SPRING and HIBERNATE

# <https://start.spring.io>

# <https://github.com/in28minutes/spring-master-class/tree/master/01-spring-in-depth>

# <https://github.com/in28minutes/in28minutes-initiatives/blob/master/The-in28Minutes-TroubleshootingGuide-And-FAQ/quick-start.md>

# https://www.springboottutorial.com/spring-boot-vs-spring-mvc-vs-spring

# <https://github.com/in28minutes/spring-master-class/tree/master/04-spring-jdbc-to-jpa>

# <https://github.com/in28minutes/spring-master-class/tree/master/03-spring-aop>

Two main annotation:

# @component – to tell spring to maintain this class

# @autowired - to inject object in the class

@Component

Public class dependentClass{

@Autowired

Injectedclass ic;

@Component

Public class Injectedclass{

}

Both the class are monitored by spring as both are under Component annotation.

Because of Autowired, spring will create a object of Injectedclass and then then call constructor of dependentclass and pass the created object into it

INTERNAL FUNCTION:

Injectedclass ic= new Injectedclass();

Dependentclass dc = new Dependentclass(ic);

# @Primary

In case, spring found two classes with of same interface or master class and want to create the object of it, it will through an error that 2 bean has been found. For that we need to give one class this annotation.

# Terminology

## Bean Different objects managed by spring

## Autowiring

## Dependency Injection

## Inversion of control – giving control of creating dependency to spring

## IoC container – anything which is implementing inversion of control

Lets say business layer is dependent of data layer. Normally we create object of datalayer in business layer and get the data in business layer. But in IoC we create object data layer in main class and send it to business layer.

Two implementation of IoC container

### Application Context

### Bean Factory

## Application context

What are the beans

What are the dependencies in beans

Where to search for the beans

# What is happening behind in the background

To start log put below line in application.properties

Logging.level.org.springframework=debug

The main class has two main parts;

1. Annotation - @SpringBootApplication
2. ApplicationContext applicationContext =

SpringApplication.run(SpringIn5StepsApplication.class, args);

BinarySearchImpl binarySearch =

applicationContext.getBean(BinarySearchImpl.class);

1. Via Annotation - @SpringBootApplication, spring know in which package to search for all the beans. It is equal to saying

## CommandLineRunner

@SpringBootApplication

public class SpringAopApplication implements CommandLineRunner{

private Logger logger = LoggerFactory.getLogger(this.getClass());

@Autowired

private Business1 business1;

@Autowired

private Business2 business2;

public static void main(String[] args) {

SpringApplication.run(SpringAopApplication.class, args);

}

@Override

public void run(String... args) throws Exception {

logger.info(business1.calculateSomething());

logger.info(business2.calculateSomething());

}

}

implementing command line runner make autoloading and running of whatever we write in here.

We no longer need to create bean using context, we can directly use autowired to create bean

## @ComponentScan(“packageName”)

Then it start creating all the instance of the beans and inject objects of other via constructor or getter setter where Autowired is declared.

* Searching directory [/in28Minutes/git/getting-started-in-5-steps/spring-in-5-steps/target/classes/com/in28minutes/spring/basics/springin5steps] for files matching pattern [/in28Minutes/git/getting-started-in-5-steps/spring-in-5-steps/target/classes/com/in28minutes/spring/basics/springin5steps/\*\*/\*.class]
* Identified candidate component class: file [/in28Minutes/git/getting-started-in-5-steps/spring-in-5-steps/target/classes/com/in28minutes/spring/basics/springin5steps/BinarySearchImpl.class]
* Identified candidate component class: file [/in28Minutes/git/getting-started-in-5-steps/spring-in-5-steps/target/classes/com/in28minutes/spring/basics/springin5steps/BubbleSortAlgorithm.class]
* Creating instance of bean 'binarySearchImpl'
* Creating instance of bean 'bubbleSortAlgorithm'
* Finished creating instance of bean 'bubbleSortAlgorithm'
* Constuctor - Autowiring by type from bean name 'binarySearchImpl' via constructor
* to bean named 'bubbleSortAlgorithm'
* Setter - Autowiring by type from bean name 'binarySearchImpl' to bean named 'bubbleSortAlgorithm'
* No Setter or Constructor - Autowiring by type from bean name 'binarySearchImpl' to bean named 'bubbleSortAlgorithm'
* Finished creating instance of bean 'binarySearchImpl'

# Plumbing code

Extra code we need to write to close everything.

# Reason for spring popularity

1. Enable testable code
2. No plumbing code
3. Flexible architecture – (can use other framework and part of spring framework)
4. Stays current – boot, cloud etc.

# Conflict when autowired is used on Interface and two class implemented that interface

Interface class - SortAlgorithm

Implemented class - BubbleSortAlgorithm - @Component

Implemented class - QuickSortAlgorithm - @Component

Dependent class - BinarySearchImpl

@Component

public class BinarySearchImpl {

@Autowired

private SortAlgorithm sortAlgorithm;

--In this case conflict will created in selection of sortAlgorithm

## Three option to resolve this:

1)@Primary (Will take precidence)

2)using exact name

@Autowired

private SortAlgorithm quicSortAlgorithm;

Note: In case name is used in one and Primary is used in another Primary will take precedence.

3)@Qualifier

@Component

@Qualifier(“bubble”)

public class BubbleSortAlgorithm {

@Component

public class BinarySearchImpl {

@Autowired

@Qualifier(“bubble”)

private SortAlgorithm sortAlgorithm;

# Bean Scope (Default- singleton)

1. Singleton – one instance per **spring context**
2. Prototype - new Bean whenever requested
3. Request - one bean per http request ( new bean created for new request sent to server)
4. Session – one bean per http session

## Singleton

In GOF it means one instance per Application (JVM), here once instance per context

BinarySearchImpl binarySearch =

applicationContext.getBean(BinarySearchImpl.class);

BinarySearchImpl binarySearch1 =

applicationContext.getBean(BinarySearchImpl.class);

binarySearch and binarySearch1 pointing to same object

## Prototype

@Component

@Scope(ConfigurableBeanFactory.SCOPE\_PROTOTYPE)

public class BinarySearchImpl {

}

BinarySearchImpl binarySearch =

applicationContext.getBean(BinarySearchImpl.class);

BinarySearchImpl binarySearch1 =

applicationContext.getBean(BinarySearchImpl.class);

binarySearch and binarySearch1 pointing to different object

### Proxy

In case where bean class is singleton and we need injected class to be prototype i.e single object of upper class but each time when we call the object of upper class we want new instance of class used in upper class we need to define proxy in the class for whom we want new instance every time.

This will autowire proxy instead of class, and proxy will ensure to return new instance

@Scope(value = ConfigurableBeanFactory.SCOPE\_PROTOTYPE,

proxyMode = ScopedProxyMode.TARGET\_CLASS)

# @PostConstruct

Public void funcName(){

//this method is called after calling constructor of that class

}

# @PreDestroy

Public void funcName(){

//this method is called destroyin of that class

}

# Context and dependency Injection

J2EE dependency injection standard

Spring support most annotation

* @Inject - @Autowired
* @Named - @Component and @Qualifier
* @Singleton (Define scope of singleton)

For this we need to add dependency in pom.xml

<dependency>

<groupId>javax.inject</groupId>

<artifactId>javax.inject </artifactId>

<version>1</version>

</dependency>

# Removing SpringBoot

Remove this dependency

<dependency>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-starter</artifactId>

</dependency>

Insert this dependency

<dependency>

<groupId>org.springframework</groupId>

<artifactId>spring-core</artifactId>

</dependency>

< dependency>

<groupId>org.springframework</groupId>

<artifactId>spring-context</artifactId>

</dependency>

## Changes to done in classes

1. Remove - @SpringBootApplication
2. Add - @Configuration
3. Add - @ComponentScan(“packageName”) or @ComponentScan for current package
4. Remove - SpringApplication.run(SpringIn5StepsApplication.class, args); in context
5. Add - new AnnotationConfigApplicationContext((SpringIn5StepsApplication);

# Adding Log

<dependency>

<groupId>org.slf4j</groupId>

<artifactId>slf4j-api</artifactId>

</dependency>

<dependency>

<groupId>ch.qos.logback</groupId>

<artifactId>logback-classic</artifactId>

</dependency>

# Application XML Context

1. Remove all annotation
2. Add applicationContext.xml in **/src/main/resources/**

<?xml version="1.0" encoding="UTF-8"?>

<beans xmlns="http://www.springframework.org/schema/beans"

xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

xsi:schemaLocation="http://www.springframework.org/schema/beans

http://www.springframework.org/schema/beans/spring-beans.xsd">

<bean id="xmlJdbcConnection"

class="com.in28minutes.spring.basics.springin5steps.xml.XmlJdbcConnection">

</bean>

<bean id="xmlPersonDAO" class="com.in28minutes.spring.basics.springin5steps.xml.XmlPersonDAO">

<property name="xmlJdbcConnection" ref="xmlJdbcConnection"/>

</bean>

</beans>

1. Change application context in main

ClassPathXmlApplicationContext applicationContext = new ClassPathXmlApplicationContext("applicationContext.xml")

NOTE: In case of setter <property name="xmlJdbcConnection" ref="xmlJdbcConnection"/>

In case of constructor <Constructor-arg ref="xmlJdbcConnection"/>

# Mixing XML context with component scan

Make changes in context.xml

<?xml version="1.0" encoding="UTF-8"?>

<beans xmlns="http://www.springframework.org/schema/beans"

xmlns:xsi=<http://www.w3.org/2001/XMLSchema-instance>

***xmlns:context=***[***http://www.springframework.org/schema/context***](http://www.springframework.org/schema/context)

xsi:schemaLocation="http://www.springframework.org/schema/beans

<http://www.springframework.org/schema/beans/spring-beans.xsd>

***http://www.springframework.org/schema/context***

***http://www.springframework.org/schema/context/spring-context.xsd"***>

***<context:component-scan base-package="com.in28minutes.spring.basics"/>***

<bean id="xmlJdbcConnection"

class="com.in28minutes.spring.basics.springin5steps.xml.XmlJdbcConnection">

</bean>

<bean id="xmlPersonDAO" class="com.in28minutes.spring.basics.springin5steps.xml.XmlPersonDAO">

<property name="xmlJdbcConnection" ref="xmlJdbcConnection"/>

</bean>

</beans>

## To check loaded beans in the context

LOGGER.info("Beans Loaded -> {}",

(Object) applicationContext.getBeanDefinitionNames());

# Parts of @Component annotation

## @controller – for web layer

## @Service – for business layer

## @Repository - for database layer

This is used to divide our code in different and section and apply different rule in different section.

# Reading property file

1. Create property file in **/src/main/resources/**

/src/main/resources/app.properties

external.service.url=http://someserver.dev.com/service

1. Create main file

package com.in28minutes.spring.basics.springin5steps;

import org.springframework.context.annotation.AnnotationConfigApplicationContext;

import org.springframework.context.annotation.ComponentScan;

import org.springframework.context.annotation.Configuration;

import org.springframework.context.annotation.PropertySource;

import com.in28minutes.spring.basics.springin5steps.properties.SomeExternalService;

@Configuration

@ComponentScan

//

**@PropertySource("classpath:app.properties")**

public class SpringIn5StepsPropertiesApplication {

public static void main(String[] args) {

try (AnnotationConfigApplicationContext applicationContext = new AnnotationConfigApplicationContext(

SpringIn5StepsPropertiesApplication.class)) {

SomeExternalService service = applicationContext.getBean(SomeExternalService.class);

System.out.println(service.returnServiceURL());

}

}

}

1. Create class to read file

package com.in28minutes.spring.basics.springin5steps.properties;

import org.springframework.beans.factory.annotation.Value;

import org.springframework.stereotype.Component;

@Component

public class SomeExternalService {

**@Value("${external.service.url}")**

private String url;

public String returnServiceURL(){

return url;

}

}

# Spring Boot

## Goals

Enable building production ready applications quickly

Provide common non-functional features

- embedded servers

- metrics

- health checks

- externalized configuration

## What Spring Boot is NOT!

ZERO code generation

Neither an application server nor a web server

## Features

Quick Starter Projects with Auto Configuration

- Web

- JPA

Embedded Servers - Tomcat, Jetty or Undertow

Production-ready features

- metrics and health checks

- externalized configuration

http://localhost:8080/books => Few hardcoded books

# Simple Rest API

package com.in28minutes.springboot.basics.springbootin10steps;

import org.springframework.boot.SpringApplication;

import org.springframework.boot.autoconfigure.SpringBootApplication;

import org.springframework.context.ApplicationContext;

import org.springframework.context.ConfigurableApplicationContext;

@SpringBootApplication

public class SpringbootIn10StepsApplication {

public static void main(String[] args) {

ApplicationContext applicationContext =

SpringApplication.run(SpringbootIn10StepsApplication.class, args);

//for (String name : applicationContext.getBeanDefinitionNames()) {

System.out.println(name);

}

}

}

package com.in28minutes.springboot.basics.springbootin10steps;

import java.util.Arrays;

import java.util.List;

import org.springframework.web.bind.annotation.GetMapping;

import org.springframework.web.bind.annotation.RestController;

@RestController //IMPORTANT

public class BooksController {

@GetMapping("/books") //IMPORTANT trigeer on localhost/books

public List<Book> getAllBooks() {

return Arrays.asList(

new Book(1l, "Mastering Spring 5.2", "Ranga Karanam"));

}

}

# Autoconfiguration

Springboot auto configure some of module for us, which we needed to configure manually in case of spring MVC.

Like:

Springmvc, hibernate, json,tomcat , starter test, autoconfiguration etc

# Spring Boot Starter Project Options

As we see from Spring Boot Starter Web, starter projects help us in quickly getting started with developing specific types of applications.

## spring-boot-starter-web-services - SOAP Web Services

## spring-boot-starter-web - Web & RESTful applications

## spring-boot-starter-test - Unit testing and Integration Testing

## spring-boot-starter-jdbc - Traditional JDBC

## spring-boot-starter-hateoas - Add HATEOAS features to your services

## spring-boot-starter-security - Authentication and Authorization using Spring Security

## spring-boot-starter-data-jpa - Spring Data JPA with Hibernate

## spring-boot-starter-cache - Enabling Spring Framework’s caching support

## spring-boot-starter-data-rest - Expose Simple REST Services using Spring Data REST

# Springboot Actuator - for monitoring

Add actuator dependency in xml

Add below line in application.properties

Management.endpoints.web.exposure.include=\*

url - localhost:8080/actuator

<dependency>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-starter-actuator</artifactId>

</dependency>

# Springboot dev tools – fast restart if java change

<dependency>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-devtools</artifactId>

</dependency>

# JPA – Java persistet API

Need to create an entity and relate it to the table and column in the table. Once it is done developer does not need to write query in the code the framework will take care of this by himself.

## JPA is standard for ORM – Object relational mapping.

Hibernate is the most popular implementation of JPA.

## JPA -Interface, Hibernate- class

## Hibernate implement JPA

## Annotation to convert bean into entity

import javax.persistence.Entity;

import javax.persistence.GeneratedValue;

import javax.persistence.Id;

import javax.persistence.NamedQuery;

@Entity // Hibernate recognize it as entity

@NamedQuery(name="find\_all\_persons", query="select p from Person p")

@Table(name=”persson”) //map this entity to table person

public class Person {

@Id // Primary key

@GeneratedValue //create sequence can also add (strategy=GenerationType.x)

X=Auto,identity,sequence,table

private int id;

@Column(name=”name”) // map it to column name

private String name;

private String location;

private Date birthDate;

## Repository class to execute query

@Repository //visible as repository class

@Transactional //define to make commit only if all query is successfull

public class PersonJpaRepository {

// connect to the database code here

@PersistenceContext

EntityManager entityManager;

//Using named query

public List<Person> findAll() {

TypedQuery<Person> namedQuery = entityManager.createNamedQuery("find\_all\_persons", Person.class);

return namedQuery.getResultList();

}

//Without named query

public Person findById(int id) {

return entityManager.find(Person.class, id);// JPA

}

//No difference in insert in update in entity manager. Update if id is present.

public Person update(Person person) {

return entityManager.merge(person);

}

public Person insert(Person person) {

return entityManager.merge(person);

}

public void deleteById(int id) {

Person person = findById(id);

entityManager.remove(person);

}

## JPQL – Java Persistent Query Language

//Using named query

public List<Person> findAll() {

TypedQuery<Person> namedQuery = entityManager.createNamedQuery("find\_all\_persons", Person.class);

return namedQuery.getResultList();

}

On entity class

@NamedQuery(name="find\_all\_persons", query="select p from Person p")

# Spring data JPA

## Spring has interface with pre-implemented find, save and delete query.

@Repository

public interface PersonSpringDataRepository //new interface to implement in main class

extends JpaRepository<Person// class it manages

, Integer //type of primary key>{

}

@SpringBootApplication

public class SpringDataDemoApplication implements CommandLineRunner {

private Logger logger = LoggerFactory.getLogger(this.getClass());

@Autowired

PersonSpringDataRepository repository; //Using interface

public static void main(String[] args) {

SpringApplication.run(SpringDataDemoApplication.class, args);

}

@Override

public void run(String... args) throws Exception {

logger.info("User id 10001 -> {}", repository.findById(10001));

logger.info("Inserting -> {}",

repository.save(new Person("Tara", "Berlin", new Date())));

logger.info("Update 10003 -> {}",

repository.save(new Person(10003, "Pieter", "Utrecht", new Date())));

repository.deleteById(10002);

logger.info("All users -> {}", repository.findAll());

}

# Spring AOP – Aspect oriented programming

Used for cross cutting concern – not related to specific layer but work across layers(MVC)

## Dependency

<dependency>

<groupId>org.springframework.boot</groupId>

    <artifactId>spring-boot-starter-aop</artifactId>

</dependency>

Downloads two jar

* Spring-aop – basic
* Aspectj – more advanced

Important terms:

### Pointcut - points at which we want to intercept

### Advide - action we defined once it get intercepted

### Aspect - when we combine pointcut and advice we called it aspect

### JointPoint – current function which is intercepted is called jointpoint

### Weaving – process of this interception is called as weaving

### Weaver – framework which does weaving – AOP

## Defining pointcut

1. Inline

//execution(\* PACKAGE.\*.\*(..))

returnType PACKAGE.CLASS.FUNCTION(Type of argument)

@Before("\* com.in28minutes.spring.Business.\*.\*(..)")

1. In a file and calling it whenever required

@Before("com.in28minutes.spring.aop.springaop.aspect.CommonJoinPointConfig.dataLayerExecution()")

public class CommonJoinPointConfig {

@Pointcut("execution(\* com.in28minutes.spring.aop.springaop.data.\*.\*(..))")

public void dataLayerExecution(){}

}

## @AfterReturning

@Aspect

@Configuration

public class AfterAopAspect {

private Logger logger = LoggerFactory.getLogger(this.getClass());

@AfterReturning(value = "com.in28minutes.spring.aop.springaop.aspect.CommonJoinPointConfig.businessLayerExecution()",

returning = "result")

public void afterReturning(JoinPoint joinPoint, Object result) {

logger.info("{} returned with value {}", joinPoint, result);

}

@After(value = "com.in28minutes.spring.aop.springaop.aspect.CommonJoinPointConfig.businessLayerExecution()")

public void after(JoinPoint joinPoint) {

logger.info("after execution of {}", joinPoint);

}

}

## @Around

@Aspect

@Configuration

public class MethodExecutionCalculationAspect {

private Logger logger = LoggerFactory.getLogger(this.getClass());

@Around("com.in28minutes.spring.aop.springaop.aspect.CommonJoinPointConfig.trackTimeAnnotation()")

public void around(ProceedingJoinPoint joinPoint) throws Throwable {

long startTime = System.currentTimeMillis();

joinPoint.proceed();

long timeTaken = System.currentTimeMillis() - startTime;

logger.info("Time Taken by {} is {}", joinPoint, timeTaken);

}

}

## @Before

//AOP

//Configuration

@Aspect

@Configuration

public class UserAccessAspect {

private Logger logger = LoggerFactory.getLogger(this.getClass());

//What kind of method calls I would intercept

//execution(\* PACKAGE.\*.\*(..))

//Weaving & Weaver

@Before("com.in28minutes.spring.aop.springaop.aspect.CommonJoinPointConfig.dataLayerExecution()")

public void before(JoinPoint joinPoint){

//Advice

logger.info(" Check for user access ");

logger.info(" Allowed execution for {}", joinPoint);

}

}

## Creating custom annotation

### Create annotation

package com.in28minutes.spring.aop.springaop.aspect;

@Target(ElementType.METHOD) //target will be method only

@Retention(RetentionPolicy.RUNTIME) //will only capture in runtime

public @interface TrackTime {

}

@Pointcut("@annotation(com.in28minutes.spring.aop.springaop.aspect.TrackTime)")

public void trackTimeAnnotation(){}

### Define its Aspect

@Aspect

@Configuration

public class MethodExecutionCalculationAspect {

private Logger logger = LoggerFactory.getLogger(this.getClass());

@Around("com.in28minutes.spring.aop.springaop.aspect.CommonJoinPointConfig.trackTimeAnnotation()")

public void around(ProceedingJoinPoint joinPoint) throws Throwable {

long startTime = System.currentTimeMillis();

joinPoint.proceed();

long timeTaken = System.currentTimeMillis() - startTime;

logger.info("Time Taken by {} is {}", joinPoint, timeTaken);

}

}

### Use the annotation

@Service

public class Business1 {

private Logger logger = LoggerFactory.getLogger(this.getClass());

@Autowired

private Dao1 dao1;

@TrackTime

public String calculateSomething(){

//Business Logic

String value = dao1.retrieveSomething();

logger.info("In Business - {}", value);

return value;

}

}

# Hibernate

1. Create entity class
2. Create xml and map the entity with the table
3. Configure xml in the hibernate config file
4. Create session factory using config file
5. Open session
6. Create transaction
7. Commit transaction
8. Close session
9. Close factory

<?xml version = "1.0" encoding = "utf-8"?>

<!DOCTYPE hibernate-mapping PUBLIC

"-//Hibernate/Hibernate Mapping DTD//EN"

"http://www.hibernate.org/dtd/hibernate-mapping-3.0.dtd">

<hibernate-mapping>

<class name = "Employee" table = "EMPLOYEE">

<meta attribute = "class-description">

This class contains the employee detail.

</meta>

<id name = "id" type = "int" column = "id">

<generator class="native"/>

</id>

<property name = "firstName" column = "first\_name" type = "string"/>

<property name = "lastName" column = "last\_name" type = "string"/>

<property name = "salary" column = "salary" type = "int"/>

</class>

</hibernate-mapping>

<?xml version = "1.0" encoding = "utf-8"?>

<!DOCTYPE hibernate-configuration SYSTEM

"http://www.hibernate.org/dtd/hibernate-configuration-3.0.dtd">

<hibernate-configuration>

<session-factory>

<property name = "hibernate.dialect">

org.hibernate.dialect.MySQLDialect

</property>

<property name = "hibernate.connection.driver\_class">

com.mysql.jdbc.Driver

</property>

<!-- Assume test is the database name -->

<property name = "hibernate.connection.url">

jdbc:mysql://localhost/test

</property>

<property name = "hibernate.connection.username">

root

</property>

<property name = "hibernate.connection.password">

root123

</property>

<!-- List of XML mapping files -->

<mapping resource = "packagename.Employee.hbm.xml"/> //Mapping resourece

<mapping class = "com.map.Student"/> //Mapping class

</session-factory>

</hibernate-configuration>

SessionFactory factory = new Configuaration.configure(“hibernate.cfg.xml”).build

Person person = new Person (23,a,b,c);

Session session = factory.openSession();

Transaction tx = session.beginTransaction();

Session.save(person);

Tx.commit();

Session.close();

Factory.close();

## Important terms

### Cascading – deleting and updating row also affect rows in other table have foreign key

### Eager loading – calling a object also retrieve cascaded row.

### Lazy loading – does not load cascading row

### Uni-directional - you can access one entity with another if related

Bi- directional - can access entity from Attempt 1

All knowledge areas

All questions

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Question 1: **Correct**

**Please evaluate the following statement and select Yes if the statement is true, otherwise select No.**

**Every region in Azure cloud includes multiple data centres.**

* ​

**Yes**

**(Correct)**

* ​

**No**

**Explanation**

A region represents a set of data centres deployed within a latency-defined perimeter and connected through a dedicated regional low-latency network.

**Reference:**

<https://docs.microsoft.com/en-us/azure/availability-zones/az-overview>

**Quick Preview:**

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Question 2: **Correct**

**Please evaluate the following statement and select Yes if the statement is true, otherwise select No .**

**Data transfer between Azure services located in two different regions is always free.**

* ​

**Yes**

* ​

**No**

**(Correct)**

**Explanation**

Outbound data transfer is *charged* at the normal rate and inbound data transfer is free. The pricing rule that you should keep in mind is this: outbound traffic (leaving Azure cloud or an Azure region) is NOT free, inbound traffic is free.

**Reference:**

https://azure.microsoft.com/en-us/pricing/details/bandwidth/

**Quick Preview:**

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Question 3: **Correct**

**Please evaluate the following statement and select Yes if the statement is true, otherwise select No.**

**Azure resources inherit locks from the resource group they are part of.**

* ​

**Yes**

**(Correct)**

* ​

**No**

**Explanation**

When you apply a lock at a parent scope, all resources within that scope inherit the same lock. Even resources you add later inherit the lock from the parent.

**Reference:**

<https://docs.microsoft.com/en-us/azure/azure-resource-manager/management/lock-resources>

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Question 4: **Incorrect**

**Please evaluate the following statement and select Yes if the statement is true, otherwise select No.**

**If your VM has a Read-only lock applied, you can add a Delete lock as well.**

* ​

**Yes**

**(Correct)**

* ​

**No**

**(Incorrect)**

**Explanation**

This is indeed possible. **Read-Only** Lock means authorised users can read a resource, but they can't delete or update the resource. **Delete** Lock means authorised users can still read and modify a resource, but they can't delete the resource.

**Reference:**

<https://docs.microsoft.com/en-us/azure/azure-resource-manager/management/lock-resources>

**Azure Portal Quick Preview:**

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Question 5: **Incorrect**

**Please evaluate the following statement and select Yes if the statement is true, otherwise select No.**

**An Azure subscription can be associated to multiple Azure Active Directory (Azure AD) tenants.**

* ​

**Yes**

**(Incorrect)**

* ​

**No**

**(Correct)**

**Explanation**

An Azure AD tenant can have multiple subscriptions but an Azure subscription can only be associated with one Azure AD tenant.

**Reference:**

<https://docs.microsoft.com/en-us/azure/active-directory/fundamentals/active-directory-how-subscriptions-associated-directory>

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Question 6: **Incorrect**

**Please evaluate the following statement and select Yes if the statement is true, otherwise select No.**

**You can modify the Azure Active Directory (Azure AD) tenant to which an Azure subscription is associated to.**

* ​

**Yes**

**(Correct)**

* ​

**No**

**(Incorrect)**

**Explanation**

Yes, the statement is true. An Azure subscription has a trust relationship with Azure Active Directory (Azure AD). A subscription trusts Azure AD to authenticate users, services, and devices. Multiple subscriptions can trust the same Azure AD directory. Each subscription can only trust a single directory.

**Reference:**

<https://docs.microsoft.com/en-us/azure/active-directory/fundamentals/active-directory-how-subscriptions-associated-directory>

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Question 7: **Correct**

**Please evaluate the following statement and select Yes if the statement is true, otherwise select No.**

**The Azure Active Directory (Azure AD) tenant is deleted by default when the Azure subscription expires.**

* ​

**Yes**

* ​

**No**

**(Correct)**

**Explanation**

If your subscription expires, you lose access to all the other resources associated with the subscription. However, the Azure AD directory remains in Azure. You can associate and manage the directory using a different Azure subscription.

**Reference:**

<https://docs.microsoft.com/en-us/azure/active-directory/fundamentals/active-directory-how-subscriptions-associated-directory>

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Question 8: **Correct**

**Your company has started migrating multiple services into Azure. You are the Azure Administrator responsible to deploy several custom applications to Azure. Some of the applications that need to be migrated will have several prerequisite applications and services installed.**

**Which of the following cloud deployment models would you recommend?**

* ​

Software as a Service (SaaS)

* ​

Platform as a Service (PaaS)

* ​

Infrastructure as a Service (laaS)

**(Correct)**

**Explanation**

Infrastructure as a service (IaaS) is an instant computing infrastructure, provisioned and managed over the internet. The IaaS service provider manages the infrastructure, while you purchase, install, configure, and manage your own software.

**Incorrect Answers:**

A: Software as a service (SaaS) allows users to connect to and use cloud-based apps over the Internet. Common examples are email, calendaring, and office tools. In this scenario, you need to run your own apps, and therefore require an infrastructure.

B: Platform as a service (PaaS) is a complete development and deployment environment in the cloud. PaaS includes infrastructure—servers, storage, and networking—but also middleware, development tools, business intelligence (BI) services, database management systems, and more. PaaS is designed to support the complete web application lifecycle: building, testing, deploying, managing, and updating.

**References:**

<https://azure.microsoft.com/en-us/overview/what-is-iaas/>

<https://azure.microsoft.com/en-us/overview/what-is-saas/>

<https://azure.microsoft.com/en-us/overview/what-is-paas/>

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Question 9: **Incorrect**

**Azure Cosmos DB is one of the many Azure popular services.**

**What type of Azure service offering does it represent?**

* ​

Infrastructure as a service (IaaS)

* ​

Platform as a service (PaaS)

**(Correct)**

* ​

Software as a service (SaaS)

**(Incorrect)**

* ​

Serverless

**Explanation**

Azure Cosmos DB is a fully managed platform-as-a-service (PaaS).

**Reference:**

<https://docs.microsoft.com/en-us/azure/cosmos-db/account-overview>

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Question 10: **Correct**

**Please evaluate the following statement and select Yes if the statement is true, otherwise select No.**

**Europe is represented by a single Azure region.**

* ​

**Yes**

* ​

**No**

**(Correct)**

**Explanation**

Europe has several Azure regions, including North Europe, West Europe, UK West, Switzerland North and some others as well.

**Reference:**

<https://azure.microsoft.com/en-gb/global-infrastructure/geographies/>

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Question 11: **Incorrect**

***Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.***

**Your company has decided to migrate all its services to Microsoft Azure. You need to deploy an Azure architecture and use only Platform as a Service (PaaS) services available in Azure.**

**Solution: You create an Azure App Service and Azure SQL databases.**

**Does this meet the goal?**

* ​

Yes

**(Correct)**

* ​

No

**(Incorrect)**

**Explanation**

Azure App Service and Azure SQL databases are examples of Azure PaaS solutions. Therefore, this solution does meet the goal.

Azure App Service is a PaaS service offering - managed production environment. App Service automatically [patches and maintains the OS and language frameworks](https://docs.microsoft.com/en-us/azure/app-service/overview-patch-os-runtime) for you. Spend time writing great apps and let Azure worry about the platform.

Azure SQL Database is a fully managed platform as a service (PaaS) database engine that handles most of the database management functions such as upgrading, patching, backups, and monitoring without user involvement. Azure SQL Database is always running on the latest stable version of the SQL Server database engine and patched OS with 99.99% availability.

**Reference:**

<https://docs.microsoft.com/en-us/azure/app-service/overview>

<https://docs.microsoft.com/en-us/azure/azure-sql/database/sql-database-paas-overview>

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Question 12: **Correct**

***Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.***

**Your company has decided to migrate all its services to Microsoft Azure. You need to deploy an Azure architecture and use only Platform as a Service (PaaS) services available in Azure.**

**Solution: You create an Azure App Service and add Azure virtual machines to your setup.**

**Does this meet the goal?**

* ​

Yes

* ​

No

**(Correct)**

**Explanation**

Azure App Service is a PaaS (Platform as a Service) service. However, Azure virtual machines are an IaaS (Infrastructure as a Service) service. Therefore, this solution does not meet the goal.

**References:**

<https://docs.microsoft.com/en-us/azure/app-service/overview>

<https://azure.microsoft.com/en-gb/blog/infrastructure-as-a-service-series-virtual-machines-and-windows/>

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Question 13: **Correct**

***Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.***

**Your company has decided to migrate all its services to Microsoft Azure. You need to deploy an Azure architecture and use only Platform as a Service (PaaS) services available in Azure.**

**Solution: You create an Azure App Service and Azure Storage accounts.**

**Does this meet the goal?**

* ​

Yes

* ​

No

**(Correct)**

**Explanation**

Azure App Service is a PaaS (Platform as a Service) service. However, Azure Storage accounts are an IaaS (Infrastructure as a Service) service. Therefore, this solution does not meet the goal.

**References:**

<https://docs.microsoft.com/en-us/azure/app-service/overview>

<https://azure.microsoft.com/en-us/overview/what-is-iaas/>

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Question 14: **Incorrect**

***Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.***

**Your company has decided to migrate all its services to Microsoft Azure. You need to deploy an Azure architecture and use only Platform as a Service (PaaS) services available in Azure.**

**Solution: You create Azure virtual machines, Azure SQL databases, and Azure Storage accounts.**

**Does this meet the goal?**

* ​

Yes

**(Incorrect)**

* ​

No

**(Correct)**

**Explanation**

Azure virtual machines and Azure Storage represent Azure Infrastructure as a Service (IaaS) service offering, therefore the solution does not meet the requirements.

**References:**

<https://azure.microsoft.com/en-gb/blog/infrastructure-as-a-service-series-virtual-machines-and-windows/>

<https://azure.microsoft.com/en-us/overview/what-is-iaas/>

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Question 15: **Incorrect**

**This question requires that you evaluate the*italic* text to determine if it is correct.**

**Azure Site Recovery provides fault tolerance for virtual machines.**

**Please review the*italic* text. If it makes the statement correct, select “No change is needed”. If the statement is incorrect, select the answer choice that makes the statement correct.**

* ​

No change is needed

**(Correct)**

* ​

scalability

* ​

elasticity

* ​

high availability

**(Incorrect)**

**Explanation**

Azure Site Recovery helps ensure business continuity by keeping business apps and workloads running during outages. Site Recovery replicates workloads running on physical and virtual machines (VMs) from a primary site to a secondary location.

**Reference:**

<https://docs.microsoft.com/en-us/azure/site-recovery/site-recovery-overview>

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Question 16: **Correct**

**You decide to use version control for your software project.**

**Which of the following Azure services provides a set of version control tools to manage code?**

* ​

Azure Repos

**(Correct)**

* ​

Azure DevTest Labs

* ​

Azure Storage

* ​

Azure Cosmos DB

**Explanation**

Azure Repos is a set of version control tools that you can use to manage your code. Whether your software project is large or small, using version control as soon as possible is a good idea.

**Reference:**

<https://docs.microsoft.com/en-us/azure/devops/repos/get-started/what-is-repos?view=azure-devops>

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Question 17: **Incorrect**

**Please evaluate the following statement and select Yes if the statement is true, otherwise select No.**

**Azure Monitor can monitor both cloud and on-premises environments.**

* ​

**Yes**

**(Correct)**

* ​

**No**

**(Incorrect)**

**Explanation**

Azure Monitor maximizes the availability and performance of your applications and services by delivering a comprehensive solution for collecting, analyzing, and acting on telemetry from your cloud and on-premises environments.

**Reference:**

<https://docs.microsoft.com/en-us/azure/azure-monitor/overview>

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Question 18: **Incorrect**

**Please evaluate the following statement and select Yes if the statement is true, otherwise select No.**

**Azure Monitor can trigger alerts based on data in an Azure Log Analytics workspace.**

* ​

**Yes**

**(Correct)**

* ​

**No**

**(Incorrect)**

**Explanation**

Azure Monitor uses Target Resource, which is the scope and signals available for alerting. A target can be any Azure resource. Example targets: a virtual machine, a storage account, a virtual machine scale set, a Log Analytics workspace, or an Application Insights resource.

**Reference:**

<https://docs.microsoft.com/en-us/azure/azure-monitor/platform/alerts-overview>

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Question 19: **Incorrect**

**This question requires that you evaluate the*italic* text to determine if it is correct.**

***Azure Databricks* is an Apache Spark-based analytics service.**

**Please review the*italic* text. If it makes the statement correct, select “No change is needed”. If the statement is incorrect, select the answer choice that makes the statement correct.**

* ​

No change is needed.

**(Correct)**

* ​

Azure Data Factory

* ​

Azure DevOps

* ​

Azure HDInsight

**(Incorrect)**

**Explanation**

Azure Databricks is an Apache Spark-based analytics platform optimized for the Microsoft Azure cloud services platform.

**Reference:**

<https://docs.microsoft.com/en-us/azure/databricks/scenarios/what-is-azure-databricks#apache-spark-based-analytics-platform>

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Question 20: **Incorrect**

**Please evaluate the following statement and select Yes if the statement is true, otherwise select No.**

**Azure Monitor can send alerts to Azure Active Directory security groups.**

* ​

**Yes**

**(Correct)**

* ​

**No**

**(Incorrect)**

**Explanation**

Alerts in Azure Monitor proactively notify you of critical conditions and potentially attempt to take corrective action. Alert rules in Azure Monitor use action groups, which contain unique sets of recipients and actions that can be shared across multiple rules.

**Reference:**

<https://docs.microsoft.com/en-us/azure/azure-monitor/overview>

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Question 21: **Incorrect**

***Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.***

**You received a new urgent task to create several Azure virtual machines in your Azure environment. Unfortunately, you are on holiday and you only have a tablet with you, that runs Android operating system.**

**Solution: You use Bash in Azure Cloud Shell.**

**Does this meet the goal?**

* ​

Yes

**(Correct)**

* ​

No

**(Incorrect)**

**Explanation**

With Azure Cloud Shell, you can create virtual machines using Bash or PowerShell. Azure Cloud Shell is an interactive, authenticated, browser-accessible shell for managing Azure resources. It provides the flexibility of choosing the shell experience that best suits the way you work, either Bash or PowerShell.

**References:**

<https://docs.microsoft.com/en-us/azure/cloud-shell/quickstart>

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Question 22: **Correct**

***Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.***

**You received a new urgent task to create several Azure virtual machines in your Azure environment. Unfortunately, you are on holiday and you only have a tablet with you, that runs Android operating system.**

**Solution: You use PowerShell in Azure Cloud Shell.**

**Does this meet the goal?**

* ​

Yes

**(Correct)**

* ​

No

**Explanation**

Azure Cloud Shell is a browser-based shell experience to manage and develop Azure resources. Cloud Shell offers a browser-accessible, pre-configured shell experience for managing Azure resources without the overhead of installing, versioning, and maintaining a machine yourself. Being browser-based, Azure Cloud Shell can be run on a browser from a tablet or mobile phone that runs the Android operating system.

**Reference:**

<https://docs.microsoft.com/en-us/azure/cloud-shell/quickstart-powershell>

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Question 23: **Correct**

***Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.***

**You received a new urgent task to create several Azure virtual machines in your Azure environment. Unfortunately, you are on holiday and you only have a tablet with you, that runs Android operating system.**

**Solution: You use the PowerApps portal.**

**Does this meet the goal?**

* ​

Yes

* ​

No

**(Correct)**

**Explanation**

PowerApps lets you quickly build business applications with little or no code. It is not used to create Azure virtual machines. Therefore, this solution does not meet the goal.

PowerApps Portals allow organizations to create websites which can be shared with users external to their organization either anonymously or through the login provider of their choice like LinkedIn, Microsoft Account, other commercial login providers.

**Reference:**

<https://docs.microsoft.com/en-us/powerapps/powerapps-overview>

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Question 24: **Correct**

***Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.***

**You received a new urgent task to create several Azure virtual machines in your Azure environment. Unfortunately, you are on holiday and you only have a tablet with you, that runs Android operating system.**

**Solution: You use the Azure portal.**

**Does this meet the goal?**

* ​

Yes

**(Correct)**

* ​

No

**Explanation**

The Azure portal is a web-based, unified console that provides an alternative to command-line tools. With the Azure portal, you can manage your Azure subscription using a graphical user interface. You can build, manage, and monitor everything from simple web apps to complex cloud deployments.

Being web-based, the Azure portal can be run on a browser from a tablet or phone that runs the Android operating system.

**Reference:**

<https://docs.microsoft.com/en-us/azure/azure-portal/azure-portal-overview>

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Question 25: **Incorrect**

**You need to correlate events from multiple resources into a centralized repository.**

**Which of the following Azure services should you use?**

* ​

Azure Event Hubs

**(Incorrect)**

* ​

Azure Analysis Services

* ​

Azure Monitor

**(Correct)**

* ​

Azure Stream Analytics

**Explanation**

Azure Monitor maximizes the availability and performance of your applications and services by delivering a comprehensive solution for collecting, analyzing, and acting on telemetry from your cloud and on-premises environments.

All data collected by Azure Monitor fits into one of two fundamental types, **metrics** and **logs**.

Log data collected by Azure Monitor can be analyzed with queries to quickly retrieve, consolidate, and analyze collected data. You can create and test queries using Log Analytics in the Azure portal and then either directly analyze the data using different tools or save queries for use with visualisation or alert rules.

**Reference:**

<https://docs.microsoft.com/en-us/azure/azure-monitor/overview>

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Question 26: **Correct**

**You received a new task to deploy a critical application in Azure cloud, using Azure virtual machines. The proposed solution must provide a guaranteed availability of 99.99 percent.**

**Which of the following options meets the requirement?**

* ​

Deploy minimum 2 virtual machines into 2 minimum availability zones.

**(Correct)**

* ​

Deploy minimum 2 virtual machines into 1 minimum availability zone.

* ​

Deploy minimum 3 virtual machines into 3 minimum availability zones.

* ​

Deploy minimum 4 virtual machines into 2 minimum availability zones.

**Explanation**

You need a minimum of two virtual machines with each one located in a different availability zone.

Availability Zones is a high-availability offering that protects your applications and data from datacenter failures. Availability Zones are unique physical locations within an Azure region. Each zone is made up of one or more data centres equipped with independent power, cooling, and networking.

Zone-redundant services replicate your applications and data across Availability Zones to protect from single-points-of-failure. With Availability Zones, Azure offers industry best 99.99% VM uptime SLA.

**Reference:**

<https://docs.microsoft.com/en-us/azure/availability-zones/az-overview>

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Question 27: **Correct**

**Your company is analyzing the possibility to migrate its services to Microsoft Azure. Before any final decision is taken, you need to find out what data Microsoft processes, how Microsoft processes the data, and the purpose of processing the data.**

**Which of the following options can help in this case?**

* ​

Microsoft Online Services Privacy Statement

**(Correct)**

* ​

Microsoft Online Services Terms

* ​

Microsoft Online Service Level Agreement

* ​

Online Subscription Agreement for Microsoft Azure

**Explanation**

The Microsoft Privacy Statement explains what personal data Microsoft processes, how Microsoft processes the data, and the purpose of processing the data.

**Reference:**

<https://privacy.microsoft.com/en-us/privacystatement>

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Question 28: **Correct**

**Please evaluate the following statement and select Yes if the statement is true, otherwise select No.**

**Azure Active Directory Domain Services (Azure AD DS) allows you to create Group Policies.**

* ​

Yes

**(Correct)**

* ​

No

**Explanation**

Settings for user and computer objects in Azure Active Directory Domain Services (Azure AD DS) are often managed using Group Policy Objects (GPOs). There are some predefined built-in GPOs and you can customize these to configure Group Policy as needed for your environment.

**Reference:**

<https://docs.microsoft.com/en-us/azure/active-directory-domain-services/manage-group-policy>

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Question 29: **Incorrect**

**Please evaluate the following statement and select Yes if the statement is true, otherwise select No.**

**Azure Active Directory (Azure AD) allows you to join Windows 10 devices.**

* ​

Yes

**(Correct)**

* ​

No

**(Incorrect)**

**Explanation**

Indeed, Windows 10 devices can be joined in an Azure Active Directory (Azure AD) environment.

**Reference:**

<https://docs.microsoft.com/en-us/azure/active-directory/devices/device-management-azure-portal>

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Question 30: **Correct**

**Please evaluate the following statement and select Yes if the statement is true, otherwise select No.**

**Azure Active Directory (Azure AD) allows you to join Android devices.**

* ​

Yes

* ​

No

**(Correct)**

**Explanation**

Azure AD join only applies to Windows 10 devices.

**Reference:**

<https://docs.microsoft.com/en-us/azure/active-directory/devices/azureadjoin-plan>

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Question 31: **Incorrect**

**Your company is preparing to audit the Azure cloud infrastructure. The CTO is very much interested to track company’s regulatory standards and regulations, such as ISO 27001.**

**Which of the following resources can help?**

* ​

Azure Cloud Shell

* ​

Azure PowerShell

* ​

Compliance Manager

**(Correct)**

* ​

Trust Center

**(Incorrect)**

* ​

Microsoft Cloud Partner Portal

**Explanation**

Microsoft Compliance Manager (Preview) is a free workflow-based risk assessment tool that lets you track, assign, and verify regulatory compliance activities related to Microsoft cloud services. By default, Compliance Manager creates the following Assessments for your organization: Office 365 ISO 27001, Office 365 NIST 800-53 and Office 365 GDPR.

**Reference:**

<https://docs.microsoft.com/en-us/microsoft-365/compliance/compliance-manager-overview?view=o365-worldwide>

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Question 32: **Incorrect**

**You are working for a multinational company that has local presence with offices in 40+ countries. As per company policy, you need to make sure that Azure resources are created in an Azure region where each office is located.**

**What Azure service would you use in order to meet the policy requirement ?**

* ​

an Azure Policy

**(Correct)**

* ​

a Management group

**(Incorrect)**

* ​

a Reservation

* ​

a read-only lock

**Explanation**

Azure policies can be used to define requirements for resource properties during deployment and for already existing resources. Azure Policy controls properties such as the types or locations of resources.

Azure Policy is a service in Azure that you use to create, assign, and manage policies. These policies enforce different rules and effects over your resources, so those resources stay compliant with your corporate standards and service level agreements. Azure Policy meets this need by evaluating your resources for noncompliance with assigned policies. All data stored by Azure Policy is encrypted at rest.

Azure Policy offers several built-in policies that are available by default. In this question, we would use the ‘Allowed Locations’ policy to define the locations where resources can be deployed.

**Reference:**

<https://docs.microsoft.com/en-us/azure/governance/policy/overview>

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Question 33: **Correct**

**The company CFO is concerned about the costs the new Azure ExpressRoute connection will bring.**

**Please evaluate the following statement and select Yes if the statement is true, otherwise select No.**

**You explain the CFO that inbound data traffic from the company's on-premises data centre to Azure cloud is always free, while using Azure ExpressRoute.**

* ​

Yes

**(Correct)**

* ​

No

**Explanation**

With Azure ExpressRoute, all inbound data transfer is free of charge.

**Reference:**

<https://azure.microsoft.com/en-us/pricing/details/expressroute/>

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Question 34: **Correct**

**The company CFO is concerned about the costs generated by traffic between Azure services, in the same region.**

**Please evaluate the following statement and select Yes if the statement is true, otherwise select No.**

**You explain the CFO that data traffic between Azure services within the same Azure region is always free.**

* ​

Yes

**(Correct)**

* ​

No

**Explanation**

Data transfer between Azure services located within the same region is not charged.

**Reference:**

<https://azure.microsoft.com/en-us/pricing/details/bandwidth/>

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Question 35: **Correct**

**Please evaluate the following statement and select Yes if the statement is true, otherwise select No.**

**Outbound data traffic from Azure to external destinations is always free.**

* ​

Yes

* ​

No

**(Correct)**

**Explanation**

Inbound data traffic is free, but outbound data traffic is not.

**Reference:**

<https://azure.microsoft.com/en-gb/pricing/details/bandwidth/>

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Question 36: **Correct**

**Please evaluate the following statement and select Yes if the statement is true, otherwise select No.**

**In Azure Portal, you are able to distinguish between services that are generally available (GA) or in public preview.**

* ​

Yes

**(Correct)**

* ​

No

**Explanation**

During Private Preview phase, Microsoft invites a few customers to take part in early access to new concepts and features. After the public preview is completed, the feature is open for any licensed customer to use and is supported via all Microsoft support channels.

Any new service that is in the Public Preview state is marked in Azure portal with a (Preview) label, which makes it easy to distinguish the service from a service that is in GA phase.

**Reference:**

<https://azure.microsoft.com/en-gb/support/legal/preview-supplemental-terms/>

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Question 37: **Correct**

**Please evaluate the following statement and select Yes if the statement is true, otherwise select No.**

**After a service transitions from public preview and becomes generally available, the service will not be updated anymore.**

* ​

Yes

* ​

No

**(Correct)**

**Explanation**

After a service is tested, improved and transitioned to GA phase, it can be purchased and used by any Azure customer. The service will continue to be updated and receive updates until Azure decides to discontinue and retire the product.

**Reference:**

<https://azure.microsoft.com/en-gb/support/legal/preview-supplemental-terms/>

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Question 38: **Correct**

**You have previously used an Azure service that was in the public preview phase.**

**Please evaluate the following statement and select Yes if the statement is true, otherwise select No.**

**The Azure service is now generally available and you now need to recreate the service in Azure.**

* ​

Yes

* ​

No

**(Correct)**

**Explanation**

Once the service transitions to generally available (GA) phase, you can simply continue to use the service, as before. You don't need to recreate the service in Azure.

**Reference:**

<https://azure.microsoft.com/en-gb/support/legal/preview-supplemental-terms/>

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Question 39: **Correct**

**You are working on a new migration project for several weeks already. The project manager has asked you to configure Azure to send email alerts when the cost of the current billing period for the Azure subscription exceeds a specified limit.**

**What will you use in this case?**

* ​

Azure Advisor

* ​

Budget alerts

**(Correct)**

* ​

Azure IAM

* ​

Compliance Manager

**Explanation**

Budget alerts notify you when spending, based on usage or cost, reaches or exceeds the amount defined in the alert condition of the budget. Cost Management budgets are created using the Azure portal or the Azure Consumption API.

**Reference:**

<https://docs.microsoft.com/en-us/azure/cost-management-billing/costs/cost-mgt-alerts-monitor-usage-spending>

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Question 40: **Correct**

**You have recently signed up for an Azure account and you are now preparing for a large migration project to Azure cloud. You need to request that Microsoft increases a subscription quota limit for your company.**

**What Azure menu should you use from the Azure portal?**

* ​

Virtual Machines

* ​

Help + Support

**(Correct)**

* ​

Azure Support

* ​

Azure Case Management

**Explanation**

To request a quota increase, you should open a new support request by navigating first to **Help + support**, on the Azure portal menu.

**Reference:**

<https://docs.microsoft.com/en-us/azure/azure-portal/supportability/per-vm-quota-requests>

**Quick Preview:**

**Best of luck with your AZ-900 exam and please let me know how it went, I most enjoy reading success stories ! :) Yours should be next !**

**Ciprian - XaaS Team**

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