Class notes 9/12-14

Purpose of azure Blueprints

this is one of the tools scale the cloud infrastructure

azure blueprints are templates that contain organizational polices that can be applied to any new subscriptions or environments that have to be created

ex: (DevOps department)

a new test/dev need to be deployed that have the security and compliance settings already defined

What are artifacts

1. role assignments
2. policy assignments
3. azure resource manager templates
4. resource groups

Policy-

Allowed locations- use this to enforce geo-compliance requirements. exclude resource groups

Azure Blueprints are Version-able

Azure blueprints help monitor deployments because they are version-able. it allows for flexibility to update the initial config with later updates and assign a new version to the update. with versioning tracking and small updates and config sets used in deployments is possible

relationship between blueprints definition (what should be deployed) and blue print assignments

Azure Policy

is a service in azure that enables to create assign an manage polices that control or audit resources.

these policies enforce different rules across your resource configs so that those configs stay compliant with the policies

azure policy can also prevent noncompliant resources from being created

can be set at each level enabling you to set policies on a specific polices

comes with built in policy and initiative definitions for storage, networking. compute, security center and monitoring

gives you a list of exceptional for VMs you should use

Azure policy initiatives

is a way of grouping related polices together.

1. monitor unencrypted SQL databases in security center
2. monitor OS vulnerability in security center
3. monitor missing endpoint protection in security center ex: (/xyz-endpoint) not working properly

Resource locks

resource locks prevents resources from being accidentally deleted or changed

Azure role-based access control (Azure RBAC)

sometimes people with the right level of access delete or change a resource group. resource locks prevent resources from deleted or updated depending on the type of lock.

Different types of resource locks

1. Delete- can still read or mod resource but cannot delete resource
2. ReadOnly - can only read cannot delete or update the resource

Manage resource locks from the azure portal, shell command

Two steps to remove the lock

first remove the lock then second you have to delete it

Service trust portal

is a portal that provides access to various content, tools, and other microsoft security, privacy and compliance practices

1. service trust portal
2. my library
3. all documents

service trust portal can be accessed here

> https://servicetrust.microsoft.com/

Monitoring tools in Azure

Azure advisor

evaluates your azure resources and makes recommendations to help improve reliability, security, and performance, achieve operation excellence

recommendations are split into 5 categories (takes time to master this)

1. reliability
2. security
3. performance
4. operational excellence-
5. cost

Azure service help

gives you a complete view of your azure environment-all the way from the global status of azure services and regions down to a specific resources. you can notice trends where it will be easier to review and investigate thanks to historical alerts.

software vs hardware (either one can go wrong) keep a trends

helps you keep track of azure resources

1. azure status-informs you of service outages
2. service health- services and regions you're using. best place to look for service impacting communications about outages, planned maintenance activities and other health advisors
3. resource health- provides info about the health of your individual cloud resources such as a specific VM instances- using azure monitor you can config alerts to notify you of available changes

Azure Log Analytics

is a tool in azure portal where you'll write and run log queries on the data gathered by azure monitor. log analytics is a robust tool that supports both simple, complex queries and data analysis

another service analytics. azure monitor features such as log query alerts or workbooks. helps use to write and test those queries.

azure monitor alerts

automated way to stay informed when azure monitor detects a threshold being crossed. you set the alert conditions and notification actions and then azure monitor alerts notifies when an alert is triggered. depending on your config azure monitor alerts can also attempt corrective action

use action groups to config who the notify and what actions to take

1. azure monitor

Application Insights

monitors your web applications. is capable of monitor a broad array of information

1. request rates, request times. failure rates
2. dependency rates, response times, failure rates, to show whether external services are slowing down performance
3. page views and load performance reported by users browser

4. AJAX calls from the webpages , including rates, response times, and failure rates
5. user and session counts
6. performance counters from windows or linux server machines such as a cpu, memory and network usage

but you can configure it to periodically send synthetic requests to your application, allowing you to check the status and monitor your application even during periods of low activity .

Azure solutions

Describe the core solutions available

internet of things (IoT)

enables devices to gather then rely information for data analysis. smart devices are equipped with sensors that collect data.

1. IoT hub
2. IoT central
3. IoT service

Big data

big data is simply larger more complex data sets especially from new data sources. the data set are so voluminous that the traditional data processing software cant manage

The three Vs of Big Data

1. volume: have to process high volumes of low-density, unstructured data
2. velocity: the fast rate at which data is received and perhaps acted on
3. variety: many types of data types that are available. metadata(categorization)

azure Synapse analytics

gives you screens of

Azure HDInsight

Apache Hadoop database major in HDInsight

Azure data lake analytics

lets you develop data transformation programs using a variety of languages including U-SQL(microsoft combined SQL and C#) lets you user code to make sense of the data

Artificial Intelligence

broad classification that allows a software system to perceive its environment

A.I Approaches

1. Deep learning
2. Machine learning

Azure product Options

1. azure machine learning
2. azure cognitive services
3. azure bot services
4.