In the first part of this presentation we will focus on the BI Administration Cockpit and the Technical Content in general.

Then we will go into detail for the three major areas covered by the BI Administration Cockpit:

- Query Runtime Statistics - with dedicated chapters on
  - Migrating query performance monitoring from SAP BW 3.x to SAP NetWeaver 7.0 BI
  - Maintaining query runtime statistics data recording
  - How to analyze query runtime
  - How to interpret query runtime statistics data
  - How to built on query performance monitors
- Data Load Statistics – monitoring the performance of BI Data Loads and Process Chains
- Data Load Status – monitoring the status of Process Chains and BI InfoProviders
This slide gives an overview on BI Monitoring in the context of SAP NetWeaver Administration.

This presentation will focus on the BI Administration Cockpit and the new Technical Content for BI Statistics.
Easy administration for complex Enterprise Data Warehouses using the BI Administration Cockpit
BI Administration Cockpit - Scope

Support the BI administrator in

- Performance optimization
- Monitor BI system usage
- Status tracking

...in the areas of

- Enterprise Data Warehousing
- Enterprise Query, Reporting and Analysis
- Business Planning and Analytical Services

...by providing a central point of entry with cockpits

- Real-time monitors
- Runtime Statistics
- Cross system monitoring

...including context-specific

- Drill-down to details
- Processing options
- Exceptions (optional)

...using proven technology

- BI Queries
- BI Web Applications
- SAP NetWeaver Portal

...to make administration easier and faster

...and thus to lower the TCO
This slide shows you how the BI Administration Cockpit (the BI Administrator role in the SAP NetWeaver Portal) looks like and points you to some interesting usability features like context menus and central access to several system.

Please note that the exception display shown on this slide is not included in the standard BI Administration Cockpit but has just been added for demo purposes. In customer projects, adding exceptions and alerts to BI Administration Cockpit monitors can be easily implemented on project basis. More information on this topic can be found from page 47 onwards.
Please note that the BI Administration Cockpit consists of three major building blocks being shipped with three different software components.
BI Administration Cockpit – Main building blocks

**BI Administration Cockpit (Business Package)**
- Single point of entry and integration with other (non BI related) portal content (example: Universal Work List)

**Technical Content (Web Application and Queries)**
- Flexible analysis of statistics data and sophisticated presentation of information (graphs, charts, tables)

**Technical Content (InfoProviders and DataSources)**
- Central Data Basis for BI Administration Cockpit and BI system load transaction ST03
- Persistent Data Storage and Remote Access to BI Statistics

**BI Statistics**
- Detailed Runtime Statistics Data collection for various BI Objects in Data Warehousing, Enterprise Reporting and Planning

**SAP NetWeaver BI**

- BI Statistics recording is in-built technology in SAP NetWeaver BI. Only task for customers: review and customize the recording for query runtime statistics (more information from page 26 onwards).

- Technical Content for BI Statistics is installed through transaction SPRO and an installation report. More information on the following pages. It is essential installing the Technical Content as not only the BI Administration Cockpit but also the BI Workload Monitor (transaction ST03) is based on the Technical Content.

- BI Administration Cockpit is a very intuitive monitoring based on the SAP NetWeaver Portal and therefore recommended for performance monitoring. Alternatively, own performance monitors can be implemented based on the Technical Content.
Overview on Technical Content

Technical Content: general objects

- BI Objects that are required for running the SAP NetWeaver BI system
  - Analysis Authorizations, BI Trace Tool, Personalization,…
- Shipped as part of BI Technology (software component SAP_BW) and installed automatically
  - Some objects are already installed in the XPRa phase during the upgrade
  - Most objects are installed when you call the Data Warehousing Workbench (DWB) for the first time.

Important Notes

- 834280 Installing technical BI Content after upgrade
- 1069134 Improved monitoring RSTCO_ADMIN
- 1008758 Automatic installation of technical BI Content

Technical Content: BI Statistics

- Monitoring Performance and Status of BI Objects
- Main focus of this presentation
- Shipped as part of BI Content (software component BI_CONT)

This slide gives you an overview on the entire Technical Content for SAP NetWeaver BI. In fact, the Technical Content for BI Statistics which is in focus of this presentation is just one part of the entire Technical Content. The other part consists of Technical Content for different SAP NetWeaver BI features like Analysis Authorizations and is installed automatically.
New Technical Content for BI Statistics

Main enhancements

- New Technical Content for new and enhanced BI Statistics
  - New Query Runtime Statistics
  - Process Chain and DTP Statistics
  - BI Object Request and Process Status

- Technical Content for direct access and analysis on persistent data
  - Per default, queries from the Technical Content filter on reading from persistent InfoProviders only
  - Reading from Virtual Providers can be enabled on query level by customers

- Technical Content on detailed and aggregated level
  - For Query Runtime Statistics

- New maintenance for query statistics data collection
  - Enabling statistics and selection of detail level for statistics

- Data load statistics are collected automatically
  - No maintenance necessary (as of SAP NetWeaver 7.0 BI, SPS9 and SAP Note 952191)
The slide gives additional detail on the statement “Technical Content for direct access and analysis on persistent data”.

In fact, the same Technical Content DataSource (0TCT_DS*) is used for loading data to the Technical Content (0TCT_C*) as well as retrieving it directly from the source system (0TCT_VC*).

An additional MultiProvider 0TCT_MC* allows then for real-time monitoring of BI Statistics data as it combines at query runtime

- Data that has been loaded to the corresponding 0TCT_C* InfoCube
- Data from the BI Statistic source tables that has not yet been loaded to 0TCT_C*. This data is read by a VirtualProvider 0TCT_VC* (“virtual delta” selection based on timestamps) from the BI Statistics source tables.

Important Performance Consideration:

- More frequent delta data loads to 0TCT_C* (at least once a day) = less “virtual delta” data needs to be read through 0TCT_VC* = faster queries / faster transaction ST03 based on 0TCT_MC* MultiProviders!
BI Administration Cockpit - Configuration

Configuration steps (executed from IMG, Transaction SPRO)

- 7. Set Up Call to BI Administration Cockpit
- 6. Install Business Package 'BI Administration 1.0'
- 5. Connect BI System and Portal (See note 917950)

4. Schedule Technical Content Process Chains
3. Check Updating of Statistics
2. Assign the BI Administrator Role
1. Activate the new technical content in SAP NetWeaver BI (automatic activation, no manual activation needed)

→ Available with installation or upgrade to SAP NetWeaver 7.0 BI

→ Please find additional information on the individual steps in the configuration IMG.
This activity starts transaction RSTCC_INST_BIAC

- which links a report for automatic installation of the Technical Content

- activating all the Technical Content objects that are assigned to role SAP_BW_BI_ADMINISTRATOR, including the relevant data flows.

Prerequisite:
- Software component BI_CONT 7.0.3, Support Package 4 or
- Software component BI_CONT 7.0.2, Support Package 7
- It is recommended to install BI_CONT 7.0.3 as BI_CONT 7.0.2 is out of maintenance!
Details: Schedule Process Chains

The following process chains need to be scheduled in order to load BI Statistics data to the Technical Content:

**Master Data**
- System Master Data - 0TCT_MD_S_FULL_P01
  This loads text for objects like ‘Process Status’, ‘BI Object type’, ‘Process Type’
- Content Master Data - 0TCT_MD_C_FULL_P01
  This loads attributes & text for objects like ‘Process Variants’, ‘Process Chain’

**Initialization Loads**
- Query Runtime Statistics - Init - 0TCT_C0_INIT_P01
- Data Load Statistics - Init - 0TCT_C2_INIT_P01
  These process chains need to run only once (Immediate scheduling).

**Delta Loads**
- Query Runtime Statistics - Delta 0TCT_C0_DELTA_P01
- Data Load Statistics - Delta 0TCT_C2_DELTA_P01
  These process chains can be scheduled for periodic execution

This slide gives details which process chains have to be scheduled in order to transfer BI Statistics data to the new Technical Content.

- Master Data Process Chains should run at least once a week.
- Initialization Process Chains for BI Statistics data do only need to run once.
- Delta Process Chains for BI Statistics data should run at least once a day.
SAP Service Marketplace note
934848 “Collective note: (FAQ) BI Administration Cockpit”

- Prerequisites for running the Technical Content and the BI Administration Cockpit
- General comments on installation
- Specific comments on the installation steps to be performed
- Tips on Running and Maintaining the Technical Content
- Important corrections

Please read this note carefully before installing the Technical Content! It is updated on a regular basis and contains important information on the topics listed above.
Administration Cockpit & Technical Content

Query Runtime Statistics

- Migration & Maintenance
- Analysis Tools
- Tips & Tricks
- Data Load Statistics
- Data Load Status
Query Runtime Statistics in SAP NetWeaver 7.0

Front end / OLAP Statistics and Data Manager Statistics ...
- Splitting the BW 3.x OLAP statistics into Frontend / OLAP statistics and Data Manager statistics
- Serial execution (Front-End/OLAP) vs. parallel execution (Data Manager, mostly)
- Many different events (FE/OLAP) vs. small number of events (DM)

Statistic detail levels
- Introducing statistic detail levels on query level
- Customize the level of detail of statistic data collection for a certain object

Event Concept
- Introducing the concept of the Event ID (characteristic)
- Flexible and extensible framework

Enhanced coverage of BI functionality
- Enhanced: BEx Web, Planning
- New: BI Accelerator

In SAP NetWeaver BI 7.0, query runtime statistics have been entirely redesigned. More information on what 3.x RSDDSTAT* tables (central query runtime statistic tables) and Technical Content can be still used is available on page 30.

In SAP NetWeaver BI 7.0 query runtime statistics recording are split into major parts:
- **Front end and OLAP Statistics**: All runtime for the BI Application (Web Application, Workbook, …) in the front end and all runtimes of the query in the Analytical Engine (formerly known as OLAP processor).
- **Data Manager**: All runtimes for retrieving the data out of the BI InfoProvider source tables or the BI Accelerator. Also, parallelization of queries at MultiProvider level is covered by these statistics.

The concept of Statistic detail levels allows you to define not only for what query or for what BI Application you want to record query runtime statistics but also on what level of granularity recording shall occur (all details vs. aggregated view).

The new Event concept allows to trace every single runtime component of a certain query execution. For example, there would be a separate Event ID for reading data out of the OLAP cache and another for authorization checks.

The new query runtime statistics closes several known gaps in query runtime monitoring
- **Front end performance of BI Web Applications**
- **Integrated Planning**
This slide gives a detailed overview on the tables that are used in query runtime statistics recording:

- The central header table RSDDSTATHEADER links all the details on runtime per Event ID in Front end and OLAP statistics in RSDDSTATEVDATA.
- Details / Texts on Event IDs in RSDDSTATEVENTS.
- Details on the Data Manager Event IDs (Event IDs = 000009xxx = reading from BI Accelerator or BI Database) in RSDDSTATDM.
- Details on aggregate usage (selected InfoObjects) in RSDDSTATAGGRDEF.
Decentralized Statistics Data Storage (2)

... use the new DB_VIEWS to display statistics data:

RSDDSTAT_OLEAP

RSDDSTAT_DM

The tables from the page before are only required in exceptional cases. Typically, if you want / need to look up data in BI Statistics tables you would use the above mentioned DB Views.
Event ID

- At many different events in processing, runtime information gets collected
- Common concept used in query runtime, planning and warehouse management statistics
- Guarantees flexibility for further extensions
- Is the basis for end to end runtime monitoring of processing in SAP NetWeaver BI
- Depending on the event, the time is measured from start to end point or only at end point (time since last end point)

Excerpt from table RSDDSTATEVENTS

This slide gives additional explanation on the concept of Event IDs.
In SAP NetWeaver BI 7.0 query runtime statistics recording are split into major parts:

- **Front end and OLAP Statistics**: All runtime for the BI Application (Web Application, Workbook, …) in the front end and all runtimes of the query in the Analytical Engine (formerly know as OLAP processor).

- **Data Manager**: All runtimes for retrieving the data out of the BI InfoProvider source tables or the BI Accelerator. Also, parallelization of queries at MultiProvider level is covered by these statistics.
In this example, you can see how a user session gets recorded

- with 2 navigation steps and a first navigation step for a
  - BI Web Application that calls two queries where the first query call a MultiProvider that will read data from 3 „PartProviders“ (2 InfoCubes and 1 DataStore Object)

The total runtime of each navigation steps is the sum of all Event IDs („time blocks“) in the Front end / OLAP statistics (upper part) where the total Data Manager time is recorded as EVENT ID '000009000'.

The Data Manager Statistics will give further details on this total Data Manager time by telling you

- Which PartProvider of the MultiProvider had the longest runtime
- Where the PartProviders have read their data from (BI Accelerator, Aggregate, Fact Table,…)
- How many records have been selected and how many (aggregated) records have been transferred to the Analytical Engine (OLAP processor)

Please note one important thing for performance monitoring

- For all Front end Event IDs, the corresponding times / records get assigned to a BI Application (Web Template, Workbook, …) or one of its components (Web Item, …).
- For all OLAP and Data Manager Event IDs, the corresponding times / records get assigned to a query.

Hence, there is no drill down for Front end times on query level or OLAP / Data Manager times on BI Application level!
This slides shows you how the query runtime statistics page in the BI Administration Cockpit looks like.
This Workset provides an overview of the statistics of the query runtime.

The Workset includes three pages with the following information:

1. BI Application Statistics with the iViews:
   - Short-Term Trends in Total Runtimes of BI Applications
   - Long-Term Trends in Total Runtimes of BI Applications
   - Runtimes of BI Applications
   - Deviations in Runtimes of BI Applications
   - BI Application Type Selection

2. BI Application Object Statistics with the iViews:
   - Short-Term Trends in Total Runtimes of BI Application Objects
   - Long-Term Trends in Total Runtimes of BI Application Objects
   - Runtimes of BI Application Objects
   - Deviations in Runtimes of BI Application Objects
   - BI Application Object Type Selection

3. InfoProvider Statistics with the iViews:
   - Short-Term Trends in Total Runtimes of InfoProviders
   - Long-Term Trends in Total Runtimes of InfoProviders
   - Runtimes of InfoProviders
   - Deviations in Runtimes of InfoProviders
   - InfoProvider Type Selection

Please find above an overview on the iViews that are provided in the BI Administration Cockpit concerning query runtime statistics.

Additional comment on terminology used:

◆ The term BI Application is a synonym for “Front end Objects” like BI Web Applications or BEx Workbooks.
◆ The term BI Application Object is a synonym for Queries or Query Views.
Technical content queries for analyzing the runtime of ...
- Queries
- BI Web Applications

... each with various key figures (excerpt) ...
- Ø Frontend-time
- Ø OLAP-time
- Ø DM-time
- Ø Planning time

... being calculated as ...
- Averages, Long Term & Short Term Deviations, Rankings

... and displayed in different time intervals:
- Hours per day, Days per month, Weeks per quarter
Using the appropriate Technical Content InfoProvider for your analysis of query runtime statistics is essential for the efficiency and quality of your query runtime monitoring. The above slide gives you advice which query runtime monitoring case fits best to what Technical Content InfoProvider.

In brief, the main InfoProvider for query runtime monitoring is 0TCT_MC01 which contains aggregated information on query runtimes. The data volume of that InfoProvider is about 2 – 10 records per Navigation Step.

- Example: 1000 users with 5 navigations each / day. Assumed average n° of records in 0TCT_C01 per navigation step = 5.
- In that Example: Records per day in 0TCT_C01: 1000 x 5 x 5 = 25000.

For query performance tuning at Data Manager / Database / BI Accelerator level, the InfoProvider 0TCT_MC03 is essential! It provides important information on MultiProvider processing as well as details on individual reads from InfoProviders and its related persistence (fact tables, aggregates, BI Accelerator indices, ...).

The InfoProvider 0TCT_MC02 is only needed for troubleshooting or „drill down“ on exceptional runtimes. In practice, you can alternatively achieve this „drill down“ by using the DB View RSDDSTAT_Olap not using that InfoProvider. Also, usually a long history is not needed for that detail data as it is mostly used for spontaneous troubleshooting. This is especially important as that InfoProvider will contain mass data! One navigation step might create between 30 – 80 records in RSDDSTAT_Olap and 0TCT_C02.

- Example: 1000 users with 5 navigations each / day. Assumed average n° of records in 0TCT_C02 per navigation step = 50.
This slides shows the relation between BI statistics source tables and Technical Content InfoProviders.

- 0TCT_C01 and 0TCT_C02 get data from the source DB view RSDDSTAT_OLAP
- 0TCT_C03 gets data from the source DB view RSDDSTAT_DM

Also, this slide describes how data is aggregated to InfoCube 0TCT_C01

- Based on the fields Handle Type and Event ID several records and their Event Time / Duration from RSDDSTAT_OLAP will be summed up and assigned to a specific key figures in 0TCT_C01.
- In the example above „Front-end“ related records from RSDDSTAT_OLAP get summed up in key figure 0TCTTIMEFE in 0TCT_C01 (red arrow).
- The same is done for „OLAP records“ (green arrow) and „Data Manager records“ (blue arrow).

More details on this can be found on the next page.
**Query Runtime Statistics: Aggregation in Extraction**

BI statistics data is aggregated within DataSource 0TCT_DS01 which populates the main Technical Content InfoCube 0TCT_C01 (Aggregated Query Runtime Statistics)

- Data is assigned to aggregated key figures using the HANDLETP (Handle type) and the EVENTID (Event ID) of the BI statistics data.

<table>
<thead>
<tr>
<th>Handle Type</th>
<th>0TCTTIMEFE</th>
<th>0TCTMEOLAP</th>
<th>0TCTTIMEDM</th>
<th>0TCTCTIMELAP</th>
<th>0TCTTIMEPLAN</th>
<th>no extraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>W3_T (Web BW 3.x)</td>
<td>all EVENTIDs</td>
<td>all EVENTIDs</td>
<td>all EVENTIDs</td>
<td>all EVENTIDs</td>
<td>all EVENTIDs</td>
<td>no extraction</td>
</tr>
<tr>
<td>W3_I (Web BW 3.x Item)</td>
<td>all EVENTIDs</td>
<td>all EVENTIDs</td>
<td>all EVENTIDs</td>
<td>all EVENTIDs</td>
<td>all EVENTIDs</td>
<td>no extraction</td>
</tr>
<tr>
<td>APPL (BEx Application)</td>
<td>all EVENTIDs</td>
<td>all EVENTIDs</td>
<td>all EVENTIDs</td>
<td>all EVENTIDs</td>
<td>all EVENTIDs</td>
<td>no extraction</td>
</tr>
<tr>
<td>ITEM (BEx Item)</td>
<td>all EVENTIDs</td>
<td>all EVENTIDs</td>
<td>all EVENTIDs</td>
<td>all EVENTIDs</td>
<td>all EVENTIDs</td>
<td>no extraction</td>
</tr>
<tr>
<td>DP (BEx Data Provider)</td>
<td>all EVENTIDs</td>
<td>all EVENTIDs</td>
<td>all EVENTIDs</td>
<td>all EVENTIDs</td>
<td>all EVENTIDs</td>
<td>no extraction</td>
</tr>
<tr>
<td>DIAL (BEx Dialog)</td>
<td>all EVENTIDs</td>
<td>all EVENTIDs</td>
<td>all EVENTIDs</td>
<td>all EVENTIDs</td>
<td>all EVENTIDs</td>
<td>no extraction</td>
</tr>
<tr>
<td>BRFC (BEx Remote Call)</td>
<td>all EVENTIDs</td>
<td>all EVENTIDs</td>
<td>all EVENTIDs</td>
<td>all EVENTIDs</td>
<td>all EVENTIDs</td>
<td>no extraction</td>
</tr>
<tr>
<td>DFLT (Default Handle)</td>
<td>all other EVENTIDs</td>
<td>000000001</td>
<td>000000001</td>
<td>000000001</td>
<td>000000001</td>
<td>no extraction</td>
</tr>
<tr>
<td>BTCH (Batch Queries)</td>
<td>all other EVENTIDs</td>
<td>000000001</td>
<td>000000001</td>
<td>000000001</td>
<td>000000001</td>
<td>no extraction</td>
</tr>
<tr>
<td>MDX (OLAP BAPI)</td>
<td>all other EVENTIDs</td>
<td>000000001</td>
<td>000000001</td>
<td>000000001</td>
<td>000000001</td>
<td>no extraction</td>
</tr>
<tr>
<td>PLAN (Planning)</td>
<td>all other EVENTIDs</td>
<td>000000001</td>
<td>000000001</td>
<td>000000001</td>
<td>000000001</td>
<td>no extraction</td>
</tr>
<tr>
<td>EXTN (External Read)</td>
<td>000000001</td>
<td>000000001</td>
<td>000000001</td>
<td>000000001</td>
<td>000000001</td>
<td>no extraction</td>
</tr>
<tr>
<td>OLAP (OLAP)</td>
<td>all other EVENTIDs</td>
<td>000000001</td>
<td>000000001</td>
<td>000000001</td>
<td>000000001</td>
<td>no extraction</td>
</tr>
</tbody>
</table>

This table gives further detail on aggregation that occurs in DataSource 0TCT_DS01 that loads data to InfoCube 0TCT_C01.

Each of the key figures in 0TCT_C01 (= columns) totals BI Statistics records for a certain Handle Type (= rows) and certain Event IDs (= content of cell).
<table>
<thead>
<tr>
<th>Administration Cockpit &amp; Technical Content</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Query Runtime Statistics</strong></td>
</tr>
<tr>
<td><strong>Migration &amp; Maintenance</strong></td>
</tr>
<tr>
<td>Analysis Tools</td>
</tr>
<tr>
<td>Tips &amp; Tricks</td>
</tr>
<tr>
<td>Data Load Statistics</td>
</tr>
<tr>
<td>Data Load Status</td>
</tr>
</tbody>
</table>
### Transaction RSDDSTAT

Transaction RSDDSTAT allows you customize the query statistics data collection.

This includes:

- Switching statistics data collection on / off
- Defining the level of detail that gets collected
- For Queries and Front-end Objects (BI Applications) such Web Templates and Workbooks.

### Maintenance of Statistic Properties

<table>
<thead>
<tr>
<th>Query Name</th>
<th>InfoProvider</th>
<th>Author</th>
<th>Last Change</th>
<th>Stats</th>
<th>OLA</th>
<th>Chan</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT3_BI_QOD_FORMULA2</td>
<td>ZFABCO5</td>
<td>VONTEC</td>
<td>09.09.2005 17:4</td>
<td>D</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>AT3_BI_QOD_FORMULA3</td>
<td>ZFABC</td>
<td>VONTEC</td>
<td>09.09.2005 17:4</td>
<td>D</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>AT3_BI_QOD_FORMULA4</td>
<td>ZFABC</td>
<td>VONTEC</td>
<td>09.09.2005 17:4</td>
<td>D</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>ZKAD_TEST_20050001_KONST_B10680V0X</td>
<td>09.09.2005 09:2</td>
<td>D</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ZKAD_TEST_20050001_KONST_B10GBW10X</td>
<td>09.09.2005 09:2</td>
<td>D</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JBMHQUERY_26</td>
<td>JBMHCITEM</td>
<td>HUANGM</td>
<td>09.09.2005 14:2</td>
<td>X</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>SMP_DD_BOXES</td>
<td>ZFABC</td>
<td>KALIZB</td>
<td>08.08.2005 11:3</td>
<td>D</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>JBMHQUERY22</td>
<td>JBMHITEM</td>
<td>HUANGM</td>
<td>08.08.2005 12:4</td>
<td>D</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>GM_MIT_HIERARCHIE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

...accessible from the Data Warehousing Workbench → Tools or using transaction RSDDSTAT.

**Switch Statistics data collection on or off**

**Set the statistic detail level**

- `0` = Aggregated data only
- `1` = No detail on data manager
- `2` = Detail on all levels
Maintenance of the query statistic data collection (2)

Default settings for statistic data collection

For newly created queries: InfoProvider default
- All new queries of this InfoProvider will inherit the setting

→ If no InfoProvider setting exists: custom system default for all queries
  - Extras → Change Default or
  - Change entry „Default Value“ in list

→ If no (custom) system default exists: (Delivered) System Default:
  - D = ‘X’ = On,
  - Statistic Detail level: D = ‘1’ = Only Front End/Calculation Layer Data

Statistic Data Management

- Please review the (delivered) system default and disable statistic data collection
  where performance monitoring is not necessary
  - Example: InfoProviders with low data volume

- Setting Statistic Detail Level ‘2’ for all queries will result in large amounts of data
  in statistic data collection tables (rule of thumb: ~ 30 - 40 records per query
  navigation step)
  - Frequent transfer to Technical Content InfoProviders recommended
  - Frequent deletion of Statistics Data (in transaction RSDDSTAT) recommended

When no query specific setting exists, the above mentioned defaults are used.

As of the high amount of BI Statistics data records that get collected at query runtime, it is essential that you review the system default, InfoProvider defaults and query specific settings. The following questions should be asked when defining defaults:

◆ What are InfoProviders where a lot of performance tuning occurs? -> Set statistic data collection to level „2“

◆ Which InfoProviders are used most frequently in querying? -> Set statistic data collection to level „2“

◆ What is the estimated maximum data volume of an InfoProvider? -> Collect aggregated data or Switch Statistics off?

◆ Have there ever been performance issues on a certain InfoProvider? -> Collect aggregated data or Switch Statistics off?

Please consider that a (new) custom system default or InfoProvider default is only considered when a new query is created. You can perform a mass change on all existing queries or Front-end Objects in transaction RSDDSTAT.
Deletion of Query Runtime Statistics

Estimated data volume in query runtime statistics

- Depending on the detail statistics level 30 – 80 records may be written per navigation step to the BI Statistics Tables (for those InfoProviders and Queries where statistics data collection is turned on)
- Example: 500 Users / day with each 6 navigation steps in average = 500 x 6 x 30 = 90,000 records / day in BI Statistics Tables

1. Manual deletion of statistics data

- In transaction RSDDSTAT. Dates to be deleted are selected.
- Using program RSDDSTAT_DATA_DELETE

2. Automatic deletion during data load

- Per default, with each delta load for query runtime statistics, data of the last 14 days is deleted out of the BI Statistics Tables. This time frame can be customized using the TCT_KEEP OLAP_DM_DATA_N_DAYS parameter in the RSADMIN table.

- Please see SAP Note 891740 “Query runtime statistics: Corrections for extractors” for more information.
Migration mandatory

- 3.x InfoCube 0BWTC_C02 will not receive any new data as source table RSDDSTAT is not used for statistics data collection anymore

No migration: Technical content 3.x still valid

- With SAP NetWeaver 7.0, table RSDDSTATAGGRDEF has been enhanced. The technical content 3.x is currently not reflecting this update but can still be used

The SAP NetWeaver 7.0 BI Technical Content InfoCubes 0TCT_C01, 0TCT_C02 and 0TCT_C03 replace the SAP BW 3.x Technical Content InfoCube 0BWTC_C02. This InfoCube can not be used anymore as its source table RSDDSTAT is not used in SAP NetWeaver 7.0 BI query runtime statistics data collection anymore.

On the other hand, the SAP BW 3.x Technical Content InfoCube 0BWTC_C03 as its source table RSDDSTATAGGRDEF is still used in the new query runtime statistics data collection.
When upgrading to SAP NetWeaver 7.0 BI and the new Technical Content, you want to measure your query performance using the same key figures than in SAP BW 3.x. As the new Technical Content consists of new InfoCubes containing new key figures for query runtime measuring, the above table compares the most important SAP BW 3.x query runtime keyfigures to those in SAP NetWeaver 7.0 BI.

Example: SAP BW 3.x Key Figure 0TCTTDBRD (InfoCube: 0BWTC_C02) corresponds to SAP NetWeaver 7.0 BI Key Figure 0TCTTDMREAD (InfoCube: 0TCT_C03).
This slide gives an overview on tools in SAP NetWeaver 7.0 BI that can be used for query runtime monitoring.

All these tools are based on the same set of BI Statistics Tables.

On the other hand, you have to distinguish between two cases for query runtime monitoring:

- **High level query runtime monitoring**
  - For SLAs (Service Level Agreement), Average runtime evolution, System performance, Finding out Top x query runtimes, ...
  - This can be achieved using the BI Administration Cockpit or the transaction ST03 which are both based on the Technical Content. Alternatively, on performance monitoring can be implemented on top of the Technical Content by using customer queries and front-end presentation on Technical Content InfoProviders.

- **Ad hoc runtime analysis, troubleshooting and detailed analysis**
  - For detailed analysis of a single navigation step, the before mentioned DB View RSDDSTAT_OLAP and RSDDSTAT_DM can be used.
  - For troubleshooting purpose, the query monitor (transaction RSRT) is used most frequently.
  - Alternatively, you can display BI Statistics data directly in BEx Web or in the BEx Analyzer (more details on the next slides).
  - In order to trace in a more detailed way planning processes, the BI Integrated Planning Performance Toolset is offered.
**Analysis of Query Runtime Statistics: ST03**

- **Precondition:** EXPERT mode

- **Header information:**
  - Timeframe
  - Source system (Default: MYSELF)

- **Timeframe selection** (User-defined is possible)

- **Analysis views for different BI areas**

**Based on Technical Content for BI Statistics**

- Accessing persistent data (0TCT_C*) and real-time data from BI Statistics through VirtualProviders (0TCT_VC*)

- See note 964418: Adjusting ST03N to new BI-OLAP statistics in Release 7.0

**For more information see SAP Note 964418 “Adjusting ST03N to new BI-OLAP statistics in Release 7.0”**
Analysis of Query Runtime Statistics: Query Monitor

In the Query Monitor (transaction RSRT) detailed query runtime statistics can be displayed:

Front-End and OLAP: detailed list of all (sequential) events

Data Manager: Runtime of all (parallel) “sub” queries:
- InfoProvider (<InfoProvider>)
- BI Accelerator (<InfoCube>$X)
- Aggregate (1xxxxx)
In the (new) BEx Web, experts / administrators can display query runtime statistics of the current user session using the expert mode ’profiling’.

See more information on http://help.sap.com/saphelp_nw04s/helpdata/de/44/57f2c19b1a311de10000000a155369/frameset.htm

See more information in SAP Note 948158 „Performance problems/measuring BI Java Web runtime“
In the (new) BEx Analyzer, experts / administrators can enable the analysis of query runtime statistics of the last user navigation step using the “Statistics” settings in the Global Properties.

This setting is used for ad hoc analysis of runtime statistics in BEx Analyzer itself and does not interfere with settings made in transaction RSDDSTAT in order to collect runtime statistics in RSDDSTAT* tables.
After having set the flag “Collect Statistics” in the Global Properties, the runtime statistics for the last navigation step of the corresponding Workbook can be displayed:
Analysis of Query Runtime Statistics: Integrated Planning

BI Integrated Planning Performance Toolset

- Available as of note 1035990 (Report ZBPPOIP)
- It is planned to deliver this report within a ST-A/PI (Solution Manager Plug In) Release

![BI-IP Performance Toolset](image)
Administration Cockpit & Technical Content

Query Runtime Statistics
Migration & Maintenance
Analysis Tools
Tips & Tricks
Data Load Statistics
Data Load Status
FAQs on Query Runtime Statistics -1-

How to get additional information on EVENT IDs?
- This information is contained in the query runtime statistics documentation. For more information see http://help.sap.com/saphelp_nw70/helpdata/en/45/f0488a1aa03115e1000000a1553f7/frameset.htm

How to monitor query usage / query activity in the system?
- The Technical Content for BI Statistics does not provide any standard queries for doing this. But you can easily create your monitoring query based on the InfoProvider 0TCT_MC01 or 0TCT_C01 by using the key figures 0TCTQUCOUNT (counts every navigation in a query) and 0TCTWTCOUNT (counts every call of a BI Application = initial opening of Workbook or Web Template).

How can I check whether a certain query navigation step used the OLAP Cache?
- You can analyze this in InfoProvider 0TCT_MC02 or in database view RSDDSTAT_OLAP. If the EVENT IDs '2505' or '2525' appear for the given STEPUID the OLAP Cache has been read.
FAQs on Query Runtime Statistics -2-

In my own queries based on Technical Content InfoProviders, runtimes appear that are not linked to the query execution. What do they mean?

- Please filter on $\text{0TCTBISOTYP} = \text{ELEM}^1$ and $\text{0TCTBIOTYP} = \text{ELEM}^1$, $\text{QVIW}$ and $\text{0TCTBIOTYP} = \text{XLWB}^1$, $\text{BTMP}^1$, $\text{TMPL}^1$ and $\text{ERPT}^1$ in order to filter out additional times such as “OPEN_DIALOG”.

Why appears a total time ($\text{0TCTTIMEALL}$) of a certain query execution much higher than expected?

- Currently, in certain cases system times such as the OPEN_DIALOG or user interaction appear as Not Assigned Time ($\text{0TCTTIMENA}$) which is part of the total time $\text{0TCTTIMEALL}$. To ignore $\text{0TCTTIMENA}$ in total time, you might calculate the total time for querying as sum of $\text{0TCTTIMEFE}$, $\text{0TCTTIMEOLAP}$ and $\text{0TCTTIMEDM}$.

What does the BI Application Object ‘RSDRI’ mean that shows high runtimes in performance monitors?

- This is the time spent on reading InfoProvider through the Data Manager Interface (RSDRI_INFOPROV_READ) or through Data Mart Extractions (3.x technology). You can filter this out by restricting characteristic $\text{0TCTBIBOBJ}$.
FAQs on Query Runtime Statistics -3-

How can I compare performance of queries that used the BI Accelerator to queries that use aggregates?

- You can analyze this using InfoProvider 0TCT_MC03. BI Accelerator accesses will appear as 0TCTAGPROV = <INFOCUBE>$X) whereas aggregates will appear as 0TCTAGPROV = 1xxxxx. For easy restriction in queries you might add an additional characteristic deriving this access type in transformations or update rules.

How to get the BI Accelerator kernel runtime for a query?

- Execute a query with statistics data in transaction RSRT. From the Aggregation Layer within the statistics data, note the Data Manager UID. Then start transaction SE16 and enter the table name RSDDSTATTREXSERV. There, enter the Data Manager UID and select the call type Q. When you choose "Execute", the TREX_KERNEL_TIME becomes visible.
Query Runtimes Statistics: DBSEL and DBTRANS

0TCTNDSEL: Selected records (from DB or BI Accelerator)
0TCTNDBTRA: Transferred records (from DB or BI Accelerator)

These two key figures indicate the aggregation (factor) that took place before data was handed over to the Analytical Engine. This is important for improving the performance of your aggregates and your data modeling in general.

0TCTNDSEL / 0TCTNDBTRA should be monitored using InfoProvider 0TCT_MC03

- Prerequisite: statistics detail level for query is set to '2' in statistics customizing)
- 0TCTNDSEL / 0TCTNDBTRA in 0TCT_MC01 are only meaningful if query data was selected out of one InfoProvider only. In case of "PartProvider" queries within a MultiProvider, data will be aggregated (results not meaningful). Example:

<table>
<thead>
<tr>
<th>MultiProvider</th>
<th>PartProvider</th>
<th>Selected</th>
<th>Transferred</th>
<th>Technical Content</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>-144000000</td>
<td>3608860</td>
<td>0TCT_MC01</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4000000</td>
<td>3600000</td>
<td>0TCT_MC03</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13500000</td>
<td>260</td>
<td>0TCT_MC03</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5000000</td>
<td>8600</td>
<td>0TCT_MC03</td>
</tr>
</tbody>
</table>

Comparing selected data records to transferred data records is essential for query performance tuning using aggregates but also is a good general indication of the level of aggregation that took place before hand over data to the Analytical Engine.

For measuring selected data records vs. transferred data records, it is preferable to use the InfoProvider 0TCT_MC03.

The example on the slide shows, that these Key Figures in 0TCT_MC01 are summed up for MultiProvider query. Hence, they are not meaningful as selection and transfer of data records do occur on the level of PartProviders (InfoProviders that are contained in the MultiProvider).
Time Zones in BI Statistics and Technical Content

**TCT Characteristic** | **BI Statistics Field** | **BI Statistics Time Zone** | **TCT Time Zone**
---|---|---|---
0TCTTIMSTMP | STARTTIMESTAMP | UTC | UTC
0TIME | STARTTIMESTAMP | UTC | UTC
0CALDAY | STARTTIMESTAMP | UTC | UTC
0TCTUETIME | UTIME | UTC | LOCAL
0TCTHOURS Slut | HOUR SLOT | UTC | LOCAL

**TCT Key Figure** | **BI Statistics Field** | **BI Statistics Time Zone** | **TCT Time Zone**
---|---|---|---
0TCTSTRRTTST | STARTTIMESTAMP | UTC | UTC
0TCTSTRRTDAT | STARTTIMESTAMP | UTC | UTC
0TCTSTRRTTIM | STARTTIMESTAMP | UTC | Local
0TCTSTIMEK | STARTTIMESTAMP | UTC | UTC
0TCTENDTST | ENDTIMESTAMP | UTC | UTC
0TCTENDDAT | ENDTIMESTAMP | UTC | UTC
0TCTENDDIM | ENDTIMESTAMP | UTC | UTC

Local = System time zone, customized in transaction STZAC, can be displayed in System Status
UTC = Coordinated Universal Time = Greenwich Mean Time (GMT)

This slides illustrates

* Which Technical Content Characteristics and Key Figures contain information on time level.
* Where this Technical Content InfoObjects are used: In query and / or data load statistics.
* From which BI Statistics source field (RSDDSTAT* tables) a certain InfoObject does extract its time information.
* With which time zone this data is stored in the BI Statistics tables and in the Technical Content InfoProviders.

As you can see, for the characteristics 0TCTUTIME and 0TCTHOURS Slut and the key figure 0TCTSTRRTTIM a time conversion from UTC to the system time zone occurs in extraction the data from the BI Statistics tables to the Technical Content.
Alerting on critical deviations in runtime statistics is not part of the Technical Content and the BI Administration Cockpit but can be easily enhanced.
Implementing Exception Broadcasting -1-

Integration of Exception Reporting
- Searching queries for exceptions that have occurred
- Distribution of exceptions that have occurred by e-mail or with the Alert Framework

Application Server

BI

BEx Query with Exception

BEx Broadcaster

Other Applications

Central Alert Framework

Send a Short Text via SMS or Pager
Send a Long Text via E-Mail or Fax
Send an Alert to the UWL

Integration of Exception Reporting
- Searching queries for exceptions that have occurred
- Distribution of exceptions that have occurred by e-mail or with the Alert Framework
Implementing Exception Broadcasting -2-

Query Designer

1. Create Exception...

- Exception Values
  - Description: Low Sales
  - Evaluation for: Key Figures
  - Number of documents: 190

BEx Broadcaster

2. Create Broadcasting Section...

- Broadcast whenever a certain exception takes place
- Broadcast only for specific exception level

<table>
<thead>
<tr>
<th>Distribution type</th>
<th>Selection Criterion</th>
<th>Document Type</th>
<th>Parameter</th>
<th>Value</th>
<th>Layout</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Send E-Mail</td>
<td>Exception</td>
<td>Exception</td>
<td>Create</td>
<td>Low Sales</td>
<td>Text</td>
<td>Low Sales/Critical 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Overview</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Create Alert</td>
<td>Exception/Alert Level</td>
<td>(No Selection Possible)</td>
<td>Create</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sorting / Filtering using importance customizing

By assigning an “importance” to a BI Object you can achieve custom sorting or filtering in queries that are based on the Technical Content („Show most important InfoProviders at the top of the list“).

1. Maintain importance in transaction RSTCIMP

2. Transfer importance customizing to InfoObject 0TCTBWOBJCT (attribute 0TCTIMPRTNC) using DataSource 0TCTBWOBJCT_ATTR.

3. Display attribute 0TCTIMPRTNC can now be used in queries for sorting or filtering purposes.

You can assign an importance to the following BI Objects. The importance can be evaluated in the Technical Content queries during reporting (for example, for filtering or sorting purposes):

- Queries
- MultiProviders
- InfoSets
- InfoCubes
- DataStore objects
- Process chains
Query Runtimes Statistics: Value helps

Through the new EVENTID concept much more detail and additional information is available in BI Statistics and Technical Content.

Example:
- Runtime for value helps in query definition and query execution

<table>
<thead>
<tr>
<th>RSDDSTAT OLAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>HANDLETP</td>
</tr>
<tr>
<td>F4</td>
</tr>
</tbody>
</table>

All EVENTIDs = .000006" describe the HANDLETP 'F4' in detail. In this case, 6001 means 'Value Help: Read Data from DB'.

Within the object properties, the origin of the data can be analyzed (Q = Posted values for query navigation, D = Values in InfoProvider, M = Values in Master Data).

- In Technical Content, this information can be analyzed through MultiProvider 0TCT_MC02 (0TCT_MC01 containing the information as part of the „Not Assigned“ time.)
Through the new query runtime statistics data storage, improved monitoring for VirtualProvider based query access in SEM-BCS (Consolidation) is possible.

**Data in BI Statistic Tables**

<table>
<thead>
<tr>
<th>Handle Type</th>
<th>InfoProvider</th>
<th>Object Name</th>
<th>Event ID</th>
<th>Event Text</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>OLAP</td>
<td>0BCS_VC11</td>
<td>BCS_QUERY_01</td>
<td>2500</td>
<td>Cache Generation</td>
<td>0.125</td>
</tr>
<tr>
<td>OLAP</td>
<td>0BCS_VC11</td>
<td>BCS_QUERY_01</td>
<td>3000</td>
<td>OLAP: Settings</td>
<td>0.14</td>
</tr>
<tr>
<td>OLAP</td>
<td>0BCS_VC11</td>
<td>BCS_QUERY_01</td>
<td>3500</td>
<td>OLAP: Query Gen.</td>
<td>0.047</td>
</tr>
<tr>
<td>OLAP</td>
<td>0BCS_VC11</td>
<td>BCS_QUERY_01</td>
<td>4400</td>
<td>OLAP Initialization</td>
<td>0.279</td>
</tr>
<tr>
<td>OLAP</td>
<td>0BCS_VC11</td>
<td>BCS_QUERY_01</td>
<td>4600</td>
<td>Node Authorizations</td>
<td>0.016</td>
</tr>
<tr>
<td>OLAP</td>
<td>0BCS_VC11</td>
<td>BCS_QUERY_01</td>
<td>9000</td>
<td>Data Manager</td>
<td>3.829</td>
</tr>
</tbody>
</table>

**Details on Data Manager**

<table>
<thead>
<tr>
<th>InfoProvider</th>
<th>Basis Provider</th>
<th>Aggregate</th>
<th>Table Type</th>
<th>DM Preparation</th>
<th>DM Read</th>
<th>Records, Selected</th>
<th>Records, Transferred</th>
</tr>
</thead>
<tbody>
<tr>
<td>0BCS_VC11</td>
<td>0BCS_VC11</td>
<td>0BCS_VC11</td>
<td>0</td>
<td>3,813</td>
<td>0</td>
<td>0</td>
<td>82</td>
</tr>
<tr>
<td>0BCS_VC11</td>
<td>0BCS_VC11</td>
<td>0BCS_VC11</td>
<td>F</td>
<td>0.016</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0BCS_VC11</td>
<td>0BCS_C11</td>
<td>0BCS_C11</td>
<td>F</td>
<td>0</td>
<td>1,422</td>
<td>6.156</td>
<td>564</td>
</tr>
<tr>
<td>0BCS_VC11</td>
<td>0BCS_C11</td>
<td>0BCS_C11</td>
<td>0.016</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Excerpt from Table RSDDSTAT_DM**

Example

3.8 sec of which 1.4 sec are due to reading from 0BCS_C11

6.156 records from DB, 564 transferred to 0BCS_VC11, 82 transferred to OLAP

The above example illustrates how the new BI Statistics data collection and the new Technical Content can be beneficial for query runtime monitoring in SAP Applications that are based on SAP NetWeaver BI.

In that example, the new BI Statistics table RSDDSTAT_DM (and the corresponding InfoProvider 0TCT_C03) can be used for analyzing VirtualProvider queries in SEM-BCS by splitting up the total time into:

- Time spent on reading the data from the InfoCube for direct update
- Time spent in the VirtualProvider containing extensive business logic
Administration Cockpit & Technical Content
Query Runtime Statistics
Migration & Maintenance
Analysis Tools
Tips & Tricks
Data Load Statistics
Data Load Status
This slide shows you how the Data Load Statistics page in the BI Administration Cockpit looks like.
This Workset provides an overview of the length of the load process and process chains, as well as the length and number of data records from InfoPackages and data transfer processes.

The Workset includes four pages with the following information:

1. Process Chain Statistics with the iViews:
   - Short-Term Trends in Total Runtimes of Process Chains
   - Long-Term Trends in Total Runtimes of Process Chains
   - Total Runtimes of Process Chains
   - Deviations in Total Runtimes of Process Chains

2. Process Statistics with the iViews:
   - Short-Term Trends in Total Runtimes of Processes
   - Long-Term Trends in Total Runtimes of Processes
   - Total Runtimes of Processes
   - Deviations in Total Runtimes of Processes

3. InfoPackage Statistics with the iViews:
   - Short-Term Trends in Total Runtimes of InfoPackages
   - Long-Term Trends in Total Runtimes of InfoPackages
   - Total Runtimes of InfoPackages
   - Deviations in Total Runtimes of InfoPackages

4. DTP Statistics with the iViews:
   - Short-Term Trends in Total Runtimes of DTPs
   - Long-Term Trends in Total Runtimes of DTPs
   - Total Runtimes of DTPs
   - Deviations in Total Runtimes of DTPs

Please find above an overview on the iViews that are provided in the BI Administration Cockpit concerning Data Load Statistics.
Technical content queries for analyzing...

...performance details of process chains
- Ø Total runtime
- Run-times data load, data update, activation, compression, aggregation, attribute change

...performance details of Data Transfer Processes
- Ø Total runtime, Ø Number of records, Ø Amount of data
- Run-times of each step type

...performance details of InfoPackages
- Ø Total runtime, Ø Number of records, Ø Amount of data
- Run-times of each action type
In SAP BW 3.x, runtime statistics were collected on InfoPackage basis for all extraction (DataSource), transformation (transfer rules, InfoSources and update rules) and loading processes (update to InfoProviders). InfoCube: 0BWTC_C05. In brief: Monitoring the old data flow concept is done in 0BWTC_C05.

In SAP NetWeaver 7.0 BI, there is a new data flow concept consisting of a new Transformation Object and new InfoSources (meta data information) and the new Data Transfer Process (Scheduling of BI internal data load processes). This new data flow concept is monitored using the new Technical Content MultiProvider 0TCT_MC22. In addition, details on InfoPackages (that are still used for loading data from the source systems to a DataSource in BI) can be monitored using MultiProvider 0TCT_MC23. In brief: Monitoring the new data flow concept is done using 0TCT_MC23 (up to DataSource / PSA Tables) and 0TCT_MC22 (from DataSource / PSA Tables to further InfoProviders).

In addition, there is new Technical Content on monitoring process chain runtimes. If additional details on the process types „DTP“ and „InfoPackage“ from the process chain statistics is needed, the before mentioned Technical Content applies.
New Technical Content for Data Load Statistics: Data Flow

- Process (Chain) Statistics
  - RSPCLOGCHAIN
  - OTCT_MC21
  - OTCT_C21
  - OTCT_VC21
  - OTCT_DS21

- DTP Statistics
  - RSDDSTATDTP
  - OTCT_MC22
  - OTCT_C22
  - OTCT_VC22
  - OTCT_DS22

- InfoPackage Statistics
  - RSDKREQUEST
  - OTCT_MC23
  - OTCT_C23
  - OTCT_VC23
  - OTCT_DS23

Migration recommended

3.x InfoCube will still contain data, migration recommended as of new data model and new InfoObjects used

No migration: Technical content 3.x still valid
<table>
<thead>
<tr>
<th>Administration Cockpit &amp; Technical Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Query Runtime Statistics</td>
</tr>
<tr>
<td>Migration &amp; Maintenance</td>
</tr>
<tr>
<td>Analysis Tools</td>
</tr>
<tr>
<td>Tips &amp; Tricks</td>
</tr>
<tr>
<td>Data Load Statistics</td>
</tr>
<tr>
<td><strong>Data Load Status</strong></td>
</tr>
</tbody>
</table>
This slide shows you how the Data Load Status page in the BI Administration Cockpit looks like.

On this page, the most important status information (processes, requests) is provided on:

- BI InfoProviders
- Process Chains
Administration Cockpit: Data Load Status

- This Workset provides an overview of the status of the loading process and process chains, and also of the requests (and data records) in the InfoProviders and InfoObjects.
- The Workset includes three pages with the following information:
  1. Process Status with the iViews:
     - Process Chain Status
     - Process Status
     - Process Type Selection
  2. BI Object Request Status with iViews:
     - InfoCube Status
     - DataStore Object Status
     - Master Data Status
     - PSA Table Status
  3. InfoProvider Request Status with the iViews:
     - InfoCube Correctness
     - Aggregate Rollup
     - DataStore Object Correctness
     - DataStore Object Activation

Please find above an overview on the iViews that are provided in the BI Administration Cockpit concerning Data Load Status.
New Technical Content for Data Load Status: Queries

Technical content queries for analyzing...

... status details of
- InfoCubes, DataStore objects, Master data (only flexible update)
- PSA tables

... with various key figures and characteristics ...
- Total numbers of requests, Last request, Time-stamp of last change

... each for the several criteria
- All requests
- Qualitatively not OK (ranking criterion, not for PSA)
- Technically not OK (filter criterion)
- Not activated (only for DataStore objects)
- Not compressed (only for InfoCubes)
- Not aggregated (only for InfoCubes)
New Technical Content for Data Load Status: Queries

Technical content queries for analyzing...

... status details of ...
- Process Chains, Data Transfer Processes, InfoPackages, DataStore object activations, InfoCube compressions, Hierarchy and Attribute change runs and various other processes

... with the following status information ...
- Status (red, yellow, green) (ranking criterion)
- Ended with error
- Still running
- Ended successfully
- Not yet started
New Technical Content for Data Load Status: Data Flow

- BI Object Request Status
  - 0TCT_Mc11
  - 0TCT_VC11
  - 0TCT_DS11
  - RSMDATASTATE
  - RSMDATASTATE_EXT

- Process Status
  - 0TCT_Mc12
  - 0TCT_VC12
  - 0TCT_DS12
  - RSPCLOGCHAIN
  - RSPCLOGCHAIN
Migration recommended

3.x InfoCubes will still contain data, migration recommended as of new data model and direct access capabilities
Further information

Documentation BI Query Runtime Statistics
http://help.sap.com/saphelp_nw7.0/helpdata/en/43/e37f8a6df402d3e10000000a1553f7/frameset.htm

Documentation BI Administration Cockpit
http://help.sap.com/saphelp_nw7.0/helpdata/de/44/08a75d19e32d2fe10000000a11466f/frameset.htm
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