Oracle Integration Cloud (OIC) - Detailed Notes

OIC Introduction

- - Oracle Integration Cloud (OIC) is a cloud-based integration platform that connects applications, data, and processes across cloud and on-premises environments.
- - It allows businesses to automate workflows, synchronize data, and build complex integrations easily with low-code tools.

OIC Overview

- - A part of Oracle Cloud Infrastructure.
- - Provides prebuilt integrations and adapters.
- - Supports application integration, process automation, and visual app building.
- - Unified interface for connecting Oracle and third-party apps.

Cloud Architecture

- - SaaS Layer: Oracle Fusion Applications.
- - PaaS Layer: OIC, with components like Integration, Process, Visual Builder.
- - Infrastructure Layer: Oracle Cloud Infrastructure (OCI).
- - Connectivity: Secure communication via REST, SOAP, Agents, and Adapters.

Integration scenario

- - Use case: Synchronizing customer data between Oracle Fusion and Salesforce.
- - Data can be pulled using adapters, transformed using mapping, and pushed to target systems.
- - Scheduled or event-based triggers.

Features & Benefits

- - Prebuilt adapters for Oracle and non-Oracle apps.
- - Low-code, drag-and-drop interface.
- - Real-time and batch integrations.
- - Process automation and decision models.
- - Robust monitoring and error handling.

OIC Components

- - Integration: Data flow design between applications.
- - Process Automation: BPMN-based flow builder.
- - Visual Builder: Web/mobile app development tool.
- - Insight: Business analytics and metrics.

Adapters

- - Prebuilt connectors that simplify integration.
- - Types: Application Adapters (e.g., Oracle ERP, Salesforce), Technology Adapters (e.g., FTP, File, REST, SOAP, DB).
- - Handle protocol, authentication, data mapping.

Integration styles

- - App-Driven Orchestration: Triggered by an application event.
- - Scheduled Orchestration: Runs based on defined schedule.
- - Basic Routing: Light-weight integration with conditional routing.
- - Publish to OIC: Publishes data to subscribers.
- - Subscribe to OIC: Subscribes to a published integration.

Connections in OIC

- - Connections are configuration objects used to link integrations with external systems.
- - Include endpoint URL, security (OAuth, basic auth), adapter type.
- - Reusable across integrations.

Aspects of OIC Integrations

- - Connections (File, FTP, ATP): Define how to connect to external systems.
- - Adapter: Used to define how data is read/written.
- - Lookups: Define static mapping values for use in mappings.
- - Agents: Used for on-premise connectivity.
- - Libraries: JavaScript functions and XPath expressions reused in integrations.

Integration workflow

- - Trigger: Defines how the integration starts (App-driven or Scheduled).
- - Invoke: Calls external systems or internal processes.
- - Actions: Logical activities (assign, switch, loop).
- - Mappings: Map data between source and target.
- - Tracking: Monitor data flow and status.

Different Integration Activities

- - Assign: Set variable values.
- - Map: Transform data.
- - Switch: Conditional branching.
- - For-Each: Loop through collections.
- - Scope: Group actions.
- - Fault Handler: Error recovery block.

Monitoring

- - Real-time and historical view of integrations.
- - Includes dashboards, logs, error reports.
- - Drill-down capability to identify issues.

Dashboard

- - Shows overall system health.
- - Displays charts for integration success/failure.
- - Filter by time, integration type, or status.

Tracking

- - Enables audit of integration runs.
- - Custom tracking fields (Business Identifiers) help correlate messages.
- - Helps in debugging and auditing.

Errors

- - Errors can occur due to data issues, connectivity, or processing logic.
- - Use Fault Handlers and Error Actions to catch and handle.
- - Log and notify stakeholders about failures.

Call an External REST API

- - Use REST Adapter as an Invoke connection.
- - Define HTTP method, endpoint, headers, and payload.
- - Use mappings to set request and read response.

Configure Invoke Connection and Create an Integration

- - Create connection → Define security → Add in integration.
- - Drag Invoke → Select connection → Set endpoint details.

- - Map request and response.

What is Connectivity Agent - Architecture, Working Principle

- - Connectivity Agent: Bridges OIC and on-premise applications.
- - Architecture: Installed in on-premise network, Secure communication via outbound connection.
- - Working: Polls OIC for messages, Executes DB calls or API requests within on-prem network.

Importing a package

- - Go to Integrations → Import → Choose file (.iar).
- - Imported package includes integrations, connections, lookups.
- - Validate and activate as needed.

Versioning

- - Each integration has a version number.
- - Clone or edit to create new versions.
- - Deploy different versions to different environments (DEV, TEST, PROD).

Create DB Connection and Create a DB Integration

- - Use Database Adapter → Configure DB details (JDBC/ATP credentials).
- - Use in integration to: Read/write data to DB, Execute SQL or stored procedures, Map inputs/outputs.

Publish and subscribe to oic model

- - Event-driven architecture.
- - Publish to OIC: Sends messages to a logical channel.
- - Subscribe to OIC: Receives messages from the channel.
- - Used for decoupled, scalable integrations.

FTP and file adapter overview

- - FTP Adapter: Read/write files to remote FTP/SFTP servers.
- - File Adapter: Used for file operations on local agent-based systems.
- - Specify directory path, file name pattern, and data format.

OIC action global variable

- - Global Variables: Available across integration flow.
- - Use Set Variable action to assign value.
- - Use Get Variable in other actions.
- - Useful for conditional logic, dynamic mappings.