

AVEVA SYSTEM PLATFORM PART 1



APPLICATION SERVER / INTOUCH FOR SYSTEM PLATFORM

COURSE DESCRIPTION

The AVEVA™ System Platform Part 1 course is a 5-day, instructor-led class designed to provide an overview of the features and functionality of AVEVA Application Server and AVEVA InTouch for System Platform. This course provides lectures and hands-on labs to supply and reinforce the knowledge necessary to use these features and functions for plant modeling and HMI design.

The AVEVA System Platform Part 1 course is divided into two chapters, Engine and Client:

Engine (Chapter 1) demonstrates how to use Application Server technology to connect to field devices, process data, run scripts, handle alarms, and historize alarms and events. This course also provides a fundamental understanding of application maintenance, real-time alarm recording, and security settings and describes how to set up redundancy for data acquisition.

Client (Chapter 2) is designed to provide an overview of the features and functionalities released with InTouch for System Platform. It covers the components and capabilities of the software, as well as topics to help you build and deploy an InTouch for System Platform visualization application. It also introduces tools for creating graphics, visualizing alarms, events, trends, and history, and implementing security in an InTouch for System Platform application. Hands-on labs are provided to reinforce the knowledge necessary to use the InTouch for System Platform software.

ENGINE (CHAPTER 1) OBJECTIVES

- Create a new application
- Model the plant floor
- Acquire data from field devices
- Configure data communication redundancy
- Work with alarm and history configurations
- Maintain application functionality using import and export
- Define the security model for the application
- Apply application engine redundancy capabilities
- Implement .NET scripting to enhance application functionality
- Backup and restore a project

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CLIENT (CHAPTER 2) OBJECTIVES

- Describe InTouch for System Platform visualization components
- Create and run visualization applications
- Describe situational awareness concepts
- Create and use graphics
- Implement navigation for visualization applications
- Implement alarm visualization
- Implement real-time and historical trending
- Implement visualization application security
- View graphics in a browser

AUDIENCE

Individuals who need to create, configure, or modify projects for AVEVA Application Server or InTouch.

PREREQUISITES

Familiarity with Windows PCs and industrial automation concepts.

ENGINE (CHAPTER 1) COURSE OUTLINE AVEVA APPLICATION SERVER

MODULE 1 - INTRODUCTION

- Section 1 – Course Introduction
- Section 2 – AVEVA System Platform Overview
- Section 3 – AVEVA Application Server Overview
 - *Lab 1 – Creating the Galaxy*
- Section 4 – The Integrated Development Environment (IDE)
- Section 5 – Automation Objects
 - *Lab 2 – Creating Global Derived Templates*
- Section 6 – Encrypted Communications
- Section 7 – System Requirements and Licensing

MODULE 2 - APPLICATION PLANNING

- Section 1 – AVEVA Application Server Project Workflow
- Section 2 – Case Study

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MODULE 3 - APPLICATION INFRASTRUCTURE

- Section 1 – The Plant Model
- Section 2 – The Deployment Model
 - *Lab 3 – Creating the Plant and Deployment Models*
- Section 3 – Operations Control Management Console
- Section 4 – The Runtime Environment
 - *Lab 4 – Using Object Viewer*
- Section 5 – Data Simulation
 - *Lab 5 – Configuring for Data Simulation*

MODULE 4 - APPLICATION OBJECTS

- Section 1 – Introduction to Application Objects
- Section 2 – Object Attributes
 - *Lab 6 – Modeling Meters*
- Section 3 – Change Control and Propagation
 - *Lab 7 – Configuring Change Control and Propagation*
- Section 4 – Containment
 - *Lab 8 – Modeling the Mixer*

MODULE 5 - DEVICE INTEGRATION

- Section 1 – Device Integration Servers
 - *Lab 9 – Configuring the OI Server*
- Section 2 – Device Integration Objects
 - *Lab 10 – Configuring the Device Integration Object*
- Section 3 – Connecting Application Objects to Field Data
 - *Lab 11 – Connecting the Mixer to the Field*

MODULE 6 - HISTORY

- Section 1 – Historizing Data for AVEVA Application Server
 - *Lab 12 – Configuring and Retrieving History*

MODULE 7 - ALARMS AND EVENTS

- Section 1 – Alarms and Events Overview
 - *Lab 13 – Configuring and Interacting with Alarms*

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MODULE 8 – OBJECT MANAGEMENT

- Section 1 – Object Export and Import
 - *Lab 14 – Exporting and Importing Objects*
- Section 2 – Galaxy Dump and Galaxy Load
 - *Lab 15 – Configuring Instances Using a .CSV File*

MODULE 9 – SECURITY

- Section 1 – Security Overview
 - *Lab 16 – Configuring Security*
- Section 2 – Object Security
 - *Lab 17 – Implementing Object Security*

MODULE 10 – APPLICATION REDUNDANCY

- Section 1 – Application Redundancy
 - *Lab 18 – Configuring Application Redundancy*
- Section 2 – Device Integration Redundancy
 - *Lab 19 – Configuring the Redundant DI Object*

MODULE 11 – INTRODUCTION TO QUICKSCRIPT.NET

- Section 1 – Introduction to Scripting
 - *Lab 20 – Adding Auto Reconnect to the DDESuiteLinkClient Object*
 - *Lab 21 – Switching Back to the Primary Redundant Engine*
- Section 2 – Variables and Control Statements
 - *Lab 22 – Scripting Valve Status*
 - *Lab 23 – Scripting Custom Alarms*
 - *Lab 24 – Creating an Averager Object*

MODULE 12 – GALAXY BACKUP AND RESTORE

- Section 1 – Galaxy Backup and Restore

CLIENT (CHAPTER 2) COURSE OUTLINE

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MODULE 1 – APPLICATION REDUNDANCY

- Section 1 – Course Introduction
- Section 2 – AVEVA System Platform Overview
 - *Lab 1 – Creating and Deploying the Galaxy*
- Section 3 – Visualization Overview
- Section 4 – Encrypted Communication
- Section 5 – System Requirements and Licensing

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MODULE 2 - GETTING STARTED

- Section 1 – Introduction to InTouch Visualization
- Section 2 – InTouch Automation Objects
 - *Lab 2 – Creating a Managed InTouch Application*
- Section 3 – Introduction to the InTouch Development Environment
 - *Lab 3 – Building the Application Layout*
- Section 3 – Runtime Environment and Application Design
 - *Lab 4 – Deploying an InTouch Application*

MODULE 3 - SYMBOLS

- Section 1 – Symbol Overview
- Section 2 – Graphic Editor
 - *Lab 5 – Building a Process Overview*
- Section 3 – Graphics with Objects
 - *Lab 6 – Creating the Mixer Components*
- Section 4 – Graphic Editor Tools and Animations
 - *Lab 7 – Creating the Mixer Display*
- Section 5 – The OwningObject Property
 - *Lab 8 – Switching Between Mixers*
- Section 6 – Custom Properties
 - *Lab 9 – Creating a Custom Symbol*
- Section 7 – Scripts in Graphics
 - *Lab 10 – Creating a Navigation Symbol*
- Section 8 – Galaxy Styles

MODULE 4 - WIDGETS

- Section 1 – Widgets Overview
 - *Lab 11 – Creating a Carousel Dashboard*

MODULE 5 - ALARMS AND EVENTS VISUALIZATION

- Section 1 – Alarming Overview
 - *Lab 12 – Applying Alarm Border Animation*
 - *Lab 13 – Building an Alarm Aggregation Overview*
- Section 2 – Live Alarms Visualization
 - *Lab 14 – Building a Live Alarm Display*
 - *Lab 15 – Creating an Alarm Popup Symbol*
- Section 3 – Logged Alarms and Events Visualization
 - *Lab 16 – Building a Historical Alarm Display*

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MODULE 6 - TREND VISUALIZATION

- Section 1 – Historization Overview
- Section 2 – Real-Time Trending
 - *Lab 17 – Adding Trending to Graphics*
- Section 3 – Multi-Pens Trend
 - *Lab 18 – Creating a Trend Popup Symbol*
- Section 4 – Historian Client Trend Control
 - *Lab 19 – Building a Historical Trend Display*

MODULE 7 - SECURITY

- Section 1 – Security Overview
 - *Lab 20 – Using Security Features in Graphics*
- Section 2 – Signed Writes
 - *Lab 21 – Signing Writes from InTouch*
- Section 3 – Customization of the Runtime Environment
 - *Lab 22 – Locking Down Your Application*

MODULE 8 - WEB CLIENT

- Section 1 – Web Client Overview
 - *Lab 23 – Using the Web Client*