Pentaho Aggregation Designer 1.1 User Guide

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Introduction

This user's guide provides you with instructions for recommending and/or designing aggregate tables. The use of aggregate tables can dramatically improve the query performance of ROLAP solutions.

Assumptions

This document is written for Database Administrators and consultants who design specific aggregate tables or get recommendations for aggregate tables based on an intelligent adviser algorithm. It is assumed that you, the reader, have a strong understanding of database design and concepts (such as database modeling, SQL security, and performance), and are familiar with aggregate table concepts.

Pentaho BI Suite Enterprise Edition Documentation

As an Enterprise Edition customer, you have access to an array of professional documentation in the Pentaho Knowledge Base , including a collection of tech tips and articles, and the following comprehensive guides for users and administrators:

Document Name	Purpose
Customizing the Pentaho User Console	A short but informative developer's guide on how to customize the theme and graphics in the Pentaho User Console
Pentaho BI Suite 3.5 Standard Installation Guide	An installer's step-by-step guide to deploying the BI Suite with the preconfigured Tomcat application server and a MySQL solution database
Pentaho BI Platform 3.5 Manual Deployment Guide	An installer's step-by-step guide to building and deploying the BI Platform and Pentaho Enterprise Console for all supported solution repository databases and application servers
Pentaho BI Suite 3.5 Mac Installation Guide	An installer's step-by-step guide to installing the BI Suite on a Mac
Pentaho BI Suite 3.5 Archive-Based Installation Guide	An installer's step-by-step guide to installing the BI Suite along with a preconfigured Tomcat application server on Windows, Solaris, or Linux by using small, pre-configured ZIP or TAR archives
Pentaho User Console 3.5 Guide	A comprehensive guide to the Pentaho User Console, including the Dashboard Designer plugin
Pentaho BI Suite 3.5 Administrator's Guide	A sysadmin and database administrator's guide to advanced BI Platform configuration, including security integration, product maintenance, and performance tuning
Pentaho Report Designer 3.5 User Guide	A task-based user guide for Report Designer
Upgrading to the Pentaho BI Suite Enterprise Edition 3.5	An administrator's step-by-step guide to upgrading a production system from the BI Suite version 2.x to 3.5

Pentaho Aggregation Designer Overview

The Pentaho Aggregation Designer simplifies the creation and deployment of aggregate tables that improve the performance of your Pentaho Analysis (Mondrian) OLAP cubes. Pentaho Analysis is a pure, relational OLAP engine that works solely with the data stored in your relational database rather than providing its own multidimensional data storage model. This simplifies deployment and data management, but places limitations on performance when working with very large data sets (fact tables with more than 10 million records and/or cubes with a high cardinality of levels and members). To improve performance in these scenarios, Pentaho Analysis supports aggregate tables. Aggregate tables coexist with the base fact table and contain pre-aggregated measures built from the fact table. This improves performance by enabling the Mondrian engine to fulfill certain summary level queries from the smaller aggregate table versus aggregating a large number of individual facts from the base fact table.

The Pentaho Aggregation Designer provides you with a simple interface that allows you to create aggregate tables from levels within the dimensions you specify. Based on these selections, the Aggregation Designer generates the Data Definition Language (DDL) for creating the aggregate tables, the Data Manipulation Language (DML) for populating them, and an updated Mondrian schema which references the new aggregate tables. If you are unfamiliar with aggregate table design concepts, the Aggregation Designer also includes an intelligent adviser that evaluates the structure and cardinality of your OLAP cube and recommends some initial aggregate tables to create for improving performance.

The components of the Pentaho Aggregation Designer workspace are shown below:

Installing the Pentaho Aggregation Designer

This section provides you with information and instructions for installing and configuring the Pentaho Aggregation Designer.

System Requirements

The Pentaho Aggregation Designer requires Java SE runtime version 1.5 or later. Java versions earlier than Java 1.5 are not supported. Pentaho recommends that you have at least 1 Gigabyte of free physical memory. The Pentaho Aggregation Designer 1.0 supports Pentaho Open BI Suite versions 1.7 and higher.

Category	Minimum	Recommended
Disk	CPU	RAM
1 GB	1 GHz (single core)	1GB
10 GB	1.5 GHz + (multi-core)	2 GB

Refer to the table below for operating system support:

Windows	Linux
Windows 2003	Windows XP
Red Hat Enterprise Linux 5	SUSE Linux 10.1

Note: Other versions of the above-listed Linux distributions, and other distributions entirely, will probably work with the Pentaho Aggregation Designer 1.0; however, only the distributions listed here are tested by Pentaho.

Installation Instructions

The **pad-open-1.0-xx.zip** file contains all the libraries and script files necessary to run Pentaho Aggregation Designer. To install the Pentaho Aggregation Designer, unzip this file into a directory of your choice.

To launch the Aggregation Designer on Windows...

Run the **startaggregationdesigner.bat** script located in the root of your installation directory.

To launch the Aggregation Designer on Linux...

Run the **startaggregationdesigner.sh** script located in the root of your installation directory.

CAUTION: Place your JDBC driver JARs in the Drivers directory. Once in this directory, the drivers are added to the classpath automatically when the Pentaho Aggregation Designer starts.