



Pentaho Training Course Catalog 2010 Edition

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Introduction to Pentaho Training

Thank you for your interest in Pentaho Training! By investing in training, you have taken a significant step in becoming productive in your implementation of Pentaho products. Even seasoned professionals benefit from regular training to remain up-to-date with the latest Pentaho BI technologies and techniques. Pentaho Training offers industry leading, high value, and actionable instruction designed to give you a high return on your investment, to increase your probability of success, and to teach you the skills to take full advantage of Pentaho’s BI technology.

Choosing the Right Course

One size definitely does not fit all. We understand that different users require different knowledge and skills. Each Pentaho Training course is targeted to match knowledge areas and skills to specific audiences. Use the course numbers (described below) and the description of each course to choose the best courses for you.

Course Numbers

Course numbers uniquely identify each course and can be used to quickly discover the content of the course, the experience level of its targeted audience, and its delivery mode. For example, the course number of the Reporting Design Techniques course (RPT1175W) identifies this web-based course as a member of the *Reporting* knowledge area and an entry-level course.

Knowledge Areas	Description
SLN K n o w	Solutions Overview courses that present a broad and conceptual view of the tools of the Pentaho BI Suite. These courses are designed for solution architects and business analysts interested in learning the methodologies and tools involved in end-to-end solution development.
ADM e d g	Administration Product courses designed to teach the skills and tools involved in installing, configuring, and maintaining the Pentaho BI Suite. These courses are designed for administrators and system integrators.
eALY A	Analysis Product courses targeted at teaching the functionality and use of the tools associated with Pentaho Analysis. These courses are designed for OLAP developers.
rPDI e a	Data Integration Product courses targeted at teaching the functionality and use of the tools associated with Pentaho Data Integration. These courses are designed for ETL developers.
SRPT O u	Reporting Product courses targeted at teaching the functionality and use of the tools associated with Pentaho Reporting. These courses are designed for report authors and developers.

Our courses are organized into knowledge areas to help you choose the right course. In terms of content, there are two types of courses: solution courses and product courses. Solution courses teach concepts and methodologies, present a broad view of the Pentaho BI Suite, and involve several products. They are intended to teach the skills to architect entire BI solutions. The product courses, however, are more task-

focused and are targeted for specific product areas such as reporting, administration, data integration, and analysis. They present a more comprehensive exploration of specific tools of the Pentaho BI Suite.

Class Level

The numerical part of each course number identifies the course level. The first digit of the course level indicates the experience level of the targeted audience. Beginning with entry-level courses in the 1000s, the higher the class level the more experience and knowledge is required to maximize the impact of the content.

Class Delivery

The last character of the course number indicates the delivery mode: classroom (C) or web-based (W). All courses are instructor-led to maximize instruction through lectures, instructor-led demonstrations, and interaction with Pentaho Certified Instructors. Classroom delivered courses also use hands-on exercises to reinforce the instruction. Pentaho schedules courses at various locations worldwide. On-line courses are scheduled for various time zones and are offered as a series of 3-hour sessions.

Tailored On-site Courses

Although Pentaho Training courses address different audiences, project requirements and constraints may require specialized training or limited disruption. For that reason, our courses can also be tailored and delivered as on-site. That is, we can partner with you to tailor a course to meet your specific needs and teach the course at your location!

Course Requirements

Students will need a Microsoft® Windows XP or Vista computer with a 1GHz CPU, 1 GB RAM, and a DVD drive, and 750 MB of available hard drive space in order to fully participate in the classroom delivered courses. We suggest the computer have at least a 1.3 GHz CPU, 2 GB of memory, and 1 GB of available hard drive space. A text editor such as Notepad may be needed for some of the exercises. On-line courses require a broadband Internet connection and a modern web browser such as Microsoft® Internet Explorer™ 7 or Mozilla Firefox® 3.0. Visit <http://developers.webex.com/api/jointest/index.php> to verify your connection speed and browser compatibility for on-line courses.

Pentaho's training team is here to partner with you in realizing the power of the Pentaho BI Suite. Feel free to contact us if you have any questions or if you would like to suggest additional courses or training locations. Visit the training page on the Pentaho Web-site to register for one of the scheduled courses or to begin the process of tailoring your on-site course. We look forward to meeting your training needs!

Pentaho Training Team

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Foundation Courses

Pentaho BI Suite Bootcamp

Course Information

Course No	Instruction Format	Delivery Mode	Duration
SLN5000	Instructor-led lecture/lab	Classroom	5 days

Course Benefits

Business Intelligence (BI) is a valuable tool to gain visibility into the health of departments, businesses, and business processes. The Pentaho BI Suite provides a platform—including a server, client tools, and supporting technologies—that enable a full spectrum of BI functionality. This course provides a fast-paced, hands-on overview of the Pentaho BI Suite for consultants and those experienced with existing BI products.

Learning Objectives

At the completion of this course, you should be able to:

- Understand the architecture of the Pentaho Business Intelligence (BI) Suite
- Create a Pentaho BI solution from start to finish during class exercises.
- Describe and demonstrate the reporting end-user experience with the Pentaho BI Server
- Use PDI and ETL to populate a basic data warehouse star schema
- Perform multiple data transformations
- Develop basic OLAP schemas for and using Pentaho Analysis
- Build and deploy reports
- Discover the different ways to create and deploy a Pentaho Dashboard

Who Should Attend

This course is designed for system administrators, system integrators, content developers, software developers, BI consultants, and others with previous experience creating BI solutions. This course is valuable to anyone with a basic understanding of SQL and relational database concepts.

Course Prerequisites

This course has no Pentaho Training course prerequisites. This is a fast paced course intended for technical consultants or those experienced in BI.

Course Requirements

Students will need a Microsoft® Windows XP or Vista computer with a 1GHz CPU, 1 GB RAM, and a DVD drive, and 750 MB of available hard drive space in order to fully participate in the classroom delivered courses. We suggest the computer have at least 1.3 GHz CPU, 2 GB of memory, and 1 GB of available hard drive space. Make sure you have a text editor such as Notepad; you may need it for some of the exercises.

Course Outline

Day 1

Module	Est. Duration (hours)
Pentaho Platform Concepts Discusses the concepts of Business Intelligence and architecture of the Pentaho BI platform. A brief demonstration and discussion of the different BI tools, and when to use each.	2
Installation of the Pentaho BI Suite Provides experience installing the Pentaho BI Suite including adding a Data Source to the Enterprise console.	1
Analysis Solutions Overview Presents an overview of the concepts and typical architecture of analysis solutions, including star schemas, fact tables and dimensions.	1
Dimensional Modeling Describes and provides hands-on experience with dimensional modeling and building star schemas.	2
ETL and Pentaho Data Integration Overview Explores the concepts and basics of extract, transform, load tools and Pentaho Data Integration. Using the Database Explorer, the automatic creation of SQL to create or alter a relational table. Using the Copy Table Wizard to easily create a new table and load it with data.	2

Day 2

Module	Est. Duration (hours)
Pentaho Data Integration Provides hands on experience with the techniques to pull data from a data source (flat file, relational table, excel files, etc) and move the data to another source. Labs will load relational from the source OLTP schema to a Star Schema designed on Day 1.	4
Look-ups and Field Transformations Provides experience with the techniques for performing look-ups, joining various sources of data, and transforming individual fields during transformations.	2
Set and Pivot Transformations Builds on the Look-ups and Field Transformations module by exploring for sorting and manipulating sets of data.	2
Jobs and Transformations Explores techniques for arranging transformations into jobs including the scheduling of jobs. Steps discussed include, FTP, SFTP, file creation, waiting for a file, sending email at the success of a job and others.	1

Day 3

Module	Est. Duration (hours)
Pentaho Analysis Introduces the tools, concepts, and architecture of Pentaho Analysis. Students create a Mondrian cube against the star schema created on Day 2, then drill and pivot the data using the Pentaho Analysis Tools.	1
Schema Workbench Students will learn how to use Schema Workbench to create a basic Analysis cube containing Measures, Dimensions and Hierarchies'.	1
Advanced Concepts The importance of Time Dimensions, Calculated Measures, Higher Level Calculations and a brief introduction to the power of MDX.	6

Day 4

Module	Est. Duration (hours)
Introduction to the Reporting Concepts Introduction of the Report Designer to produce high fidelity reports, including Sub Report, Charts, Parameter Screens, Calculations and Expressions.	5
Report Wizard Explores techniques for creating and publishing a report using the Report Wizard, and using the Query Designer to visually create the SQL for the report.	1
Report Designer Provides hands on experience with connecting to a Dataset, Design Elements, the use of Hyperlinks to drill from one report to another, Charts, Groupings, and SubBands.	1

Day 5

Module	Est. Duration (hours)
Parameterized Reports Use Expressions to add styles to your report like Traffic Lights and the conditional display of objects, creating report parameter screens, Report Functions for creating row and summary calculations, Sub Reports, and creating a report that display multiple report objects for a "Dashboard Feel".	5
Dashboard Designer Detailed demonstration and lab using the new Dashboard Designer. A discussion of the Community Dashboard Framework.	1
The Pentaho Metadata Layer A brief discussion and demonstration of the MetaData Editor and the Ad-Hoc Reporting Wizard.	1

Analysis

Pentaho Analysis for OLAP Developers

Course Information

Course No	Audience	Delivery Mode	Duration
ALY3050C	OLAP Developers	Classroom	3 days

Course Benefits

Online analytical processing (OLAP) is one of the most powerful technologies to use within Business Intelligence applications and systems. OLAP allows fast, interactive analysis of large volumes of data. The power to explore large amounts of data at the stream of thought allows employees throughout the enterprise to answer critical business questions and make better decisions. This course explores the architecture, concepts, and features of Pentaho Analysis (Mondrian) to harness the power of OLAP, including the use of star and snowflake schemas, the use of aggregate tables, and the integration of Pentaho Analysis and the remainder of the Pentaho BI Suite.

Who Should Attend

This course is designed for BI developers and analysts tasked with developing cubes for online analytical processing (OLAP).

Learning Objectives

At the completion of this course, you should be able to:

- Understand the basic concepts of OLAP
- Employ industry standard BI development methodologies
- Explain the life cycle of Pentaho Analysis cubes
- Understand the basic architecture of Pentaho Analysis and its modules
- Understand the integration of Pentaho Analysis with the Pentaho BI Platform
- Develop star and snowflake OLAP schemas for use with Pentaho Analysis
- Employ OLAP security including cell-level access control
- Utilize aggregates and other techniques to improve Pentaho Analysis performance
- Use dimension sharing to build more expressive and maintainable cubes
- Understand the factors that impact performance

Course Prerequisites

There are no Pentaho Training prerequisites for this course. The course is designed for students with a strong understanding of SQL and relational database concepts and with experience creating and editing XML files. Basic knowledge of ETL and of web-application administration is also suggested.

Course Outline

Day 1

Module	Est. Duration (hours)
Introduction to OLAP and Mondrian (Pentaho Analysis) Introduces the features and use cases for online analytical processing and Mondrian (Pentaho Analysis).	2
Dimensional Concepts Explores the concepts of dimensions and dimensional modeling.	1
Basic Schema Design Uses the Pentaho Schema Workbench to create a basic OLAP schema.	2
OLAP Tools and Clients Demonstrates the various Pentaho tools and clients for OLAP.	2

Day 2

Module	Est. Duration (hours)
Intermediate Schema Design Explores the use of hierarchies, levels, conformed dimensions, and dimension references in schema design.	3
Introduction to MDX Teaches the basic use and syntax of multidimensional expression (MDX) query language for OLAP schemas.	1
Advanced Schema Design Incorporates time dimensions, calculated members, member properties, and format strings into schema design.	3

Day 3

Module	Est. Duration (hours)
Virtual Cubes Introduces the concepts and use cases of virtual cubes.	1
OLAP Security Explores the use of security in OLAP schemas.	2
Performance Considerations Discusses the issues, factors, and techniques for impacting performance.	2
Pentaho Deployment Teaches the techniques involved in and benefits of deploying schemas to the Pentaho BI Platform.	2

Data Integration

Pentaho Data Integration for Database Developers

Course Information

Course No	Audience	Delivery Mode	Duration
PD12000C	Database Developers	Classroom	4 days

Course Benefits

Data is increasingly becoming the currency of business. Efficiently moving and transforming data between business systems and processes are keys to maximizing the use of data to make informed decisions. This course provides foundational theory, best practices, design patterns, and hands-on exercises utilizing Pentaho Data Integration to maximize the value of data to the organization.

Who Should Attend

This course is designed for database developers and administrators; however, it is valuable to anyone with at least two years of experience with SQL and relational database design/implementation.

Learning Objectives

At the completion of this course, you should be able to:

- Understand the basic architecture of Pentaho Data Integration (PDI) and its modules
- Load and write data from and to different data sources
- Join data from different sources
- Perform multiple data transformations
- Use PDI and ETL design patterns to populate a data warehouse
- Influence the performance aspects of databases and PDI
- Develop advanced transformations and jobs
- Build portable and flexible jobs
- Use the logging, monitoring and error handling features
- Use JavaScript and Java classes into transformations
- Load, transform and create complex XML structures
- Retrieve and serve data via web services using PDI and the Pentaho BI Server
- Understand the integration in the Pentaho BI Suite

Course Prerequisites

There are no Pentaho Training prerequisites for this course. This course is designed for students with at least two years of experience with SQL and relational database design/implementation.

Course Outline

Day 1

Module	Est. Duration (hours)
Pentaho Data Integration Overview Presents the purpose, capabilities, and history of Pentaho Data Integration.	3
Introduction to the Training Data and Platform Installs and describes the software and data used in the course.	1
Inputs and Outputs Explores the techniques for retrieving and outputting data within transformations.	3

Day 2

Module	Est. Duration (hours)
Look-ups and Field Transformations Provides hands-on experience with the techniques for data enrichment by performing look-ups, joining various sources of data, and transforming individual fields during transformations.	3
Set and Pivot Transformations Builds on the Look-ups and Field Transformations module by exploring transformation techniques for sorting and manipulating sets of data.	3

Day 3

Module	Est. Duration (hours)
Jobs and Advanced Job Concepts Teaches the techniques for creating jobs that orchestrate transformations as ETL workflows.	3
XML and Web Services Explores using web services to retrieve data and the use of XML as input sources and output destinations.	2
JavaScript and Transformations Teaches the use of JavaScript in transformations.	1
Building Portable Transformations and Jobs Presents techniques for and principles of authoring more portable transformations.	1

Day 4

Module	Est. Duration (hours)
ETL Patterns Discusses the use of common ETL patterns to accelerate transformation authoring.	2
Logging and Error Handling Presents techniques for detecting and handling errors.	2
Performance Tuning Explores topics related to building high performing transformations.	2

Reporting

Pentaho Report Design Techniques

Course Information

Course No	Audience	Delivery Mode	Duration
RPT1175W	Report Authors	Web	12 hrs/4 days

Course Benefits

Reporting needs vary from simple tabular data to financial statements to highly interactive reports. This course teaches the report design techniques to meet almost any reporting need. The course begins with a session that will help users create and publish their first report in less than two hours. The next three sessions build upon that foundation and teach report parameterization, design techniques with sub reports, report functions and calculations, and conditional formatting.

Who Should Attend

This course is designed for report authors and designers with an understanding of SQL and relational database concepts.

Learning Objectives

At the completion of this course, you should be able to:

- Understand the basic architecture and tools of Pentaho Reporting and the Pentaho BI Platform
- Author complex and dynamic reports using the Pentaho Report Designer
- Use the Report Designer to parameterize reports
- Construct reports against several different data sources
- Use hyperlinks within reports to build a network of reports
- Employ calculations and grouping techniques within a report
- Include charts and sub reports in reports
- Create a simple Dashboard using the Pentaho Dashboard Builder

Course Prerequisites

There are no Pentaho Training prerequisites for this course. The course is designed for students with an understanding of SQL and relational database. Basic knowledge of web-applications is also suggested.

Course Outline

Day 1

Session	Est. Duration (hours)
Getting Started Explores the foundational skills involved in designing and publishing reports with Pentaho Report Designer and the Pentaho BI Platform. A detailed demonstration of the features of the Pentaho User Console. Connecting to various Data Sources. Pulling data fields onto the report, adding lines, headings, column titles, and other cosmetic enhancements.	3

Day 2

Session	Est. Duration (hours)
Designing Reports Teaches the skills to design high fidelity reports with a variety of charts, hyper linking, sub reports, and bands using the Pentaho Report Designer. Creating a report with multiple report objects and using multiple queries and multiple report objects to achieve a "dashboard look" for your report.	3

Day 3

Session	Est. Duration (hours)
Parameterizing Reports Introduces the use of Pentaho Report Designer to create parameterized reports, including radio buttons, drop downs, date calendars and tabs. Publishing the report to the Solution Directory so it can be viewed within the Pentaho User Console.	3

Day 4

Session	Est. Duration (hours)
Authoring Dynamic Reports Uses functions, calculations, and style expressions to design dynamic reports that include traffic lighting and conditional formatting. Creating a simple Dashboard using the Pentaho Dashboard Designer.	3