Azure Fundamentals (AZ-900)

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Agenda

- What is Cloud Computing?

- Microsoft Azure Platform

- Cloud Deployment Models

- Microsoft Azure Platform History

- Public Cloud Adoption

- Microsoft Azure Advantages

- Azure Certifications

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What is Cloud Computing?

- A way to deliver the computing as a service rather than a product.

- Provides on-demand hardware (like Server), storage resources, services hosting, services management environment, and other devices as a resource over the internet.

- Typically, it is a way to rent compute power and storage from someone else's datacenter.
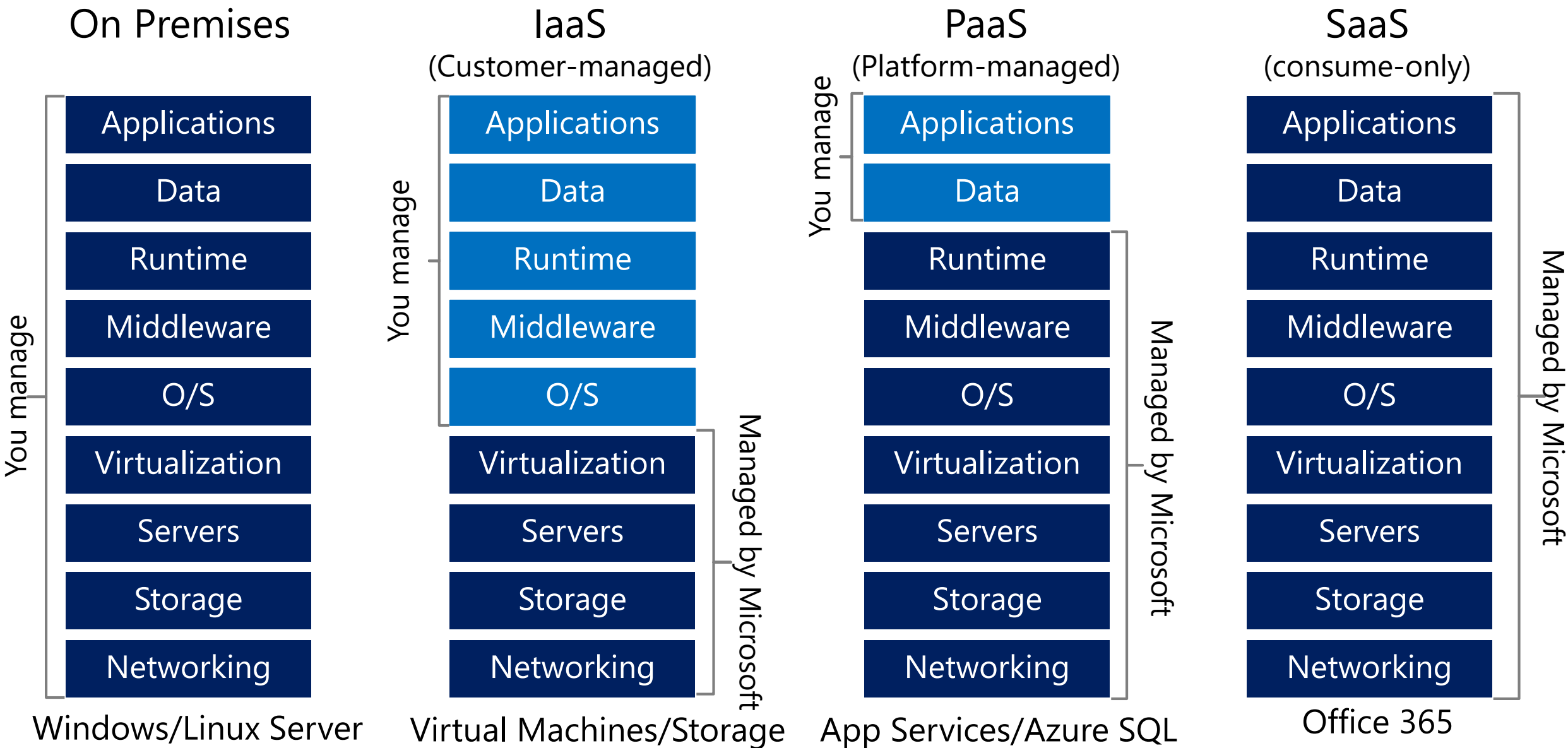

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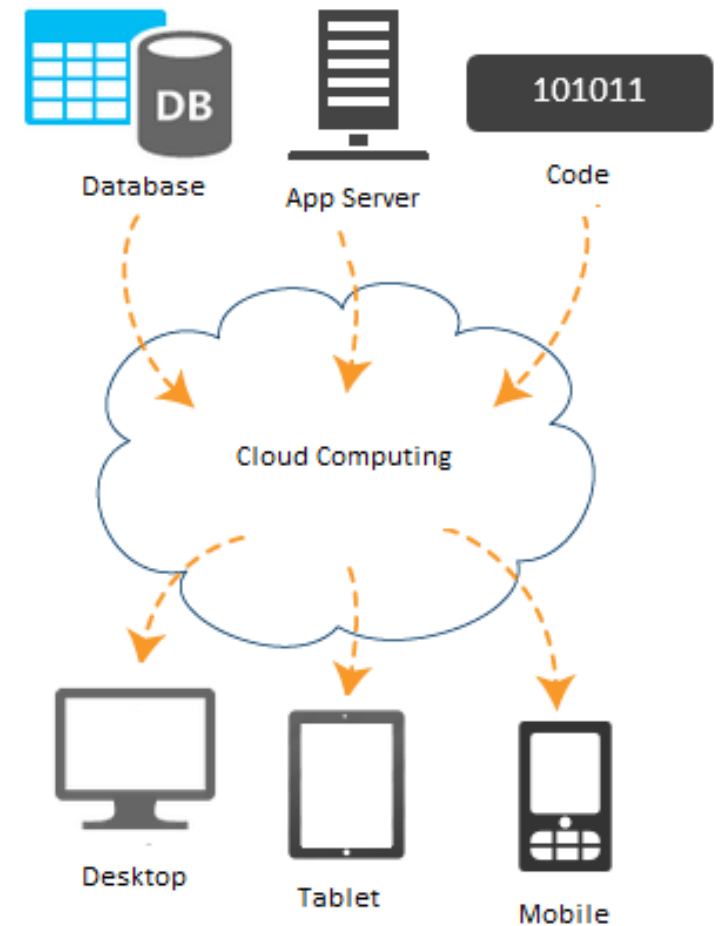
Cloud Computing Advantages

- **High availability**: Your cloud-based applications/service will always run with no downtime even when things go wrong.

- **Scalability**: Cloud-based applications can be scaled in two ways:
  - **Vertically**: Computing capacity can be increased by adding RAM or CPUs to a virtual machine.
  - **Horizontally**: Computing capacity can be increased by adding instances of a resource.

- **Elasticity**: Cloud-based applications can be configured for auto scaling, so it will always have the resources when they need.
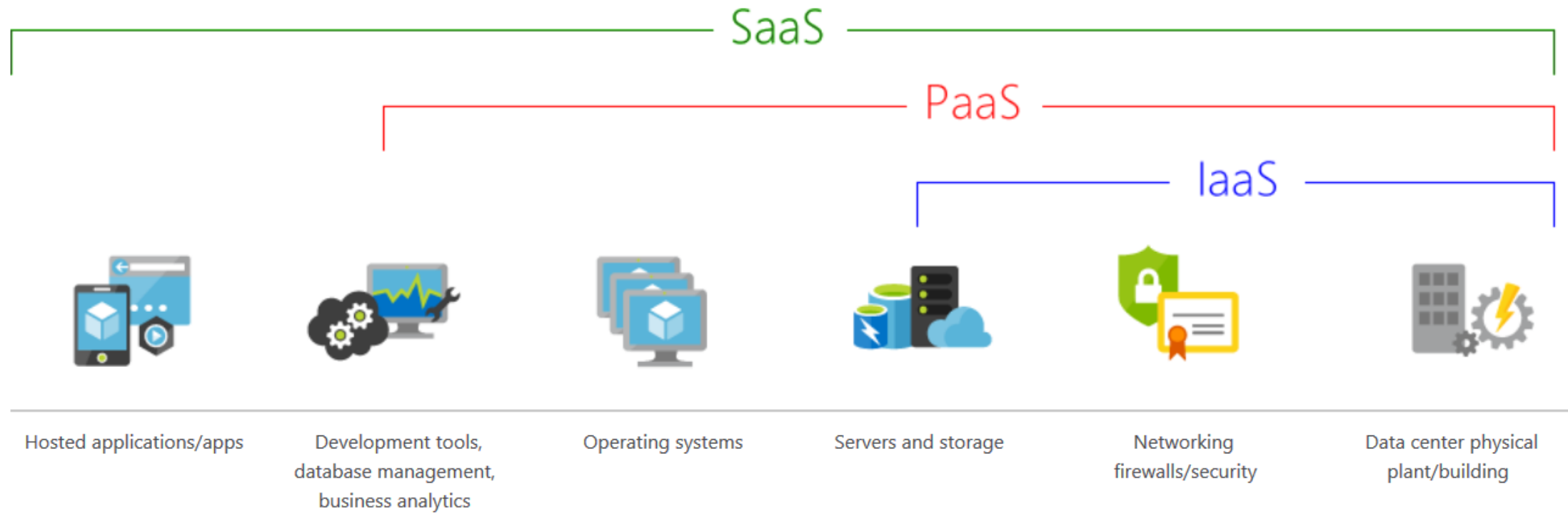
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Cloud Computing Advantages Contd..

- **Agility**: Cloud-based resources can be deployed and configured quickly as your application requirements change.

- **Geo-distribution**: Applications and data can be deployed to regional datacenters around the globe, so your customers always have the best performance in their region.

- **Disaster recovery**: cloud-based application data is replicated and geo-distribution make your data safe even a disaster occur.
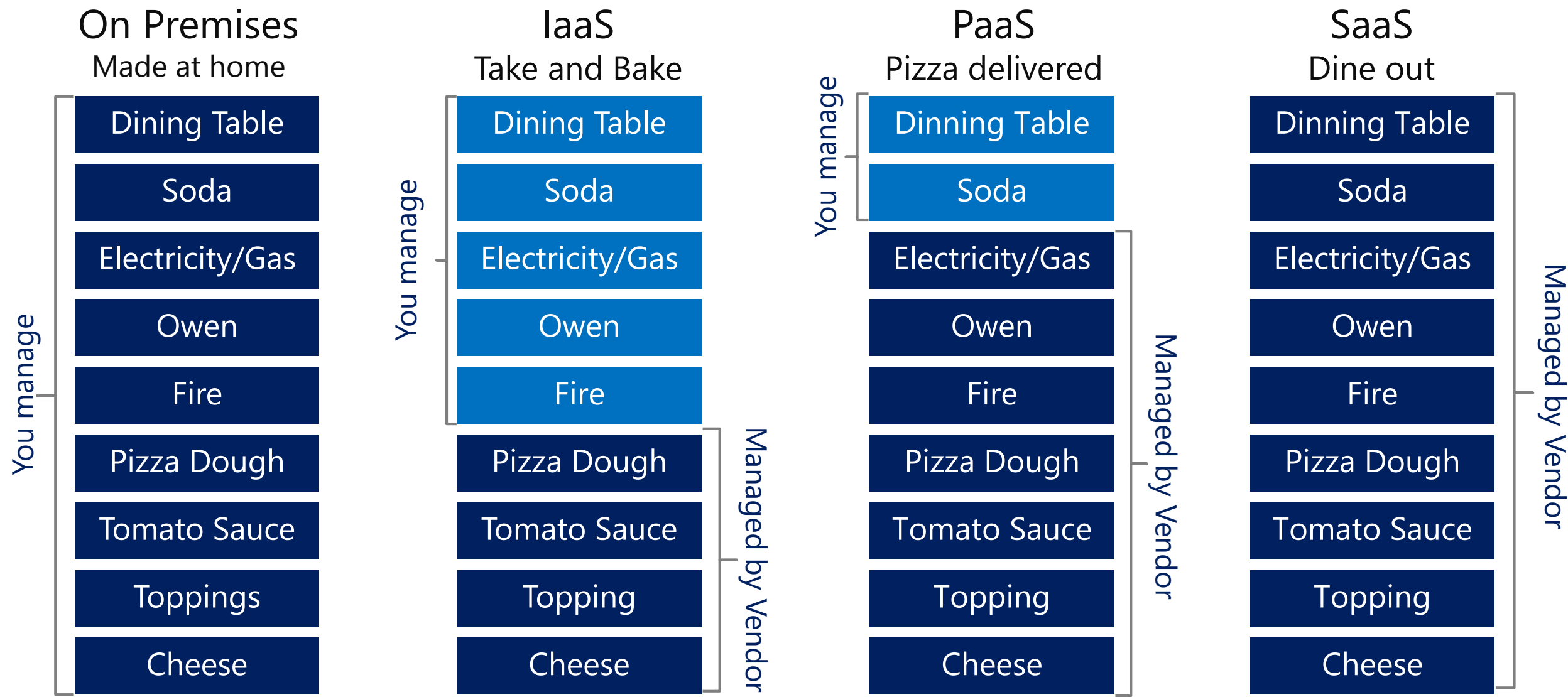
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Cloud Computing Offering

On Premises

| Applications |
| Data |
| Runtime |
| Middleware |
| O/S |
| Virtualization |
| Servers |
| Storage |
| Networking |

You manage

Windows/Linux Server

IaaS
(Customer-managed)

| Applications |
| Data |
| Runtime |
| Middleware |
| O/S |
| Virtualization |
| Servers |
| Storage |
| Networking |

You manage

Managed by Microsoft

Virtual Machines/Storage

PaaS
(Platform-managed)

| Applications |
| Data |
| Runtime |
| Middleware |
| O/S |
| Virtualization |
| Servers |
| Storage |
| Networking |

You manage

Managed by Microsoft

App Services/Azure SQL

SaaS
(consume-only)

| Applications |
| Data |
| Runtime |
| Middleware |
| O/S |
| Virtualization |
| Servers |
| Storage |
| Networking |

Managed by Microsoft

Office 365

Cloud Computing Offering

SaaS					
PaaS					
			IaaS		
Hosted applications/apps	Development tools, database management, business analytics	Operating systems	Servers and storage	Networking firewalls/security	Data center physical plant/building

Cloud Computing Offering *hungry kya!*

On Premises
Made at home

You manage

Dining Table
Soda
Electricity/Gas
Owen
Fire
Pizza Dough
Tomato Sauce
Toppings
Cheese

IaaS
Take and Bake

You manage

Dining Table
Soda
Electricity/Gas
Owen
Fire

Managed by Vendor

Pizza Dough
Tomato Sauce
Topping
Cheese

PaaS
Pizza delivered

You manage

Dinning Table
Soda

Managed by Vendor

Electricity/Gas
Owen
Fire
Pizza Dough
Tomato Sauce
Topping
Cheese

SaaS
Dine out

Managed by Vendor

Dinning Table
Soda
Electricity/Gas
Owen
Fire
Pizza Dough
Tomato Sauce
Topping
Cheese

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Serverless Computing (FaaS)

- In serverless computing servers are still running the code. But the tasks associated with infrastructure provisioning and management are invisible to the developer.

- Enables developers to build applications faster by eliminating the need to provisions, scales manage infrastructure.

- Serverless architectures are highly scalable and event-driven. They use resources only when a function or trigger occurs.

- Serverless computing enables team to increase their productivity and bring products to market faster.

Cloud Computing Deployment Models

Public

Accessible over
the public internet

Private

Exclusive for
an Organization

Hybrid

A Mix of
public & private

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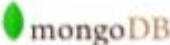
Microsoft Azure Platform

- An open and flexible cloud platform which offers a set of cloud services that help your organization to meet your current and future business challenges.

- Provides on-demand compute and storage to host, scale, and manage web applications on the internet through Microsoft datacenters.

- You can build applications using any language, tool, or framework. Even you can integrate your public cloud applications with your existing IT environment.

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Microsoft Azure Platform History

Announced Windows Azure 2008

Feb 2010 Commercially Available

Improved Dev/IT Pro Experience Oct 2010

2012 VMs for Windows & Linux

Renamed to Microsoft Azure 2014

2014 Azure Machine Learning Public Preview

Visual Studio App Center 2017

2018-2020 Continuous Improvement

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Support for Open Source

DevOps	Nagios	VAGRANT	GRUNT	gradle	Gradle	**Clients**	Android	Xamarin	CORDOVA
Management	CHEF	puppet labs	ANSIBLE	SALTSTACK		mist.io	libcloud	SCALR
Applications	WordPress	Joomla!	Drupal	PaaS and DevOps	apprenda	Jelastic	CLOUD FOUNDRY	GitHub
App frameworks and tools	php	nodeJS	Python	Java	Ruby	IntelliJ IDEA	eclipse
Databases and middleware	hadoop	redis	cleardb	cloudera	MySQL	mongoDB	Couchbase
Infrastructure	Linux	Ubuntu	redhat	SUSE	bitnami	ORACLE LINUX	freeBSD	docker

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Public Cloud Adoption 2019 vs. 2020

Public Cloud Adoption YoY
% of all respondents

	2020	2019
AWS	76%	61%
Azure	63%	52%
Google Cloud	35%	19%
VMware Cloud on AWS	17%	12%
Oracle Infrastrucuture Cloud	17%	11%
IBM Public Cloud	13%	12%
Alibaba Cloud	7%	3%

N=750

Source: Flexera 2020 State of the Cloud Report

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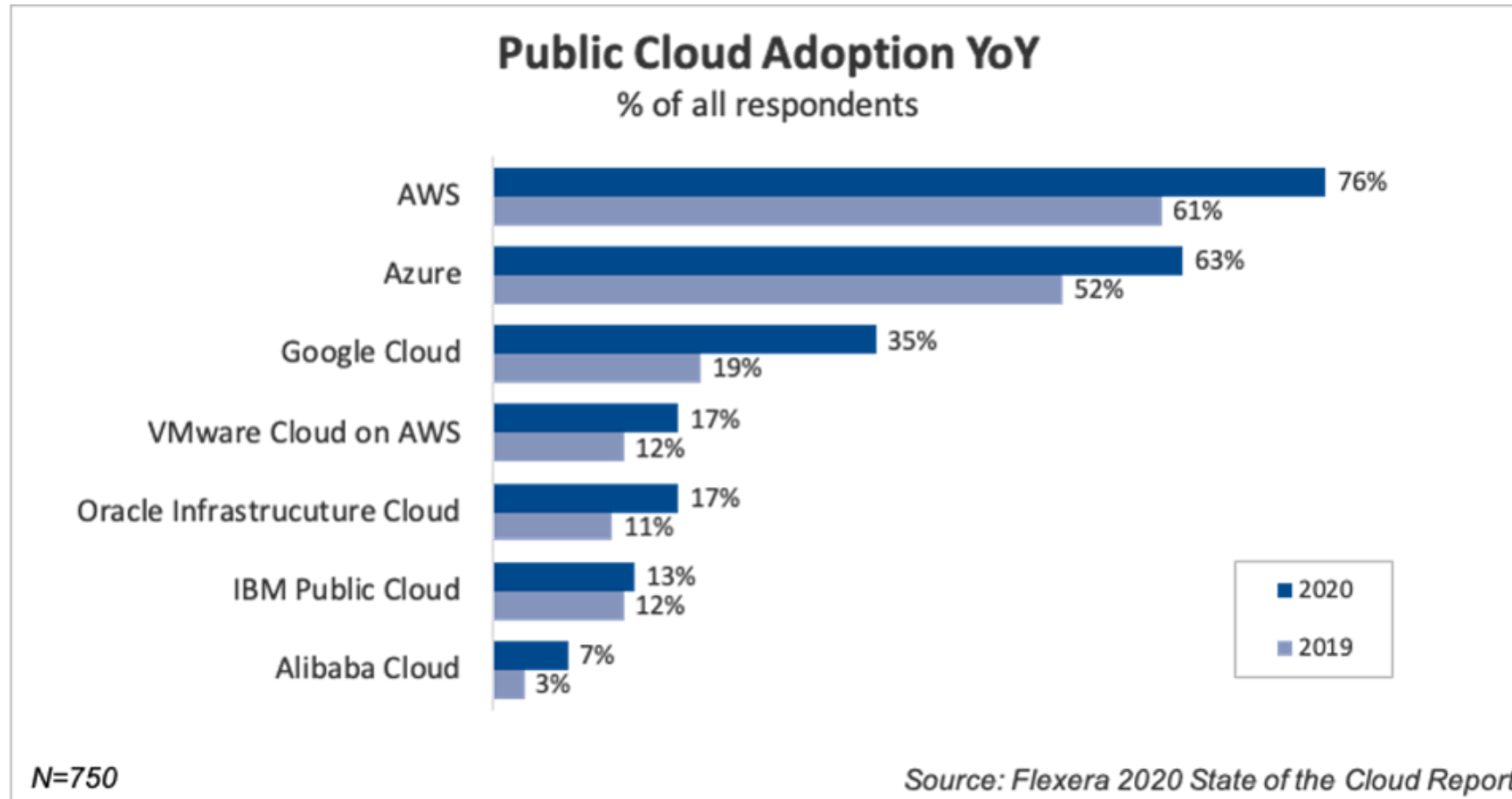
Microsoft Azure Services

Platform Services

Security and Management
- Portal
- Active Directory
- Multi-Factor Authentication
- Automation
- Key Vault
- Store/Marketplace
- VM Image Gallery and VM Depot

Compute
- Cloud Services
- Service Fabric
- Batch
- Remote App

Web and mobile
- Web Apps
- API Apps
- API Management
- Mobile Apps
- Logic Apps
- Notification Hubs

Developer services
- Visual Studio
- Azure SDK
- Team Project
- Application Insights

Hybrid Operations
- Azure AD Connect Health
- AD Privileged Identity Management
- Backup
- Operational Insights
- Import/Export
- Site Recovery
- StorSimple

Integration
- Storage Queues
- BizTalk Services
- Hybrid Connections
- Service Bus

Analytics and IoT
- HDInsight
- Machine Learning
- Data Factory
- Event Hubs
- Stream Analytics
- Mobile Engagement

Data
- SQL Database
- SQL Data Warehouse
- Redis Cache
- Search
- Cosmos DB
- Tables

Media and CDN
- Media Services
- Content Delivery Network (CDN)

Infrastructure Services

Compute
- Virtual Machine
- Containers

Storage
- BLOB Storage
- Azure Files
- Premium Storage

Networking
- Virtual Network
- Load Balancer
- DNS
- Express Route
- Traffic Manager
- VPN Gateway
- Application Gateway

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Azure Marketplace

- An online store that hosts applications that are certified and optimized to run in Azure

- Helps us to connect with Microsoft partners, independent software vendors, and startups that are offering their solutions and services.

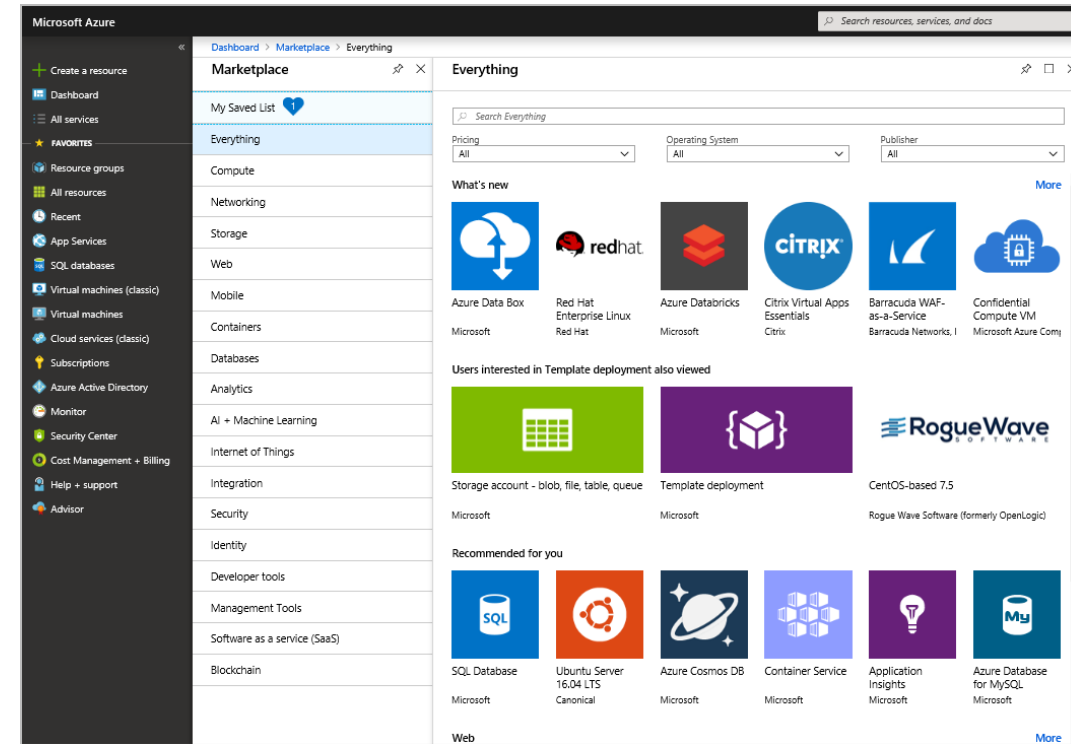- There are more than 8,000 listings

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Configuring Visual Studio 2017/2019

Modifying — Visual Studio Enterprise 2017 — 15.4.1

Workloads Individual components Language packs

Windows (3)

Universal Windows Platform development ☑
Create applications for the Universal Windows Platform
with C#, VB, JavaScript, or optionally C++.

.NET desktop development ☑
Build WPF, Windows Forms, and console applications using
C#, Visual Basic, and F#.

Desktop development with C++ ☐
Build classic Windows-based applications using the power
of the Visual C++ toolset, ATL, and optional features like...

Web & Cloud (7)

ASP.NET and web development ☑
Build web applications using ASP.NET, ASP.NET Core,
HTML, JavaScript, and container development tools.

Azure development ☑
Azure SDK, tools, and projects for developing cloud apps
and creating resources.

Python development ☐
Editing, debugging, interactive development and source
control for Python.

Node.js development ☑
Build scalable network applications using Node.js, an
asynchronous event-driven JavaScript runtime.

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Azure Certifications

Job Roles

- **Developer**: Responsible to design, build, test, and maintain solutions using Microsoft technologies.

- **Administrator**: Responsible to implement, monitor, and maintain solutions using Microsoft technologies.

- **Solutions Architect**: Responsible to design solutions that meet the needs of the business using Microsoft technologies.

Expertise Levels

Azure Certification Badges

AZ-900   AZ-204   AZ-104   AZ-303, AZ-304   AZ-400

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AZ-900 Exam Format

- No. of Questions : 40-60

- Questions Types: Multiple Choice, Multi Response, Case Study etc.

- Passing Score : 700 on a scale of (1-1000)

- Exam Duration: 85 Minutes

- Exam Fee: $99/ ₹3696

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AZ-204/AZ-104 Exam Format

- No. of Questions : 40-60
- Questions Types: Multiple Choice, Multi Response, Case Study etc.
- Passing Score : 700 on a scale of (1-1000)
- Exam Duration: 150 Minutes
- Exam Fee: $165/ ₹4800

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