



TIBCO ActiveMatrixBusinessWorks 6.x

Course Overview

This course gives you hands-on experience with TIBCO ActiveMatrixBusinessWorks 6.x. This brief introductory unit provides an overview of the course, including learning objectives, agenda and lab environment.

Introducing TIBCO BusinessWork

- TIBCO: This is What We Do!
- Components: Connected Intelligence
- Connect Everything, Anywhere!
- Integration: Enterprise Service Bus
- Connected Data and Systems: ActiveMatrixBusinessWorks
- Integration: Adapters and Connectors,
- Connect Data and Systems: Across the Enterprise
- From On Premise to Cloud Native

Development Environment

This unit describes process development with TIBCO Business Studio for Designers.

- Why BusinessWorks 6: Key Points
- BusinessWorks Details
- BusinessWorks 6.x Installation Details
- BusinessWorks 6 Methodology: High Level View
- TIBCO Business Studio
- Comparing Development Environments
- Business Studio Perspectives
- Business Studio Editor Views
- Opening and Closing Projects
- Workspace: Modular Development
- Defining An Application Module
- Adding an Application
- Sharing Projects Artifacts



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Application Development

This unit describes the BusinessWorks 6 development methodology.

- BusinessWorks Application Development
- Process Layout Details
- BusinessWorks 6 Gestures
- Process Layout Details
- Mapping and Transformation
- Resolving Mapping Errors
- Saving Changes

Building Web Services

This unit describes the capabilities of Business Studio in building and testing Web Services. It examines the basic concepts of a REST architecture.

- *Web Services in BusinessWorks*
- *Developing Services*
- *SOAP Services Concepts: A Brief Review*
- *Using Existing WSDLs*
- *Completing Web Service Implementation*
- *Testing Web Services: Create Calling Process*
- *Invoking Service Across Application*
- *Verifying Component Starters*
- *Business Case Implementation*
- *Process-Pattern Mapping*

Debugging and OSGi

This unit describes the BusinessWorks 6 development methodology.

- TheBusinessWorks Debugger
- Setting and Using Breakpoints
- Viewing Job Data
- BusinessWorks Debug Environment



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- Setting up Debugging Details
 - BusinessWorks and OSGi
 - BusinessWorks Application Startup
 - Accessing the OSGi Console
 - Key OSGi Commands
 - Viewing Bundle and Engine Details
 - Endpoint Details

Configuring JDBC Drivers

This unit examines the JDBC driver option and design time JDBC configuration.

- Transitioning JDBC Activity Based Projects
- Packaging an Application
- Connecting to a Database using JDBC
- JDBC Driver: Setting up Design Time
- Design Time JDBC Configuration
- JDBC Driver: Run Time Changes
- Working with a Database
- Adding a JDBC Query
- JDBC Connections in a Process
- Database Schema

Working with Properties

This unit describes properties and their usage. It also examines the types and usage of variables.

- Variables and Properties
- Understanding Scope of Properties
- Accessing Process Properties
- Defining Process Properties
- Process Properties vs. Process Variables
- Process Property Features
- From Process Properties to Module Properties



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- Module Property Details
- Types of Module Properties
- Application Properties
- Property Layers and Scope
- Application Configuration Profiles
- Variables

Using Java Message Service

This unit introduces messaging concepts and discusses the features of TIBCO Enterprise Message Service.

- Fundamentals of Messaging
- Messaging Features
- Message Processing Choices
- Java Message Service (JMS)
- TIBCO Enterprise Message Service
- Publish-Subscribe Messaging
- Point-to-Point Messaging
- JMS Message Format
- Client-Service Delivery Modes
- TIBCO EMS Access Control
- Administering TIBCO EMS
- JMS In BusinessWorks
- Java Projects in Business Studio

Adding Java Projects

This unit describes the java development capability of Business Studio.

- Business Studio: Additional Features
- Creating Other Projects in Business Studio
- Creating a Java Project
- Java Perspective
- Adding External JAR Files
- Running Java Projects
- BusinessWorks Projects in Java Perspective



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Using Groups and Loops

In this unit you examine the transaction capabilities of TIBCO ActiveMatrixBusinessWorks.

- Types of Groups
- Grouping For Repetitive Actions
- Using Scope
- Error Handling Details
- Implementing Transactions
- Using Checkpoints with Transactions
- Process Inventory Definition
- Grouping Best Practices

Embedding Java Code

This unit examines how external Java code can be imported into a BusinessWorks project. It also examines how product bundles can be used to resolve classpath references for Java code.

- Java Nature for Application Module
- Confirming Java Nature
- Adding External Java Code to Module
- Using Product Bundles
- Using the Mapper
- Variables in Mapper
- Inline Schema Editor

Building Plug-in Projects

This unit discusses the standard and OSGI java code.

- Java Code: The OSGI Way
- OSGI Activator Classes
- Using a Plug-In Project
- Referencing a Plug-in Project
- Using Non-OSGI Java Code
- Business Case Implementation
- Java Plugins



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Invoking Services

This unit describes process details and service invocation.

- BusinessWorks 6: Process Types
- Sub-Process Types
- Invoking WSDL Based Sub-Process
- Dynamic Process Invocation
- Dynamic Process: Name Generation
- Service Invocation: Internal
- Invoking an External Service
- Reference Binding: Review
- Business Case Implementation
- Process-Pattern Mapping to Test Invocation Options

Using Conversations

This unit explores the concept of conversations and the activities that support a conversation.

- Synchronous Communication
- Asynchronous Communication
- Asynchronous Communication in Messaging
- Asynchronous Communication in Services
- Setting Up a Conversation
- Joining a Conversation
- The Conversation Tab
- Activities Supporting Conversations
- Conversation Details
- Interface Specification
- Process-Pattern Mapping to Test Conversations

Implementing Event Handlers

This unit describes the purpose of event handlers and the usage of multiple handlers.



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- Events
- Event Handlers
- Changing Event Handler Scope
- Multiple Event Handlers
- Defining an Event Handler
- Adding Multiple Event Handlers
- Event Handler Business Logic
- Interface Specification
- Process-Pattern Mapping to Test Event Handler

Using Compensation

This unit describes compensation and ways to trigger compensations.

- Compensation Logic
- Compensation Handler
- Explicitly Invoking Compensation Handler
- Compensation Handler: Implicit Invocation
- Rules for Compensation
- Compensation Logic Details
- Interface Specification
- Implicit Compensation - Process-Pattern Mapping
- Explicit Compensation - Process-Pattern Mapping

REST Services

This unit examines details for REST Services.

- REST Fundamentals
- REST Support in BusinessWorks
- REST Architectural Elements
- REST Architectural Elements and Implementations
- Defining a RESTful Service
- BusinessWorks REST Wizard
- Completing REST Services Definition
- Filling in the Details
- REST Operation Details



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- Testing a RESTful Service
- Business Case Implementation

Testing and Debugging

This unit describes the application debugging environment.

- Building an Application
- Running an Application
- Testing Applications using Business Studio
- Runtime Details
- Testing an Application
- Differentiating Between Testing Options
- The BusinessWorks Debugger
- Setting and Using Breakpoints
- Viewing Job Data
- Setting up Debugging Details
- Using the Debug Mode
- BusinessWorks and OSGI
- Debugger Deployment Details

Developing REST Clients

This unit examines the REST client capabilities of Business Works. It examines the fundamentals of JSON (JavaScript Object Notation) and discusses the conversion capabilities between XML and JSON.

- Representational State Transfer (REST)
- SOAP vs REST
- JavaScript Object Notation (JSON)
- REST and JSON Palette Overview
- Invoke REST API
- Parse JSON and Render JSON
- Conversion between XML and JSON



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- Normal Conversion
- Badgerfish Conversion
- Business Case Implementation
- Process-Pattern Mapping

Local Application Deployment

This unit examines the local mode for application deployment. The bwadmin tool is examined in detail and the runtime components of local mode are also identified and discussed.

- Comparing Deployable Archives
- BusinessWorks and OSGi
- BusinessWorks Application Startup
- Generating a EAR File
- Comparing Deployment Options
- Local Mode: Runtime Components
- Deploying an Application
- Defining Objects using bwadmin
- Uploading Archives and Deploying Applications
- Local Deployment Mode

Enterprise Mode

This unit describes the enterprise mode and also creation of runtime entities in enterprise mode.

- Enterprise Deployment Concepts
- Enterprise Mode: Communication and Data Storage
- Data Persistence using TIBCO ActiveSpace
- TIBCO Enterprise Administrator
- TIBCO Enterprise Administrator Architecture
- Setting up TEA for BusinessWorks
- TIBCO Enterprise Administrator Features
- BusinessWorks Administration Views



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Deployment Options

This unit explores the various deployment options available for TIBCO BusinessWorks.

- Deployment Options
- Command Line Option
- bwdesign commands
- Runningbwdesign
- Importing Modules into a Workspace
- Exporting As Enterprise Archive
- Deploying EAR: bwadmin
- Deployment Choice 2: TIBCO Business Studio
- Application Deployment Details
- Deployment Choice 3: TIBCO Enterprise Administrator
- Process Details

Debugging Applications

This unit explores the debugging techniques for deployed applications.

- BusinessWorks and OSGi
- AppNode Details
- Engine Execution Details
- BusinessWorks Application Startup
- Examining Application Runtime Details
- Enhanced Logging for AppNode
- Understanding Error Types
- Updating Logging Level
- Using the AppNodeOSGi Console
- Useful OSGi Commands
- OSGi Commands for Detailed Information
- Using Business Studio for Debugging



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- Enabling Remote Debugging
- Connecting to Remote Application
- Remote Debugging Features