SAP® MaxDB™ Database Analyzer Charts

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Public

Agenda

A Quick Tour - Step by step guides

Working with Database Analyzer Charts

Combining two or more Metrics in one Chart

Working with Metric Templates

Display/Compare/Concatenate via Metric Template

Working with the Navigator

Working with Database Analyzer Projects

A Quick Tour
Step by step guide

→ Back to Agenda

- First steps while having access to the database

- First steps with no access to the database

- Further steps
  - Select columns for charting
  - Choose a time span
  - Compare with data from another csv file
  - Merge two csv files in one chart
 - Export charts to image files
  - Further chart functionality

A Quick Tour – While Being Online
Start Database Studio – open Database Analyzer File folder

→ Back to Quick Tour

Start Database Studio and Login to the database as administrator

1. Open the list of folders belonging to the administrator

2. On **Diagnosis Files** folder apply the context menu function "Extended File list"

3. The **Database Analyzer File** folder becomes visible.
   Now open it.
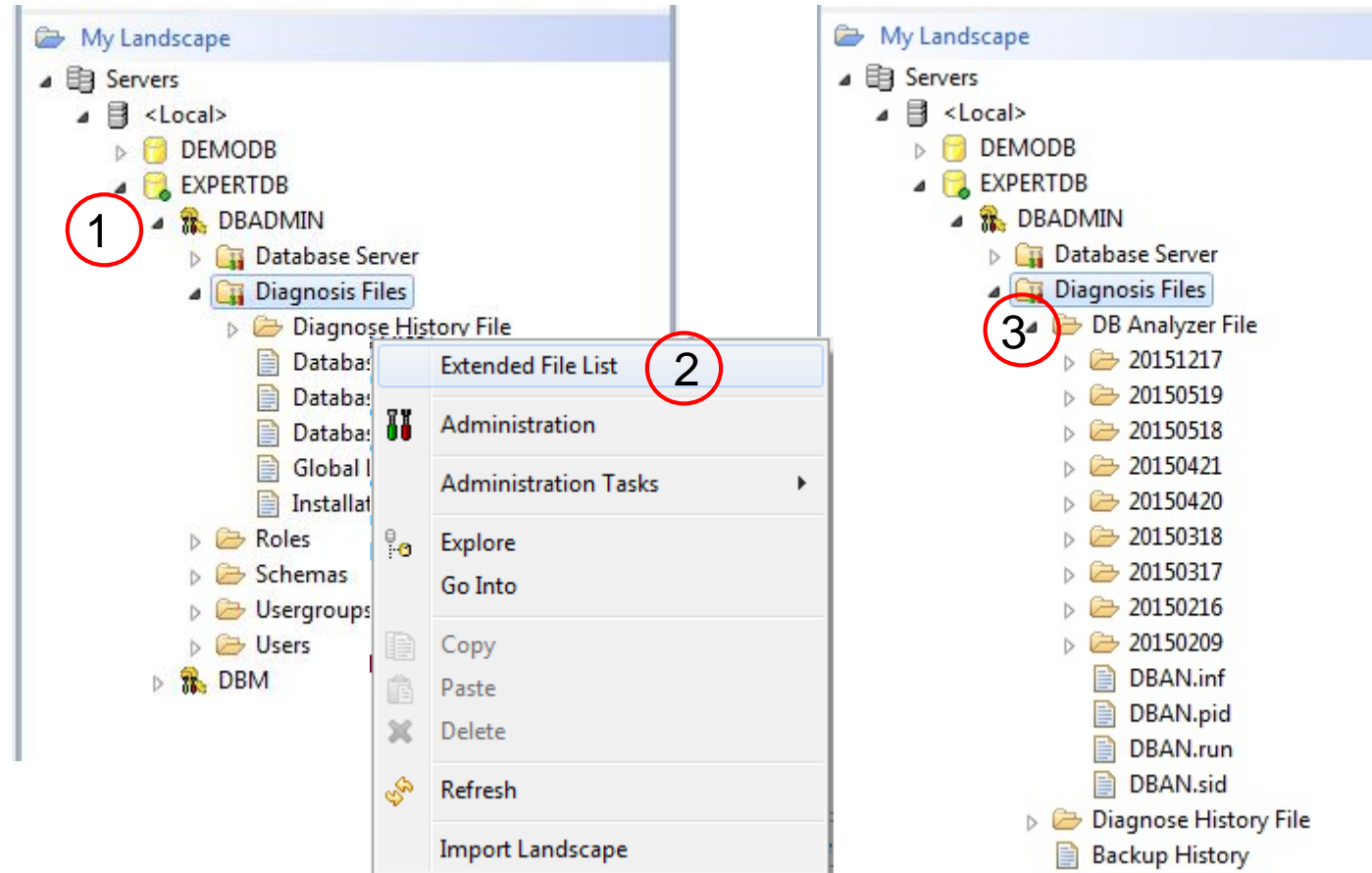
A Quick Tour – While Being Online
Set the Preference **Show extended diagnosis file list**

The **DB Analyzer File** folder will always appear right away if the according preference is set.

1. Choose the **Preferences** function under the **Window** menu.

2. On the **Database Studio** Preferences page check the **Show extended diagnosis file list** option.

3. The **Database Analyzer File** folder will always be visible.
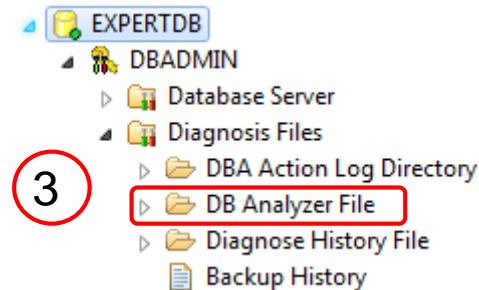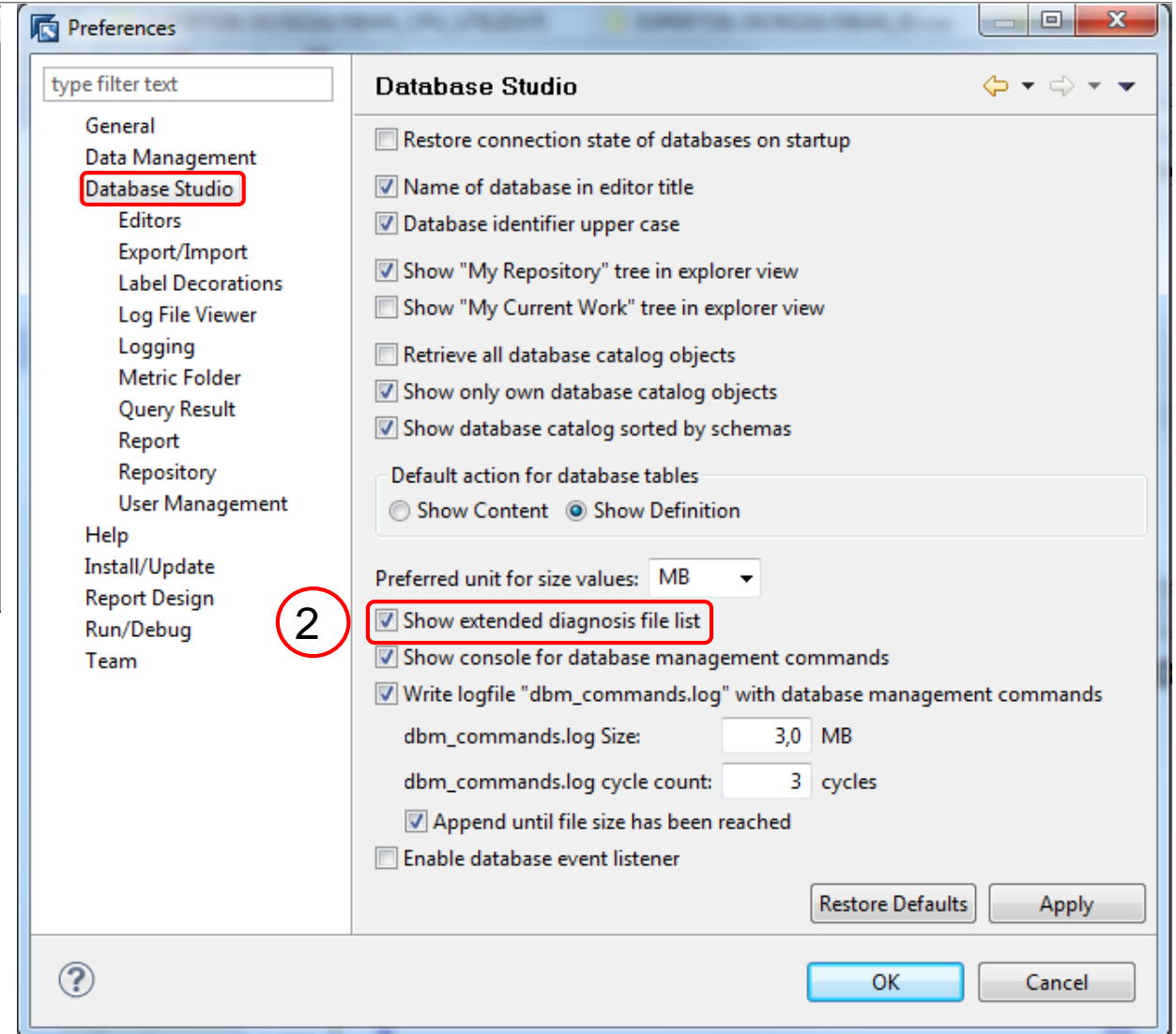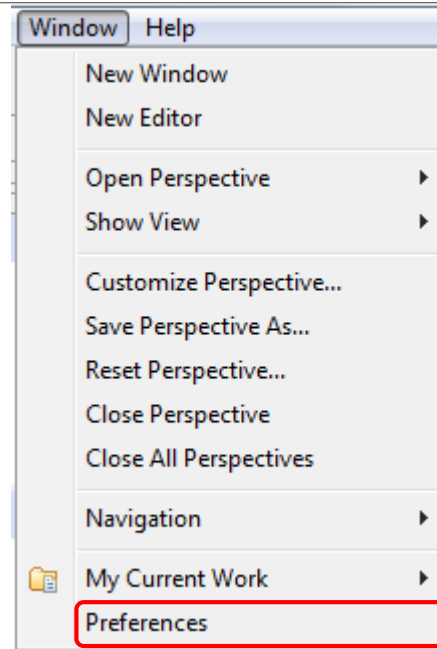
A Quick Tour – Online or Offline
Select CSV file of interest

Navigate to the Database Analyzer data of interest

1. Open the date folder of interest, here e.g. May 19th 2015?

2. Double click on the csv file of interest e.g.: DBAN_IO or DBAN_OVERVIEW

3. If you see now some charts then this means, that Database Studio delivers a **Default Metric Template** for this csv file.

A Quick Tour – Online or Offline
Select columns for charting

In this example the first column with data is "Virtual reads"

1. Double click on a column on the right side of the table

2. The column values are displayed as graph. (Double click again and the chart disappears.)

3. If you move the mouse over the column title you will see the long name of the column on the right side

A Quick Tour – Online or Offline
Select columns for charting

1. Double click on the second column on the right side of the table

2. The column values are displayed as graph with the left scale

A Quick Tour – Online or Offline
Select columns for charting

1. Double click on the second column on the right side of the table

2. The column values are displayed as graph with the left scale

3. From the context menu choose **Show in diagram (right scale)** to display the graph with a separate scale on the right.

A Quick Tour – Online or Offline
Select columns for charting

1. Double click on the second column on the right side of the table

2. The column values are displayed as graph with the left scale

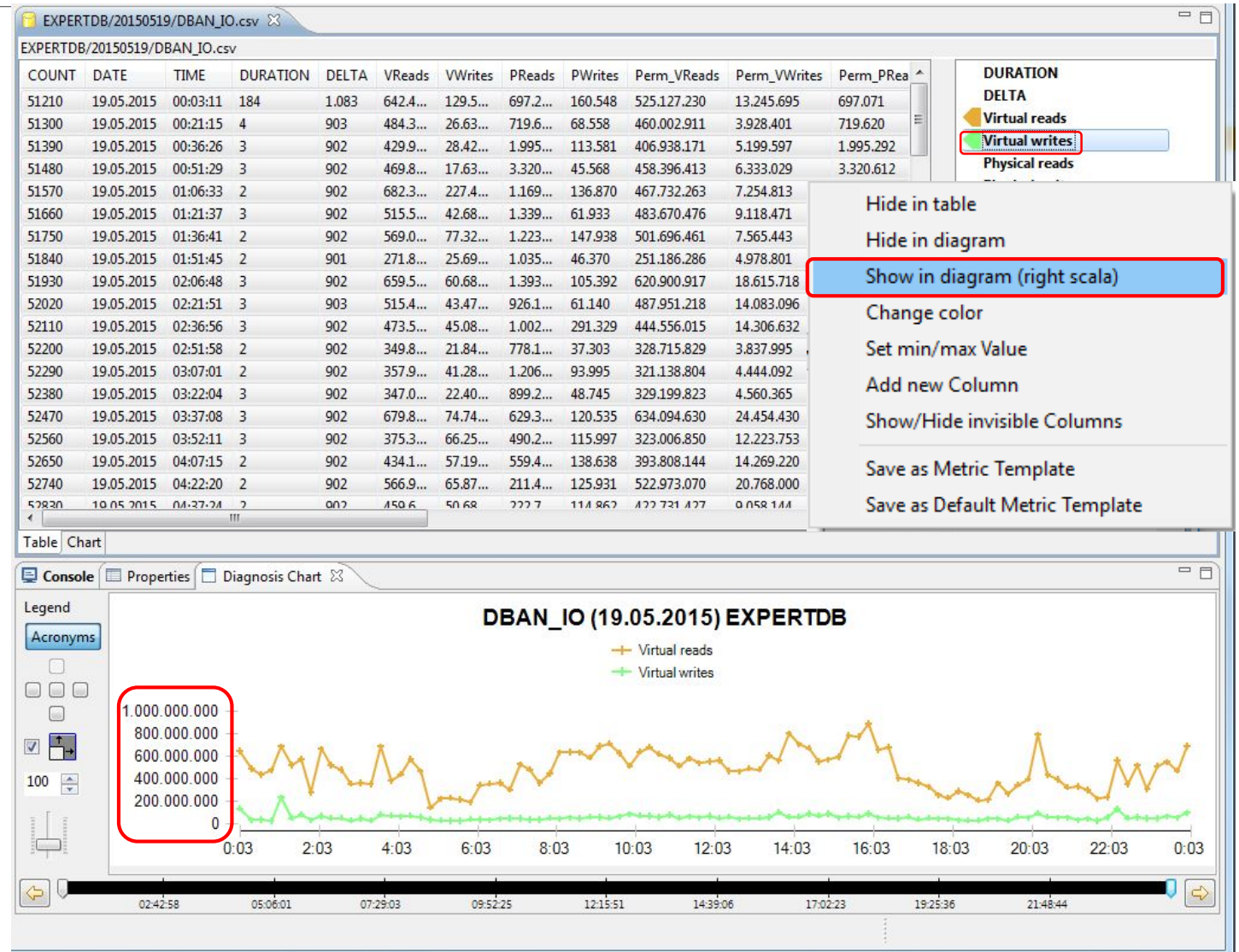3. From the context menu choose **Show in diagram (right scale)** to display the graph with a separate scale on the right.
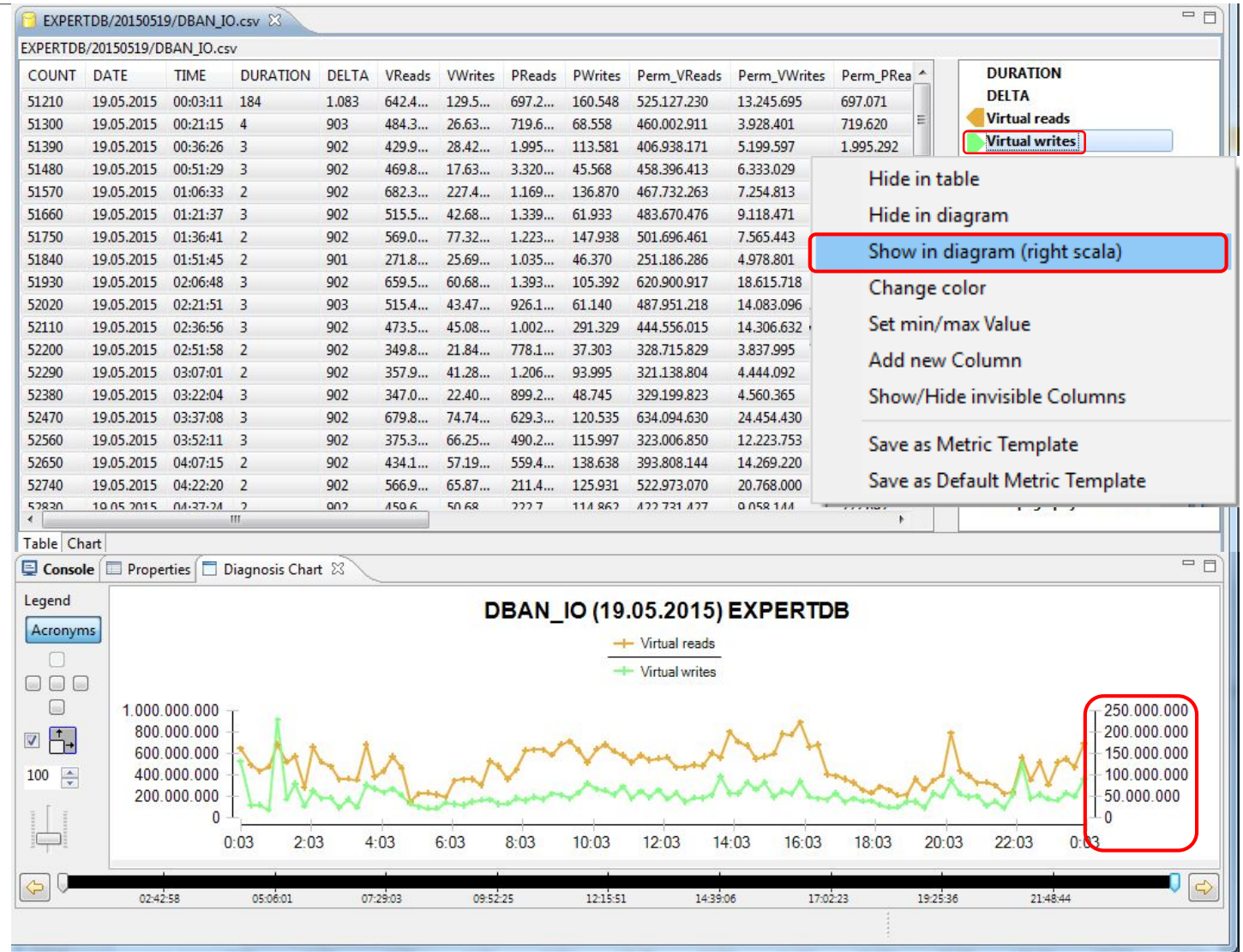
4. See the second scale on the right side and the changed graph progression.

A Quick Tour – Online or Offline
Open another csv file in the same date folder

1. Open in the same date folder another csv file e.g.: DBAN_IOTHREADS.csv

2. You can see DBAN_IOTHREADS.csv as specified in its **Default Metric Template** which has been installed together with the Database Studio software.

A Quick Tour – Select columns for charting
Choose a time span

1. Drag the left and right slider on the time scale to narrow down the time span.

A Quick Tour – Select columns for charting
Choose a time span

1. Drag the left and right slider on the time scale to narrow down the time span.

2. As result you will see the time interval chosen and zoomed automatically regarding the chart view size.
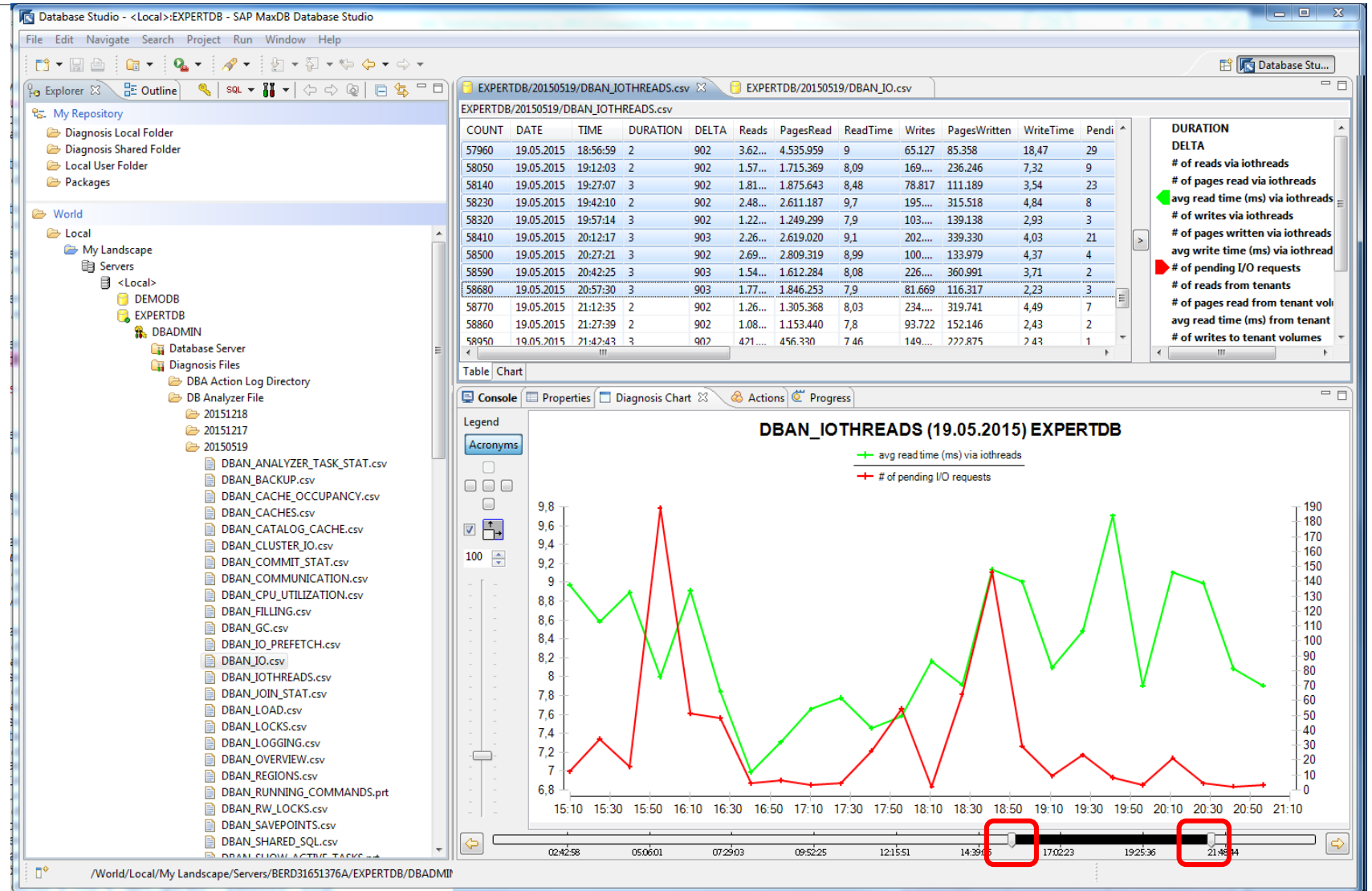
A Quick Tour – Select columns for charting
Choose a time span

1. Drag the left and right slider on the time scale to narrow down the time span.

2. As result you will see the time interval chosen and zoomed automatically regarding the chart view size.

3. Now in the table part you see the lines marked corresponding to the chosen time interval.
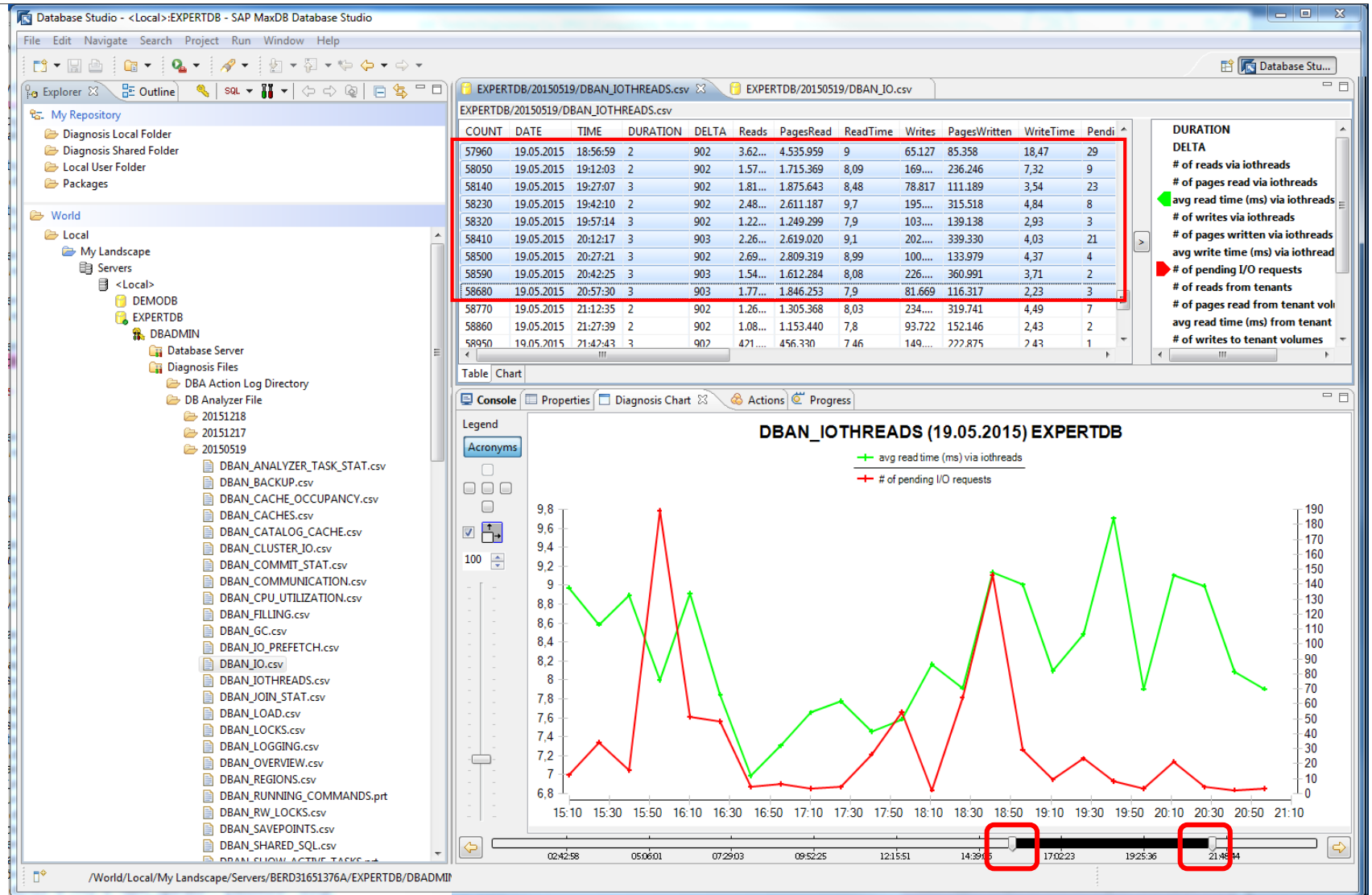
A Quick Tour – Select columns for charting
Compare with data from another csv file

1. After you have narrowed down the time interval of interest

2. With context menu function **Select timespan in** you can display the same time interval in the other csv file actually displayed.

3. With context menu function **Set timespan** or **Edit timespan <from> - <to>** you can set the timespan as a default setting which effects …

A Quick Tour – Select columns for charting
Compare with data from another csv file

1. After you have narrowed down the time interval of interest

2. With context menu function **Select timespan in** you can display the same time interval in the other csv file actually displayed.

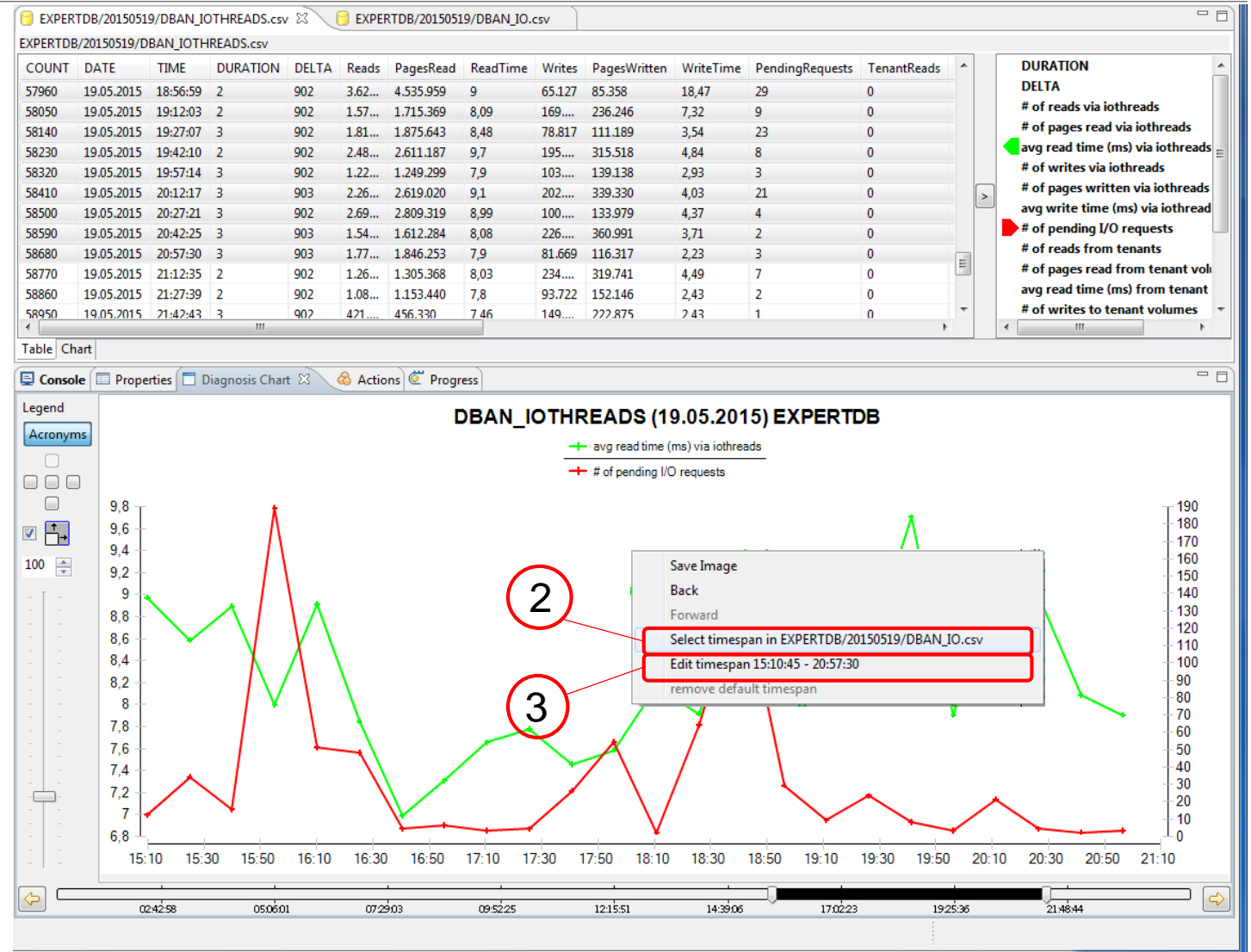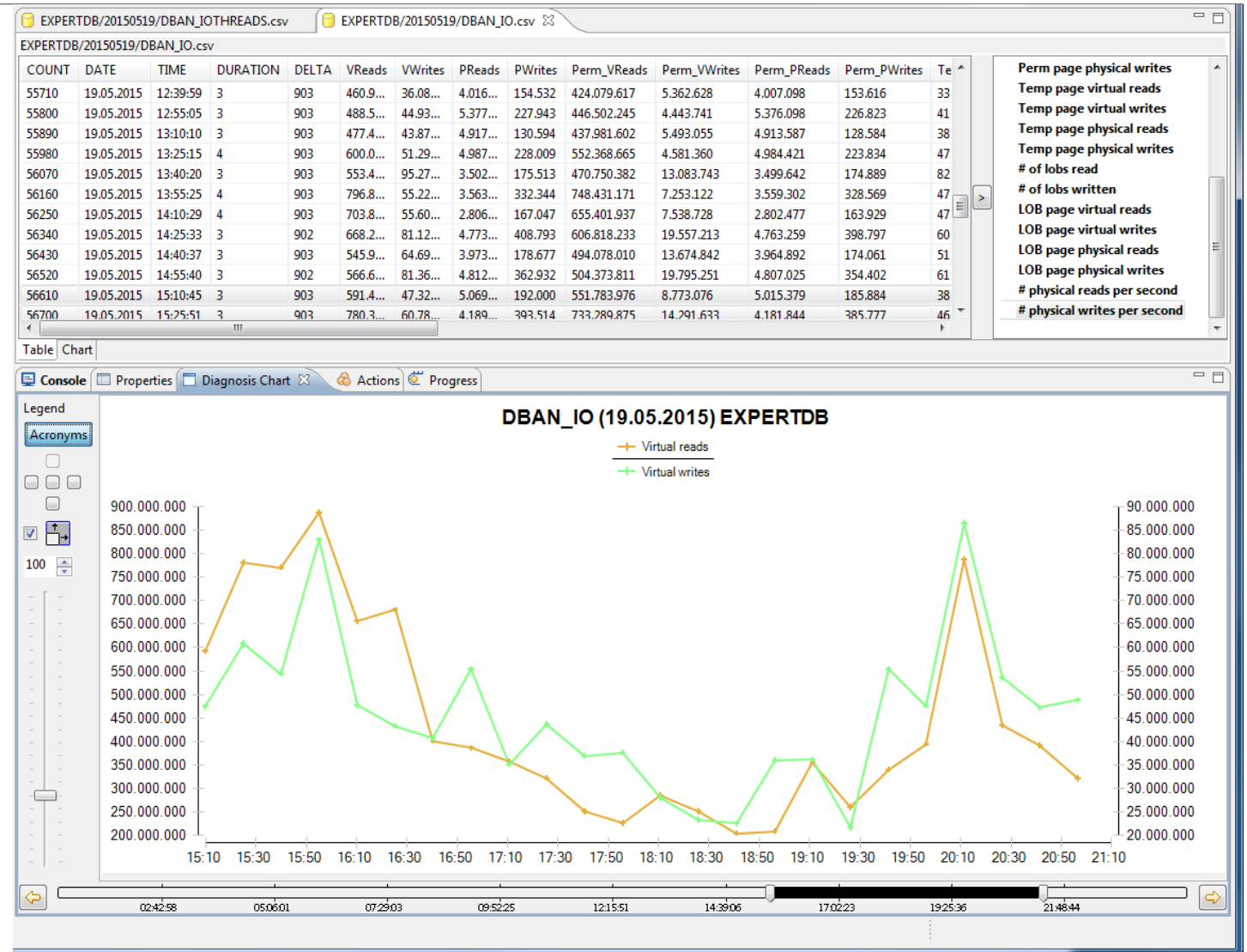3. Now you can easily see the charts of the chosen csv file regarding the same time interval

A Quick Tour – Select columns for charting
Compare with data from another csv file

1. After you have narrowed down the time interval of interest

2. With context menu function
   Set timespan or
   Edith timespan <from> - <to>
   you can choose
   set as default timespan
   which effects …

3. … all the charts displayed there after. They will be restricted to that **default timespan** until you press the **clear timespan** button.
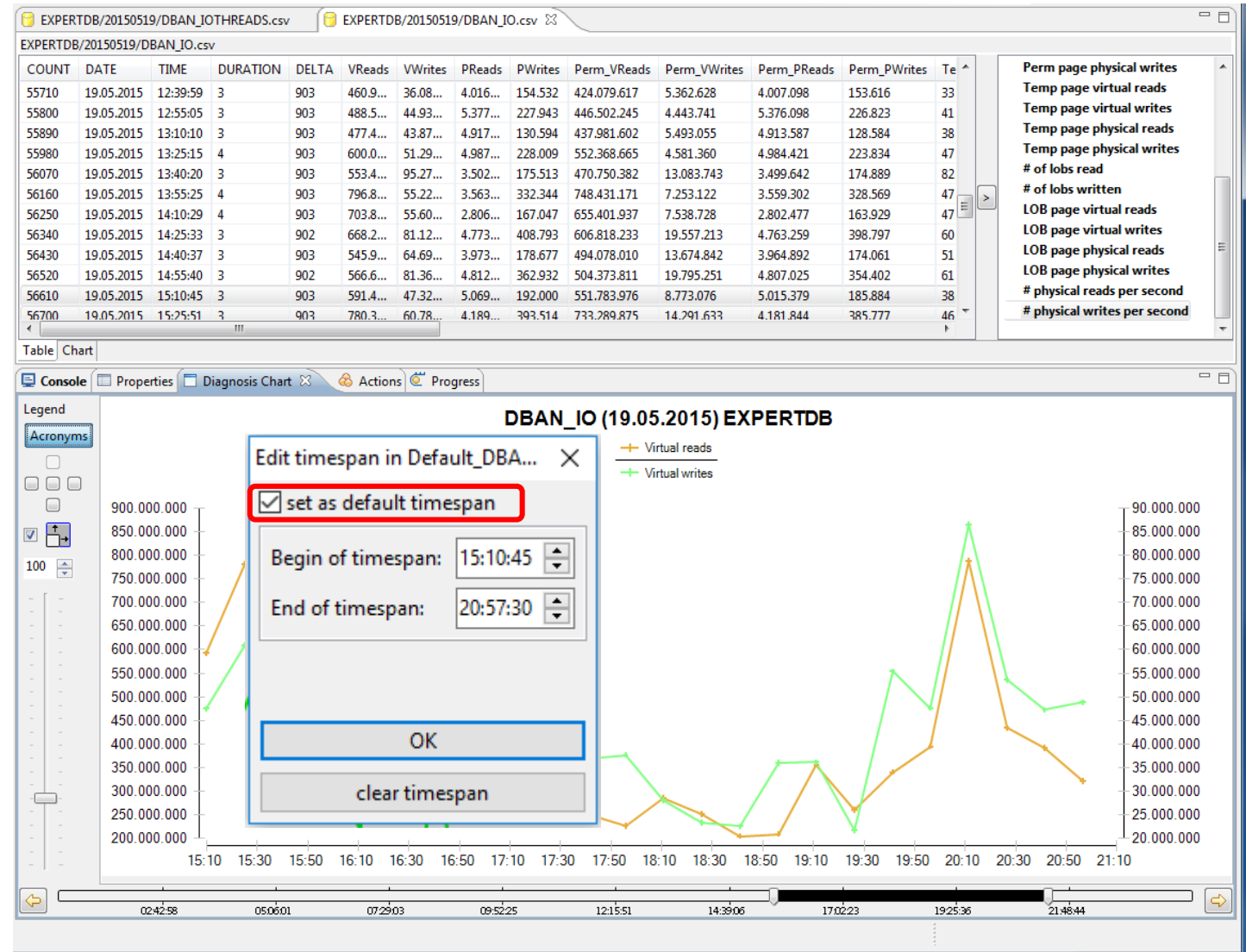
A Quick Tour – Select columns for charting
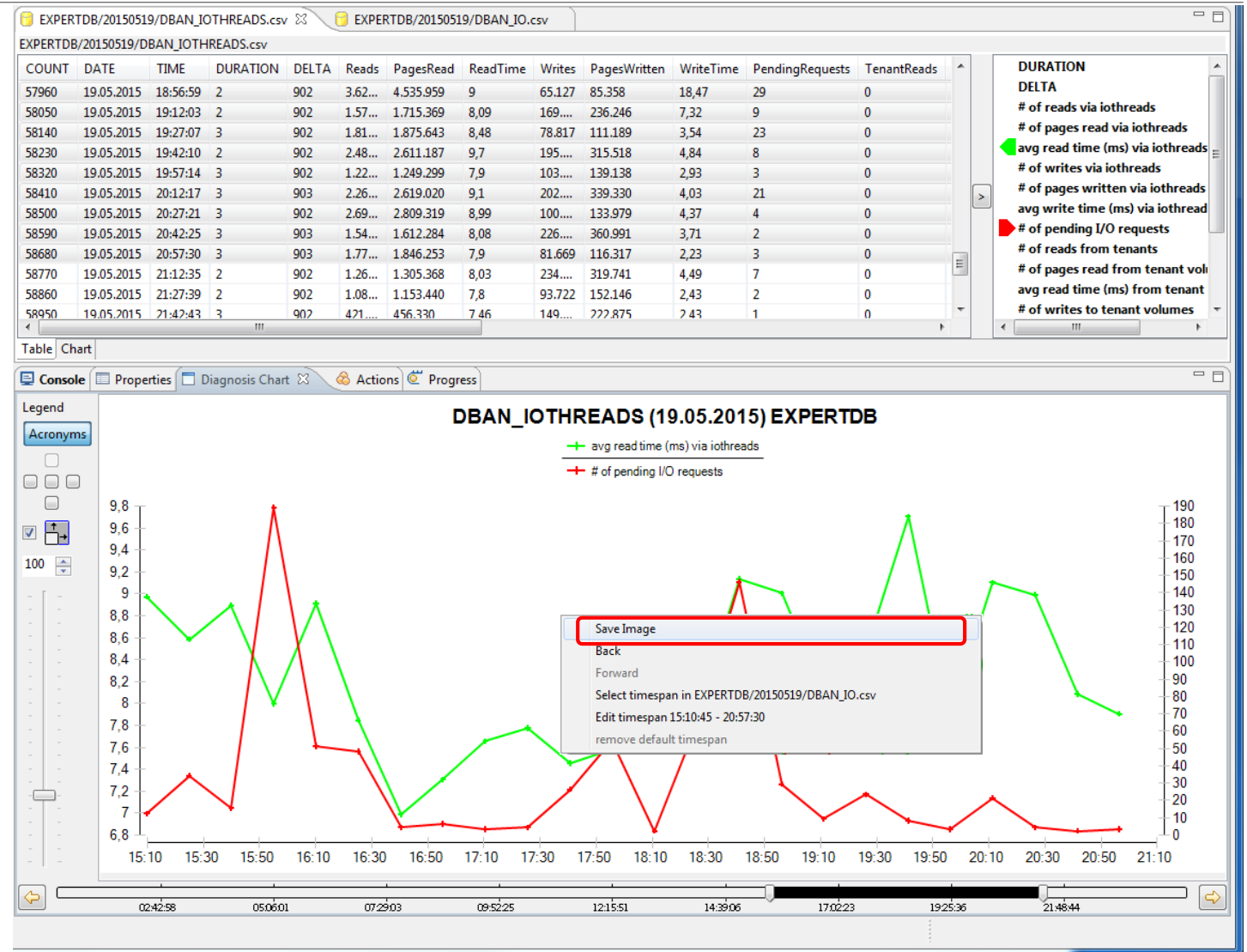## Export charts to image file

1. Save the chart as image file with the context menu function **Save Image**

A Quick Tour – Select columns for charting
Export charts to image file

1. Save the chart as image file with the context menu function **Save Image**

2. There are several image formats supported.

A Quick Tour – Select columns for charting
Export charts to image file

1. Save the chart as image file with the context menu function **Save Image**

2. There are several image formats supported.

Continue with:
- Further Chart Functionality

Next button continues with:
- Quick Tour - Analyzing Performance Offline

A Quick Tour - Analyzing Performance Offline

Step by step guide – First steps with no access to the database

Preliminary steps for downloading and analyzing Database Analyzer data

- Define the preferences **Diagnosis Local Folder** and **Diagnosis Shared Folder**

- Define the associated editor for *.csv endings

- Define **Remote Metric** folder path

- Restart Database Studio and download Database Analyzer data
    – Download via Database Studio
    – Download via DBACockpit

A Quick Tour Analyzing Performance Offline
Define preferences Repository (1 of 6)

Repository Paths

1. Set Diagnosis Local Folder as the local location for Database Analyzer data

2. Set Diagnosis Shared Folder as the shared location in the network for Database Analyzer data

Repository Paths

1. Set Diagnosis Local Folder as the local location for Database Analyzer data

2. Set Diagnosis Shared Folder as the shared location in the network for Database Analyzer data

3. After restarting Database Studio you will see these folders in the upper left section of the explorer
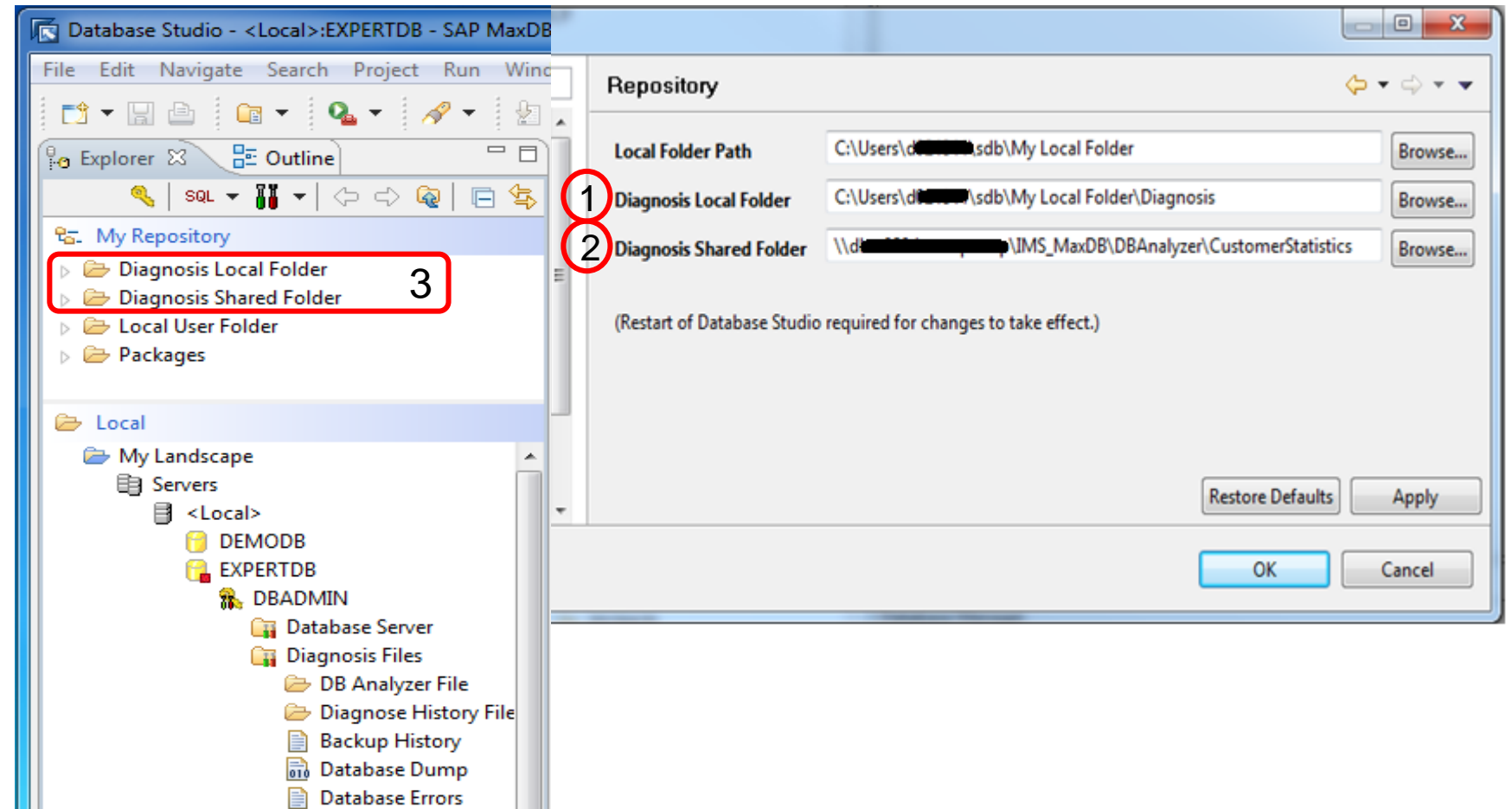
A Quick Tour Analyzing Performance Offline

Prerequisites – Define new File Association 1   (3 of 6)   Back

**Define Preferences
File Associations**

- Select General - Editors
  1. File Associations
  2. Click Add
  3. Enter *.csv
  4. Click Ok

Continue with next slide

New File Association
.. Continuation

1. Associated editors: Click Add

2. Choose
   Diagnosis File (Table and Chart)

3. Click Ok

4. Click Ok

5. **Restart Database Studio**
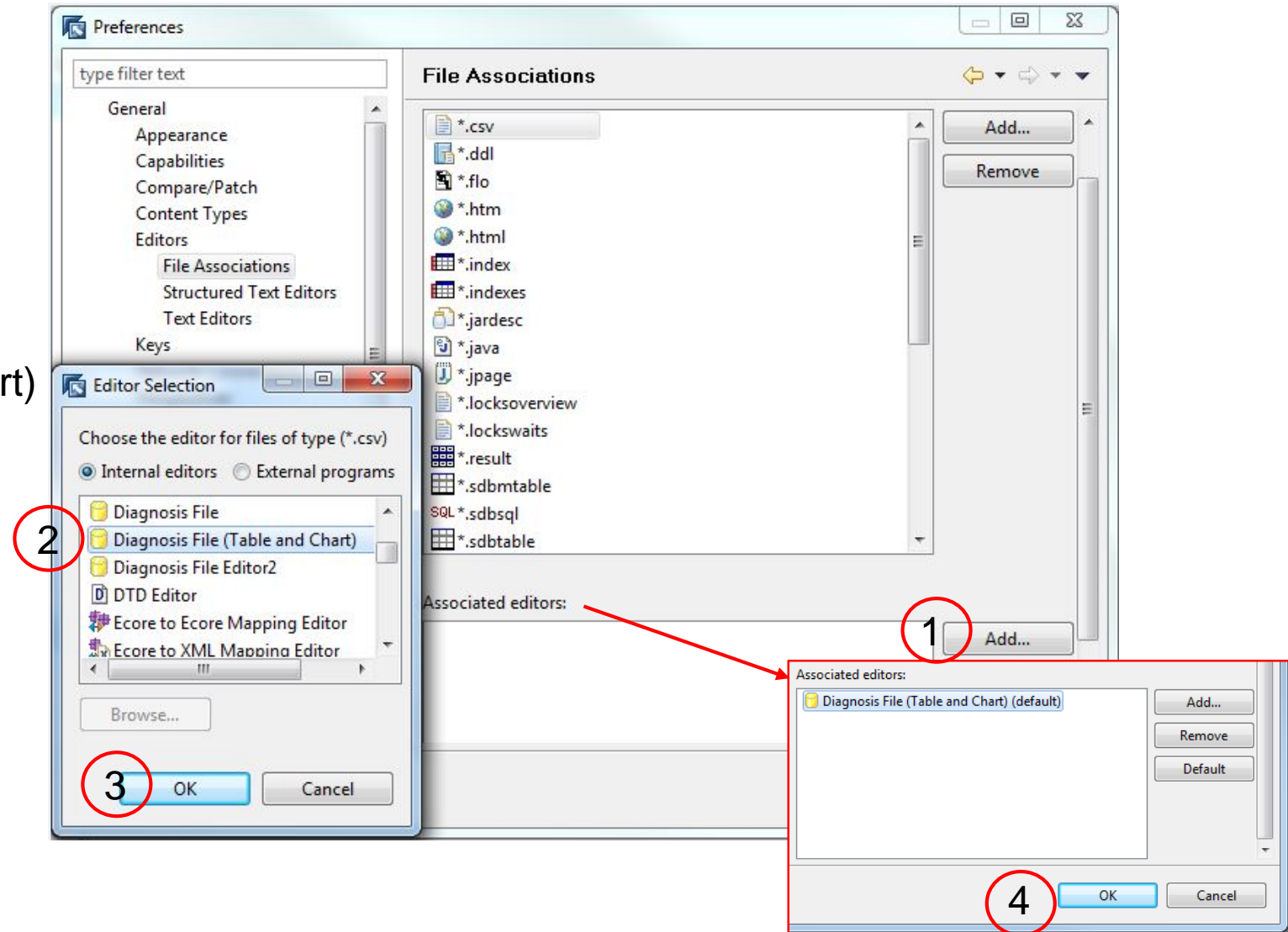
Download Database Analyzer Data via Database Studio
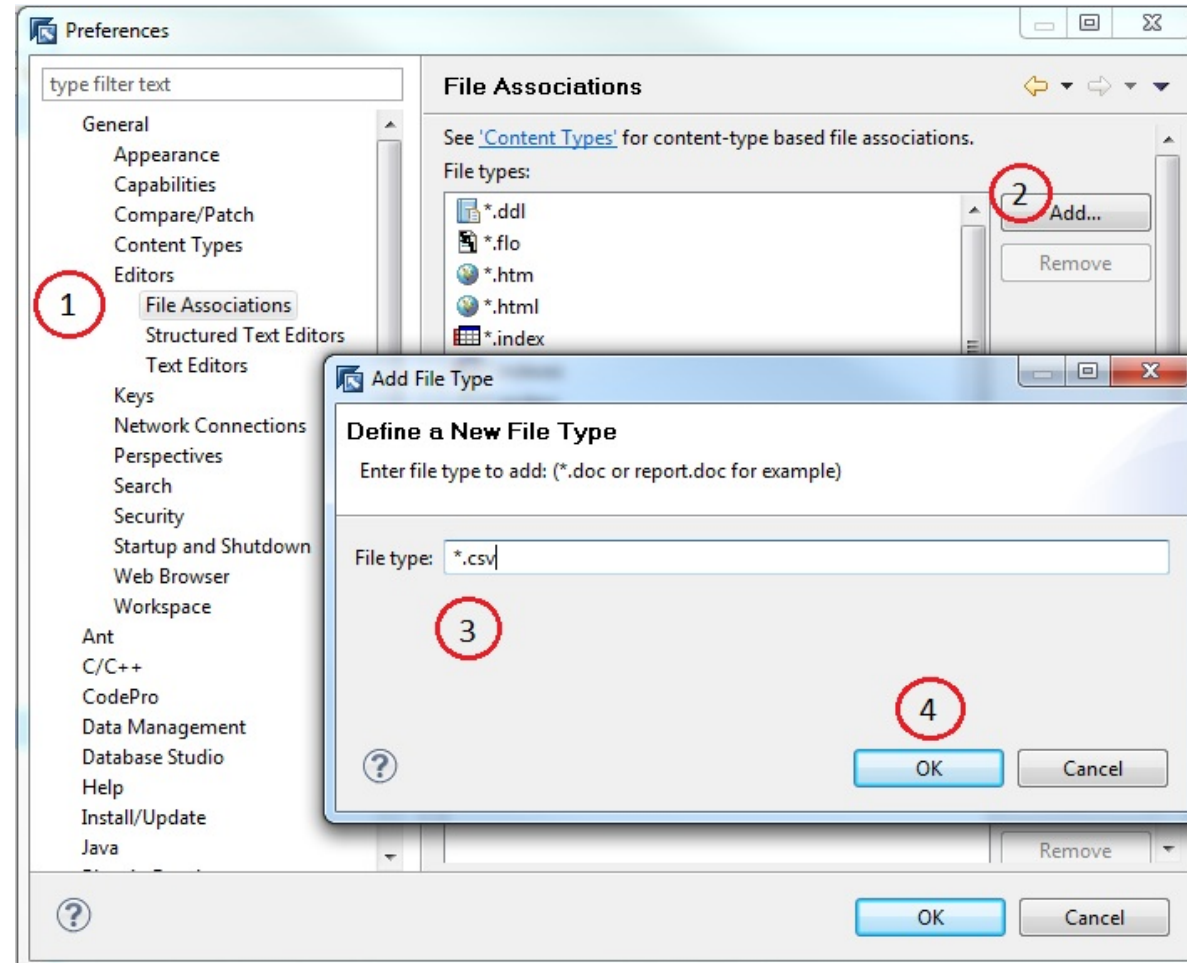
1. Login to the database of interest and navigate to the Database Analyzer File folder.

2. Select the date folders and choose context function "Save To Diagnosis…"

3. Choose a name for the Database Analyzer folder and press OK & Yes

4. See the data now in the resp. Repository folder
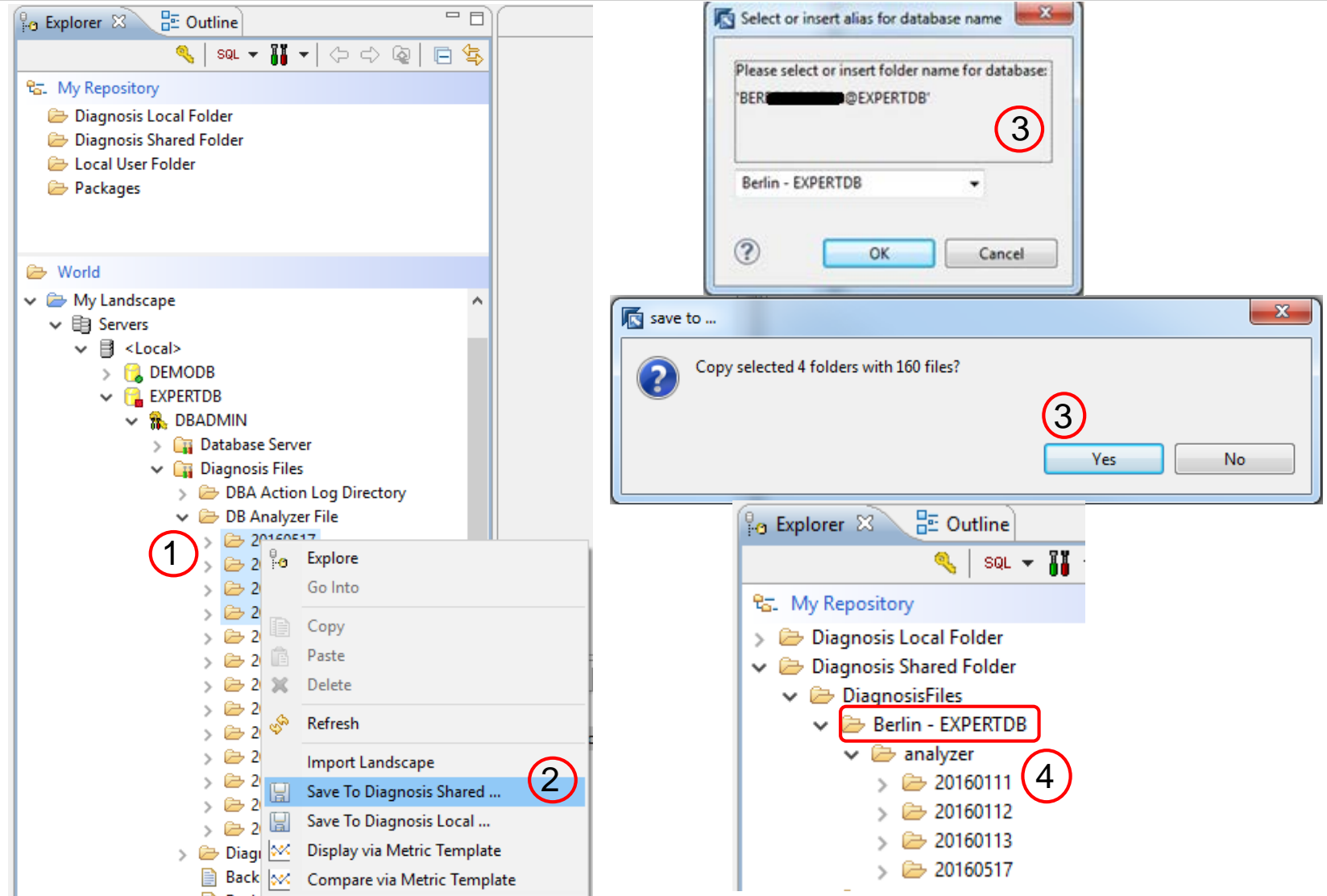
Provide Database Analyzer Data via transaction DBACOCKPIT

- Login to the database of interest
- Download Database Analyzer data of interest
  1. Goto Expert Analyis
  2. Select the date folders of interest
  3. Choose "Download Files" function
  4. Choose a path, that is defined in Database Studio preferences and press OK
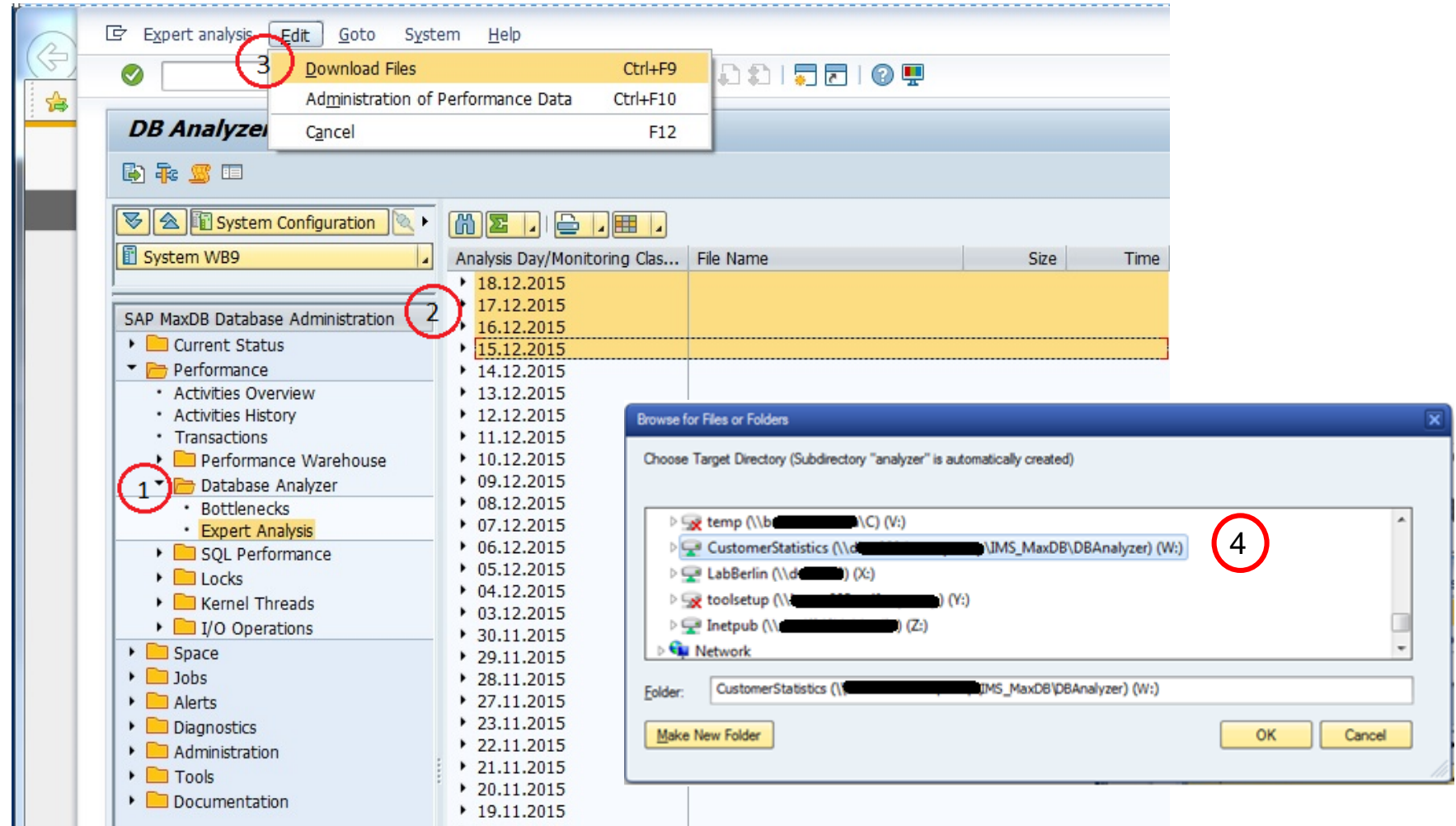
A Quick Tour Analyzing Performance
Prerequisites – Define location for remote metric templates Back

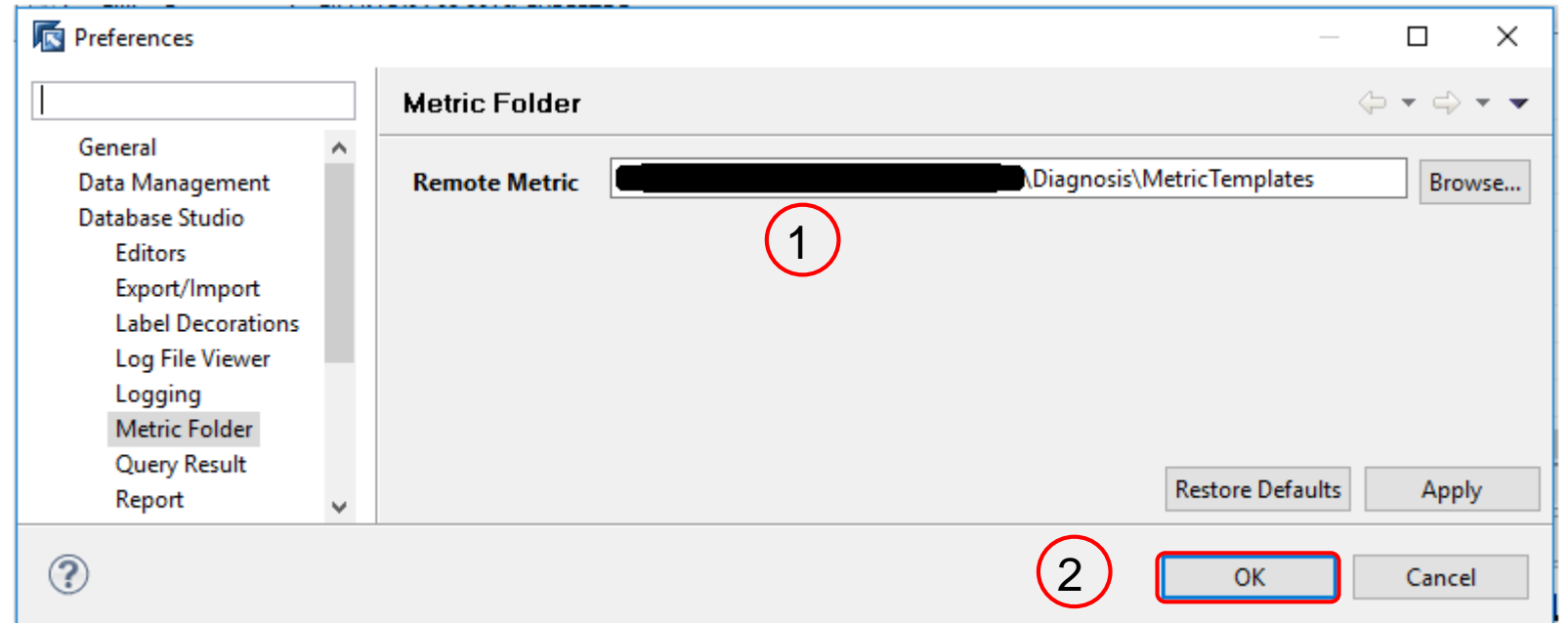**Remote Metric Path**

Optional settings for a location in order to share metric templates

1. Enter a path as a location to be shared among a team

2. Press ok

The folder contents will be explained on another slide

Database Analyzer Charts
Further Chart Functionality

1. Displaying/Hiding a Column in the Chart

2. Change the Color of a Graph

3. Hiding/showing Columns in the Table

4. Issuing and Removing Warnings for Values

5. Adding/changing/deleting Virtual Columns

Database Analyzer Charts
Displaying/Hiding Columns as Graphs

1. On the column list double click the column which interests you.
   F.e.:

   # physical reads for user tasks

Database Analyzer Charts
Displaying/Hiding Columns as Graphs

1. On the column list double click the column which interests you.
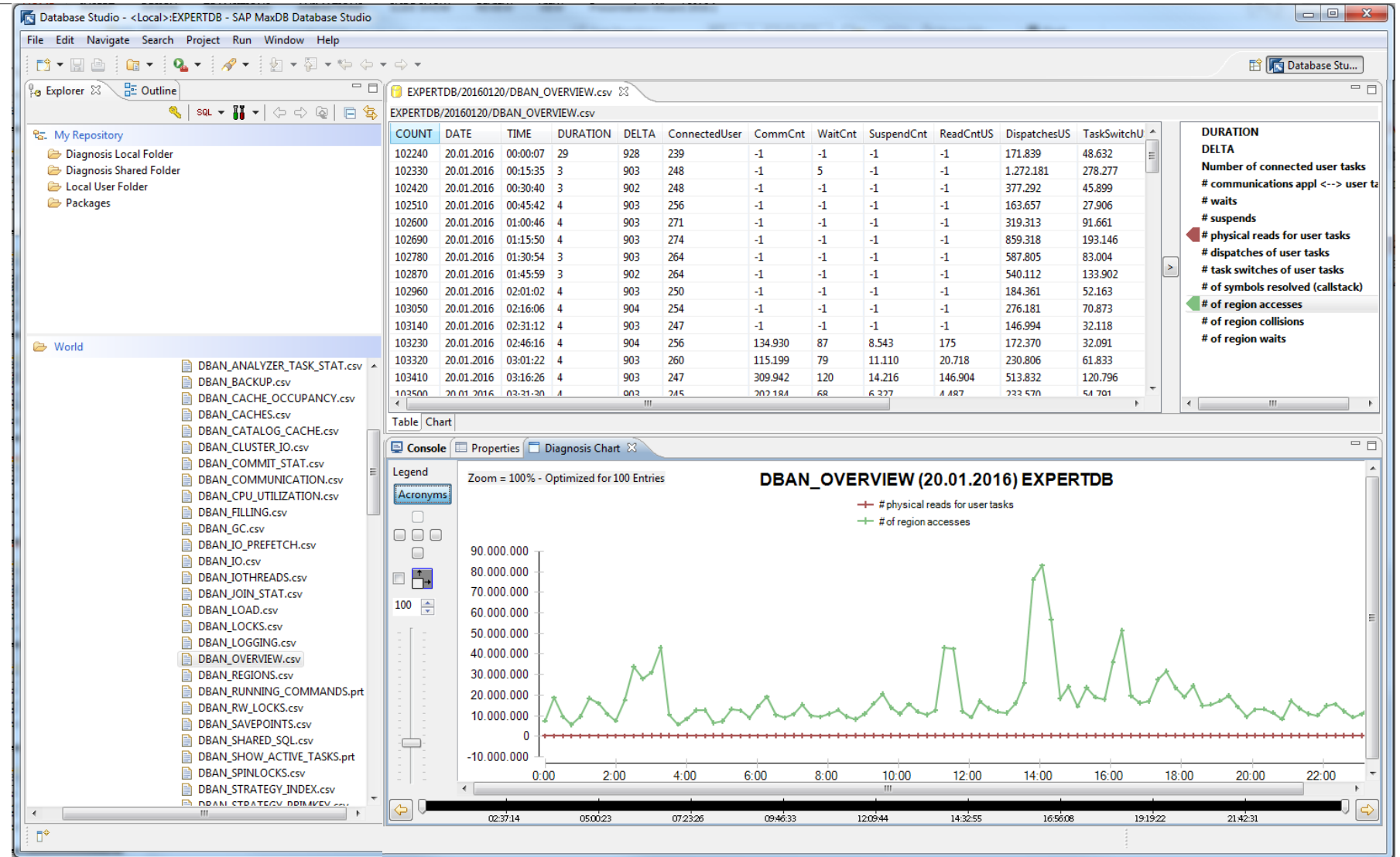   F.e.:
   # physical reads for user tasks

2. Double click on a second column and see how the scale has changed.

Database Analyzer Charts
Displaying/Hiding Columns as Graphs

1. On the column list double click the column which interests you.
   F.e.:
   # physical reads for user tasks

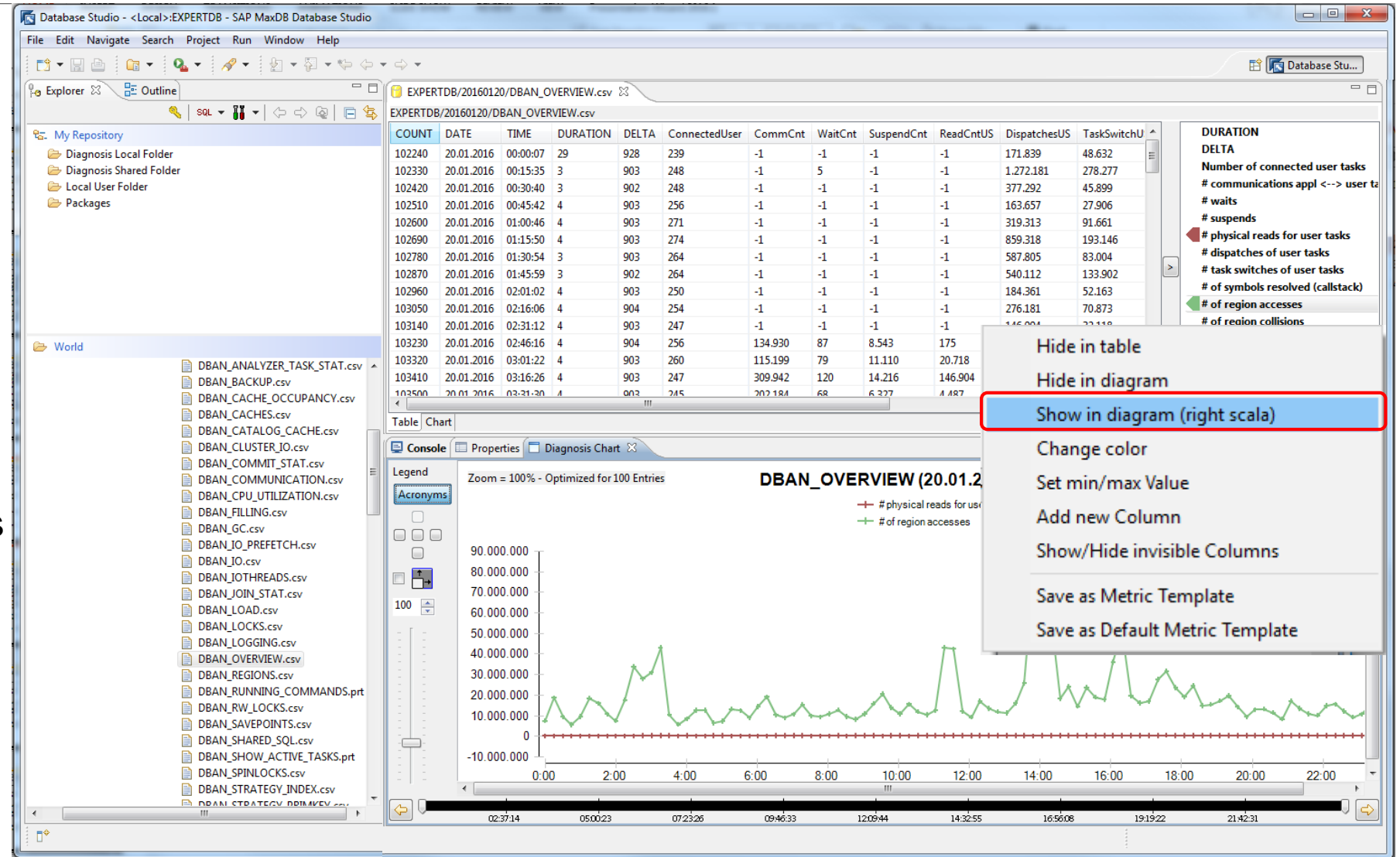2. Double click on a second column and see how the scale has changed.

3. Assign one of the columns to the right scale

Database Analyzer Charts
Displaying/Hiding Columns as Graphs

1. On the column list double click the column which interests you.
   F.e.:
   # physical reads for user tasks

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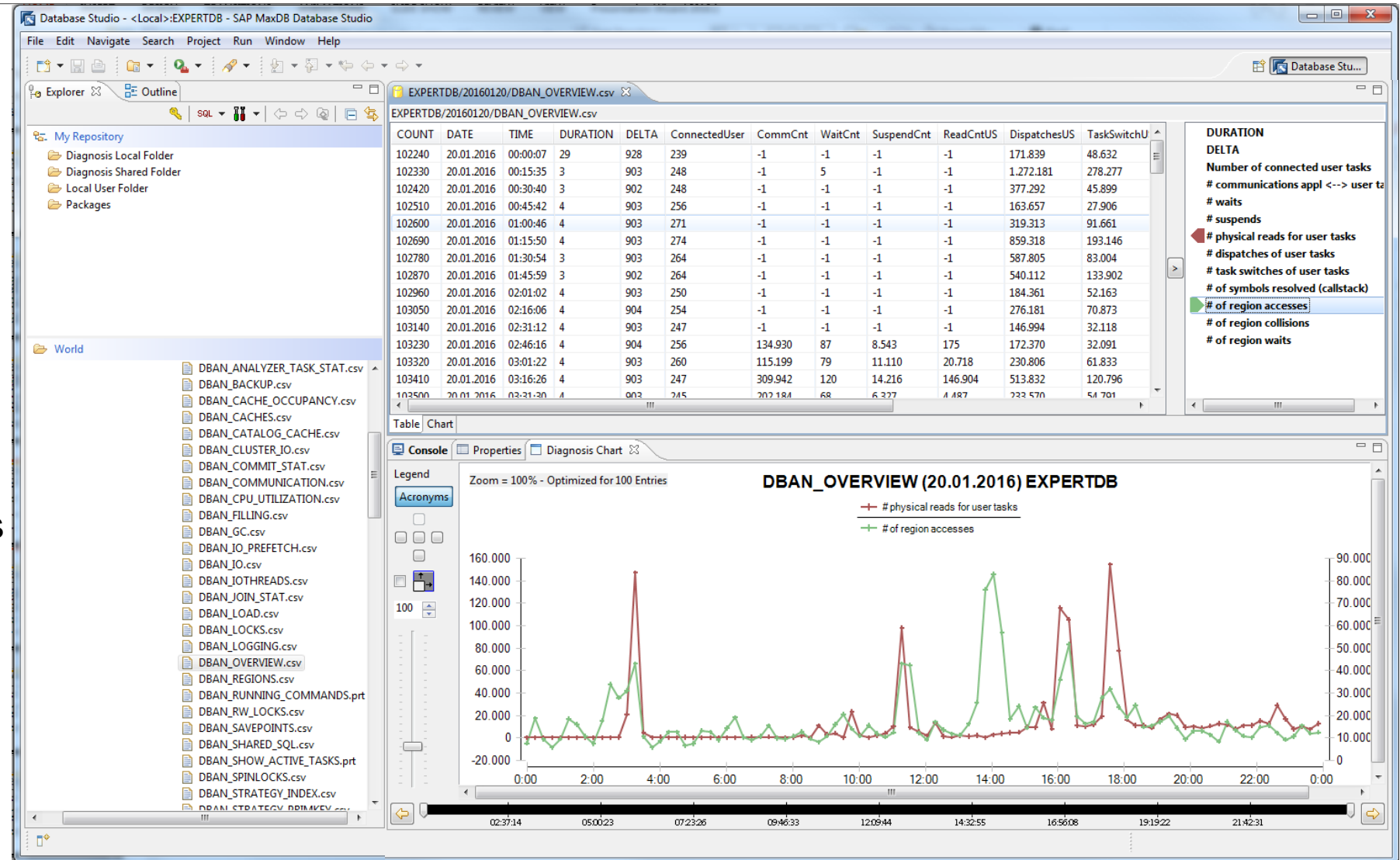
3. Assign one of the columns to the right scale

4. See both graphs now with their own scale

Database Analyzer Charts
Change the Color of the Graph

1. On the respective column choose the context function **Change color**

Database Analyzer Charts
Change the Color of the Graph

1. On the respective column choose the context function Change color

2. Choose a color from the color menu

Database Analyzer Charts
Change the Color of the Graph

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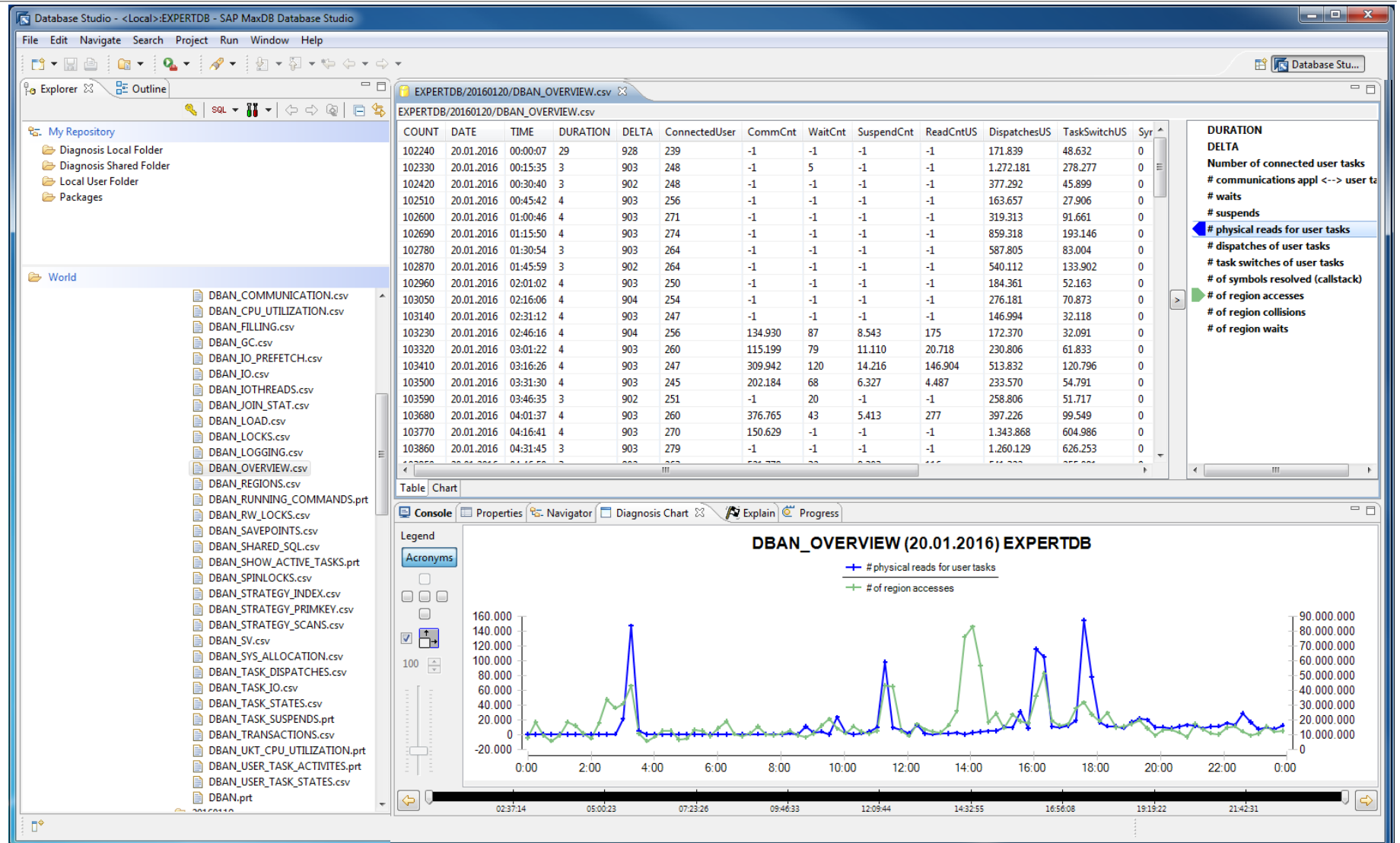3. The graph is now displayed with the chosen color

Database Analyzer Charts
Hiding/showing a Column in the Table

1. Which table column is this? Move the mouse over the column. See beneath the header the long name of the column in the tool tip.

Database Analyzer Charts
Hiding/showing a Column in the Table

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2. Exclude first column from the table via context menu function "Hide in table"

Database Analyzer Charts
Hiding/showing a Column in the Table

1. Which table column is this? Move the mouse over the column. See beneath the header the long name of the column in the tool tip.

2. Exclude first column from the table via context menu function "Hide in table"

3. Now you see in the table the former second column as first column

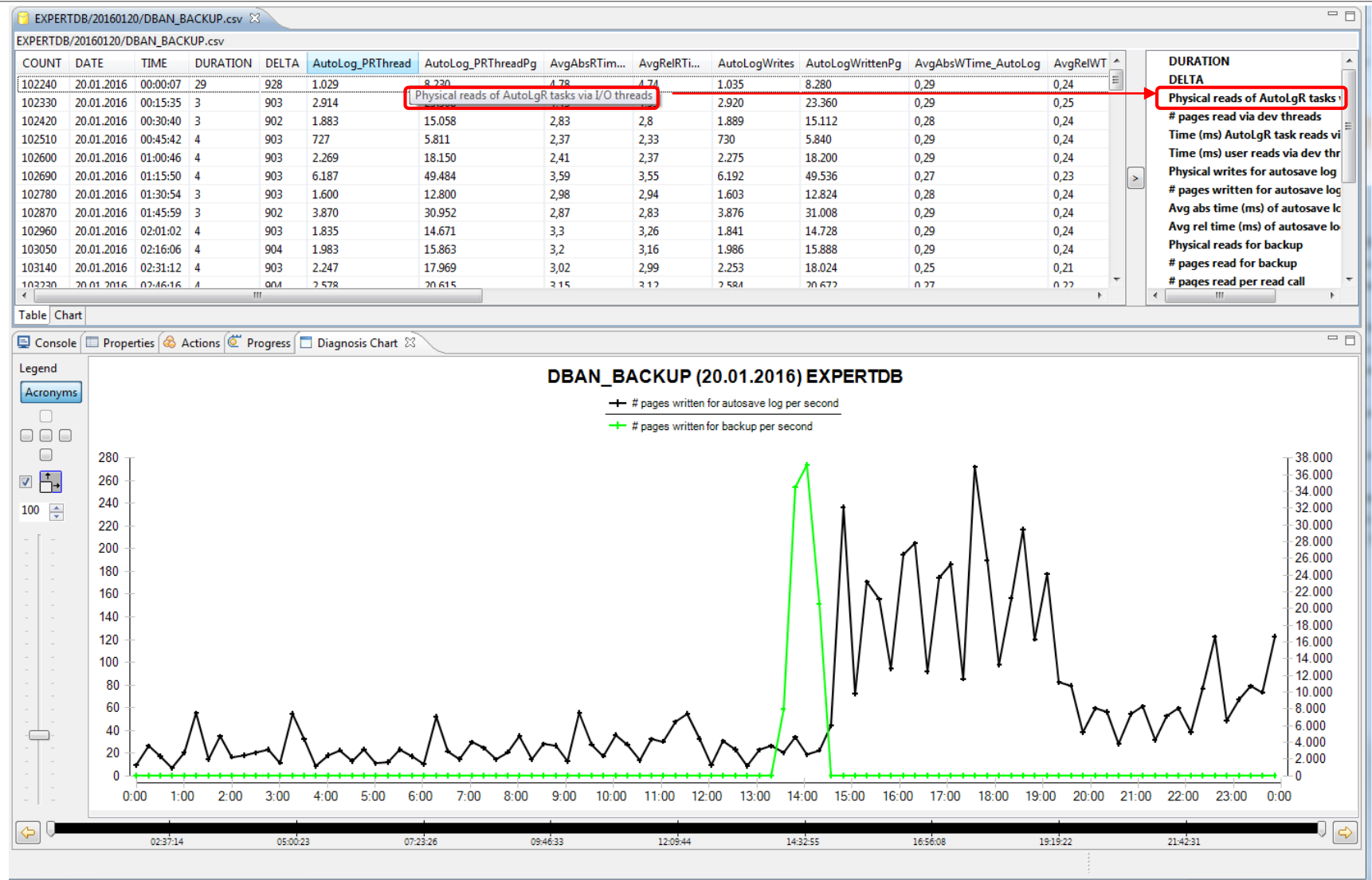# Database Analyzer Charts
Hiding/showing a Column in the Table

1. Which table column is this? Move the mouse over the column. See beneath the header the long name of the column in the tool tip.
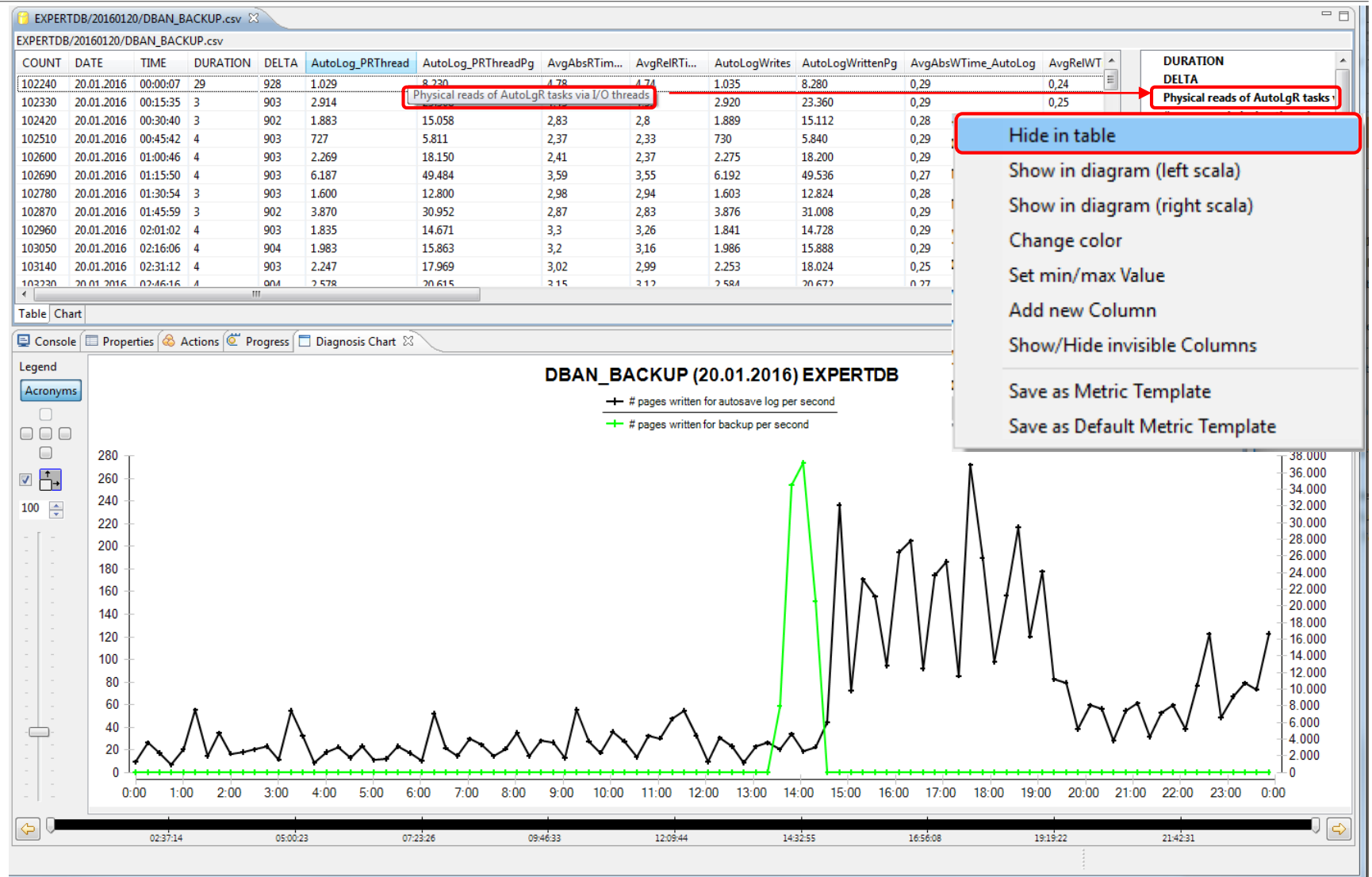
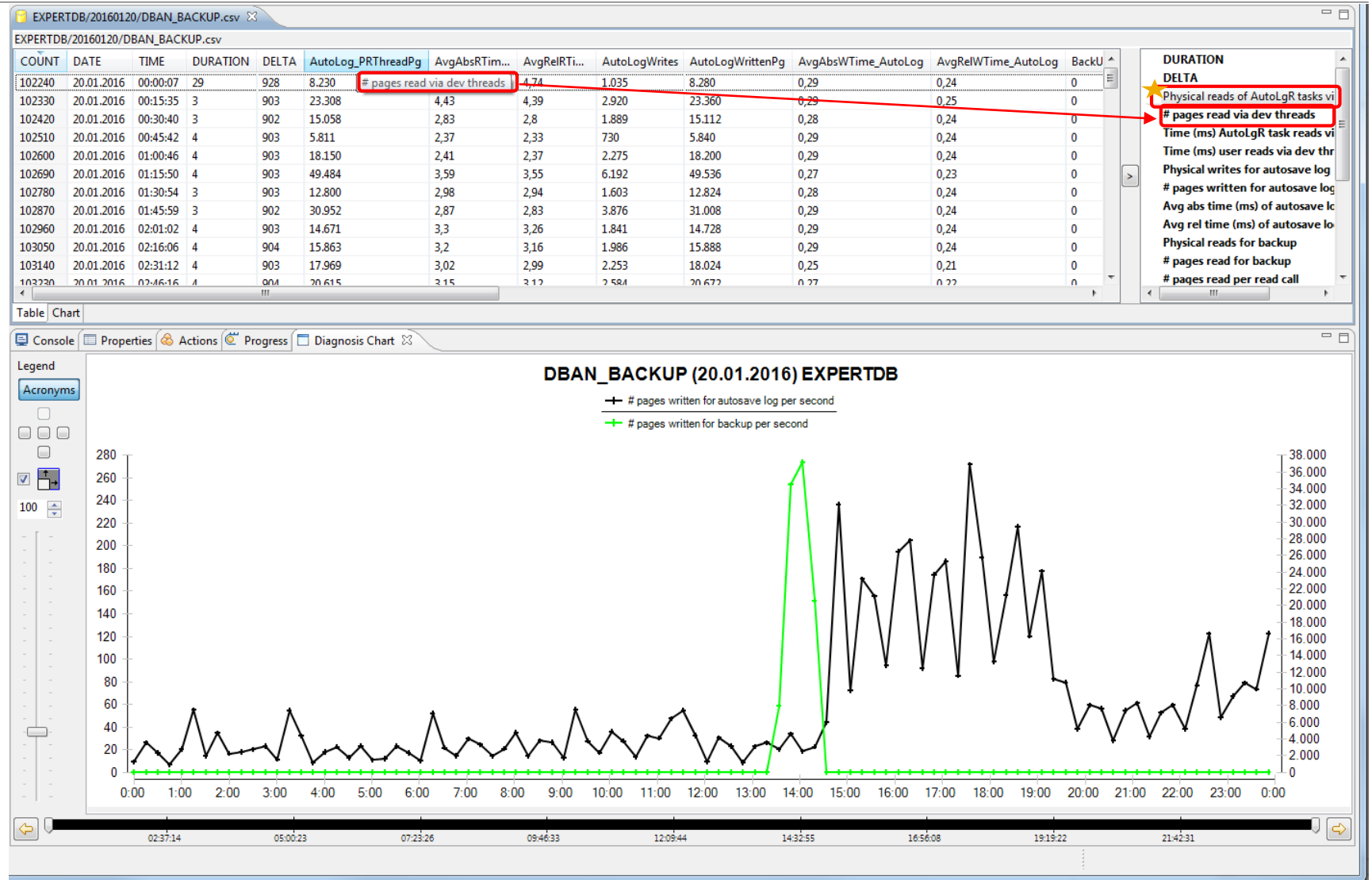2. Exclude first column from the table via context menu function "Hide in table"

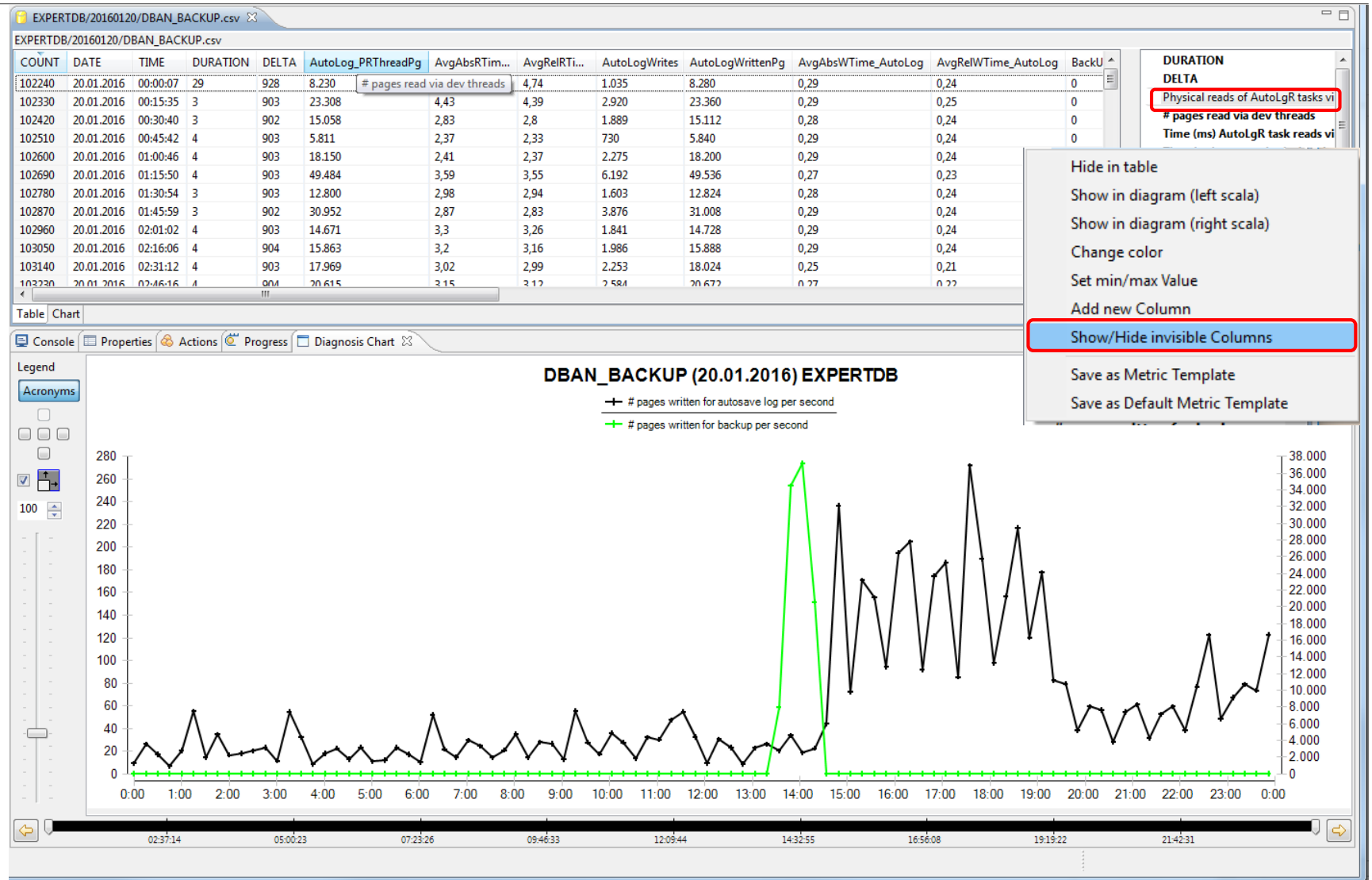3. Now you see in the table the former second column as first column

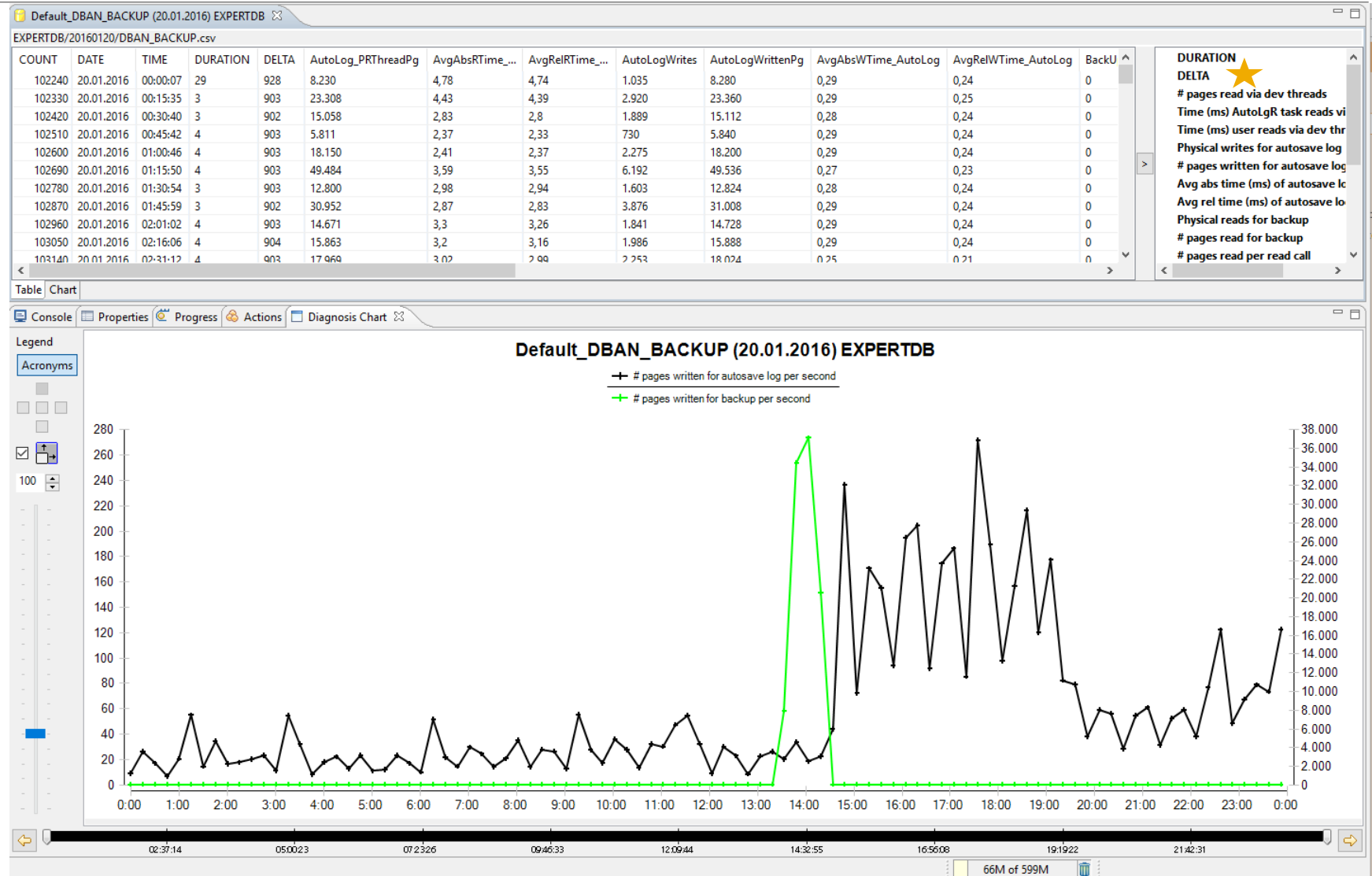4. You can now exclude the not visible table column from the column list

Database Analyzer Charts
Hiding/showing a Column in the Table
→Back

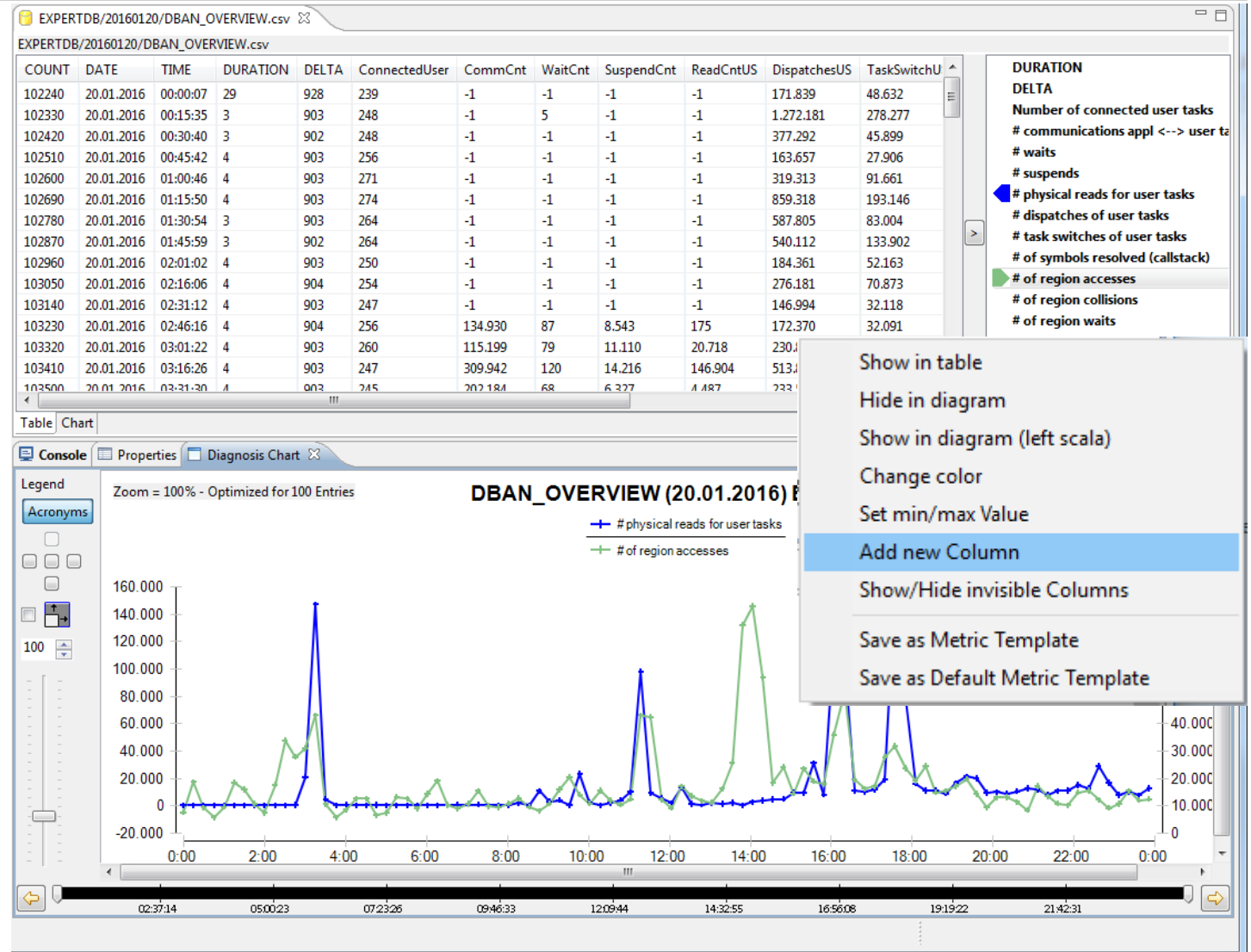5. The column list does not show the excluded column any more.
See ⭐

Database Analyzer Charts
Adding, changing and deleting virtual columns

1. You want to know the number of region accesses per second? Therefore you need a computed column.

2. From the context menu choose: **Add new Column**

Database Analyzer Charts
Adding, changing and deleting virtual columns

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2. From the context menu choose: **Add new Column**

3. Enter a name and acronym for the new column. Specify a formula - use Ctrl/space. Division by DELTA means: per second.

Database Analyzer Charts
Adding, changing and deleting virtual columns

1. You want to know the number of region accesses per second? Therefore you need a computed column.

2. From the context menu choose: **Add new Column**

3. Enter a name and acronym for the new column. Specify a formula - use Ctrl/space. Division by DELTA means: per second.

4. Choose **Edit Column** or **Delete Column** if you want to change or delete the definition of the column.
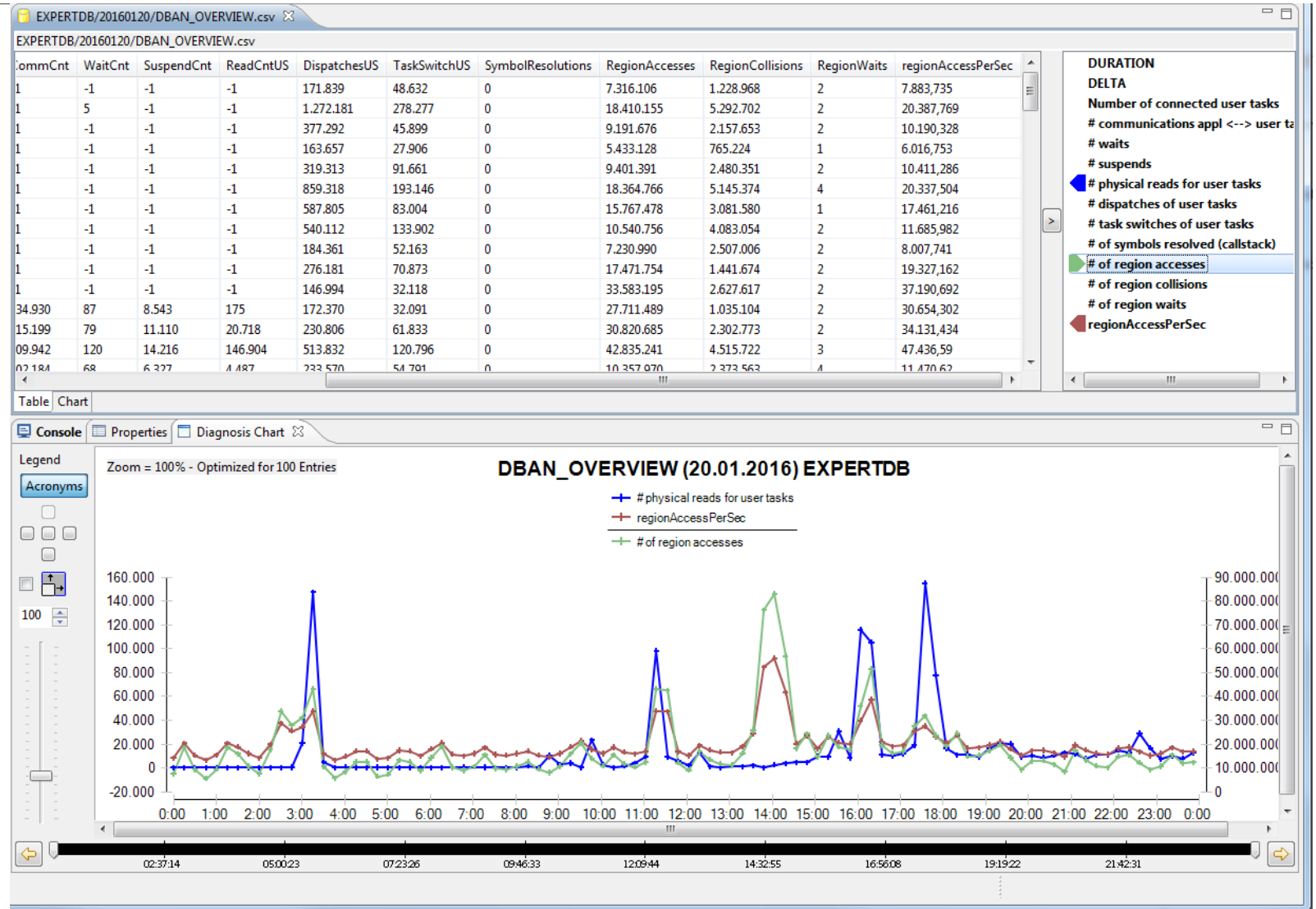
Database Analyzer Charts
Issuing and Removing Warnings for Values

→Back

1. You want to see warnings if values are beneath or above a threshold.

2. From the context menu choose: **Set min/max Value** to specify a min or max threshold value for the chosen column

Database Analyzer Charts
Issuing and Removing Warnings for Values

1. You want to see warnings if values are beneath or above a threshold.

2. From the context menu choose: **Set min/max Value** to specify a min or max threshold value for the chosen column

3. Here only a maximum value is specified. The minimum value stays undefined (**NaN** value means "not a number").

4. Save the metric template under a specific name ("LogFilling-WithThreshold"). After applying it to this date folder, the resp. values will be emphasized.

Database Analyzer Charts
Issuing and Removing Warnings for Values

Having saved the metric template under a specific name (f.e.:"LogFilling-WithThreshold"):

After applying **LogFilling-WithThreshold** again to this date folder, the respective values will be marked in the chart and in the table.
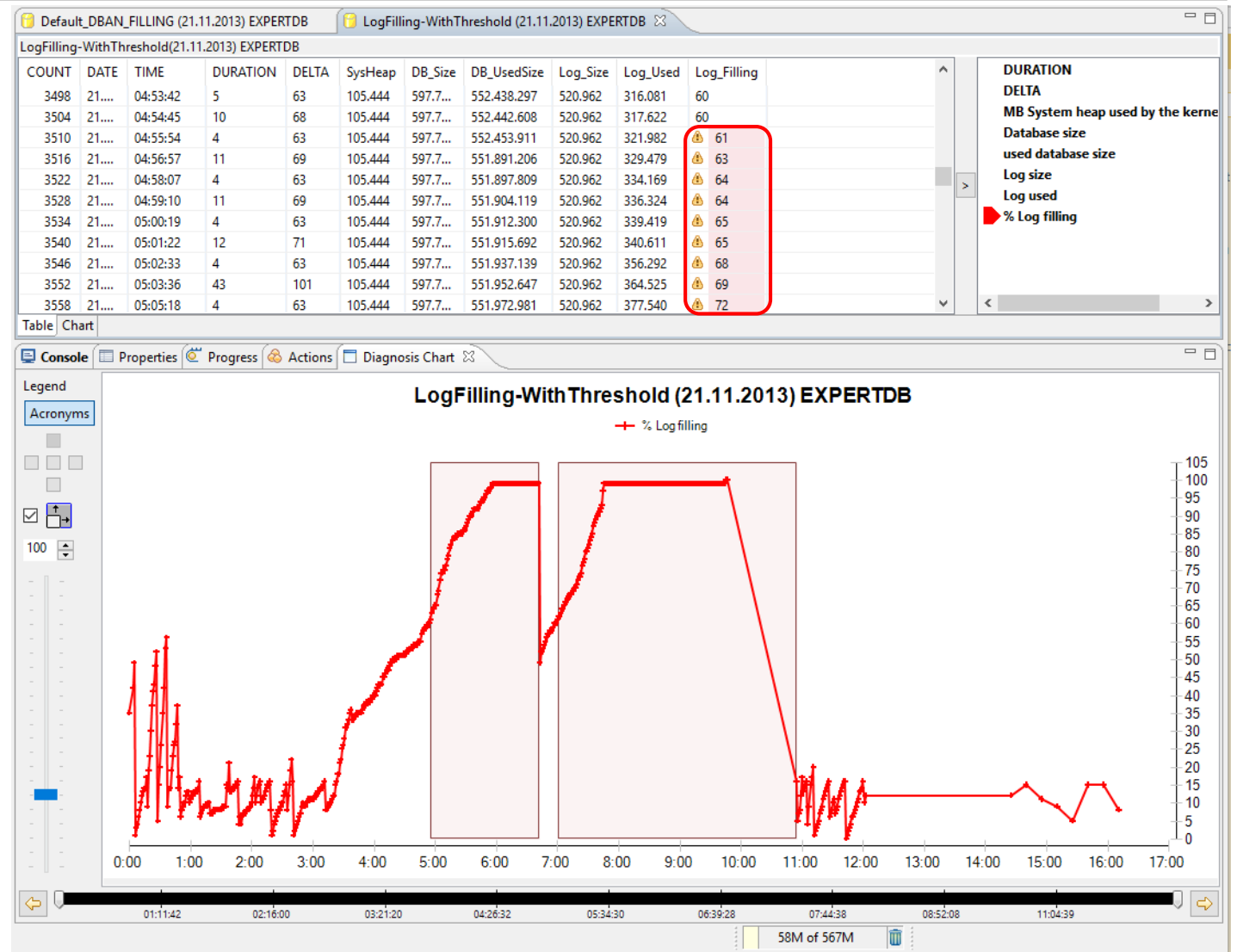
Database Analyzer Charts
Two or More Metrics in one Chart

1. What do different metrics of the same date have in common?

   Merge different csv files in one chart
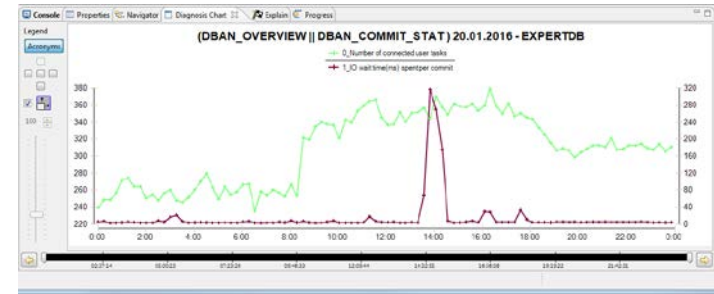
2. How the metric changes from one date to the other?

   Compare the metrics of two different dates in one chart
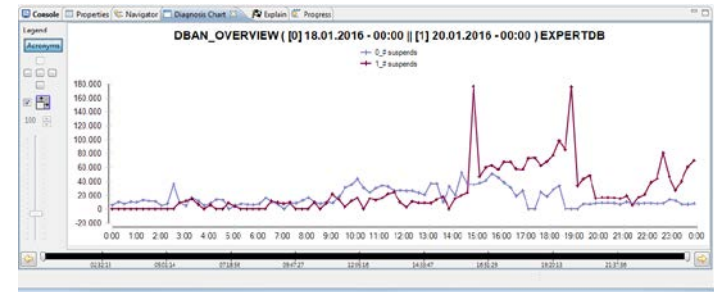
3. How to display a metric over more the one day? Concatenate a succeeding or preceding day with the same metric

   Concatenate charts over more then one day

Merging Two or More Metrics in one Chart
Merge two different csv files in one chart

1. To combine graphs of two different charts in one single chart, open the two different csv files.

2. Via context function **Merge with** choose the 2nd chart you want to merge with.

Merging Two or More Metrics in one Chart

Merge two different csv files in one chart

1. To combine graphs of two different charts in one single chart, open the two different csv files.

2. Via context function **Merge with** choose the 2nd chart you want to merge with.

3. Now you can see all chosen graphs in one merged chart. Switch off the ones which are not of interest.

Compare Two Dates in One Chart
Compare Metrics of Different Dates or Databases

1. To compare metrics of different dates: open the two csv files.

2. In the table choose context function **Compare with** and select the 2nd chart you want to compare with

Compare Two Dates in One Chart
Compare Metrics of Different Dates or Databases

1. To compare metrics of different dates: open the two csv files.

2. In the table choose context function **Compare with** and select the 2nd chart you want to compare with

3. Click ok, if you wish to compare the graphs starting at the same point in time

4. Enter different starting point if you want to compare different time intervals

Compare Two Dates in One Chart
Compare Metrics of Different Dates or Databases

5. Now you can see all chosen graphs in one chart.

Concatenate several Dates in One Chart
Concatenate same Metrics over several succeeding Dates

-> Back

1. To concatenate metrics of succeeding dates: open the same metric in up to four succeeding date folder.

2. The context menu offers according to the displayed charts the potentially possible operations.

3. After concatenation of the date 10.02.2016 and 11.02.2016 it is possible to continue the concatenation until four dates are concatenated.
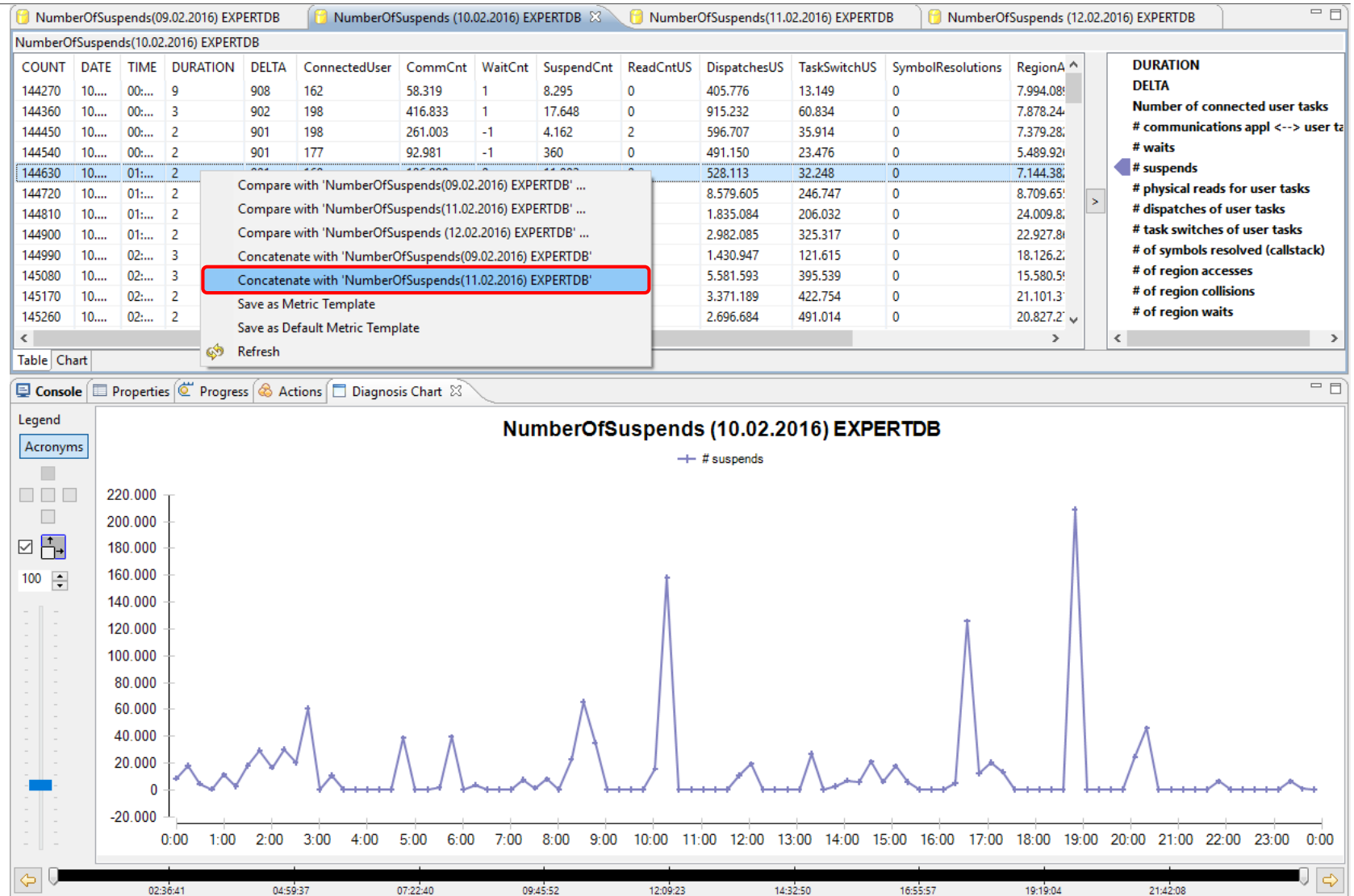
Concatenate several Dates in One Chart
Concatenate same Metrics over several succeeding Dates

4. See here the second concatenation step

   and on the next slide the result of three stepwise concatenations.
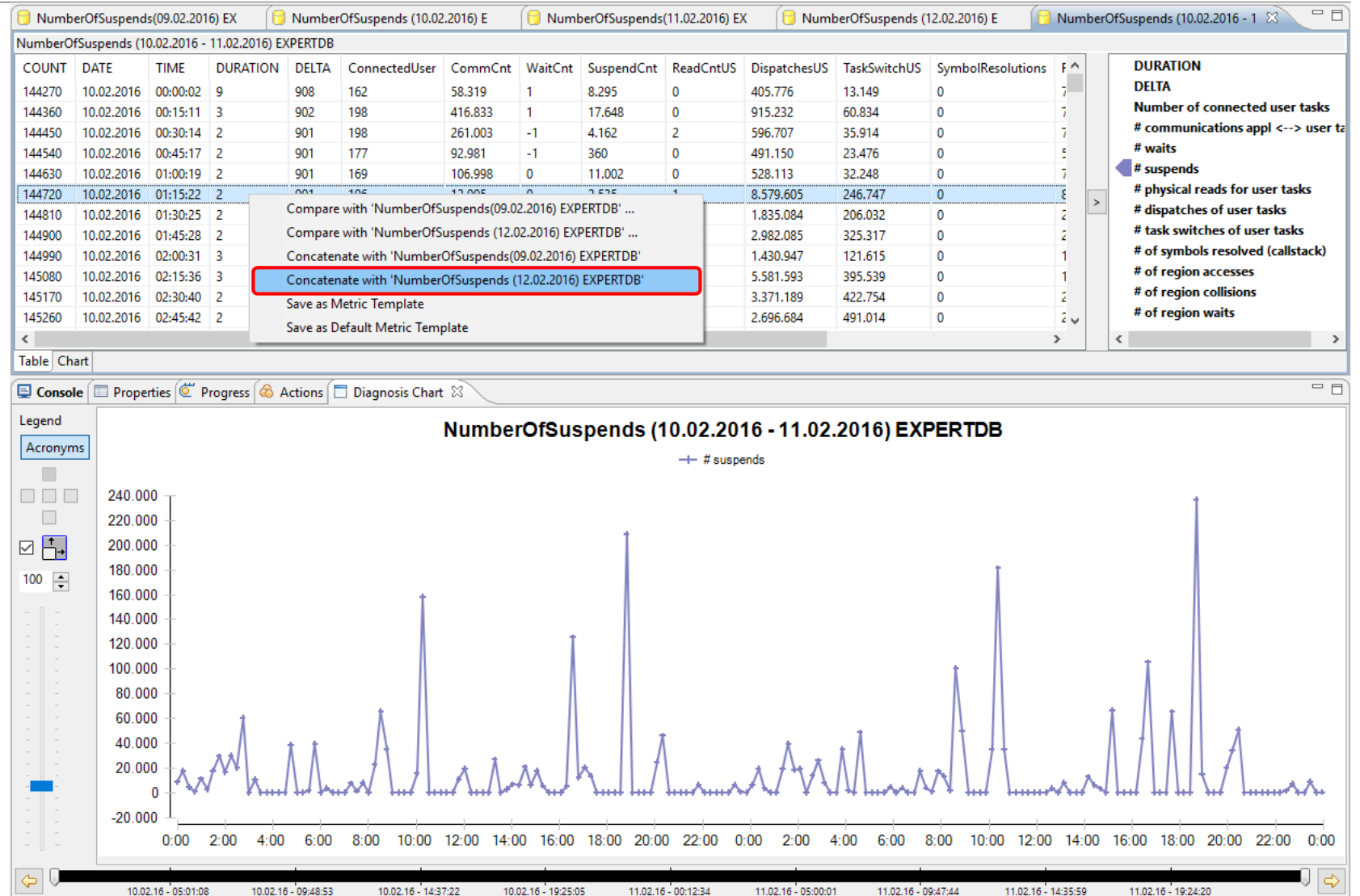
Concatenate several Dates in One Chart
Concatenate same Metrics over several succeeding Dates -> Back

5. This is the result of the stepwise concatenation

   09.02.2016 until 2.02.2016
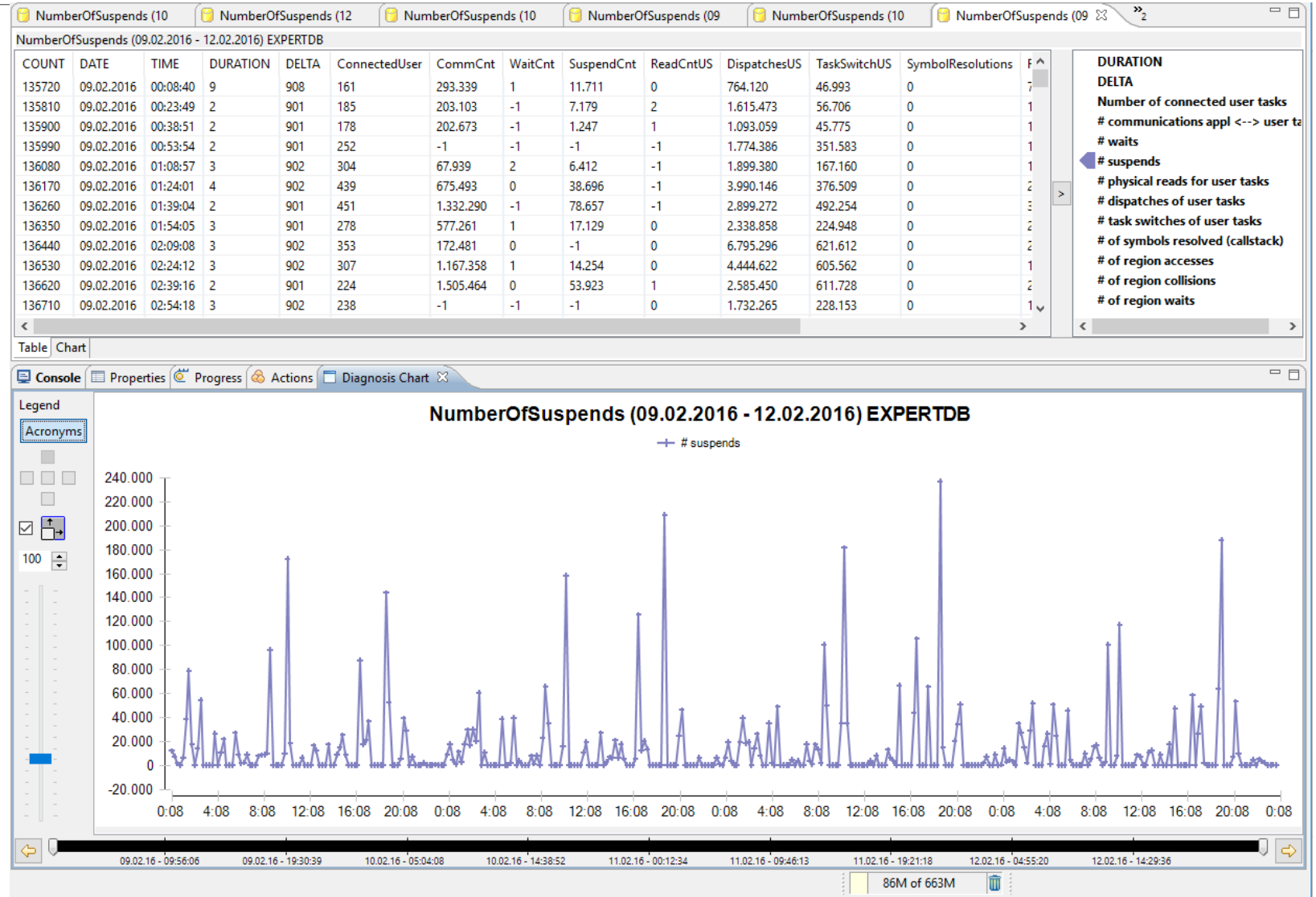
Database Analyzer Charts
Display/Compare/Concatenate via Metric Template

1. How to select and display different dates with a specific Metric Template?

   Display via Metric Template
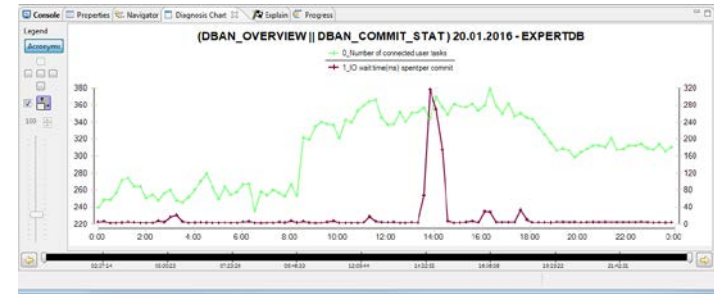
2. How to select and **compare** different dates in one chart directly from the explorer?

   Compare via Metric Template
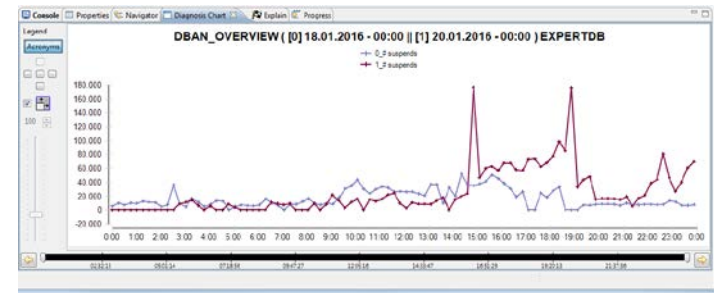
3. How to select and concatenate different dates in one chart directly from the explorer?

   Concatenate via Metric Template
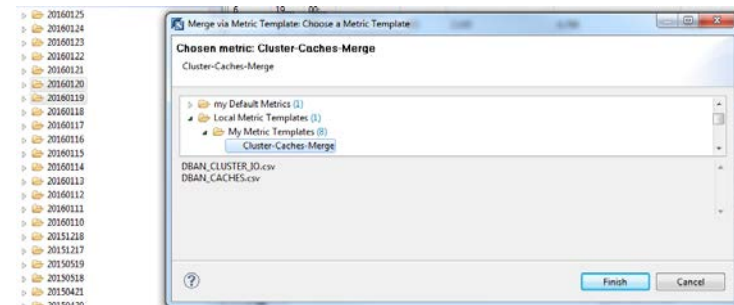
Displaying via Metric Template One or More Dates at once
Display directly via Metric Template

1. To display metrics of different dates directly from the explorer:

   select two or more date folders and choose the context function **Display via Metric Template**

2. Then select the Metric Template of interest.

3. As result for every chosen date the metric will be displayed

Comparing Two or more Dates in one Chart
Compare directly via Metric Template

1. To compare metrics of different
   dates directly from the explorer:

   select two or more date folders
   and choose the context function
   Compare via Metric Template

Comparing Two or more Dates in one Chart
Compare via Metric Template

1. To compare metrics of different dates directly from the explorer: select two or more date folders and choose the context function **Compare via Metric Template**

2. In the dialog box select the metric you are interested in.
   F.e. NumberOfSuspends is the name of a Metric Template dealing with DBAN_OVERVIEW.csv

3. Click finish to get the graphs according to the chosen Metric Template displayed in one chart for comparison. In this example the chosen Metric Template deals with DBAN_OVERVIEW.csv.
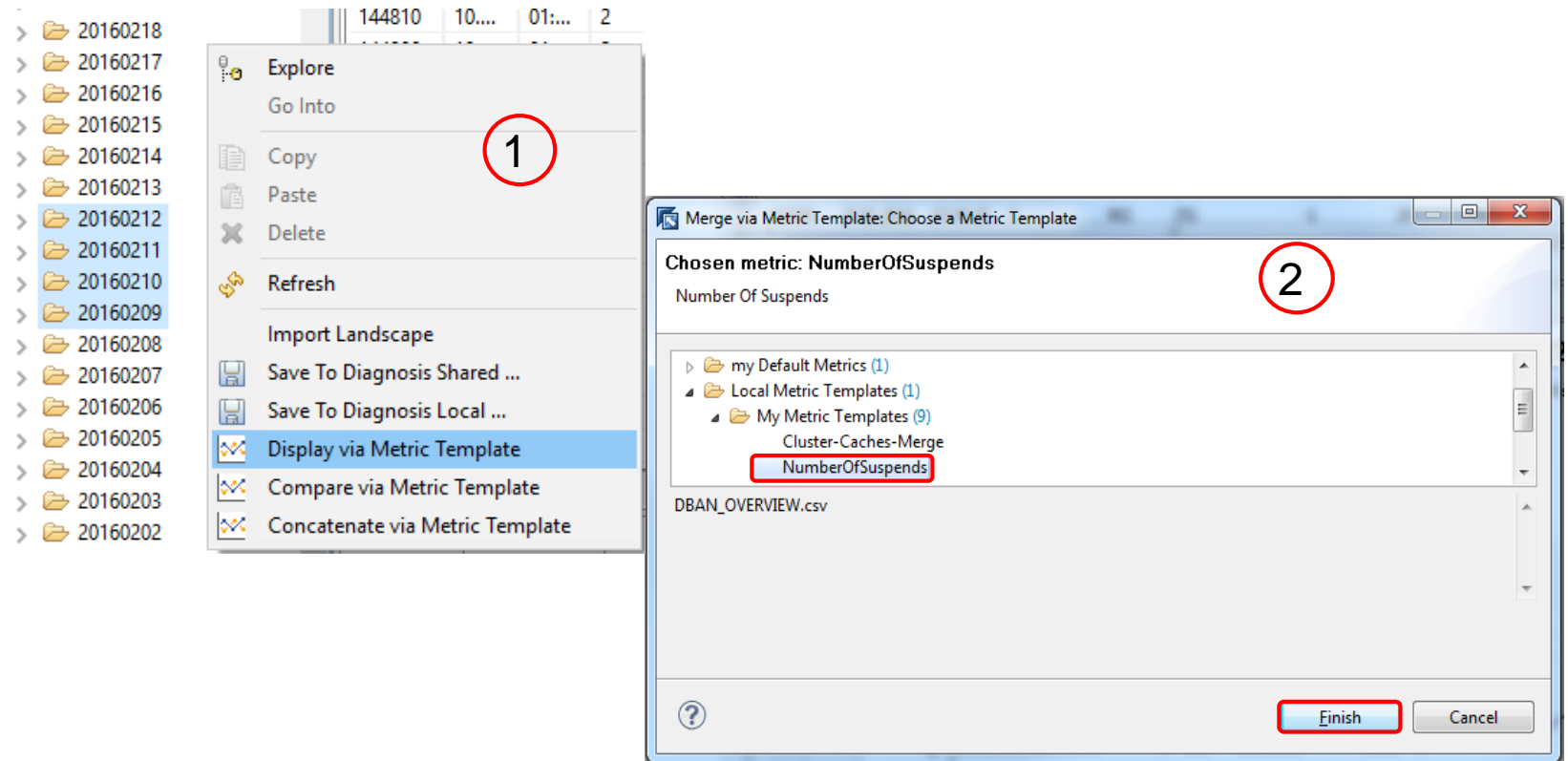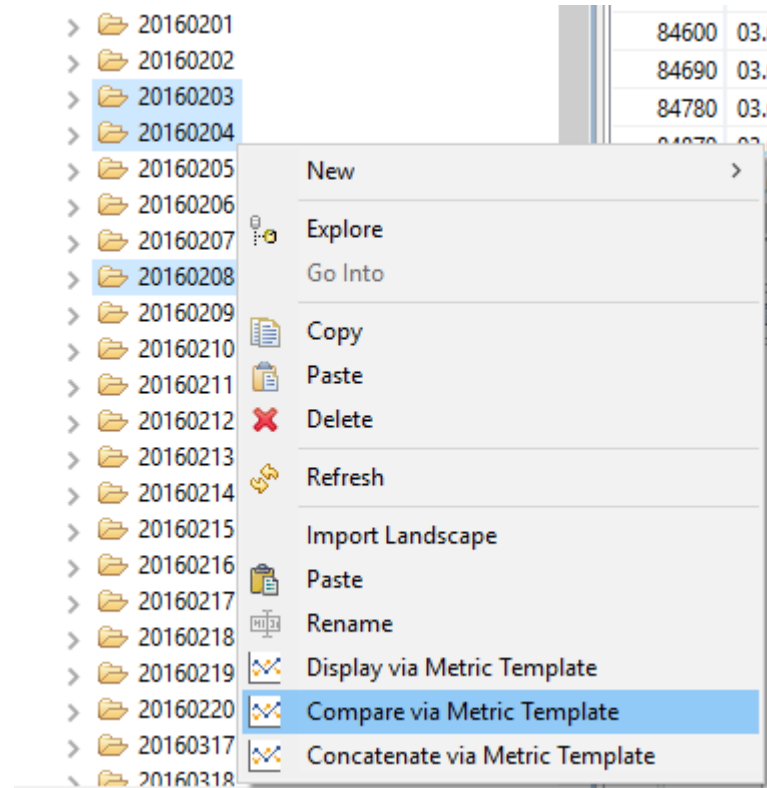
Compare via Metric Template: Choose a Metric Template — □ ×

Chosen metric: NumberOfSuspends

Number of Suspends in Overview.csv

- Default Metrics (Plugin) (35)
- my Default Metrics (6)
- Local Metric Templates (1)
  - My Metric Templates (2)
    - MetricTemplateExamples (3)
      - Cluster-Caches-Merge
      - NumberOfSuspends

DBAN_OVERVIEW.csv

? Finish Cancel

Comparing Two or more Dates in one Chart
Compare via Metric Template

1. To compare metrics of different dates:
   select two or more date folders and choose the context function **Compare via Metric Template**

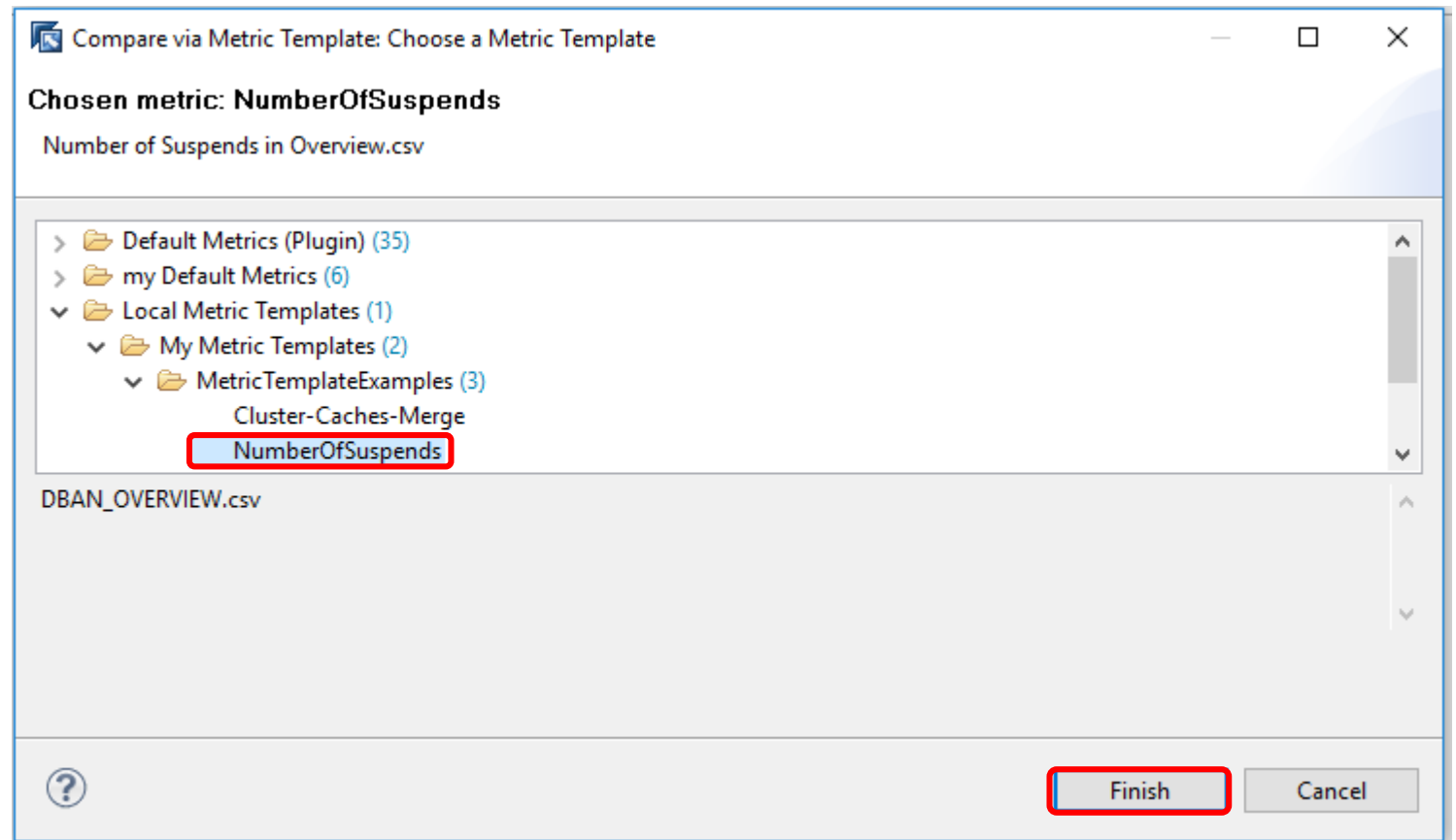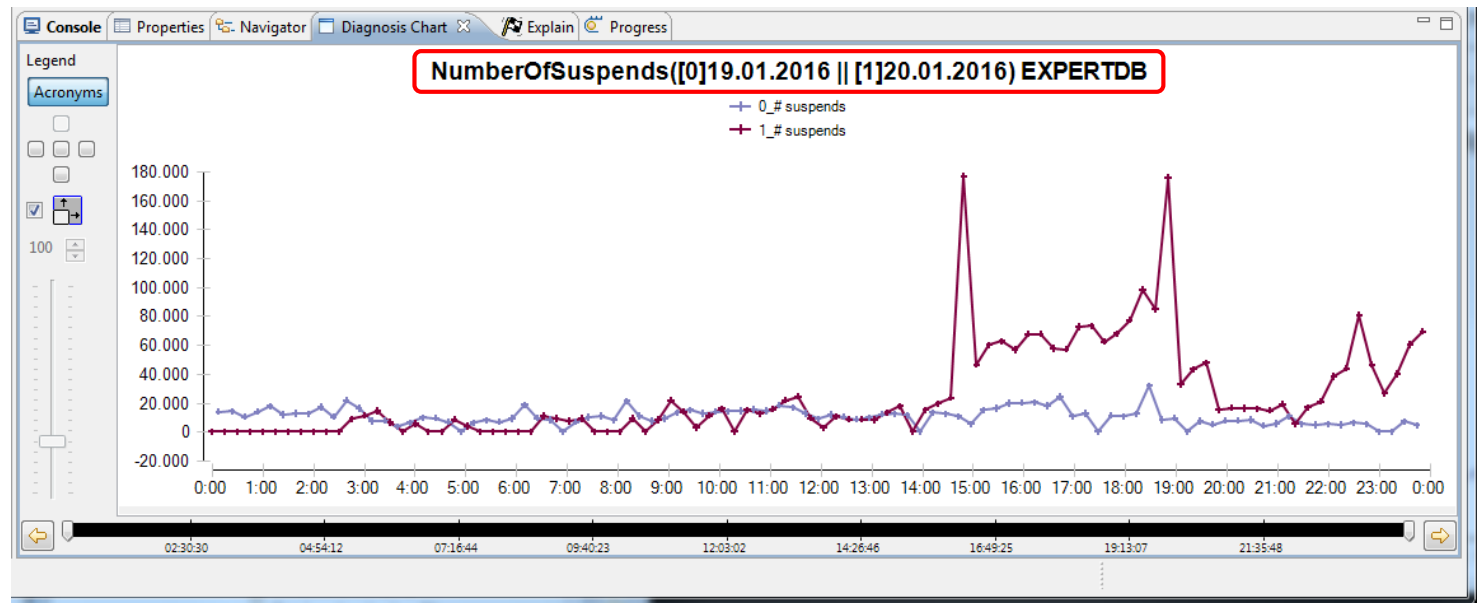2. In the dialog box select the metric you are interested in.
   F.e. NumberOfSuspends is the name of a Metric Template dealing with DBAN_OVERVIEW.csv

3. Click finish to combine the DBAN_OVERVIEW.csv files from the two date folders according to the Metric Template

4. As result you can see the two graphs in one chart.

Concatenating via Metric Template up to Four Dates at once
Concatenate via Metric Template

1. To concatenate metrics of different dates directly from the explorer:

   select two or more date folders (up to four) and choose the context function
   Concatenate via Metric Template

2. Then select the Metric Template of interest.

3. As result all the metric will be displayed for the whole timespan determined by the chosen date folders.

Database Analyzer Charts
Defining/Changing and Applying Metric Templates -> Back

1. Define/Change Default Metric Template

    - Predefined Default Metric Templates
    - Personal Default Metric Templates
    - Reset Default Metric Templates

2. Define/Change Named Metric Template

    - Local Metric Templates
    - Remote Metric Templates

3. Display/Compare/Concatenate via Metric Template

Database Analyzer Charts
Save as Default Metric Template

1. You have changed the presentation of the chart and want to keep your settings for DBAN_OVERVIEW.csv. Choose **Save as Default Metric Template**
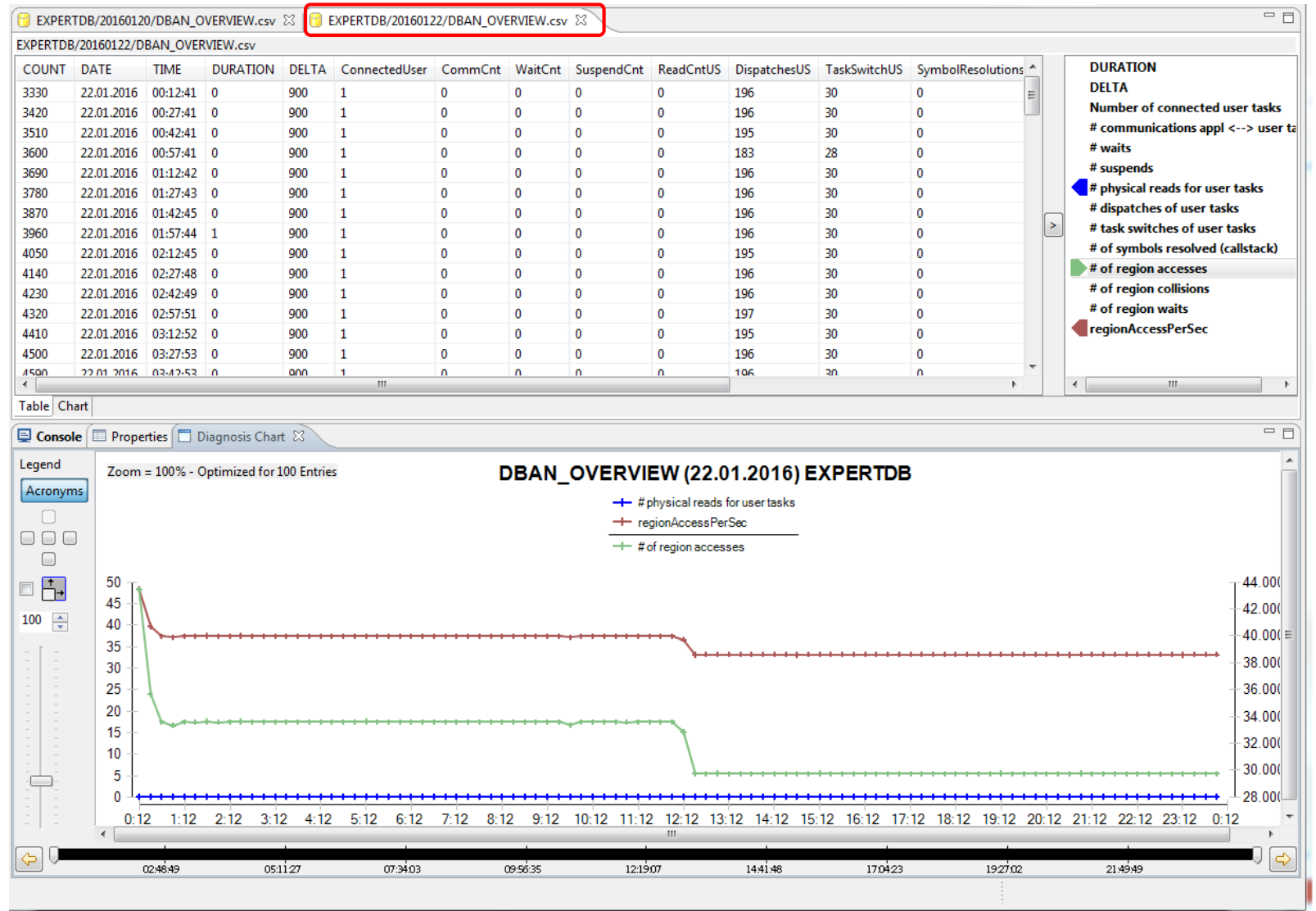
Database Analyzer Charts
Save as Default Metric Template

1. You have changed the presentation of the chart and want to keep your settings for DBAN_OVERVIEW.csv. Choose **Save as Default Metric Template**

2. If you now open the same csv file in another date folder by double clicking then your personal changes will be visible.
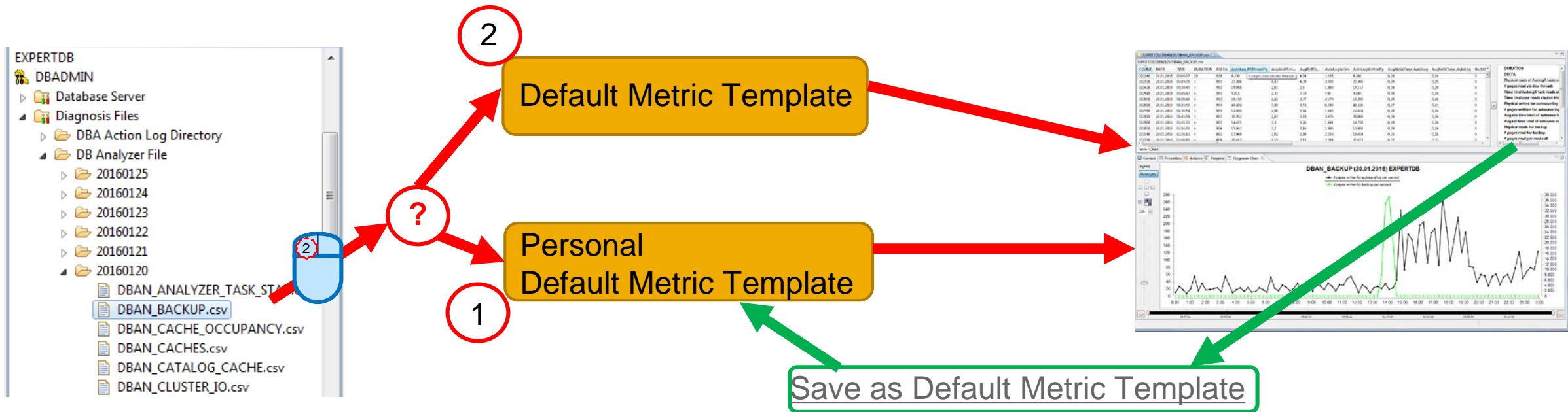
   E.g.: 20160122

Database Analyzer Charts
Default Metric Templates

EXPERTDB
- DBADMIN
  - ▷ Database Server
  - ▲ Diagnosis Files
    - ▷ DBA Action Log Directory
    - ▲ DB Analyzer File
      - ▷ 20160125
      - ▷ 20160124
      - ▷ 20160123
      - ▷ 20160122
      - ▷ 20160121
      - ▲ 20160120
        - DBAN_ANALYZER_TASK_ST...
        - DBAN_BACKUP.csv
        - DBAN_CACHE_OCCUPANCY.csv
        - DBAN_CACHES.csv
        - DBAN_CATALOG_CACHE.csv
        - DBAN_CLUSTER_IO.csv

2

?

1

Default Metric Template

Personal Default Metric Template

Save as Default Metric Template

Database Analyzer Charts
Save as Metric Template

1. You can save your settings as named Metric Template under a specific name. Choose:
   Save as Metric Template

2. Specify a meaningful name and a description. Choose the folder where to store the this Metric Template and click the **Create Metric** button.

Database Analyzer Charts
Save as Metric Template

1. You can save your settings as named Metric Template under a specific name. Choose:
   Save as Metric Template

2. Specify a meaningful name and a description. Choose the folder where to store the this Metric Template and click the **Create Metric** button.

3. Now you can apply this **Metric Template** to any other date folder via context function **Display via Metric Template.**
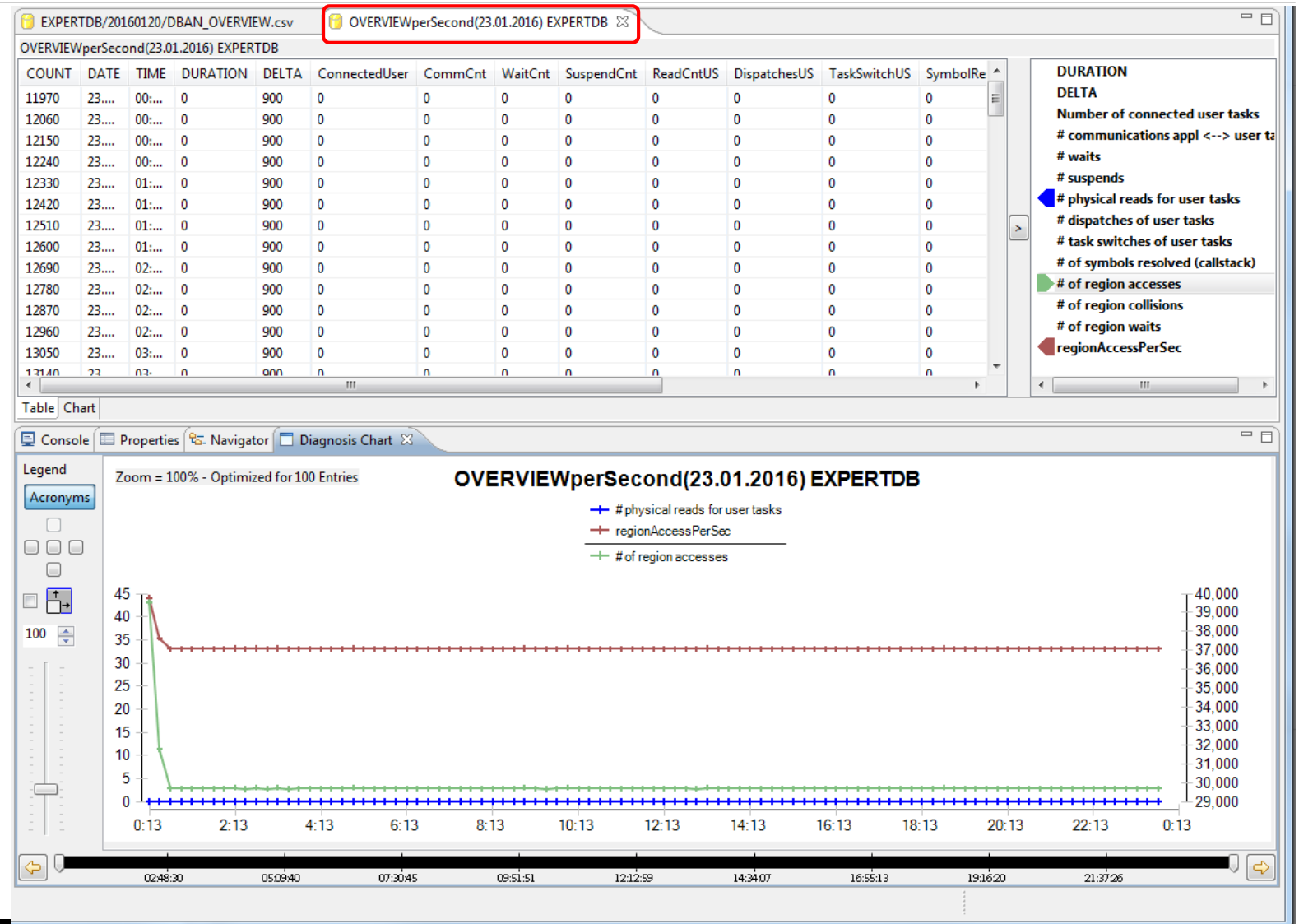
Database Analyzer Charts
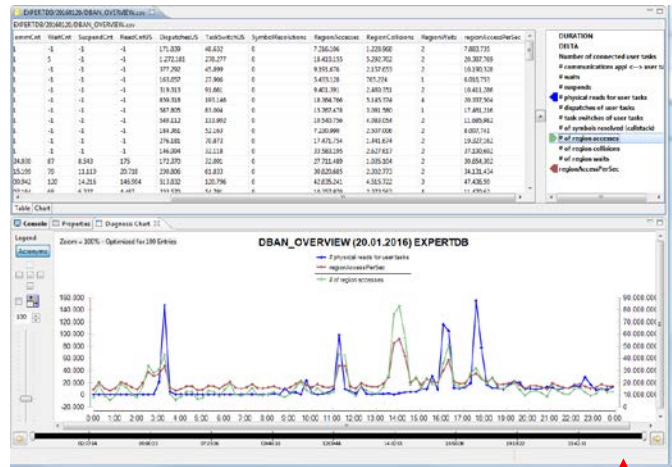## Save as Metric Template

1. You can save your settings as named Metric Template under a specific name. Choose:
Save as Metric Template

2. Specify a meaningful name and a description. Choose the folder where to store the this Metric Template and click the **Create Metric** button.

3. Now you can apply this **Metric Template** to any other date folder via context function **Display via Metric Template.**

4. As result you can see your **Metric Template** applied onto the other date folder.

Database Analyzer Charts
Named Metric Templates

1 → Save as Metric Template: OVERVIEWPerSecond

2

3

Database Analyzer Charts
Applying Metric Templates

Default Metrics
delivered with the software

my Default Metrics
personal Default Metrics
overruling the **Default Metrics**

Local Metric Templates
name Metric Templates stored
in the Database Studio
workspace

Metrics

Remote Metric Folder
as specified in the preferences

Working with the Navigator

How to reset to the predefined Metric Templates

1. Open a navigator view:
   Window -> Show View ->
   Other -> General ->
   Navigator and press Ok
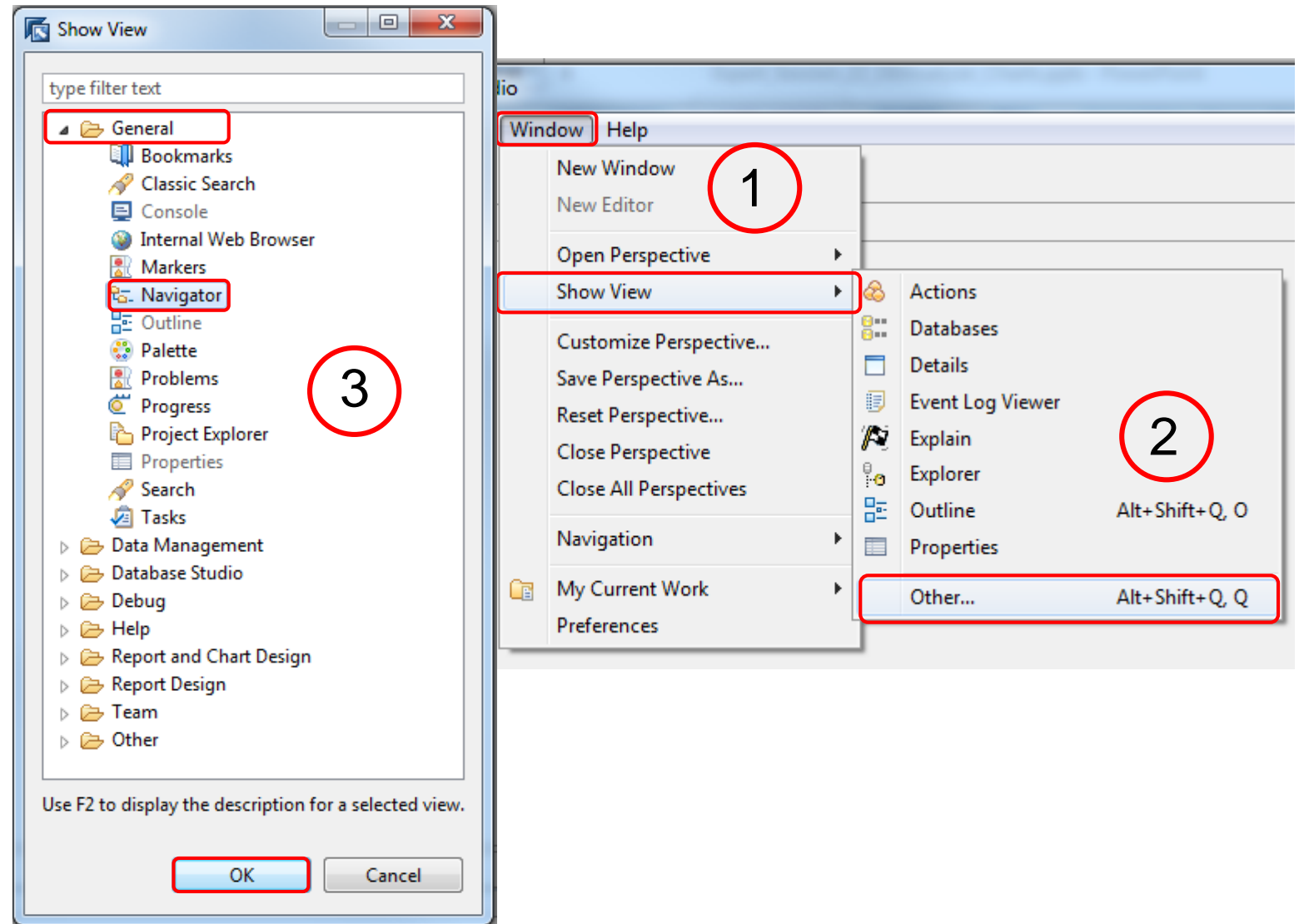
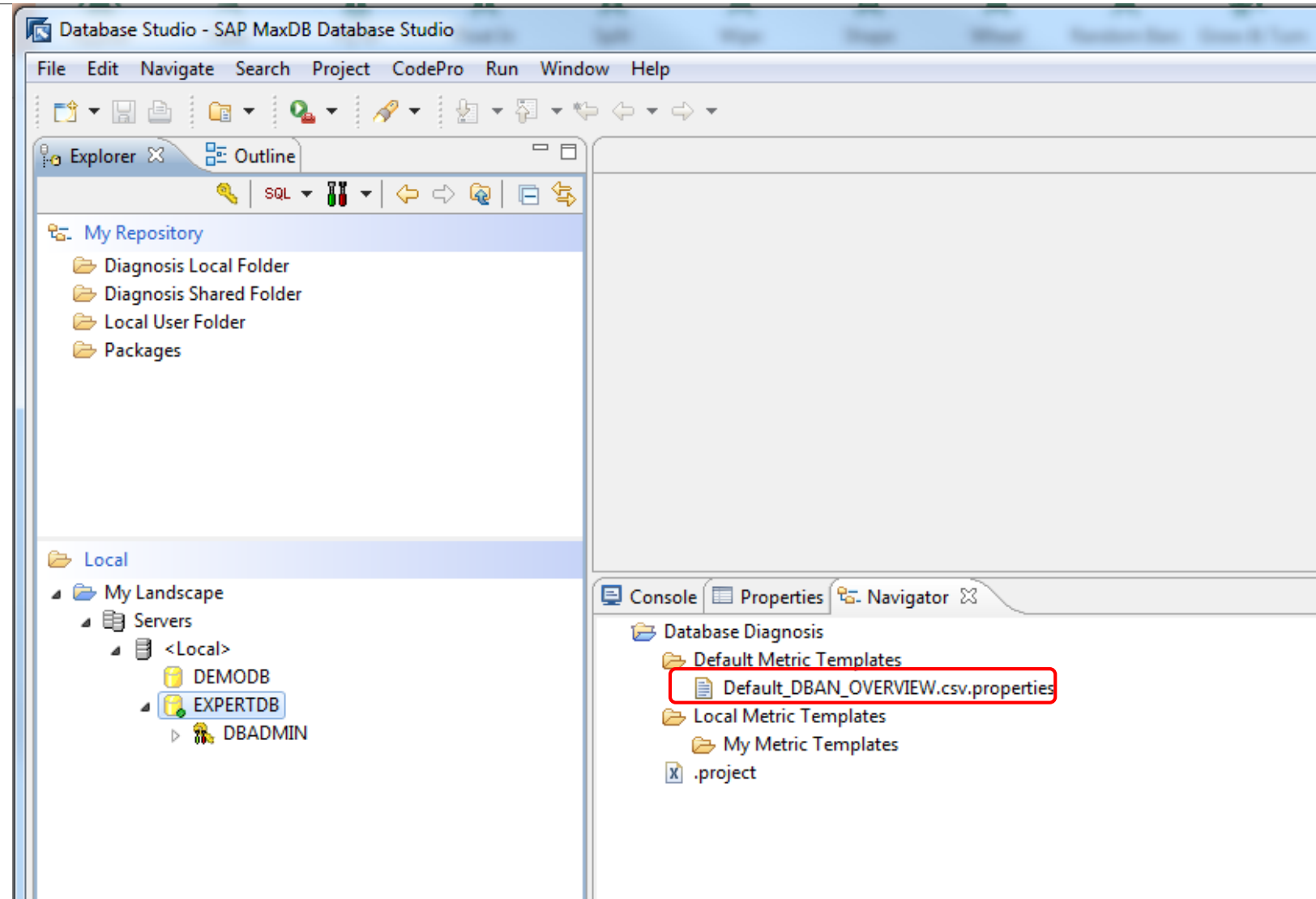# Working with the Navigator

How to reset to the predefined Metric Templates

1. Open a navigator view:
   Window -> Show View ->
   Other -> General ->
   Navigator and press Ok

2. Per default you see your
   personal Default Metric
   Templates and the Local
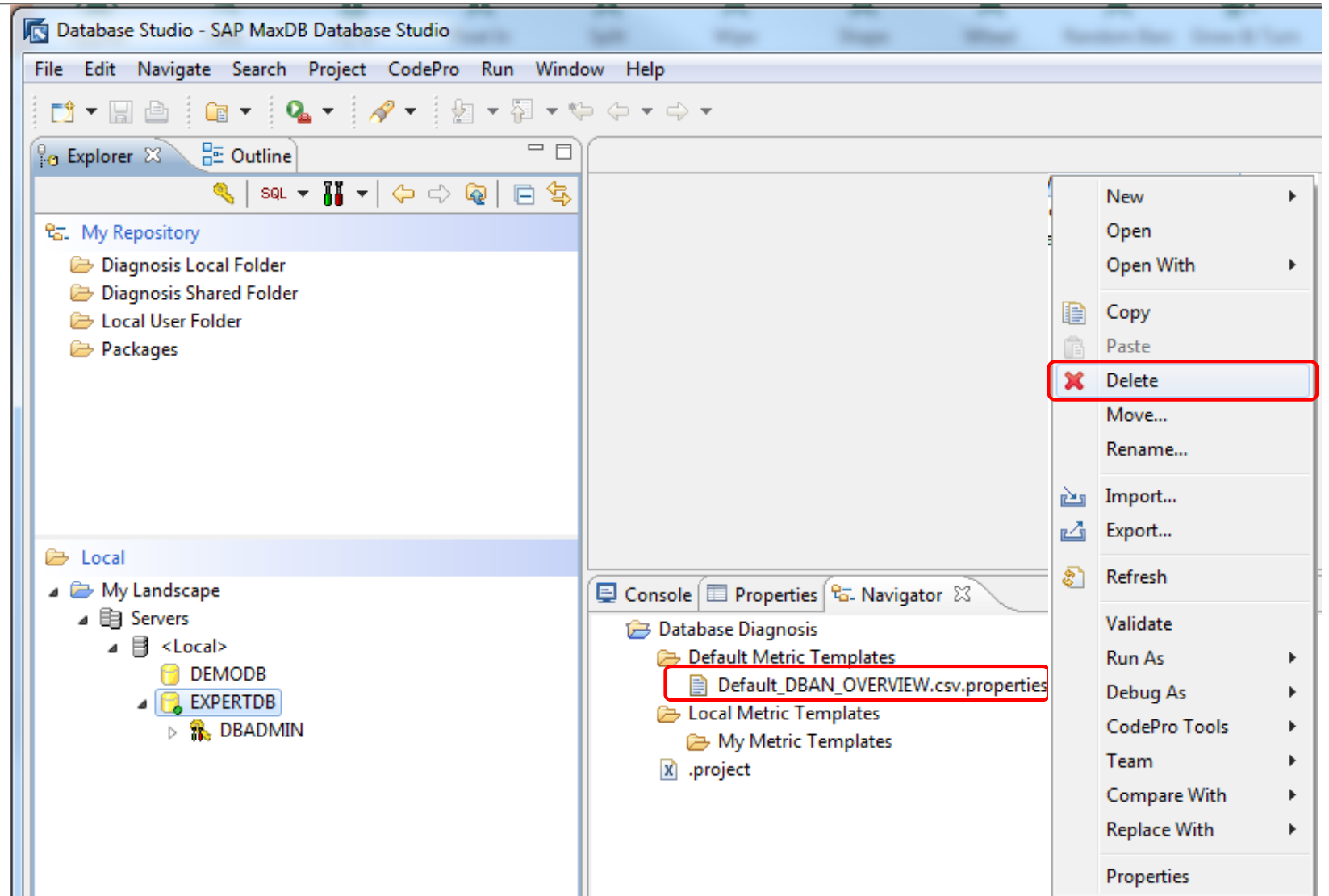   Metric Templates you have
   defined so far.

Working with the Navigator

How to reset to the predefined Metric Templates

1. Open a navigator view: Window -> Show View -> Other -> General -> Navigator and press Ok

2. Per default you see your personal Default Metric Templates and the Local Metric Templates you have defined so far.

3. To reset to the predefined Default Metric Templates: delete in the folder Default Metric Templates your personal Default Metric Template
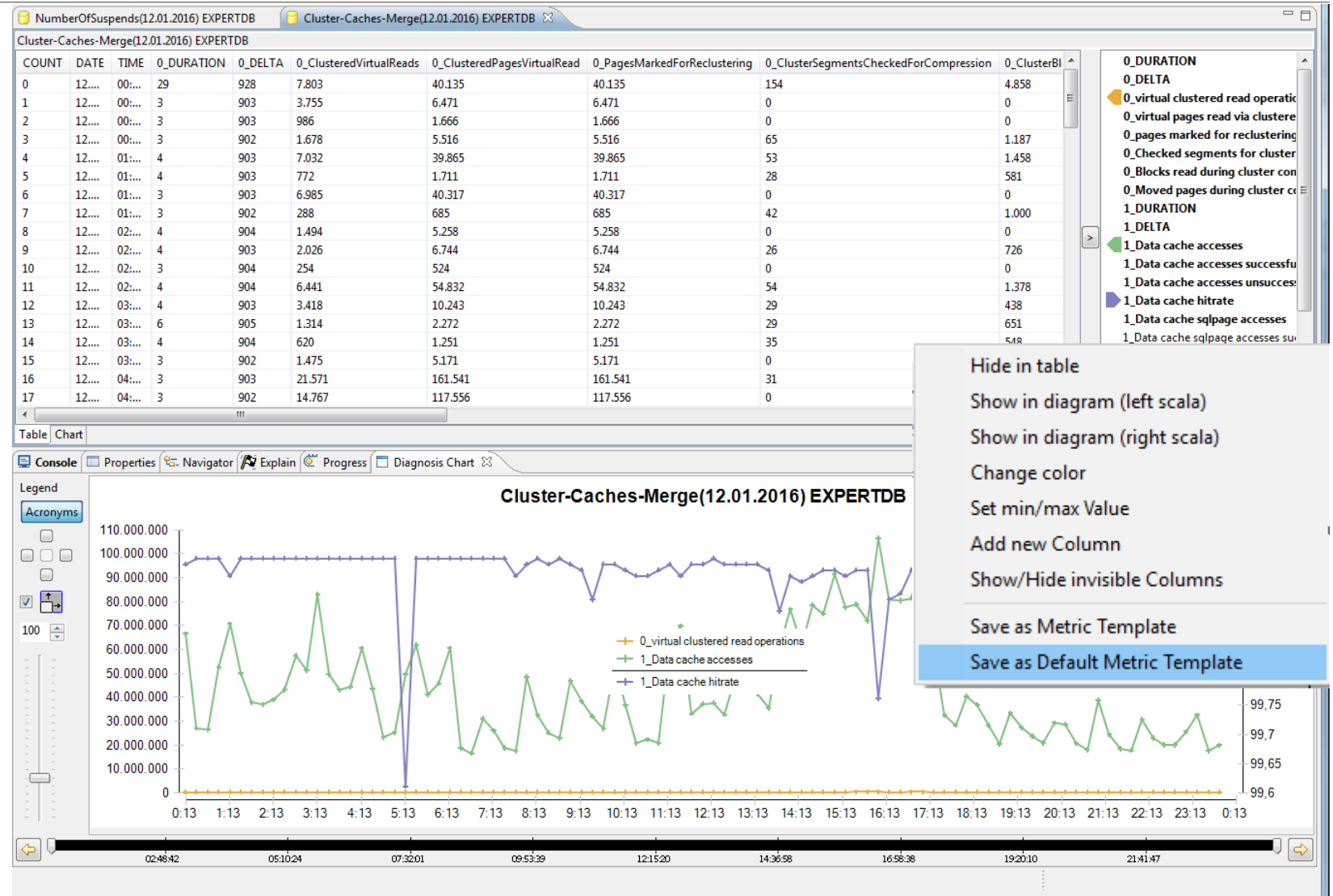
Working with Database Analyzer Projects

Store your Results of Analysis in a Separate Metric Template Folder

1. Save the analysis results as Metric Templates into a folder of Metric Templates.

Working with Database Analyzer Projects

Store your Results of Analysis in a Separate Metric Template Folder

1. Save the analysis results as Metric Templates into a folder of Metric Templates.

2. Via context menu
   - make a new folder
   - rename the folder and
   - create the Metric Templates

Working with Database Analyzer Projects

Store your Results of Analysis in a Separate Metric Template Folder

1. Save the analysis results as Metric Templates into a folder of Metric Templates.

2. Via context menu
   - make a new folder
   - rename the folder and …

Working with Database Analyzer Projects

Store your Results of Analysis in a Separate Metric Template Folder

1. Save the analysis results as Metric Templates into a folder of Metric Templates.

2. Via context menu
   - make a new folder
   - rename the folder and …

3. … for every metric template you want to keep as result:

   create a Metric Template in that project folder.

Working with Database Analyzer Projects
Using Folders of Metric Templates to Profit from your Findings

1. Use the analysis project to apply it on another date folder of the same or another database.

2. Right click on the date folder and choose
   - Display via Metric Templates
   - choose the project folder to be applied.

Working with Database Analyzer Projects
Using Folders of Metric Templates to Profit from your Findings

1. Use the analysis project to apply it on another date folder of the same or another database.

2. Right click on the date folder and choose
   - Display via Metric Templates
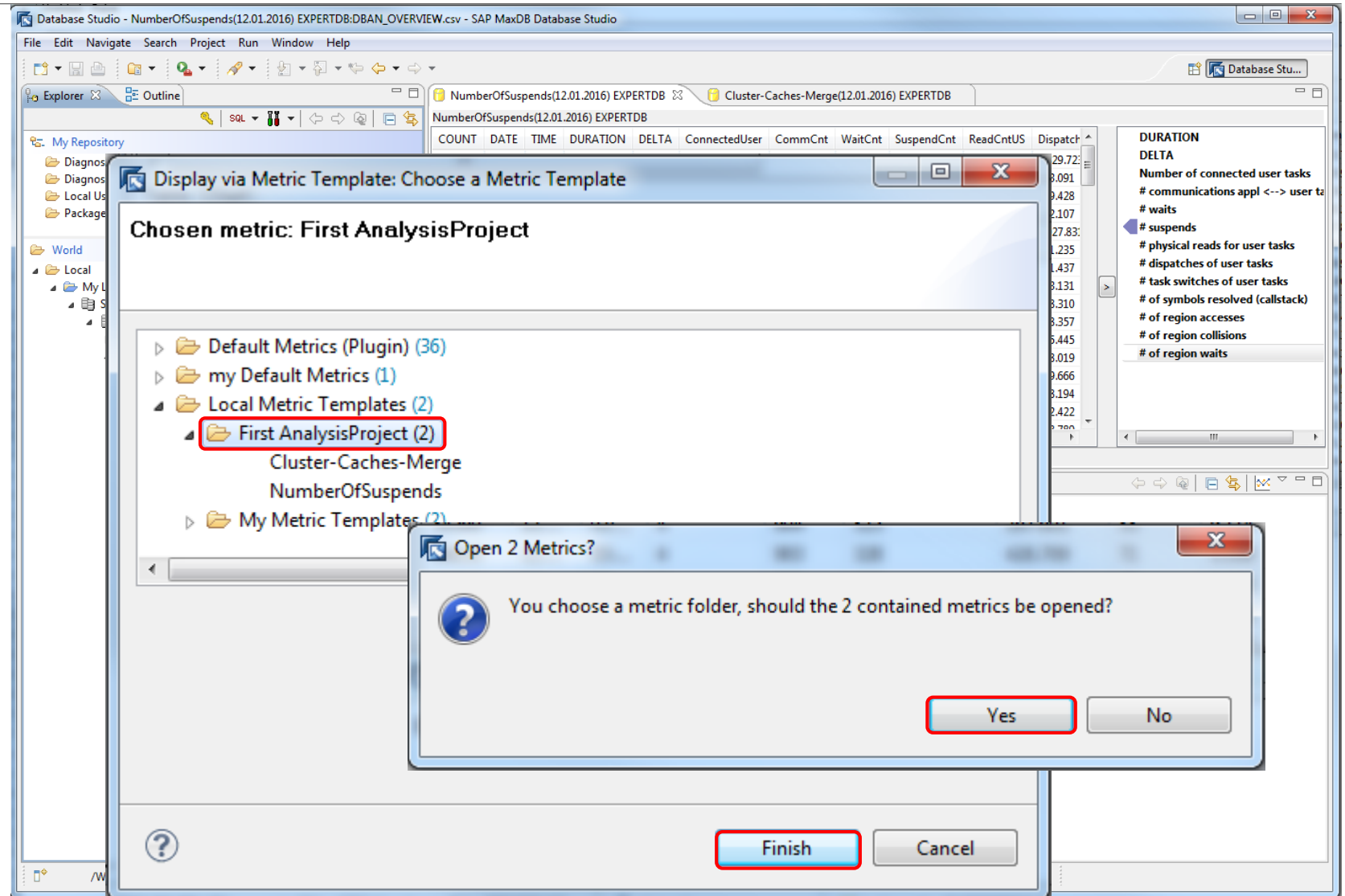   - choose the project folder to be applied.

   Click **Finish** and then **Yes.**

Working with Database Analyzer Projects
Using Folders of Metric Templates to Profit from your Findings

1. Use the analysis project to apply it on another date folder of the same or another database.

2. Right click on the date folder and choose
   - Display via Metric Templates
   - choose the project folder to be applied.
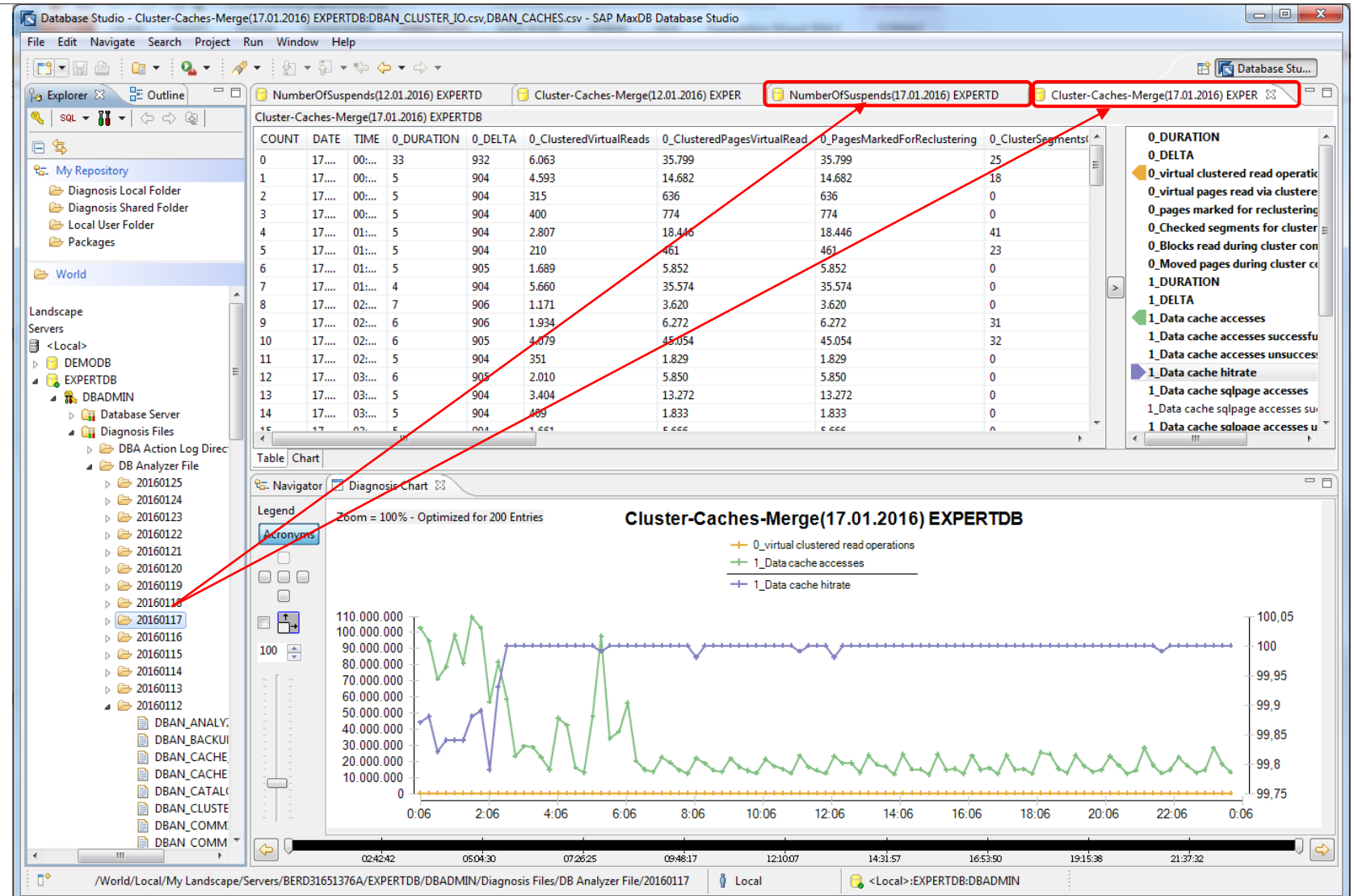
3. Click **Finish** and then **Yes.**

4. As result you can see the same charts according to another date folder.

Thank you

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