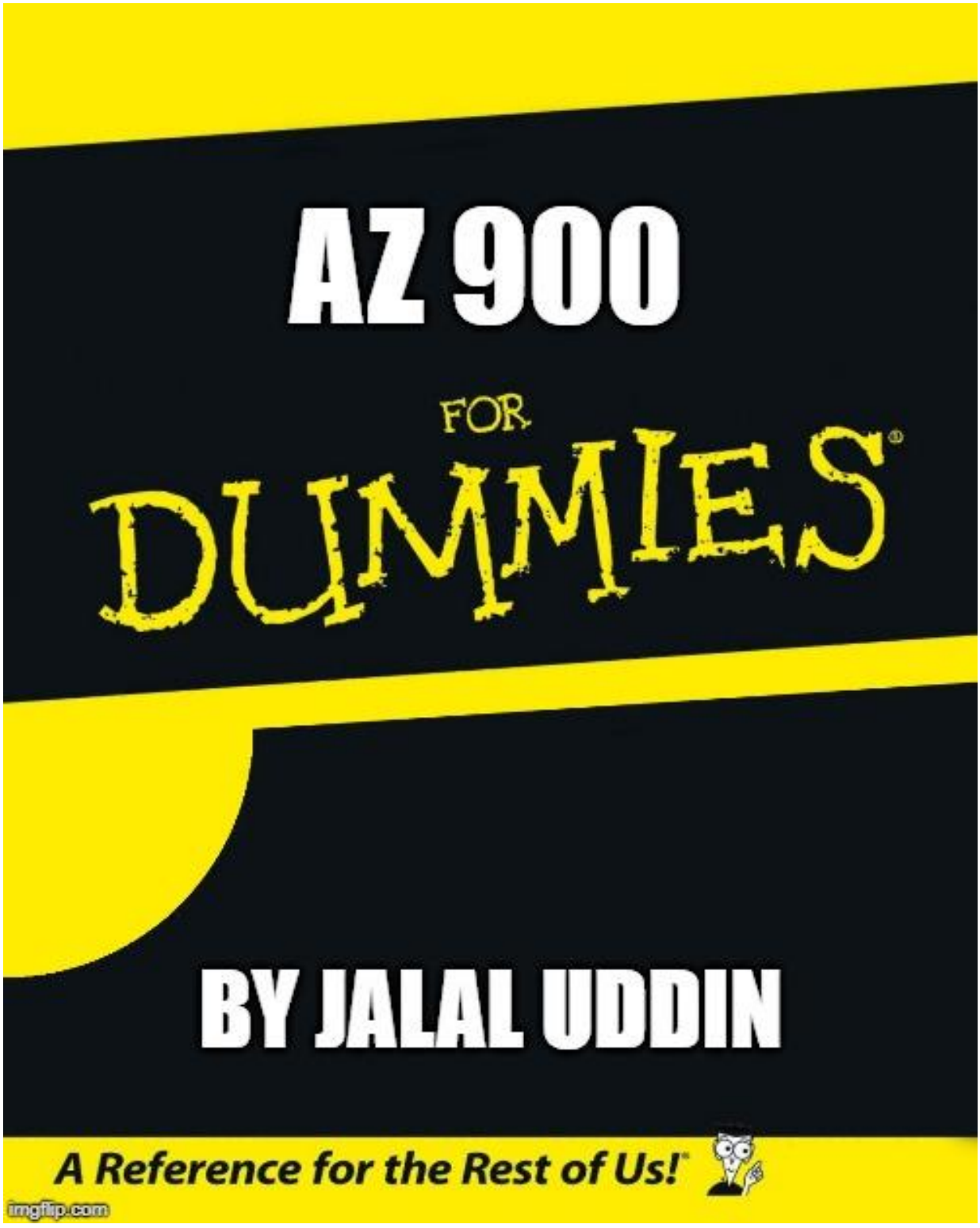
AZ 900
FOR
DUMMIES
BY JALAL UDDIN
A Reference for the Rest of Us!
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PREFACE

The AZ-900 exam validates foundational level knowledge and is a great first step to prove your Azure competency.

This document provides a glossary of terms for the AZ-900 exam. It covers all the major exam concepts. It is by no means a replacement of the official learning plan.

	**Note**
	It is recommended to use this document in conjunction with the official learning path. When in doubt, ctrl+f this document.

ACKNOWLEDGEMENTS:

Thank you to all those involved with the following books/documents/tutorials/videos which formed the basis of this revision document.

Learn & Certify – Internal MS OneNote Revision Compilation

Learning O'Reilly - Microsoft Azure Fundamentals: First Edition

Microsoft Stream - Azure Fundamentals Virtual Training

Microsoft Docs – Azure Fundamentals Learning Path

MeasureUp – AZ-900 Practice Exam

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EXAM ADVICE

There is no singular best way to revise for this exam as everyone has their own preferred way of revising. What can be recommended however is a mixture of learning methods, for example; rote memorisation, watching videos and note taking. Furthermore, utilising multiple revision sources is helpful as one might clarify what another source has made too verbose.

The learning plan provided by Microsoft is a very comprehensive resource. It may get tiring but stick with it. By covering the learning plan you will identify the topics you need to know and can hone in on those topics using other online resources. An effective way to test your revision is to compare two resources' explanation of an Azure service and attempt to word it yourself.

Once you've read through the official learning plan at least once, visit the MeasureUp site and sit practice exams to test your knowledge. Expect to score poorly initially. To improve, go over the correct answers provided by MeasureUp. Don't stick to it for too long as you will begin to memorise which boxes to tick rather than learning the content – switch it up here and there by using another revision source, for example the Virtual Training videos.

MeasureUp provides you with a score for each section of the exam, and so after a few days you should make note of your strong and weak points. Make a deliberate effort to cover the gaps in knowledge you have in those weaker areas by adjusting the practice exam settings to cover more questions in the areas you struggle in.

It should be noted that the MeasureUp practice exams do not neccessarily resemble the actual exam, but instead should be treated as an indicator as to the type of questions that may come up.

Take your time to read the questions properly. The case study style questions at the beginning of the exam do not allow you to modify your answers retrospectively, so make sure you're happy with your answers before you proceed. The exam is designed for you to have a rough idea of what the question is alluding to by the time you end up reading it so don't assume they're trying to trick you. If in doubt, use the process of elimination – a very useful method for this exam.

CHAPTER 1: CLOUD CONCEPTS

Scale up: Adding more CPUs or memory to perform heavier tasks.

Scale out: Adding more VMs to help deal with load.

Scalability: Scalability is the ability to scale up/down or out/in based on your resource demands.

Elasticity: The concept of **automatically** scaling to meet resource demands is known as elasticity.

Agility: The ability to **quickly** scale, as long as you told azure previously how many VMs you want.

Fault tolerance: Dealing with failure without user interaction. It moves you from an unhealthy VM to a **healthy** VM.

Disaster recovery: Having reliable backups as well as the infrastructure to replicate your application's resources in an unaffected region so your application **availability** isn't impacted.

On-premise model: Business purchases physical hardware for IT needs. They are purchased as **capital** expenses. In this day and age, this approach is not agile enough as hardware quickly becomes outdated before it makes financial sense to replace it.

Cloud model: Business rents hardware from cloud provider. Your expenses are **operational** rather than capital. Much easier to adjust based on need consequently. Major benefit is reduced cost which is achieved by the principle of economies of scale.

Virtual Machine: A computer that is software based that runs on a physical computer.

IaaS: Requires the most user management out of all the cloud services. User manages **OS**, **data** and **applications**. Has greatest flexibility. Pay for resource use – ability to reduce operational costs by turning off VMs. Common use for IaaS: VMs.

PaaS: Requires less user management than IaaS. Cloud provider manages the OS. User manages **data** and **applications** - your own or developed by someone else (i.e. WordPress). Common use for PaaS: Azure SQL Database.

SaaS: Requires the least user management. Cloud provider manages everything. User just uses the software. Common use for SaaS: Office 365.

Public cloud: Shared infrastructure – network, storage and VMs are shared amongst consumers of public cloud. Ability to scale quickly as provider has all resources

provisioned already. Provider's security measures may not be stringent enough as public cloud is hosted on a public network.

Private cloud: Same benefits of public cloud but set in a private environment. Commonly used to meet regulatory requirements as private cloud operates on a private network thus only accessible by single organisation. Costly as

Hybrid cloud: Mixture of both private and public cloud. For example, application that runs on the public cloud but accesses data on premises. Or application runs on private cloud but uses services on public cloud.

CHAPTER 2 – CORE SERVICES

Geography: Often the literal boundary of a country i.e UK, US, Canada geography. Broken out into two or more regions.

Regions: Contains datacentres that hold the physical hardware Azure uses. Placed strategically far apart to maintain disaster recovery (by replicating data in multiple regions).

Availability Zones: Physically separate datacentres that are equipped with independent power within an Azure region. The more zones the better. Help with high-availability and fault tolerance.

Availability Set:

Maximum availability: 99.99% uptime for VMs if two or more VMs are deployed in two or more availability zones.

ARM: Azure Resource Manager is a service that's responsible for all interaction with Azure services. It's not CLI based but browser based.

Resource Groups: A container of Azure services. Can give it an easily recognisable name so one can see all the Azure services related to a project at a quick glance.

Tags: You can add a tag to a resource group to filter through your projects. Tags also help organize your Azure billing expenses.

Azure Compute: Services that determine the execution of an application. Includes VMs (IaaS), Containers, Azure App Service (PaaS)

Azure Networking: Virtual Network, Load Balancer, Application Gateway, Traffic Manager, VPN Gateway, and Content Delivery Network (CDN).

Virtual Network: Allows Azure services to connect with one another and with the internet. Without VNET, RDP isn't possible.

Load Balancer: Ensures load is distributed fairly across VMs.

Application Gateway: Ensures HTTP traffic is distributed fairly. Similar to Load Balancer.

VPN Gateway: Connects your on-premise resources to your VNET via a virtual private network.

CDN: A network that delivers content to a user. An effective way to deliver large files or stream over the internet.

Azure Storage: Blob, Disk, File, and Archive

Blob Storage: Used for storing large, unstructured data such as videos and images.

Disk Storage: Storage for VMs. Available to the VM it is attached to - no outside access.

File Storage: A fully managed file share system. Simply put, cloud storage.

Archive Storage: Storage option for long term data storage. Lowest cost for storage but highest cost of access. Very slow access speeds.

Azure SQL: A fully managed relational database that has highly availability and performance.

CosmosDB: A Nonrelational (schema-less) database known for its agility and speed in managing many different datatypes.

IoT Hub (PaaS): IoT Hub is an open and flexible cloud platform that helps securely connect, monitor and manage billions of devices to develop IoT applications. Telemetry data is **not** analysed.

IoT Central (SaaS): A fully managed service that helps connect, monitor and manage your IoT assets. Telemetry data **is** analysed.

Machine Learning Service: Provides a cloud-based solution for building machine learning models. Requires use of Python language. Very technical.

Machine Learning Studio: Provides an easy to use, drag and drop GUI for creating, testing and deploying Machine Learning models. Not technical.

Azure Function: A serverless compute service that lets you run code without a designated VM – **without** GUI.

Azure Logic App: Helps automate business processes **with** a GUI.

SQL Data Warehouse: A fully managed cloud data warehouse for enterprises – lightning fast query performance and leading security.

HDInsight: A cost-effective, enterprise-grade service for open source analytics (e.g. supports Hadoop).

Data Lake Analytics: A cloud analytics service that allows you to run massively parallel data transformation projects. Dealing with petabytes (LOTS!) of data.

CHAPTER 3: SECURITY, PRIVACY, COMPLIANCE AND TRUST

Azure Firewall: Assesses incoming data through open connections (ports) in your network.

Network Security Group: Similar to a firewall, controls what ports are open to allow incoming and outgoing data.

Azure DDoS Protection: Protects network from being flooded with traffic which would otherwise cause the network to crash.

Azure Security Centre: Azure service that provides an overview of current resources and offers recommendations

Identity Services

Authentication: Authentication is confirming the user's identity.

Authorization: Authorisation is ensuring an authenticated user has the privileges to carry out the task they are seeking to complete.

Azure Active Directory: AAD is a cloud based identity service that helps you both authenticate and authorise users. Offers SSO (Single Sign On).

Azure Multi-Factor Authentication: A security feature that requires a user to both know something and have something. Knowing would be the password, having would be the approved device to which a text may be sent (think of Banking OTP texts).

Security Tools

Key Vault: This is where sensitive information such as keys, certificates and secrets are stored.

Azure Information Protection: A feature that protects documents and emails by applying certain restrictions on them to prevent from reaching the wrong hands or be overshared.

Advanced Threat Protection: Security feature that protects your Azure resources from attacks on your VMs and applications.

Governance Tools

Policies: Azure Policy allows you to define rules on the creation and use of Azure resources (i.e. all VMs must be UK South).

Initiatives: A collection of policies is known as an initiative.

Role Based Access Control: Abbreviated to RBAC, it is used to define granular security features for users over resource groups, subscriptions etc.

Locks: It does exactly what it says on the tin. It locks resources from being modified or deleted.

Azure Advisor: A key Azure service that recommends best practices for all your resources.

Azure Monitor: Analyses your resources and presents key data in simple graphical interface.

Azure Service Health: A service that allows you to view current status of Azure services. If a service is going to go down for maintenance, you'd find information here.

Alerts: Part of Azure Monitor, it allows you to create custom alerts (i.e. email the CTO if 75% of the monthly Azure allowance has been used)

Privacy, compliance and data protection

GDPR: A data regulation act enforced by the EU – compliancy required when dealing with companies within the EU.

NIST: Dealing with government data requires complying with National Institute of Standards and Technology regulation.

ISO: International Standards Organisation

Microsoft Trust Centre: A portal to many links that pertain to Microsoft's security, privacy and compliance.

Service Trust Portal: Hosts the Compliance Manager and audit reports.

Compliance Manager: A tool that allows you to check how compliant you as a company are in terms of your use of Azure.

CHAPTER 4: PRICING AND SUPPORT

Azure Subscription: This is just like a netflix subscription. It is associated with your Netflix acount (email address). Resources that are created are associated with a subscription. A large company may have multiple divisons and consequently decide to have multiple subscriptions to simulate those boundaries. Subscriptions can be shared across many people.

Azure Account: Much like any other account, this is simply something that is tied to you as an individual. You do not neccessarily have to have a subscription to have an account. An account can have multiple subscriptions.

Billing Zones: Azure uses Zones based on geographical regions for billing purposes. The different zones have different costs. Data transfer between the same region is not charged, but data transfer between zones is charged.

Azure Pricing Calculator: The Azure Pricing calculator estimates how much the required Azure services required cost.

Azure TCO: The Total Cost of Ownership calculator helps you calculate savings made by migrating to the cloud.

SLA: Service Level Agreements offered by cloud provider wherein they guarantee a minimum level of uptime. If they fall below this, they pay the customer.

General Availability: When an Azure service has been well tested and is commercially available.

Public Preview: When an Azure service that's available to those who sign up – but isn't fully ready (not yet attained GA status).

Private Preview: When an Azure service is still heavily in the testing phase – invite only.

Azure Support Table:

	Dev	Standard	Pro Direct	Premier
Price	$29	$100	$1000	Depends on contract
Tech Support	Business hour email support	24x7 engineer support via email or phone	24x7 engineer support via email or phone	24x7 engineer support via email or phone
Severity Available	C	C, B, A	C, B, A	C, B, A
Response Time	8 business hours or less	C: 8 business hours or less B: 4 business hours or less A: 1 business	C: 4 business hours or less B: 2 business hours or less 1 business hour or less	C: 4 business hours or less B: 2 business hours or less 1 business hour or less

		hour or less		
Architecture Guidance	General only	General only	Best practice guidance	Bespoke guidance
Training	N/A	N/A	Web seminars	Web seminars + on demand training