



Oracle Cloud Infrastructure Foundations 2021 Certified Associate

Agenda

OCI Foundation Exam format

OCI Foundation Exam Content

Actual Exam Picture (Areas focused)

Quick Cheat Sheet

Check list for OCI Foundation Exam

Reference Material that can help

What is next?

How to reach me?

Exam Format

Non-Proctored

Number of Questions : 55

Passing Mark : 68%

Score Calculated : Out of 50

Type of Question : Multi-choice & Multi-Answer

Level of Questions : Fundamentals (Only Concept based)

How to register? : No prior registration

How Many Attempts we have? : Three (Free)

Content

OCI Introduction

Compute

Networking

Storage

Database

IAM Services

Security

App Dev

Observability & Management

Analytics & AI

Hybrid

Governance & Administration

SLA & Support

Actual Exam Picture

Domain
OCI Foundation
OCI Regions and Availability Domains
Key Features and Components of OCI
OCI Compute Service
OCI Networking Services
Different OCI Storage Services
IAM capabilities
Different OCI Security Services
OCI Security Model
Different OCI App Dev Services
OCI Observability & Management Services
Core Solutions for OCI
OCI Analytics & AI services
OCI Hybrid Offerings
OCI Pricing Model
OCI SLA and Support Model

T3P

T3P

T3P

Cheat Sheet

T3P

T3P

T3P

OCI
Introduction

OCI Architecture

Oracle Cloud Free Tier (walk through)

OCI Architecture

Region: Geographic Location (with at least one Availability Domain)

We can have single AD or multi-AD regions.

Availability Domain: Availability Domain is physical Data center which are isolated with each other and fault tolerant, and each AD has three Fault Domains (FD).

Fault Domains: Logical Data center within AD. (Avoid single point of failure due to Power failure & Hardware Failure).

Always Free Services



30-day free trial

US\$300 in free credits.

- Access to a wide range of Oracle Cloud services for 30 days, including Databases, Analytics, Compute, and Container Engine for Kubernetes
- Up to eight instances across all available services
- Up to 5 TB of storage

Infrastructure

2 AMD based Compute VMs with 1/8 OCPU** and 1 GB memory each.

4 Arm-based Ampere A1 cores and 24 GB of memory usable as one VM or up to 4 VMs.

2 Block Volumes Storage, 200 GB total.

10 GB Object Storage.

10 GB Archive Storage.

Resource Manager: managed Terraform.

5 OCI Bastions.

Databases

Your choice of Oracle Autonomous Transaction Processing, Autonomous Data Warehouse, Autonomous JSON Database, or APEX Application Development. Two databases total, each with 1 OCPU** and 20 GB storage.

NoSQL Database with 133 million reads per month, 133 million writes per month, 25 GB storage per table, up to 3 tables.

Observability and Management

Monitoring: 500 million ingestion datapoints, 1 billion retrieval datapoints.

Application Performance Monitoring: 1000 tracing events per hour.

Logging: 10 GB per month.

Notifications: 1 million sent through https per month, 1000 sent through email per month.

Service Connector Hub: 2 service connectors.

Additional services

Flexible Load Balancer: 1 instance, 10 Mbps.

Flexible Network Load Balancer.

Outbound Data Transfer: 10 TB per month.

Virtual Cloud Networks (VCN): Maximum of 2 VCNs, includes IPv4 and IPv6 support.

VCN Flow Logs: Up to 10 GB per month shared across OCI Logging services.

Site-to-Site VPN: 50 IPSec connections.

Content Management Starter Edition: 5000 assets per month.

<https://www.oracle.com/in/cloud/free/#free-cloud-trial>

Compute

Compute

Instance Basics

Scaling

OS Mgmt Service

Compute

Compute	Use Compute to provision and manage compute instances. You can launch an Oracle bare metal compute resource in minutes. Provision instances as needed to deploy and run your applications, just as you would in an on-premises data center.
Instance Basics	Compute Shape, OCPU, RAM <Bare Metal, Virtual Machine, Dedicated VM Host>
Scaling	Horizontal Scaling, Vertical Scaling & AutoScaling
OS Management Service	Automated Patch Mgmt; Simplified Package Mgmt; Also, it helps to discover common vulnerabilities and Exposure lookup (right now only for Linux distributions).

Networking

VCN Intro

VCN Routing

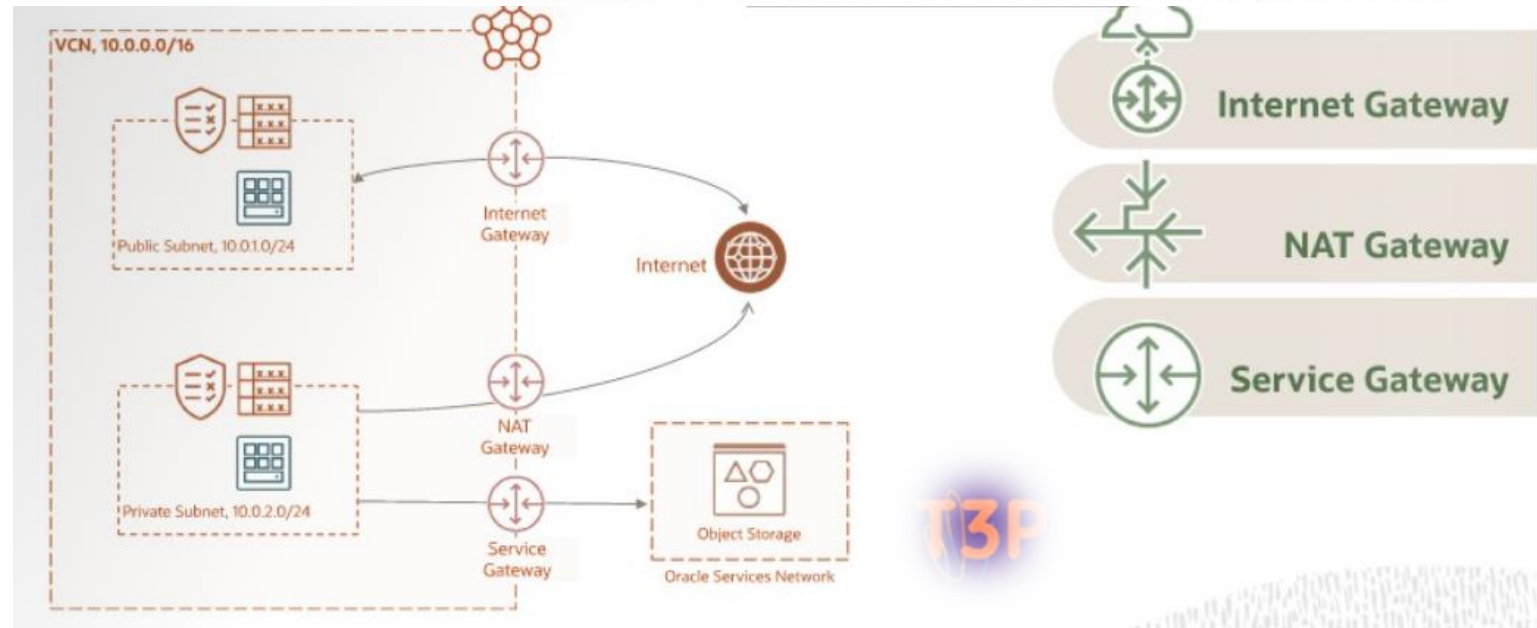
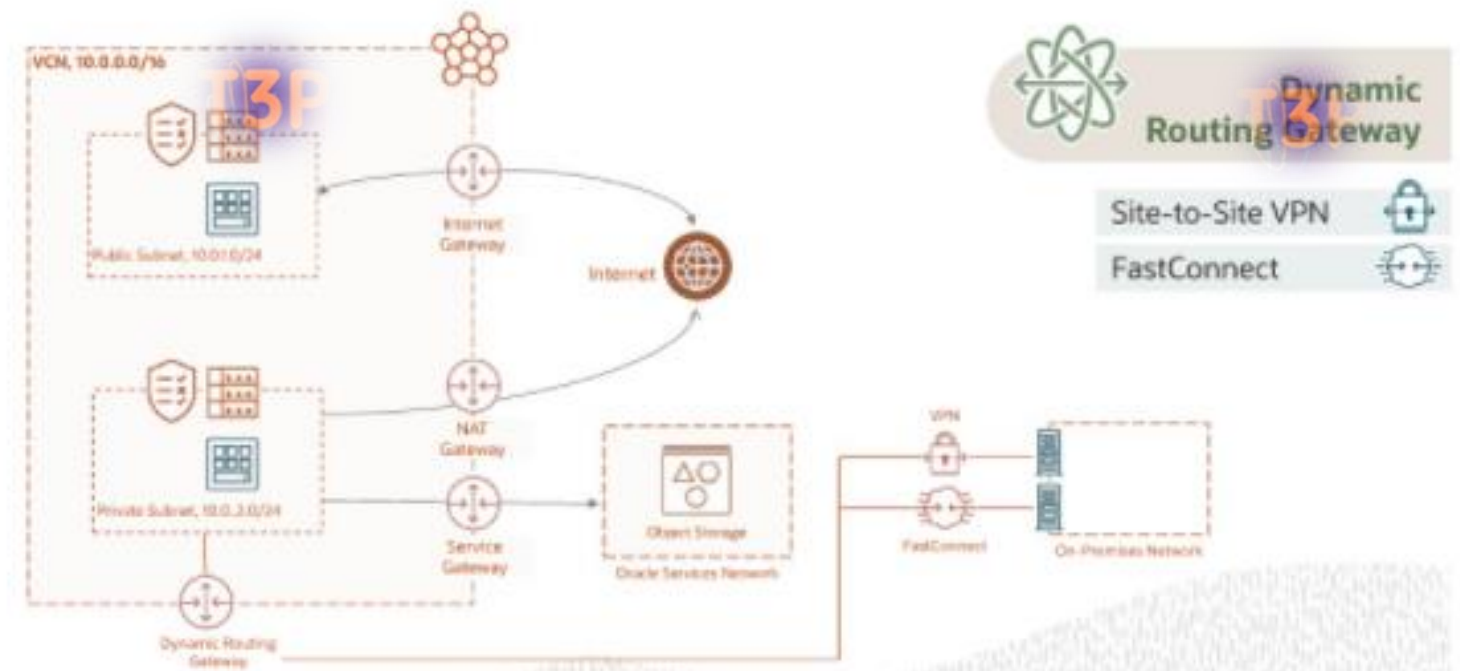
VCN Security

Load Balancer

Networking

VCN Intro	A virtual version of a traditional network—including subnets, route tables, and gateways
VCN Routing	Routing is a process for handing traffic which need send out to the VCN (for example: to the internet, to your on-premises network, or to a peered VCN) and VCN uses Route table for it.
VCN Security	Security List (which defines set of security rules to all VNICs in an entire subnet), Network Security Groups(NSG) [which defines set of security rules to a group of VNICs of our choice)
Load Balancer	To distribute traffic to the backend servers. Can be private or public, Can be Layer 7 (Application Load Balancer, which understand HTTP/HTTPS traffic) and Layer 4 (Network Load Balancer, which understand TCP or UDP traffic), faster than Application LB, lower latency, used for Performance sensitive apps)

VCN Connectivity



T3P - Technology To The Point

Storage

Storage Intro

Object Storage

Block Volume

File Storage

Migration Services

Storage

Storage	We have 4 types of storage : Local NVMe, Block Volume, File Storage, Object Storage
Object Storage	Internet-scale high-performance storage platform & ideal for unstructured data like image, text, videos etc
Block Volume	Block Volumes are persistent disks that can be attached to compute instances.
File Storage	Hierarchical collection of documents organized into named directories
Migration Service	Data Transfer Disks, Data Transfer Appliance, Storage Gateway

Object Storage Tiers

We have three Tiers available in Object Storage, it can be used as per need

Standard Storage Tier

- › Fast, immediate, and frequent access
- › Most recent copy of the data
- › Instantaneous retrieval
- › Can't be downgraded

Hot

Infrequent Access Storage Tier

- › Ideal for data that you access infrequently
- › Storage costs lower than the Standard Storage Tier
- › Minimum retention requirement for Infrequent Access: 31 days
- › Retrieval fees

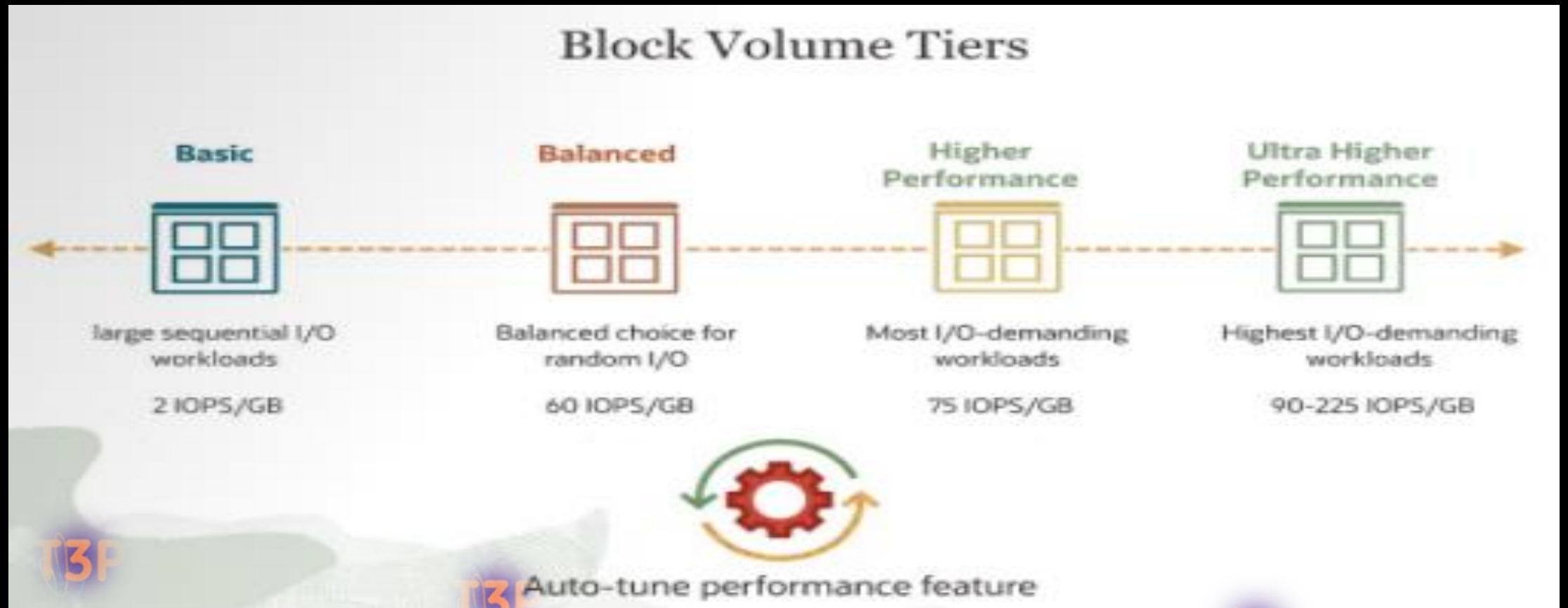
Cool

Archive Storage Tier

- › Seldom or rarely accessed data
- › Minimum retention requirement for Archive Storage: 90 days
- › Objects need to be restored before download
- › Restore time: 1 Hour
- › Download time: 24 Hours
- › Archive Bucket can't be upgraded

Cold

Block Volume Tiers



Database

Database Intro

Autonomous DB

DB Systems

MySQL

NoSQL

Database

Autonomous DB

Oracle Cloud Infrastructure's Autonomous Database is a fully-managed, preconfigured database environment with three workload types available, Autonomous Transaction Processing, Autonomous Data Warehouse and Autonomous JSON Database.

DB systems

DB systems are bare metal servers with local NVMe flash storage.

You launch a DB System the same way you do a bare metal instance, you just add some additional configuration parameters. You can then use your existing tools, Recovery Manager (RMAN), and the database CLI to manage your databases in the cloud the same way you manage them on-premises.

MySQL

MySQL Database is a fully-managed Oracle Cloud Infrastructure service which is developed, managed, and supported by the MySQL team in Oracle.

NoSQL

Oracle NoSQL Database Cloud Service is a fully managed database cloud service that is designed to handle large amounts of data at high velocity.

Autonomous DB

- We do not need to configure or manage any hardware or install any software.
- After provisioning, we can scale the number of CPU cores or the storage capacity of the database at any time without impacting availability or performance.
- Autonomous Database handles creating the database, as well as the following maintenance tasks:
 - Backing up the database
 - Patching the database
 - Upgrading the database
 - Tuning the database
- ❖ **ATP**: Built for transactional workloads. Offers high concurrency for short running over large volumes of data.
- ❖ **ADW**: Built for decision support and data warehouse workloads. Offers fast queries over large volumes of data.
- ❖ **AJD**: Built for JSON-centric application development. Offers developer-friendly document APIs and native JSON storage.

IAM
Services

IAM Intro

AuthN AuthZ

Compartments

IAM Services

IAM

Identity and Access management service which also used for fine-grained access control

AuthN

Authenticate, checks who are you?

AuthZ

Authorization, checks what permissions you have?

Policy Syntax : Allow Group <group name> to <verb> <resource type> in <location> where <conditions>

Users --> Groups --> Policy --> Compartment --> Resources

Compartments

- Collection of related resources
 - Used for isolation and control access
 - Tenancy/Root Compartment can hold all the Cloud Resources
- ✓ Properties:
- ❖ Each resource belongs to single compartment
 - ❖ Resources can interact with each other in different compartments
 - ❖ Resources can be moved from one compartment to another

Users --> Groups --> Policy --> Compartment --> Resources

Compartments

- Collection of related resources
- used for isolation and control access
- Tenancy/Root Compartment can hold all the Cloud Resources
- Properties:
 - ❖ Each resource belongs to single compartment
 - ❖ Resources can interact with each other in different compartments;
 - ❖ Resources can be moved from one compartment to another.

Security

Security Intro

Cloud Guard

Security Zone & Security Advisor

Scanning

Vault

Web Application Firewall

Security Services

Cloud Guard	Cloud Guard helps customers achieve and sustain a strong security posture on OCI. Also, it helps to monitor OCI, identifies problems and helps to fix those problems.
Security Zone	Security Zones let you be confident that your resources comply with Oracle security principles. If any resource operation violates a security zone policy, then the operation is denied.
Security Advisor	Security Advisor helps to improve security for Object Storage Buckets, File Storage, Block Volumes and VM Instances by security boot volumes
Scanning	Checks Routing & Reports Risk levels
Vault	OCI vault is a managed service that let you Centrally manage encryption keys and secret credentials. It removes the need to store encryption keys and secrets in configuration files or in code.
WAF	Supports 250+ rules to protect against SQL Injection & Cross Site Scripting, HTML injection etc
Bastion	Provide restricted and time-limited access to target resources that don't have public endpoints. Also, it removes the need to create your own Bastion

App Dev

App Dev

Resource Manager

Functions

OKE

OCIR

API Gateway

App Dev Services

App Dev	Developer Services
Resource Manager	Automates the process of provisioning our OCI resources and helps to install, configure and manage resources through the "Infrastructure-as-code" model
Functions	The Functions service is a serverless platform that enables you to create, run, and scale business logic without managing any infrastructure.
OKE	Container Engine for Kubernetes helps you define and create Kubernetes clusters to enable the deployment, scaling, and management of containerized applications.
OCIR	Container Registry helps you store, share, and manage development artifacts like Docker images in an Oracle-managed registry. It can be either public or private.
API Gateway	API Gateway enables you to create governed HTTP/S interfaces for other services, including Oracle Functions, Container Engine for Kubernetes, and Container Registry. API Gateway also provides policy enforcement such as authentication and rate-limiting to HTTP/S endpoints.

Observability and Mgmt

Observability & Mgmt Intro

Monitoring

Logging

Logging Analytics

Observability & Management Services

Monitoring	Monitoring Service enables to perform active and passive monitoring of cloud resources (Compute, Autonomous DB) using metric and alarm features. Metrics and alarms help monitor the health, capacity, and performance of your cloud resources.
Logging	Centralized log mgmt; Rule-based Actions; Built on open standard
Logging Analytics	Provide single view: Multi cloud, on-premises;

Analytics & AI

Analytics & AI Intro

Data Integration

Data Flow

Data Catalog

Data Science

Analytics & AI Services

Data Integration	Oracle managed, cloud native, ETL service
Data Flow	OCI Data Flow allows us to run our own Spark Scripts in a serverless manner. It supports Java, Scala and Python
Data Catalog	Data Catalog is a collaborative metadata management solution that lets you be more insightful about the data you have in Oracle Cloud and beyond.
Data Science	Data Science is a platform for data scientists to build, train, and manage machine learning models on Oracle Cloud Infrastructure, using Python and open-source machine learning libraries.

Hybrid

Hybrid Intro

Dedicated Regions

Oracle Cloud VMWare
Solutions

Hybrid Services

Dedicated Regions	Installed and Operated at customer site by OCI
Oracle Cloud VMWare Solutions	Use the VMware Solution to create and manage VMware enabled software-defined data centers (SDDCs) in Oracle Cloud Infrastructure.
Roving Edge Device (RED)	A high-powered and portable server that can run core IaaS services optimized for remote computing and storage. REDs can be ordered as single nodes or as a cluster, in which case storage and compute capacity and durability increases. REDs are sometimes referred to as "device" in this documentation.

Governance &
Administration

Pricing

Cost Management

Tagging

Hybrid Services

Pricing	Pay as you Go (PAYG) Annual Universal Credits Bring your own License (BYOL) Monthly Flex
Cost Mgmt	OCI Budget, Usage Report, Compartment Quota
Tagging	Oracle Cloud Infrastructure Tagging allows you to add metadata to resources, which enables you to define keys and values and associate them with resources. <ul style="list-style-type: none">❖ Defined Tags (Administrator managed)❖ Free Form Tags (applied by users)

SLA &
Support

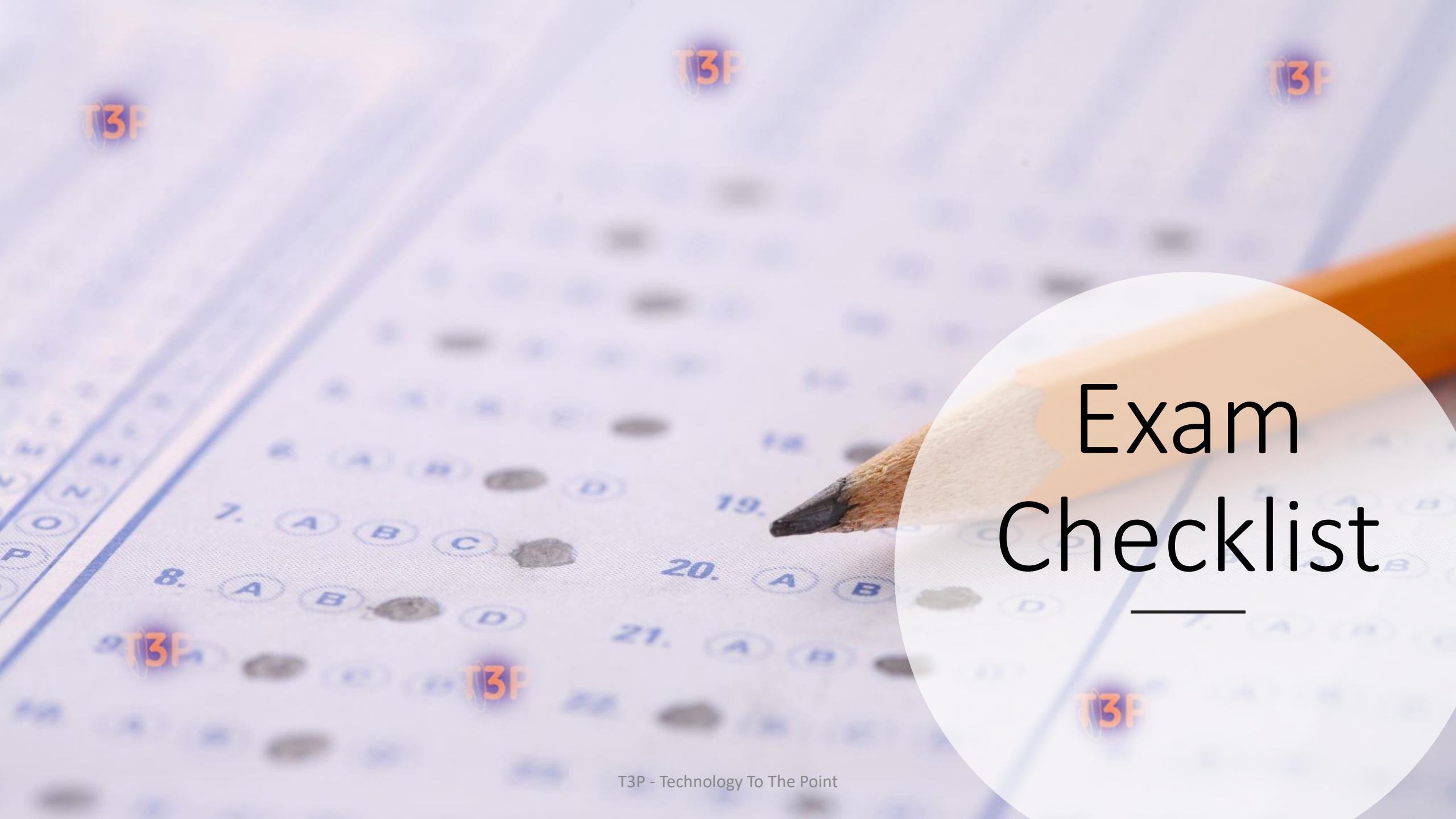
SLA

Support

SLA & Support

SLA	Data Plane, Control Plane, performance
Support	OCI Support Center <u>Open a Support Service:</u> Technical, Billing, and limit increase



The background is a close-up, slightly blurred image of a multiple-choice exam sheet. A wooden pencil with a sharpened lead tip is positioned diagonally across the middle of the frame, pointing towards the bottom right. The exam sheet features several questions, each with four circular options labeled A, B, C, and D. Some of the visible question numbers are 7, 8, 19, 20, and 21. The text 'Exam Checklist' is overlaid on the right side of the image, enclosed within a white circular area. The overall color palette is soft, with light blues and greys from the paper and pencil, and a warm orange glow from the circular overlay.

Exam Checklist

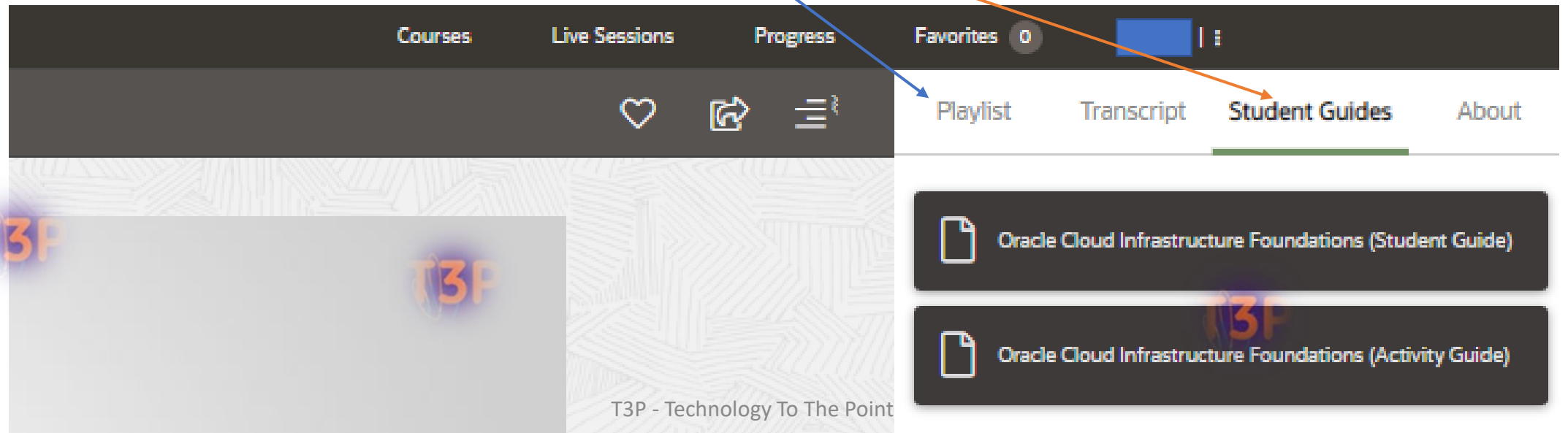
OCI Free Tier Service	Types of Storage & Their usage	WAF
Marketplace	Object Storage & It's Tier (Hot, Cool, Cold)	Bastion
OCI Region, Availability Domains and Fault Domains	Block Volume & it's Tier (Basic, Balanced, Higher Performance, Ultra Higher Performance)	Terraform (IAC) --> Resource Manager
Data Transfer Cost (Ingress & Egress)	Retention Rules for Object Storage Tier	Service used for deploying Microservices (Kubernetes)
2-node Oracle Real Application Cluster (RAC) DB Systems	Autonomous DB (ADW, ATP)	Service which allow code without provisionng any underlying Infra
High availability consideration for region with just one AD	DB Systems	OCIR (Private/Public)
Instance basics (compute Shape, Scaling)	Compartments	Monitoring
Service to use for Containerized Applications	Cost Management with in an OCI Tenancy	Logging
OCI Load Balancers (Application & Network LB)	How to apply IAM policy and it's syntax (Allow Group)	Logging Analytics
VCN Routing	IAM service components	Data integration --> ETL worklaod
VCN Peering (Local & Remote)	Types of Encryption Keys that are recognized by OCI Vault Service (MEK, DEK)	Data Flow --> Apache Spark
VCN Security (Virtual Firewall)	Vulnerability Scanning	Data Catalog --> Harvesting of technical data
Security Lists & Network Security Groups	Key Encyption Algorithm supported by OCI Vault Service	SLA
	Services can be integrated with OCI Key Management	Support



Reference Material

Reference Material

- OCI foundation Training
- OCI Student Guide
- Practice Questions available in Playlist for 2020 [As 60-70% content is still valid]



How to reach me?

For any query related to any question/ needed help for future cloud certifications

- Email: t3p.technologytothepoint@gmail.com

For free resources (which can't be shared on public domain like youtube)

- Telegram Channel: <https://t.me/T3PAcademy>
- Telegram Group: <https://t.me/joinchat/CD7l47AXkhIkNWU1>



Thanks for Watching!!