

SAP BTP Solution Architecture – Application, Identity, Security and Hybrid Integration

Course Description

This course provides an understanding of the SAP Business Technology Platform services and architecture used to build and integrate a cloud-based SAP application with an on-premise SAP S/4HANA environment.

The course covers the SAP BTP services used in the solution, including SAP Application Router, SAP Authorization and Trust Management Service (XSUAA), SAP Cloud Identity Services – Identity Authentication (IAS), SAP Destination Service, SAP Cloud Application Programming Model (CAP), SAP HANA Cloud, SAP Integration Suite – Cloud Integration, SAP Connectivity Service, and SAP Cloud Connector.

It also explains how these services work together with the enterprise identity and on-premise SAP environment to provide authentication, authorization, application access, backend integration, and secure connectivity.

Course Objectives

Upon completion of the course, learners will be able to:

- Understand the SAP BTP architecture used for the solution.
- Understand the purpose and role of each SAP BTP service used in the architecture.
- Understand SAP BTP application routing using SAP Application Router.
- Understand authentication and authorization using SAP IAS and XSUAA.
- Understand identity federation with ADFS and Active Directory.
- Understand SAP BTP Destination Service and its role in application communication.
- Understand SAP CAP and its role as the application backend.
- Understand SAP HANA Cloud and its role in the solution.
- Understand integration using SAP Integration Suite – Cloud Integration.
- Understand SAP BTP Connectivity Service and SAP Cloud Connector.
- Understand secure connectivity between SAP BTP and the on-premise SAP environment.

- Understand the complete end-to-end request flow between the user, SAP BTP and SAP S/4HANA.
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Table of Contents

Module 1: Understanding SAP BTP Solution Architecture

- Understanding SAP BTP solution architecture
 - Understanding the role of a Solution Architect in SAP BTP projects
 - Understanding SAP BTP application architecture
 - Understanding cloud and on-premise architecture
 - Understanding SAP BTP services and their roles within a solution
 - Reading and interpreting SAP BTP solution architecture diagrams
 - Understanding the relationship between application, identity, integration, database and connectivity services
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Module 2: SAP BTP Architecture and Account Model

- Understanding SAP Business Technology Platform
 - Understanding the SAP BTP account model
 - Understanding SAP BTP global accounts and subaccounts
 - Understanding SAP BTP services and service instances
 - Understanding SAP BTP environments
 - Understanding SAP BTP security responsibilities
 - Understanding SAP BTP connectivity
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Module 3: SAP BTP Application Router

- Understanding SAP Application Router
- Understanding the role of Application Router in SAP BTP
- Understanding application request routing

- Understanding authentication handling through Application Router
 - Understanding integration of Application Router with XSUAA
 - Understanding user sessions
 - Understanding how Application Router connects users to SAP BTP applications
 - Understanding the application access flow
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Module 4: SAP Cloud Identity Services – Identity Authentication

- Understanding SAP Cloud Identity Services
 - Understanding Identity Authentication (IAS)
 - Understanding IAS as an authentication service
 - Understanding identity federation
 - Understanding integration of IAS with an enterprise identity provider
 - Understanding federation with ADFS
 - Understanding authentication flow between SAP BTP, IAS and ADFS
 - Understanding Active Directory integration
 - Understanding user authentication and SSO
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Module 5: SAP Authorization and Trust Management Service (XSUAA)

- Understanding SAP Authorization and Trust Management Service
- Understanding XSUAA in SAP BTP application architecture
- Understanding authentication and authorization
- Understanding OAuth concepts
- Understanding JWT tokens
- Understanding JWT scopes
- Understanding token validation
- Understanding role collections

- Understanding mapping of enterprise groups to BTP role collections
- Understanding XSUAA integration with Application Router
- Understanding XSUAA integration with IAS
- Understanding the application authorization flow

Module 6: SAP BTP Destination Service

- Understanding SAP BTP Destination Service
- Understanding destinations
- Understanding the purpose of destinations in SAP BTP
- Understanding endpoint configuration
- Understanding secure application-to-service communication
- Understanding how applications consume backend endpoints through Destination Service
- Understanding Destination Service integration with SAP CAP
- Understanding Destination Service integration with SAP Integration Suite – Cloud Integration

Module 7: SAP Cloud Application Programming Model (CAP)

- Understanding SAP Cloud Application Programming Model
- Understanding CAP application architecture
- Understanding CAP services
- Understanding CAP service endpoints
- Understanding application-to-backend communication
- Understanding CAP integration with SAP HANA Cloud
- Understanding CAP integration with SAP BTP Destination Service
- Understanding CAP security and authorization
- Understanding JWT-based authorization in CAP applications

- Understanding the role of CAP within the overall SAP BTP architecture
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Module 8: SAP HANA Cloud

- Understanding SAP HANA Cloud
 - Understanding the role of SAP HANA Cloud in SAP BTP architecture
 - Understanding SAP HANA Cloud database services
 - Understanding CAP and SAP HANA Cloud integration
 - Understanding application data flow between CAP and SAP HANA Cloud
 - Understanding SAP HANA Cloud within the overall solution architecture
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Module 9: SAP Integration Suite – Cloud Integration

- Understanding SAP Integration Suite
 - Understanding Cloud Integration
 - Understanding the role of Cloud Integration in hybrid integration
 - Understanding integration flows
 - Understanding sender and receiver systems
 - Understanding integration between SAP BTP applications and SAP S/4HANA
 - Understanding the use of Destination Service with Cloud Integration
 - Understanding routing of integration requests
 - Understanding payload movement between cloud and on-premise systems
 - Understanding response flow from the on-premise SAP system
 - Understanding integration security
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Module 10: SAP BTP Connectivity Service

- Understanding SAP BTP Connectivity Service
- Understanding cloud-to-on-premise connectivity

- Understanding the role of Connectivity Service in SAP BTP
 - Understanding secure connectivity to on-premise systems
 - Understanding Connectivity Service integration with Cloud Integration
 - Understanding Connectivity Service integration with SAP Cloud Connector
 - Understanding the request flow from SAP BTP to the on-premise environment
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Module 11: SAP Cloud Connector

- Understanding SAP Cloud Connector
 - Understanding the role of Cloud Connector
 - Understanding secure tunnelling between SAP BTP and on-premise systems
 - Understanding Cloud Connector architecture
 - Understanding connection between SAP BTP and on-premise SAP systems
 - Understanding backend system mapping
 - Understanding access control for on-premise resources
 - Understanding Cloud Connector integration with SAP BTP Connectivity Service
 - Understanding Cloud Connector integration with SAP S/4HANA
 - Understanding secure cloud-to-on-premise communication
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Module 12: SAP S/4HANA On-Premise Connectivity and Integration

- Understanding integration with SAP S/4HANA
- Understanding SAP Web Dispatcher
- Understanding the role of SAP Web Dispatcher in the architecture
- Understanding the connection from SAP Cloud Connector to SAP Web Dispatcher
- Understanding request forwarding to SAP S/4HANA
- Understanding SAP S/4HANA OData services
- Understanding response flow from SAP S/4HANA to SAP BTP

- Understanding the SAP BTP to SAP S/4HANA integration architecture
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Module 13: End-to-End SAP BTP Solution Architecture

- Understanding the complete solution architecture
- Understanding the user access flow
- Understanding the authentication flow
- Understanding the authorization flow
- Understanding the application request flow
- Understanding the SAP BTP backend flow
- Understanding the integration flow
- Understanding the cloud-to-on-premise connectivity flow
- Understanding the SAP S/4HANA request and response flow
- Understanding the interaction between all SAP BTP services