
FUTURE
DECODED
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# Gestione degli scenari ibridi con Microsoft Azure

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# Who am I?

**NICOLA FERRINI**

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Microsoft Regional Director

MVP Microsoft® Most Valuable Professional

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Microsoft CERTIFIED Solutions Associate Office 365

Microsoft Specialist

Architecting Microsoft Azure Solutions

# Agenda

- What's cloud? (private or public)
- Azure platform overview
- IAAS foundational components
- What's new with IAAS


What is Cloud?
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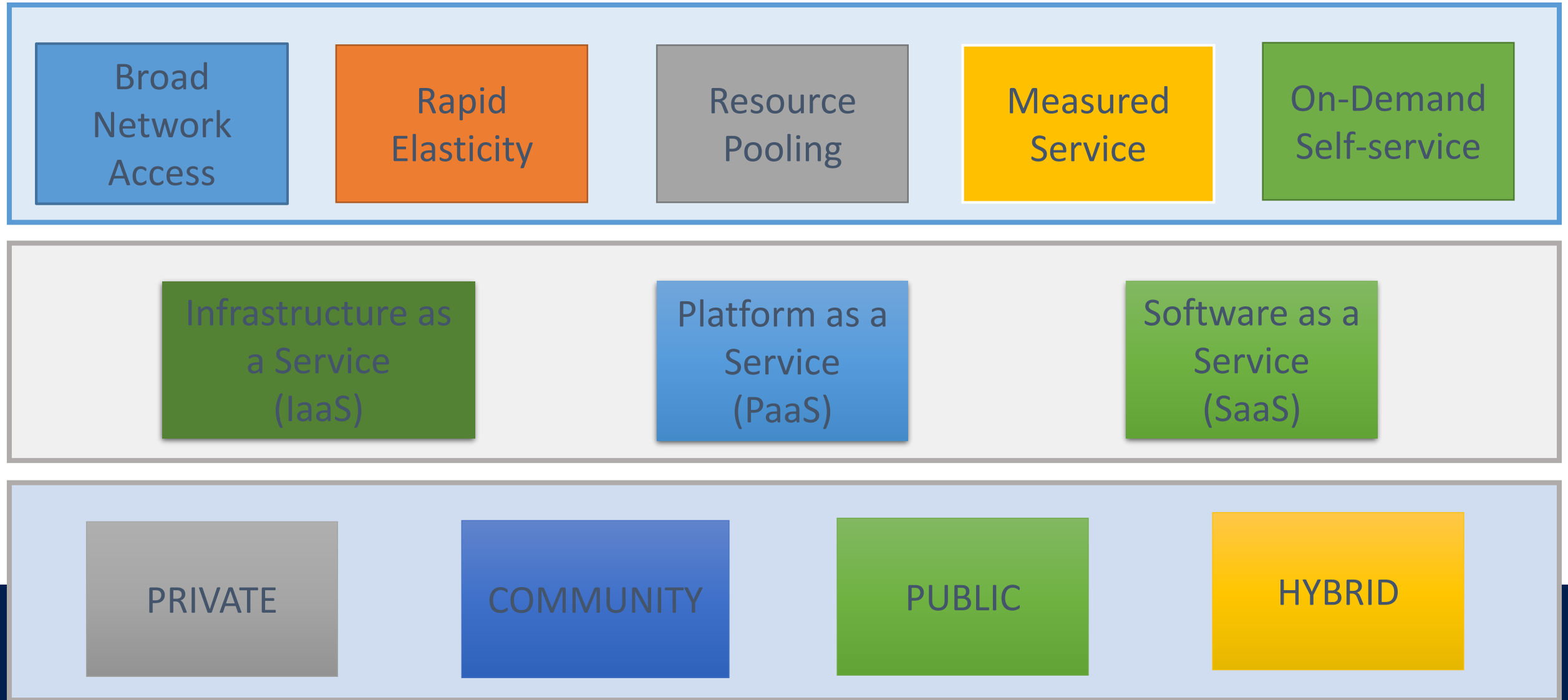
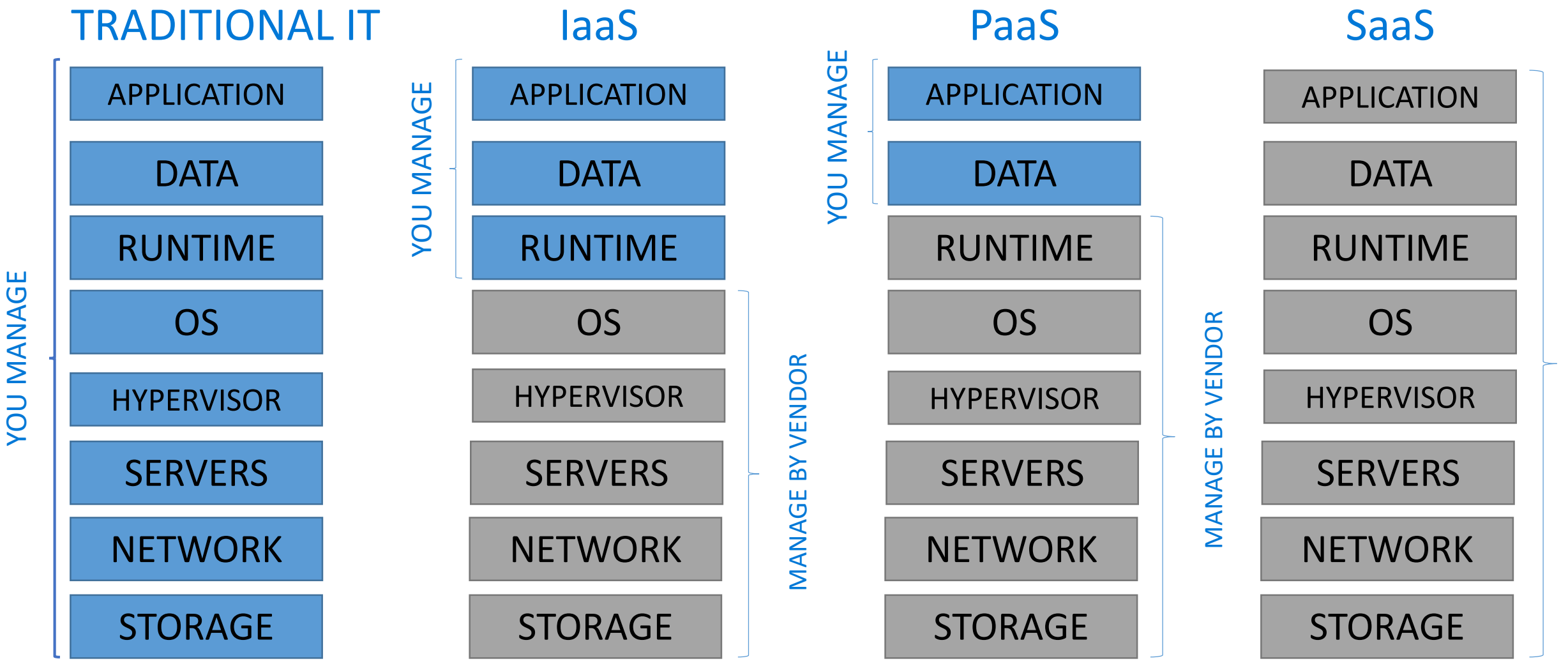
# Characteristics, Services and deployment models



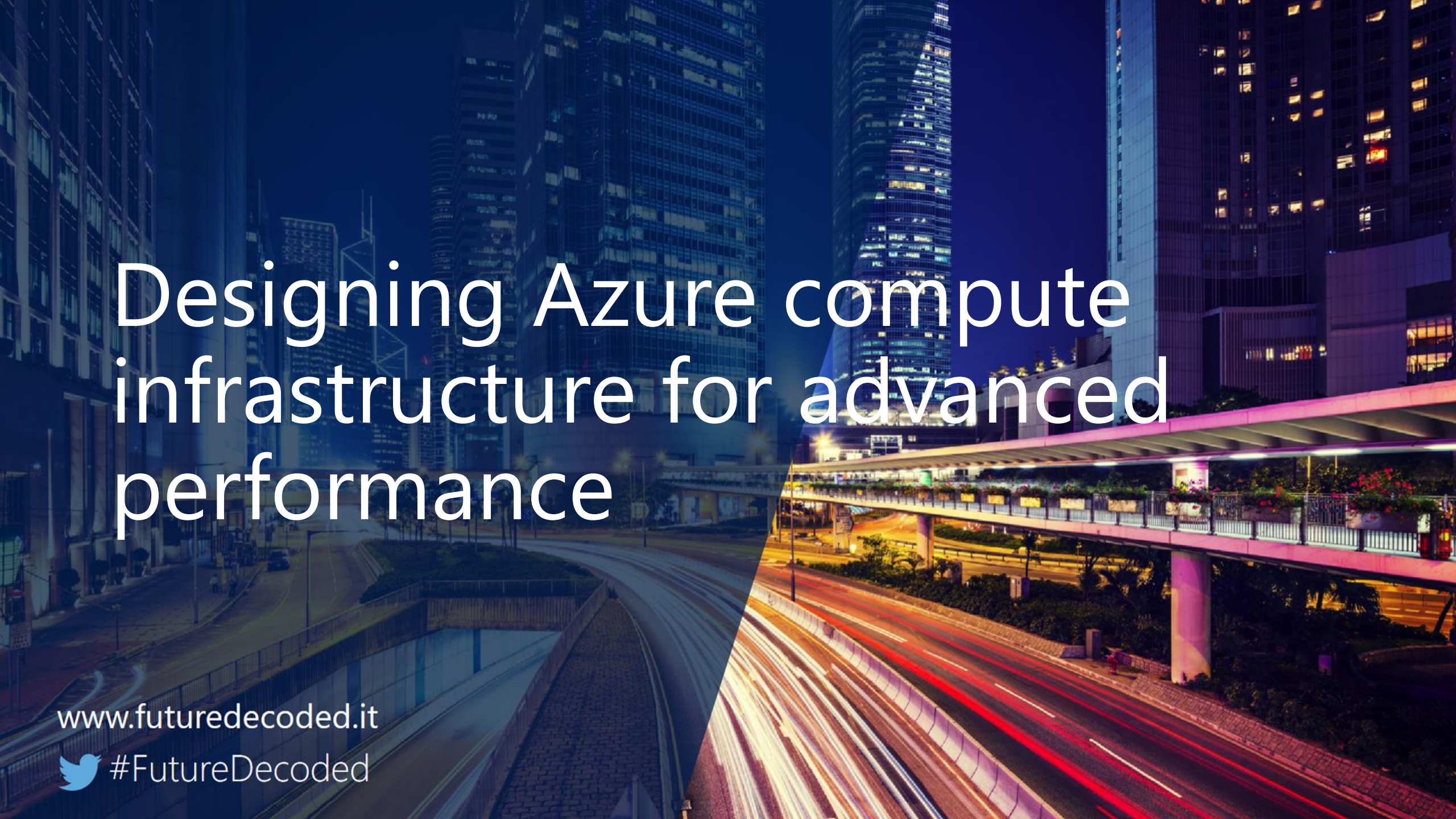
# What do you manage in public cloud?



# Azure regions

Azure is generally available in 30 regions around the world, and has announced plans for 4 additional regions. Geographic expansion is a priority for Azure because it enables our customers to achieve higher performance and it support their requirements and preferences regarding data location.

Explore products per region ▶


Designing Azure compute infrastructure for advanced performance
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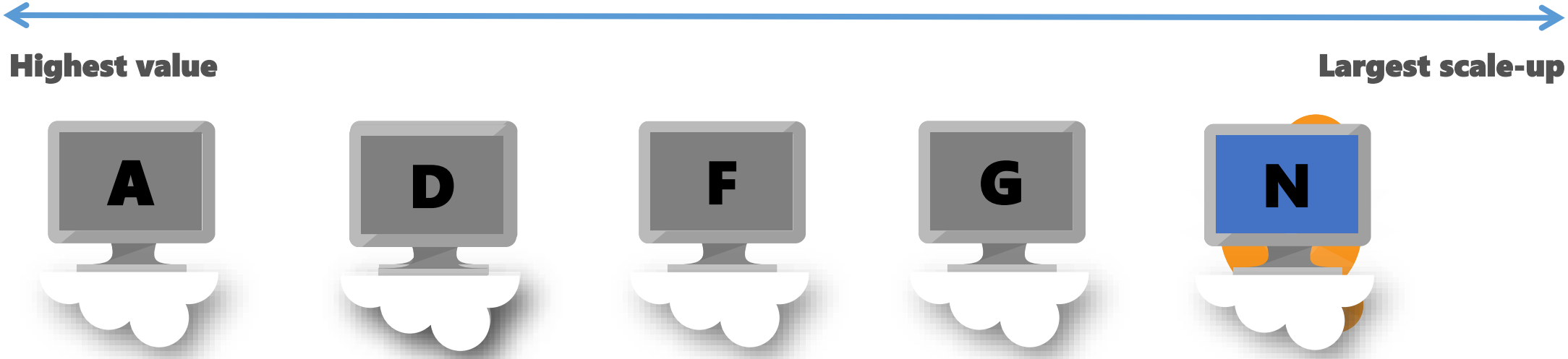
# Virtual Machines

- Infrastructure-as-a-Service offering that allows you to deploy compute instances in minutes to be used for Windows or Linux workloads.

- Features:
  - Use images built by the product teams to deploy workloads such as SQL Server, SharePoint and Apache
  - Attach, format and configure multiple disks for a VM
  - Remotely connect to a Windows or Linux VM
  - Select between VM sizes (A, D, DS, F, Fs, G and GS)
  - Select a Basic or Standard tier VM

# Scale-up options

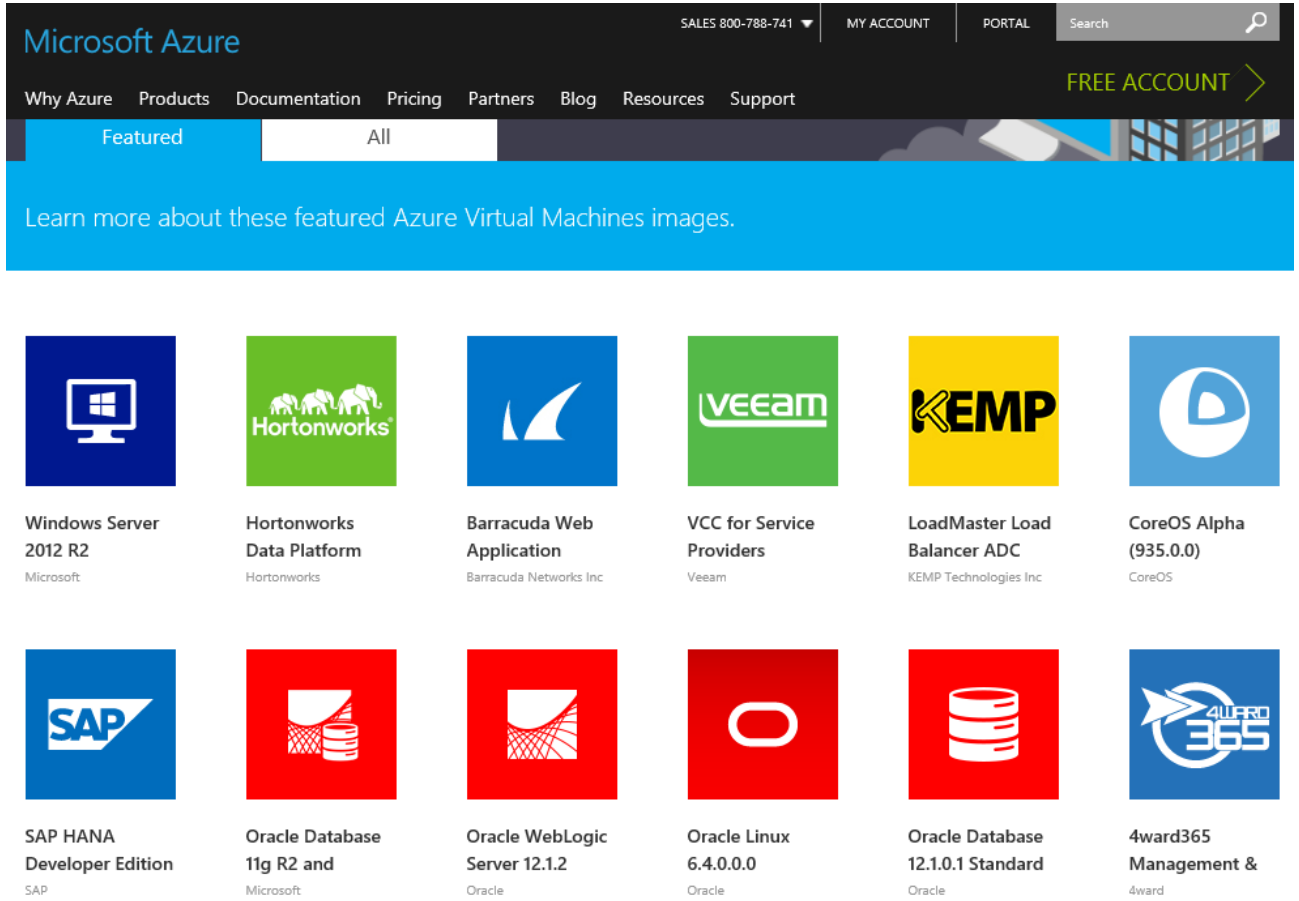


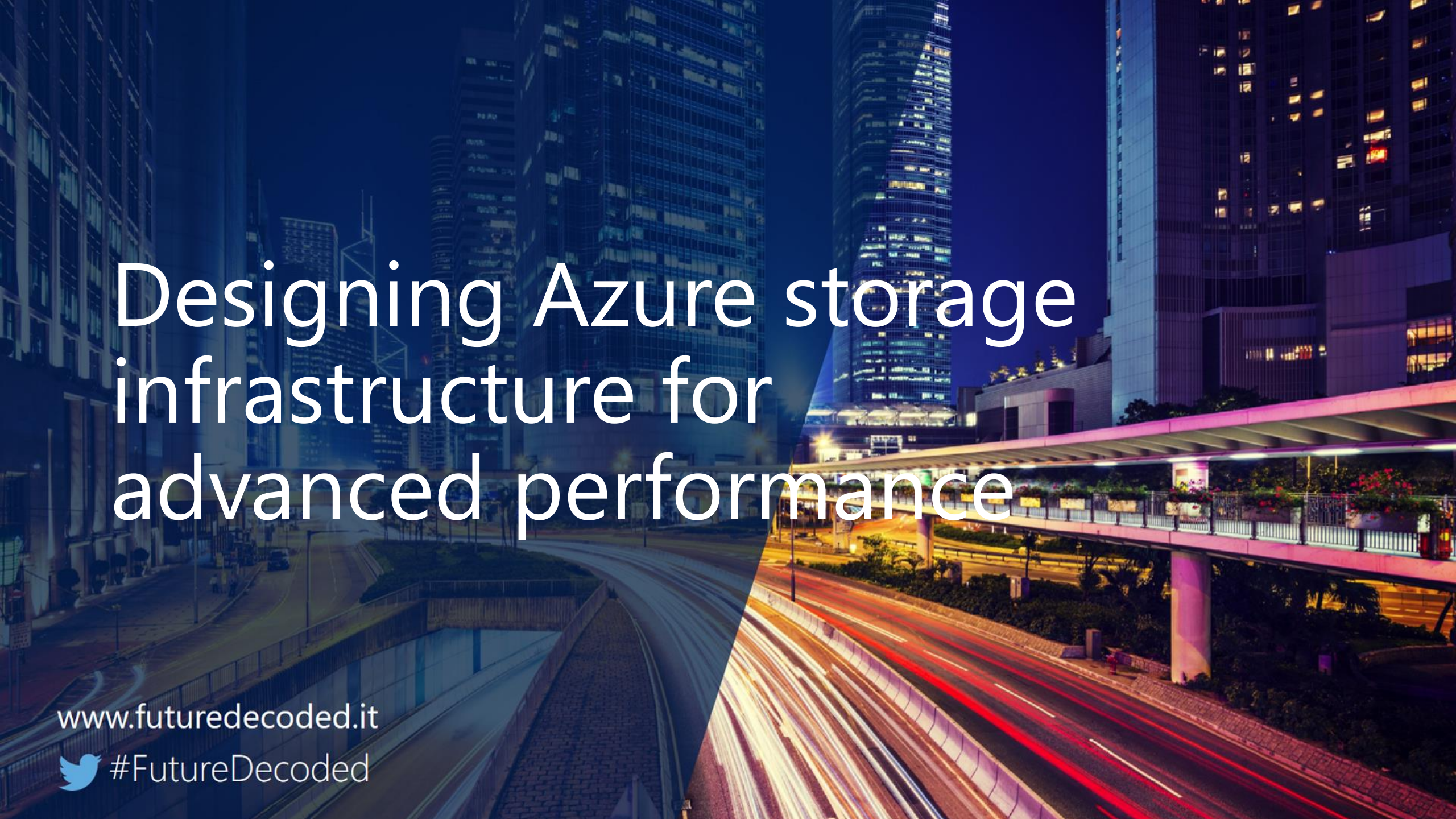

**Largest virtual machines**
**Fastest storage in the public cloud**

# Using Images to Construct Virtual Machines

Many images are already provided by Microsoft:

- Microsoft SQL Server
- Microsoft SharePoint
- OpenSUSE
- Ubuntu
- Microsoft BizTalk Server
- Docker
- Open source and third-party images

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# Azure Storage

Reliable and scalable storage service for data of all types and sizes

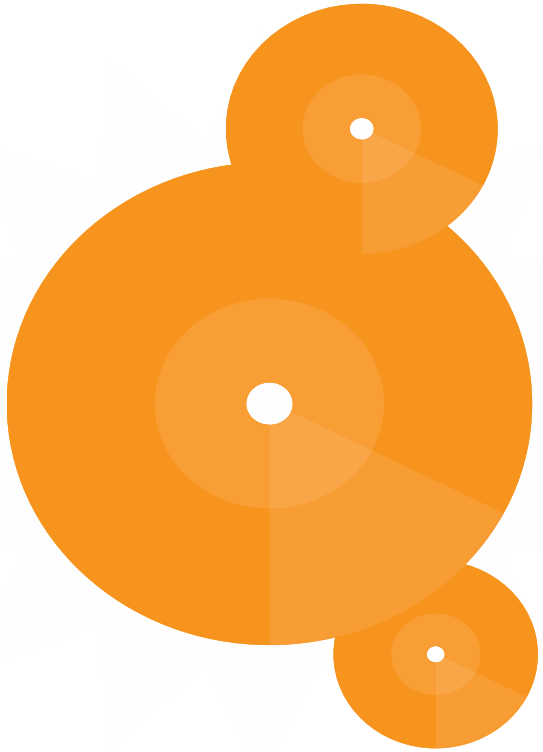
- Features:
  - Select a datacenter for storage
  - Configure geo-replication options
  - Manage blobs and files
  - Secure a container
  - Upload files
  - Access files

# Azure storage types

| | Locally Redundant Storage (LRS) | Zone Redundant Storage (ZRS) | Geographically Redundant Storage (GRS) | Read-Access Geographically Redundant Storage (RA-GRS) |
|---|---|---|---|---|
| How it works | Makes multiple synchronous copies of your data within a single datacenter | Stores three copies of data across multiple datacenters within or across regions. For block blobs only | Same as LRS, plus multiple asynchronous copies to a second datacenter hundreds of miles away | Same as GRS, plus read access to the secondary datacenter |
| Total copies | 3 | 3 | 6 | 6 |
| Why use it | For economical local storage or data governance compliance | An economical, higher durability option for block blob storage | For protection against a major datacenter outage or disaster | Provides read access to data during an outage, for maximum data availability and durability |
| Availability SLA | 99.9% read/write | 99.9% read/write | 99.9% read/write | 99.9% write<br>99.99% read |

# Premium storage

- High bandwidth with low latency
- Up to 35 TB of storage per Storage Account
- 64,000 IOPS per VM
- 5,000 IOPS per disk
- ~5 ms read/write (no cache)
- Less than 1 ms read latency (cache)
- Up to 200 MB per second




What's New
with IAAS
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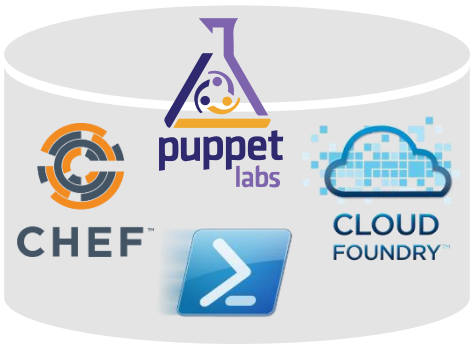
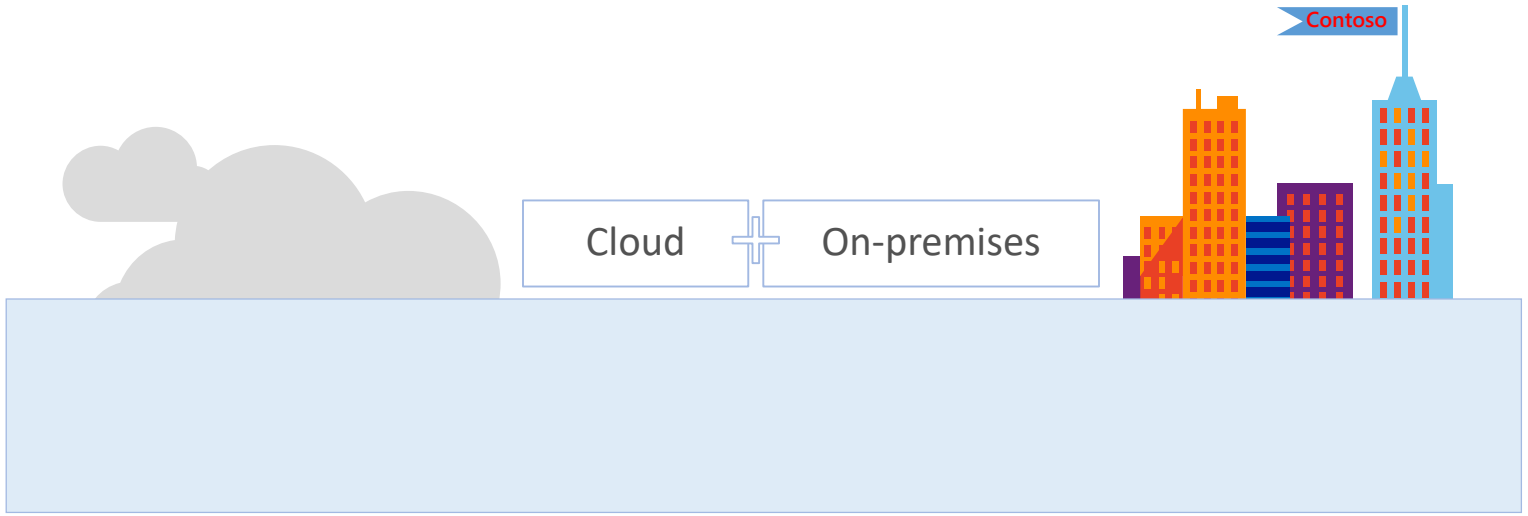
# Azure Resource Manager (ARM)

Consistent management layer

Curated extensions



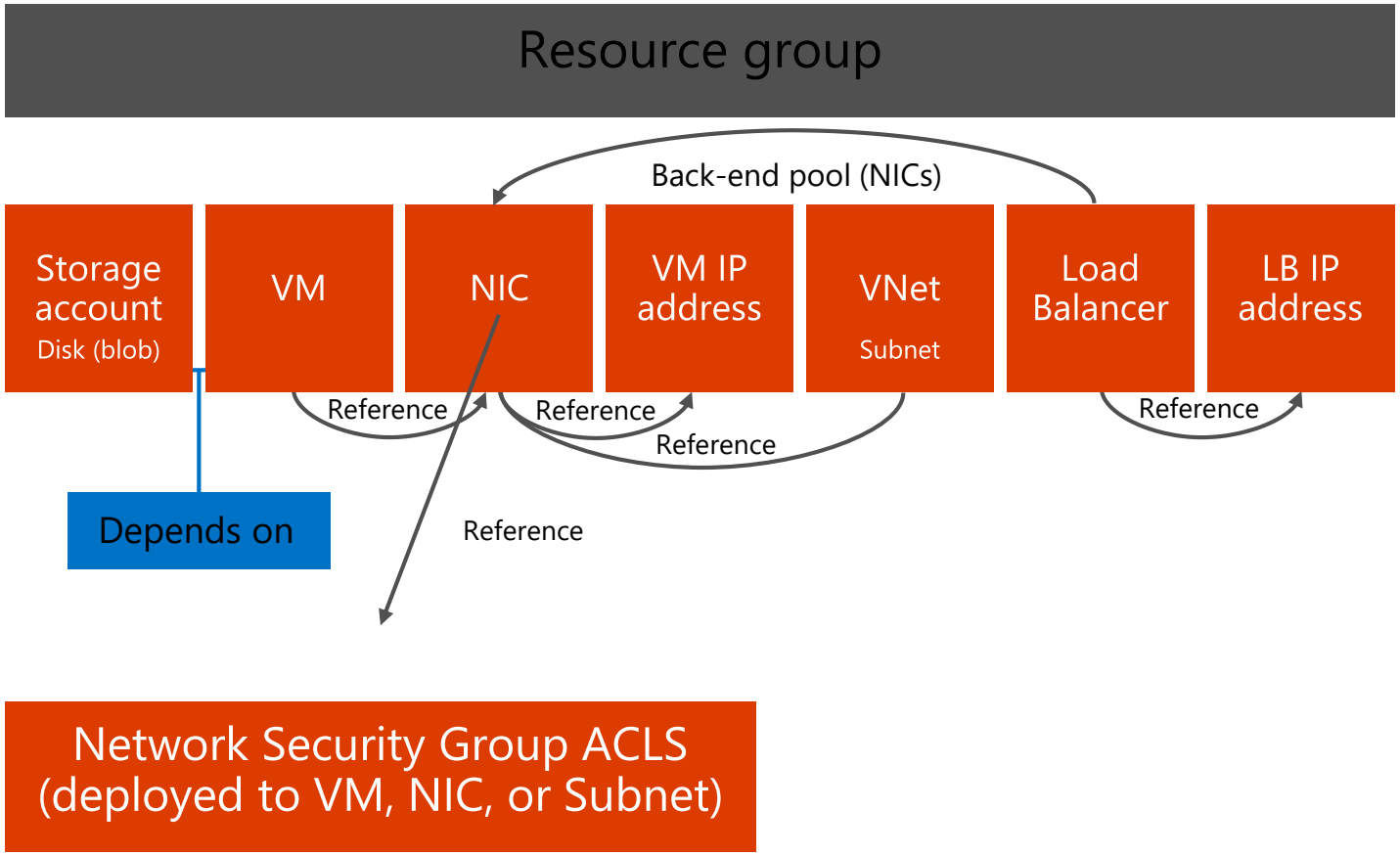

Tools

# Resource Manager example

- Resource Manager (v2)
- Classic model (v1)



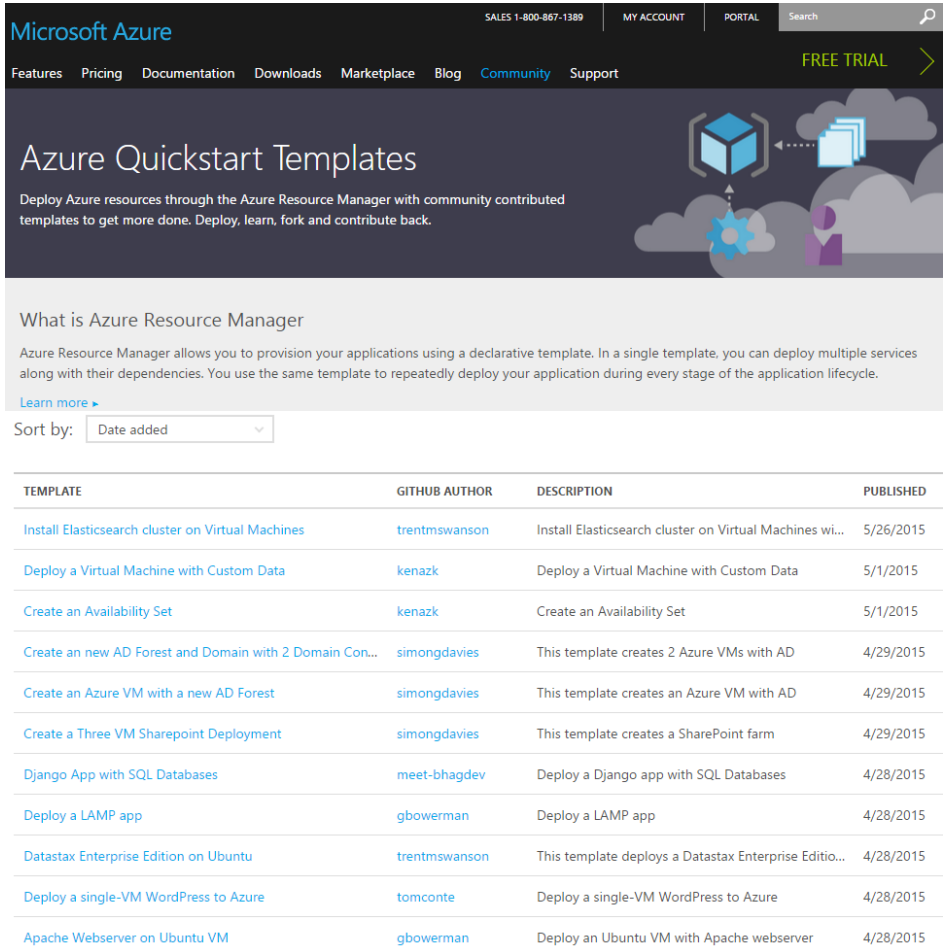




Network Security Group ACLS (deployed to VM, NIC, or Subnet)

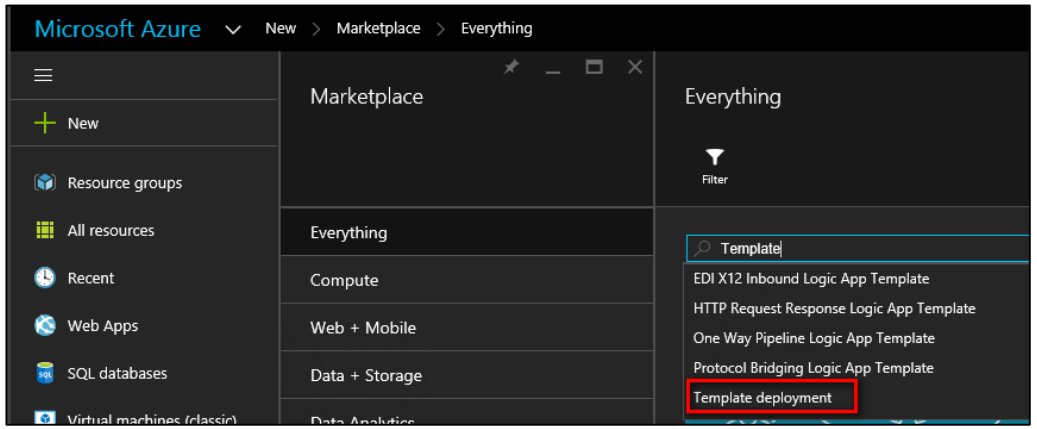
# Azure templates

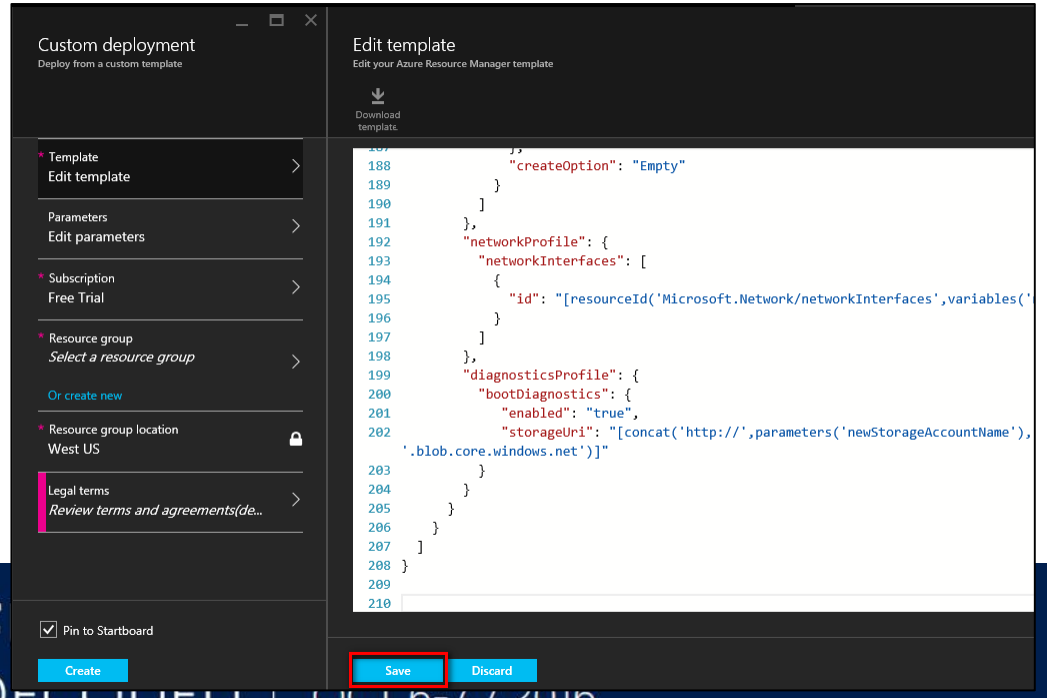
Wide range of Quickstart templates

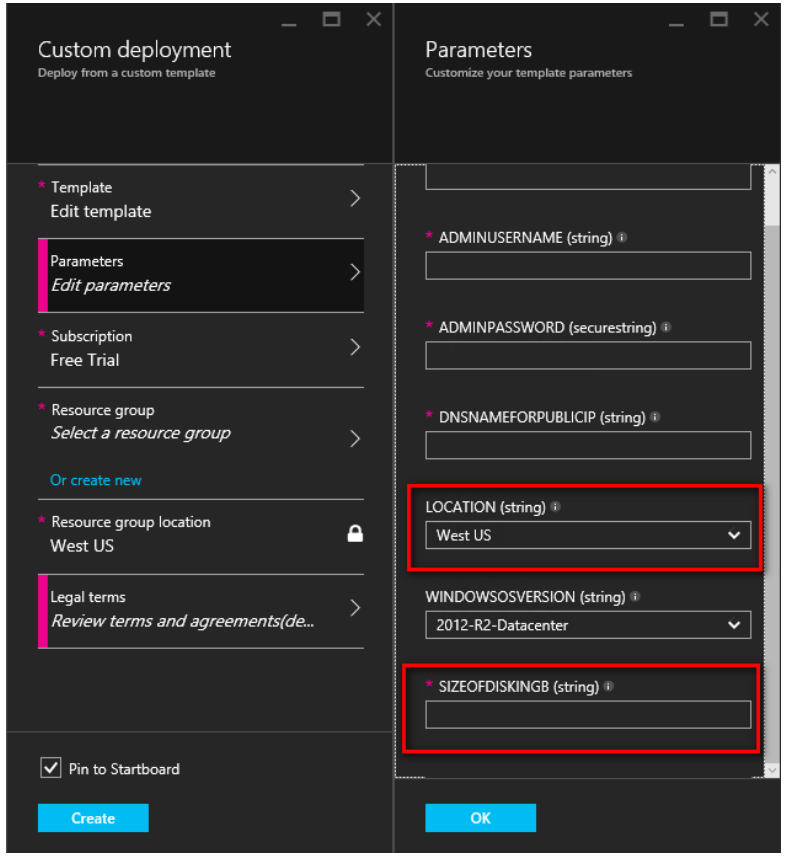
- Indexed on Azure.com
- GitHub repo
- Community and Microsoft contributed
  - Integration of IaaS with Azure Services



# Deploying custom JSON files




```
New-AzureResourceGroupDeployment -DeploymentName
"Simple-VM" -ResourceGroupName
RG-AZITCAMP -TemplateFile "C:\GitHub\Templates\101-
simple-windows-vm\azuredeploy.json
```


Networking
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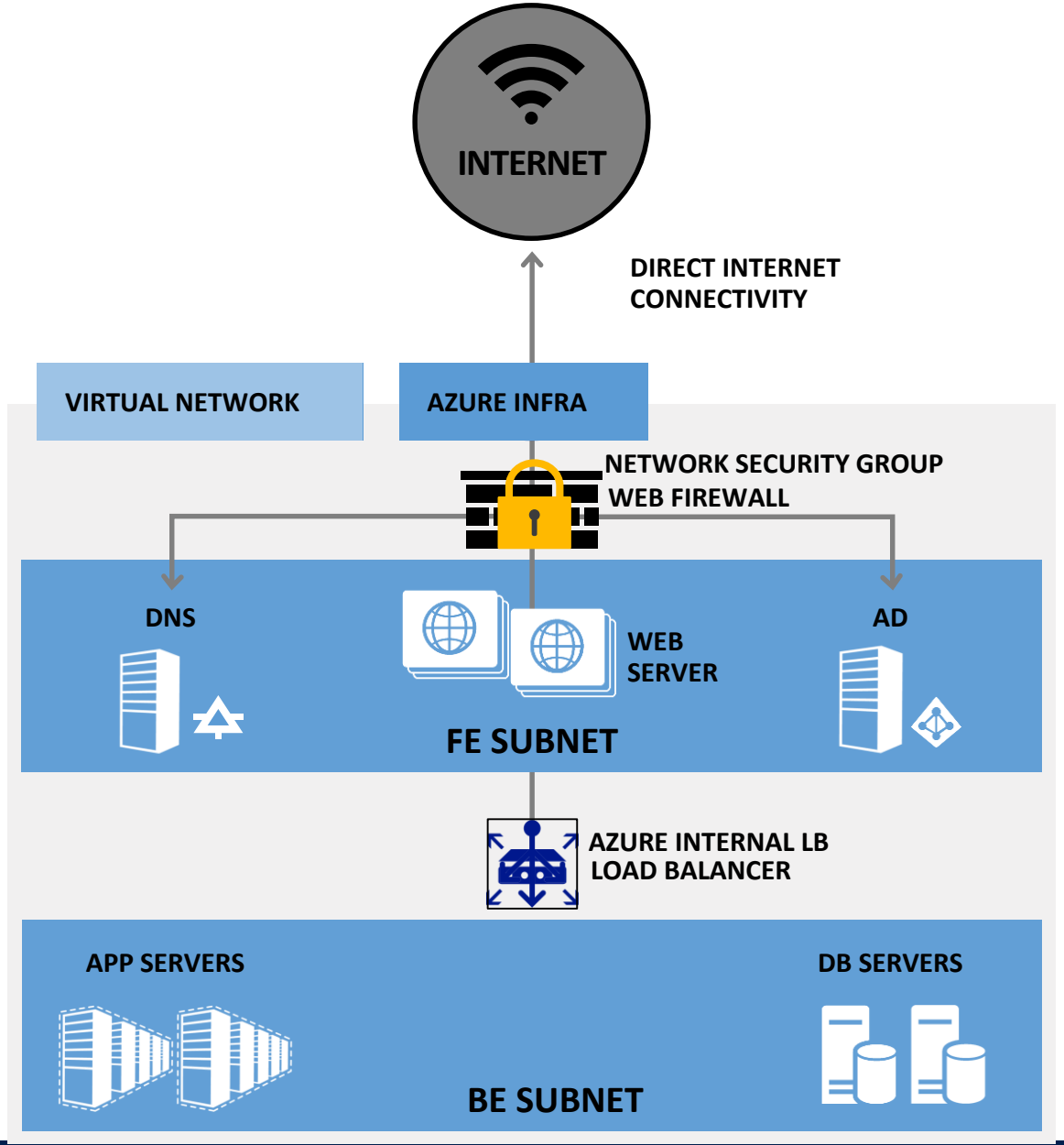
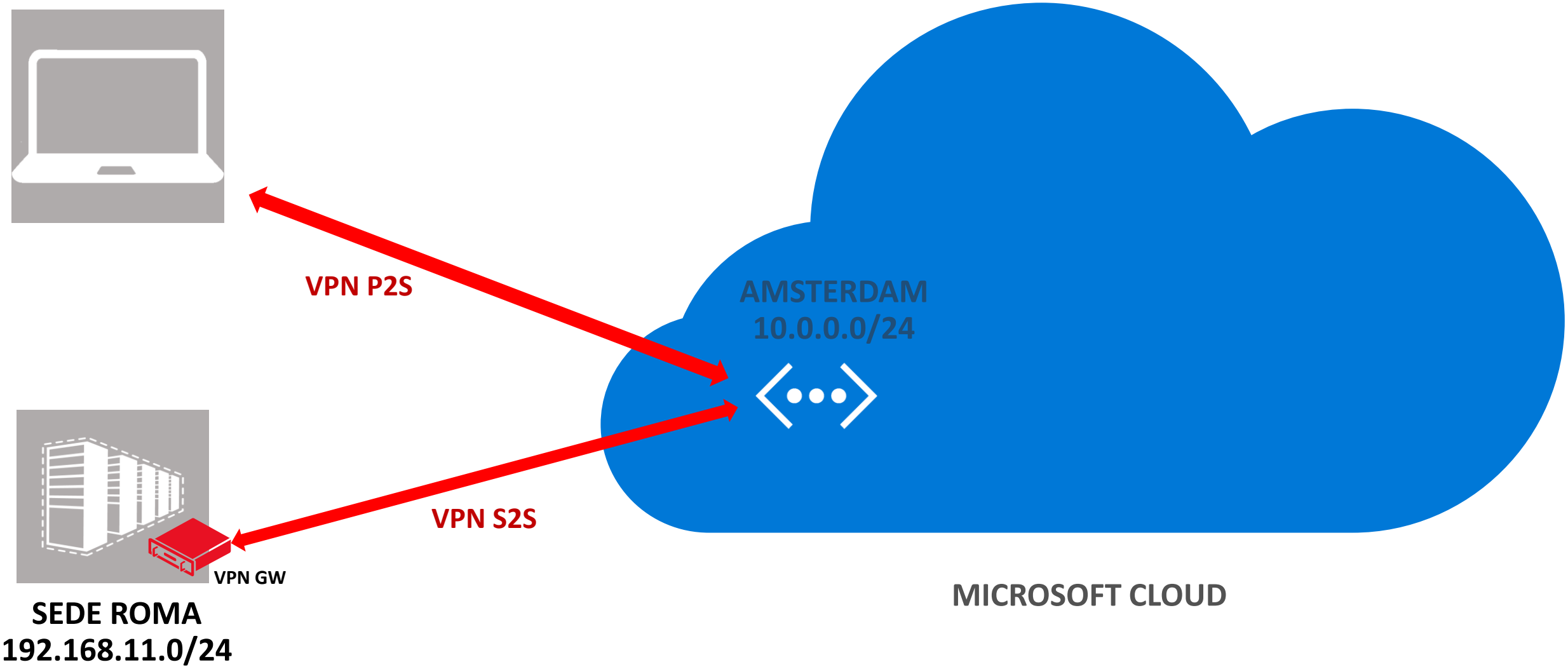
# Azure virtual network

- Bring your own network
- Logical isolation with control over network
- Create subnets with your private or public IP address spaces
- Bring your own DNS or use Azure-provided DNS
- Secure VMs with Network Security Groups
- Run highly available internal services behind internal load balancer



# Our Lab


VPN P2S
AMSTERDAM
10.0.0.0/24
VPN S2S
VPN GW
SEDE ROMA
192.168.11.0/24
MICROSOFT CLOUD


DEMO
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When implement hybrid cloud?
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# Hybrid Cloud use cases

- Test/Dev Environment (Copy of On-Prem, «Dev Test Lab»)
- Guaranteed SLA (99,9% - 99,99%)
- Business Continuity/Disaster Recovery (Azure Site Recovery)
- Backup in Secondary Site (Azure Backup)
- Cost Saving (Automation: turn off/on workload, to reduce sizing of VM)
- Scalability
- Protection

# Backup and Site Recovery

## Backup

- Offsite backups of your server data
- Encrypted in transmission
- Integrated in System Center and Windows Server
- Backs up only changes instead of entire files
- Backup VM Azure with high retention time

## Site Recovery

- Replicates private clouds to a secondary location (other datacenter or Microsoft Azure)
- Quickly recover your virtual machines.
- Integrated with Windows Server Hyper-V Replica
- Connects to System Center Virtual Machine Manager for health monitoring
- Protects VMware and physical servers

# When to suggest Hybrid solution?

- Business Continuity/Disaster Recovery
- Backup in Secondary Site
- Scalability
- Protection
- Flexibility
- Cost Saving

# When to suggest only Cloud solution ?

- Test Environment
- Dev Environment
- Service Level Agreement
- File Server Geo Replicated
- Cost Saving

# Do you want to know more?

ICTPower Community

- http://www.ictpower.it

Microsoft Virtual Academy

- https://mva.microsoft.com/

Microsoft Channel 9 Videos

- https://channel9.msdn.com/

Microsoft Official Course 20533:

- Implementing Microsoft Azure Infrastructure Solutions
- https://www.microsoft.com/en-us/learning/course.aspx?cid=20533B

# Everything is clear?


Any question?
Materiale su
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