

BizTalk Server 2016 course outline

Course outline

- Introduction to Enterprise Application Patterns and BizTalk Server
- Understanding BizTalk Framework
- Setting up a BizTalk Server Environment
- Messaging Architecture
- Setting up a BizTalk Server Environment
- Schemas in BizTalk
- Transformations in BizTalk
- The BizTalk Messaging Engine and Pipelines
- Adapters in BizTalk
- Orchestrations
- Advanced Orchestrations
- Integration Patterns in BizTalk
- BizTalk Rules Engine
- Business Activity Monitoring
- WCF Services with BizTalk
- RESTful API's with BizTalk
- EDI Processing in BizTalk
- ESB Toolkit
- BizTalk 2016 Features
- BizTalk Cloud Integration
- Testing BizTalk Artifacts
- BizTalk Server Instrumentation, Error Handling, and Deployment
- Tracking and Deploying BizTalk Solutions
- Monitoring and Maintenance
- Administration
- BizTalk Server Performance and Tuning
- BizTalk Tools

Introduction to EAI

- The EAI Business Scenario
- Integrating with existing systems
- Managing Interoperability within a system
- The B2B Business Scenario
- Communicating with External Systems
- Technology solutions available to integrate
- Role of XML and Web services in SOA
- BizTalk and SOA

Understanding BizTalk Framework

- Why BizTalk?
- BizTalk Framework Architecture
- Messages
- Adapters
- Pipelines

- Subscriptions
- MessageBox
- Orchestrations
- Enterprise Single Sign-On

Messaging Architecture

- Understanding the Message Bus
- Content Based Routing
- BizTalk's publish and subscribe architecture
- Send and receive ports
- BizTalk message box
- Applying transformations to messages

Setting up a BizTalk Server Environment

- Introduction
- BizTalk server Installation on single machine and multiple machines
- Gathering requirements by asking the right questions
- Analyzing requirements and creating a design
- Validating a BizTalk installation with BPA
- Managing the SSO system

Schemas

- XML Schema in BizTalk Server
- BizTalk Schema Editor
- Document schemas
- Envelope schemas
- Property schemas
- Flat file schemas
- Canonical schemas
- Schema custom data types
- Reusable schemas
- Convert schema as a class

Maps

- XSLT in BizTalk Server
- The BizTalk Mapper
- Using basic and advanced functoids in maps
- Managing transformation challenges
- Calling XSLT in .Net class and pipeline components
- XslTransform vs XslCompiledTransform
- Testing maps
- Debugging maps

Pipeline

- Pipeline Architecture
- Standard Pipelines
- Standard Pipeline Components
- Building Custom Send Pipeline
- Building Custom Receive Pipeline

- Building Custom Pipeline Component
- Debugging Pipeline Component
- Recoverable Interchange

Adapter

- Architecture
- Communication Semantics
- Ports
- Filtering
- Dynamic Send Ports
- Enlistment
- Hosting
- Configuration Settings
- Retry Semantics
- Service Windows
- Tracking
- Context Properties
- BizTalk Adapter Framework
- Standard BizTalk Adapters
- BizTalk WCF Adapters

Orchestration

- Introduction to Orchestrations
- BizTalk Orchestration XLANGs Engine
- Working with messages in orchestrations
- Routing BizTalk messages
- Sending and Receiving Messages
- Managing ports in orchestrations Port Bindings
- Constructing and Transforming Messages Message Correlation
- Integrating with .NET Code
- Managing Orchestrations using scopes
- Exception and Error Handling
- Communicating with Other Orchestrations
- Generating BizTalk Artifacts from Database
- Using WCF LOB Adapters in BizTalk Server
- Debugging Orchestrations
- Tracking Messages
- Debatching

Advanced Orchestration

- Transactions and compensation
- Correlation
- Construct a message with XSD class

BizTalk Server Automation: Patterns

- Introduction
- Implementing the splitter pattern

- Creating a FIFO solution
- Developing a parallel convoy solution
- Routing using the resequencer messages in an orchestration
- Implementing a retry pattern in an orchestration

Business Rules

- Business rule engine concepts
- Creating and testing rules
- Managing business rule policies
- Creating and managing rule vocabularies
- Executing rules from orchestrations

Business Activity Monitoring

- BAM Fundamentals
- Conceptual Overview
- Database Structure
- Tracking Profile Editor
- Using the TPE
- Creating Activities
- Updating Data Items
- Continuation
- Applied BAM
- Writing Activity Data
- Using Activity Data
- BAM Portal

WCF Services with BizTalk

- Introduction
- Exposing schemas as a WCF Service
- Consuming WCF Services in a BizTalk orchestration
- Consuming WCF Services in a BizTalk messaging only solution
- Exposing orchestrations with BizTalk
- Develop WCF custom behaviors

RESTful Services with BizTalk

- HTTP Verbs, Headers, and Response Codes
- Publish and Consume Rest Services
- Newtonsoft Json Supports BizTalk
- Working with JSON Encoded Messages
- Preprocessing Messages with IIS Modules

Logging in BizTalk

- Log4Net
- CAT Framework
- Enterprise Library

Security

- Enable message security using pipelines
- Securely manage passwords using ESSO Affiliate Applications

EDI Message Processing

- Validating EDI schemas and generating instances
- Service schema extensions
- Create parties
- Configure profiles, including protocol and encoding settings
- Create EDI and AS2 agreements
- Create batches of EDI messages
- Split batched messages
- Configure the creation and processing of acknowledgement messages
- Customize EDIFACT and X12 schemas
- Build maps for transforming EDI messages
- Configure tracking and reporting for EDI message processing Route messages using EDI-specific properties

ESB Toolkit

- Introduction to ESB Guidance
- Installation & Configuration of ESB
- ESB Portal & Exception Handling
- ESB application Transformation Service
- Resolver Services
- Itinerary Services

BizTalk 2016 new features

- New Adapters - Azure Logic App, SFTP, SB-Messaging
- BizTalk Server Azure VM support
- Integration with Azure and Cloud applications
- SQL Server 2016 AlwaysOn Availability Groups
- Connecting Service Bus

Testing BizTalk Artifacts

- Introduction
- Testing BizTalk artifacts inside Visual Studio
- Testing pipelines and pipeline components
- Load Testing
- Performance Testing
- Integration Testing

Stress Testing

- Mixing It Up
- Overload Testing

User Acceptance Testing

Production Support Testing

- Deploying New Solution Artifacts
- Handling Suspended Messages and Orchestrations

BizTalk Server Instrumentation, Error Handling, and Deployment

Introduction

- Deploy BizTalk Server applications using MSI's
- Deploy BizTalk Server applications using BTDF
- Deploy BizTalk Server applications using Powershell
- Deploy BizTalk Server applications using Build Master
- Manage application configuration using binding files.
- Tracing BizTalk applications using DebugView
- Applying event logging in BizTalk solutions
- Enabling Failed Message Routing in BizTalk

BizTalk Server Administration

- What to Manage

The Administration Toolkit

- BizTalk Server Administration Console
- BTSTask and BTSDeploy
- BizTalk Explorer

Regular Administration Tasks

- Application Deployment
- Managing Hosts
- Clustering Hosts
- Configuring BizTalk Adapter Handlers

Troubleshooting BizTalk

- Checking the Health of Your BizTalk System

Tools to Assist You

- BizTalk Best Practices Analyzer (BPA)
- BizTalk Documenter

Automate BizTalk Server management tasks

- WMI

- PowerShell Provider

Monitoring and Maintenance

- Introduction

- Using the BizTalk Administration Console
- Alternative BizTalk monitoring solution BizTalk360
- Configuring the BizTalk database jobs
- Leveraging the BizTalk monitoring job
- Backup and restore BizTalk databases
- Configure multiple MessageBox databases
- Identifying bottlenecks with the Performance Monitor and PAL tools.
- Generating PAL reports for BizTalk health check

Using the BizTalk Health Monitor Tool
Managing BizTalk sever messages through BizTalk terminator tool
Enabling Tracking and Viewing Tracked Data

BizTalk Server Performance and Scalability

Laying the Foundations

Hardware

Software Checklist

Monitoring Strategy

BizTalk

SQL Server

Dependent Systems

Common Symptoms

Orchestration Completed/Sec

Drops Off Suddenly High Memory Usage

Web Service Problems (SOAP Adapter)

Low Throughput (Not Achieving the msg/Sec)

Heavy BAM Usage

Spool Increasing Steadily

Performance Testing and Tuning

Load Profile

Performance Testing Tools – Load Generation Identifying

Performance Bottlenecks

Automating Performance Testing

Tuning Operating System Performance

Tuning Network Performance

Tuning IIS Performance