Historian Server 2017 Update 2

Course Description

The Historian Server 2017 Update 2 course is a 2-day, instructor-led class designed to provide a fundamental understanding of the features and functionality of Historian Server for both Application Server and Traditional InTouch tag-based applications. This course provides lectures and hands-on labs to supply and reinforce the knowledge necessary to use Historian Server for SCADA and factory data. This information includes how to configure, historize, and retrieve historical data; retrieve auto-summary data; implement data replication to a remote historian; insert, update, and import historical data; and employ the Historian Classic Event system.

Objectives

Upon completion of this course, you will be able to:

- Start and configure Historian Server
- Configure and historize Application Server and InTouch data
- Distinguish between retrieval modes
- Retrieve data with SQL queries
- Use time domain extensions in SQL queries
- Update, insert, and import historical data
- Create and configure events and retrieve event data
- Use a Tier-2 Historian for replication and summarization
- Back up and restore Historian data

Audience

Individuals who need to historize, analyze, and maintain data from Application Server or from a Standard (tag-based) InTouch application

Prerequisites

Knowledge of the following tools, features, and technologies is required:

- For all students:
  - Industrial automation software concepts
  - Structured query language fundamentals for data retrieval
- For historizing data from Application Server:
  - ArchestrA IDE
  - Automation Objects
  - Historization of attributes
  - Deployment Model
  - Object Viewer
- For historizing data from InTouch tags:
  - InTouch tag development

Course Outline

Module 1 – Introduction

Section 1 – Course Introduction

This section describes the Historian Server course objectives and agenda.

Section 2 – Introduction to Historian Server

This section describes the main functions and features of Historian Server and explains the capabilities of Wonderware Online.

Section 3 – System Requirements and Licensing

This section provides an overview of the general hardware recommendations and software requirements for Historian. It also explains the licensing model.

Module 2 – Historian Configuration

Section 1 – Configurator

This section describes the Historian Server configuration options: alarm options, the ArchestrA SMC access, and how to drop and recreate a database. It also discusses the Historian security options, describes the Historian search configuration, and explains the Historian reporting configuration.

Section 2 – Historian and the System Management Console

This section describes the ArchestrA System Management Console (SMC). It provides an overview of its interface and explains how to set startup permissions and start Historian, as well as use it to register Historians. It also describes Historian options and system parameters, and discusses Historian history block configuration and behavior.

Module 3 – Historian and System Platform

Section 1 – Integrating Historian with System Platform

This section explains the basics of how Historian Server integrates with the Galaxy. It also describes how to configure platforms, engines, and object attributes for historization.

Module 4 – Historian and Traditional InTouch

Section 1 – IDAS: Historian and InTouch

This section explains the basics of historizing data from tag-based InTouch applications (IDAS). It describes the Tag Importer Wizard, defines storage options, and explains manual tag configuration.

Module 5 – Data Retrieval

Section 1 – Insight

This section describes how to retrieve data using an on-premises version of Insight. It explains the different methods of data representation. It also discusses block gap behavior when retrieving data. In addition, it explains how to add annotations to a chart and how to save and share content with Insight.

Section 2 – Data Retrieval Subsystem

This section describes the Historian Server data retrieval subsystem, the Historian OLE DB provider, and extension tables for history data. It explains the syntax for basic SQL queries and demonstrates how to use Live, History, Wide History, and Summary History options for retrieved data. It discusses

the Auto-Summary features of Historian and explains the syntax for the OPENQUERY function in SQL queries.

Section 3 – Retrieval Modes

This section describes Historian Server retrieval modes, with a focus on Cyclic, Delta, and Full. It also explains how to use retrieval modes in SQL queries.

Section 4 – Retrieval Options

This section describes Historian Server retrieval options, with a focus on wwResolution, wwCycleCount, wwEdgeDetection, and wwFilter. It also explains the usage of wwRetrievalmode = Startbound/Endbound when querying history.

Section 5 – Advanced Retrieval Modes

This section describes phantom cycles. It defines Historian Server advanced retrieval modes, including Counter, Integral, Interpolated, RoundTrip, and Slope.

Module 6 – Manual Data

Section 1 – Data Definitions

This section defines Historian data categories. It explains original versus revision data, as well as streamed versus non-streamed original data.

Section 2 – INSERT and UPDATE Query Syntax

This section describes data versioning and explains the INSERT and UPDATE query syntax.

Section 3 – Importing and Backfilling Historical Data

This section describes the methods of importing historical data using a .CSV file. It discusses Historian data folder methods and executable methods, and explains how to backfill Auto-Summary data.

Section 4 – Importing Data with Questionable Quality

This section discusses the effects of data quality when importing historical data. It also explains the wwQualityRule options when querying historical data.

Module 7 – Historian Events

Section 1 – Classic Event Subsystem

This section describes the Historian classic event subsystem. It explains how to configure event tags and latency in event configuration. It also defines event tags, detectors, and actions.

Section 2 – Event Data Retrieval

This section describes Historian tables related to the classic event subsystem. It also explains how to retrieve event data with SQL queries.

Section 3 – Active Event

This section describes the ActiveEvent .NET and ActiveX controls and explains methods for triggering an external event using ActiveEvent.

Module 8 – Summaries and Data Replication

Section 1 – Data Summarization and Replication

This section explains the concept of Tiered Historians, describes analog and state summary replication, and explains naming schemes from the replication process. It describes how to

summarize data locally, as well as how to summarize to a Tier-2 Historian. It also describes how to do simple replication to a Tier-2 Historian.

Section 2 – Summarized and Replicated Data Retrieval

This section describes how to retrieve summarized and replicated data from a Tier-2 Historian. It also reviews AnalogSummaryHistory and StateSummaryHistory views.

Module 9 – Historian Maintenance

Section 1 – History Block Maintenance

This section explains how to back up history blocks.

Section 2 – Historian Database Management

This section explains how and when to back up Historian Server databases.