ESPRESSO TUTORIALS

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SAP® BW on SAP HANA

- Tips for upgrading, maintaining, and running SAP BW on SAP HANA
- New reporting paradigm for SAP BW on SAP HANA
- Data loading methods and real-time data acquisition
- SAP HANA data architecture

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2 An introduction to data modeling on EDW on SAP BW on SAP HANA

Data modeling comes with a twist when running SAP BW on SAP HANA. As explained in Chapter 1, SAP HANA is not just an in-memory database but also a platform to build new applications. This means data modeling is also available within SAP HANA itself. Having SAP BW on SAP HANA then entails two distinct modeling environments that can be easily integrated, allowing cross-modeling to support mixed scenarios. One environment is the SAP BW data warehouse workbench, well known by SAP BW consultants. The other modeling environment is SAP HANA studio.

2.1 SAP HANA studio

SAP defines SAP HANA studio as an Eclipse-based development and administration environment for working with SAP HANA. Eclipse itself is an integrated development environment (IDE) written mostly in Java that offers a base workspace extensible via plug-ins. SAP HANA studio is one of such plugins.

Using lesser technical terms, SAP HANA studio is a client tool that allows one to connect to an SAP HANA database to perform typical database administrative tasks as well as to maintain SAP HANA artifacts, such as tables, views, and procedures. In addition, SAP HANA studio also offers user and authorization management and SAP HANA extended application services (XS) for the development of applications based on SAP HANA.

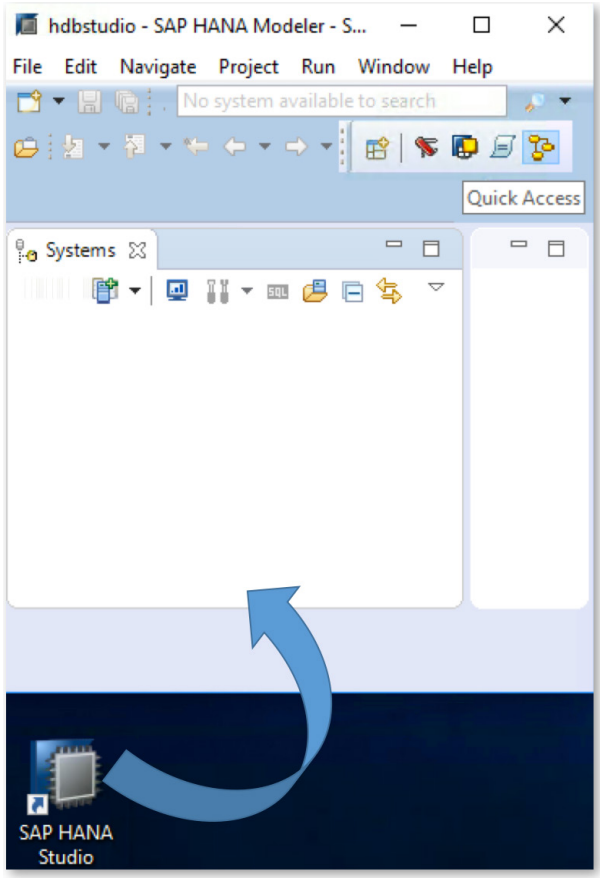

Figure 2.1: Launching SAP HANA studio, an Eclipse-based client tool for development and administration of SAP HANA database

Because it is an Eclipse-based IDE, SAP HANA studio can be opened like any desktop application, as demonstrated in Figure 2.1. As with other Eclipse-based environments, SAP HANA studio offers several perspectives. A perspective is a collection of screen elements that are selected and customized for visualization according to the interaction desired with SAP HANA database. In a nutshell, a perspective is a predefined view of SAP HANA studio. A partial list of the perspectives can be seen in Figure 2.2.

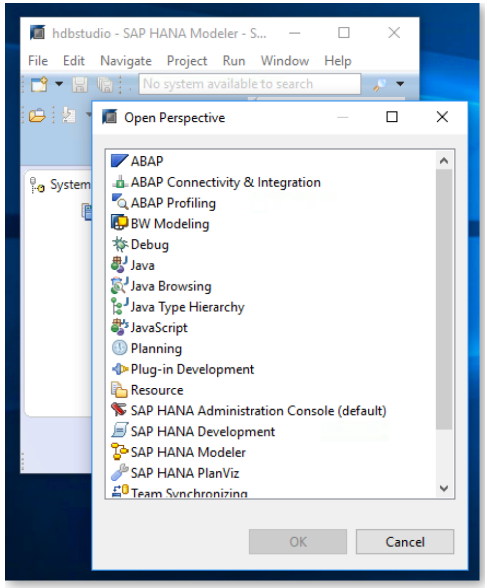

Figure 2.2: Perspectives are predefined views within SAP HANA studio

Two perspectives are of interest when discussing data modeling within an SAP BW on SAP HANA context: SAP HANA modeler perspective and BW modeling perspective. The next sections of this chapters dive into these two perspectives specifically.

BW modeling perspective requirements

The BW modeling perspective is only available for SAP BW 7.4 SP5 and higher. As per SAP documentation, other requirements for the availability of the BW modeling perspective within SAP HANA studio include:

- Windows OS 7 on local PC
- Java Runtime Environment (JRE) 1.6 or higher
- Internet Explorer 7.0 or higher or Firefox 4.0 or higher
- SAP GUI for Windows 7.20, patch level 9 or higher
- SAP HANA studio (32-bit or 64-bit for Windows) SP08 or higher on local PC

2.2 SAP HANA native modeling

SAP HANA native modeling relates to the activities associated with creating views on top of database tables to depict desired business scenarios or address reporting requirements. Figure 2.3 demonstrates SAP HANA studio's modeler perspective and how a user would view his or her home screen. Notice the list of views that can be created. These views are information views in SAP HANA and can be created, changed, and deleted via the SAP HANA modeler perspective.

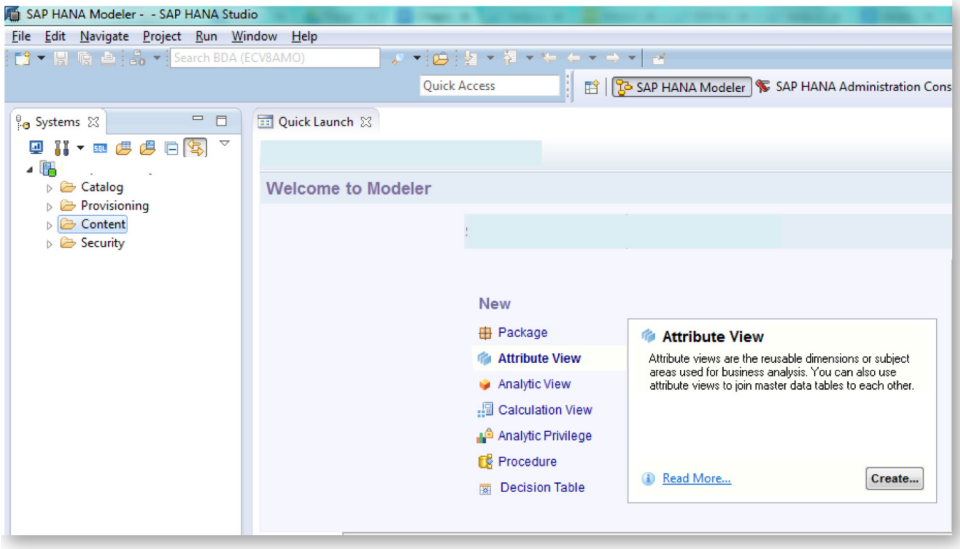

Figure 2.3: SAP HANA modeler perspective

Information views are therefore logical, non-materialized structures acting as a semantic layer over the SAP HANA index server, allowing reporting tools to access data stored within SAP HANA tables.

SAP HANA tables are organized by schemas under the catalog folder. Schemas are groups of tables, database views, and procedures of a database. Schemas can be seen as the blueprints of the database and are commonly used to restrict access to certain database content. The association of users to schemas results into proper segregation of access to content groups.

Information views are organized by packages under the content folder. They organize data as per business needs and do not follow technically defined schemas. An information view, for example, could be created associating tables from sales and finance schemas to address reporting needs of a sales department. An information view like this would probably be stored under a package with a suggestive name such as “Order to Cash Analysis” package.

In a nutshell, SAP HANA tables are organized by schemas under the catalog folder representing the technical view of the database. Information views are organized by packages under the content folder representing the business view of the database contents. Figure 2.4 demonstrates the file structure within SAP HANA studio.

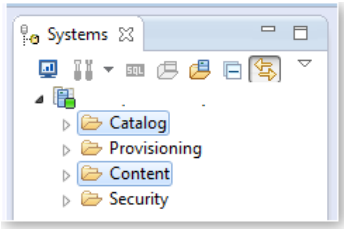

Figure 2.4: SAP HANA studio catalog and content folders

The catalog, therefore, is the usual workspace for SAP HANA developers. A dedicated SAP HANA perspective named SAP HANA development is available for such users. The focus for SAP HANA modelers on the other hand is centered on the content folder. It is under this folder that information views can be maintained to slice, filter, and join SAP HANA tables to address specific business requirements. Three types of information views can be created within the content folder: attribute views, analytical views, and calculation views.

2.2.1 Attribute views

Attribute views are used to represent an entity relationship model at the attribute level. As an analogy, an attribute view could be seen as similar to an SAP BW master data model with a main entity combined with its attributes and texts. An attribute view is a self-contained unit, a dimension that joins SAP HANA tables and can be reused on any other SAP HANA model or consumed directly by reports.

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