BI104

# SAP NetWeaver BI Accelerator - Query Analysis

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# Contributing Speaker

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# Learning Objectives

As a result of this workshop, you will be able to:

- **understand the architecture of SAP NetWeaver BI Accelerator**
- **understand the new query runtime statistics in BI 7.0.**
- **analysis of  the SAP NetWeaver BI Accelerator query runtime**
- **identify the different transactions for SAP NetWeaver BI Accelerator**



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## Overview

## Query Runtime Statistics

## BI Accelerator Query Runtime

## BI Accelerator Transactions

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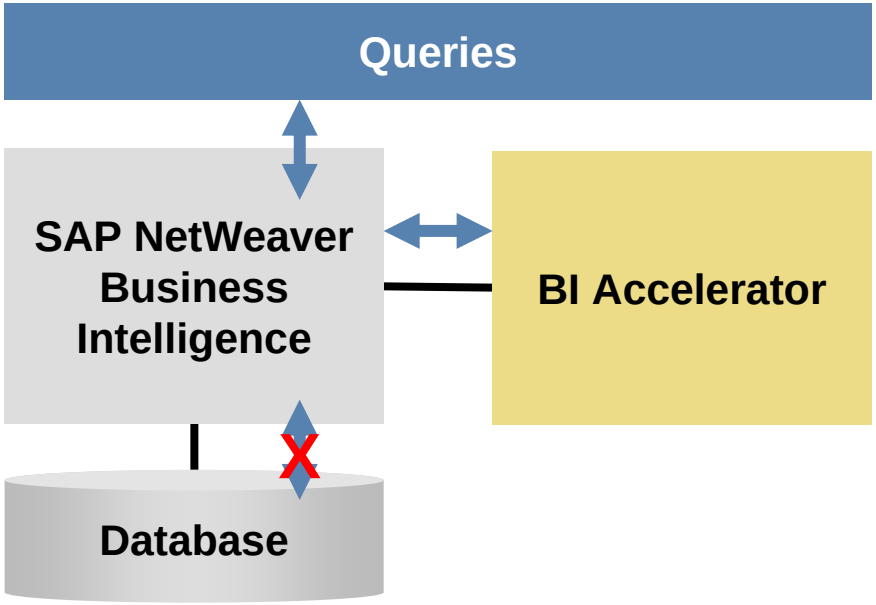
# BI Accelerator for high performance BI

**A new transparent approach to boost BI query performance**

- **Performance speedup factor between 10 and 100 (compared to DB)**
- **Without changing the BI user experience (transparent to users)**
- **Pre-requisite: SAP NetWeaver 7.0 BI**

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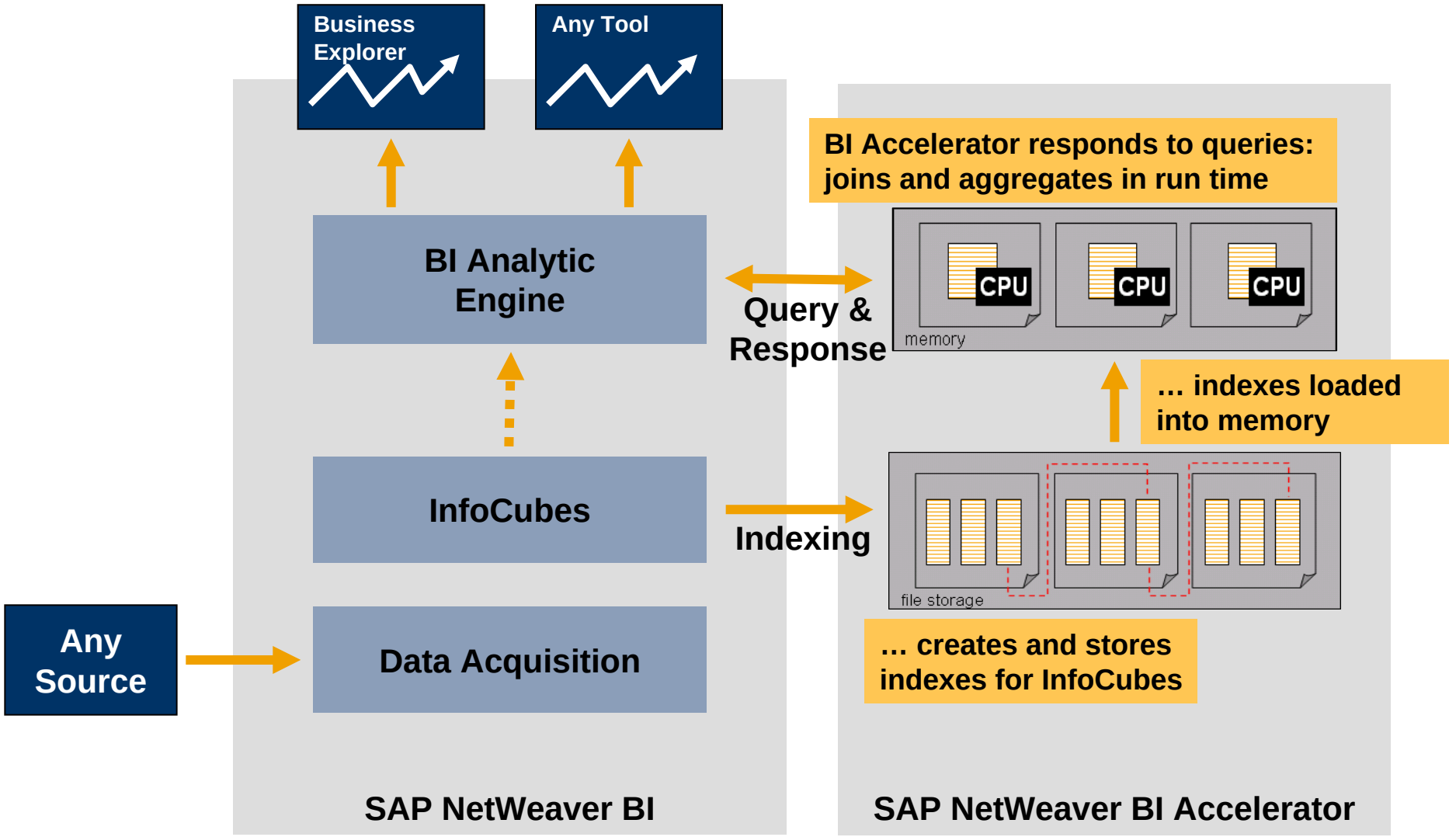
# SAP NetWeaver BI Accelerator: Architecture

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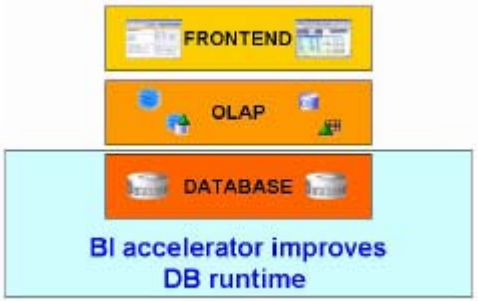
# Criteria for BI Query Acceleration

## Query processing time comprises 3 components

- Database access, calculations (OLAP), client rendering
- BIA addresses the Database access times




## No Acceleration for

- Queries that are already fast w/o aggregates
- Queries with high OLAP time
- Long front-end events
- Complex authorization checks
- Transferred amount of data > 500,000 (rough indicator)

## Acceleration for

- Ad-hoc analysis/unpredictable query patterns
- High database time
- Big ratio DBSEL/DBTRANS
- Queries that routinely need lots of aggregates

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Overview

**Query Runtime Statistics**

BI Accelerator Query Runtime

BI Accelerator Transactions

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# New Query Statistics

- **Splitting the “OLAP“ statistics into a FE/OLAP and a DataManager part.**
  - **Serial (FE/OLAP) vs. (often) parallel (DM) execution**
  - **Many different events (FE/OLAP) vs. small number of events (DM)**
- **Introducing statistic detail levels on query (not just InfoProvider)**
- **Introducing the concept of Events (flexibility for further extensions)**
- **Distributing the statistic information over several tables**

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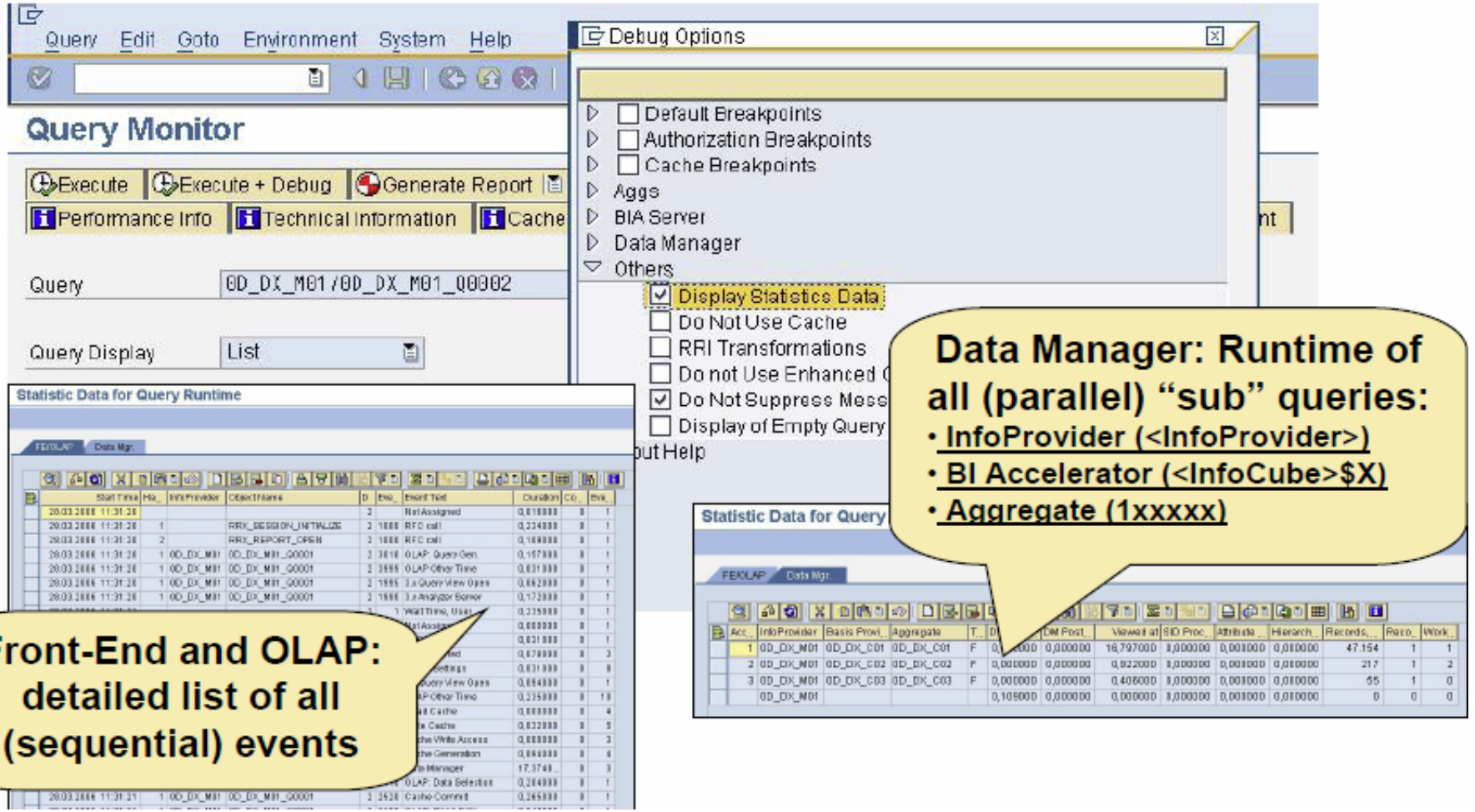
# Analysis of Query Runtime Statistics

**In the Query Monitor (transaction RSRT), detailed query runtime statistics can be displayed.**



## Event-IDs:

- **Definition in RSDDSTATEVENTS**
- **Common concept used in query runtime, planning and warehouse management statistics**
- **Guarantees flexibility for further extensions**

## Most important Event-IDs:

| EVENT-ID / EVENT-RANGE | Description |
|---|---|
| **2500 – 2530** | OLAP Cache usage |
| **3000 – 3999** | OLAP processing & calculation |
| **4300 – 4600** | Authorization checks |
| **9000** | Data Manager |
| **12600 – 14600** | Web application |
| **15000 – 15100** | BEx 7.x frontend |
| **19900 – 19999** | BEx 3.x frontend |
| **40000 – 40100** | MDX |
| **50000 – 50010** | Integrated planning |

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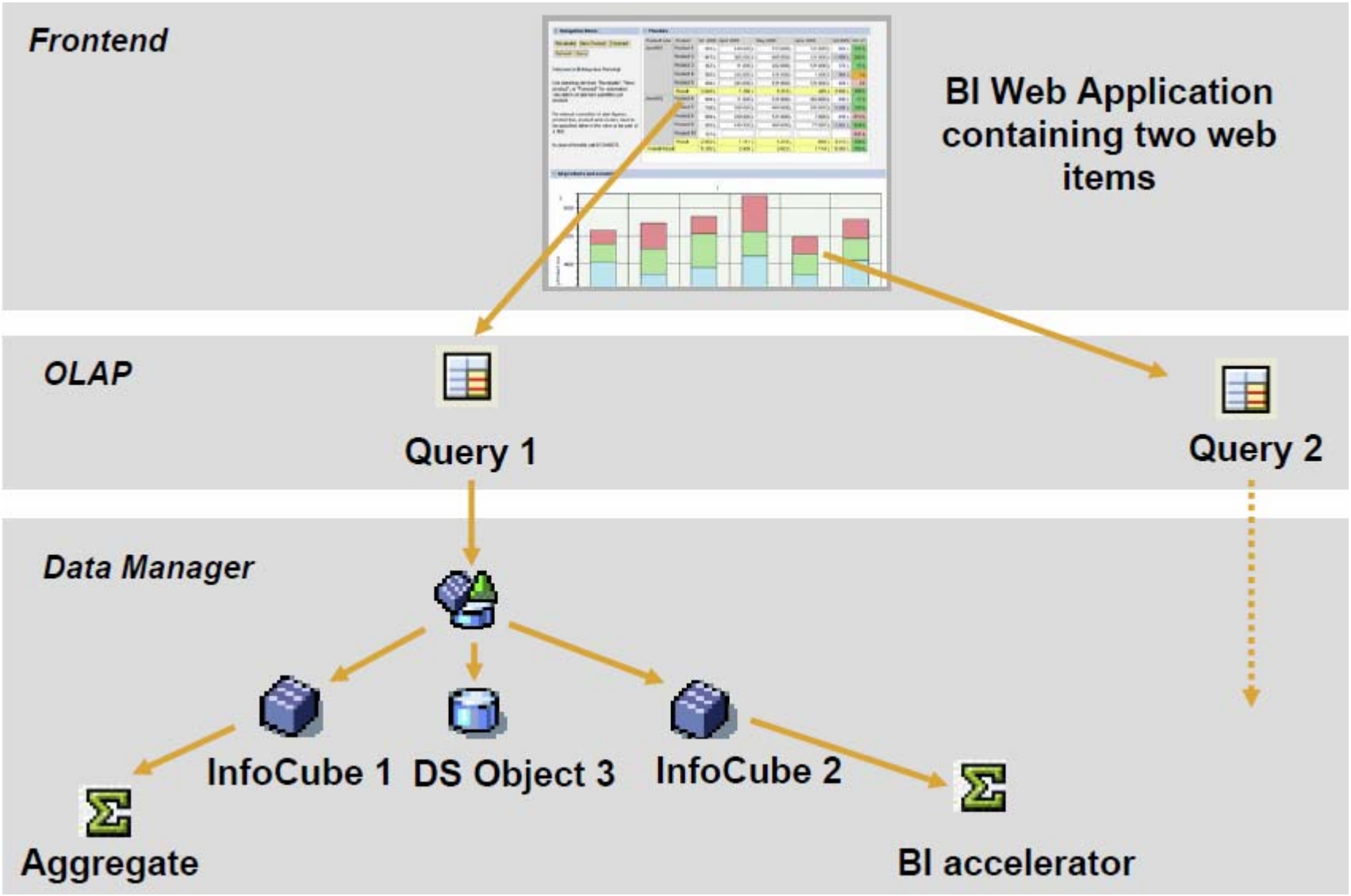
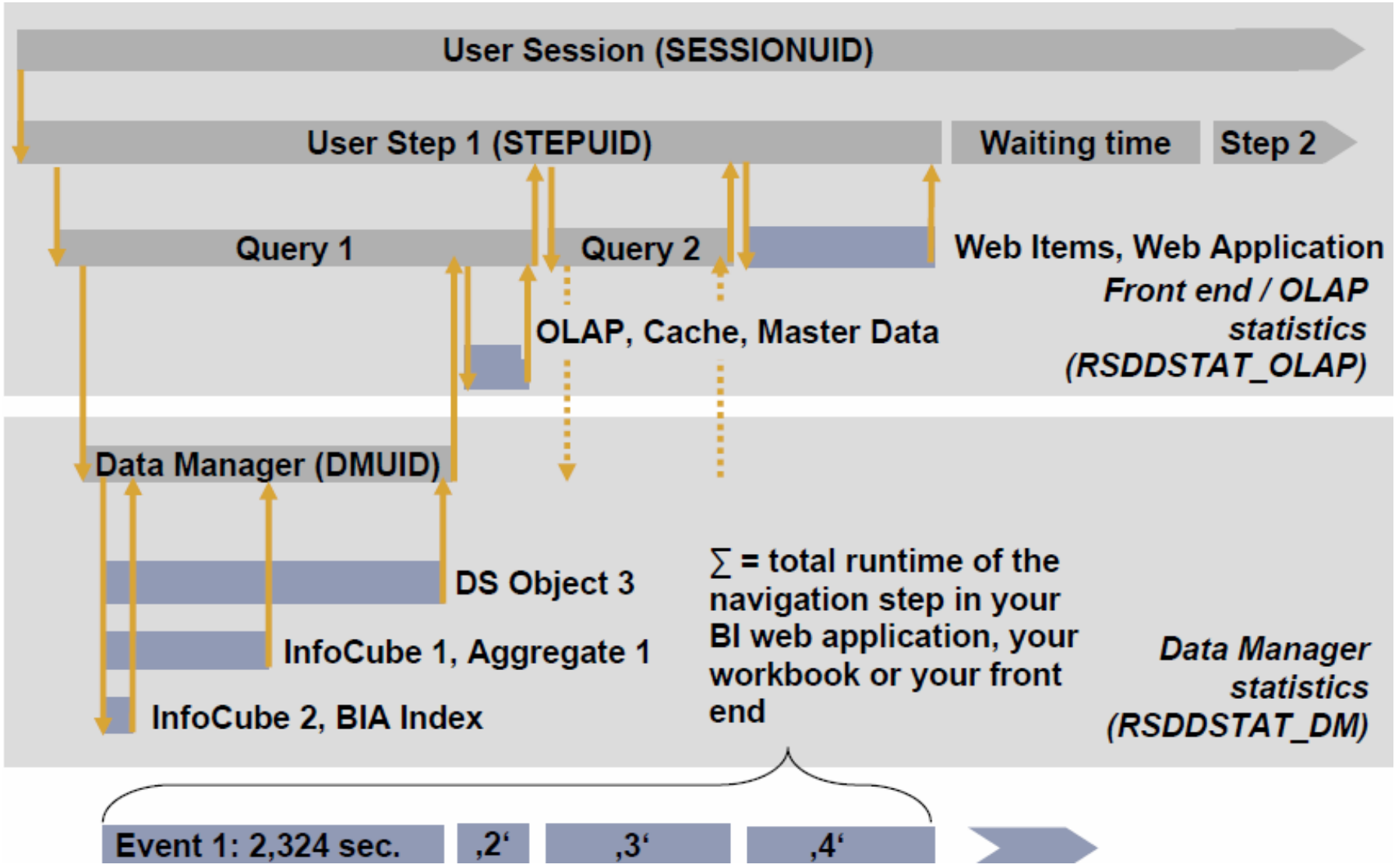
# Query Runtime Overview



# Query Runtime Overview



# RSDDSTAT_OLAP: Details (I)

**Used frontend**

**Overall runtime (per step)**

Data Browser: Table RSDDSTAT_OLAP Select Entries 39

| SESSIONUID | STEPUID | H | HANDLETP | EVENTID | UNAME | STEPTP | S | UTIME | CALDAY | RUNTIME | NFOPROV | OBJNAME | OBJPROP | S... | EVTIME | EVCOUNT | E | STARTTIME |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9UY2XWUQAS | 2RWICP14 | | DFLT | | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | | | | 2 | 0,000000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 1 | BRFC | 10000 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | | RRW3_WEBRFC | | 2 | 0,000000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 1 | W3_I | 19911 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | | MAIN | | 2 | 1,125000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 1 | W3_T | 4600 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | | | | 2 | 0,500000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 1 | W3_T | 19910 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | | | | 2 | 23,312000 | 0 | 2 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 1 | W3_T | 19919 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | | | | 2 | 0,000000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 2 | W3_I | 19911 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | | TITLE | | 2 | 0,016000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 3 | W3_I | 19911 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | | HEADER | | 2 | 0,000000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 2500 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | WS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 0,110000 | 0 | 8 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 2520 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | WS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 0,000000 | 0 | 3 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 3000 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | WS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 3,688000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 3010 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | WS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 8,344000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 3100 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | WS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 1,077000 | 15 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 3110 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | WS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 0,734000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 3200 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | WS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 0,405000 | 19 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 3900 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | WS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 0,673000 | 0 | 3 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 3999 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | WS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 3,953000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 4600 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | WS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 0,968000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 9000 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | WS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 10,782000 | 0 | 2 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 9010 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | WS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 0,000000 | 30 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 9011 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | WS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 0,000000 | 16.939 | 1 | 20.060.828.150.255,3... |

***Administrative Info***

***Execution start time***

# RSDDSTAT_OLAP: Details (II)

**Data Browser: Table RSDDSTAT_OLAP Select Entries 39**

| SESSIONUID | STEPUID | H | HANDLETP | EVENTID | UNAME | STEPTP | S | UTIME | CALDAY | RUNTIME | INFOPROV | OBJNAME | OBJPROP | S... | EVTIME | EVCOUNT | E | STARTTIME |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9UY2XWUQAS | 2RWICP14 | | DFLT | | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | | | | 2 | 0,000000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 1 | BRFC | 10000 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | | RRW3_WEBRFC | | 2 | 0,000000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 1 | W3_I | 19911 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | | MAIN | | 2 | 1,125000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 1 | W3_T | 4600 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | | | | 2 | 0,500000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 1 | W3_T | 19910 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | | | | 2 | 23,312000 | 0 | 2 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 1 | W3_T | 19919 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | | | | 2 | 0,000000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 2 | W3_I | 19911 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | | TITLE | | 2 | 0,016000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 3 | W3_I | 19911 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | | HEADER | | 2 | 0,000000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 2500 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | ZWS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 0,110000 | 0 | 8 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 2520 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | ZWS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 0,000000 | 0 | 3 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 3000 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | ZWS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 3,688000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 3010 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | ZWS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 8,344000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 3100 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | ZWS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 1,077000 | 15 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 3110 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | ZWS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 0,734000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 3200 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | ZWS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 0,405000 | 19 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 3900 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | ZWS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 0,673000 | 0 | 3 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 3999 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | ZWS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 3,953000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 4600 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | ZWS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 0,968000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 9000 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | ZWS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 10,782000 | 0 | 2 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 9010 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | ZWS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 0,000000 | 30 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 9011 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | ZWS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 0,000000 | 16.939 | 1 | 20.060.828.150.255,3... |

**Event-IDs**

**Runtime**

**Counter**

***2 keyfigure types***

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# RSDDSTAT_OLAP: Details (III)

**InfoProvider**

**Query**

Data Browser: Table RSDDSTAT_OLAP Select Entries 39

| SESSIONUID | STEPUID | H | HANDLETP | EVENTID | UNAME | STEPTP | S | UTIME | CALDAY | RUNTIME | INFOPROV | OBJNAME | OBJPROP | S... | EVTIME | EVCOUNT | E | STARTTIME |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9UY2XWUQAS | 2RWICP14 | | DFLT | | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | | | | 2 | 0,000000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 1 | BRFC | 10000 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | | RRW3_WEBRFC | | 2 | 0,000000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 1 | W3_I | 19911 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | | MAIN | | 2 | 1,125000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 1 | W3_T | 4600 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | | | | 2 | 0,500000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 1 | W3_T | 19910 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | | | | 2 | 23,312000 | 0 | 2 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 1 | W3_T | 19919 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | | | | 2 | 0,000000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 2 | W3_I | 19911 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | | TITLE | | 2 | 0,016000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 3 | W3_I | 19911 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | | HEADER | | 2 | 0,000000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 2500 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | ZWS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 0,110000 | 0 | 8 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 2520 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | ZWS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 0,000000 | 0 | 3 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 3000 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | ZWS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 3,688000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 3010 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | ZWS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 8,344000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 3100 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | ZWS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 1,077000 | 15 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 3110 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | ZWS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 0,734000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 3200 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | ZWS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 0,405000 | 19 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 3900 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | ZWS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 0,673000 | 0 | 3 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 3999 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | ZWS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 3,953000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 4600 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | ZWS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 0,968000 | 0 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 9000 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | ZWS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 10,782000 | 0 | 2 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 9010 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | ZWS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 0,000000 | 30 | 1 | 20.060.828.150.255,3... |
| 9UY2XWUQAS | 2RWICP14 | 4 | OLAP | 9011 | MUELLERS | JAVA | 1 | 15:02:55 | 28.08.2006 | 57,203000 | ZWS_MULTI | ZSM_ZWS_MULTI_E | H0_002____ | 1 | 0,000000 | 16.939 | 1 | 20.060.828.150.255,3... |

**Used statistic level:**
**‚0' = Aggregated data only**
**‚1' = No detail on data manager**
**‚2' = Detail on all levels**

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# Data Manager details in RSDDSTAT_DM (I)

**Link to RSDDSTAT_OLAP**

**Query**

**InfoProvider / MultiProvider**

| STEPUID | H | HANDLETP | UNAME | UTIME | CALDAY | OBJNAME | DMUID | A... | ACCESSTI | INFOPROV | PARTPROV | AGGREGATE | TABLTP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DKU8WTAHAQ | 4 | OLAP | D026527 | 14:22:32 | 27.07.2006 | FIRSTQUERY | 58KJZ885N. | | | ZWS_MULTI | | | |
| DKU8WTAHAQ | 4 | OLAP | D026527 | 14:22:32 | 27.07.2006 | FIRSTQUERY | 58KJZ885N. | 1 | | ZWS_MULTI | ZWS_CUBE1 | 100010 | E |
| DKU8WTAHAQ | 4 | OLAP | D026527 | 14:22:32 | 27.07.2006 | FIRSTQUERY | 58KJZ885N. | 2 | | ZWS_MULTI | ZWS_C1_G2 | ZWS_C1_G2 | F |

| TIMEDMPREP | TIMEDMPOST | TIMEREAD | TIMESID | TIMENAVATTR | TIMEHIERARCHY | DBSEL | DBTRANS | WP_ID | PROCESSCNT | SLOTNR | STARTTIME |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,532000 | 0,000000 | 0,000000 | 0,000000 | 0,000000 | 0,000000 | 0 | 0 | 0 | 0 | 0 | 20.060.727.142.232,3630000 |
| 0,000000 | 0,000000 | 1,734000 | 0,000000 | 0,000000 | 0,000000 | 47.404 | 1 | 2 | 1 | 2 | 20.060.727.142.232,3630000 |
| 0,000000 | 0,000000 | 2,124000 | 0,000000 | 0,000000 | 0,000000 | 50.000 | 1 | 1 | 2 | 1 | 20.060.727.142.232,3630000 |

***Administrative Info***

***Execution start time***

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# Data Manager details in RSDDSTAT_DM (II)

**Aggregate used ?**

| STEPUID | H | HANDLETP | UNAME | UTIME | CALDAY | OBJNAME | DMUID | A... | ACCESSTP | INFOPROV | PARTPROV | AGGREGATE | TABLTP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DKU8WTAHAQ | 4 | OLAP | D026527 | 14:22:32 | 27.07.2006 | FIRSTQUERY | 58KJZ885N. | | | ZWS_MULTI | | | |
| DKU8WTAHAQ | 4 | OLAP | D026527 | 14:22:32 | 27.07.2006 | FIRSTQUERY | 58KJZ885N. | 1 | | ZWS_MULTI | ZWS_CUBE1 | 100010 | E |
| DKU8WTAHAQ | 4 | OLAP | D026527 | 14:22:32 | 27.07.2006 | FIRSTQUERY | 58KJZ885N. | 2 | | ZWS_MULTI | ZWS_C1_G2 | ZWS_C1_G2 | F |

**Basis InfoProvider**

**Fact table type**

| TIMEDMPREP | TIMEDMPOST | TIMEREAD | TIMESID | TIMENAVATTR | TIMEHIERARCHY | DBSEL | DBTRANS | WP_ID | PROCESSCNT | SLOTNR | STARTTIME |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,532000 | 0,000000 | 0,000000 | 0,000000 | 0,000000 | 0,000000 | 0 | 0 | 0 | 0 | 0 | 20.060.727.142.232,3630000 |
| 0,000000 | 0,000000 | 1,734000 | 0,000000 | 0,000000 | 0,000000 | 47.404 | 1 | 2 | 1 | 2 | 20.060.727.142.232,3630000 |
| 0,000000 | 0,000000 | 2,124000 | 0,000000 | 0,000000 | 0,000000 | 50.000 | 1 | 1 | 2 | 1 | 20.060.727.142.232,3630000 |

**DM prepare**

**Database read time**

**DBSEL & DBTRANS**

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# Data Manager details in RSDDSTAT_DM (III)

## Parallel execution statistics

**WP_ID:** Used DIA Workprocess

**PROCESSCNT:** Analog access counter

**SLOTNR:** Max. 6 parallel slots available

| STEPUID | H | HANDLETP | UNAME | UTIME | CALDAY | OBJNAME | DMUID | A... | ACCESSTP | INFOPROV | PARTPROV | AGGREGATE | TABLTP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DKU8WTAHAQ | 4 | OLAP | D026527 | 14:22:32 | 27.07.2006 | FIRSTQUERY | 58KJZ885N. | | | ZWS_MULTI | | | |
| DKU8WTAHAQ | 4 | OLAP | D026527 | 14:22:32 | 27.07.2006 | FIRSTQUERY | 58KJZ885N. | 1 | | ZWS_MULTI | ZWS_CUBE1 | 100010 | E |
| DKU8WTAHAQ | 4 | OLAP | D026527 | 14:22:32 | 27.07.2006 | FIRSTQUERY | 58KJZ885N. | 2 | | ZWS_MULTI | ZWS_C1_G2 | ZWS_C1_G2 | F |

| TIMEDMPREP | TIMEDMPOST | TIMEREAD | TIMESID | TIMENAVATTR | TIMEHIERARCHY | DBSEL | DBTRANS | WP_ID | PROCESSCNT | SLOTNR | STARTTIME |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,532000 | 0,000000 | 0,000000 | 0,000000 | 0,000000 | 0,000000 | 0 | 0 | 0 | 0 | 0 | 20.060.727.142.232,3630000 |
| 0,000000 | 0,000000 | 1,734000 | 0,000000 | 0,000000 | 0,000000 | 47.404 | 1 | 2 | 1 | 2 | 20.060.727.142.232,3630000 |
| 0,000000 | 0,000000 | 2,124000 | 0,000000 | 0,000000 | 0,000000 | 50.000 | 1 | 1 | 2 | 1 | 20.060.727.142.232,3630000 |

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Overview

Query Runtime Statistics

**BI Accelerator Query Runtime**

BI Accelerator Transactions

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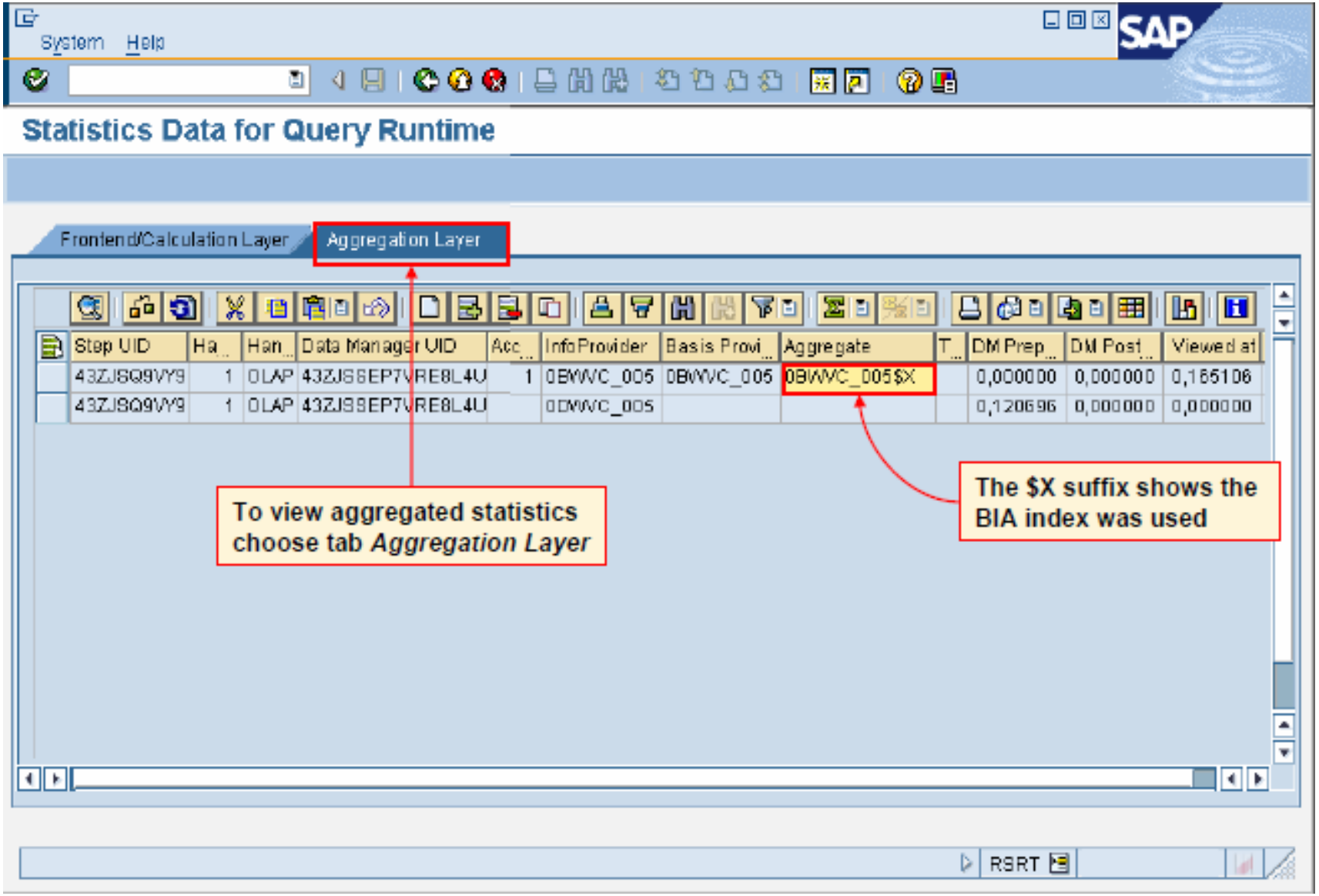
# BI Accelerator Query Runtime

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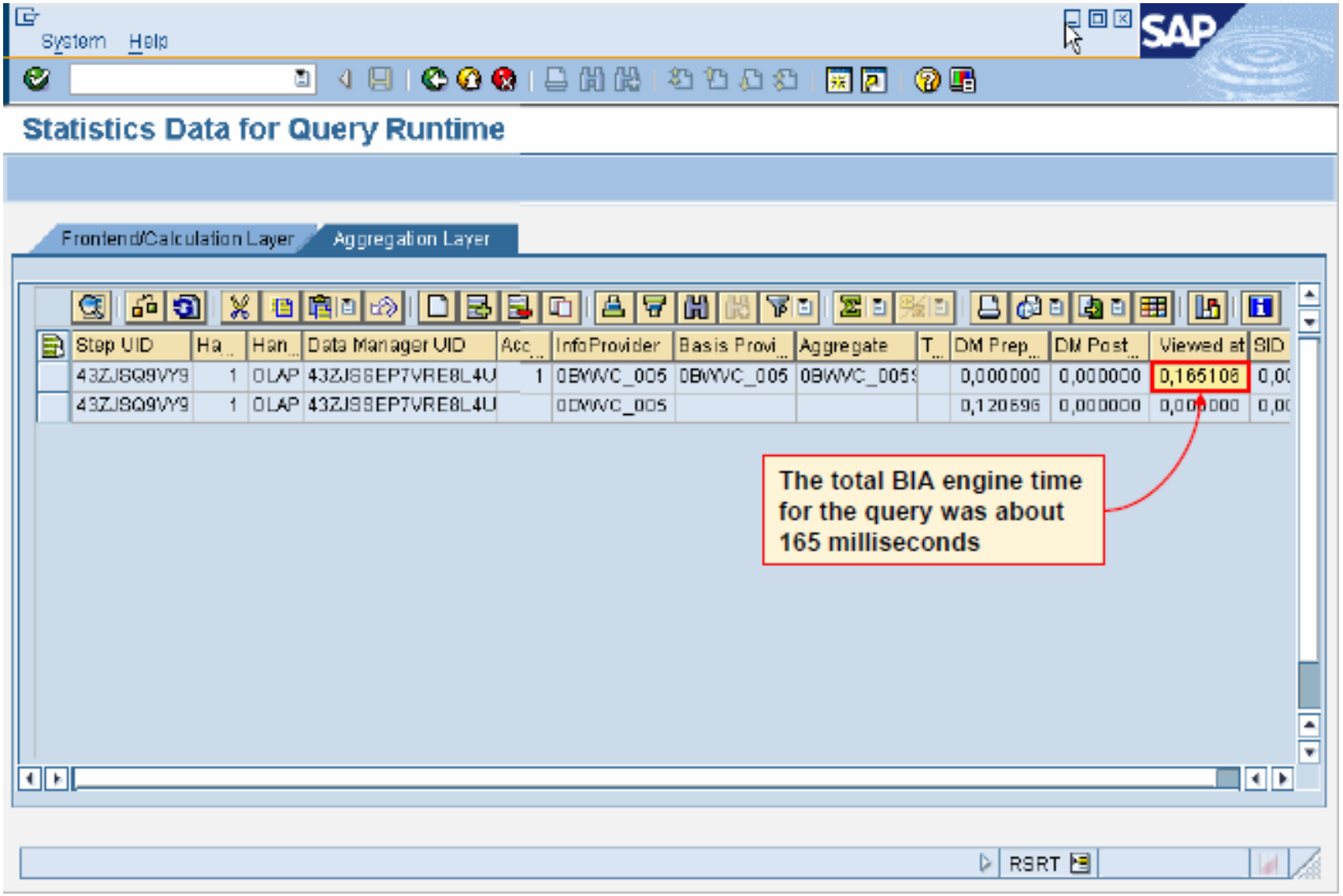
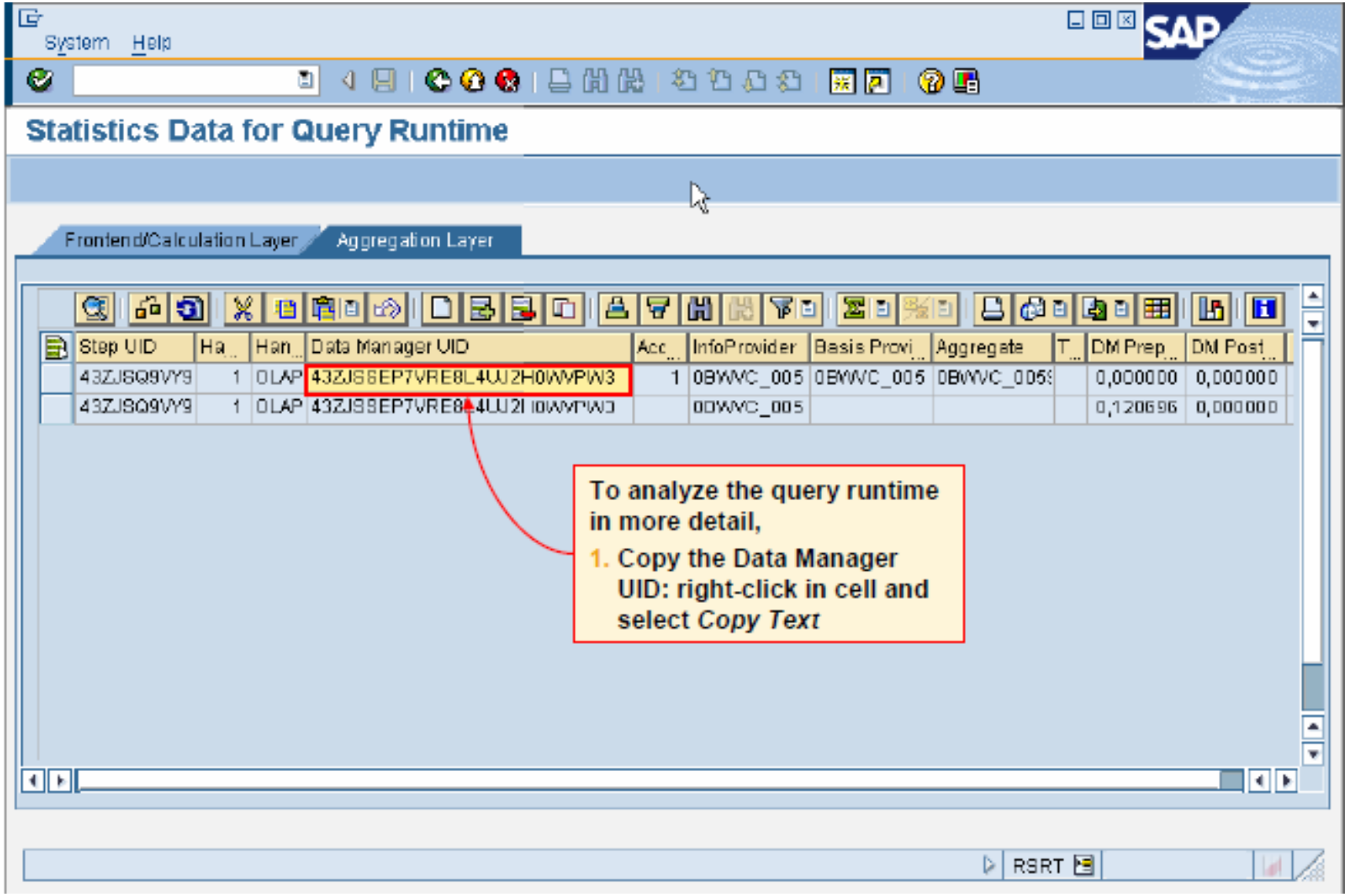
# BI Accelerator Query Runtime



# BI Accelerator Query Runtime



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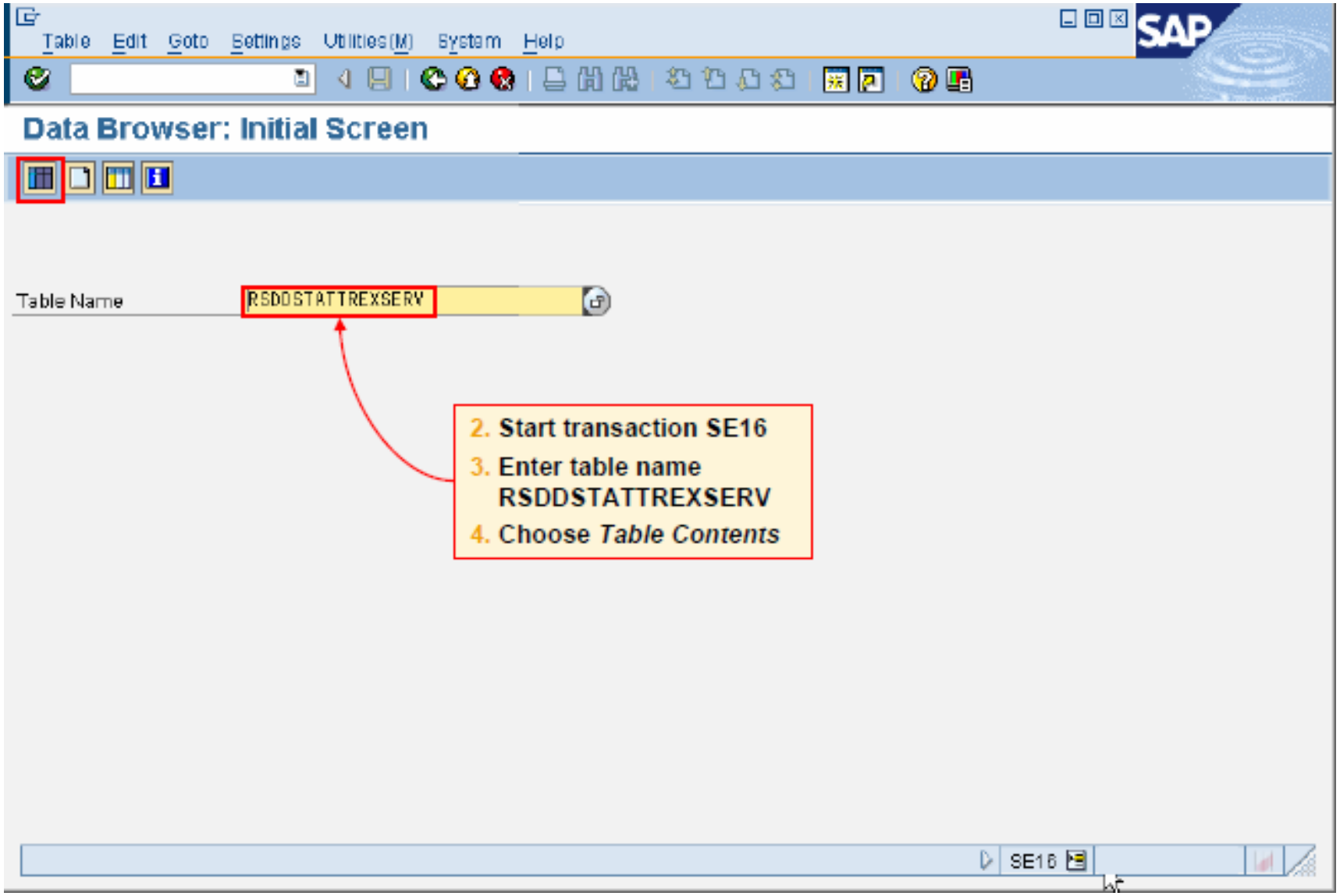
# BI Accelerator Query Runtime



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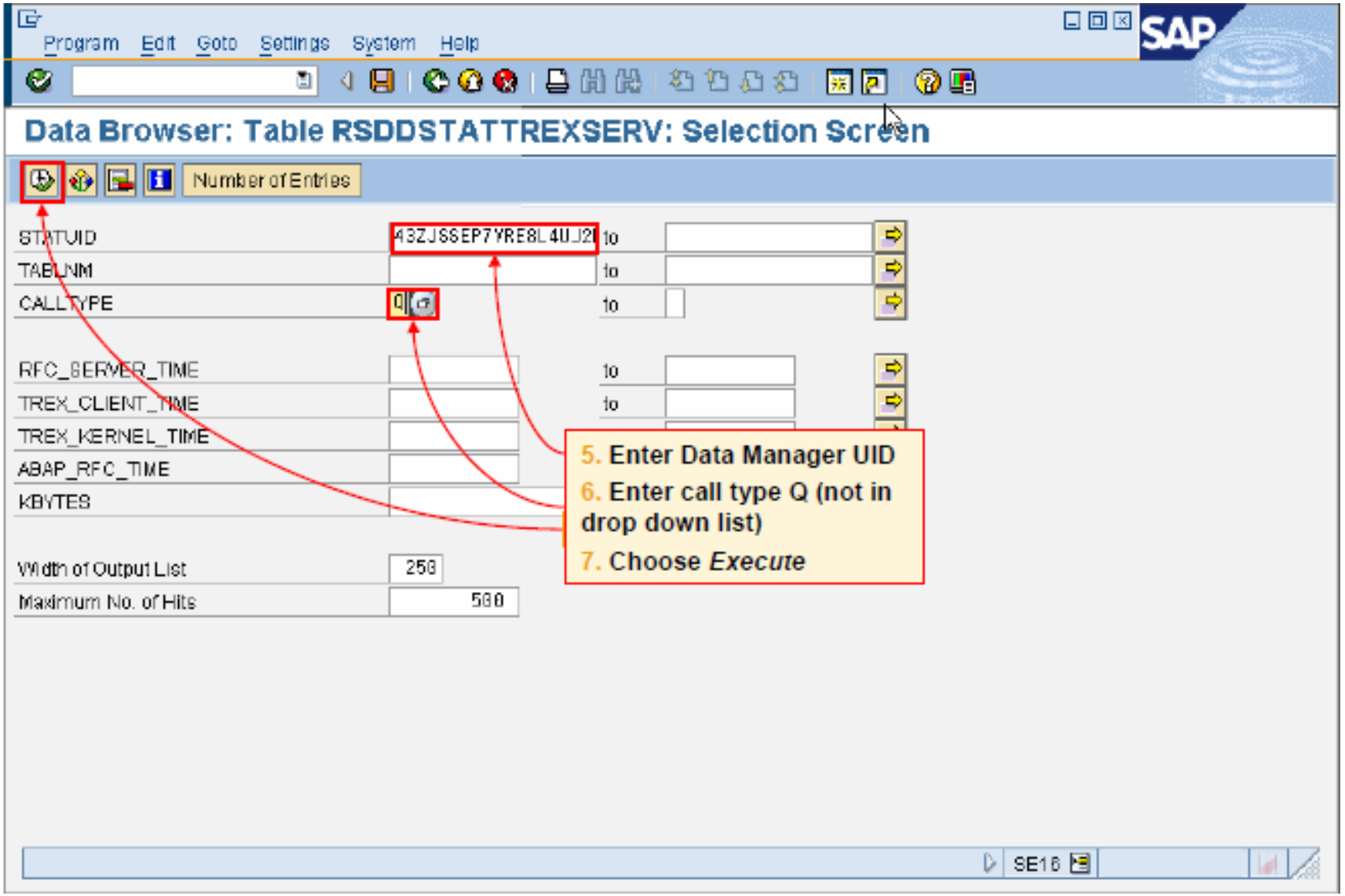
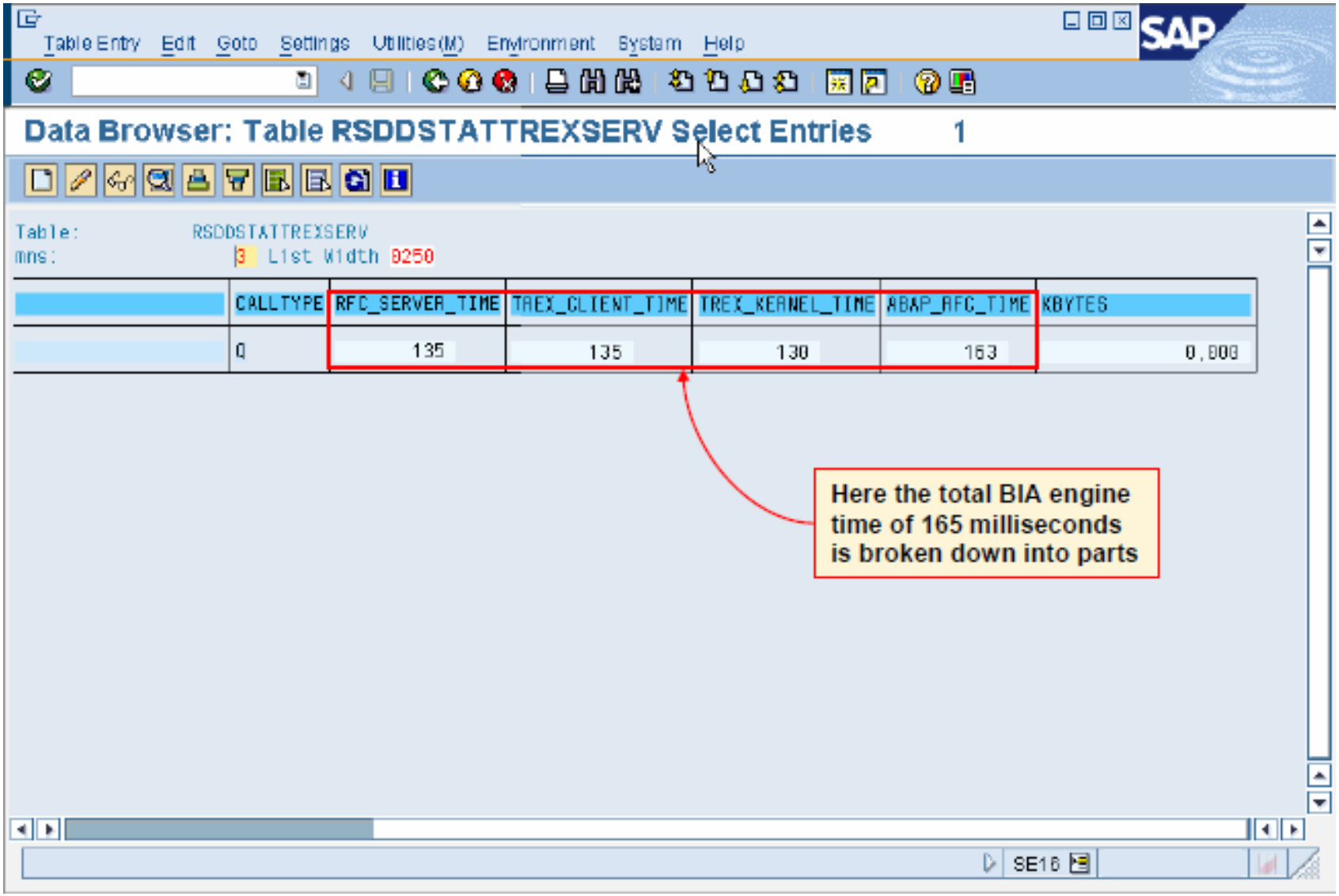
# BI Accelerator Query Runtime



# BI Accelerator Query Runtime

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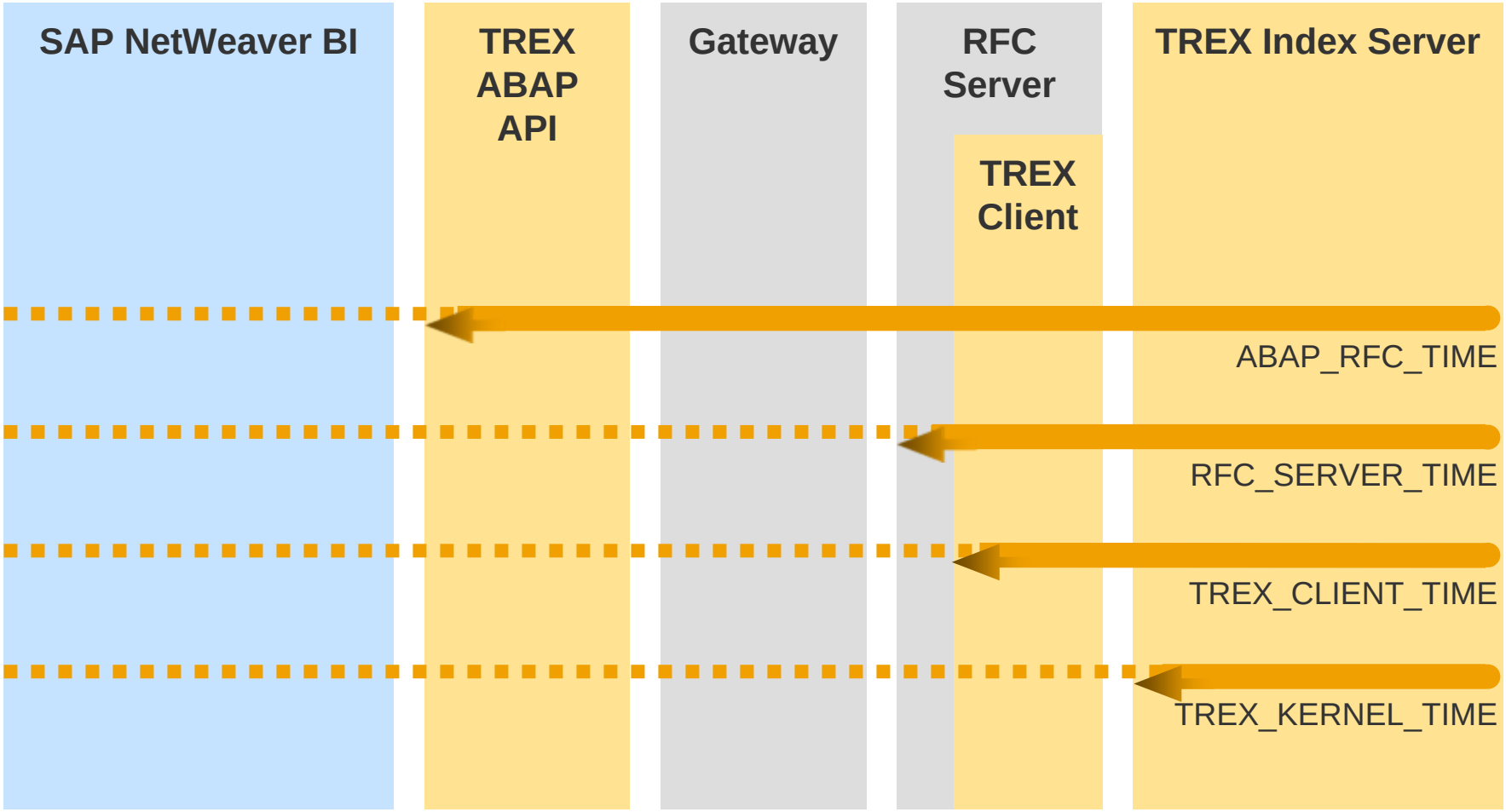
# BI Accelerator Query Runtime

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Overview

Query Runtime Statistics

BI Accelerator Query Runtime

**BI Accelerator Transactions**

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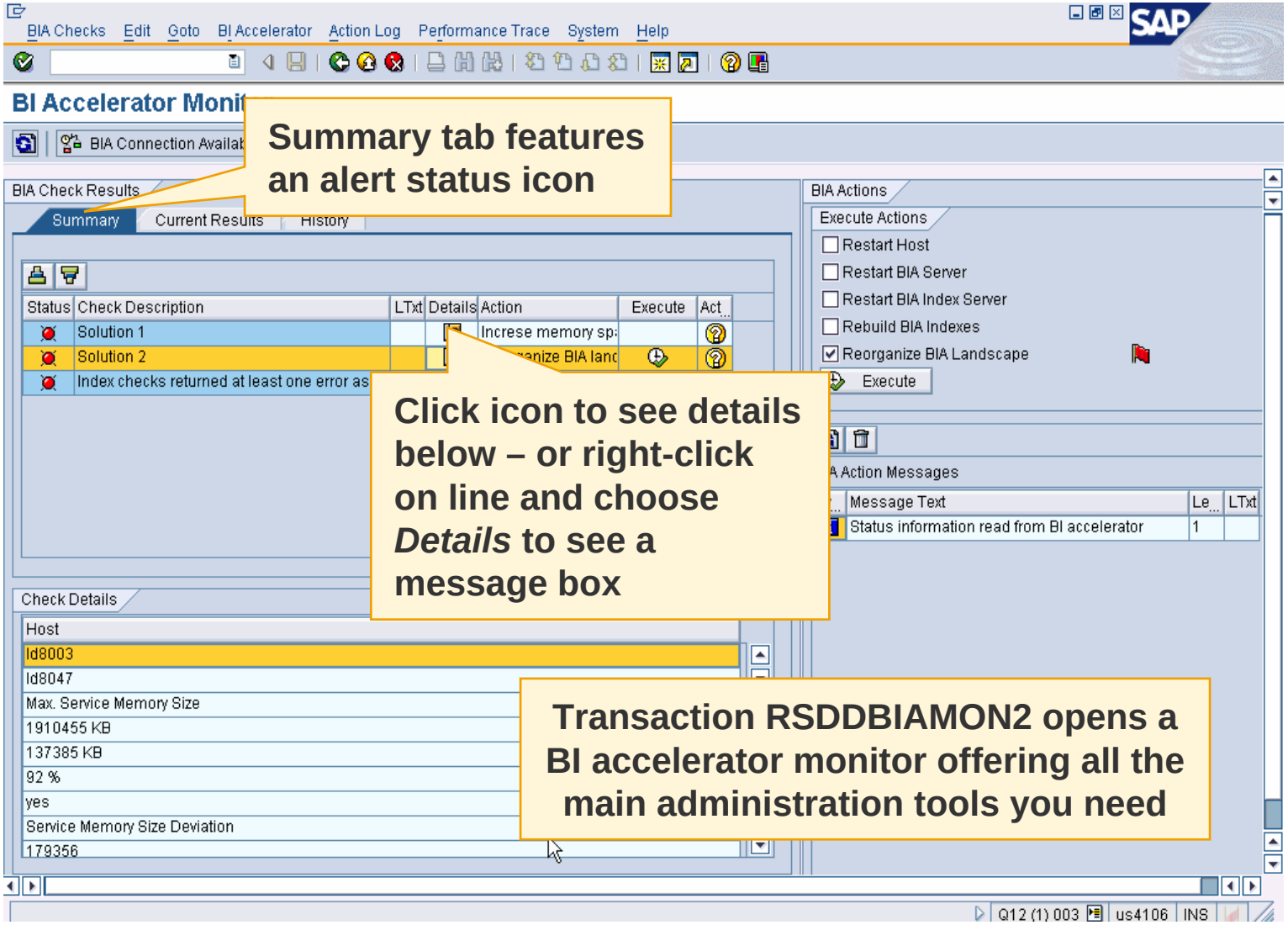
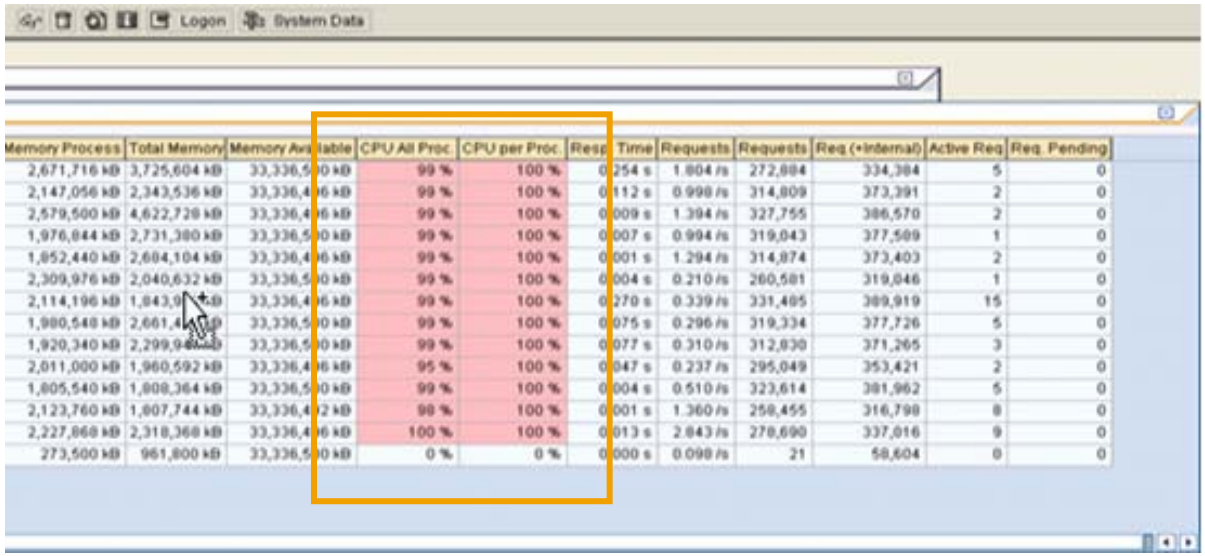
# BI Accelerator Monitor - Summary (RSDDBIAMON2)



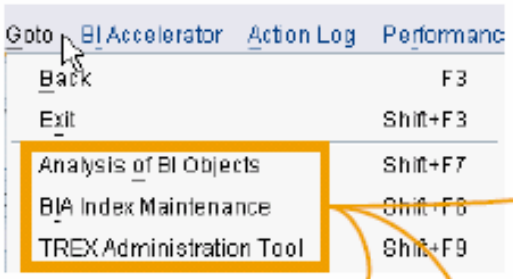
# RSDDBIAMON2 – Check Load Distribution

## Check if Load is equally distributed

- ‘CPU per Proc.‘ indicates single CPU utilization / per Index server / blade
- ‘CPU All Proc‘ indicates combined CPU utilization / blade
- ‘Memory Process‘ indicates memory utilzation / Index server / blade
- ‘Total Memory‘ is the total memory utilzation / blade
- If load is not evenly distributed, either re-org (re-distibute) the BIA index across the blades or re-index the InfoCube



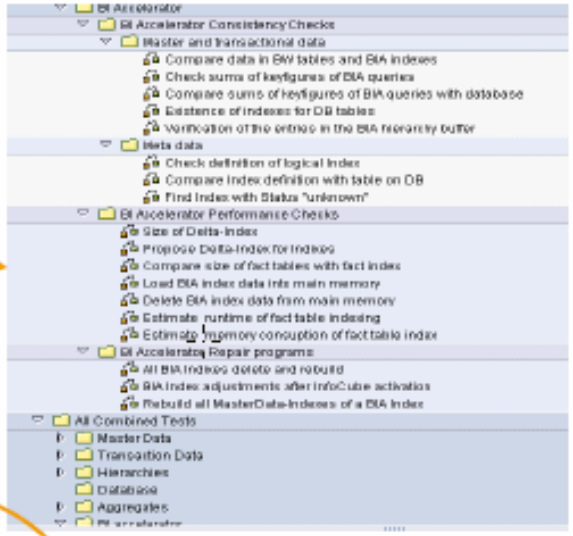
# BI Accelerator Monitor - Go To 1

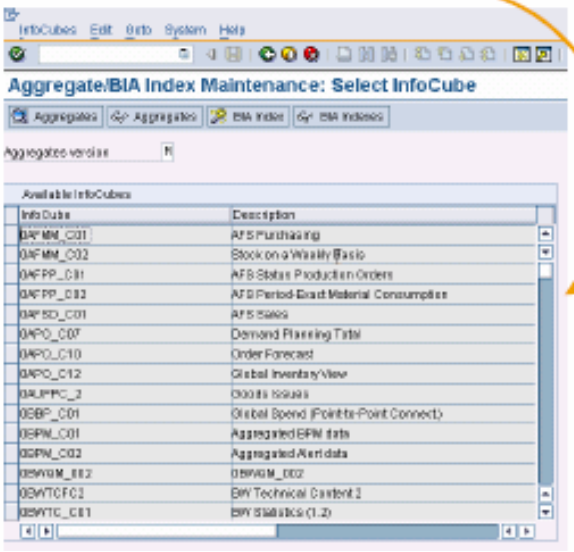


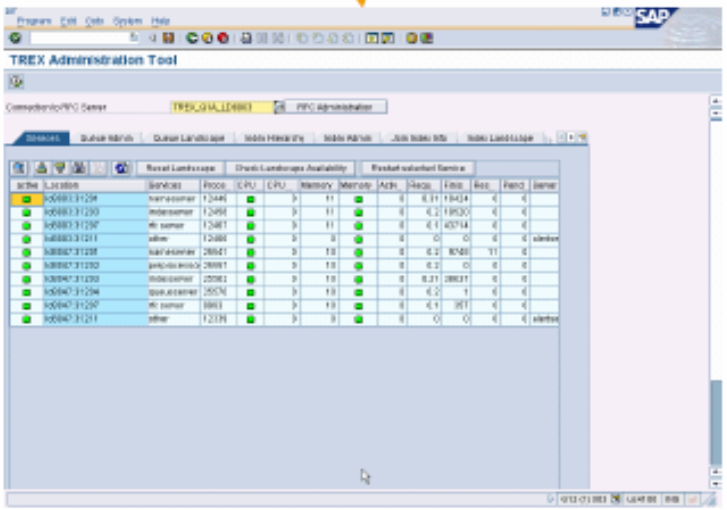

RSRV

RSDDV

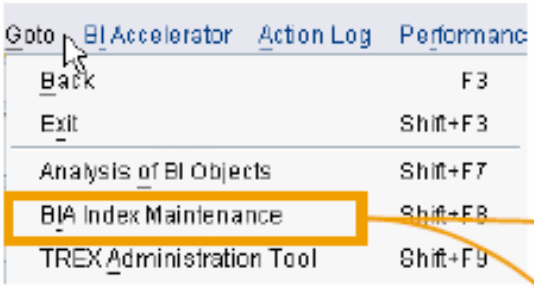
TREXADMIN

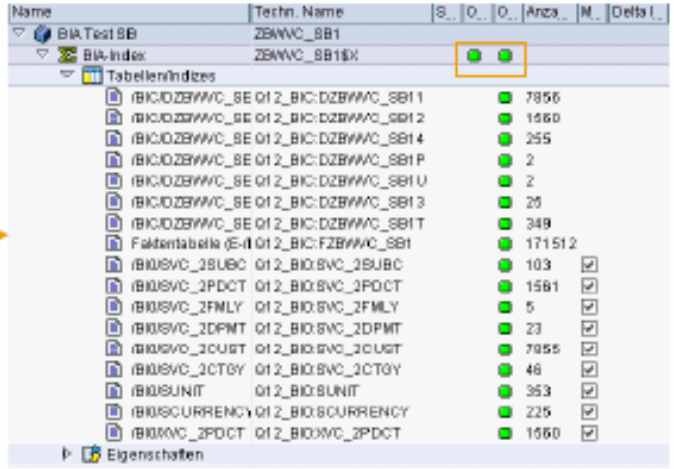


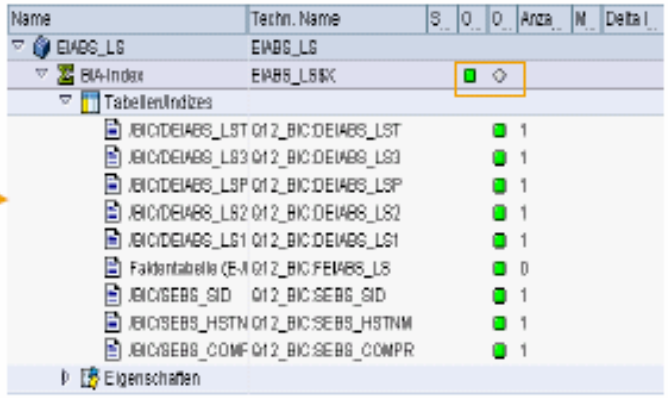



# BI Accelerator Monitor - Go To 2




**If the BIA Index of an InfoCube has been deactivated, the object status changes to a grey diamond symbol.**

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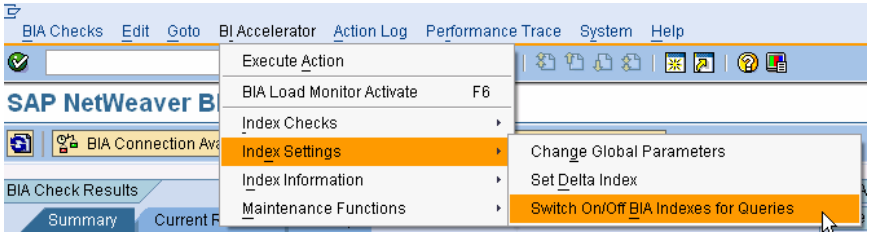
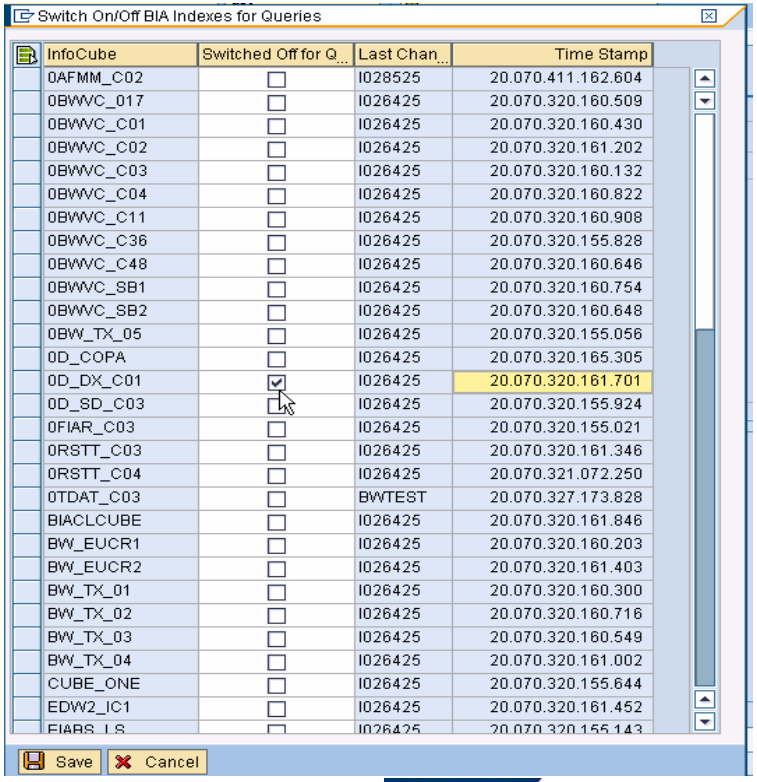
# BI Accelerator Monitor – BI Accelerator - 3

**If an index is turned off for reporting, it will still be affected by the delta loads. The index will contain up to date information if it were to be activiated again.**

**The ‘Time Stamp‘ column indicates the last date and time when the index was changed (via either roll up, change-run, re-indexing).**

**‘Last Changed‘ indicates the user associated with the last change.**

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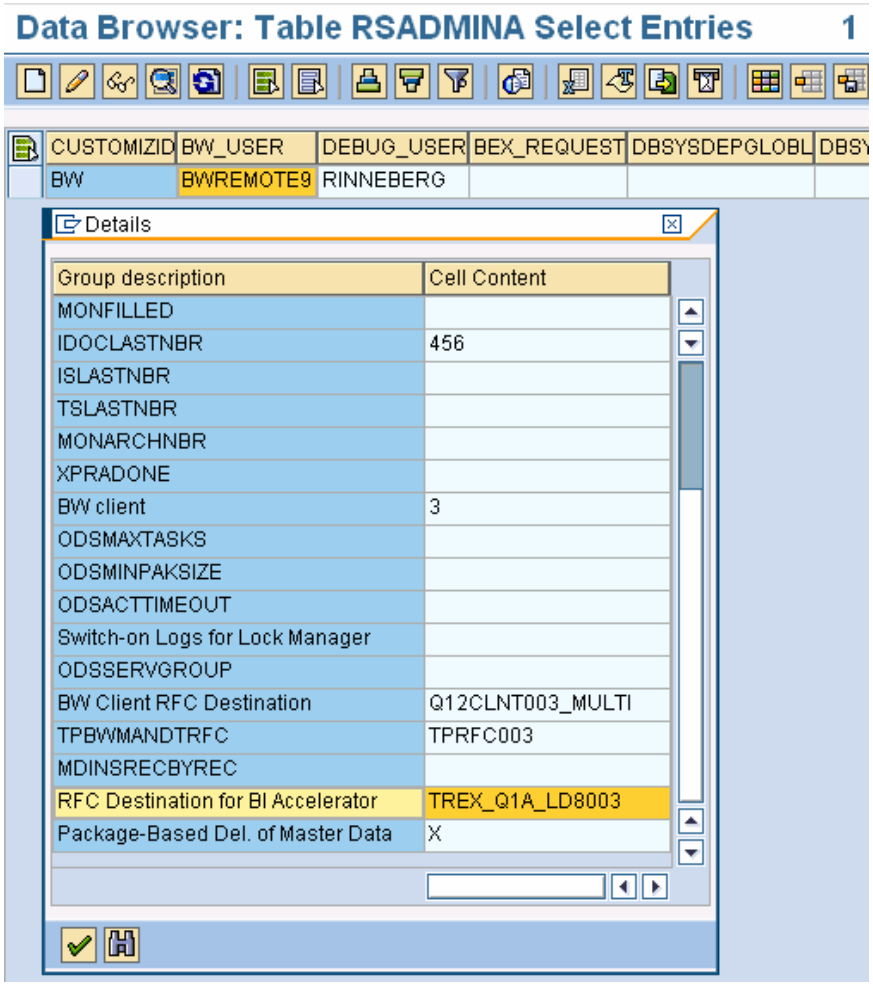
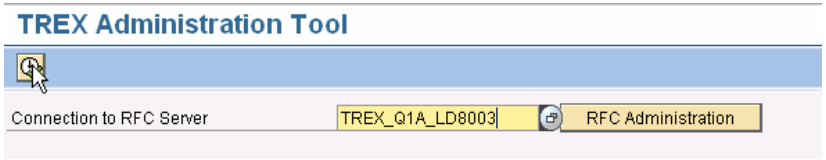
# TREX Administration Tool

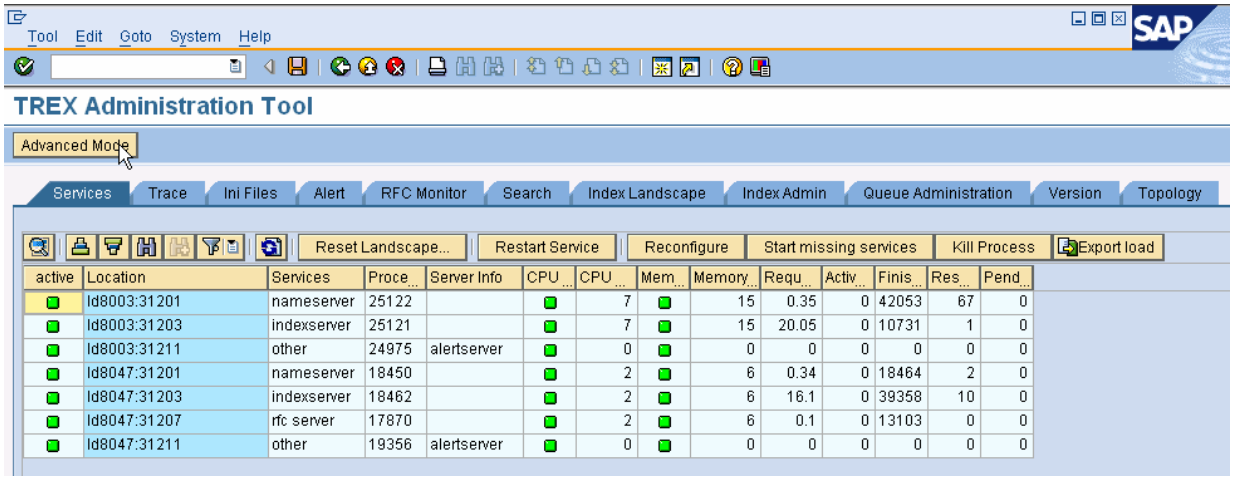
- **TREX Admin Tool is a stand-alone program that you can use to administer TREX independently of the application to which it is connected.**
- **The application that is connected to TREX normally provides its own administration tools for TREX too. You should use the administration tools provided by the application where possible. Only use the TREX admin tool for the functions that are not available in the administration tools of the application.**

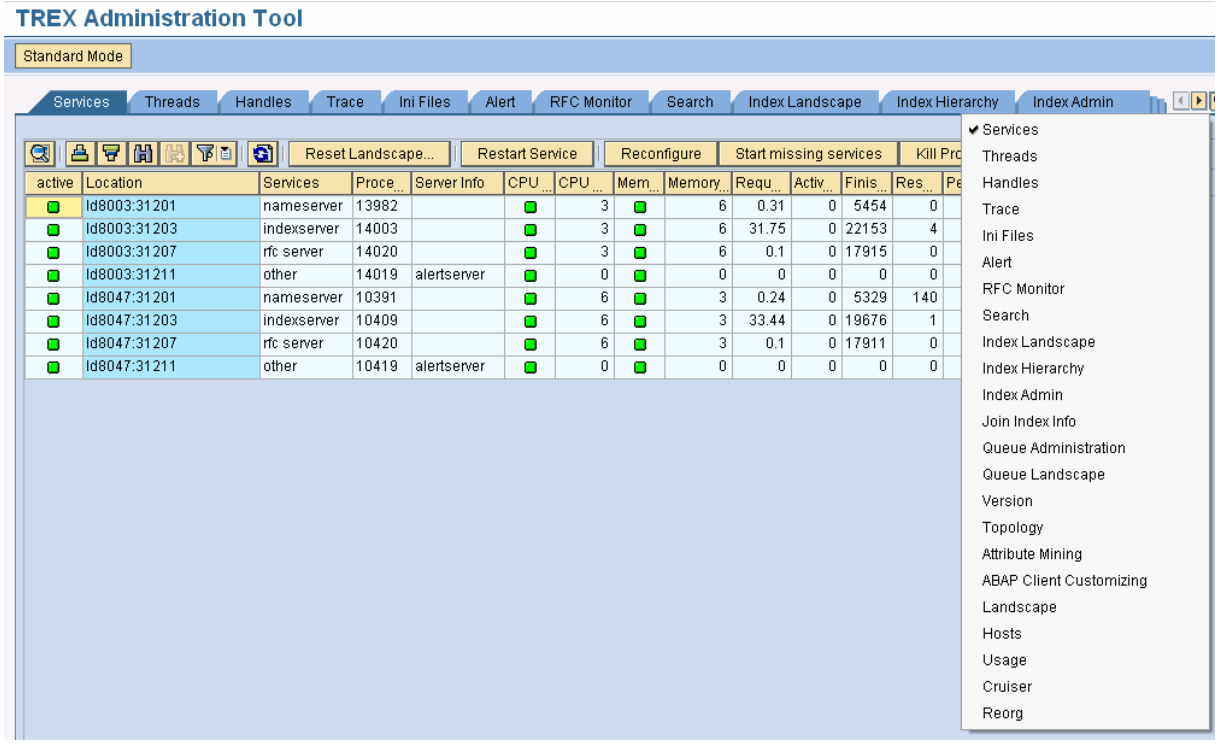
# Transaction TREXADMIN - 1



# Transaction TREXADMIN - 2



# Table RSADMIN – QUERY_MAX_WP_DIAG

- **QUERY_MAX_WP_DIAG is a parameter in table RSADMIN.**
- **Specifies the maximum number of parallel processes that a query (non-BIA and BIA) could potentially use.**
- **The BI system reserves 5 DIA (dialog) work processes open and uses the formula: (MIN(# InfoProviders, QUERY_MAX_WP_DIAG) + 5) to determine whether or not to parallelize query execution.**
- **Default value = 6. Hence, there NEEDS to be atleast 11 DIA work processes free in order to execute query in parallel.**
- **For additional information, refer to SAP Note 895530.**



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# Summary

- **SAP NetWeaver BI Accelerator improves Query database time**
- **New Query Runtime statistics are flexible and available for further extensions**
- **SAP NetWeaver BI Accelerator Query Runtime statistics can be viewed using the table RSDDSTATTREXSERV**
- **Transactions RSDDBIAMON2 and TREXADMIN can be used to monitor the SAP NetWeaver BI Accelerator.**



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# Further Information

## SAP Public Web:

SAP Developer Network (SDN): www.sdn.sap.com

Business Process Expert (BPX) Community: www.bpx.sap.com

## Related SAP Education and Certification Opportunities

http://www.sap.com/education/



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# Q & A

THANK YOU FOR YOUR ATTENTION !

QUESTIONS – SUGGESTIONS – DISCUSSION

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# Feedback

**Please complete your session evaluation.**

**Be courteous — deposit your trash,
and do not take the handouts for the following session.**

Thank You !

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