>
Analysis from 30.12.2019
Until 05.01.2020
Report: P01, Productive
Installation: [redacted]
Session: 0010000023096

EarlyWatch Alert - P01

1 Service Summary

This EarlyWatch Alert session detected issues that could potentially affect your system.
Take corrective action as soon as possible.

Alert Overview

Backlog found in Business Key Figures Chapter
Noticeable potential for reduction of data volume was identified.
We found more than 30 ABAP dumps in your system.
A high number of users has critical authorizations

Note: If you send SAP EarlyWatch Alert data to SAP, this report can also be viewed in the SAP ONE Support Launchpad in an interactive SAP Fiori application SAP Note 2520319. Here is the link to the latest reports for this system: SAP EarlyWatch Alert Workspace
Specific links to analytical detail pages in SAP EarlyWatch Alert Workspace are included in the respective sections or in this report.
Based on these findings, it is recommended that you perform the following Guided Self-Services.

Guided Self Service	FAQ SAP Note
Security Optimization Service	1484124
Data Volume Management	1904491

For more information about Guided Self-Services, see SAP Enterprise Support Academy.
Register for an Expert-Guided Implementation Session for the Guided Self-Service at SAP Enterprise Support Academy - Learning Studio - Calendar.

Check Overview

Topic Rating	Topic	Subtopic Rating	Subtopic
	SAP System Configuration		
			Database - Maintenance Phases
			SAP Kernel Release
	Performance Overview		
			Performance Evaluation
	SAP System Operating		
			Availability based on Collector Protocols
			Program Errors (ABAP Dumps)
			Update Errors
			Table Reorganization
	Hardware Capacity		
	Database Performance		
			Missing Indexes
			Database Key Performance Indicators
			Setup of the Temporary Tablespace
			Database Parameters
			Optimizer Statistics
	Database Administration		
			Space Statistics
			Freespace in Tablespaces
			brconnect -f check (sapdba -check) schedule
			Multibyte Character Sets
	Database Server Load From Expensive SQL Statements		

Check Overview

Topic Rating	Topic	Subtopic Rating	Subtopic
			TRANSACT-SQLORA(01)-P01: Expensive SQL Statements
			Database Server Load
	Security		
			System Recommendations (ABAP)
			Age of Support Packages
			Default Passwords of Standard Users
			Control of the Automatic Login User SAP*
			Protection of Passwords in Database Connections
			ABAP Password Policy
			Gateway and Message Server Security
			Users with Critical Authorizations
	Software Change Management		
			Number of Changes
			Emergency Changes
			Failed Changes
	Data Volume Management (DVM)		

Note: All recommendations in this report are based on our general experience. Test them before using them in your production system. Note that EarlyWatch Alert is an automatic service.
Note: If you have any questions about the accuracy of the checks in this report or the correct configuration of the SAP Solution Manager EarlyWatch Alert service, create a customer message under component SV-SMG-SER-EWA.

Note: If you require assistance to resolve concerns about the performance of the system, or if you require a technical analysis of other aspects of your system as highlighted in this report, please contact your customer representative (for example, TQM or ESA). To contact the SAP Enterprise Support advisory team or Customer Interaction Center, please refer to the local contact number specified in SAP Note 560499. For details of how to set the appropriate priority level, see SAP Note 67739.

Performance Indicators for P01

The following table shows the relevant performance indicators in various system areas.

Area	Indicators	Value	Trend
System Performance	Active Users (>400 steps)	760	
	Avg. Availability per Week	100 %	
	Avg. Response Time in Dialog Task	508 ms	
	Max. Dialog Steps per Hour	10615	
	Avg. Response Time at Peak Dialog Hour	427 ms	
	Avg. Response Time in RFC Task	574 ms	
	Max. Number of RFCs per Hour	11158	
	Avg. RFC Response Time at Peak Hour	328 ms	
Hardware Capacity	Max. CPU Utilization on DB Server	22 %	
	Max. CPU Utilization on Appl. Server	62 %	
Database Performance	Avg. DB Request Time in Dialog Task	190 ms	
	Avg. DB Request Time for RFC	71 ms	
	Avg. DB Request Time in Update Task	25 ms	
Database Space Management	DB Size	1099.72 GB	
	DB Growth Last Month	14.63 GB	

2 Landscape

2.1 Products and Components in current Landscape

Product

System	SAP Product	Product Version
P01~ABAP	SAP ERP ENHANCE PACKAGE	6.07

Main Instances (ABAP or JAVA based)

Related System	Main Instance
P01~ABAP	SAP ECC Server
P01~ABAP	Add-on: Gateway Server - 2.0

Databases

Related System	Database System	Database Version	DB ID
P01~ABAP	ORACLE	12.1.0.2	P01

2.2 Servers in current Landscape

SAP Application Servers

System	Host	Instance Name	Logical Host	ABAP	JAVA
P01~ABAP	aocdbs06a	aocdbs06sap_P01_00	aocdbs06sap		
P01~ABAP	aocr3s06a	aocr3s06a_P01_00	aocr3s06a		
P01~ABAP	aocr3s06c	aocr3s06c_P01_00	aocr3s06c		

DB Servers

Related System	Host	Logical Host (SAPDBHOST)
P01~ABAP	aocdbs06b	aocdbs06app

Components

Related System	Component	Host	Instance Name	Logical Host
P01~ABAP	ABAP SCS	aocdbs06a	aocdbs06a_P01_01	aocdbs06a

2.3 Hardware Configuration

Host Overview

Host	Hardware Manufacturer	Model	CPU Type	CPU MHz	Virtualization	Operating System	CPUs	Cores	Memory in MB
aocdbs06a	VMware, Inc.	VMware Virtual Platform	Xeon E5-2690	2900	VMWARE	Red Hat Enterprise Linux 6 (x86_64)	4	4	64427
aocdbs06b	VMware, Inc.	VMware Virtual Platform	Xeon E5-2690	2900	VMWARE	Red Hat Enterprise Linux 6 (x86_64)	4		64427
aocr3s06a	VMware, Inc.	VMware Virtual Platform	Xeon E5-2690	2900	VMWARE	Red Hat Enterprise	2	2	32110

Host Overview

Host	Hardware Manufacturer	Model	CPU Type	CPU MHz	Virtualization	Operating System	CPUs	Cores	Memory in MB
						Linux 6 (x86_64)			
aocr3s06c	VMware, Inc.	VMware Virtual Platform	Xeon E5-2690	2900	VMWARE	Red Hat Enterprise Linux 6 (x86_64)	2	2	32110

3 Service Data Quality and Service Readiness

Configuration hints for optional service data are provided.
The SAP ERP ENHANCE PACKAGE system P01 is not fully prepared for delivery of future remote services.

Rating	Check Performed
	Service Data Quality
	Service Preparation of P01

3.1 Service Data Quality

The service data is collected by the Service Data Control Center (SDCCN) or read from the Solution Manager's BW or Configuration and Change Database (CCDB).
This section comprehensively shows issues with the data quality and provides hints on how to resolve them.

Explanation for 'Priority' Column In Tables Below

Prio.	Explanation: Impact of Missing or Erroneous Data
	An optional check was skipped.

3.1.1 Managed System Setup In Solution Manager

Prio.	Report Area affected	Details	SAP Note
	Configuration of ABAP System P01	Collector job DSWP_GET_PPMS_DATA_AUS_OSS for retrieval of the latest available SAP support packages is probably suspended. Information about the latest available SAP support packages was omitted from this report due to outdated data. Please ensure daily scheduling of this job in your SAP Solution Manager system. used in check 'Support Package Maintenance - ABAP'	894279

3.2 Service Preparation of P01

Rating	Check Performed
	Service Preparation Check (RTCCTOOL)
	Service Data Control Center
	Hardware Utilization Data

In preparation for SAP services, ensure that connections, collectors, and service tools are up to date. These functionalities are explained in SAP Notes 91488 and 1172939.

3.2.1 Service Preparation Check (RTCCTOOL)

Before we can ship any services, the latest version of the SAP Service tools must be implemented in your system.
Report RTCCTOOL was last run on 06.01.2020. During the check, the tool detected issues for which a RED rating was set.

Overall Status	SAP Note	Title	Tool Status	Manual Status
	1482296	for DVM [Serv. Exec]		
	2865869	Technical S-User for SAPOSS		
	2865869	Techn. S-User for SDCC_OSS		
	2865869	Tech. S-User for SAPNET_RFC		

Overall Status	SAP Note	Title	Tool Status	Manual Status
	69455	ST-A/PI 01T_731 Support Package 3		
	539977	ST-PI 740 Support Package 12		
	69455	Addon ST-A/PI 01T_731		
	69455	Proc. after addon impl.		
	69455	Switch on digital content verification		
	69455	Allow Online data collectors		
	539977	Addon ST-PI 740		
	12103	Collectors and TCOLL		
	207223	EWAlert setup		

Recommendation:
for DVM [Serv. Exec]
DB Statistics on Oracle Databases [managed]
Please follow the instructions of SAP note 1482296. Please perform the manual activities as mentioned in the SAP Note.

Technical S-User for SAPOSS
HTTP to SAP backbone (for SNOTE, EWA..) is not set up. Systems >=740 that sent EWAs to SAP in the past are temporarily allowed to use RFC after 01/2020. But they need a technical S-User in the RFC destinations to SAP.
Open https://launchpad.support.sap.com/#techuser with admin S-User. Create technical S-User with title Instno+SID (note 2174416). One techn. S-user per system or per Dev-QA-Prod. Wait 24 h. Activate&set password. Call tx SM59. Enter the techn. S-User with password into ABAP connection SAPOSS.

Techn. S-User for SDCC_OSS
RFC destination SDCC_OSS may be used by SDCCN to connect to SAP. Systems that sent EWAs to SAP in the past are temporarily allowed to use RFC after 01/2020. But they need a technical S-User in the RFC dest. to SAP.
Call tx SM59. Enter a technical S-User and its password into ABAP connection SDCC_OSS (use same S-User as in ABAP connection SAPOSS, as set in recommendation "Technical S-User for SAPOSS"). Alternatively configure SDCCN to use SAPOSS for "To SAP" and delete

destination SDCC_OSS.

Tech. S-User for SAPNET_RFC
RFC destination SAPNET_RFC may be used by SDCCN to connect to SAP. Systems that sent EWAs to SAP in the past are temporarily allowed to use RFC after 01/2020. But they need a technical S-User in the RFC dest. to SAP.
Call tx SM59. Enter a technical S-User and its password into ABAP connection SAPNET_RFC (use same S-User as in ABAP connect. SAPOSS, as set in recommendation "Technical S-User for SAPOSS"). Alternatively configure SDCCN to use SAPOSS for "To SAP" and delete destination SAPNET_RFC.

ST-A/PI 01T_731 Support Package 3
Addon supportpackage level 3 for ST-A/PI 01T_731 for NetWeaver as of 7.31 [your current level is max. 2 lower than latest. Update is recommended]
From http://support.sap.com/supporttools ->ST-A/PI->Support packages-> ST-A/PI 01T_731 download patches up to SAPKITAB9X. For basis >=700 use the Maintenance optimizer to release the download. Upload from frontend to transaction SPAM, define a queue and import.

ST-PI 740 Support Package 12
Addon supportpackage level 12 for ST-PI 740 for basis as of 7.40 [your current level is lower than recommended. Update recommended]
Open http://support.sap.com/supporttools ->ST-PI Supportpck.-> ST-PI 740. Add patch SAPK-74012INSTPI (and predecessors if not yet implemented) t download basket. Release basket via Maintenance optimizer. Upload from frontend into transaction SPAM, define a queue and import the queue.

3.2.2 Service Data Control Center

Recommendation: SDCC is still active. Activate SDCCN instead. See SAP Note 763561.

3.2.3 Performance DB (ST03 / ST06)

Analysis of ST06 and history data indicate some problems with SAPOSCOL. Check SAPOSCOL and see SAP Note 1309499.

4 Software Configuration for P01

We have listed recommendations concerning the current software configuration on your system.

Your system's software versions are checked. If known issues with the software versions installed are identified, they are highlighted.

4.1 SAP Application Release - Maintenance Phases

SAP Product Version	End of Mainstream Maintenance	Status
EHP7 FOR SAP ERP 6.0	31.12.2025	

In October 2014, SAP announced a maintenance extension for SAP Business Suite 7 core application releases to 2025. If you are running a relevant release, see SAP Note 1648480 for more details and applicable restrictions.

4.2 Support Package Maintenance - ABAP

The following table shows an overview of currently installed software components.

Support Packages

Software Component	Version	Patch Level	Latest Avail. Patch Level	Support Package	Component Description
ACLDL	600	1		SAPK-67001INACLDL	
EA-APPL	617	18	19	SAPK-61718INEAAPPL	SAP R/3 Enterprise Application Extension 617
EA-DFPS	600	31	31	SAPKGPDD31	SAP R/3 Enterprise Defense Forces & Public Security
EA-FIN	617	18	19	SAPK-61718INEAFIN	Ea Fin 617

Support Packages

Software Component	Version	Patch Level	Latest Avail. Patch Level	Support Package	Component Description
EA-FINSERV	600	32	32	SAPKGPFD32	SAP R/3 Enterprise Financial Services 600
EA-GLTRADE	600	31	31	SAPKGPGD31	SAP R/3 Enterprise Global Trade 6.00
EA-HR	608	72	75	SAPK-60872INEAHR	SAP R/3 Enterprise Human Resource & Travel Extension 608
EA-IPPE	400	31	31	SAPKGPID31	SAP Integrated Product and Process Engineering 400
EA-PS	617	18	19	SAPK-61718INEAPS	SAP R/3 Enterprise Public Services 617
EA-RETAIL	600	31	31	SAPKGPRD31	SAP R/3 Enterprise Retail 6.00
ECC-DIMP	600	26	31	SAPK-60026INECCDIMP	ECC-DIMP 600
ERECRUIT	600	31	31	SAPK-60031INERECRUIT	ERECRUIT 600
FI-CA	617	18	19	SAPK-61718INFICA	FI-CA, Contract Accounts Receivable and Payable (virtuell) 617
FI-CAX	600	26	31	SAPK-60026INFICAX	FI-CAX extended
FINBASIS	600	31	31	SAPK-60031INFINBASIS	FINBASIS 600
GBAPP002	600	12	12	SAPK-60012INGBAPP002	Odata purchase approval 600
GBHCM002	600	15	15	SAPK-60015INGBHCM002	HCM Employee Requests (leave) 600
GBHCM003	600	12	12	SAPK-60012INGBHCM003	HCM Manager Approvals (time, training, leave) 600
GBX01HR	600	14	15	SAPK-60014INGBX01HR	GBX01HR 600 (oData Base, HCM Fiori) 600
INSURANCE	600	26	31	SAPK-60026ININSURANC	INSURANCE 600

Support Packages

Software Component	Version	Patch Level	Latest Avail. Patch Level	Support Package	Component Description
IS-CWM	600	26	31	SAPK-60026INISCWM	SAP CATCH WEIGHT MANAGEMENT 6.00 on SAP ERP 2005
IS-H	600	40	61	SAPK-60040INISH	IS-H 600
IS-M	600	26	31	SAPK-60026INISM	IS-Media 6.00
IS-OIL	600	26	31	SAPK-60026INISOIL	IS-OIL 600
IS-PS-CA	617	18	19	SAPK-61718INISPSCA	IS-Public Sector Contract Accounting 617
IS-UT	600	26	31	SAPK-60026INISUT	IS-UT 600
LSOFE	617	15	16	SAPK-61715INLSOFE	Learning Solution - Front End 617
MDG_APPL	617	18	19	SAPK-61718INMDGAPPL	MDG Applications 617
MDG_FND	747	18	19	SAPK-74718INMDGFND	MDG Foundation 747
PERSONAS	300	9	10	SAPK-30009INPERSONAS	SAP Screen Personas 3.0
PI_BASIS	740	22	22	SAPK-74022INPIBASIS	Basis Plug-In 7.40
SAPUIFT	100	1	1	SAPK-10001INSAPUIFT	SAP UI Frontend Implementation Technology Version 1.00
SAP_ABA	740	22	22	SAPKA74022	SAP Anwendungsbasis 7.40
SAP_AP	700	37	37	SAPKNA7037	SAP Application Platform 7.00
SAP_APPL	617	18	19	SAPKH61718	SAP APPL 6.17
SAP_BASIS	740	22	22	SAPKB74022	SAP Basis Component 7.40
SAP_BS_FND	747	18	19	SAPK-74718INSAPBSFND	SAP Business Suite Foundation 747
SAP_BW	740	22	22	SAPKW74022	SAP Business Warehouse 7.40
SAP_FIN	617	18	19	SAPK-61718INSAPFIN	Financials
SAP_GWFND	740	22	22	SAPK-74022INSAPGWFND	SAP NetWeaver Gateway Foundation 7.40

Support Packages

Software Component	Version	Patch Level	Latest Avail. Patch Level	Support Package	Component Description
SAP_HR	608	72	75	SAPKE60872	SAP HR 6.08
SAP_UI	752	7	8	SAPK-75207INSAPUI	User Interface Technology 7.50
SEM-BW	600	31	31	SAPKGS6031	SEM-BW 600
SRA001	600	9	9	SAPK-60009INSRA001	Approve Purchase Contracts
SRA002	600	9	9	SAPK-60009INSRA002	My Timesheet 1.0
SRA003	600	4	4	SAPK-60004INSRA003	Change Sales Order 1.0
SRA006	600	8	8	SAPK-60008INSRA006	My Paystubs 1.0
SRA007	600	6	6	SAPK-60006INSRA007	My Benefits 1.0
SRA010	600	8	8	SAPK-60008INSRA010	Approve Timesheets 1.0
SRA012	600	5	5	SAPK-60005INSRA012	My Spend 1.0
SRA013	600	7	7	SAPK-60007INSRA013	Order Purchase Requisitions 1.0
SRA016	600	8	8	SAPK-60008INSRA016	Price & Availability Check 1.0
SRA017	600	8	8	SAPK-60008INSRA017	Order create (from P&A, from quote, from existing order) 1.0
SRA018	600	8	8	SAPK-60008INSRA018	Order status tracking (including display order and lines) 1.0
SRA019	600	5	5	SAPK-60005INSRA019	Shipment tracking 1.0
SRA020	600	10	10	SAPK-60010INSRA020	Order change (change address / ship VIA) 1.0
SRA021	600	8	8	SAPK-60008INSRA021	Invoice (my bills) including display invoice - billing document 1.0
ST-A/PI	01T_731	2	3	SAPKITAB9W	ST-A/PI 01T_731
ST-PI	740	11	12	SAPK-74011INSTPI	Solution Tools Plugin 740
UIHR001	100	14	15	SAPK-10014INUIHR001	UI for ERP Human capital management 100

Support Packages

Software Component	Version	Patch Level	Latest Avail. Patch Level	Support Package	Component Description
UIX01EAP	100	13	14	SAPK-10013INUIX01EAP	UI for ERP Central Applications 1.0
UIX01HCM	100	7	7	SAPK-10007INUIX01HCM	UI for HCM Application 1.0
WEBCUIF	747	18	19	SAPK-74718INWEBCUIF	SAP Web UIF 747

4.3 Database - Maintenance Phases

Database Version	End of Standard Vendor Support*	End of Extended Vendor Support*	Status	SAP Note
Oracle Database 12g Release 1	31.07.2019	31.07.2021		1174136

* Maintenance phases and duration for the DB version are defined by the vendor. Naming of the phases and required additional support contracts differ depending on the vendor. Support can be restricted to specific patch levels by the vendor or by SAP. Check in the referenced SAP Note(s) whether your SAP system requires a specific patch release to guarantee support for your database version.
The support status you receive in this report regarding your Oracle database version takes only the major release support dates into account and not whether the individual patch set level is outdated in terms of Oracle patch support. For this reason, verify in the corresponding patch set SAP Note whether the patch set you are currently using is still in the Oracle patch provisioning mode.

For more information, see the "Oracle Release" section of the "Database" section.

> **Recommendation:** Standard vendor support for your database version has already ended / will end in the near future. Consider ordering extended vendor support from your database vendor or upgrading to a higher database version.

4.4 Operating System(s) - Maintenance Phases

Host	Operating System	End of Standard Vendor Support*	End of Extended Vendor Support*	Comment	Status	SAP Note
4 Hosts	Red Hat Enterprise Linux 6 (x86_64)	30.11.2020	30.06.2024	Limited (ELS)		936887

* Maintenance phases and duration for the operating system version are defined by the vendor. Naming of the phases and required additional support contracts differ depending on the vendor. Support can be restricted to specific patch levels by the vendor or by SAP. Check in the referenced SAP Note(s) whether your SAP system requires a specific patch release to guarantee support for your operating system version.

4.5 SAP Kernel Release

The following table lists all information about your SAP kernel(s) currently in use.

Instance(s)	SAP Kernel Release	Patch Level	Age in Months	OS Family
3 instances	749	701	7	Linux (x86_64)

4.5.1 Kernel out of date

Your current SAP kernel release is probably not up to date.

> **Recommendation:** Make sure that you are using the recommended SAP kernel together with the latest Support Package stack for your product.

4.5.2 Additional Remarks

SAP releases Support Package stacks (including SAP kernel patches) on a regular basis for most products (generally 2–4 times a year). We recommend that you base your software maintenance strategy on these stacks.
You should only consider using a more recent SAP kernel patch than that shipped with the latest Support Package Stack for your product if specific errors occur.
For more information, see SAP Service Marketplace at https://support.sap.com/software/patches/stacks.html (SAP Support Package Stack information) and https://launchpad.support.sap.com/#/softwarecenter/support/index (Support Packages & patch information).
For each patch there is an SAP Note in which all known regressions for this level are listed. Find it using the keyword KRNL749PL701 in the SAP Note search. For detailed information, see SAP Note 1802333 - Finding information about regressions in the SAP kernel.

5 Hardware Capacity

We have checked your system for potential CPU or memory bottlenecks and found that the hardware of your servers is sufficient for the current workload.

Note: Hardware capacity evaluation is based on hosts for which data is at least partially available.

5.1 Overview System P01

General
This analysis focuses on the workload during the peak working hours **(9-11, 13)** and is based on the hourly averages collected by SAPOSCOL. For information about the definition of peak working hours, see SAP Note 1251291.
CPU
If the average CPU load exceeds **75%**, temporary CPU bottlenecks are likely to occur. An average CPU load of more than **90%** is a strong indicator of a CPU bottleneck.
Memory
If your hardware cannot handle the maximum memory consumption, this causes a memory bottleneck in your SAP system that can impair performance. The paging rating depends on the ratio of paging activity to physical memory. A ratio exceeding **25%** indicates high memory usage (if Java has been detected **0%**) and values above **50%** (Java **10%**) demonstrate a main memory bottleneck.

Server	Max. CPU load [%]	Date	Rating	RAM [MB]	Max. Paging [% of RAM]	Date	Rating	Analysis Start	Analysis End
aocr3s06c	19	02.01.2020		32.110	0			30.12.2019	05.01.2020
aocr3s06a	14	03.01.2020		32.110	0			30.12.2019	05.01.2020
aocdbs06b	22	02.01.2020		64.427	0			30.12.2019	05.01.2020
aocdbs06a	62	02.01.2020		64.427	0			30.12.2019	05.01.2020

Note: For virtualization or IaaS scenarios (for example, IBM PowerVM, VMware, Amazon AWS, ...) it is possible that the CPU rating for some hosts is YELLOW or RED, even though the utilization value is quite low. In this case, the relevant host could not use maximum usable

capacity due to a resource shortage within the virtualized infrastructure (for example, IBM PowerVM: Shared Pool CPU utilization).

6 BKF Info & Admin for SAP EWA

System errors or business exceptions can be a reason for open, overdue, or unprocessed business documents or long-lasting processes. SAP Business Process Analysis, Stabilization and Improvement offerings focus on helping you to find these documents (as it may directly or indirectly negatively impact business).
This section provides an example of indicators, and its findings are a basis of further SAP offerings. In the example below, the backlog of business documents is compared to daily or weekly throughput or set in relation to absolute threshold numbers.
It provides business information to discuss possible technical or core business improvement process potential.
SAP tools and methods can help to monitor and analyze business processes in more detail. Find more information, see here.
NOTE: Overdue or exceptional business documents are often caused by system errors, *such as user handling issues, configuration or master data issues, or open documents on inactive organizational units or document types* that can be included in the measurements. These documents are rarely processed further by the business departments and often do not have a direct impact on customer satisfaction, revenue stream, or working capital. Nevertheless, these documents can have negative impacts on other areas such as supply chain planning accuracy, performance (of other transactions, reports, or processes), and reporting quality.

For more information about this section, see here. See "Which optional content can be activated in SAP EarlyWatch Alert?".

6.1 Reference Key Figures Measured Value Summary

The below values originate from reference key figures executed in your back-end system. A rating is given as the first criticality indicator for each value that may represent open, overdue, or exception documents. The rating can be based on the absolute number of references or relate to a certain business throughput. Note that a rating can be assigned only if a reference value is available (in the case of relative evaluation) or if the evaluation is based on an absolute number. The following general rule of thumb applies to most ratings of application-related backlog key figures:
GREEN – the backlog is smaller than one day of typical daily throughput
YELLOW – the backlog is between one and five days of typical daily throughput
RED – the backlog is above five days of typical daily throughput
GRAY – standard evaluation is not possible due to missing reference value
Bear in mind that all assumptions and ratings in this presentation are based on our general experience with other customers and that the findings are not necessarily business-critical in your particular case. The key figures are further described in the KPI Cloud Catalog.

Data collection status:
Data collection frequency (in months): 0

Rating	Business Area: Key Figure Short Name	Finding	#
	Finance: Overdue vendor payments (actual fiscal year) [K20]	1.305 open vendor items in Accounts Payable in the current were identified, whereby the due date for payment is .. (28 less than three months & 56 older than twelve months). Based on absolute numbers (GREEN[<100]; RED[>1000]).	
	Finance: Overdue customer payments (actual fiscal year) [K15]	1.008 open customer items in Accounts Receivable in the current were identified, whereby the due date for payment is .. (233 less than three months & 106 older than twelve months). Based on absolute numbers (GREEN[<100]; RED[>1000]).	
	Finance: Bank Statement Items not completed [K16]	46.836 bank statement items were identified that have not been fully posted (11.351 less than three months & 1.903 older than twelve months). Based on absolute numbers (GREEN[<10]; RED[>100]).	
	Order To Cash: Orders not billed (Order related billing) [K06]	2.500 open sales orders were identified that have not yet been billed or have only been partially billed (9 less than three months & 2.199 older than twelve months). Based on absolute numbers (GREEN[<10]; RED[>100]).	
	Procure To Pay: Overdue PO items [K28]	4.057 purchase order items were identified that are overdue by more than 10 days and that are not yet completely deli.. (243 less than three months & 2.035 older than twelve months). Based on 0 PO items created (max per week).	
	Procure To Pay: Purchase Order Items without Final Invoice Indicator [K33]	74.156 purchase order items were identified that are more than 30 days and without a final invoice indicator (2.362 less than three months & 66.008 older than twelve months). Based on absolute numbers (GREEN[<100]; RED[>1000]).	
	Procure To Pay: Overdue Purchase Requisition Items [K27]	540 purchase requisition items were identified that are open and overdue by more than 10 days (82 less than three months & 40 older than twelve months). Based on 92 created (max per week) (GREEN[<92]; RED[>460]).	

Rating	Business Area: Key Figure Short Name	Finding	#
	Procure To Pay: Blocked invoices for payment [K30]	2.989 vendor invoices items were identified which were created more than 30 days ago and still have not been released.. (80 less than three months & 2.800 older than twelve months). Based on absolute numbers (GREEN[<100]; RED[>1000]).	

SAP Active Global Support provides several self-assessments or guided services to encourage customers to benefit from an SAP Business Process Analysis, Stabilization, or Improvement project.

6.2 SAP Business Process Analytics

With SAP Business Process Analytics in SAP Solution Manager, you can continuously analyze the above key figures and more than 750 additional out-of-the-box key figures for continuous improvement potential in your SAP business processes.
With SAP Business Process Analytics, you can perform the following functions:
(1) Internal business process benchmarking (across organizational units, document types, customers, materials, and so on) for a number of exceptional business documents and/or for the cumulated monetary value of these documents.
(2) Age analysis to measure how many open documents you have from the previous years or months.
(3) Trend analysis for these business documents over a certain time period.
(4) Create a detailed list for all of these exceptional business documents in the managed system, enabling a root cause analysis to find reasons why these documents are open, overdue, or erroneous.
SAP Business Process Analytics can help you to achieve the following main goals:
- Gain global transparency of business-relevant exceptions to control template adherence
- Improve process efficiency and reduce process costs by reducing system issues and eliminating waste (for example, user handling, configuration issues, and master data issues)
- Improve working capital (increase revenue, reduce liabilities and inventory levels)
- Ensure process compliance (support internal auditing)
- Improve supply chain planning (better planning results and fewer planning exceptions)
- Improve closing (fewer exceptions and less postprocessing during period-end closing)

SAP also provides business process improvement methodology to help you identify and analyze improvement potential within your business processes using Business Process Analytics in SAP Solution Manager and visualize it for your senior management.
For more information, navigate to the following link: here.
In general, SAP Active Global Support provides several self-assessments or guided services to encourage customers to benefit from an SAP Business Process Stabilization and/or Business Process Improvement project.

7 Workload Overview P01

7.1 Workload By Users

User activity is measured in the workload monitor. Only users of at least medium activity are counted as 'active users'.

Users	Low Activity	Medium Activity	High Activity	Total Users
dialog steps per week	1 to 399	400 to 4799	4800 or more	
measured in system	3587	745	15	4347

7.2 Workload By Task Types

This chart displays the main task types and indicates how their workload is distributed in the system.

Task Type	Response Time[s]	DB Time[s]	CPU Time[s]	GUI Time in s
Batch	894624	469736	213811	0
HTTP(S)	414348	154284	219985	0
RFC	305856	37642	37967	1531
Dialog	201644	75200	62877	59493
Others	21206	5420	5422	1738

The chart below lists the top task types in terms of total response time in s.

7.3 Top Applications

This table lists the top applications of the Dialog task type. The unit of measure is milliseconds [ms] for average time and seconds [s] for total time.

Transaction Profile

Transaction	Total Response Time[s]	% of Total Load	Dialog Steps	Avg. Resp. Time[ms]	Avg. Proc. Time[ms]	Avg. CPU Time[ms]	Avg. DB Time[ms]	Avg. Roll Wait Time[ms]	Avg. GUI Time[ms]
FS10N	11280	0.6	17826	633	0	293	189	86	92
ZGL001	10931	0.6	2624	4166	1	563	2815	657	671
PT60	10888	0.6	632	17228	17	15286	577	21	21
ME23N	8181	0.4	20952	390	0	74	52	226	265
ZFI_DAILY_CASH	8113	0.4	5747	1412	0	280	1054	198	206
SESSION_MANAGER	6985	0.4	24864	281	0	21	10	233	233
FBV0	6606	0.4	17894	369	0	119	48	198	156
ZFCHN	6520	0.4	3367	1936	2	1374	363	12	13
ZFI_BANK_RECON	5813	0.3	7097	819	0	126	519	202	202
ZAP006	5572	0.3	9000	619	0	74	282	277	277

This table lists the top applications of the RFC task type. The unit of measure is milliseconds [ms] for average time and seconds [s] for total time.

RFC Profile

Initial System	Initial Action	Total Response Time[s]	% of Total Load	Steps	Avg. Resp. Time[ms]	Avg. Proc. Time[ms]	Avg. CPU Time[ms]	Avg. DB Time[ms]
P01/aocdbs06sap_P01_00	SAPMHTTP	40090	2.2	246476	163	86	68	71
P01/aocdbs06sap_P01_00	FI_P01_BOFA_ACKERR_IN	39249	2.1	2896	13553	329	11	9
P01/aocdbs06sap_P01_00	FI_P01_ALL_PSCD_INBOUND	14383	0.8	246	58468	8959	8076	5795
P01/aocr3s06a_P01_00	BI_WRITE_PROT_TO_APPLLOG	13842	0.8	2099	6594	6014	10	578
SMP/aocsls06a_SMP_00	EFWK RESOURCE MANAGER	12875	0.7	5459	2359	699	474	1521
P01/aocr3s06a_P01_00	/BDL/TASK_PROCESSOR	12657	0.7	457	27695	3261	1709	6730
P01/aocdbs06sap_P01_00	HR_P01_KERN_HEALTHCOMP_OUT_MDV	10568	0.6	44	240177	592	105	155
P01/aocdbs06sap_P01_00	HR_P01_KERN_HEALTHCOMP_OUT_FSA	8722	0.5	44	198217	479	15	24
P01/aocr3s06c_P01_00	HR_P01_ALL_CALPERS_INBOUND	7754	0.4	800	9693	326	13	9

RFC Profile

Initial System	Initial Action	Total Response Time[s]	% of Total Load	Steps	Avg. Resp. Time[ms]	Avg. Proc. Time[ms]	Avg. CPU Time[ms]	Avg. DB Time[ms]
BWP/aocapw06b_BWP_00	BIREQU_0VMXERR6ZVG2E2ACTIAME7CR7	5596	0.3	3996	1400	510	29	12

This table lists the top applications of the Batch task type. The unit of measure is milliseconds [ms] for average time and seconds [s] for total time.

Jobs Profile

Report	Response Time[s]	% of Total Load	Steps	CPU Time[s]	DB Time[s]
RPTARQPOST	300897	16.4	2016	65375	264342
ZCS_START_SFTP_INBOUND	114644	6.2	2833	216	357
/USE/PDS3_RUNTIME	95367	5.2	53	1334	2270
RHBAUS00	72335	3.9	84	34013	35763
RHBAUS02	41867	2.3	84	23017	21988
/UI5/APP_INDEX_CALCULATE	33465	1.8	680	17681	14006
RPCPRRU0	23618	1.3	28	21456	1465
SAPF124	22845	1.2	63	368	22119
RSTS0020	19865	1.1	7	3685	17044
RPTIME00	18524	1.0	30	15790	2665

This table lists the top applications of task type HTTP(S). The unit of measure is milliseconds [ms] for average time and seconds [s] for total time.

Service	Total Response Time[s]	% of Total Load	Dialog Steps	Avg. Resp. Time[ms]	Avg. Proc. Time[ms]	Avg. CPU Time[ms]	Avg. DB Time[ms]
RPTIME00	1748	0	8	218520	216	163605	2258
RCATS_DISPLAY_ACTIVITIES	218	0	1100	198	0	113	20
ZHR_TIME_LEVELING	48	0	376	128	0	51	25
Y100R017	40	0	188	215	0	72	89
ZHRR_FMLA_REPORT	22	0	14	1622	0	183	1358
ZHRR_FUTURE_LEAVE_REQUEST	11	0	63	165	0	83	33
RPTQTA10	3	0	30	90	0	36	3

Service	Total Response Time[s]	% of Total Load	Dialog Steps	Avg. Resp. Time[ms]	Avg. Proc. Time[ms]	Avg. CPU Time[ms]	Avg. DB Time[ms]
MainMenu	1	0	8	175	0	89	6
ZHRR_MSS_EE_COMP_REPORT	1	0	4	198	0	60	59
MP200000	0	0	2	245	0	165	40

7.4 RFC Load by Initiating Action

The load in task type RFC is shown. In the workload monitor, this information is shown as 'Load from External Systems'. The calling system can be an application server of the system itself or any external system using the RFC interface. The 'Initial Action' is the calling program initiating the RFC. The total response time for each initial action is shown as an absolute value and as a percentage compared to the total RFC load considered in this table. The average times (per dialog step) are shown in milliseconds [ms].
Calls from external systems are shown if they account for at least 8h or 5% of the total RFC load. Local calls are shown if they account for at least 24h or 20% of the total RFC load.

Load Overview

Initial System	Load [s]	Load %
Local system P01	578.835	92,32
Sum of external systems	48.169	7,68
RFC load (sum of above)	627.004	100,00
RFC load in Performance Overview	305.860	48,78
Load of all task types in Performance Overview	1.837.678	293,09

Top 20 RFC Calls From External Systems - Average Times [ms]

Initial System	Initial Action	Total Resp. Time in s	% of RFC Load	Avg. Response Time	Avg. CPU Time	Avg. DB Time	Avg. Roll Wait Time
SMP	EFWK RESOURCE MANAGER	11.874	1,89	2.265,1	475,1	1.423,7	0,1
BWP	BIREQU_EAQXA5RYAO6G4V3CT3B2TMWCZ	5.449	0,87	1.369,2	29,3	11,5	0,1
BWP	BIREQU_8X83ZO6IXYAUQZKHWTNICG577	5.430	0,87	1.364,9	29,9	11,4	0,1
BWP	BIREQU_2M0YUR2M05JI9ENQRYLXXZW43	4.533	0,72	3.891,2	18,3	17,1	0,1
BWP	BIREQU_6ZA84QREIGO7F9CENBTWQF8ER	4.406	0,70	3.798,6	18,3	17,0	0,1
BWP	BI_PROCESS_LOADING	2.238	0,36	550,6	11,6	14,9	0,1

Top 20 RFC Calls From External Systems - Average Times [ms]

Initial System	Initial Action	Total Resp. Time in s	% of RFC Load	Avg. Response Time	Avg. CPU Time	Avg. DB Time	Avg. Roll Wait Time
SMX	SAP_MW_COCKPIT_COLLECTOR_001	1.656	0,26	520,2	2,3	0,2	0,0
BWP	FI_BWP_LAX_REAP_OUT	1.479	0,24	42.265,7	1.100,6	2.237,9	0,1
BWP	FI_BWP_SBD_REAP_OUT	1.255	0,20	35.863,8	456,6	909,9	0,1
BWP	FI_BWP_ORG_REAP_OUT	1.103	0,18	31.515,3	408,0	934,4	0,1
BWP	BIREQU_ATLCOWTUL1YLV0089LFY60Q4Z	1.091	0,17	384,0	34,5	9,5	0,1
BWP	BIREQU_1A20IQXZVTL8A92NYFIKVXTG3	1.035	0,16	364,8	34,0	11,2	0,1
BWP	FI_BWP_RVR_REAP_OUT	803	0,13	22.929,3	263,7	518,2	0,1
BWP	FI_BWP_SBN_REAP_OUT	663	0,11	18.947,7	54,6	98,3	0,1
SMX	SAP_CCMS_CPH_HRCOLL	344	0,05	1.841,4	15,6	0,1	0,0
BWP	BIREQU_8JL6N5BTEOI3VBYVCZDI7CB4J	268	0,04	8.117,1	82,4	6.896,6	0,0
SMX	SAP_CCMS_MONI_BATCH_DP	264	0,04	540,7	2,9	0,5	0,1
BWP	BIREQU_5RTQ7E57W9760N3GIJL14GWUR	256	0,04	10.223,2	80,8	9.182,6	0,0
SMP	SM:SELFDIAGNOSIS	244	0,04	2.174,9	847,3	1.275,5	0,0
SMP	/TMWFLOW/SCMA_TRORDER_IMPORT/000	148	0,02	2.182,4	315,2	207,8	0,1

Top 20 RFC Calls From Local System - Average Times [ms]

Initial System	Initial Action	Total Resp. Time in s	% of RFC Load	Avg. Response Time	Avg. CPU Time	Avg. DB Time	Avg. Roll Wait Time
P01	SAPMHTTP	440.346	70,23	801,8	420,8	305,3	0,1
P01	FI_P01_BOFA_ACKERR_IN	37.974	6,06	13.343,0	10,9	8,7	0,1
P01	FI_P01_ALL_PSCD_INBOUND	14.232	2,27	60.304,7	8.417,6	6.039,8	0,6
P01	BI_WRITE_PROT_TO_APPLLOG	13.293	2,12	6.593,6	10,3	577,0	0,1
P01	/BDL/TASK_PROCESSOR	8.273	1,32	26.264,6	1.627,2	6.371,5	0,1
P01	HR_P01_ALL_CALPERS_INBOUND	7.551	1,20	9.632,0	12,7	9,3	0,1
P01	FI_P01_ALL_FI_INBOUND	5.519	0,88	19.431,9	1.985,3	871,3	0,1
P01	FI_P01_RVR_GLAP_INTERFACE	5.039	0,80	78.735,0	3.251,1	4.300,3	0,1
P01	HR_P01_KERN_HEALTHCOMP_OUT_MDV	4.838	0,77	219.919,8	106,4	144,8	0,1
P01	SAP_COLLECTOR_PERFMON_SWNCCOLL	4.735	0,76	1.800,3	1.067,8	544,4	0,1

Top 20 RFC Calls From Local System - Average Times [ms]

Initial System	Initial Action	Total Resp. Time in s	% of RFC Load	Avg. Response Time	Avg. CPU Time	Avg. DB Time	Avg. Roll Wait Time
P01	FI_P01_BOFA_ACHCPS_OUT	4.182	0,67	19.452,8	11,9	12,3	0,1
P01	HR_P01_KERN_HEALTHCOMP_OUT_FSA	4.074	0,65	185.180,8	16,4	24,8	0,1
P01	SAP_CCMS_MONI_BATCH_DP	2.819	0,45	1.456,6	94,6	1.258,0	0,1
P01	FI_P01_RVR_GLAP_INTERFACE_MID	2.277	0,36	10.738,3	572,7	215,4	0,1
P01	FI_P01_056_VENTURA_DAILY_EXTRACT	1.991	0,32	49.768,6	12,8	13,7	0,1
P01	FI_P01_ALL_PSCD_PAY_STATUS	1.825	0,29	65.172,2	11,4	14,6	0,1
P01	SBWP	1.731	0,28	606,0	70,6	98,9	0,1
P01	ZFII_UPLOAD_ZGL031N_NEW	1.307	0,21	829,0	245,8	106,9	0,1
P01	HR_P01_ALL_TIME_EVAL_STEP1	1.115	0,18	30,8	5,6	6,9	0,0
P01	ZGL031N	1.085	0,17	883,7	270,2	122,7	0,0

8 Performance Overview P01

The performance of your system was analyzed with respect to average response time and total workload. No problems that could significantly impair system performance were detected.

Rating	Check
	Performance Evaluation

8.1 Performance Evaluation

The following table shows the average response times of task types running in dialog work processes. Data is from Solution Manager BW.

Dialog WP related task types

Task Type	Steps	Avg. Resp. Time[ms]	Avg. CPU Time[ms]	Avg. Wait Time[ms]	Avg. DB Time[ms]	Avg. GUI Time[ms]
HTTP(S)	505327	820	435	0	305	0
RFC	533087	574	71	0	71	3
Dialog	396568	508	159	0	190	150

The measured times are compared against reference times to provide a rating.
- If the task type is not listed in the "Task Type Overview" table in the "Workload Overview P01" section, the task type is not included in the evaluation.
- DIALOG, RFC, and HTTP(S) are considered to be related to the end user's dialog activity.
The table below indicates that performance problems are anticipated for tasks rated YELLOW or RED.

Ratings

Task	Steps	Application Server Performance	Database Server Performance
Dialog	396568		
RFC	533087		
HTTP(S)	505327		

Time Profile Rating

Rating	Task	Time	Steps	Avg. Response Time[ms]	Avg. CPU Time[ms]	Avg. Database Time[ms]
	Dialog	03-04	6	11.791	38	53
	Dialog	06-07	1.163	1.785	478	1.323
	Dialog	18-19	969	1.421	45	653
	Dialog	19-20	74	1.344	35	51
	HTTP(S)	00-01	868	2.563	1.578	1.168
	HTTP(S)	01-02	839	2.239	1.396	1.005
	HTTP(S)	02-03	917	2.085	1.304	926
	HTTP(S)	03-04	858	2.173	1.372	960
	HTTP(S)	04-05	1.493	1.526	963	651
	HTTP(S)	05-06	1.118	1.715	1.083	748
	HTTP(S)	18-19	1.070	2.306	1.294	948
	HTTP(S)	19-20	1.162	2.210	1.181	944

Time Profile Rating

Rating	Task	Time	Steps	Avg. Response Time[ms]	Avg. CPU Time[ms]	Avg. Database Time[ms]
	HTTP(S)	20-21	1.011	2.172	1.334	981
	HTTP(S)	21-22	902	2.341	1.477	1.026
	HTTP(S)	22-23	1.342	1.727	1.076	763
	HTTP(S)	23-24	821	2.513	1.582	1.112
	RFC	00-01	7.595	2.542	344	268

Reference Times

Task	Ref. for Avg. Response Time[ms] - Yellow Rating	Ref. for Avg. Response Time[ms] - Red Rating	Ref. for Avg. DB time[ms] - Yellow Rating	Ref. for Avg. DB time[ms] - Red Rating
Dialog	1.200	3.600	600	1.800
RFC	2.400	3.600	1.200	1.800
HTTP(S)	1.200	3.600	600	1.800

The chart below displays the time profile for the Dialog task type.

The chart below displays the time profile for the RFC task type.

The chart below displays the time profile for the HTTP(S) task type.

9 Trend Analysis for P01

The performance of your system was analyzed with respect to the trend of response times per system and per application. We found no major problems that could affect system performance.

Rating table

Rating	Check	Description
	History of response time of P01	The long-term or short-term analysis of the response time does not show a critical trend
	Application profile of P01	The long-term analysis of applications does not show a critical trend

In the following, we analyzed the trend within the following time frames:
Short term: From calendar week 50/2019 to 01/2020
Long term: From calendar week 28/2019 to 01/2020

9.1 History of Response Time of P01

We analyzed the growth of the average response time within this system. The long-term is %/year and short-term is %/year. This is not critical and no action is required.

The graphs below show the time profiles of the following task types: Dialog, HTTP(S), RFC.

In the following, we analyzed the trend within the following time frames:
Short term: From calendar week 50/2019 to 01/2020
Long term: From calendar week 28/2019 to 01/2020
The table below shows the long-term and short-term growth in average response time extrapolated to a year.

Growth Extrapolated To A Year

Task Type	Long Term Growth (%/year)	Trend	Rating	Short Term Growth (%/year)	Trend	Rating
ALL	-0,5			71,5		
Dialog	-9,2			86,8		
HTTP(S)	5,3			36,6		
RFC	3,4			-251,5		

The table below shows the long-term and short-term weekly average growth in the average response time.

Average Growth

Task Type	Long Term Growth (%/week)	Trend	Rating	Short Term Growth (%/week)	Trend	Rating
ALL	0,0			1,4		
Dialog	-0,2			1,7		
HTTP(S)	0,1			0,7		

Average Growth

Task Type	Long Term Growth (%/week)	Trend	Rating	Short Term Growth (%/week)	Trend	Rating
RFC	0,1			-4,8		

Rating Legend

	The trend is only for information
	The trend is not critical
	The trend is critical
	The trend is very critical

9.2 Application profile

In the following, we analyzed the trend within the following time frames:
Short term: From calendar week 50/2019 to 01/2020
Long term: From calendar week 28/2019 to 01/2020
The table below shows the time profile of the top applications by total workload during the analyzed period.

Top Applications by Response Time

Task Type	Application	Total Resp. Time in s	% of Total Load	Avg. Resp. Time in ms	Long Term Growth (%/year)	Short Term Growth (%/year)	Avg. DB Time in ms	Avg. CPU Time in ms
RFC	P01/aocdbs06sap_P01_00|SAPMHTTP	1487473	6	198	-0,2	-294,8	58	55
RFC	P01/aocdbs06sap_P01_00|FI_P01_BOFA_ACKERR_IN	921263	4	12780	3,8	310,8	9	11
RFC	P01/aocdbs06sap_P01_00|FI_P01_ALL_PSCD_INBOUND	456196	2	44278	-6,2	1.770,5	4869	6650
Dialog	SESSION_MANAGER	343533	1	389	-29,2	-449,6	12	32
Dialog	FS10N	338688	1	477	17,4	540,4	159	202
RFC	P01/aocr3s06a_P01_00|BI_WRITE_PROT_TO_APPLLOG	331464	1	6567	0,1	2,4	547	10
Dialog	ZGL001	331385	1	3122	-19,9	787,2	2195	437
RFC	P01/aocr3s06c_P01_00|HR_P01_ALL_CALPERS_INBOUND	291103	1	14657	-12,8	-659,9	10	11
RFC	SMP/aocsls06a_SMP_00|EFWK RESOURCE MANAGER	254161	1	1899	21,3	345,5	989	495
Dialog	ZFI_BANK_RECON	249155	1	846	-37,8	60,0	522	153

Top Applications by Response Time

Task Type	Application	Total Resp. Time in s	% of Total Load	Avg. Resp. Time in ms	Long Term Growth (%/year)	Short Term Growth (%/year)	Avg. DB Time in ms	Avg. CPU Time in ms
Dialog	ME23N	245555	1	324	5,2	355,6	38	60
RFC	P01/aocdbs06sap_P01_00|FI_P01_ALL_FI_INBOUND	219238	1	38612	9,3	-564,6	14780	7701
Dialog	FBV0	216603	1	396	-19,2	-144,5	47	117
Dialog	ZFI_DAILY_CASH	202509	1	1182	-5,3	271,0	867	233
Dialog	ZAP006	198037	1	720	4,0	-239,0	370	106
RFC	P01/aocr3s06a_P01_00|/BDL/TASK_PROCESSOR	190355	1	23015	27,7	-80,3	5901	1030
Dialog	FBL1N	162545	1	429	-30,4	275,3	253	123
Dialog	ME53N	162238	1	660	28,5	58,4	83	106
Dialog	PUOC_10	152912	1	626	-33,9	-369,4	197	248
Dialog	FBL3N	152450	1	450	-2,1	-570,0	221	109

The graph below shows how the average response time of the top five applications varies over time. Data is normalized to 100% equaling the average value.

10 SAP System Operating P01

The daily operation of your system was analyzed. We detected some problems that may impair system operation and stability.

10.1 Availability based on Collector Protocols

A value of 100% means that the collector was available all day. "Available" in the context of this report means that at least one SAP instance was running. If the SAP collector was not running correctly, the values in the table and graphics may be incorrect.
To check these logs, call transaction ST03N (expert mode) and choose "Collector and Performance DB -> Performance Monitor Collector -> Log".
This check is based on the logs for job COLLECTOR_FOR_PERFORMANCEMONITOR that runs every hour.
The job does NOT check availability; it carries out only general system tasks such as collecting and aggregating SAP performance data for all servers/instances. The log does not contain any direct information about availability; it contains only information about the status of the hourly statistical data collection.
As of SAP Basis 6.40, system availability information is available in the CCMS (Computing Center Management System) of an SAP System, in Service Level Reporting of SAP Solution Manager. This function is provided by the relevant Solution Manager Support Packages as an advanced development. For more information, refer to SAP Note 944496, which also lists the prerequisites that must be fulfilled before implementation can take place."

10.2 Update Errors

In a system running under normal conditions, only a small number of update errors should occur. To set the rating for this check, the number of active users is also taken into consideration.
We did not detect any problems.

10.3 Table Reorganization

The largest tables and/or rapidly growing tables of system P01 were checked. No standard SAP recommendations for the applicable data volume management were found.

10.4 Program Errors (ABAP Dumps)

71 ABAP dumps have been recorded in your system in the period 30.12.2019 to 03.01.2020.
ABAP dumps are generally deleted after 7 days by default. To view the ABAP dumps in your system, call transaction ST22 and choose Selection. Then select a timeframe.

Date	Number of Dumps
30.12.2019	16
31.12.2019	27
01.01.2020	0

Date	Number of Dumps
02.01.2020	16
03.01.2020	12

Name of Runtime Error	Dumps	Server (e.g.)	Date (e.g.)	Time (e.g.)
TABLE_INVALID_INDEX	2	aocr3s06c_P01_00	30.12.2019	14:47:10
MESSAGE_TYPE_X	14	aocdbs06sap_P01_00	31.12.2019	12:55:40
TIME_OUT	1	aocdbs06sap_P01_00	31.12.2019	19:00:17
SAPSQL_IN_ITAB_ILLEGAL_SIGN	2	aocr3s06c_P01_00	02.01.2020	09:22:01
CONVT_NO_NUMBER	1	aocr3s06c_P01_00	02.01.2020	12:27:48
CALL_FUNCTION_SEND_ERROR	1	aocdbs06sap_P01_00	03.01.2020	15:03:49
RAISE_EXCEPTION	50	aocdbs06sap_P01_00	03.01.2020	15:50:38

It is important that you monitor ABAP dumps using transaction ST22 on a regular basis. If ABAP dumps occur, you should determine the cause as soon as possible.
Based on our analysis, we found several ABAP dumps that need your attention. Evaluate and resolve the above dumps. If you cannot find a solution, send a customer message to SAP to request support.

11 Security

Critical security issues were found in your system.
See the information in the following sections.

Rating	Check
	System Recommendations (ABAP)
	Age of Support Packages
	Default Passwords of Standard Users
	Control of the Automatic Login User SAP*
	Protection of Passwords in Database Connections
	ABAP Password Policy
	Gateway and Message Server Security
	Users with Critical Authorizations

11.1 ABAP Stack of P01

11.1.1 Age of Support Packages

The following table shows the current status, the final assembly date at SAP, and the implementation date of selected key software components that are installed in the system.

Software Component	Release	Support Package	Final assembly date	Age of final assembly date in months	Support Package import date	Age of SP import date in months
SAP_ABA	740	22	28.06.2019	6	13.12.2019	1
SAP_APPL	617	18	05.03.2019	10	13.12.2019	1
SAP_BASIS	740	22	28.06.2019	6	13.12.2019	1
SAP_GWFND	740	22	28.06.2019	6	13.12.2019	1

Security fixes for SAP NetWeaver-based products are delivered with the support packages of these products. For all SAP Notes with high or very high priority, SAP provides this service for

the support packages from the last 24 months (refer to https://support.sap.com/securitynotes for further details).

> **Recommendation:** Run a support package update at least once a year (refer to https://support.sap.com/en/my-support/software-downloads/support-package-stacks.html for further details) and evaluate SAP Security Notes once a month in relation to the monthly SAP Security Patch Day.

11.1.2 ABAP Password Policy

If password login is allowed for specific instances only, the password policy is checked only for these instances.

11.1.3 Users with Critical Authorizations

For more information about the following check results, see SAP Note 863362.

> **Recommendation:** Depending on your environment, review your authorization concept and use the Profile Generator (transaction PFCG) to correct roles and authorizations. You can use the User Information System (transaction SUIM) to check the results. For each check, you can review the roles or profiles that include the authorization objects listed in the corresponding section.

11.1.3.1 Super User Accounts

Users with authorization profile SAP_ALL have full access to the system. There should be a minimum of such users. The number of users with this authorization profile is stated for each client.

Client	No. of Users Having This Authorization	No. of Valid Users	Rating
000	14	20	
001	3	6	
066	3	4	
100	9	6.774	

Authorization profile:
SAP_ALL

11.1.3.2 Users Authorized to Change or Display all Tables

Unauthorized access to sensitive data is possible if too many users have this authorization. The specified number of users for each client have the checked authorization.

Client	No. of Users Having This Authorization	No. of Valid Users	Rating
001	3	6	
066	3	4	
100	90	6.774	

Authorization objects:
Object 1: S_TCODE with TCD=SE16, TCD=SE16N, TCD=SE17, TCD=SM30, or TCD=SM31
Object 2: S_TABU_DIS with ACTVT = 03 or 02 and DICBERCLS = *

12 Software Change and Transport Management of P01

No critical software change management issues were found in your system.

12.1 SAP Netweaver Application Server ABAP of P01

Rating	Check Performed
	Number of Changes
	Emergency Changes

Rating	Check Performed
	Failed Changes

12.1.1 Number of Changes

Performing changes is an important cost driver for the IT department. It is only acceptable to make a large number of software and configuration changes in exceptional situations, such as during go-live for an implementation project.
The following diagram shows the number of changes per day that were performed in the SAP system in the last week. The data is extracted from the Change Diagnostics application in SAP Solution Manager. The changes are grouped into "Software Maintenance" (such as support or enhancement packages), "Parameter" (instance, database, operating system), "Transport Requests", "SAP Notes", and "Miscellaneous" (such as security settings).

Date	Security	Software Maintenance	Parameter	Transport Requests	SAP Notes	Miscellaneous
30.12.2019	3	0	0	5	0	0
31.12.2019	0	0	0	12	9	0
02.01.2020	7	0	0	4	0	0
03.01.2020	0	0	0	1	0	12

12.1.2 Number of Transport Requests

The following diagram contains information about the number of transport requests per day that were imported into the SAP system in the last week.

Date	Workbench and Relocation Requests	Customizing Requests	Transport of Copies
30.12.2019	2	3	0
31.12.2019	4	8	0
02.01.2020	1	3	0
03.01.2020	0	1	0

12.1.3 Number of Transported Objects

The following diagram contains information about the number of objects per day that was imported into the SAP system in the last week.

Date	Objects in Workbench and Relocation Requests	Objects in Customizing Requests	Objects in Transport of Copies
30.12.2019	5	16	0
31.12.2019	291	12	0
02.01.2020	1	8	0
03.01.2020	0	5	0

12.1.4 Emergency Changes

We analyzed the number of emergency changes in system P01 in the last week.

Rating	Item	Value	Explanation
	Transport requests created in production	0	Number of transport requests; created or released in production.
	Total number of transport requests	22	Total number of transport requests in production.

12.1.5 Failed Changes

In this check, we analyzed the number of failed changes in system P01 during the last week.

Rating	Item	Value	Explanation
	Transport requests with import errors	0	Number of transport requests with import errors that were not resolved within one hour.
	Total number of transport requests	22	Total number of transport requests that were imported or released in production within the last week.

13 Database Performance

We have detected some problems with the settings of the database. These settings may affect performance.

Rating	Check
	Missing Indexes
	Database Key Performance Indicators
	Setup of the Temporary Tablespace
	Database Parameters
	Optimizer Statistics

13.1 Load per User

The following table provides an overview of the load caused by different database users. The data in the table is based on samples of session activity in the system over the past seven days.

Load per User

User Name	Load (%)
%GDPR%	18
SAPCOCKPIT	0
SAPSR3	82

13.2 I/O performance reported by Oracle statistics

Important I/O Performance Counters

Performance-Indicators	Description	Observed-Value	Reference-Value
db file sequential read	Indicates the average time in ms a session is waiting for a read request from disk to complete.	1	<=15
log file sync	Indicates the average time in ms a session is waiting for a Commit (or a Rollback).	6	<=15

Oracle stores wait situations that have occurred since the last database startup in the Dynamic Performance View V$SYSTEM_EVENT. The I/O related events that have the most influence on the performance of your system are listed in the table above, together with threshold values derived from our experience.

13.3 Performance History

This section shows where DB time has been spent in the past. This helps to compare DB load at different times and is a basis for target-oriented tuning. By having information on the most time-consuming areas in the database, these areas can be tuned carefully to maximize DB time savings. Depending on where DB time is mainly spent, different tuning activities will need to be performed. Further information on wait events and possible follow-up actions for specific wait events can be found in SAP Note 619188.

DB Time

The following diagram shows where DB time was spent during the past 7 days.

The following diagram shows the distribution of the DB time per hour for the past 7 days.

IO-related wait events usually take up the most DB time. Details for those wait events are shown in the following diagrams.
A higher than usual total time for a wait event can be due to more waits, an increase in the average wait time, or both. To reduce the absolute time spent on a wait event, either the number of waits or the average time per wait needs to be reduced. The direction to go can be found by correlating the total time spent for the event per hour with the averages and waits.

Top Segments by Different Criteria

A significant part of the DB time is usually spent reading data from the data files (db file sequential read, db file scattered read) and processing data that already exists in the memory (CPU). The top objects with respect to physical and logical reads are therefore listed in the following diagrams. Statements on these objects usually offer the greatest potential for reducing IO or CPU time. CPU time is also spent on activities other than data access in the main memory (SAP Note 712624), but data access is usually the dominant part.

Further segment statistics are listed in the following diagrams for information purposes. They do not need to be directly related to a wait event, but can indicate why specific wait events are having a significant impact.

> **Example:** If considerable DB time is spent on "enq: TX – row lock contention", this can have two reasons: a large number of waits or long-running waits. Statements on segments with a large number of waits are a potential root cause. The segments with a large number of waits are therefore listed here. Segments with few, but long-running waits can also be a root cause but there are no segment statistics for the duration of the waits. Segments with the most waits can potentially, but do not have to be the root cause.

Database KPIs

The following section lists performance indicators, for information purposes. When the database time history is being analyzed, these performance indicators can help to pinpoint potential reasons for an increase in the database time. In other words, they support the time-driven analysis.

13.4 Database Parameters for P01

This section lists parameter alterations to be made on the Oracle database. The recommendations are based mainly on SAP Note 1888485.
Parameters that can have multiple values such as "_fix_control" or "event" can appear several times in the tables below. Set these parameters in one step, as described in SAP Note 1289199; SAP Note 1888485 also contains links to information on different parameters.

13.4.1 Database Parameters

The following parameters are currently not set. They need to be added with the recommended value.

Parameters to be added

Parameter	Recommended Value
_in_memory_undo	FALSE
db_create_file_dest	+DATA
db_create_online_log_dest_1	+DATA
db_create_online_log_dest_2	+RECO

The following parameters currently have different values than recommended. They need to be changed to the recommended value.

Parameters to be changed

Parameter	Current Value	Recommended Value
open_cursors	25000	between 800 and 2000

The following parameters are set although there is no SAP recommendation given for them. Therefore, they should be deleted if there is no special reason to keep them set explicitly.

Parameters likely to be deleted after checking

Parameter	Current Value
_ktb_debug_flags	8
_max_spacebg_slaves	10
_optimizer_batch_table_access_by_rowid	FALSE

Parameters likely to be deleted after checking

Parameter	Current Value
db_recovery_file_dest_size	31457280000
optimizer_adaptive_features	FALSE
optimizer_capture_sql_plan_baselines	FALSE
spfile	[redacted]

The following parameters need to be checked manually. The prerequisites for if and how they need to be set cannot be checked automatically, or the parameters are not recommended in the Note but set in the system. They are listed here for documentation purposes and further manual checking. The "Set" column shows if the parameter is currently set in the parameter file.

Parameters to be checked manually

Parameter	Current Value	Set
_advanced_index_compression_options	16	Yes
_enable_numa_support	Null	No
_fix_control (23738304)	23738304:ON	Yes
_px_numa_support_enabled	Null	No
audit_sys_operations	TRUE	No
control_files	[redacted]	Yes
control_management_pack_access	DIAGNOSTIC+TUNING	No
db_cache_size	24494735360	Yes
enable_pluggable_database	FALSE	No
heat_map	ON	Yes
inmemory_clause_default	Null	No
inmemory_max_populate_servers	0	No
inmemory_size	0	No
local_listener	Null	No
log_buffer	62119936	No
os_authent_prefix	ops$	No
os_roles	FALSE	No
parallel_max_servers	40	Yes
pga_aggregate_target	12369505812	Yes
processes	800	Yes
remote_login_passwordfile	EXCLUSIVE	No
sessions	1632	Yes
shared_pool_size	6039797760	Yes
sql92_security	FALSE	No
undo_retention	43200	Yes
use_large_pages	TRUE	No

13.5 System Performance

13.5.1 DB Time History

13.5.1.1 Instance: Total

The graph below shows the components of the database time history.

13.5.2 Database Load analysis ST04 Data

13.5.2.1 ST04 Daily Data Total

Number of user calls per day.

Daily average of buffer quality.

Number of logical reads per day.

Number of physical reads per day.

Number of full table scans per day.

Daily average of reads per user call.

14 Database Administration

In the checks performed, no problems regarding the administration of your database were found.

Rating	Check
	Space Statistics

Rating	Check
	Freespace in Tablespaces
	brconnect -f check (sapdba -check) schedule
	Multibyte Character Sets

14.1 Mini Checks

This section contains a list of checks executed on the system that do not return the expected value. Due to a number of factors, we cannot rate this check automatically.

> **Recommendation:** For more information about each mini-check, their expected values, potential reasons why the system value is different, and solutions, see SAP Note 1615380.

Name	Value
DDIC statistics creation	2016-04-23 00:32:09
Files with AUTOEXTEND increment > 100 M	5
Fixed objects statistics creation	2016-04-23 00:35:40
Indexes without statistics	9
Log switches within less than 1 minute	8
Redo log mirroring not by Oracle	Yes
Snapshot Retention (days)	8
Tables without statistics	8

14.2 Space Statistics

14.2.1 Database Growth

The following figure shows the development of the size of your database in GB.

An overview of the freespace development of your database in GB is shown here.

The following table shows you the current size and the monthly growth of your database in GB.

Date	Current Size in GB	Monthly Growth in GB
01.02.2019	962,02	-153,63
01.03.2019	972,67	10,65
01.04.2019	982,74	10,07
01.05.2019	999,07	16,33
01.06.2019	1.013,03	13,96
01.07.2019	1.026,85	13,82
01.08.2019	1.046,25	19,40
01.09.2019	1.044,97	-1,28
01.10.2019	1.061,49	16,52
01.11.2019	1.076,16	14,67
01.12.2019	1.085,09	8,93

14.2.2 Tablespace Freespace overview

The following table shows the overview of free space for table space.

Tablespace Freespace overview

Tablespace	Max Free Space in KB	Total Free Space in KB	Number of Fragments	Space critical objects	Extent critical objects
PSAPSR3	27907.00	379999.26	14408	0	0
PSAPSR3740	9000.00	26543.94	46	0	0
PSAPSR3USR	2045.00	2067.50	2	0	0
PSAPUNDO	4800.00	43573.09	376	0	0
SYSAUX	1553.00	1828.98	387	0	0
SYSTEM	2369.00	2541.47	121	0	0
TF10	32193.11	32269.24	3	0	0
PSAPTEMP	0.00	0.00	0	0	0

14.2.3 Top 10 Tables

The following table shows you the top 10 tables based on total size.

Table_name	Total size in GB	Table size in GB	Index size in GB	Lob size in GB	Percent of total Size	Cumulated percentage
SOFFCONT1	234.09	1.17	0.91	232.01	21.32	21.32
ZFIT_CHK_PDF	120.49	116.25	4.24	0.00	10.98	32.30
PCL2	90.56	89.72	0.84	0.00	8.25	40.55
ZZSPLITA	42.16	12.51	29.65	0.00	3.84	44.39
RFBLG	40.30	39.40	0.90	0.00	3.67	48.06
GMIA	35.75	13.02	22.74	0.00	3.26	51.32
BALDAT	28.49	23.68	4.81	0.00	2.60	53.91
SRT_MONILOG_DATA	22.45	13.48	8.97	0.00	2.04	55.96
REPOLOAD	21.07	0.68	0.03	20.36	1.92	57.88
PCL4	20.05	17.75	2.31	0.00	1.83	59.70

N.B. If a graph line drops to zero, there is no data available for that date.

14.2.4 Top 10 Segments

The following table shows you the top 10 segments based on size.

Top 10 Segments based on size

Segment name	Segment type	Tablespace	Size inGB	Extents	Table	Column
SYS_LOB0000104146C00007$$	LOBSEGMENT	PSAPSR3	230.37	7524	SOFFCONT1	CLUSTD
ZFIT_CHK_PDF	TABLE	PSAPSR3	116.25	3829		
PCL2	TABLE	PSAPSR3	89.26	2195		
RFBLG	TABLE	PSAPSR3	39.28	868		
BALDAT	TABLE	PSAPSR3	22.97	747		
PCL4	TABLE	PSAPSR3	17.53	508		
SRT_MONILOG_DATA	TABLE	PSAPSR3	13.48	412		
GMIA	TABLE	PSAPSR3	13.02	404		
ZZSPLITA	TABLE	PSAPSR3	12.51	395		
SYS_LOB0000967709C00014$$	LOBSEGMENT	PSAPSR3740X	10.74	303		

The following table shows you the top 10 segments based on extents.

Top 10 Segments based on extents

Segment name	Segment type	Tablespace	Size inGB	Extents	Table	Column
SYS_LOB0000104146C00007$$	LOBSEGMENT	PSAPSR3	230.37	7524	SOFFCONT1	CLUSTD
ZFIT_CHK_PDF	TABLE	PSAPSR3	116.25	3829		
PCL2	TABLE	PSAPSR3	89.26	2195		
ZFIT_CHK_PDF~0	INDEX	PSAPSR3	4.24	1048		
RFBLG	TABLE	PSAPSR3	39.28	868		
BALDAT	TABLE	PSAPSR3	22.97	747		
TST03	TABLE	PSAPSR3	8.87	632		
RFBLG~0	INDEX	PSAPSR3	0.90	623		
PCL4	TABLE	PSAPSR3	17.53	508		
PCL2~ZLH	INDEX	PSAPSR3	0.50	504		

The following table shows you the top 10 segments based on monthly growth rate.

Top 10 Segments based on monthly growth rate

Segment name	Segment type	Tablespace	Size inGB	Extents	Table	Column
SYS_LOB0001089409C00014$$	LOBSEGMENT	PSAPSR3740	10.57	293	REPOLOAD	QDATA
SYS_LOB0001089409C00013$$	LOBSEGMENT	PSAPSR3740	9.80	279	REPOLOAD	LDATA
SYS_LOB0000104146C00007$$	LOBSEGMENT	PSAPSR3	231.76	7557	SOFFCONT1	CLUSTD
SYS_LOB0001067456C00034$$	LOBSEGMENT	PSAPSR3740	5.38	206	REPOSRC	DATA
SYS_LOB0001075758C00005$$	LOBSEGMENT	PSAPSR3740	3.97	185	DYNPSOURCE	FIELDINFO
SYS_LOB0001073985C00004$$	LOBSEGMENT	PSAPSR3	1.88	151	DDNTF	FIELDS
SYS_LOB0001082876C00008$$	LOBSEGMENT	PSAPSR3740	1.88	150	ENHOBJCONTRACT	CONTRACTDATA
SYS_LOB0001079080C00004$$	LOBSEGMENT	PSAPSR3740	1.80	152	DYNPLOAD	DATA
BALDAT	TABLE	PSAPSR3	23.55	779		
PCL2	TABLE	PSAPSR3	89.66	2206		

15 Data Volume Management (DVM)

We found significant potential for data volume reduction on your system P01.

The **Deletion and Data Archiving** section below highlights database objects that show potential for data reduction by data archiving or deletion. These database objects are proposed as a starting point for establishing a well-defined Data Volume Management process.
Alerts are created based on estimates of saving potential, starting with "easy-to-implement" objects that can be implemented by the IT department, without intensive consultations with the business owners. The entire system size can often be reduced considerably without touching upon business-data-related archiving concepts.
Keeping data volumes at the required minimum reduces the TCO, reduces maintenance effort, and prevents degradation of system performance.

For more information about Data Volume Management, see sap.service.com/dvm or join the collaboration platform for DVM: "Enterprise Support Value Map". Either register using the following menu path: SAP Service Market Place SAP Support Portal > alias ESACADEMY support.sap.com/esacademy > Value Maps > Join Now (register for DVM) or contact your local SAP Enterprise Support Advisory Center.
The ES Academy also offers Expert-Guided Implementation (EGI) training on DVM, which is helpful when using the DVM Workcenter and Guided Self-Service in SAP Solution Manager.

15.1 Deletion and Data Archiving - Summary

> **Recommendation:** Execute a DVM Guided Self Service report that includes each of the objects listed below to get details of the applicable DVM methodology per object.

In this section, information and data regarding DVM is displayed. The data was collected on for client 100 of your system P01.

Reduction Potential

Rating	Object	Rank	Complexity	Appl. Area	Document Type	Doc. Type Size [GB]	Saving Pot. [%]	Saving Pot. [GB]	Trend*
	BALDAT	16	Low	BC	Application Logs	11,13	58,62	6,52	
	EDI40	19	Low	BC	Intermediate Documents	5,99	85,16	5,10	
	CDCLS	20	Low	BC	Change Documents	7,04	88,04	6,20	
	E071K	33	Low	BC	Change and Transport	6,02	96,54	5,81	

Reduction Potential

Rating	Object	Rank	Complexity	Appl. Area	Document Type	Doc. Type Size [GB]	Saving Pot. [%]	Saving Pot. [GB]	Trend*
					System Records				
	TST03	46	Low	BC	TemSe Data	2,15	79,50	1,71	
	Sum of Document Types					32,33			
	Sum of Saving Potential							25,34	

Related document types are 4.07 % of total database size(794.22 GB).
Saving potential is 3.19 % of total database size(794.22 GB).

Five objects were analyzed regarding potential for data reduction. These objects are proposed as a starting point for establishing a well-defined Data Volume Management process. The overview table below displays these objects together with their potential for data reduction. For further details, see the "Proposed Objects" section.

The direction of the trend arrow reflects the growth/reduction of the table in relation to the previous month's measurement.
Therefore, an arrow pointing vertically upward indicates a high growth rate and an arrow pointing vertically downward reflects a
reduction in growth (in both cases, the deviation exceeds 10% of the total size of the table).
An arrow that is at an angle to the top or bottom is related to a moderate growth/reduction rate (lower than 10% but higher than 3% of the total size of the table).
A horizontal arrow indicates no change or only a slight change in size (less than 3% of the total size of the table).
A GRAY icon indicates that trend calculation was not possible.

* In general, trend evaluation is performed by comparing table size on a monthly basis. Since it seems that scheduling of the jobs creating ST14 datasets is not set up for your system P01 at a monthly interval, extrapolation was used here for trend calculation.

The saving potential [%] is determined based on the header table of the document type. The header table is not necessarily the one listed in the "Object" column.

The following rules apply for the saving potential:
- For Basis-related and cross-application-related objects, data older than 6 months is considered to have saving potential.
- For application-related objects, data older than 24 months is considered to have saving potential.

The rating for each object is calculated as follows:
- A YELLOW rating indicates saving potential of more than 1 GB for an object, representing at least 0.1% of the total database size.
- A GREEN rating indicates saving potential that is less than 1 GB, or the saving potential for this object represents less than 0.1% of the total database size.
- An UNDEFINED rating indicates that the saving potential could not be calculated for the object

in question.

You can create a DVM self-service from SAP Solution Manager via the Data Volume Management Workcenter by calling the Service Documents application. Alternatively, you can do this via the SAP Engagement and Service Delivery Workcenter in your SAP Solution Manager. Before executing the self-service, you can check whether SAP has released any DVM information regarding the listed objects by using the content browser in the Data Volume Management Workcenter.

You can find information about which actions to take to reduce the data volume either in the Data Management Guide or in SAP Note 2388483: How To: Data Management for Technical Tables.
You can access the Data Management Guide in your SAP Solution Manager system: Data Volume Management in wiki.scn.sap.com > "Data Management Guide" in the "Useful Links" section.

15.1.1 Date of Analysis

The following table shows the date of the current analysis and the date of the previous analysis for your system P01. You can also see which client of your system P01 was analyzed.

Analysis	Analysis Date	Analyzed Client
Current Analysis	02.01.2020	100
Previous Analysis	26.12.2019	100

15.1.2 Distribution of Size by Application Area

The following pie chart shows how data from the top 30 tables is distributed across the top 10 application areas. From here, you can easily identify the applications that cause the largest volume of data in your system. You can focus your attention on dealing with these largest applications.

Note:
Application areas that fall outside the top 10 are grouped together and shown collectively in one section of the pie chart.

Application Area	Size [GB]	Portion [%]
BC	329,86	41,53
FI	162,85	20,50
OTHER	120,26	15,14
PY	108,75	13,69

Application Area	Size [GB]	Portion [%]
PSM	28,79	3,62
CO	19,66	2,47
CA	6,30	0,79
PT	5,24	0,66
MM	4,48	0,56
FIN	1,95	0,25
Sum of smaller Application Areas	6,08	0,77
Total Size of all Application Areas	794,22	100,00

15.1.3 Top 30 Tables (including Indexes) and Document Type Assignment

The following table lists the top 30 tables in your system P01.

The "Size [GB]" column indicates the total size of a table and its associated indexes.
Based on SAP experience, the "Complexity" indicates how much effort might be needed to reduce the data volume for a particular object. Low complexity indicates a comparatively low effort for data volume reduction. In contrast, high complexity indicates that greater effort is required to reduce the data volume.
The "Trend" column specifies the trend of the table size compared with the last month, if available. If technically possible, the corresponding application areas and document types are also shown.

Note:
The "Document Type" is used by SAP during the DVM Strategy session to perform a detailed analysis of the tables. This provides a deeper level of granularity than the analysis by application area. The table description is collected by our tools (that is, transaction ST14) depending on the logon language (default is English). 'N/A' could indicate that the description is not available in the relevant language.

Table Name	Size [GB]	Complexity	Appl. Area	Document Type	Trend*
SOFFCONT1	126,26	Medium	BC	Business Workplace / SAPOffice Data	
ZFIT_CHK_PDF	102,50	Medium	OTHER	OTHERS	
PCL2	73,34	High	PY	Payroll Results	

Table Name	Size [GB]	Complexity	Appl. Area	Document Type	Trend*
RFBLG	33,34	High	FI	FI Classic: Accounting Documents	
ZZSPLITA	32,18	Medium	FI	FI Special Ledger	
GMIA	26,17	Medium	PSM	Grantee Management	
SRT_MONILOG_DATA	22,45	Medium	BC	WebServices ABAP Monitoring	
PCL4	16,84	High	PY	HR Administration Revision	
COEP	14,46	Medium	CO	Controlling Documents	
FMIA	14,16	Medium	FI	Funds Management	
FMIFIIT	11,77	Medium	FI	Funds Mgmt. Documents	
GVD_LATCHCHILDS	10,49	Low	BC	BC Oracle Monitoring	
BSIS	10,15	High	FI	Secondary Index for GL Accounts	
D010TAB	9,53	Medium	BC	Data Dictionary Objects	
REGUC	9,39	Medium	FI	Financial Accounting	
BALDAT	8,67	Low	BC	Application Logs	
ZTFI_ZGL031N_DAT	6,83	Medium	OTHER	OTHERS	
PPOIX	6,71	Medium	PY	Payroll - Index	

Table Name	Size [GB]	Complexity	Appl. Area	Document Type	Trend*
EDI40	5,99	Low	BC	Intermediate Documents	
CDCLS	5,76	Low	BC	Change Documents	
BKPF	5,25	High	FI	FI Classic: Accounting Documents	
REPOSRC	4,89	High	BC	Report Objects	
SWWCNTP0	4,84	Medium	BC	Work Items	
D010INC	4,57	Medium	BC	Data Dictionary Objects	
SWFREVTLOG	4,42	Low	BC	Workflow Event Log	
DPAYP	4,33	Low	FI	FI-CA Payment Data	
REPOSRC~	4,19	Medium	BC	ABAP Runtime Environment	
GLIDXA	3,79	Medium	FI	Special Ledger Document	
DD03L	3,73	Medium	BC	Data Dictionary Objects	
SWWLOGHIST	3,61	Medium	BC	Work Items	
Top30 tables are 74.16 % of total database size (794.22 GB)	589,00				

* In general, trend evaluation is performed by comparing table size on a monthly basis. Since it seems that scheduling of the jobs creating ST14 datasets is not set up for your system P01 at a monthly interval, extrapolation was used here for trend calculation.

Note:
The direction of the trend arrow reflects the growth/reduction of the table in relation to the previous month's measurement. Therefore, an arrow pointing vertically upward indicates a high growth rate and an arrow pointing vertically downward reflects a reduction in growth (in both cases, the deviation exceeds 10% of the total size of the table).
An arrow that is at an angle to the top or bottom is related to a moderate growth/reduction rate (lower than 10% but higher than 3% of the total size of the table).

A horizontal arrow indicates no change or only a slight change in size (less than 3% of the total size of the table).
A GRAY icon indicates that trend calculation was not possible.

15.1.4 Proposed Objects

15.1.4.1 Proposed Objects: Age of Records Distribution

The following chart shows the yearly distribution of data in your system P01 for the "Proposed Objects" mentioned above.

15.1.4.2 Proposed Objects: Saving Potential

In the table below, the saving potential for the "Proposed Objects" is displayed based on the age of records.

Rating	Object	Document Type	2020	2019	2018	< 2018	Saving Pot. [%]	Saving Pot. [GB]
	BALDAT	Application Logs	12.020	3.136.388	1.081.704	3.361.277	58,62	6,52
	EDI40	Intermediate Documents	1.035	261.006	218.179	1.279.405	85,16	5,10
	CDCLS	Change Documents	5.551	2.269.886	2.120.582	14.592.317	88,04	6,20
	E071K	Change and Transport System Records	0	872	1.092	23.258	96,54	5,81
	TST03	TemSe Data	23.384	22.275	20.900	65.500	79,50	1,71

Note:
The records in the individual year columns and the saving potential [%] are determined based on the header table of the document type. The header table is not necessarily the one listed in the "Object" column. Consequently, the figures do not necessarily reflect the number of entries in the table listed in the "Object" column. The saving potential [GB] is calculated by applying the percentage savings to all the tables of the document type. For more details about the rating of the saving potential, see the "Summary" section.
This section only provides information about saving potential. For a more detailed analysis, execute a DVM Guided Self Service report that includes each of the objects listed above to get details of the applicable DVM methodology per object. For more details about this, again please see the "Summary" section.

15.1.5 Additional Information

15.1.5.1 Archiving Statistic Information

The following table shows the overall archiving situation in client 100 of your system P01. It lists all archiving objects that have been executed with additional information about the number of archived and deleted objects and the size of the archive files by status ('Archived and Deleted' or 'Archived only').

You can use this information to determine whether the overall archiving strategy is working as intended or whether additional measures are required. You can also determine the size of the archive files waiting to be deleted. The related archive files may have already been moved to the content server or file system.

Archiving Object	Compl. Arch. Runs	First Run	Last Run	No. of Arch. and Del. Objects	Size of Arch. and Del. File [MB]	Arch. Objects awaiting Deletion	Size of Arch. File awaiting Deletion [MB]
CO_ALLO_ST	1	31.03.2006	31.03.2006	28560	784.35	0	0.00
FM_DOC_CO	2	14.06.2006	14.06.2006	3353	49.99	0	0.00

Note:
If there are archiving objects awaiting deletion, check whether this works as designed and whether the deletion is expected to take place within the next few days. Archive files for which the delete jobs have not yet been scheduled may cause data to be archived redundantly.
If there are archiving objects for which the most recent archiving run is older than one year, check whether this works as designed or whether archiving has been discontinued unintentionally.

15.1.5.2 Overview of available DVM Service Documents

In the table below, you can find a list of available DVM service documents for your system P01. These documents relate to Guided Self Services (GSS) performed on system P01. The documents can be accessed via the link in the table below or through the DVM Workcenter using the "Service Documents" application.

Session Rating	Service Document Creation Date	Link to Service Document	Service Type	Service Session Number
			No Service Sessions found!	

Note:
A RED or YELLOW icon for the session rating indicates that DVM recommendations are provided in this document and action is required.
A GREEN icon indicates that no immediate action is required.
A GRAY icon indicates that no session rating was determined.

16 SAP NetWeaver Gateway

The gateway configuration and administration of your SAP ERP ENHANCE PACKAGE system P01 have been analyzed and areas that require your attention have been highlighted. To ensure system stability, you should implement the recommendations in the following section.

Rating	Check
	MetaData Cache Activation
	Logging Configuration
	NetWeaver Gateway Error Logs
	Cache Cleanup Job

16.1 Gateway Configuration

16.1.1 MetaData Cache Activation

Cache	Activated
Metadata Cache	Yes

The metadata cache is activated in your system as recommended.

16.1.2 Logging Configuration

Logging Use Case	Log Level	Recommended Log Level
Regular processing	[redacted]	[redacted]

The gateway logging configuration is set correctly on your system.

16.2 Gateway Administration

16.2.1 Gateway Error Logs

Number Of Errors in last 7 Days

Date	Number of Errors
04.01.2020	33
03.01.2020	269
02.01.2020	133
01.01.2020	4
31.12.2019	159
30.12.2019	106

Error types by number of occurrences

Error Message	Message ID	Number of Occurrences	Service Name	Date (e.g.)	Time (e.g.)
/IWFND/CM_CONSUMER	122	516	ZHR_ESS_MY	31.12.2019	13:00:40
/IWFND/CM_CONSUMER	101	129	HCM_LEAVE_	31.12.2019	16:32:17
/IWFND/CM_MGW	004	23	zhr_mss_ge	31.12.2019	14:46:19
/IWFND/CM_MGW	033	22	HCM_LEAVE_	30.12.2019	08:20:03
/IWBEP/CM_MGW_RT	000	14	PQM4_ODATA	03.01.2020	10:38:14

The tables above list the top gateway errors during the last 7 days.

> **Recommendation:** Monitor the error logs periodically for errors and take administrative action to resolve these errors.
> **Implementation:** To search for errors, call transaction /IWFND/ERROR_LOG and select the desired timeframe and error type. If you need further information about how to resolve specific errors, open a customer message on the relevant component.

16.2.2 Cache Cleanup Job

Jobname	Status
/IWFND/R_SM_CLEANUP	Scheduled

The gateway cache cleanup job is scheduled on your system.

17 UI Technologies Checks

No major problems were found with the UI technology configuration or administration of your SAP ERP ENHANCE PACKAGE system P01.

Rating	Check
	Fiori Checks for P01

17.1 Fiori Checks for P01

Rating	Check
	SAPUI5 Version
	SAP Fiori Cache Buster Activation
	SAPUI5 Application Index
	Fiori Launchpad Configuration

No major problems were found with the SAP Fiori configuration or administration of your SAP ERP ENHANCE PACKAGE system P01.

17.1.1 SAPUI5 Version

Current SAPUI5 Version Installed
1.52.20

The SAPUI5 library is part of the software component SAP User Interface Technology (or of the UI Add-On for NW AS ABAP 7.31). Updates include better browser support, improved performance, and better supportability, as well as supporting adoption of new SAP products and solutions in addition to fixing issues for known problems.

It is recommended to install the most recent support package stack of UI add-on 1.0 or 2.0 for SAP NetWeaver available. For information about how to update the SAPUI5 version, see SAP Note 2217489.
We strongly recommend that you test all of your SAPUI5 applications before upgrading the SAPUI5 version in the production system.

17.1.2 SAP Fiori Cache Buster Activation

You have activated the cache buster mechanism for system P01 because the ICF service /sap/bc/ui2/flp is activated in SICF.
Please note that to use the cache buster mechanism, you need to call the SAP Fiori launchpad with one of the following URLs:
[redacted]
You can also maintain a custom URL via an SICF external alias as described here: Customize the Launchpad URL
Background:
Web browsers store static resources like JavaScript files, stylesheets, and images in the browser cache. When these resources are changed on the server in a software upgrade, you want the browser to load the new resources from the server rather than from the cache, without having to manually clear the browser cache.
Cache buster techniques cause Web browsers to load content from the server rather than from the browser cache when new resources are available on the server.
You can find the latest information about the cache buster for SAP Fiori components in 2043432.

17.1.3 SAPUI5 Application Index

Report	Scheduled as backround job	Rating
/UI5/APP_INDEX_CALCULATE	Yes	

The SAPUI5 application index is scheduled as a background job as recommended.

18 Database server load from expensive SQL statements - P01

The SQL statements identified did not lead to performance problems. The load overview is listed in the table below for reference, and further details of the most expensive statements are included at the end of the section.

Load From Expensive Statements

Impact	CPU Load [%]	I/O Load [%]	Elapsed Time [%]
HIGH	15,39	60,30	48,00

The table above shows the cumulative load of the top statements from cache based on elapsed database time. If the database was active for less than one day before the analysis was performed, the information provided may not be entirely accurate.

> **Note:** The overall section rating is linked to the above table rating; the ratings are described in SAP Note 551646.
>
> If the table impact is HIGH, there are SQL statements that cause a significant percentage of the overall load on your SAP system.
> If the table impact is MEDIUM, there are SQL statements that cause a significant percentage of the overall load on your SAP system.
> If the table impact is LOW, your system SQL statement cache contains no significant problems.
> If the table impact is N/A, the cache utilization, system load (dialog steps or total reads) was too low, or some analysis data was unavailable.
> The following table lists the load of each SQL statement individually. The load of the statement is evaluated against the total load since database startup. If an object name in this table contains the character "/", it may indicate a join. If such an object is not in the ABAP Dictionary (transaction SE12) with the object name listed, check for each part of the join (items separated by "/").

18.1 Cache Analysis On 06.01.2020

Expensive Statements Overview

Object Name	CPU Load [%]	I/O Load [%]	Elapsed Time [%]	Total Executions	Records Processed
GV$SORT_SEGMENT	2,84	59,41	18,00	6.635	41.600
PTREQ_ITEMS	3,10	0,00	7,00	849.886.801	4.248.356.177
BSIS	0,03	0,89	6,00	2.788	14.961.852
PTREQ_HEADER	9,38	0,00	4,00	214.768.318	138.026
UET$/TS$/RECYCLEBIN$	0,01	0,00	3,00	2.230	0
V$FILESTAT	0,00	0,00	2,00	6.635	1.023.795
V$DATAFILE	0,00	0,00	2,00	6.635	1.036.019
GV$SORT_SEGMENT	0,03	0,00	2,00	6.635	50.600

Expensive Statements Overview

Object Name	CPU Load [%]	I/O Load [%]	Elapsed Time [%]	Total Executions	Records Processed
V$LOG	0,00	0,00	2,00	6.635	6.320
DBA_TEMP_FILES	0,00	0,00	2,00	6.635	50.574

18.1.1 Access on GV$SORT_SEGMENT

Load Statistics Total

Analysis Date	Total Executions	Total Physical Reads	Elapsed Time (ms)	Total Buffer Gets	Records Processed
06.01.2020	6.635	392.659.411	146.822.181	1.047.818.351	41.600

```
SELECT
LTRIM (d.tablespace_name) as name, NVL (ddf.BYTES - NVL(u.BYTES, 0), 0) as
freeSp, DECODE (d.CONTENTS, 'UNDO', NVL (TRUNC ((ddf.BYTES - NVL (u.BYTES,
0))/(ddf.bytes)*100,3),0), NVL (TRUNC (dfs.BYTES / ddf.BYTES * 100,3), 0)) as
avPct, NVL (dfs.antall, 0) as chunks, ddf.autoextend_flag as autoext, NVL
(TRUNC ((ddf.bytes)), 0) as maxSize, NVL (TRUNC ((ddf.BYTES - NVL(dfs.BYTES,
0))/(ddf.bytes)*100,3),0) as maxPct
FROMdba_tablespaces d, (SELECT tablespace_name, SUM (BYTES) BYTES, MAX
(BYTES) maxbytes, COUNT (1) antall
FROM
dba_free_space
GROUP BY
tablespace_name) dfs, (SELECT tablespace_name, SUM (BYTES) BYTES, SUM
(maxbytes) maxbytes, COUNT (1) antall, DECODE (MAX (autoextensible),'YES',
'Y','N') autoextend_flag
FROMdba_data_files GROUP BY tablespace_name) ddf, (SELECT tablespace_name,
SUM (BYTES) BYTES
FROM
dba_undo_extents
WHERE
status <> ('EXPIRED') GROUP BY tablespace_name) u
WHERE
d.tablespace_name = ddf.tablespace_name(+) AND d.tablespace_name =
dfs.tablespace_name(+) AND d.tablespace_name = u.tablespace_name(+) AND NOT
(d.extent_management LIKE 'LOCAL' AND d.CONTENTS LIKE 'TEMPORARY')UNION ALL
SELECT LTRIM(d.tablespace_name) as name, NVL (TRUNC(ddf.BYTES), 0) - NVL
(TRUNC (dfs.BYTES), 0) as freeSp, 100 - NVL (TRUNC (dfs.BYTES / ddf.BYTES *
100), 0) as avPct, DECODE (NVL (TRUNC (dfs.BYTES / ddf.BYTES * 100), 0),0,
1,100, 0) as chunks, ddf.autoextend_flag as autoext, NVL (TRUNC
((ddf.bytes)),0) maxSize, NVL (TRUNC (NVL (dfs.BYTES, 0) / (ddf.bytes)*
100,3),0) as maxPct
FROM
dba_tablespaces d, (SELECT tablespace_name, SUM (BYTES) BYTES, SUM (maxbytes)
maxbytes, COUNT (1) antall, DECODE (MAX (autoextensible), 'YES', 'Y','N')
autoextend_flag
FROM
dba_temp_files
GROUP BY
tablespace_name) ddf, (SELECT ss.tablespace_name, SUM ((ss.used_blocks *
ts.BLOCKSIZE)) BYTES, MAX ((ss.used_blocks * ts.BLOCKSIZE)) maxbytes, COUNT
(1) antall
```

```
FROM
gv$sort_segment ss, SYS.ts$ tsWHERE ss.tablespace_name = ts.NAME GROUP BY
ss.tablespace_name)dfs
WHERE
d.tablespace_name = ddf.tablespace_name(+) AND d.tablespace_name =
dfs.tablespace_name(+) AND d.extent_management LI
KE 'LOCAL' AND d.CONTENTS LIKE 'TEMPORARY'
ORDER BY
1
```

18.1.2 Access on PTREQ_ITEMS

Load Statistics Total

Analysis Date	Total Executions	Total Physical Reads	Elapsed Time (ms)	Total Buffer Gets	Records Processed
06.01.2020	849.886.801	13.780	56.550.910	1.145.165.342	4.248.356.177

```
SELECT
"MANDT","ITEM_LIST_ID","ITEM_LIST_NO","ITEM_CLS","ITEM_INS","REQUEST_ITEMTYPE
"
FROM
"PTREQ_ITEMS"
WHERE
"MANDT"=:A0 AND "ITEM_INS" IN (:A1,:A2,:A3,:A4,:A5)
Execution Plan From: V$SQL_PLAN sql_id: bxcx84d06rzj5
SELECT STATEMENT Estimated Costs= 3 Estimated Rows= 0
Optimizer: ALL_ROWS
3 INLIST ITERATOR
2 TABLE ACCESS BY INDEX ROWID PTREQ_ITEMS
Estimated Costs= 2 Estimated Rows= 5
Estim. Bytes: 405
Estim. CPU-Costs = 27,601 Estim. IO-Costs = 2
1 INDEX UNIQUE SCAN PTREQ_ITEMS~INS
Estimated Costs= 1 Estimated Rows= 5
Access predicates:
"MANDT"=:A0 AND (("ITEM_INS"=:A1 OR "ITEM_INS"=:A2 OR "ITEM_INS"=:A3 OR "IT
EM_INS"=:A4 OR "ITEM_INS"=:A5))
Search Columns: 2
Estim. CPU-Costs = 21,604 Estim. IO-Costs = 1
```

Program Name	Line	Created By	Last Changed By	Last Changed On
CA_PT_REQ_HEADER==========CM00L	83	SAP	SAP	01.12.2015

```
000071 lcl_temp_item_id-request_itemtype = lcl_item_list_object_wa-
>request_itemtype.
000072 APPEND lcl_temp_item_id TO temp_itm_list_ids.
000073 ENDLOOP.
000074 *---Item ID does not exist in item position table --> entry in memory
doesn't fit selection criteria
000075 IF sy-subrc NE 0.
000076 DELETE lt_objects_in_memory_tab.
000077 ENDIF.
000078 ENDLOOP.
000079
```

```
000080 *---Get ITEM LIST IDs
000081 CLEAR lcl_field_range.
000082 lcl_field_range-fieldname = 'ITEM_LIST_ID'.
000083 SELECT * "item_list_id
000084 APPENDING CORRESPONDING FIELDS OF TABLE temp_itm_list_ids
000085 FROM ptreq_items
000086 FOR ALL ENTRIES IN lt_item_id_tab_2 WHERE item_ins EQ
lt_item_id_tab_2-low. "INS Note891122
000087 * WHERE item_ins IN lt_item_id_tab. "DEL Note891122
000088
000089 *---Append ITEM LIST IDs
000090 LOOP AT temp_itm_list_ids INTO lcl_item_list_wa.
000091 CLEAR lcl_range.
000092 lcl_range-sign = 'I'.
000093 lcl_range-option = 'EQ'.
000094 lcl_range-low = lcl_item_list_wa-item_list_id.
000095 APPEND lcl_range TO lcl_field_range-selopt_t.
000096 ENDLOOP.
000097
000098 *---Item positions are not relevant for the field range
```

18.1.3 Access on BSIS

Load Statistics Total

Analysis Date	Total Executions	Total Physical Reads	Elapsed Time (ms)	Total Buffer Gets	Records Processed
06.01.2020	2.788	5.880.018	50.279.885	10.712.769	14.961.852

```
SELECT
*
FROM
"BSIS"
WHERE
"MANDT"=:A0 AND "BUKRS"=:A1 AND "HKONT"=:A2 AND "XOPVW"=:A3
Execution Plan From: V$SQL_PLAN sql_id: 3cn9nqxhxv3nm
SELECT STATEMENT Estimated Costs= 9,169 Estimated Rows= 0
Optimizer: ALL_ROWS
2 TABLE ACCESS BY INDEX ROWID BSIS
Estimated Costs= 9,168 Estimated Rows= 84,648
Filter predicates: "XOPVW"=:A3
Estim. Bytes: 32,335,536
Estim. CPU-Costs = 137,437,099 Estim. IO-Costs = 9,162
1 INDEX RANGE SCAN BSIS~Z2
Estimated Costs= 68 Estimated Rows= 169,296
Access predicates: "MANDT"=:A0 AND "BUKRS"=:A1 AND "HKONT"=:A2
Search Columns: 3
Estim. CPU-Costs = 7,228,049 Estim. IO-Costs = 68
```

Program Name	Line	Created By	Last Changed By	Last Changed On
F124_MERGE	2648	SAP	SAP	06.12.2018

```
002636 *---------------------------------------------------------------------
-*
002637 FORM read_bsis CHANGING e_subrc LIKE sy-subrc.
002638 DATA: subrcbseg LIKE sy-subrc.
002639 DATA: ld_ignore_doc(1) TYPE c.
```

```
002640
002641 IF x_saknr NE space.
002642 READ TABLE i030_skv WITH KEY bukrs = tsako-bukrs
002643 konts = tsako-hkont.
002644 IF sy-subrc <> 0. "SY-SUBRC=0 -> SKV-Konto
002645 REFRESH ibsis. "454904
002646 * ---If account is not ledger group specific clearable
002647 IF tsako-xlgclr IS INITIAL.
002648 SELECT * FROM bsis
002649 WHERE bukrs = tsako-bukrs
002650 AND hkont = tsako-hkont
002651 AND zuonr IN so_zuonr
002652 AND gjahr IN gjahx
002653 AND belnr IN docnr
002654 AND budat IN postdate
002655 AND xopvw EQ char_x.
002656 CLEAR ibsis-ldgrp.
002657 PERFORM check_authority_add "516329
002658 USING bsis-blart bsis-gsber "516329
002659 CHANGING rtc. "516329
002660 CHECK rtc IS INITIAL. "516329
002661 "516329
002662 *----- IST BELEGBUCHUNG ZUM AUSGLEICHSDATUM ERLAUBT? ----------------
--
002663 *----- Wird Ausgleichsdatum aus jüngstem Beleg bestimmt, werden Belege
002664 *----- zunächst selektiert; die Prüfung kann dann erst im sapmf05a *
002665 *----- erfolgen, weil Ausgleichsdatum erst kurz vor call transaction
002666 *----- bestimmt werden kann
002667 IF xf124e = space AND xaugdt = space.
```

18.1.4 Access on PTREQ_HEADER

Load Statistics Total

Analysis Date	Total Executions	Total Physical Reads	Elapsed Time (ms)	Total Buffer Gets	Records Processed
06.01.2020	214.768.318	731	31.007.193	3.461.620.280	138.026

```
SELECT
"REQUEST_ID","VERSION_NO"
FROM
"PTREQ_HEADER" "F"
WHERE
"MANDT"=:A0 AND "ITEM_LIST_ID" IN (:A1,:A2,:A3,:A4,:A5) AND
"REQUEST_TYPE"=:A6 AND ("STATUS"=:A7 OR "STATUS"=:A8) AND
"VERSION_NO"=(SELECT MAX("PTREQ_HEADER"."VERSION_NO")
FROM
"PTREQ_HEADER"
WHERE
"PTREQ_HEADER"."MANDT"=:A0 AND "PTREQ_HEADER"."REQUEST_ID"="F"."REQUEST_ID")
Execution Plan From: V$SQL_PLAN sql_id: 3fq2c177sr1c7
SELECT STATEMENT Estimated Costs= 6 Estimated Rows= 0
Optimizer: ALL_ROWS
7 FILTER
Filter predicates: "VERSION_NO"=
3 INLIST ITERATOR
2 TABLE ACCESS BY INDEX ROWID PTREQ_HEADER
Estimated Costs= 4 Estimated Rows= 4
```

```
Filter predicates: (INTERNAL_FUNCTION("STATUS") AND "REQUEST_TYPE"=:A6)
Estim. Bytes: 348
Estim. CPU-Costs = 43,185 Estim. IO-Costs = 4
1 INDEX RANGE SCAN PTREQ_HEADER~ITM
Estimated Costs= 1 Estimated Rows= 15
Access predicates:
"MANDT"=:A0 AND (("ITEM_LIST_ID"=:A1 OR "ITEM_LIST_ID"=:A2 OR "ITEM_LIST_ID
"=:A3 OR "ITEM_LIST_ID"=:A4 OR "ITEM_LIST_ID"=:A5))
Search Columns: 2
Estim. CPU-Costs = 21,924 Estim. IO-Costs = 1
6 SORT AGGREGATE
Estimated Costs= 0 Estimated Rows= 1
Estim. Bytes: 40
5 FIRST ROW
Estimated Costs= 1 Estimated Rows= 1
Estim. Bytes: 40
Estim. CPU-Costs = 4,313 Estim. IO-Costs = 1
4 INDEX RANGE SCAN (MIN/MAX) PTREQ_HEADER~0
Estimated Costs= 1 Estimated Rows= 1
Access predicates:
"PTREQ_HEADER"."MANDT"=:A0 AND "PTREQ_HEADER"."REQUEST_ID"=:B1
Search Columns: 2
Estim. Bytes: 40
Estim. CPU-Costs = 4,313 Estim. IO-Costs = 1
```

Program Name	Line	Created By	Last Changed By	Last Changed On
CA_PT_REQ_HEADER==========CM00N	90	SAP	SAP	01.12.2015

```
000078 * Too many PERNRs (OWNER_INStances) for SELECT statement
000079 SELECT request_id version_no "INS Note980485
000080 FROM ptreq_header AS f "INS Note980485
000081 INTO TABLE ex_header_tab "INS Note980485
000082 FOR ALL ENTRIES IN lt_owner_ins "INS Note980485
000083 WHERE owner_ins EQ lt_owner_ins-low AND "INS Note980485
000084 (lcl_where-where_tab) AND "INS Note980485
000085 version_no EQ ( SELECT MAX( version_no ) "INS Note980485
000086 FROM ptreq_header "INS Note980485
000087 WHERE request_id EQ f~request_id ). "INS Note980485
000088 ENDIF. "INS Note980485
000089 ELSE. "INS Note891122
000090 SELECT request_id version_no "INS Note891122
000091 FROM ptreq_header AS f "INS Note891122
000092 INTO TABLE ex_header_tab "INS Note891122
000093 FOR ALL ENTRIES IN lt_item_list_id "INS Note891122
000094 WHERE item_list_id EQ lt_item_list_id-low AND "INS Note891122
000095 (lcl_where-where_tab) AND "INS Note891122
000096 version_no EQ ( SELECT MAX( version_no ) "INS Note891122
000097 FROM ptreq_header "INS Note891122
000098 WHERE request_id EQ f~request_id ). "INS Note891122
000099 IF lines( lt_owner_ins ) GT 0. "INS Note980485
000100 * Too many ITEM_LIST_IDs and PERNRs --> determine intersection
000101 SELECT request_id version_no "INS Note980485
000102 FROM ptreq_header AS f "INS Note980485
000103 INTO TABLE lt_header_tab "INS Note980485
000104 FOR ALL ENTRIES IN lt_owner_ins "INS Note980485
000105 WHERE owner_ins EQ lt_owner_ins-low AND "INS Note980485
000106 (lcl_where-where_tab) AND "INS Note980485
```

```
000107 version_no EQ ( SELECT MAX( version_no ) "INS Note980485
000108 FROM ptreq_header "INS Note980485
000109 WHERE request_id EQ f~request_id ). "INS Note980485
000110 * Try to reduce number of expensive LOOPs
```

18.1.5 Access on UET$/TS$/RECYCLEBIN$

Load Statistics Total

Analysis Date	Total Executions	Total Physical Reads	Elapsed Time (ms)	Total Buffer Gets	Records Processed
06.01.2020	2.230	490	25.195.066	3.488.061	0

```
SELECT tablespace_name||'---
('||'alloc='||to_char(megs_allocated,'FM9999999.90')||',extendable='||to_char
(megs_extendable,'FM9999999.90')
||',free='||to_char(megs_free,'FM9999999.90')||',used='||to_char(megs_used,'F
M9999999.90')||',%used='||to_char(pct_used,'FM999.90')||'%)'
FROM
(SELECT c.tablespace_name, ROUND (A.BYTES / 1048576, 2) megs_allocated,
ROUND(a.ext_bytes / 1048576, 2) megs_extendable, ROUND (b.BYTES / 1048576, 2)
megs_free, ROUND ((A.BYTES- b.BYTES) / 1048576, 2) megs_used, ROUND (b.BYTES
/ (A.BYTES + a.ext_bytes) * 100, 2) pct_free, ROUND ((A.BYTES - b.BYTES) /
(A.BYTES + a.ext_bytes), 4) * 100.00 pct_used
FROM
(SELECT tablespace_name , SUM (A.BYTES)BYTES , SUM
(decode(autoextensible,'YES',(greatest(a.maxbytes,a.bytes)-a.bytes),0))
ext_bytes
FROM
SYS.dba_data_files A
GROUP BY
tablespace_name ) A, (SELECT A.tablespace_name, NVL (SUM (b.BYTES), 0) BYTES
FROM
SYS.dba_data_files A, SYS.dba_free_space b
WHERE
A.tablespace_name= b.tablespace_name(+) AND A.file_id = b.file_id(+)
GROUP BY
A.tablespace_name ) b, SYS.dba_tablespaces c
WHERE
A.tablespace_name = b.tablespace_name(+) AND A.tablespace_name =
c.tablespace_name A
ND C.contents not in ('UNDO','TEMPORARY') )
WHERE
pct_used >= 85
ORDER BY
tablespace_name
```

18.1.6 Access on V$FILESTAT

Load Statistics Total

Analysis Date	Total Executions	Total Physical Reads	Elapsed Time (ms)	Total Buffer Gets	Records Processed
06.01.2020	6.635	2	16.771.774	168	1.023.795

```
SELECT
name,phyrds,pd.phys_reads,phywrts,pd.phys_wrts
FROM(SELECT (SUM(phyrds)) phys_reads, (SUM(phywrts)) phys_wrts
FROM
v$filestat) pd, v$datafile df, v$filestat fs
WHERE
df.file# = fs.file#
```

18.1.7 Access on GV$SORT_SEGMENT

Load Statistics Total

Analysis Date	Total Executions	Total Physical Reads	Elapsed Time (ms)	Total Buffer Gets	Records Processed
06.01.2020	6.635	0	13.147.163	9.360.981	50.600

```
SELECT
d.tablespace_name as name, NVL (dfs.BYTES, 0) AS freeSp, NVL (TRUNC
(dfs.BYTES / ddf.BYTES * 100, 3), 0) AS avPct, NVL (dfs.antall, 0) as chunks,
ddf.autoextend_flag as autoext, NVL (TRUNC ((ddf.maxbytes)), 0) as maxSize,
NVL (TRUNC( (ddf.BYTES - NVL (dfs.BYTES, 0))/(ddf.maxbytes)*100,3),0) as
maxPct
FROMdba_tablespaces d, (SELECT tablespace_name, SUM (BYTES) BYTES, COUNT (1)
antall
FROM
dba_free_space
GROUP BY
tablespace_name) dfs, (SELECT tablespace_name, SUM (BYTES) BYTES, SUM
(GREATEST (maxbytes, BYTES)) maxbytes, COUNT (1) antall, MAX(autoextensible)
autoextend_flag
FROM
dba_data_files GROUP BY tablespace_name) ddf
WHERE
d.tablespace_name = ddf.tablespace_name(+) AND d.tablespace_name =
dfs.tablespace_name(+) AND NOT(d.extent_management LIKE 'LOCAL' AND
d.CONTENTS LIKE 'TEMPORARY') UNION ALL SELECT LTRIM (d.tablespace_name) as
name, NVL (TRUNC (ddf.BYTES - NVL(dfs.BYTES, 0)), 0) AS freeSp, NVL
(TRUNC((ddf.BYTES - NVL(dfs.BYTES, 0)) / ddf.BYTES * 100), 0) AS avPct,
DECODE (NVL (TRUNC (((ddf.BYTES - NVL(dfs.BYTES, 0)) / ddf.BYTES) * 100), 0),
0, 1, 100, 0,1) as chunks, ddf.autoextend_flag as autoext, NVL (TRUNC
((ddf.maxbytes)), 0) as maxSize, NVL (TRUNC ((NVL(dfs.BYTES, 0)) /
(ddf.maxbytes)* 100,3),0) as maxPct
FROM
dba_tablespaces d, (SELECT tablespace_name, SUM (BYTES) BYTES, SUM (GREATEST
(maxbytes, BYTES)) maxbytes, COUNT (1)antall, MAX(autoextensible)
autoextend_flag
FROM
dba_temp_files
GROUP BY
tablespace_name) ddf, (SELECT ss.tablespace_name, SUM ( ss.used_blocks *
ts.BLOCKSIZE) BYTES, COUNT (1) antall
FROM
gv$sort_segment ss, SYS.ts$ ts
WHERE
ss.tablespace_name = ts.NAME
GROUP BY
ss.tablespace_name) dfsWHERE d.tablespace_name = ddf.tablespace_name(+) AND
d.tablespace_name = dfs.tablespace_name(+)
```

```
AND d.extent_management LIKE 'LOCAL' AND d.CONTENTS LIKE 'TEMPORARY'
ORDER BY
1
```

18.1.8 Access on V$LOG

Load Statistics Total

Analysis Date	Total Executions	Total Physical Reads	Elapsed Time (ms)	Total Buffer Gets	Records Processed
06.01.2020	6.635	0	12.887.576	1.195.657	6.320

```
SELECT
(a.datasize+b.tempsize+c.logsize)/(1024 * 1024) as mbtotalsize,
a.datasize+b.tempsize+c.logsize as totalsize, a.datasize, b.tempsize,
c.logsize
FROM(select sum(bytes) datasize
FROMdba_data_files) a , (select nvl(sum(bytes),0) tempsize
FROMdba_temp_files) b, (select sum(bytes) logsize
FROM
v$log) c
```

18.2 Historical Analysis Between 30.12.2019 05.01.2020

Expensive Statements Overview

Object Name	CPU Load [%]	I/O Load [%]	Elapsed Time [%]	Total Executions	Records Processed
FMIOI/EKPO	1,81	63,79	5,00	3.867	195
PTREQ_HEADER	19,27	0,00	4,00	3.088.164	156.754
TST01	0,61	0,01	2,00	39.131.247	39.131.247
PAYR	0,05	0,05	2,00	7	2.966

18.2.1 Access on FMIOI/EKPO

Load Statistics Total

Analysis Date	Total Executions	Total Physical Reads	Elapsed Time (ms)	Total Buffer Gets	Records Processed
06.01.2020	3.867	465.892.316	17.355.352	465.935.516	195

```
SELECT
"T1"."REFBN","T1"."REFBT","T1"."RFORG","T1"."RFPOS","T1"."BTART","T1"."ZHLDT"
,"T1"."WRTTP","T1"."TRBTR","T1"."LIFNR"
FROM
"FMIOI" "T1" INNER JOIN "EKPO" "T2" ON "T1"."MANDT"="T2"."MANDT" AND
"T1"."REFBN"="T2"."EBELN" AND "T1"."RFPOS"="T2"."EB
ELP"
WHERE
```

```
"T1"."MANDT"=:A0 AND "T1"."LIFNR" IN (:A1,:A2,:A3,:A4,:A5) AND
("T1"."BTART"=:A6 OR "T1"."BTART"=:A7 OR "T1"."BTART"=:A8) AND "T1"."ZHLDT"
BETWEEN :A9 AND :A10 AND "T1"."WRTTP"=:A11 AND "T2"."LOEKZ"=:A12
Execution Plan From: DBA_HIST_SQL_PLAN sql_id: 1p0cgw5pcywnn
SELECT STATEMENT
plan line: 0 samples: 0 percent: 0 Estimated Costs= 14,608 Estimated Rows= 0
Optimizer: ALL_ROWS
6 FILTER
plan line: 1 samples: 0 percent: 0
5 NESTED LOOPS
plan line: 2 samples: 0 percent: 0
Estimated Costs= 14,607 Estimated Rows= 1
Estim. Bytes: 77
Estim. CPU-Costs = 11,198,096,150 Estim. IO-Costs = 14,108
3 NESTED LOOPS
plan line: 3 samples: 0 percent: 0
Estimated Costs= 14,607 Estimated Rows= 1
Estim. Bytes: 77
Estim. CPU-Costs = 11,198,096,150 Estim. IO-Costs = 14,108
1 TABLE ACCESS FULL FMIOI
plan line: 4 samples: 0 percent: 0
Estimated Costs= 14,607 Estimated Rows= 1
Estim. Bytes: 54
Estim. CPU-Costs = 11,198,092,859 Estim. IO-Costs = 14,108
2 INDEX UNIQUE SCAN EKPO~0
plan line: 5 samples: 0 percent: 0
Estimated Costs= 0 Estimated Rows= 1
Search Columns: 3
Estim. CPU-Costs = 1,814 Estim. IO-Costs = 0
4 TABLE ACCESS BY INDEX ROWID EKPO
plan line: 6 samples: 0 percent: 0
Estimated Costs= 0 Estimated Rows= 1
Estim. Bytes: 23
Estim. CPU-Costs = 3,291 Estim. IO-Costs = 0
```

Program Name	Line	Created By	Last Changed By	Last Changed On
ZFII_EDD_INTERFACE	386	DKAKAR	KFONG	04.03.2015

```
000374
000375 ENDFORM. " GET_VENDOR_LIST
000376 *&---------------------------------------------------------------------
-*
000377 *& Form GET_FMIOI_BSAK_BSIK_DATA
000378 *&---------------------------------------------------------------------
-*
000379 * text
000380 *---------------------------------------------------------------------
-*
000381 * --> p1 text
000382 * <-- p2 text
000383 *---------------------------------------------------------------------
-*
000384 FORM GET_FMIOI_BSAK_BSIK_DATA .
000385 ******Get data from FMIOI
000386 SELECT T1~REFBN
000387 T1~REFBT
000388 T1~RFORG
000389 T1~RFPOS
```

```
000390 T1~BTART
000391 T1~ZHLDT
000392 T1~WRTTP
000393 T1~TRBTR
000394 T1~LIFNR
000395 FROM FMIOI AS T1 INNER JOIN EKPO AS T2
000396 ON T1~REFBN = T2~EBELN AND
000397 T1~RFPOS = T2~EBELP
000398 INTO CORRESPONDING FIELDS OF TABLE T_FMIOI
000399 FOR ALL ENTRIES IN T_LFBW
000400 WHERE T1~LIFNR = T_LFBW-LIFNR
000401 AND ( T1~BTART = '0100' OR
000402 T1~BTART = '0150' OR
000403 T1~BTART = '0200' )
000404 AND T1~ZHLDT BETWEEN P_PSTDTM AND P_PSTDTO
000405 AND T1~WRTTP = '51'
000406 AND T2~LOEKZ = SPACE.
000407
000408 ****Get Data from BSAK
000409 SELECT LIFNR
000410 BELNR
000411 BUDAT
000412 BLART
000413 SHKZG
000414 WRBTR
000415 FROM BSAK
000416 INTO CORRESPONDING FIELDS OF TABLE T_BSAK
000417 FOR ALL ENTRIES IN T_LFBW
000418 WHERE LIFNR = T_LFBW-LIFNR
```

18.2.2 Access on PTREQ_HEADER

Load Statistics Total

Analysis Date	Total Executions	Total Physical Reads	Elapsed Time (ms)	Total Buffer Gets	Records Processed
06.01.2020	3.088.164	137	12.862.393	4.965.282.533	156.754

```
SELECT
"REQUEST_ID","VERSION_NO"
FROM
"PTREQ_HEADER" "F"
WHERE
"MANDT"=:A0 AND "OWNER_INS" IN (:A1,:A2,:A3,:A4,:A5) AND "REQUEST_TYPE"=:A6
AND ("STATUS"=:A7 OR "STATUS"=:A8) AND "VERSION_NO"=(SELECT
MAX("PTREQ_HEADER"."VERSION_NO")
FROM
"PTREQ_HEADER"
WHERE
"PTREQ_HEADER"."MANDT"=:A0 AND "PTREQ_HEADER"."REQUEST_ID"="F"."REQUEST_ID")
Execution Plan From: DBA_HIST_SQL_PLAN sql_id: 9thxv9xqtac23
SELECT STATEMENT
plan line: 0 samples: 0 percent: 0 Estimated Costs= 438 Estimated Rows= 0
Optimizer: ALL_ROWS
7 FILTER
plan line: 1 samples: 0 percent: 0
3 INLIST ITERATOR
plan line: 2 samples: 0 percent: 0
```

```
2 TABLE ACCESS BY INDEX ROWID PTREQ_HEADER
plan line: 3 samples: 0 percent: 0
Estimated Costs= 290 Estimated Rows= 491
Estim. Bytes: 34,861
Estim. CPU-Costs = 2,276,104 Estim. IO-Costs = 290
1 INDEX RANGE SCAN PTREQ_HEADER~OWN
plan line: 4 samples: 0 percent: 0
Estimated Costs= 3 Estimated Rows= 1,719
Search Columns: 2
Estim. CPU-Costs = 105,687 Estim. IO-Costs = 3
6 SORT AGGREGATE
plan line: 5 samples: 0 percent: 0
Estimated Costs= 0 Estimated Rows= 1
Estim. Bytes: 40
5 FIRST ROW
plan line: 6 samples: 0 percent: 0
Estimated Costs= 1 Estimated Rows= 1
Estim. Bytes: 40
Estim. CPU-Costs = 4,313 Estim. IO-Costs = 1
4 INDEX RANGE SCAN (MIN/MAX) PTREQ_HEADER~0
plan line: 7 samples: 0 percent: 0
Estimated Costs= 1 Estimated Rows= 1
Search Columns: 2
Estim. Bytes: 40
Estim. CPU-Costs = 4,313 Estim. IO-Costs = 1
```

Program Name	Line	Created By	Last Changed By	Last Changed On
CA_PT_REQ_HEADER==========CM00N	101	SAP	SAP	01.12.2015

```
000089 ELSE. "INS Note891122
000090 SELECT request_id version_no "INS Note891122
000091 FROM ptreq_header AS f "INS Note891122
000092 INTO TABLE ex_header_tab "INS Note891122
000093 FOR ALL ENTRIES IN lt_item_list_id "INS Note891122
000094 WHERE item_list_id EQ lt_item_list_id-low AND "INS Note891122
000095 (lcl_where-where_tab) AND "INS Note891122
000096 version_no EQ ( SELECT MAX( version_no ) "INS Note891122
000097 FROM ptreq_header "INS Note891122
000098 WHERE request_id EQ f~request_id ). "INS Note891122
000099 IF lines( lt_owner_ins ) GT 0. "INS Note980485
000100 * Too many ITEM_LIST_IDs and PERNRs --> determine intersection
000101 SELECT request_id version_no "INS Note980485
000102 FROM ptreq_header AS f "INS Note980485
000103 INTO TABLE lt_header_tab "INS Note980485
000104 FOR ALL ENTRIES IN lt_owner_ins "INS Note980485
000105 WHERE owner_ins EQ lt_owner_ins-low AND "INS Note980485
000106 (lcl_where-where_tab) AND "INS Note980485
000107 version_no EQ ( SELECT MAX( version_no ) "INS Note980485
000108 FROM ptreq_header "INS Note980485
000109 WHERE request_id EQ f~request_id ). "INS Note980485
000110 * Try to reduce number of expensive LOOPs
000111 IF lines( ex_header_tab ) GT lines( lt_header_tab ). "INS Note980485
000112 LOOP AT lt_header_tab ASSIGNING <header_wa>. "INS Note980485
000113 READ TABLE ex_header_tab "INS Note980485
000114 FROM <header_wa> TRANSPORTING NO FIELDS. "INS Note980485
000115 IF sy-subrc = 0. "INS Note980485
000116 APPEND <header_wa> TO lt_header_tab_tmp. "INS Note980485
```

```
000117 ENDIF. "INS Note980485
000118 ENDLOOP. "INS Note980485
000119 ELSE. "INS Note980485
000120 LOOP AT ex_header_tab ASSIGNING <header_wa>. "INS Note980485
000121 READ TABLE lt_header_tab "INS Note980485
```

18.2.3 Access on TST01

Load Statistics Total

Analysis Date	Total Executions	Total Physical Reads	Elapsed Time (ms)	Total Buffer Gets	Records Processed
06.01.2020	39.131.247	51.442	6.779.325	156.524.988	39.131.247

```
SELECT
/*+ FIRST_ROWS(1) */
*
FROM
"TST01"
WHERE
"DCLIENT"=:A0 AND "DNAME"=:A1 AND "DPART"=:A2 FETCH FIRST 1 ROW ONLY
Execution Plan From: DBA_HIST_SQL_PLAN sql_id: 20xb68u4z0xr0
SELECT STATEMENT
plan line: 0 samples: 0 percent: 0 Estimated Costs= 1 Estimated Rows= 0
Optimizer: HINT: FIRST_ROWS
4 VIEW
plan line: 1 samples: 0 percent: 0
Estimated Costs= 1 Estimated Rows= 1
Estim. Bytes: 484
Estim. CPU-Costs = 4,637 Estim. IO-Costs = 1
3 WINDOW NOSORT STOPKEY
plan line: 2 samples: 0 percent: 0
Estimated Costs= 1 Estimated Rows= 1
Estim. Bytes: 167
Estim. CPU-Costs = 4,637 Estim. IO-Costs = 1
2 TABLE ACCESS BY INDEX ROWID TST01
plan line: 3 samples: 0 percent: 0
Estimated Costs= 1 Estimated Rows= 1
Estim. Bytes: 167
Estim. CPU-Costs = 4,637 Estim. IO-Costs = 1
1 INDEX UNIQUE SCAN TST01~0
plan line: 4 samples: 0 percent: 0
Estimated Costs= 0 Estimated Rows= 1
Search Columns: 3
Estim. CPU-Costs = 3,059 Estim. IO-Costs = 0
```

Program Name	Line	Created By	Last Changed By	Last Changed On
LSTMSU11	60	SAP	SAP	15.12.2016

```
000048 , r_lang LIKE lang "note 791763
000049 .
000050
000051 * Protection violation ?
000052 " Attributes of TemSe-Objects are not protected.
000053 " PERFORM INTERNAL_RSTS_AUTH_CHECK USING AUTHORITY
000054 " CLIENT
000055 " NAME
```

```
000056 " 1 "PART
000057 " '???'.
000058
000059 * Look at part 1 first. Part 1 defines an object.
000060 SELECT SINGLE * FROM tst01 CLIENT SPECIFIED
000061 WHERE dclient = client
000062 AND dname = name
000063 AND dpart = 1 .
000064 IF sy-subrc >< 0.
000065 MESSAGE s220(ts) RAISING no_object "- no such object ->
000066 WITH sy-sysid name 1.
000067 ENDIF.
000068 CLEAR r_locat.
000069 r_charco = tst01-dcharcod.
000070 r_creater = tst01-dcreater.
000071 r_credate = tst01-dcretime.
000072 r_max_credate = tst01-dcretime.
000073 r_deldate = tst01-ddeltime.
000074 r_max_deldate = tst01-ddeltime.
000075 r_noof_parts = tst01-dnoparts.
```

18.2.4 Access on PAYR

Load Statistics Total

Analysis Date	Total Executions	Total Physical Reads	Elapsed Time (ms)	Total Buffer Gets	Records Processed
06.01.2020	7	371.390	6.093.243	12.206.741	2.966

```
SELECT
*
FROM
"PAYR"
WHERE
"MANDT"=:A0 AND "IREFE"=CHR(32) AND "VOIDR"=:A1 AND "ZBUKR"=:A2 AND
"HBKID"=:A3 AND "ZALDT"=:A4 AND "VBLNR"<>:A5
Execution Plan From: DBA_HIST_SQL_PLAN sql_id: 1ddj1s8862hp9
SELECT STATEMENT
plan line: 0 samples: 0 percent: 0 Estimated Costs= 1,509 Estimated Rows= 0
Optimizer: ALL_ROWS
2 TABLE ACCESS BY INDEX ROWID PAYR
plan line: 1 samples: 0 percent: 0
Estimated Costs= 1,508 Estimated Rows= 1
Estim. Bytes: 322
Estim. CPU-Costs = 38,619,487 Estim. IO-Costs = 1,506
1 INDEX RANGE SCAN PAYR~Z01
plan line: 2 samples: 0 percent: 0
Estimated Costs= 31 Estimated Rows= 88,578
Search Columns: 3
Estim. CPU-Costs = 3,622,165 Estim. IO-Costs = 31
```

Program Name	Line	Created By	Last Changed By	Last Changed On
RFCHKU00	344	SAP	SAP	06.12.2018

```
000332 APPEND R_LAUFD.
000333 ENDIF.
000334 IF NOT ZW_LAUFI IS INITIAL.
```

```
000335 CLEAR R_LAUFI.
000336 R_LAUFI-LOW = ZW_LAUFI.
000337 R_LAUFI-OPTION = 'EQ'.
000338 R_LAUFI-SIGN = 'I'.
000339 APPEND R_LAUFI.
000340 ENDIF.
000341
000342 * Reading of the payment transfer mediums, whose numbers are to filled
000343 * in the selected field of document
000344 SELECT * FROM PAYR INTO TABLE T_PAYR
000345 WHERE IREFE = SPACE
000346 AND VOIDR = 0
000347 AND LAUFD IN R_LAUFD
000348 AND LAUFI IN R_LAUFI
000349 AND ZBUKR IN S_ZBUK
000350 AND HBKID IN S_BANK
000351 AND HKTID IN S_ACCO
000352 AND RZAWE IN S_ZWEG
000353 AND CHECT IN S_CHEC
000354 AND ZALDT IN S_ZALD
000355 AND PRIDT IN S_CPUD
000356 AND PRIUS IN S_USER
000357 AND VBLNR IN S_VBLN
000358 AND VBLNR <> SPACE.
000359
000360 LOOP AT T_PAYR.
000361 CLEAR: T_BKPF, T_BSEG.
000362 CLEAR: xbseg, ybseg, *bkpf, bkpf.
000363 REFRESH: xbseg, ybseg.
000364 REFRESH t_bkpf.
000365 * if a payment document is referenced more than once,
000366 * it is not possible to determine the check number
000367 SELECT * FROM payr UP TO 2 ROWS
000368 WHERE zbukr = t_payr-zbukr
000369 AND vblnr = t_payr-vblnr
000370 AND gjahr = t_payr-gjahr
```

19 Cross Application Business Process Analysis

This section provides insights into cross-application data in the areas of jobs, interfaces, and data consistency.
The data is collected in the cross-application business process analysis (BPA) and the data collection findings are displayed in the EWA if it is configured to include BPA data. Further details can be found in the cross-application BPA.
With Business Process Monitoring in SAP Solution Manager, you can continuously analyze the key figures displayed below in addition to approximately 800 out-of-the-box key figures.
Disclaimer
Bear in mind that all assumptions and ratings in this presentation are based on our general experience with other customers and that the findings are not necessarily business-critical in your particular case.

Rating	Area	Key Figure	Finding
	Jobs	Canceled background jobs	1 of jobs have been canceled on the peak day of the analyzed week.
	Interfaces	IDoc throughput (Inbound)	349 of all inbound IDocs have been successfully processed in the analyzed week.
	Interfaces	Erroneous IDocs (Inbound)	0 erroneous inbound IDocs were identified for the analyzed week.
	Interfaces	IDoc backlog (Inbound)	0 backlog inbound IDocs have been identified in the analyzed week.
	Interfaces	IDoc throughput (Outbound)	3770 of all outbound IDocs have been successfully processed in the analyzed week.
	Interfaces	Erroneous IDocs (Outbound)	1 erroneous outbound IDocs were identified for the analyzed week.
	Interfaces	IDoc backlog (Outbound)	0 backlog outbound IDocs have been identified in the analyzed week.
	Interfaces	Erroneous qRFC (Inbound)	0 qRFC inbound errors occurred during the analyzed week.
	Interfaces	Backlog qRFC (Inbound)	0 inbound qRFC were in backlog in the analyzed week.
	Interfaces	Erroneous qRFC (Outbound)	0 qRFC outbound errors occurred during the analyzed week.
	Interfaces	Backlog qRFC (Outbound)	10 outbound qRFC were in backlog in the analyzed week.
	Interfaces	Erroneous tRFC (Outbound)	5 tRFC errors occurred during the analyzed week.
	Interfaces	Backlog tRFC (Outbound)	5 tRFC were in backlog in the analyzed week.

Rating	Area	Key Figure	Finding
	Interfaces	Erroneous bgRFC (Inbound)	0 bgRFC inbound errors occurred during the analyzed week.
	Interfaces	Backlog bgRFC (Inbound)	0 inbound bgRFC were in backlog in the analyzed week.
	Interfaces	Erroneous bgRFC (Outbound)	0 bgRFC outbound errors occurred during the analyzed week.
	Interfaces	Backlog bgRFC (Outbound)	0 outbound bgRFC were in backlog in the analyzed week.
	Interfaces	Workflows in error	16 errors in workflows have been identified in the analyzed week.
	Interfaces	Throughput batch input sessions	57 throughput batch input sessions have been identified in the analyzed week.
	Interfaces	Batch input sessions with errors	41 erroneous batch input sessions have been identified in the analyzed week.
	Interfaces	Batch input sessions in backlog	40 batch input sessions in backlog have been identified in the analyzed week.
	Interfaces	Erroneous PI messages	0 erroneous PI messages have been identified in the analyzed week.
	Interfaces	PI messages in backlog	0 PI messages in backlog have been identified in the analyzed week.
	Interfaces	Canceled PI messages messages	0 canceled PI messages have been identified in the analyzed week.
	Data Consistency	Errors in update task	0 errors in update tasks occurred during the analyzed week.

Rating	Area	Key Figure	Finding
	Data Consistency	Consistency check scheduling verification	Not all variants for all recommended Data Consistency reports have been executed
	Data Consistency	Posting of error records from auto. goods movements	0 failed goods movements were identified that are more than seven day old.

The displayed measurements relate to the findings in the cross-application business process analysis (BPA). For more information, see the results of the BPA. For more information about the BPA, check the following link:
https://websmp103.sap-ag.de/~sapdownload/011000358700000461312009E/SAPCQCBPAMonitoring.pdf
If you have an **SAP Enterprise Support** contract, SAP Active Global Support will provide you with the following offerings to provide job monitoring, interface monitoring, and data consistency monitoring:
- Expert Guided Implementation Data Consistency Management (EGI link: https://service.sap.com/sap/bc/bsp/spn/esa_redirect/index.htm?gotocourse=X&courseid=70209396)
- CQC Interface Management (link to fact sheet: https://websmp103.sap-ag.de/~form/sapnet?_SHORTKEY=01100035870000759911&_SCENARIO=01100035870000000202&)
- CQC Data Consistency Management (link to fact sheet: https://websmp108.sap-ag.de/~sapdownload/012002523100011104342014E/DataConsistencyManagement.pdf)

If you have an **SAP Max Attention Contract**, contact your Technical Quality Manager (TQM) for information about how SAP Active Global Support can help you to implement job, interface, and consistency monitoring.

20 Trend Analysis

This section contains the trend analysis for key performance indicators (KPIs). Diagrams are built weekly once the EarlyWatch Alert service is activated.
In this section, a "week" is from Monday to Sunday. The date displayed is the Sunday of the week.

20.1 System Activity

The following diagrams show the system activity over time.
The "Transaction Activity" diagram below depicts transaction activity in the system over time.

- Total Activity: Transaction steps performed each week (in thousands)
- Dialog Activity: Transaction steps performed in dialog task each week (in thousands)
- Peak Activity: Transaction steps (in thousands) during the peak hour; this peak hour is calculated as the hour with the maximum dialog activity in the ST03 time profile divided by 5 working days per week.
(Peak Activity is absent if "Activity Data" is taken from ST03 data directly).

The "User Activity" diagram below shows the user activity on the system over time.

- **Total Users:** Total users that logged on in one week.
- **Active Users:** Users who performed more than 400 transaction steps in one week.

20.2 System Operation

The following diagram or table shows important KPIs for system operation.

20.3 Hardware Capacity

Report time frame: Service data was collected starting at 06.01.2020 04:11:10. This took 24 minutes.
You can see sample SAP EarlyWatch Alert reports on SAP Support Portal at SAP EarlyWatch Alert -> Sample Reports.
For general information about SAP EarlyWatch Alert, see SAP Note 1257308.

About System And Solution Manager

System No. Of Target System	[redacted]
Solution Manager System	SMP
Solution Manager Version	SOLUTION MANAGER 7.2
Service Tool	720 SP16