

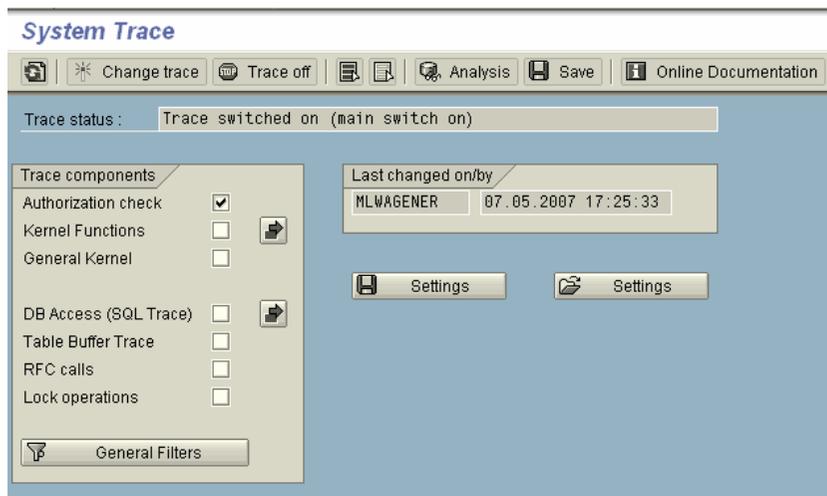
## NOTE MAY 2007

### The SAP® system trace

SAP® offers with the system trace the opportunity to evaluate the authorization objects that are checked during the call of the different transactions.

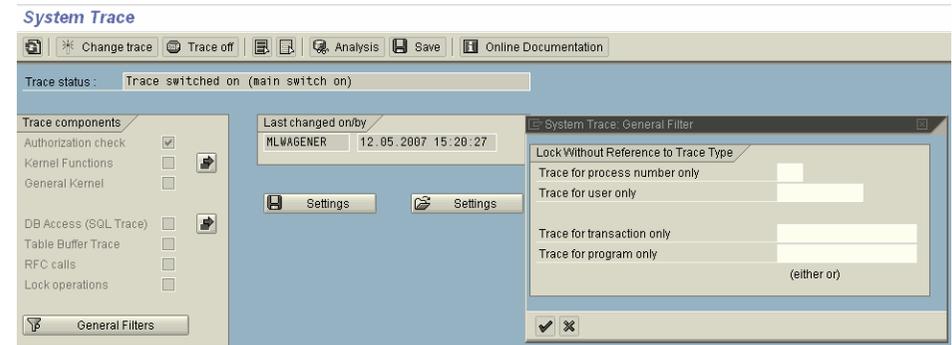
With the help of the trace all authorization objects on which an authority check is executed while working with the system can be logged. This also includes the corresponding field values within the authorization objects.

Call the transaction **ST01** for the use of the system trace.



From Release 4.7

In the selection screen the different components can be activated via checkmark.



There are options for additional filter settings. Push the button *General Filters*. You can filter for the process you want to log, the user, the transaction, or the program.

Enter the required selection, push the key *Enter*, and then activate the trace.

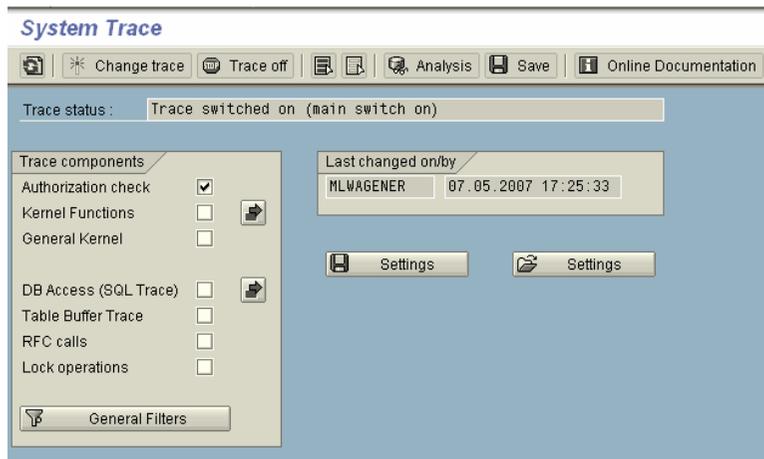
Note: An activation of the trace for all system users should not be activated. For user evaluation always enter the username you want to analyze.

With activation of the trace all required access rights for the selected user will be logged.

When all actions are traced, and logged, then please switch the *Trace off*. After that you can evaluate the results by pushing the button *Analysis* [or key *F2*].

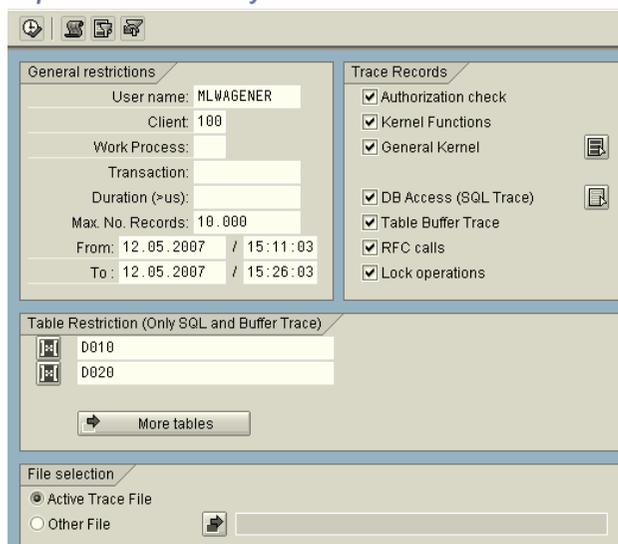
The evaluation path varies in dependency of the current release level.

### A. from release 4.7:



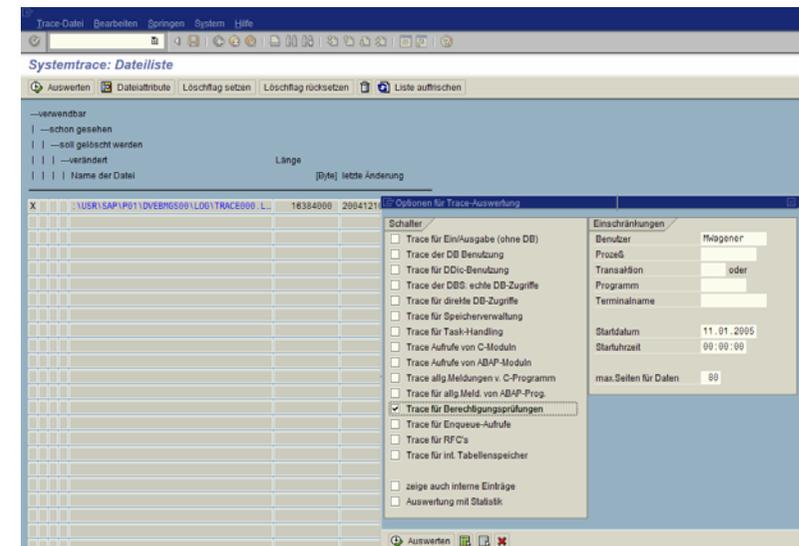
Activate the integrated button *Analysis*. Enter the required selection for evaluation, and push the key F8 for activation.

### Options for Trace Analysis



Aside from the selection of the different trace components, you can narrow down the selection according to users, transactions work process, or times. In the context of performance analysis you can select a restriction in the field duration, which is not very useful for an authorization trace. Additionally an evaluation with consideration of tables can be set up, which might be helpful for SQL or table buffer traces.

### B. up to release 4.6D:



Double click onto the displayed file name. Select the required information in the dialog box, and activate the button *Analysis*.

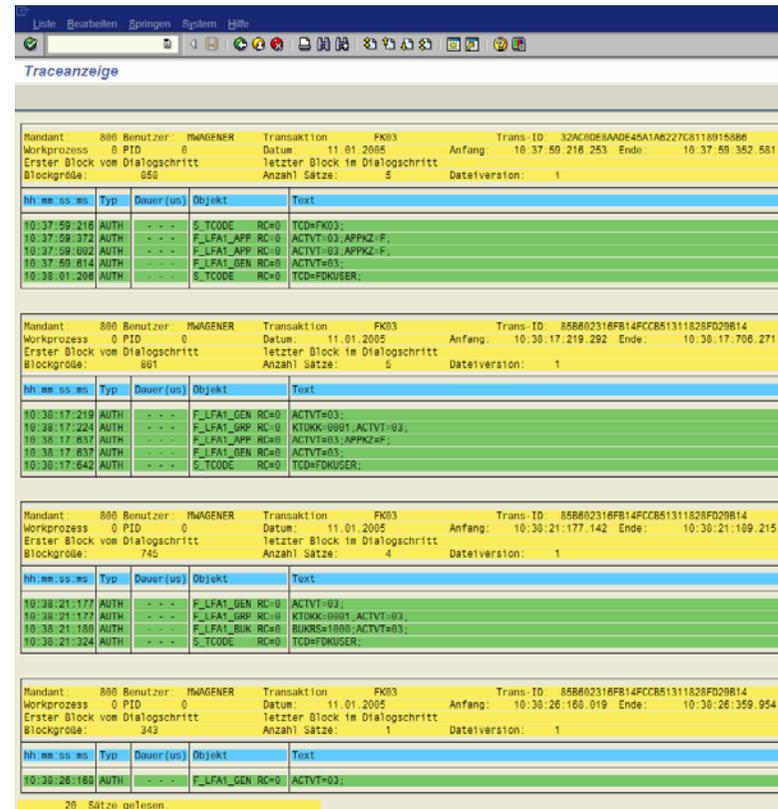
### Trace in a multiple instance environment

In case you run SAP® on different instances you have to make sure that you activate the trace for the instance on which the user is executing the transactions that need to be logged for evaluation. Users can be active on more than one instance.

[The user instance information is displayed down on the right in the SAP status bar.] You can review, and even change to the corresponding instance, with the help of transaction **SM51**.

Select the instance you want to review. Activate the button *User Info* [CTRL+SHIFT+F7]. Select the user from the correspond list. Mark the entry. In the menu bar select the path *Goto – Terminals*. Select the user. In the menu bar select the path *Goto – Remote Server*. From here you can activate the trace for the instance on which the user is located.

### The trace evaluation



hh:mm:ss.ms	Typ	Dauer (us)	Objekt	Text
<b>Mandant:</b> 800 <b>Benutzer:</b> MWAGENER <b>Transaktion:</b> FK03 <b>Trans-ID:</b> 32AC00E8A0DE45A1A6227C8118915886 <b>Werkprozess:</b> 0 <b>PID:</b> 0 <b>Datum:</b> 11.01.2005 <b>Anfang:</b> 10.37.59.218.293 <b>Ende:</b> 10.37.59.352.581 <b>Erster Block vom Dialogschritt:</b> <b>letzter Block im Dialogschritt:</b> <b>Blockgröße:</b> 855 <b>Anzahl Sätze:</b> 5 <b>Dateiverstion:</b> 1				
10:37:59.218	AUTH	- - -	S_TCODE RC=0	TCD=FK03;
10:37:59.372	AUTH	- - -	F_LFA1_APP RC=0	ACTVT=03;APPKZ=F;
10:37:59.602	AUTH	- - -	F_LFA1_APP RC=0	ACTVT=03;APPKZ=F;
10:37:59.614	AUTH	- - -	F_LFA1_GEN RC=0	ACTVT=03;
10:38:01.208	AUTH	- - -	S_TCODE RC=0	TCD=FK03USER;
<b>Mandant:</b> 800 <b>Benutzer:</b> MWAGENER <b>Transaktion:</b> FK03 <b>Trans-ID:</b> 858602316FB14FCC851311828FD29B14 <b>Werkprozess:</b> 0 <b>PID:</b> 0 <b>Datum:</b> 11.01.2005 <b>Anfang:</b> 10.38.17.219.292 <b>Ende:</b> 10.38.17.706.271 <b>Erster Block vom Dialogschritt:</b> <b>letzter Block im Dialogschritt:</b> <b>Blockgröße:</b> 861 <b>Anzahl Sätze:</b> 5 <b>Dateiverstion:</b> 1				
10:38:17.219	AUTH	- - -	F_LFA1_GEN RC=0	ACTVT=03;
10:38:17.224	AUTH	- - -	F_LFA1_GRP RC=0	KTOKK=0001;ACTVT=03;
10:38:17.637	AUTH	- - -	F_LFA1_APP RC=0	ACTVT=03;APPKZ=F;
10:38:17.637	AUTH	- - -	F_LFA1_GEN RC=0	ACTVT=03;
10:38:17.642	AUTH	- - -	S_TCODE RC=0	TCD=FK03USER;
<b>Mandant:</b> 800 <b>Benutzer:</b> MWAGENER <b>Transaktion:</b> FK03 <b>Trans-ID:</b> 858602316FB14FCC851311828FD29B14 <b>Werkprozess:</b> 0 <b>PID:</b> 0 <b>Datum:</b> 11.01.2005 <b>Anfang:</b> 10.38.21.177.142 <b>Ende:</b> 10.38.21.109.215 <b>Erster Block vom Dialogschritt:</b> <b>letzter Block im Dialogschritt:</b> <b>Blockgröße:</b> 745 <b>Anzahl Sätze:</b> 4 <b>Dateiverstion:</b> 1				
10:38:21.177	AUTH	- - -	F_LFA1_GEN RC=0	ACTVT=03;
10:38:21.177	AUTH	- - -	F_LFA1_GRP RC=0	KTOKK=0001;ACTVT=03;
10:38:21.180	AUTH	- - -	F_LFA1_BUK RC=0	BUKRS=1000;ACTVT=03;
10:38:21.324	AUTH	- - -	S_TCODE RC=0	TCD=FK03USER;
<b>Mandant:</b> 800 <b>Benutzer:</b> MWAGENER <b>Transaktion:</b> FK03 <b>Trans-ID:</b> 858602316FB14FCC851311828FD29B14 <b>Werkprozess:</b> 0 <b>PID:</b> 0 <b>Datum:</b> 11.01.2005 <b>Anfang:</b> 10.38.26.169.019 <b>Ende:</b> 10.38.26.359.954 <b>Erster Block vom Dialogschritt:</b> <b>letzter Block im Dialogschritt:</b> <b>Blockgröße:</b> 342 <b>Anzahl Sätze:</b> 1 <b>Dateiverstion:</b> 1				
10:38:26.169	AUTH	- - -	F_LFA1_GEN RC=0	ACTVT=03;

For interpretation of the evaluation you can use the following overview of relevant information.

Element	Info	Additional info
Time	Exact milli second.	Per double-click onto the selected entry you branch to the detail view.
Type	Type of the corresponding trace entry	Display of the selected trace component. See component overview
Duration	Duration of the trace	Not useful for authorization trace
Object	Objekt in dependency of the related component	See: component overview
Trace-message text		Per double-click onto the selected entry, you branch into the detail view. From there, you can branch into the related ABAP source code.

Please find the component overview with corresponding acronyms.

Component	Acronym	Object
Authorization check	AUTH	Authorization object t
Kernel-Funktionen	CMOD	Related C- function in kernel
Kernel general	USER	C-Modul im Kernel, in dem der Trace geschrieben wird
DB-access (SQL-Trace)	SQL	DB-Table that was accessed
Table buffer-Trace	BUFF	DB- that was accessed
RFC-call	RFC	Called function module
Lock operation	ENQUE	Lock object

### The return code

Successfully passed authorization check are marked in dark green already and have the value  $RC=0$  added in the column next to the authorization object.

RC is the acronym for return code. The return values vary depending on the check result.

The return code 0 means that the authorization was successfully checked.

The return code 4 says, that the required authorization for the authorization object in the user master is not available.

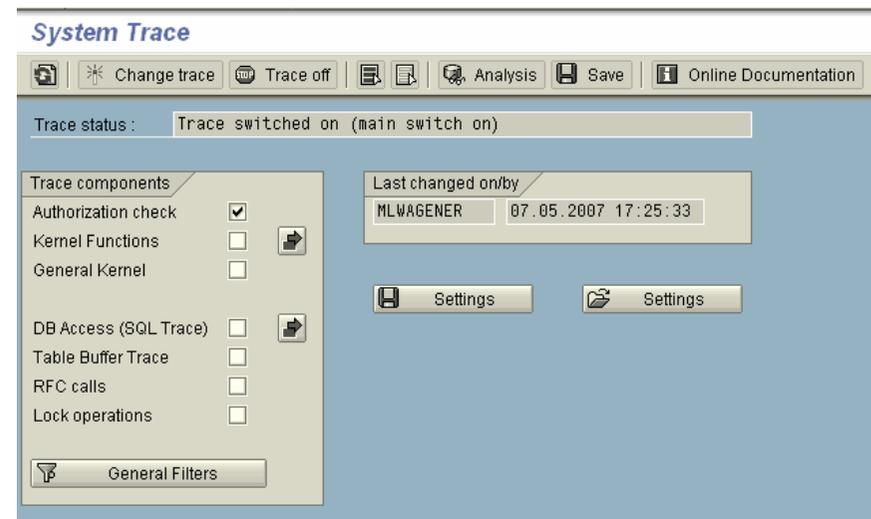
The return code 12 says, that no authorization for the authorization object is available.

### Saving of trace results

There are different ways to save trace evaluation results.

You can download the trace file in the evaluation display mode by saving the list locally.

If trace information are to be protected against overwriting, you have to branch to the button **Save after tracing**.



In the following window you can enter remarks as well as a file name.

## Restrictions on Saving Trace Records

Remark About Trace

Name of New File

Automatically  
 Manual entry

General restrictions

User name: MLWAGENER  
Client: 100  
Work Process:  
Transaction:  
Duration (>us):  
Max. No. Records: 10.000  
From: 12.05.2007 / 13:33:01  
To: 12.05.2007 / 13:48:01

Trace Records

Authorization check  
 Kernel Functions  
 General Kernel  
 DB Access (SQL Trace)  
 Table Buffer Trace  
 RFC calls  
 Lock operations

Table Restriction (Only SQL and Buffer Trace)

D010  
D020

More tables

If you do not enter an absolute path when entering the file name manually, the file will be created in the log directory.

For the automatic file name creation, the system provides a file name, and creates the file in the log directory.

Automatically created file names can be selected with the F4 search key in the future. This option is not available for manually created names.

Automatically created file names can be deleted within this application, manually created file names need to be deleted on the OS level separately.

*Therefore the automatic file name creation is to be preferred.*

### Trace configuration

The system trace is configurable through different profile parameters. All trace relevant parameters are part of the category *rstr/*.

To review the parameters the transaction **RZ11** can be used. The following parameters are adjustable.

Profile parameter	Description
<code>rstr/buffer_size_kB</code>	The SAP-Trace (SQL-Trace u.a.) writes the trace data into trace files. Because of performance issues this is not done directly but through a process internal buffer. The profile parameter <code>rstr/buffer_size_kB</code> determines the size of this buffer in kilobytes.
<code>rstr/filename</code>	Since release 6.10 the SAP-Trace (SQL Trace etc..) saves the data in different files, that are sequentially written. The Parameter <code>rstr/filename</code> establishes the basic name of these files. There is always only one file with this name. If the file is full (parameter <code>rstr/max_filesize_MB</code> ), the file is renamed and a new file with the basic name is created. During the renaming a file extension with the numbers 00 to 99 is added to the file name. The parameter <code>rstr/max_files</code> determines, how many files there will be altogether. If this number is exceeded, the files will be overwritten.
<code>rstr/max_files</code>	
<code>rstr/max_filesize_MB</code>	

The system trace cannot only be used for the evaluation of authority checks, but also for evaluation of kernel functions, kernel modules, DB access, table buffer, RFC calls and lock operations. For system monitoring the developer trace is usually preferred.