

SAP Visual Intelligence & SAP BusinessObjects Explorer on SAP BW powered by SAP HANA

TABLE OF CONTENTS

DISCLAIMER	3
OVERVIEW OF SAP NETWEAVER BW ON SAP HANA FOR SAP BUSINESSOBJECTS EXPLORER AND SAP VISUAL INTELLIGENCE	4
Document Scope and Target Audience	4
Overview: SAP NetWeaver BW on SAP HANA	4
Customer Value of SAP NetWeaver BW Powered by SAP HANA	4
Previous Solution: SAP BusinessObjects Explorer and SAP Visual Intelligence for SAP NetWeaver BW on SAP HANA	4
New Solution: SAP BusinessObjects Explorer and SAP Visual Intelligence for SAP NetWeaver BW on SAP HANA	5
DEPLOYMENT SCENARIOS	6
Deployment Scenario #1: SAP NetWeaver BW without SAP NetWeaver BW Accelerator (BWA) and without SAP HANA	6
Deployment Scenario #2: SAP NetWeaver BW in combination with SAP NetWeaver BW Accelerator (BWA)	7
Deployment Scenario #3: SAP NetWeaver BW on SAP HANA, DB edition	8
Deployment Scenario #4: SAP NetWeaver BW with SAP HANA, Full Use Editions	8
NEW SOLUTION	9
Overview	9
Using existing BI Authorizations	11
Technical Pre-Requisites	11
Scope of Functionality	12
Comparison by Deployment Scenario	13
INTEGRATION ROADMAP	15
Future Scope	15
APPENDIX	16
Additional Resources	16

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OVERVIEW OF SAP NETWEAVER BW ON SAP HANA FOR SAP BUSINESSOBJECTS EXPLORER AND SAP VISUAL INTELLIGENCE

Document Scope and Target Audience

This document outlines the support of SAP BusinessObjects Explorer and SAP Visual Intelligence for SAP NetWeaver BW on SAP HANA.

The general roadmap for SAP NetWeaver BW, SAP HANA, and SAP BusinessObjects BI are out of scope for this document.

The target audience for this document includes BI consultants, BI project managers, BI team leads, and BI team members that are involved in deploying and configuring SAP BusinessObjects Explorer or SAP Visual Intelligence in combination with SAP NetWeaver BW.

Overview: SAP NetWeaver BW on SAP HANA

SAP NetWeaver BW on HANA is the first existing SAP solution completely enhanced to take advantage of SAP HANA In-Memory technology. SAP NetWeaver BW Powered by SAP HANA enables SAP customers to leverage their existing SAP NetWeaver BW investments by using the SAP HANA in-memory database. SAP NetWeaver BW customers continue to run the BW application on the App server, but the data base server will run the SAP HANA database leading to unprecedented BW performance, a dramatically simplified IT landscape, and a business community able to make faster decisions.

Customer Value of SAP NetWeaver BW Powered by SAP HANA

Speed and Accelerated performance

- Excellent query performance for improved decision making
- Performance boost for data load processes for decreased data latency
- Accelerated in memory planning capabilities for faster planning scenarios

Streamline landscape and simplify data management

- Reduce data persistency layers and admin efforts: no aggregates, indexes, rollups, statistics
- Simplified data modeling experience

Previous Solution: SAP BusinessObjects Explorer and SAP Visual Intelligence for SAP NetWeaver BW on SAP HANA

Prior to the release of SAP BusinessObjects BI4 Support Pack (SP) 05 and SAP Visual Intelligence 1.0 SP 04, the data connectivity of SAP BusinessObjects Explorer and SAP Visual Intelligence to SAP NetWeaver BW was limited. In Figure 1 you can see that with SAP NetWeaver BW powered by SAP HANA, only SAP BusinessObjects Explorer was able to connect directly to the SAP NetWeaver BW InfoProvider. SAP BusinessObjects Explorer 4.x only supported a relational Universe data connection to SAP HANA. Visual Intelligence did not.

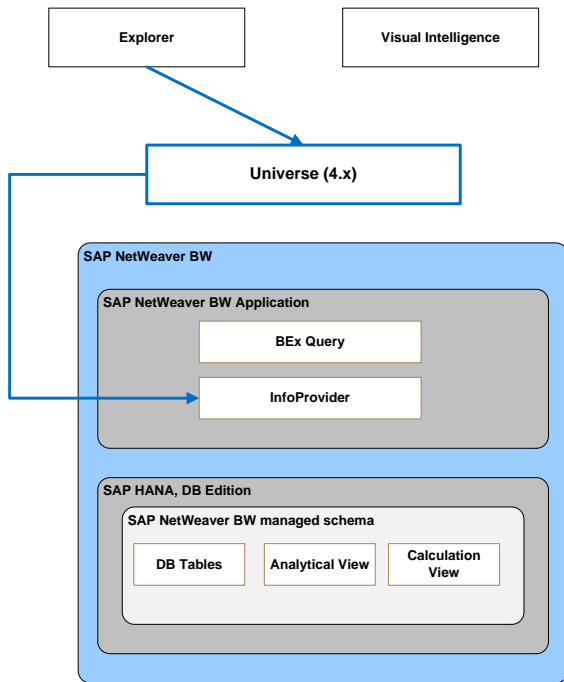


Figure 1: Data Connectivity to SAP NetWeaver BW

Using the data connectivity via the relational universe, SAP BusinessObjects Explorer is able to index the data from an InfoProvider, but the relational data connectivity for SAP NetWeaver BW also has a set of limitations.

Below is a list of elements the relational universe is not able to support:

- Restricted Key Figures
- Calculated Key Figures
- SAP Variables
- Custom Structures
- BW Hierarchies

New Solution: SAP BusinessObjects Explorer and SAP Visual Intelligence for SAP NetWeaver BW on SAP HANA

With neither SAP BusinessObjects Explorer nor Visual Intelligence able to connect to SAP NetWeaver BW directly and therefore leverage the full power of SAP HANA, there was the need to create a better option to leverage existing investments into SAP NetWeaver BW models, and leverage the full power of SAP HANA.

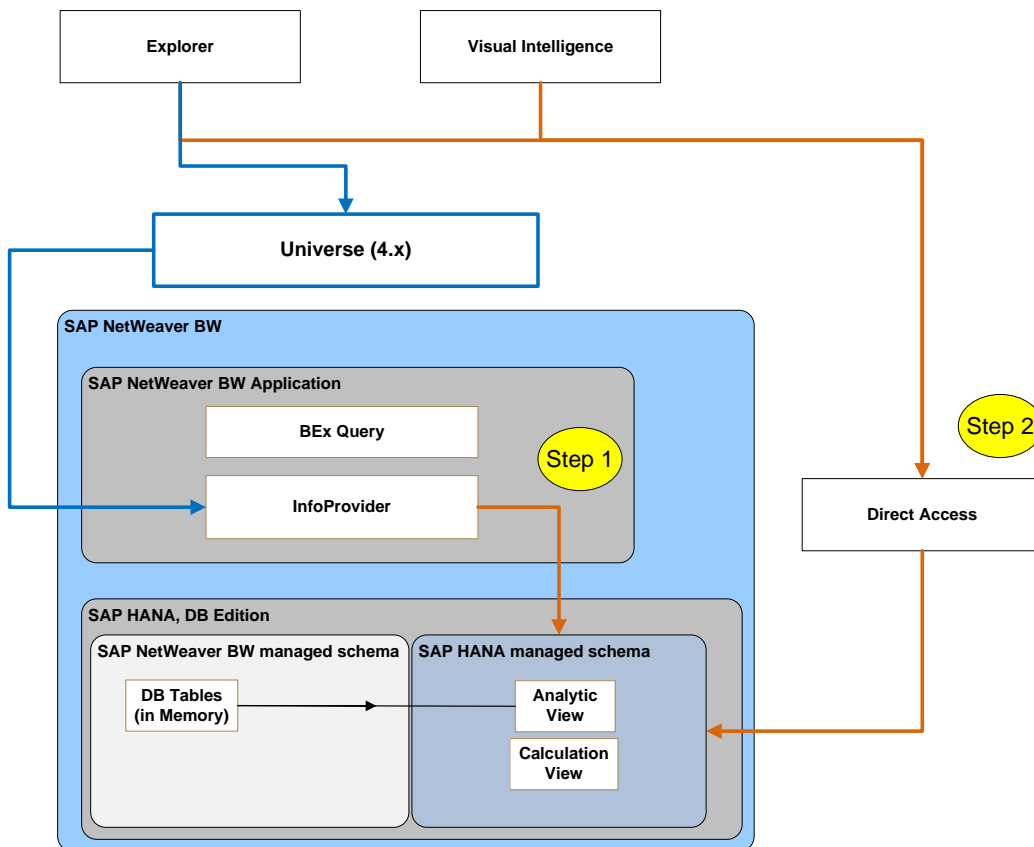


Figure 2: New Data Connectivity Options

In Figure 2 you can see a brief overview of the new option, allowing you to leverage an existing InfoProvider model and to import the data model into SAP HANA in form of a generated Calculation or Analytic view (shown as Step 1 in Figure 2). After the model has been imported into SAP HANA, you can leverage a direct connection to SAP HANA for SAP BusinessObjects Explorer and SAP Visual Intelligence (shown as Step 2 in Figure 2).

Please refer to Section 7.6 Importing BW Objects of the SAP HANA SPS5 [documentation](#) for more details.

DEPLOYMENT SCENARIOS

In this section we will outline several deployment scenarios, showing the different implications for SAP BusinessObjects Explorer and SAP Visual Intelligence. Overall we have four different scenarios:

- Scenario #1 : SAP NetWeaver BW standalone without SAP NetWeaver BW Accelerator (BWA) and without SAP HANA
- Scenario #2: SAP NetWeaver BW in combination with SAP NetWeaver BW Accelerator (BWA)
- Scenario #3: SAP NetWeaver BW with SAP HANA, DB edition
- Scenario #4: SAP NetWeaver BW with SAP HANA, Full Use Editions.

Deployment Scenario #1: SAP NetWeaver BW without SAP NetWeaver BW Accelerator (BWA) and without SAP HANA

In deployment scenario #1 we are looking at SAP NetWeaver BW without SAP NetWeaver BWA and without SAP HANA.

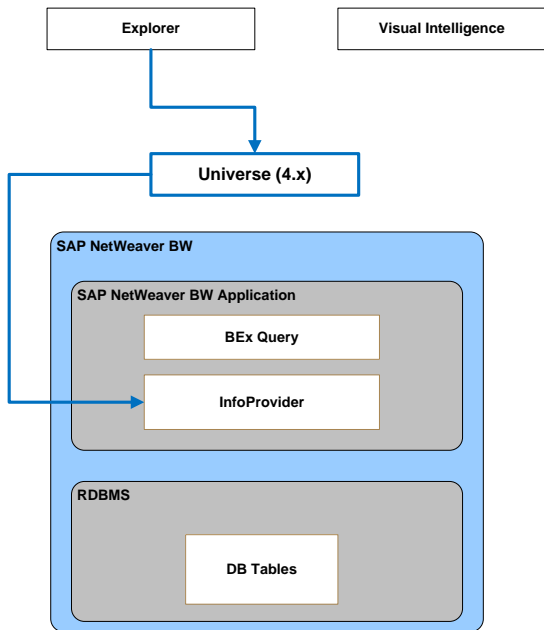


Figure 3: SAP NetWeaver BW without SAP NetWeaver BWA and without SAP HANA
In this scenario the upcoming solution does not have any functional implications as SAP HANA, DB edition is not being used and therefore the only option to connect SAP BusinessObjects Explorer to SAP NetWeaver BW data is the option to leverage a relational Universe based on SAP NetWeaver BW InfoProviders. In this scenario only SAP BusinessObjects Explorer is able to leverage data from SAP NetWeaver BW. Connectivity for SAP Visual Intelligence is not supported.

Deployment Scenario #2: SAP NetWeaver BW in combination with SAP NetWeaver BW Accelerator (BWA)

In deployment scenario #2 we are looking at SAP NetWeaver BW in combination with SAP NetWeaver BW Accelerator (BWA).

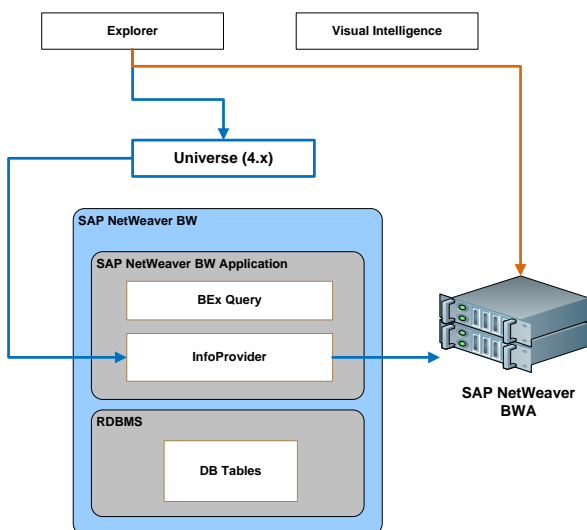


Figure 4: SAP NetWeaver BW with SAP NetWeaver BWA

In this scenario the upcoming solution does not have any direct implication as SAP HANA, DB edition is not being used at this point in time, but SAP NetWeaver BW on SAP HANA, DB edition is the premium alternative to the deployment shown in Figure 4.

Where SAP NetWeaver BW is being used in combination with SAP NetWeaver BW Accelerator (BWA) (Figure 4), SAP BusinessObjects Explorer can connect to SAP NetWeaver BW InfoProviders with a relational Universe well as directly to SAP NetWeaver BWA. In a deployment like Figure 4 connectivity for SAP Visual Intelligence is not supported.

Deployment Scenario #3: SAP NetWeaver BW on SAP HANA, DB edition

In this scenario the standard relational database for SAP NetWeaver BW is replaced with SAP HANA.

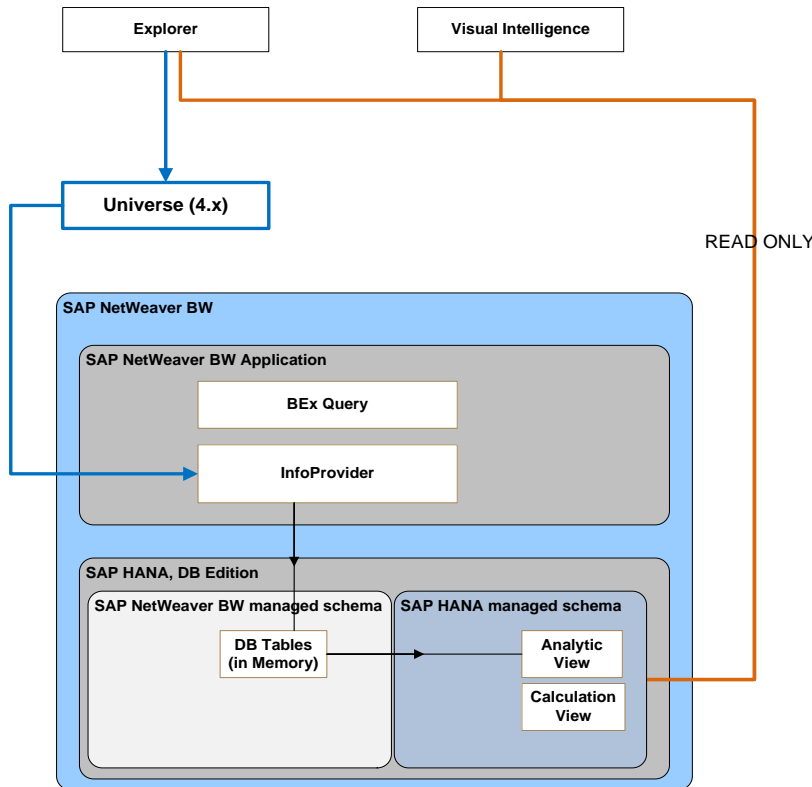


Figure 5: SAP NetWeaver BW on SAP HANA, DB edition

In the scenario where SAP HANA, DB edition is the underlying database for SAP NetWeaver BW, SAP HANA has the ability to have models managed by SAP NetWeaver BW (SAP NetWeaver BW InfoProviders) and it has the ability to manage schemas outside of SAP NetWeaver BW managed schemas. Especially for the usage of SAP BusinessObjects Explorer and SAP Visual Intelligence the applicable licensing has been changed and allows SAP BusinessObjects Explorer and SAP Visual Intelligence to be used on top of SAP HANA models, which have been populated based on their SAP NetWeaver BW InfoProviders.

Please contact your Account Executive to get more licensing [details](#).

Deployment Scenario #4: SAP NetWeaver BW with SAP HANA, Full Use Editions

In this scenario the standard relational database for SAP NetWeaver BW is replaced with SAP HANA, Full Use Editions.

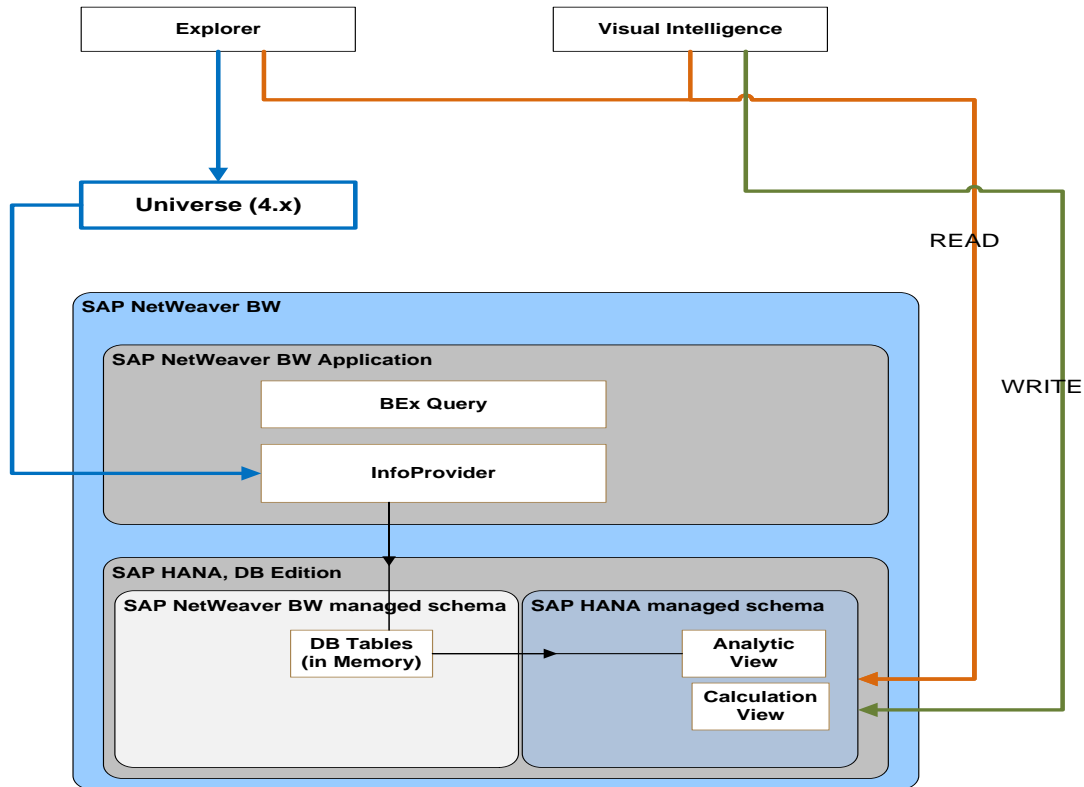


Figure 6: SAP NetWeaver BW on SAP HANA, Full Use Editions

In comparison to deployment scenario #3, this scenario uses SAP HANA Full Use Editions which can leverage the full capabilities of SAP HANA and is not limited in any way on the usage of SAP HANA. SAP BusinessObjects Explorer and SAP Visual Intelligence are now not only able to leverage the populated models in combination with SAP BusinessObjects Explorer and SAP Visual Intelligence, but are also able to write back the data set into SAP HANA using SAP Visual Intelligence.

NEW SOLUTION

Overview

With the new solutions offered with SAP NetWeaver BW powered by SAP HANA, you are able to leverage an existing SAP NetWeaver BW InfoProvider and import the model into SAP HANA Studio and in that way expose the SAP NetWeaver BW InfoProvider as an SAP HANA based Calculation or Analytic View.

Please refer to Section 7.6 Importing BW Objects of the SAP HANA SPS5 [documentation](#) for more details

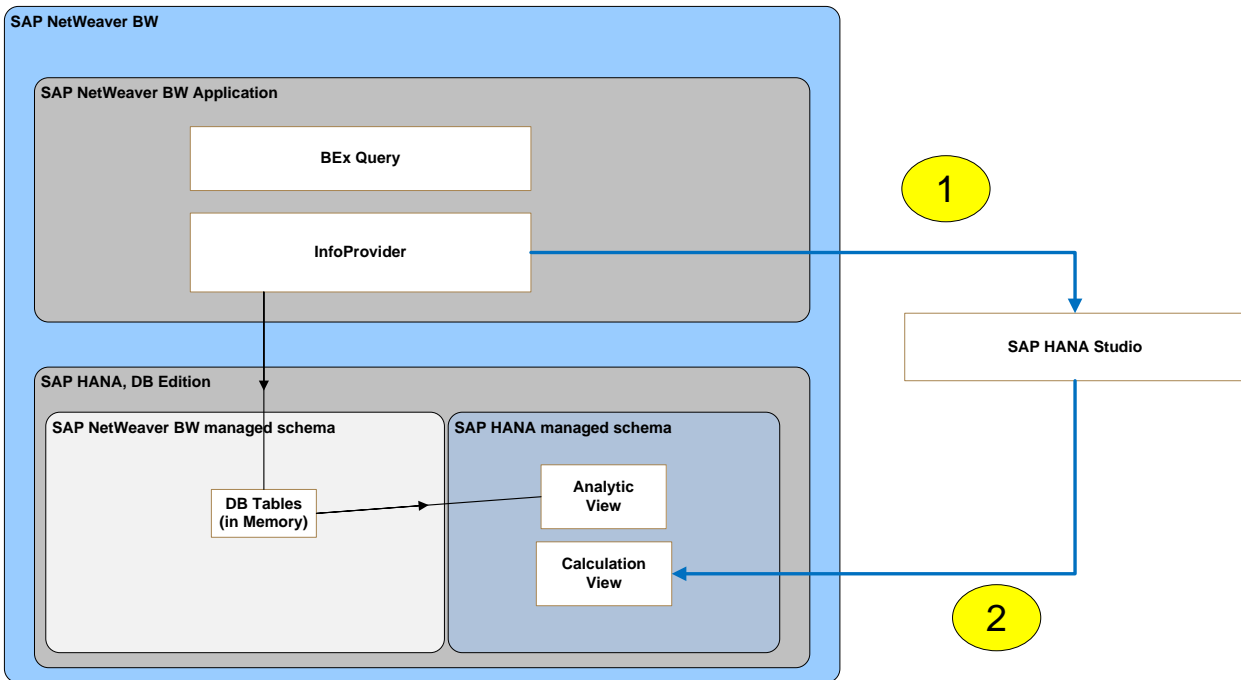


Figure 7: SAP NetWeaver BW on SAP HANA, DB edition

As shown in Figure 7 and Figure 8, the involved steps are as follows:

1. Start the SAP HANA Studio and import an existing SAP NetWeaver BW InfoProvider
2. After importing the existing SAP NetWeaver BW InfoProvider the existing model is being used to populate a SAP HANA generated View based on the underlying tables of the SAP NetWeaver BW model.
3. After the SAP HANA View has been created, SAP BusinessObjects Explorer and SAP Visual Intelligence can connect to the SAP HANA View directly.

For more details on steps, please refer to section 7.6 [here](#)

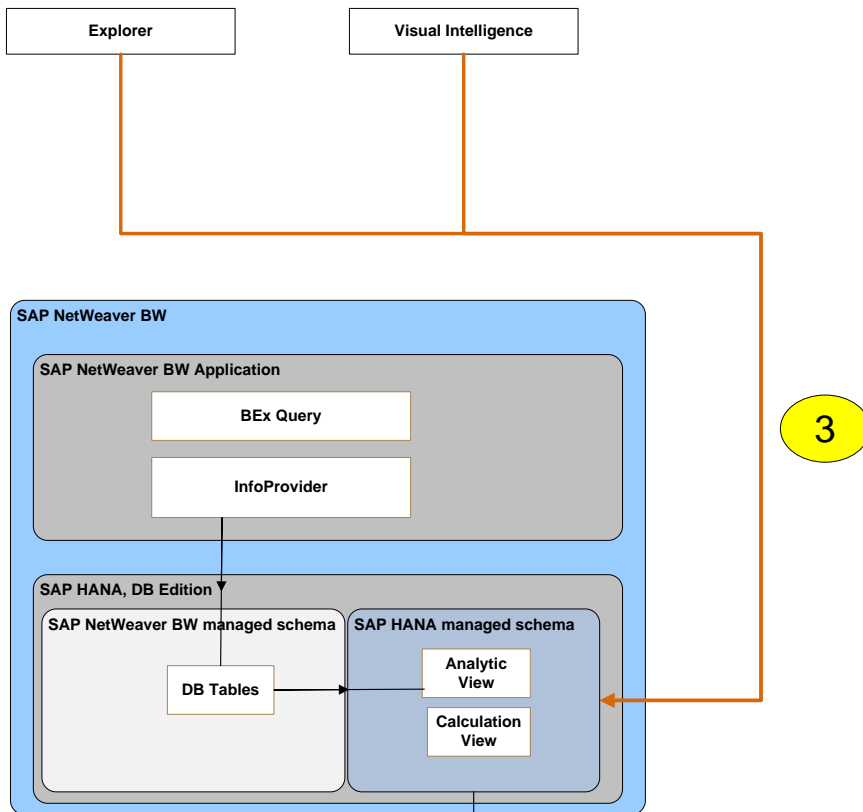


Figure 8: SAP NetWeaver BW on SAP HANA, DB edition

Using existing BI Authorizations

During the process of importing SAP HANA Optimized InfoCube or SAP HANA Optimized DSO objects, the relevant SAP BI Authorization objects are being imported from SAP NetWeaver BW into the SAP HANA system in form of Analytic Privileges. These BI Authorizations could be associated with the InfoProviders or Roles.

The current scope of the integration does have some known limitations, outlined below

- Limitations in the area of BI Authorizations:
 - Exclude operator not supported
 - Aggregated value operator ':' is not supported
 - User EXIT Variables are not supported
 - Authorization on Key Figures are not supported
 - Authorization on hierarchy node is not supported

You can find further details in the documentation for SAP HANA SP05 available in [documentation](#) section "Importing BW Objects".

Technical Pre-Requisites

The following is outlining the minimum releases of the necessary components for this solution:

- SAP HANA
 - SAP HANA 1.0 SP05
 - SAP HANA Modeler 1.0 SP04 Rev 37
- SAP BusinessObjects BI
 - SAP BusinessObjects Explorer 4.0 SP04 or higher
 - SAP Visual Intelligence 1.0 SP04 or higher
- SAP NetWeaver BW

- SAP NetWeaver BW 7.30 SP8 or SAP NetWeaver BW 7.30 SP7

In addition please ensure the following SAP Notes are implemented: 1703061, 1759172, 1752384, 1733519, 1769374 and 1790333.

Scope of Functionality

The following outlines the feature scope as of SAP HANA 1.0 SP05 and SAP BusinessObjects Explorer 4.0 SP04 and SAP Visual Intelligence 1.0 SP04.

- Import of SAP NetWeaver BW data models into SAP HANA
 - Automatic generation of SAP HANA data model for:
 - SAP HANA optimized InfoCubes
 - SAP HANA optimized DSO objects
 - BEx Query Snapshots

During the process of importing SAP HANA Optimized InfoCube or SAP HANA Optimized DSO objects, the relevant SAP BI Authorization objects are being imported from SAP NetWeaver BW into the SAP HANA system in form of Analytic Privileges. These BI Authorizations could be associated with the InfoProviders or Roles. Please refer to [documentation](#) section 7.6 for more details

Currently the first version of this solution does have some known limitations, which are outlined below:

- Limitations in the area of BI Authorizations:
 - Exclude operator not supported
 - Aggregated value operator ':' is not supported
 - User EXIT Variables are not supported
 - Authorization on Key Figures are not supported
 - Authorization on hierarchy node is not supported
- Limitations in the area of importing existing SAP NetWeaver BW InfoProvider
 - Time dependent text and time dependent attributes are not supported
 - Unit of Measure Conversion is not supported
 - Calculated and Restricted Key Figures are not supported
 - SAP NetWeaver BW hierarchies are not supported
- In general the solution does not provide an automated change management, so updates in the SAP NetWeaver BW InfoProvider will have to be manually adjusted in the SAP HANA model

Comparison by Deployment Scenario

The comparison below is looking at deployment scenarios #2, #3, and #4 and compares the functionality that is available in the different SAP landscapes. The option outlined in deployment scenario #1 – using the relational Universe based on SAP NetWeaver BW InfoProvider – is available for all deployment scenarios, which is the reason why it is not part of the comparison matrix shown below.

SAP BusinessObjects Explorer & SAP Visual Intelligence Integration with BW/HANA

BWA – BW/HANA comparison matrix

	Customer scenario#2 (SAP BW with SAP BWA)*	Customer scenario#3 (SAP BW on SAP HANA, DB Edition)	Customer scenario#4 (SAP BW on SAP HANA, Full Use Edition)
InfoCube	Supported	SAP HANA optimized <u>InfoCubes</u>	SAP HANA optimized <u>InfoCubes</u>
DSO objects	Supported	SAP HANA optimized DSO objects	SAP HANA optimized DSO objects
<u>MultiProvider</u>	Supported	Possible by using a Query Snapshot (1)	Possible by using a Query Snapshot (1)
<u>MultiProvider Snapshot</u>	Supported	Possible by using a Query Snapshot (1)	Possible by using a Query Snapshot (1)
BEx Query Snapshot	Supported	Supported (1)	Supported (1)

(1) BEx Query snapshot is supported starting with:

SAP NetWeaver BW 7.30 SP08 (see SAP Note 1769374)

SAP NetWeaver BW 7.30 SP07 (see SAP Note 1703061, 1759172, 1752384, 1733519 and 1769374)

SAP HANA 1.0 SP05

* Only applicable to SAP BusinessObjects Explorer

SAP BusinessObjects Explorer & SAP Visual Intelligence Integration with BW/HANA

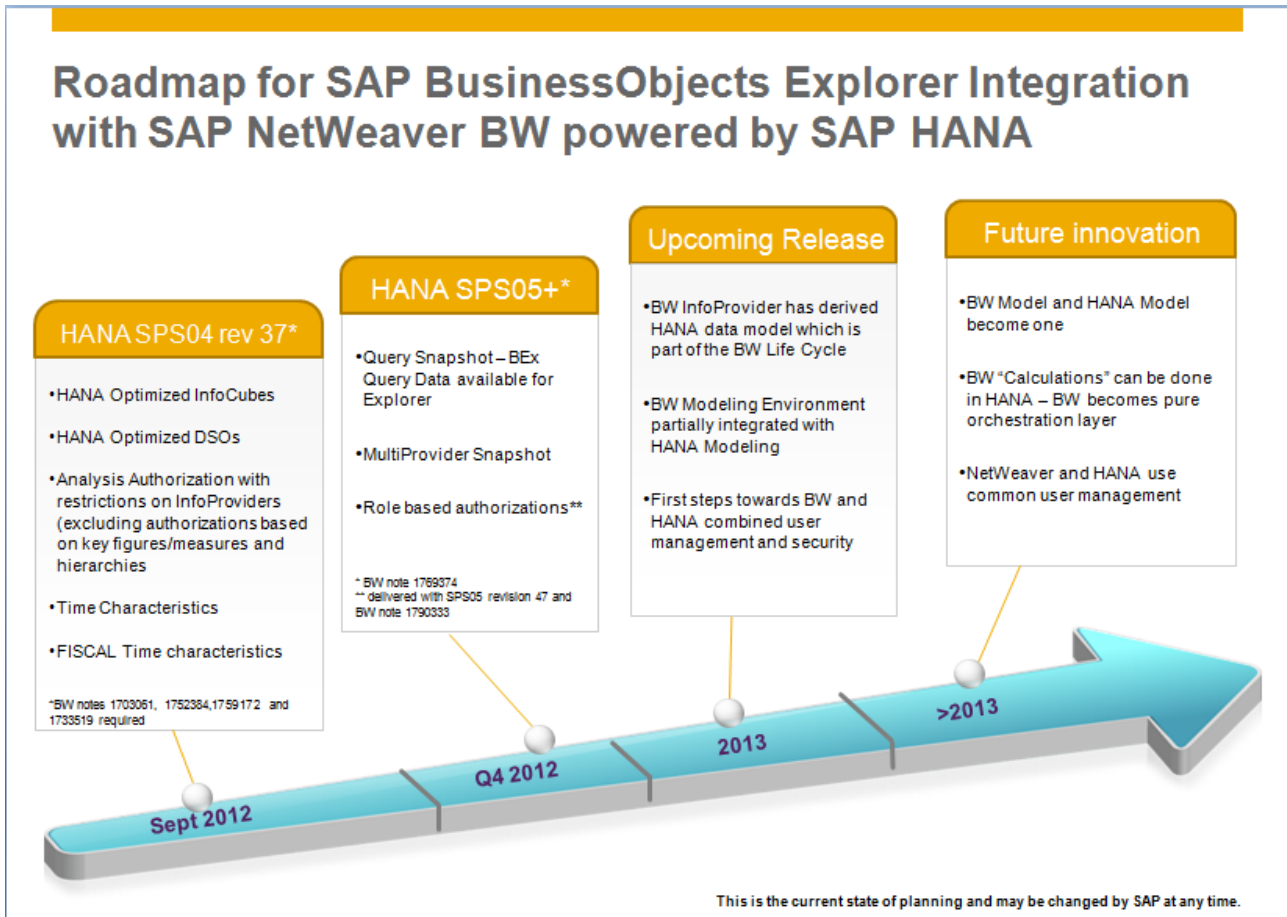
BWA – BW/HANA comparison matrix

	Customer scenario #2 (SAP BW with SAP BWA)*	Customer scenario #3 (SAP BW on SAP HANA, DB Edition)	Customer scenario #4 (SAP BW on SAP HANA, Full Use Edition)
BI Authorization	Limited	Limited	Limited
SAP BW Hierarchies	Limited – Only Facet Filtering	Planned for future release	Planned for future release
Restricted Key Figures	Supported	Possible by manually extending the HANA model or by using a Query Snapshot (1)	Possible by manually extending the HANA model or by using a Query Snapshot (1)
Calculated Key Figures	Supported	Possible by manually extending the HANA model or by using a Query Snapshot (1)	Possible by manually extending the HANA model or by using a Query Snapshot (1)
BEx Query Variables	Supported		
Unit Conversion	Supported	Planned for Q1 2013	Planned for Q1 2013
Currency Conversion	Supported	Possible by manually extending the HANA model	Possible by manually extending the HANA model
Automated Change management	Can be integrated with SAP BW Process Chains	Planned for future release	Planned for future release
Write Back from Visual Intelligence	Not possible	Not possible	Supported

*Only applicable for SAP BusinessObjects Explorer

INTEGRATION ROADMAP

Future Scope



With the future releases of SAP BW powered by SAP HANA every BW data model will automatically generate a HANA model that will be part of the BW lifecycle. Changes to BW models will be automatically reflected by the attached HANA models. There will also be a tighter integration between the different modeling tools on SAP HANA and SAP BW that will improve the end user modeling experience. User and security management in SAP BW and SAP HANA continue to be based on independent frameworks. User and security management will be combined gradually in phased releases with the end goal being one common user management environment for both SAP NetWeaver and SAP HANA. Another innovation goal for future releases is to consolidate the modeling experience for SAP BW and SAP HANA models entirely. At that point the execution and runtime of most BW transformations and calculations will be pushed down to the SAP HANA database layer to take full advantage of SAP HANA's in-memory capabilities. Only the runtime of calculations will be pushed down to the database, not the modeling or creation of the process logic. This will evolve BW more into a pure data warehousing orchestration application.

Please refer [here](#) for more details.

APPENDIX

Additional Resources

SAP BusinessObjects Explorer Documentation

- [Install, administration and end-user guides](#)

SAP Visual Intelligence Documentation

- [User Guides](#)

SAP HANA 1.0 SP05 Documentation

- [SAP HANA Developer Guide](#)

SAP NetWeaver BW on SAP HANA, DB Edition Documentation

- [SAP NetWeaver BW on SAP HANA FAQ](#)

How to Videos

- [Importing SAP NetWeaver BW models as native SAP HANA models](#)
- [Understanding SAP HANA models imported from SAP NetWeaver BW](#)
- [Exploring data for SAP HANA models imported from SAP NetWeaver BW](#)

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