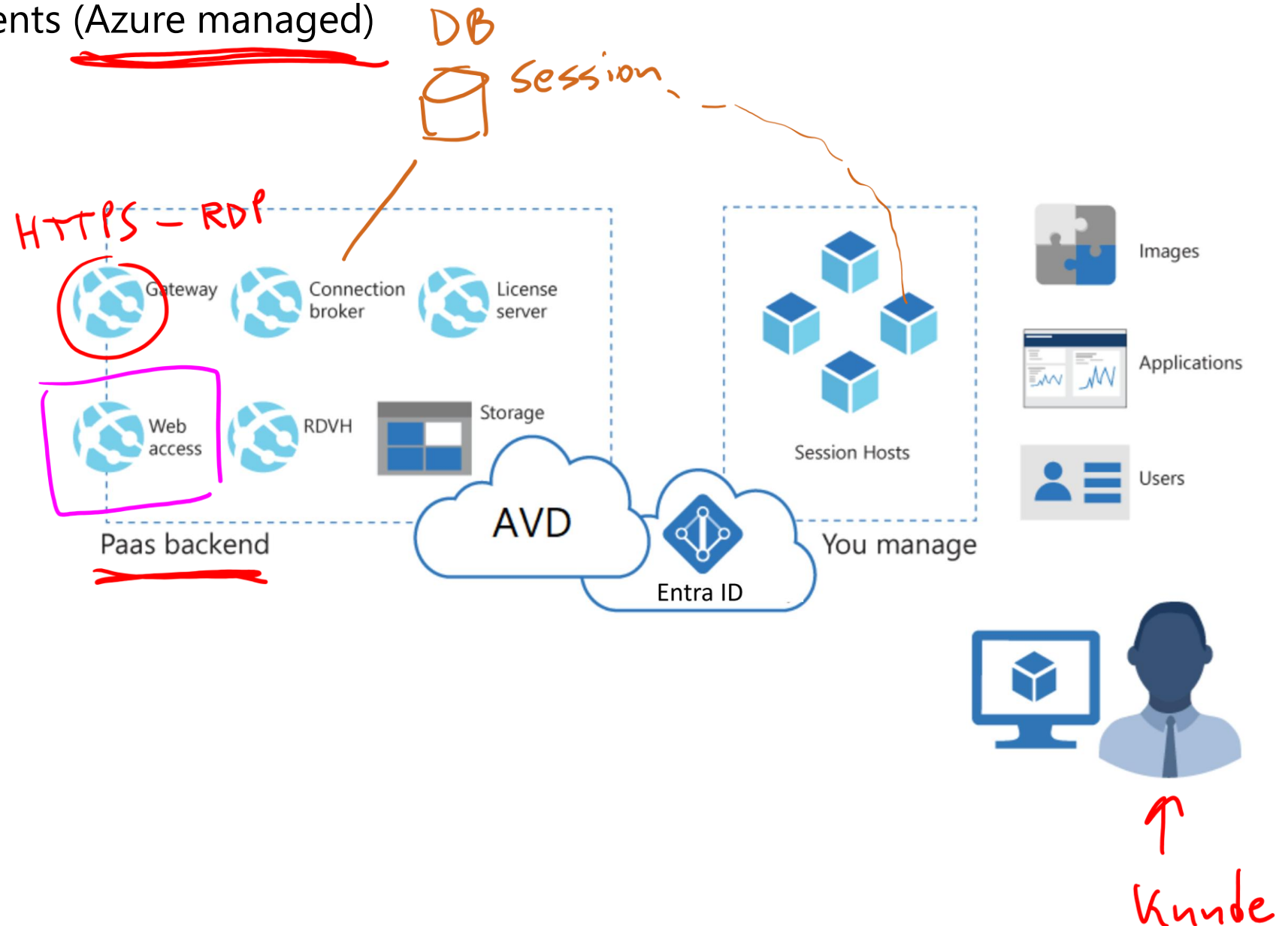ANF Volume 2

Spoke Virtual Network (VNET)

Azure Virtual Desktop components

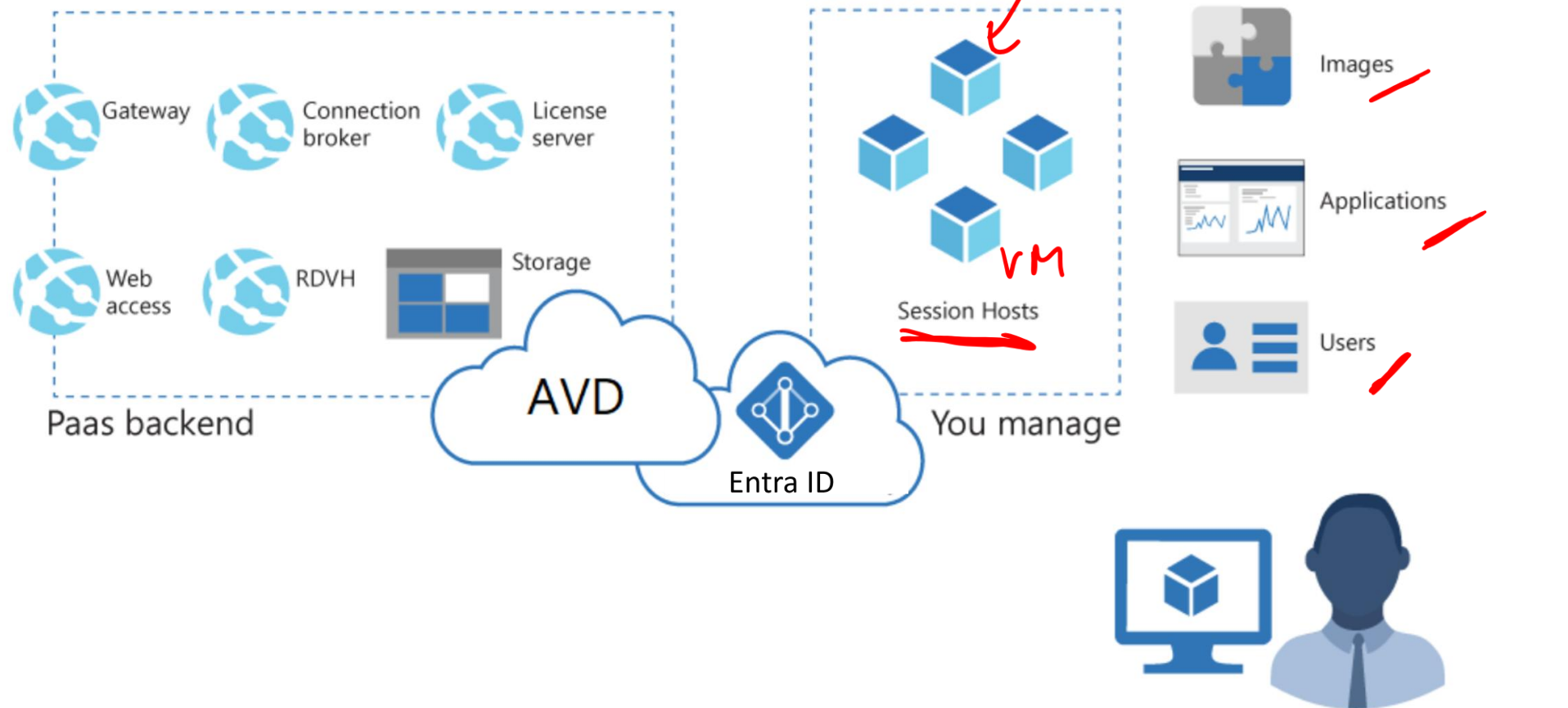# Azure Virtual Desktop components (Azure managed)

- **Web Access:** users access virtual desktops through an HTML5-compatible browser

- **Gateway**: connects remote users to Azure Virtual Desktop apps and desktops from any internet-connected device

- Connection Broker: manages user connections to virtual desktops and apps

- **Diagnostics**: event-based aggregator that marks each user or administrator action

- **Extensibility components**: manage Azure Virtual Desktop using Windows PowerShell or REST APIs

DB

Session

HTTPS — RDP

Gateway

Connection broker

License server

Web access

RDVH

Storage

AVD

Entra ID

Paas backend

Session Hosts

You manage

Images

Applications

Users

Kunde

Azure Virtual Desktop components (Customer managed)

OS → Windows Server
OS → Windows 11 ⭐ Multi Session

- **Azure Virtual Network:** Connect an Azure Virtual Desktop to an on-premises network using a VPN or Azure ExpressRoute.

- **Entra ID:** Azure Virtual Desktop uses Entra ID for identity and access management.

- **Azure Virtual Desktop session hosts:** A host pool can run the operating systems.
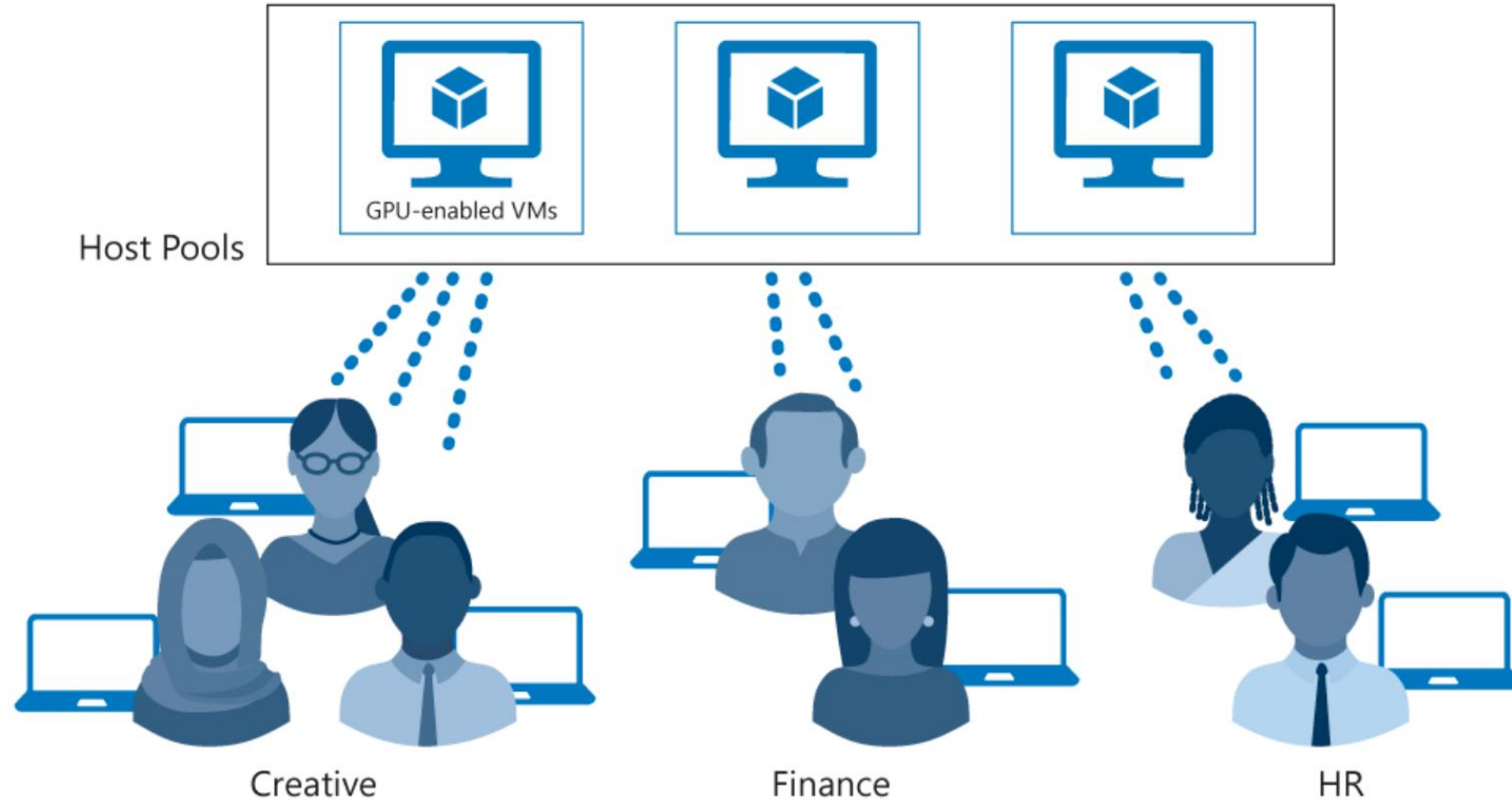
Gateway   Connection broker   License server

Web access   RDVH   Storage

Paas backend

AVD   Entra ID

VM
Session Hosts

You manage

Images

Applications

Users

Personal and pooled desktops

Alternative: WaaS (M365)

AVD

- Host pools are a collection of one or more identical virtual machines (VMs) within Azure Virtual Desktop environments.

- Personal desktop solutions (sometimes called persistent desktops) allow users to always connect to the same specific session host.

- Users can modify their desktop experience to meet personal preferences and save files in the desktop environment.

Host pool

Brokering service
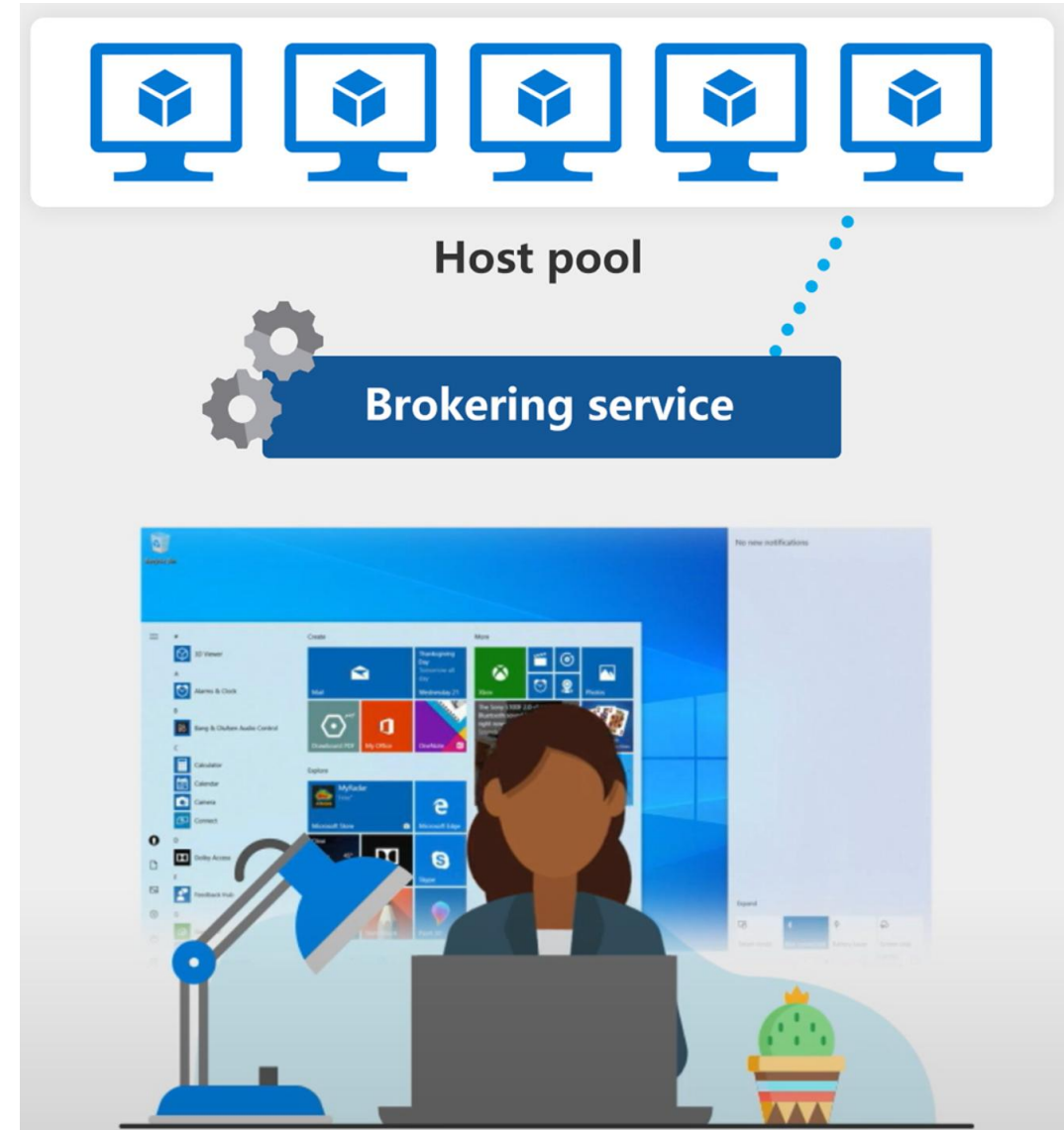
Each host pool can contain an app group that users can interact with as they would on a physical desktop.

Options for updating Azure Virtual Desktop desktops

Intune (MDM)

- [Microsoft Endpoint Configuration Manager (MECM)](#) updates server and desktop operating systems.

- [Windows Updates for Business](#) updates desktop operating systems like Windows 10 or Windows 11 multi-session.

- [Azure Update Manager](#) updates server operating systems.

- [Azure Log Analytics](#) checks compliance.

- Deploy a new (custom) image to session hosts every month for the latest Windows and applications updates. You can use an image from the Azure Marketplace or a [custom Azure managed image](#).

✗ Azure Automation Account
PS >
DSC
Update ment

Azure limitations for Azure Virtual Desktop

Azure Virtual Desktop limitations

| Azure Virtual Desktop object	Per Parent container object	Service limit
Workspace	Azure Active Directory tenant	1300
HostPool	Workspace	400
Application group	Azure Active Directory tenant	500*
RemoteApp	Application group	500
Role assignment	Any Azure Virtual Desktop object	200
Session host	HostPool	10,000

For the most recent limitations, see: https://learn.microsoft.com/en-us/azure/architecture/example-scenario/wvd/windows-virtual-desktop, and https://learn.microsoft.com/en-us/azure/azure-resource-manager/management/azure-subscription-service-limits

Virtual machine (VM) sizing

Use the virtual machine sizing guidelines for the maximum suggested number of users per virtual central processing unit (vCPU) and minimum VM configurations.
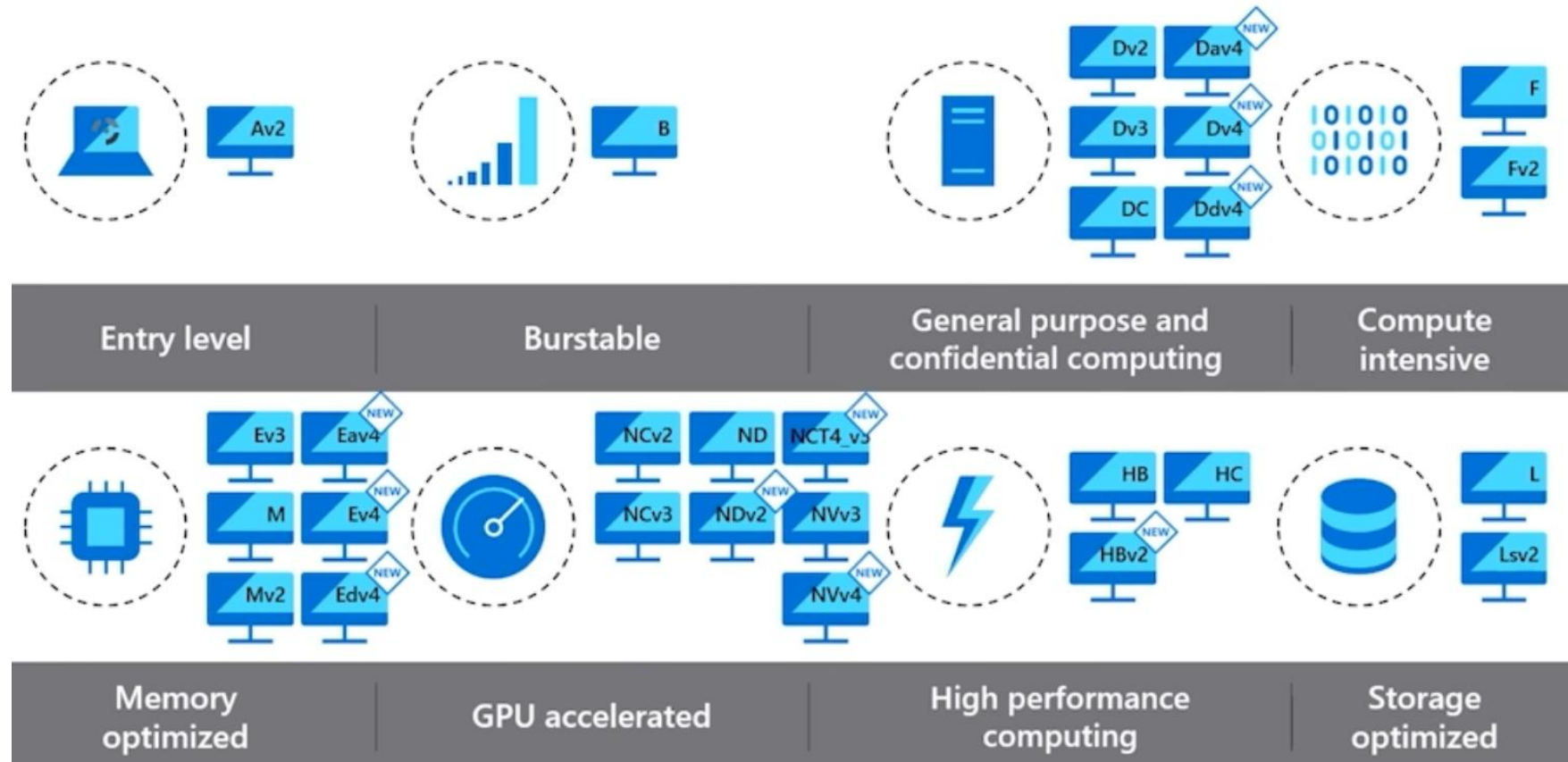
Azure Virtual Desktop
pricing

Pricing

- **Windows 10 or Windows 11 multi-session**: By delivering a multi-session desktop experience for users that have identical compute requirements, you can let more users log onto a single VM at once, resulting in considerable cost savings.

- **Azure Hybrid Benefit**: If you have Software Assurance, you can use [Azure Hybrid Benefit for Windows Server](#) to save on the cost of your Azure infrastructure.

- **Azure Reserved Instances**: You can prepay for your VM usage and save money. Combine [Azure Reserved Instances](#) with Azure Hybrid Benefit for up to 80 percent savings over list prices.

- **Session host load-balancing**: When setting up session hosts, **Breadth-first** is the standard default mode, which spreads users randomly across session hosts. **Depth-first** mode fills up a session host server with the maximum number of users before it moves on to the next session host. You can adjust this setting for maximum cost benefits.

Summary

Summary

What you learned:

- Explain the Azure Virtual Desktop components.

- Describe the Azure Virtual Desktop architecture.

- Choose between personal and pooled desktops.

- Identify the Azure limitations for Azure Virtual Desktop.

- Describe the options for Azure Virtual Desktop pricing.

Azure

Broker
GW
License

Ich

Session
Hosts ▢
↗ vm

App

⚥ Users
▢ Device &s
(Intune)

End of presentation