

**Simple Steps
for SAP
License Optimization**

Contents

Software Asset Management 5

 Primary Duties And Responsibilities: 6

Simple Steps for SAP License Optimization 8

 Why SAP License Optimization 8

SAP License Model: Difference between Concurrent and Name Users 10

 SAP License types..... 10

 Cost 10

 Common Man Description 10

SAP License Model: Difference between Concurrent and Named Users 11

Simple Steps by SAP Professional 13

 Step 1: Understanding the SAP License Contract 13

 Pick the proper Price list in USMM 13

 Review your Users Carefully through Transaction SUIM..... 14

 Step by Step 15

Organize with SAP User Group 16

 Cleanup The Users List..... 16

 Lock and remove roles from Inactive Users..... 16

User Lock Automation Can Help 18

SAP Developer Count: The Elephant in the Room 19

Multiple Logon Can Invite Penalty From SAP 20

Assigning SAP License type to Roles 21

Help from SAP For Controlling Your SAP License..... 23

Step 2: Cleanup - Removing Duplicate and Expired Roles 25

Final Results Table..... 27

Step 3: SAP ECC Transaction Usage 28

Three Steps for Reviewing the SAP Custom Transactions 30

 Step 1 30

 Step 2: 32

 Step 3: 33

SAP License Assessment Questions 34



Simple Steps for SAP License Optimization

SAP Risk Management Score Card	36
SAP License Assessment Process	38
Roles & Responsibilities:	38

Table of Figures

Figure 1 SAP License Benefits 5

Figure 2 SAP License Assessments 6

Figure 3 SAP License Assessment Process 8

Figure 4 SAP License Types Costs..... 10

Figure 5 SAP License Types 11

Figure 6 SAP License Type Functions 12

Figure 7 SAP License Pick List..... 14

Figure 8 SUIM Report..... 15

Figure 9 SAP User List..... 15

Figure 10 Auto Lock..... 17

Figure 11 Auto Lock Features..... 18

Figure 12 SAP Developer Count 19

Figure 13 SAP Multiple Count 20

Figure 14 Roles assigned to SAP License Type 21

Figure 15 User Classified by License Type Based on User..... 22

Figure 16 Selection Option for Program PRGN_COMPRESS_TIMES..... 25

Figure 17 SAP Role to be Removed..... 25

Figure 18 SAP Function Module..... 28

Figure 19 SAP Function Module Result Summary 29

Figure 20 SAP Transaction Executed..... 29

Figure 21 List of Custom Programs 30

Figure 22 SAP List of Tables 32

Figure 23 License Process **Error! Bookmark not defined.**

Software Asset Management

The Software Asset Management (SAM) will be responsible for planning, acquisition, deployment, monitoring, harvesting and retirement of software assets. Develop SAM policies, workflows, processes, and procedures. Responsible for creating and updating software information into Asset Manager/SAM. Involved in the calculating of software license compliance based on software license right-to-use (RTU), software license agreements, maintenance agreements and software installations. Central point to process and track all software license purchases, mainly Microsoft Software Licenses and managing Software Assurance Benefits.



Figure 1 SAP License Benefits

Software Asset Manager Role will encompass establishing and maintaining all processes associated with the entire lifecycle of software license management throughout SAP Environment. This role will also include maintaining awareness and understanding of relevant SAM industry trends, best practices and issues, including their potential impact, and formulating appropriate methodologies that benefit.

Software Asset Manager will be involved in the management of software acquisition, compliance, lifecycle planning, and administration, tracking, and systems configurations with regards to software licensing. The Software Asset Manager will provide analysis, reporting, support and consultation to the Director of IT Infrastructure, Finance and Procurement.

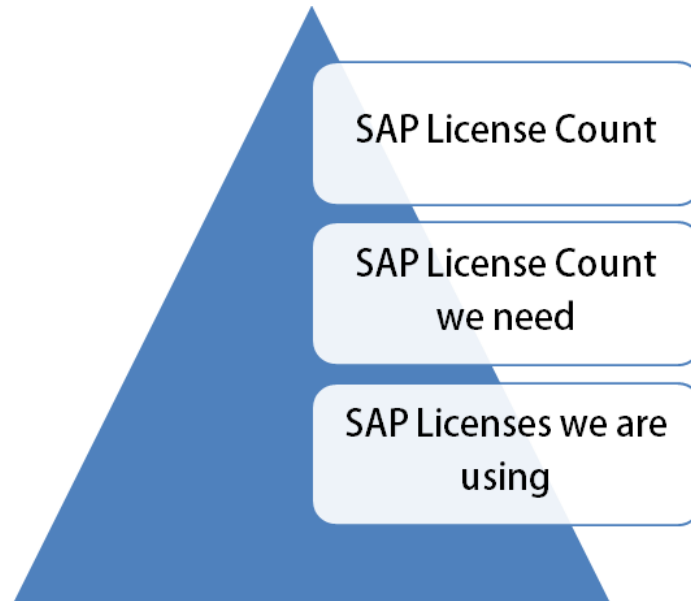


Figure 2 SAP License Assessments

Primary Duties And Responsibilities:

- Review and/or create the Software Asset Management related policies, procedures, governance and workflows.
- Contribute to development of roadmap and strategy to further mature Software Asset management practices with goals of reducing risk, increasing accountability, uncovering savings and maintaining control of organizational processes.
- Implement and utilize the appropriate tools and methodologies with respect to Software License inventory and procurement by users, and to maintain the accuracy and automation of reporting and asset tracking
- Proactively manage the license inventory and perform software harvesting based on usage. Participate in renegotiation of license agreements based on updated software analysis.



Simple Steps for SAP License Optimization

- Perform internal software audits, to ensure software license compliance standards are being met.
- Act as a software compliance subject matter expert, providing guidance and sharing expert advice.
- Track, identify and report savings opportunities for renewals, software licensing, and services.
- Correspond with business and technology partners to coordinate and fulfill needs in the US and overseas.
- Manage contracts, purchase requests and relationships to maximize value creation and costs for software licensing, maintenance, and service offerings while partnering with Finance, Procurement and Legal to ensure cross functional alignment.
- Support IT Leadership and Finance by collecting information for budgeting, software compliance & inventory, contract summaries, and cost comparisons.

Simple Steps for SAP License Optimization

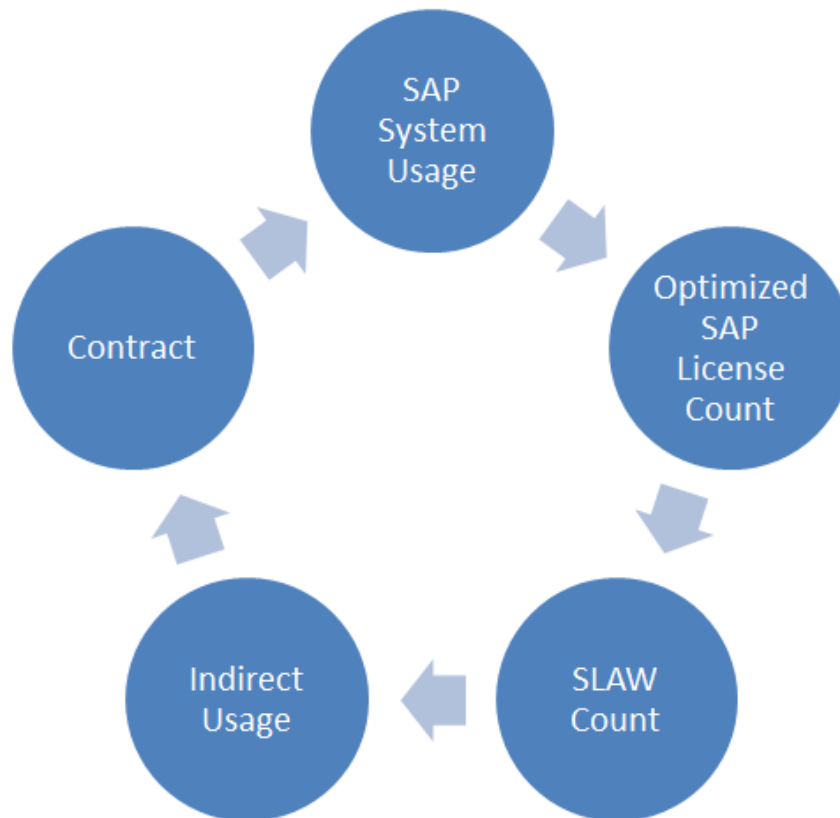


Figure 3 SAP License Assessment Process

Why SAP License Optimization

Global enterprises will invest more than \$3.5 trillion in enterprise software in the next 10 years. Effectively, efficiently and proactively managing and optimizing this huge investment using Software Asset Management (SAM) is absolutely critical for every enterprise. This is particularly true given that most SAP customers overpay to some degree, and SAP's built-in license dashboard (LAW) is only used by SAP for their benefit.

SAP application systems can support a vast variety of industries, business functions and their corresponding processes. This lays the foundation for a high number of application components.

Their reuse for similar requirements in different industries leads to combinations that can be relatively complex. Customers need to take care that what they use is within the scope of what they are entitled to under their SAP License software agreements. The increasing number of software license audits and the interaction of users with this complex conglomerate of software (licensed scope may be less than delivered) may cause unexpected licensing costs.

When licensing SAP software, the customer may find some challenges defining the right entitlements for potential users.

SAP does not provide comprehensive documentation that gives an easy answer to this question.

The SAP License is a direct result of the users and their access in the system. This basically means that a user can be counted as a higher license type based on their actions in the system

SAP License Model: Difference between Concurrent and Name Users

For more detailed information on Bottom line is number of Unique user ids created in SAP Systems and non SAP Systems (Accessing SAP System, go to <http://www.sap.com>.

This is a primary step you need do so you understand, what are the yearly maintenance fees that you company needs to pay on yearly basis. This is usually 20% of your original license cost.

SAP License types	Cost	Common Man Description
Developer	High	Can develop custom object in the SAP System
Professional or Operational	High	Perform configuration and heavy data updates. Mainly your Configurators, support and Administration people
Limited professional	Medium	Some end users and users responsible for Data manipulation
Employee	Low	Your end users who perform regular tasks

Figure 4 SAP License Types Costs

SAP License Model: Difference between Concurrent and Named Users

This is concurrent users. This means, if you have 20 employees who might use the system, but only 9 at the exact same time, you could buy 9 licenses as long as folks log out when they are done. There may be processes in place not to allow more users to log on to the system. Which also means you can have many users but only the specific number of users will be able to log on to the system.

You cannot have more than 9 LOGGED ON at any one time. The 9 may or may not be actually doing anything actively, but if they are LOGGED ON then generally they are IN the count of Concurrent for License management purposes. Concurrent user model is preferred some small customers as they feel they are getting a little bonus by purchasing, say, 20 concurrent users, when they may have 40 people set up on the system.



Figure 5 SAP License Types

Named Users licenses means if you have 20 employees who might use the system, you need to purchase 20 licenses regardless of how many are on at the same time. SAP Licenses are name

user licenses. That means the user’s licenses are tied to the user id. Even if you have multiple systems you can have one user id and you will be only counted once.

Companies don't like to pay for named users, because the odds are that once they get over 10, someone is going to be out of the office, on vacation, sick, etc. on any given day, and that license will not be used.

Usually vendors will charge a bit less for named licenses due to this.

SAP License model is Named user license model, which mean each user id is counted. So you have to carefully watch the number of license created in SAP System and user id created in non-sap systems which are accessing the SAP Systems. This is called indirect access.

Bottom line is number of Unique user ids created in SAP Systems and non-SAP Systems (Accessing SAP System)

SAP License types	Cost	Common Man Description	Count
Developer	High	Can develop custom object in the SAP System	
Professional or Operational	High	Perform configuration and heavy data updates. Mainly your Configurators, support and Administration people	
Limited professional	Medium	Some end users and users responsible for Data manipulation	
Employee	Low	Your end users who perform regular tasks	

Figure 6 SAP License Type Functions

Simple Steps by SAP Professional

Step 1: Understanding the SAP License Contract

Goal

To understand clearly how many licenses have been purchased and are there any special clauses and exemptions which are specifically negotiated

This is a primary step you need do so you understand, what are the yearly maintenance fees that you company needs to pay on yearly basis. This is usually 20% of your original license cost.

There may be very complex wording in the contract, but you must weed though the details with help of people in your company or the SAP Contact person for your company. Basically, you need to understand the number of named user license you have purchased by SAP License type. This information will help you identify all the number of SAP License type users you have purchased from SAP.

Example

Example could be SAP Developer – 5, SAP Professional User – 100 SAP Limited Professional – 500 SAP Warehouse Worker -150 etc.

This information can greatly help to access where you are and what you want to do. Without this information it will tough to access your situation and identify the steps to follow to optimize your SAP License

Pick the proper Price list in USMM

Once you understand the price list you need to pick the right price list as per your company. This price list will then give you the required SAP License types. Please review you contract to find out the exact price list you have purchased. This will drive the SAP License type users will be assigned to in the system.

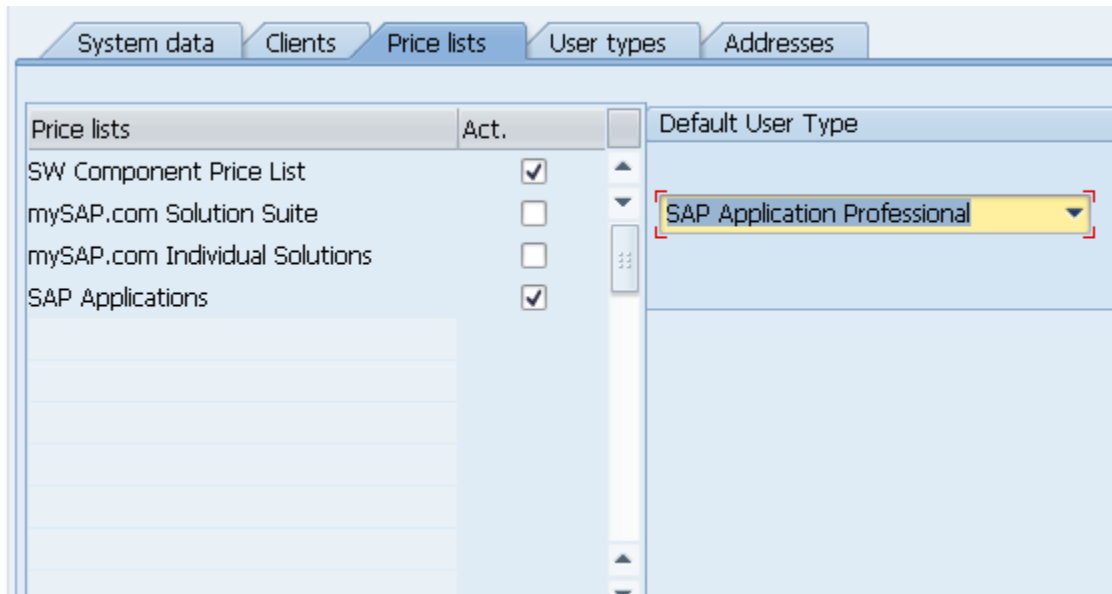


Figure 7 SAP License Pick List

Review your Users Carefully through Transaction SUIM

Goal

Since SAP licenses are named users, companies have to take stock of the number users they have created and identify user who can be removed.

Armed with the information on the number SAP Licenses you have purchased, you can now check if you have exceeded or under the SAP License count. Go to Transaction SUIM and execute user with complex criteria and list the number of users. This analysis should be done in the production system. You can also do same things in all the production systems in your company and then consolidate the list into a unique user list. Check if this count matches the number of SAP user purchased.

Step by Step

Go to transaction SUIM and Expand user information >>>> User by complex selection criteria

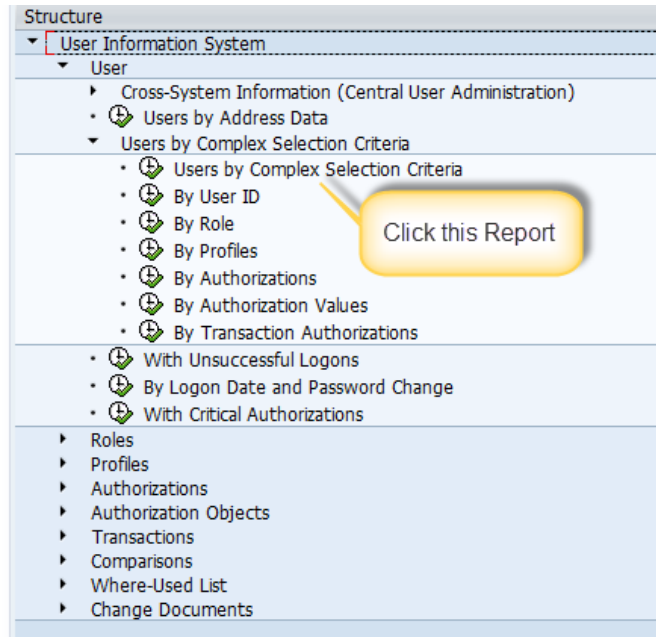


Figure 8 SUIM Report

Once you execute the report you will see the list of user in the system. You can also look for users who are not locked in the system. You have option to download the report into the spread sheet. This will help you review and put your recommendations

Users by Complex Selection Criteria

Number of Users Selected: 3.658 Download File

User Name	Complete name	Group	Account no.	Locked	Reason	Valid from	Valid through	User Type
02573A783F1	Lux Smith	INACTIVE	333333333333	🔒	ADM	18.05.2006	25.01.2014	A Dialog
0434C129E41	Blythe	ESSUSER		🔒	ADM	31.03.2006	16.01.2014	A Dialog
08741F8A221	Campuzano	ESSUSER		🔒	GADM	30.06.2006	31.12.9999	A Dialog
352C167A411	Freeman	ESSUSER		🔒	GADM	29.03.2006	31.12.9999	A Dialog
378C489D7B1	Hildreth	ESSUSER		🔒	GADM	14.04.2006	31.12.9999	A Dialog
3CAB462C441	Yan	INACTIVE		🔒	ADM	11.04.2006	13.04.2014	A Dialog
3F746C4A881	Simmons	ESSUSER		🔒	GADM	14.04.2006	31.12.9999	A Dialog
41449595FD1	Van Vranken	ESSUSER		🔒	GADM	22.03.2006	31.12.9999	A Dialog
4570B882981	Liebert	ESSUSER		🔒	GADM	15.02.2005	31.12.9999	A Dialog
45F345EDED1	Spector	ESSUSER		🔒	GADM	21.03.2006	31.12.9999	A Dialog
47553903301	Planstale	ESSUSER		🔒	GADM	15.02.2005	31.12.9999	A Dialog
49508EBE431	Stroman	ESSUSER		🔒	GADM	13.03.2006	31.12.9999	A Dialog
498E721F6E1	Ott	ESSUSER		🔒	GADM	16.05.2006	31.12.9999	A Dialog
4A28A78D911	Redican	ESSUSER		🔒	GADM	20.07.2006	31.12.9999	A Dialog
4C87E488C61	Hildreth	ESSUSER		🔒	GADM	22.03.2006	31.12.9999	A Dialog
4EC2DF183B1	Matthews	ESSUSER		🔒	GADM	10.03.2006	31.12.9999	A Dialog
5434DFC5CA1	Carlson	ESSUSER		🔒	GADM	12.04.2006	31.12.9999	A Dialog
5D0A01D4961	Cannon	ESSUSER		🔒	GADM	31.03.2006	31.12.9999	A Dialog
5FA331E2CA1	Manchester	ESSUSER		🔒	GADM	11.08.2006	31.12.9999	A Dialog
625A8277691	Reilly	ESSUSER		🔒	GADM	08.03.2006	31.12.9999	A Dialog
647643A40E1	Loscar	ESSUSER		🔒	GADM	24.07.2006	31.12.9999	A Dialog
659A6DF9A51	Bachinsky	ESSUSER		🔒	GADM	27.06.2006	31.12.9999	A Dialog
665371BF141	Howard	ESSUSER		🔒	GADM	27.06.2006	31.12.9999	A Dialog
68ED0F7D981	Crippen (MAB)	ESSUSER		🔒	GADM	11.04.2006	31.12.9999	A Dialog
7428FC80D91	Barnes	ESSUSER		🔒	GADM	22.03.2006	31.12.9999	A Dialog

Figure 9 SAP User List

Organize with SAP User Group

SAP User Group is a simple task which must be essential part of your SAP Security Strategy. Make sure all the users are assigned to a user group. The User group should be indicative of the Location, type of Job and License type possible. This will be very helpful when you want to review the SAP License Type.

You can also use the Cost center and Account Number field in SAP User master to indicate a specific location and any additional information. This will help you charge back the clients for the license used by specific division or subsidiary

Cleanup The Users List

Once you have the information on the SAP Users from all the SAP ECC systems look at this information and delete the sap users who are not supposed to be in the system. This could be test users, temporary user ids and other generic ids which should not be there.

It may also be a good idea to get a list of users in the company and bounce it against this list to see if you see any employees who have left the company but still in SAP System.

Look at the service user type users in the systems that are mainly used for testing and validation purposes. Too many service users could trigger a SAP Audit.

Lock and remove roles from Inactive Users

Locking users who are inactive in the System can be done through a report in SAP System. It is advised to lock the users who have not used the system for 60 days or 90 days based on your company policy. Also move them to a separate user group and assign a test license type so you can make sure they are not counted as part of your annual license audit. Please move the user to a separate user group and also assign the test license type so the user is not counted as part of your sap license count.

SAP Report to identify the users who are inactive for certain number of days. You can use transaction RUSR200

List of Users According to Logon Date and Password Change

Standard Selection

User to

User group to

No. days since last logon **Enter Number of Days**

No. days since password change

Selection by Validity of User

Users Valid Today

Users Invalid Today

Selection by Status of the User

Users not Locked

Locked Users

Selection by Logon Attempts

Users with Incorrect Logon Attempts

Users with no Incorrect Logon Attempts

Selection by User Type

Dialog Users

Communications User

System Users

Service User

Reference User

User Types Included or Excluded

Figure 10 Auto Lock

User Lock Automation Can Help

auto audit lock manager scans the sap users who have been inactive or dormant for a specific number of days and locks them. Following are the options available:

Lock the user, move to specific user group remove or expire the user roles

Email user a specific number of days before they are locked to give them a chance to log-in and save their user ID from getting locked.

Backup the role assignment of the users whose roles were removed to enable reverting back the roles if needed in future

Figure 11 Auto Lock Features

SAP Developer Count: The Elephant in the Room

For counting the developers, you need to start from the SAP Service marketplace. You may have to ask the basis person to get you list developers created in the sap service market. This gives you information on the number of SAP Developers requested from SAP. Missing this information could be costly. Then review the number of entries in DEVACCESS in all the Development systems.

Reconcile the difference and make sure you have good justification for the discrepancy. If the users have left the company, then make sure that the users are locked. This list gives you the current user who will be able to create custom ABAP Programs in the system

Data Browser: Table DEVACCESS: 140 of 140 Hits

User	Char20
AMRHEIN	18321020161665470926
ANDRES	40565824841688108185
ARIDA	08501692203198799189
AUDITBOT	
BABU	
BAIERSCHMITT	40210975083937935922
BALU	
BEILMANN	12922827093079328403
BENDERK	08318230371194949205
BERTHELOT	25291366810679869925
BERTHOLD	22355837082645306416
BOLLINGER	26958317752423978612
BONIN	08661951143562694561
BRAUN	35271478391444380547
BRAUNJ	15806971341597220705
BREUKER	40772712041369434360
BUCHHOLZF	04454579621056918947
CHOIR	25751761291520803250
CHU	18211502921179486103
CLEANER	00703624780420208200
CORDREY	39420051100145807362
CURA	05032139133758028052
D000310	22862144070240586891
D001571	38525411343735479205
D002057	41119110851095111411

Figure 12 SAP Developer Count

Multiple Logon Can Invite Penalty From SAP

By default, SAP users can have a multiple logon to SAP system but we can disable the function. If the function is disabled, multiple dialog logons to (in the same client and under the same user name) are blocked by the system: When the system recognizes a multiple logon, it displays a dialog box with the options "Terminate the current sessions" or "Terminate this logon". This parameter works with SAPGUI logons. Multiple logons are tracked by SAP and it is a License Violation. This can invite penalty from SAP

Multiple Logons					
2013			2014		
Number	Highest Value	Client	Number	Highest Value	Client
60	4	800			
26	3	000			
23	3	800			
20	2	800			
20	3	800			
17	2	800			
12	2	800			
9	2	800			
9	4	800			
8	2	800			

Figure 13 SAP Multiple Count

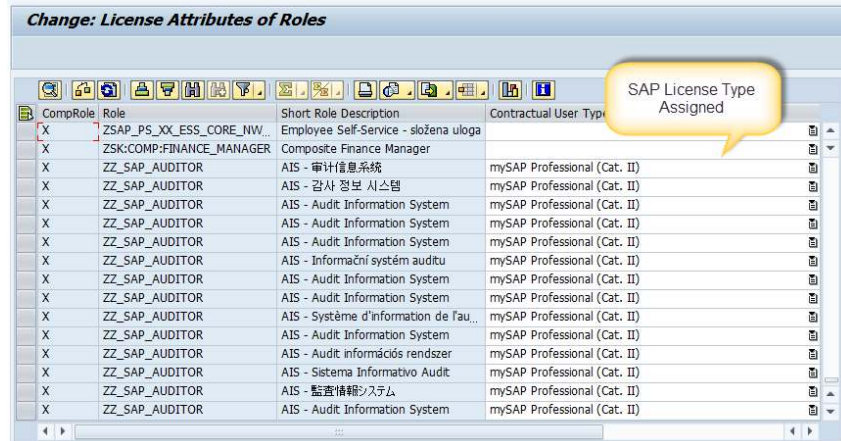
Refer SAP Note # Note 142724 - Prevention of multiple SAPGUI logons you can disable multiple user login across SAP instance via profile parameter: `login/disable_multi_gui_login = 1` however, further you can add exception list via SAP profile parameter: `login/multi_login_users = <userID>` as per your requirement, you further want restrictions by allowing above exception list with only 4 sessions, which you can control via SAP profile parameter: `rdisp/max_alt_modes = 6`, changing SAP profile parameter requires SAP system restart to reflect changes

Assigning SAP License type to Roles

Now you can also assign license type to the roles. This way when you assign the users to the roles the user automatically inherits the license from the roles. This will be helpful for classifying the users based roles assigned rather than guessing. For example, you can assign basis license type for the entire user who gets assigned basis roles.

This will eliminate the manual guessing game. For example, if you use who has a role which is an informational license type and other role which is operational user type. The System will classify the license type based on his role assignment

If the system cannot consolidate the roles, for example, because too many roles are classified, it indicates this in the log. The roles are classified by activity area and not by authorization. Execute transaction LICENSE_ATTRIBUTES.



CompRole	Role	Short Role Description	Contractual User Type
X	ZSAP_PS_XX_ESS_CORE_NW...	Employee Self-Service - složena uloga	
X	ZSK:COMP:FINANCE_MANAGER	Composite Finance Manager	
X	ZZ_SAP_AUDITOR	AIS - 审计信息系统	mySAP Professional (Cat. II)
X	ZZ_SAP_AUDITOR	AIS - 감사 정보 시스템	mySAP Professional (Cat. II)
X	ZZ_SAP_AUDITOR	AIS - Audit Information System	mySAP Professional (Cat. II)
X	ZZ_SAP_AUDITOR	AIS - Audit Information System	mySAP Professional (Cat. II)
X	ZZ_SAP_AUDITOR	AIS - Audit Information System	mySAP Professional (Cat. II)
X	ZZ_SAP_AUDITOR	AIS - Informační systém auditu	mySAP Professional (Cat. II)
X	ZZ_SAP_AUDITOR	AIS - Audit Information System	mySAP Professional (Cat. II)
X	ZZ_SAP_AUDITOR	AIS - Audit Information System	mySAP Professional (Cat. II)
X	ZZ_SAP_AUDITOR	AIS - Système d'information de l'au...	mySAP Professional (Cat. II)
X	ZZ_SAP_AUDITOR	AIS - Audit Information System	mySAP Professional (Cat. II)
X	ZZ_SAP_AUDITOR	AIS - Audit információs rendszer	mySAP Professional (Cat. II)
X	ZZ_SAP_AUDITOR	AIS - Sistema Informativo Audit	mySAP Professional (Cat. II)
X	ZZ_SAP_AUDITOR	AIS - 監査情報システム	mySAP Professional (Cat. II)
X	ZZ_SAP_AUDITOR	AIS - Audit Information System	mySAP Professional (Cat. II)

Figure 14 Roles assigned to SAP License Type

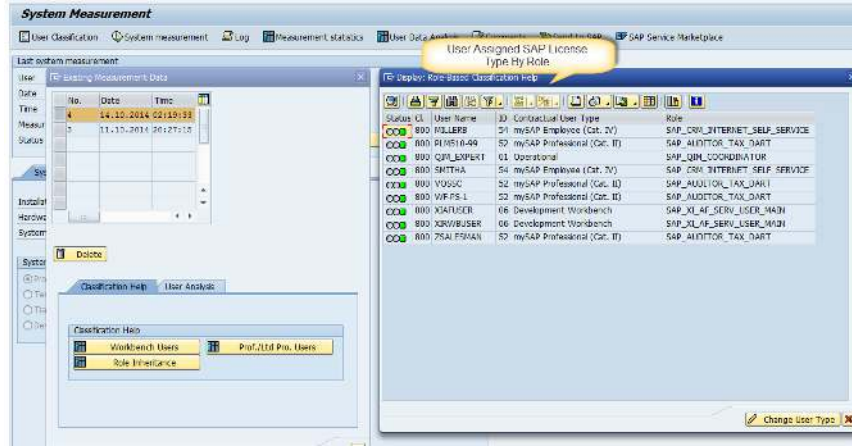


Figure 15 User Classified by License Type Based on User

Help from SAP for Controlling Your SAP License

The Transaction USMM will help companies determine the number of SAP user and the sap modules used in the SAP software for each system. The measurement program is used solely to determine the number of users and the utilized modules of SAP products.

For multiple SAP landscapes SAP advises to use the License Administration Workbench (transaction SLAW) rather than USMM. This will help companies find duplicate user ids and companies will be able to consolidate them in one system. The logic behind this is that since the user is named user he or she should be only counted one across your sap systems.

The measurement of the SAP Engines runs in the background. The measurement program automatically detects the modules used in the SAP System, measures them in the background, and list the assessed SAP License type in the Log file. The program comes with all the SAP System and sometimes may not be available in the lower versions.

With system measurement, you determine the number of users and the chargeable objects of the Engines of the SAP software. Then consolidate the results of the system measurements in the License Administration Workbench to ultimately transfer the consolidated measurement result to SAP. During the measurement, the system follows the following rules (in this order):

- 1.** With manually classified users, their classification is used. This basically means you have assigned a SAP License type for the users based on the business function they are performing
- 2.** With users that take their authorizations exclusively from a reference user (no roles, no profiles) and for which the assigned reference user is classified, the classification of the reference user is inherited
- 3.** There are some users who are not in production but have developer SAP license type assigned. These users are in the service market place or devaccess table in development system.

4. If you wish some of the users should be included like test users then assign a test license type to the user id

5. Generally system ids and default sap ids are excluded from the SAP license classification

6. You can use the system measurement transaction (transaction USMM, "User Classification" button) to determine the non-classified users, and classify them.



Simple Steps for SAP License Optimization

When creating new users with the user maintenance transaction (SU01), you can enter the measurement-relevant data immediately (choose the "License Data" button or tab page).

Final Results Table

Table 1 SAP License Count

SAP Risk Management Step	Expected	Actual
Total number of User		
Total Number of Assigned Roles		
Total Number of Support Roles		
Total number of End user Roles		
Total number of Professional Users		
Total number of Limited Professional User		
Total Number of Information User or Employee		
Total Number ECC or MSS Users		

Step 3: SAP ECC Transaction Usage

The default retention period for statistics is the current month plus the previous two. If you need more time, you have to alter the system configuration. The SAP ECC System Transaction ST03N also stores information on the Transaction usage by the Users and but you have to pull your tooth to extract the data. The Easiest way in the SAP ECC system is go look for the table where it is stored. But unfortunately this information is not stored in a transparent table. It is stored in cluster table called moni and cannot be retrieved easily.

The best option you have is to use a functional module from SAP. This function module will help you extract all Transactions ST03N data. Using Transaction SE37 (ABAP Function Modules), you can execute a function called SWNC_GET_WORKLOAD_STATISTIC.

This will be helpful in understanding the transaction being used in the system and the users who have not even executed any transaction in the system. If you have list of SAP sensitive transaction this can be used to identified users who have used the SAP Sensitive transactions.

Test Function Module: Initial Screen

Debugging Test data directory

Test for function group: SCSM_GLOB_SYSTEM
 Function module: SWNC_GET_WORKLOAD_STATISTIC
 Uppercase/Lowercase:

RFC target sys: _____

Import parameters	Value	System
SELECT_SYSTEM		
SYSTEMID	PRD	
INSTANCE	FROMAL08	Instance from transaction AL08
PERIODTYPE	m	
PERIODSTRT	01.09.2013	From Date
SUMMARY_ONLY		

Month

Figure 18 SAP Function Module



Test Function Module: Result Screen	
Import parameters	
SELECT_SYSTEM	SRI
SYSTEMID	SERVER02_SRI_00
INSTANCE	M
PERIODTYPE	08/01/2014
PERIODSTRT	
SUMMARY_ONLY	
Export parameters	
TASKTYPE	16 Entries
TASKTIMES	248 Entries
TIMES	1,067 Entries
DBPROCS	0 Entries
EXTSYSTEM	318 Entries
TCDET	0 Entries
FRONTEND	9 Entries
MEMORY	477 Entries
SPOOL	0 Entries
SPOOLACT	3 Entries
TABLEREC	0 Entries
USERCODE	451 Entries
USERWORKLOAD	102 Entries
RFCLNT	556 Entries
RFCLNTDEST	292 Entries
RFCSRV	373 Entries
RFCSRVDEST	114 Entries
ASTAT	9 Entries
HITLIST_DATABASE	571 Entries
HITLIST_RESPTIME	571 Entries
HITLIST_ASTAT_DB	72 Entries

Transactions

Figure 19 SAP Function Module Result Summary

SA	ACCOUNT	ENTRY_ID	COUNT	DCOUNT	SCOUNT	
01	APP_0001	SAPSYSVT	1	6	6	0
01	APP_0001	SRW	7	49	49	0
01	APP_0001	SESSION_MANAGER	7	7	7	0
01	AVERS_AP	/RC/GRC	7	287	287	0
01	AVERS_AP	/RC/RELPERSEC000	7	6	6	0
01	AVERS_AP	/RC/PARAMTES000	7	2	2	0
01	AVERS_AP	RSABAPPROGRAM	6	6	6	0
01	AVERS_AP	SESSION_MANAGER	7	11	11	0
01	AVERS_AP	SOE	7	47	47	0
01	RF_FTR001	/RC/RELPERSEC000	7	6	6	0
01	RF_FTR001	RSABAPPROGRAM	6	6	6	0
01	RF_FTR001	SETPARAMIN	6	21	21	0
01	RF_FTR001	SESSION_MANAGER	7	5	5	0
01	ORCTOBER	/RC/CR04	7	1	1	0
01	ORCTOBER	/RC/GRC	7	126	126	0
01	ORCTOBER	/RC/GRCHER	7	11	11	0
01	ORCTOBER	SESSION_MANAGER	7	5	5	0
01	ORCTOBER01	/RC/GRC	7	12	12	0
01	ORCTOBER01	/RC/GRCTOBER	7	11	11	0
01	ORCTOBER01	SAPSYSVT	6	1	1	0
01	ORCTOBER01	SESSION_MANAGER	7	6	6	0
01	ORPLAN	/RC/DOR02	7	1	1	0
01	ORPLAN	/RC/GR03	7	173	173	0
01	ORPLAN	/RC/GRC	7	196	196	0
01	ORPLAN	REL	7	6	6	0
01	ORPLAN	SESSION_MANAGER	7	45	45	0
01	ORPLAN	/RC/RELPERSEC000	7	37	37	0
01	ORPLAN	/RC/RELPERSEC000EXT	7	300	300	0

Figure 20 SAP Transaction Executed

Three Steps for Reviewing the SAP Custom Transactions

General

Restrict the selection criteria by Z* or Y* or any custom name space registered by the company.

Step 1

Get a List of the Custom programs in the systems. This is available in the table TRDIR. This way you are getting a list of all the custom programs which are under program type executable. The fields you want to save are Program name, created by, creation date, change date and changed date.

Program	SECU	Created By	Created on	Changed on	Changed on
ZAUDCHK02		VEL	29.06.2012	VEL	29.06.2012
ZAUDRPT012	/BOT/	VEL	17.08.2013	VEL	17.08.2013
ZAUDRPT012_NEW	/BOT/	VEL	06.04.2013	VEL	08.04.2013
ZAUDRPT012_ORIG	/BOT/	VEL	08.04.2013	VEL	08.04.2013
ZBABU		VEL	23.08.2012	VEL	29.09.2013
ZBABURECORDING		VEL	25.09.2013	VEL	25.09.2013
ZCDHDR		VEL	25.05.2013	VEL	25.05.2013
ZCOMPREFRESH		VEL	12.05.2013	VEL	12.05.2013
ZCUSTES10		VEL	28.07.2013	VEL	28.07.2013
ZFILEPFCG		VEL	18.05.2013	VEL	18.05.2013
ZGRCTOOL	/BOT/	VEL	04.04.2013	VEL	04.04.2013
ZGRCTOOL01	/BOT/	VEL	01.04.2013	VEL	02.04.2013
ZGRCTOOL01_ORIG	/BOT/	VEL	02.04.2013	VEL	02.04.2013
ZGRCTOOL_ORIG	/BOT/	VEL	03.04.2013	VEL	03.04.2013
ZGRCTOOL_ROLE	/BOT/	VEL	03.04.2013	VEL	03.04.2013
ZGRCTOOL_ROLE_ORIG	/BOT/	VEL	03.04.2013	VEL	03.04.2013
ZHIDE		VEL	04.06.2013	VEL	05.06.2013
ZLICENSEKEY		VEL	26.03.2012	VEL	24.05.2012
ZLICENSEKEYD		VEL	26.03.2012	VEL	24.05.2012
ZMAILCONFIG		VEL	29.06.2012	VEL	29.06.2012
ZOBJTEST		VEL	30.06.2012	VEL	30.06.2012
ZPFCG		VEL	21.05.2013	VEL	21.05.2013
ZPFCGTRAN		VEL	08.05.2013	VEL	08.05.2013
ZRSKCHK05	/BOT/	VEL	21.08.2013	VEL	21.08.2013
ZRSUVW001		VEL	09.09.2013	VEL	09.09.2013
ZSMARTROLES		VEL	17.05.2012	VEL	17.05.2012
ZSTADLOG_470		VEL	29.06.2012	VEL	29.06.2012

Figure 21 List of Custom Programs

Post Audit Processing

1. Look at the custom program naming convention so see if you can identify the team and sub team they belong.
2. Look for programs which are missing the authorization group. The naming convention of the authorization group should include sensitivity of the program and the team. This way custom programs can be properly classified and protected.
3. Review the technical and functional documentation for each program. This documentation will be essential when the external audit reviews the custom programs. This will establish the process of the custom program development.
4. Each program has to be reviewed for the functionality like Report, display load, replication of existing SAP Transaction.
5. Review the data being displayed in the report and classify them to if they are sensitive or non-sensitive.
6. Review the programs coded so they also contain SAP authority check statement so that the program can be restricted by the data being displayed.
7. Look for statements within the code which can cause performance problems and vulnerability in the programs.

Step 2:

Get a List of the Custom programs and custom tables in the SAP ECC systems. This is available in the table DD09L and TDDAT respectively. This list should have the object created and object changed. This will help the internal audit team identify the person who created the custom object.

Table Name	Ac	Vers	SC	Auth...	Date	Time	T
/BOT/ABAPLOG	A		4	VEL	16.05.2012	13:26:56	
/BOT/APPLOG	A		4	VEL	27.08.2012	09:47:58	
/BOT/AUCESS	A		0	VEL	19.07.2012	13:51:22	
/BOT/AUDCRT	A		0	VEL	29.08.2012	09:56:02	
/BOT/AUDLOG	A		4	VEL	12.03.2013	18:21:09	
/BOT/AUDTYPE	A		0	VEL	17.04.2012	21:31:12	
/BOT/BATCHLOG	A		5	VEL	19.03.2012	23:35:11	
/BOT/BATSELOG	A		4	VEL	19.03.2012	23:35:47	
/BOT/CDPOSFILTER	A		2	VEL	08.07.2013	22:20:51	
/BOT/CONFRMUSR	A		4	VEL	19.03.2012	23:37:39	
/BOT/CRTABLOG	A		5	VEL	19.03.2012	23:38:24	
/BOT/DESKAUSER	A		0	VEL	08.08.2012	17:45:08	
/BOT/DESKCRE	A		0	VEL	15.02.2013	17:46:27	
/BOT/DESKMAP	A		0	VEL	08.08.2012	17:39:50	
/BOT/DESKMON	A		6	VEL	22.09.2012	01:07:34	
/BOT/DESKRES	A		0	VEL	08.08.2012	17:47:13	
/BOT/DESKREV	A		0	VEL	08.09.2012	22:08:36	
/BOT/DESKRMAP	A		0	VEL	05.08.2012	01:21:15	
/BOT/DESKRUSER	A		0	VEL	08.08.2012	17:44:15	
/BOT/DESKSUSER	A		0	VEL	08.08.2012	17:43:22	
/BOT/DESKTCD	A		0	VEL	15.02.2013	17:48:29	
/BOT/DESKTKT	A		6	VEL	21.09.2012	14:21:49	
/BOT/DIAGLOG	A		4	VEL	16.05.2012	23:36:28	
/BOT/DOCSFILTER	A		0	VEL	11.02.2013	20:57:30	
/BOT/DOCSLOG	A		6	VEL	27.07.2012	00:48:38	
/BOT/FIRPTFILTER	A		0	VEL	06.03.2013	21:09:00	
/BOT/LICENSE	A		0	VEL	29.07.2012	13:03:20	

Figure 22 SAP List of Tables

Step 3:

Post Audit Processing

1. Look for table which are missing the authorization group
2. Review the technical and functional documentation for each program
3. Each of the table have to be reviewed to see if they are configuration table or views
4. Review the data being displayed in the table and classify them to if they are sensitive or non-sensitive

SAP License Assessment Questions

1. Total Number of Active Dialog users:
2. Total number of Roles assigned to users
3. Total Number of Support Roles
4. Total Number of End User Roles
5. Total Number of Single Roles
6. Total Number of Derived Roles
7. Total Number of Composite Roles
8. Total Number of Organizational Elements in the Roles / Assigned to Role
9. Total number of Developers (Devaccess Table)
10. Total number of Finance Support Users / Ability to Execute
11. Total Number of Basis Support Users / Ability to Execute
12. Total Number of Security Support Users / Ability to Execute
13. Total Number Material Master Support Users / Ability to Execute
14. Total Number of Sales and Distribution Support Users / Ability to Execute
15. Total Number of HR Support Users / Ability to Execute
16. Total Number of Custom Tables / Functional Spec
17. Total Number of Custom Programs / Functional Spec
18. Total number of Custom Transactions / Functional Spec
19. Total Number of Unique Transactions in Support Roles

- 20.** Total Number of Unique Transaction In End User Roles
- 21.** Role with * Access
- 22.** Roles with Wild Card access
- 23.** Number of Transactions Used

SAP Risk Management Score Card

Table 2 List Sensitive transaction List

Sensitive Transaction	Display Roles	End User Roles	Support Roles	Basis Roles	Update Role	Risk
Maintain Client Setting SCC4						
Perform Import into System STMS						
Number of User with SAP* Profiles						
Create Users SU01						
Mass Maintain Users SU10						
Maintain Table SM30 and S_TABU_CLI						
Open and Close Posting Periods OB52						
Process Payment F110						



Mass Change Material Master MM17						
--	--	--	--	--	--	--

Sensitive Transaction	End User	Support User	Basis User	Security User	Display User	Risk
Maintain Client Setting SCC4						
Perform Import into System STMS						
Number of User with SAP* Profiles						
Number of User with SU01						
Number of User with SU10						
Number of Users with SM30 and S_TABU_CLI						
Open and Close Posting Periods OB52						
Process Payment F110						
Mass Change Material Master MM17						

SAP License Assessment Process

Working in the SAP Customer the Tool is responsible for the SAP License Management of major accounts. The SAP License Management Solution will assist customers in understanding and managing their SAP software Assets, avoiding legal pitfalls related to licensing by leveraging industry best practices while expanding our clients licensing opportunities and building more-profitable, long term relationships with their customers.

Roles & Responsibilities:

- Conduct SAP Compliance Assessments
- Support SAP Customers during SAP Compliance Audits
- Analyze SAP Inventory on cost saving opportunities
- Development of SAP SAM Best Practices & Strategy
- Provide customer specific SAP Advisory Services
- Pre-Sales Support in terms of upcoming SAP SAM opportunities
- Internal and external SAP License Management Trainings
- Support customers generating SAP License Metric Tool Reports
- Determine SAP License usage
- Data Aggregation: relevant usage and logon data is being aggregated across all connected SAP systems.
- Data Analysis: the data is then analyzed relative to duplicate/obsolete/erroneous user accounts, logons, usage, roles, license types, and indirect access flags.
- License optimization: upon analysis, recommendations for optimizations are made. Approved changes are submitted via the SAP change queue for implementation.



Simple Steps for SAP License Optimization