

Informatica Power Center 10.1 Developer Training

Course Overview

An introduction to Informatica Power Center 10.x which is comprised of a server and client workbench tools that Developers use to create, execute, monitor and schedule ETL processes. Work through the Power Center Designer, Workflow Manager, and Workflow Monitor tools while performing tasks such as creating source and target definitions, transformations, mappings, reusable objects, sessions and workflows to extract, transform and load data.

Objectives

After completing this course, students should be able to:

- Utilize Power Center Designer to build mappings that extract and load data with the necessary transformations.
- Deploy Power Center transformations to cleanse, format, join, aggregate and route data to appropriate targets.
- Perform error handling/trapping using Power Center mappings.
- Use Power Center Workflow Manager to build and run workflows which execute sessions associated with a mapping and to control data transformation processes.
- Complete basic troubleshooting using Power Center logs and debugger.

Target Audience

- Data Integration developers with little or no experience of Power Center.
- Database developers new to Informatica Power Center.

Prerequisites

- Windows GUI
- Understanding of RDBMS concepts
- Knowledge of SQL

Course Duration (36 Hours)

- Weekday Batches (Monday to Friday) – 24 sessions
- Weekend Batches (Saturday and Sunday) – 12 sessions

Fee Structure

- Per student – Rs. 10000 / \$ 150 (For U.S learners)
- Corporate Batches – Rs. 40000 (for 5 learners) & Rs. 60000 (for 10 learners)

Course Agenda

Chapter 1: Data Warehousing Basics and Overview of Informatica Power Center

- Basics of Data Warehousing
- Characteristics of a Data Warehouse
- OLTP and OLAP systems
- Data Warehouse Architecture
- Types of Data Warehouse
- ODS v/s Data Warehouse
- Data Marts
- Data Integration using ETL
- ETL Process Overview
- Data Analysis Techniques
- Data Warehouse Architecture choices
- Implementation choices
- Difference between Top Down and Bottom Up Approach
- Data Granularity
- Logical v/s Physical Data Model
- Data Modeling Techniques
- E-R Model and Dimensional Model
- What is a Fact?
- Types of Facts
- Designing Fact Tables
- What is a Dimension?
- Types of Dimensions
- Slowly Changing Dimensions – Type 1, Type 2 and Type 3
- Star Schema, Snowflake Schema and Fact Constellation Schema
- Introduction to Power Center
- Service Oriented Architecture (SOA)
- Overview of Power Center 9.x and above Architecture
- Concept of Domain, Nodes and Grids
- Service Manager
- Application Services and Core Services
- Repository Service and Integration Service
- Informatica Repository
- Metadata
- Overview of Power Center Client Components
- New features in Power Center 10.x

Chapter 2: Working with Power Center Designer and Transformations

- Getting Started with Informatica Power Center 10.1
- Overview of Repository Manager Interface
- Overview of Designer and Workflow Manager

- Introduction to Mappings and Transformations
- Design first mapping using Designer
- Run first workflow using Workflow Manager
- Working with Relational Database and Flat File sources
- Working with Relational Database and Flat File targets
- Active and Passive Transformations
- Data Flow rules in a mapping
- Connected v/s Unconnected Transformations
- Understanding Transformation ports
- Working with Source Qualifier Transformation
- Homogenous joins using Source Qualifier
- User Defined Source Qualifier join
- Multiple source pipelines
- Overview of Expression Transformation
- Expression editor and Expression functions
- Variable ports in Expression Transformation
- Filter Transformation
- Router Transformation
- Sorter Transformation
- Use of Sorter Cache
- Aggregator Transformation
- Aggregator with Sorted Input
- Aggregator Caches
- Use of Joiner transformation
- Join Types
- Master and Detail pipelines in Joiner
- Understanding Joiner Caches
- Tips and Guidelines to use Aggregator and Joiner
- Sequence Generator Transformation and properties
- Lookup functionality
- Lookup Transformation overview
- Understanding lookup caches
- Static and Dynamic Lookup Caches
- Use of Persistent Cache
- Working with Dynamic Lookup
- Unconnected Lookup transformation
- Connected v/s Unconnected Lookup
- Joiner v/s Lookup
- Implementing Active lookup transformation
- Update Strategy Transformation
- Update strategy expressions
- Rank Transformation Overview
- Understanding Rank Caches
- Union Transformation
- Normalizer Transformation Overview
- Converting columns to rows using Normalizer

Chapter 3: Working with Workflow Manager and Workflow Monitor

- Overview of Workflow Manager interface
- Understanding Tasks and Sessions
- Link conditions
- Command Task and Email Task
- Event Raise and Event Wait Task
- Control Task, Decision Task and Timer Task
- Assignment Task
- Scheduling Workflows
- Using File Lists
- Overview of Workflow Monitor interface
- Task view and Gantt Chart view
- Stop, Abort and Restart tasks and workflows
- Monitoring session run statistics
- Analyzing session logs and workflow logs

Chapter 4: Advanced Transformation Techniques

- Overview of Stored Procedure Transformation
- Stored Procedure transformation ports
- Unconnected Stored Procedure
- Stored Procedure types
- Overview of SQL Transformation
- Using SQL Transformation Script Mode
- Script Mode rules
- Using SQL Static Query mode
- Using SQL Dynamic Query mode
- Database Dynamic Connection Type
- Working with Transactions
- Transaction commit types
- Understanding Target Based Commit
- Commit Interval and Buffer Blocks
- Handling Target Load Order Groups
- Understanding Source Based Commit
- Constraint Based Loading
- User defined commit and Transaction Control transformation
- Transaction control actions
- Transaction control and commit types
- Transformation Scope
- Java Transformation Overview
- XML Overview
- XML file formats – XSD and DTD
- Reading XML sources
- Working with XML targets
- XML views – ER, Normalized and Denormalized hierarchy

- XML Parser Transformation
- XML Generator Transformation

Chapter 5: Reusability

- Using Reusable Transformations
- Mapplet overview
- Data sources defined outside mapplet
- Data sources defined inside mapplet
- Mapplet Input Transformation
- Mapplet Output Transformation
- Mapplet with multiple output groups
- Active and Passive mapplets
- User Defined Functions
- Using Public and Private UDF's
- Using Reusable Tasks
- Worklet overview
- Reusable and non-reusable worklet

Chapter 6: Parameters and Variables

- Declaring Mapping Parameters and Variables
- Initialization priority of parameters and variables
- User defined session parameters
- Service Variables and Service Process Variables
- Maintaining parameter files
- System variables
- Functions to set Mapping Variables
- Built in and User defined Workflow Variables
- Mapplet parameters and variables
- Worklet parameters and variables

Chapter 7: Error Handling, Troubleshooting and Recovery

- Transformation Errors and Data Reject
- Session Error Logging options
- Error Logging in Relational Database
- Error Logging in Flat file
- Log Row Data and Source Row Data
- Custom Error Logging
- Fatal and Non-Fatal Errors
- Use of ABORT() and ERROR() functions
- Error troubleshooting techniques
- Using Debugger Interface
- Setting Breakpoints in Debugger
- Using Workflow and Session Recovery

- Workflow State of Operation
- Session State of Operation
- Using Cold Start option
- Recovering suspended workflows
- Automatic Recovery of workflows and sessions

Chapter 8: Performance Tuning and Optimization

- Preliminary steps for performance tuning
- Benchmarking
- Understanding Thread Statistics
- Using Thread Statistics
- Analyzing session performance counters
- Identifying Bottlenecks
- Order of identifying bottlenecks
- Target, source and transformation bottleneck
- Methods of Bottleneck isolation
- Target Optimization Techniques
- Source Optimization Techniques
- Tuning transformations and mapping design
- Memory Optimization
- Understanding DTM Buffer
- DTM Buffer Size and Buffer block size
- DTM buffer bottlenecks
- Tuning DTM Buffer
- Tuning Transformation Caches
- Use of Cache calculator
- Manual tuning of Aggregator caches
- Manual tuning of Joiner caches
- Fine tuning Lookup caches
- Concurrent Lookup Caching
- Manual tuning Sorter and Rank caches
- Session Optimization Techniques
- Grid Optimization
- Concurrent execution of workflows
- Partitioning Overview
- Understanding Threads and Partition points
- Types of partitions
- Implementing pass-through and Round Robin partitions
- Understanding Database partitions
- Using Hash Auto Key and Hash User Key partitions
- Dynamic partitioning
- Transformation rules for partitioning
- Working with Flat file partitions
- Understanding Pushdown Optimization
- Source Side, Target Side and Full PDO

- Pushdown optimization guidelines

Chapter 9: Working with Repository Manager and Administration Console

- Repository Manager overview
- Working with Folders and Labels
- Import and export XML's
- Comparing objects
- Working with Queries
- Viewing dependencies of objects
- Creating static and dynamic deployment groups
- Migrating objects
- Overview of Administration Console
- Domain, Node and Service properties
- Creating Users, Groups and Roles
- Assigning Roles and Permissions

Chapter 10: Command Line Utilities

- Infasetup program
- Infacmd program
- Pmcmd program
- Pmrep program

Chapter 11: Real Time Implementation Scenarios

- Implementing Type 1, Type 2 and Type 3 SCD
- Implementing Changed Data Capture (CDC)
- Implementing Incremental Aggregation
- Practice sets on Interview based scenario questions
- Basic Unix shell scripting for real time implementations

Chapter 12: Real Time Project

- Informatica Velocity Standards overview
- Project Requirement walkthrough
- Preparing project level documents – TDD, S2T, UTCL
- Preparing mappings, session and workflows to load a data mart (dimensions and fact tables)
- Submit XML's for review

Installation Support

- Informatica Power Center 10.1 installation in personal systems (Windows/Unix OS).
- Informatica Power Center 10.1 installation in Google/Amazon Cloud VM instance using Microsoft Windows Server 2008/2012.