Auditee's Guide - CheckAud for SAP Systems 2023.2
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A product of IBS Schreiber GmbH

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Chapter I   -   Usage of the Auditee's Guide CheckAud 2023.2

I   Usage of the Auditee's Guide CheckAud 2023.2

This document describes the technical preliminaries for a scan with CheckAud 2023.2 in preparation for a live data demonstration of CheckAud 2023.2 or for an authorization audit.

I - 1   Kostenfreier SAP Security Check mit CheckAud 2023.2 //OLD: Free SAP Security Check with CheckAud 2023.2

Was bieten wir Ihnen?
Lassen Sie uns Ihre digitale Festung prüfen! Bei unserem exklusiven SAP Security Check tauchen wir tief in Ihr SAP-System ein, um potenzielle Sicherheitslücken im Bereich Berechtigungen zu identifizieren und zu bewerten.

Warum ist das wichtig für Sie?
SAP-Systeme sind das Rückgrat vieler Unternehmen, und jede Lücke kann erhebliche betriebswirtschaftliche und rechtliche Risiken darstellen. Mit unserer Expertise helfen wir Ihnen, solche Risiken rechtzeitig zu erkennen und zu minimieren.

Wie funktioniert es?
Unkomplizierte Terminvereinbarung: Sie wählen einen für Sie passenden Zeitpunkt unter Kontakt – IBS Schreiber (ibs-schreiber.de)

Vorbereitung leicht gemacht:
Mit unserem Scanmodul CheckScan bereiten Sie die notwendigen Daten vor. Keine Sorge, alles wird klar und einfach erklärt.

Datensicherheit an erster Stelle:
Wir stellen Ihnen einen gesicherten Upload/Download-Server zur Verfügung, auf den Sie die Daten sicher hochladen können.

Expertise remote als auch vor Ort möglich:
Ein qualifizierter IBS-Mitarbeiter analysiert die Daten entweder remote oder bei Ihnen vor Ort, je nach Ihrem Bedarf. Unabhängig vom Ort der Analyse erhalten Sie stets unsere ungeteilte Aufmerksamkeit und Expertise. Gemeinsam besprechen wir die Ergebnisse und potenzielle Handlungsschritte.

Transparenz pur:
Sie erhalten detaillierte Auswertungen und Berichte, um genau zu verstehen, wo und wie Sie handeln sollten.

Datenschutz gewährleistet:
Nach der Analyse werden alle Daten sicher entfernt. Wir bieten Ihnen zudem eine Muster-Datenschutzvereinbarung an oder verwenden auf Wunsch Ihre eigenen Vorlagen.

Weitere Informationen unter: Kostenfreier SAP Security Check – IBS Schreiber (ibs-schreiber.de)

Und das Beste?
Diese intensive Sicherheitsüberprüfung ist für Sie völlig kostenfrei, und Sie gehen keinerlei Verpflichtungen ein. Sehen Sie es als unseren Beitrag dazu, Ihre digitale Landschaft sicherer zu machen.

Lassen Sie uns gemeinsam dafür sorgen, dass Ihr SAP-System so sicher wie möglich ist. Kontaktieren Sie uns heute noch für Ihren persönlichen kostenfreien SAP Security Check!

--------------------OLD_TEXT--------------------

What do we offer you?
Let us check your digital fortress! In our exclusive SAP Security Check, we dive deep into your SAP system to identify and assess potential security gaps in the area of authorizations.

Why is this important for you?
SAP systems are the backbone of many businesses, and any gap can pose significant business and legal risks. With our expertise, we can help you identify and mitigate such risks in a timely manner.

How does it work?
Uncomplicated appointment scheduling:
You choose a time that suits you at Contact - IBS Schreiber (ibs-schreiber.com)

Preparation made easy:
With our CheckScan scanning module, you prepare the necessary data. Don't worry, everything is explained clearly and simply.

Data security first:
We provide you with a secure upload/download server to which you can safely upload the data.

Expertise remote as well as on-site possible:
A qualified IBS employee analyzes the data either remotely or at your site, depending on your needs. Regardless of the location of the analysis, you will always receive our undivided attention and expertise. Together, we discuss the results and potential action steps.

Pure transparency:
you receive detailed evaluations and reports to understand exactly where and how you should take action.

Data protection guaranteed:
After the analysis, all data is securely removed. We also offer you a sample data protection agreement or use your own templates if you wish.

For more information, see: Free SAP Security Check - IBS Schreiber (ibs-schreiber.de)

And the best part?
This intensive security check is completely free of charge for you, and you enter into no obligations whatsoever. Consider it our contribution to making your digital landscape more secure.

Let's work together to make sure your SAP system is as secure as possible. Contact us today for your personal free SAP Security Check!

I - 2   Authorization audit with CheckAud 2023.2

For preparation of an authorization audit please follow the steps below to install the Scan module and to create a snapshot. One of our consultants will contact you in time to provide you with detailed information.

Chapter II   -   Installation notes

II   Installation notes

II - 1   System requirements

To install CheckAud 2023.2, you require one of the Windows versions listed in the table below. The use of a 64-bit version of Windows is recommended but is not mandatory. In addition, Microsoft .net Framework 4.8 is a minimum requirement for running CheckAud 2023.2.

Version	Service Pack / Note	Remarks
Windows 8.1	-	only Pro und Enterprise
Windows 10	since 1607 inkl. 2016 LTSB & 2019 LTSC	only Pro und Enterprise
Windows 11	-	only Pro und Enterprise
Windows Server 2012	-	not „Server Core"
Windows Server 2012 R2	-	not „Server Core"
Windows Server 2016	RTM (=1607), 1709 & 1803	not „Server Core"
Windows Server 2019	since 1809 inkl. 1903, 1909, 2004 & 20H2	not „Server Core"
Windows Server 2022	-	not „Server Core"

If you intend to post-edit the evaluation results from CheckAud, we recommend installing a Microsoft Office package (Office 2010 or later).

II - 2   Recommended hardware

We recommend at least 4 GB of physical memory (RAM) to use CheckAud 2023.2. For fast analysis of larger SAP systems (containing several thousand users or several hundred thousand authorizations, for example), a minimum of 6 GB is recommended. The use of the latest Intel Core processors is recommended but is not required. The installation path should be on a local hard disk. The use of an SSD is not required.

II - 3   Use in virtual environments / CITRIX / Terminal Server

Although CheckAud 2023.2 can generally be used on network storage systems, access to NAS/SAN systems impairs performance significantly due to the large amounts of data to be analyzed. For this reason, we recommend installing CheckAud 2023.2 on a physical hard disk connected directly to the system. For installation in a virtual environment, you must ensure that the operating system has exclusive physical access to the main memory mentioned above.

An installatiuon of CheckScan 2023.2 or CheckAud 2023.2 on a CITRIX or terminal server environment is possible. A local installation of the CheckAud database on each server has to be ensured because CheckAud doesn't support multi user access on the database and UNC paths.

A simultaneous access of multiple users on one CheckAud database is not recommended.

II - 4   Use of anti-virus software products

As a basic principle, the use of "on-access" virus scanners poses no problem for 2023.2. However, for reasons of performance and stability, the host process of the internal database and its data directory must be excluded from the scan. In isolated cases, the virus scanner may have to be fully uninstalled (or switched to a newer version or different product) to use CheckAud 2023.2.

Chapter III   -   Installing CheckScan 2023.2

III   Installing CheckScan 2023.2

The data capture module from the SAP system, the scan module, is provided separately as an installation package. Proceed as follows for the installation:

You can select your desired language for the installation:
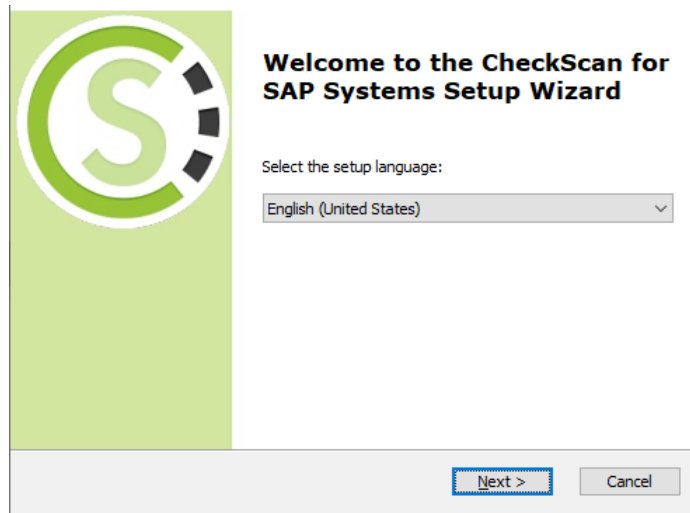
Figure 1 - Selecting the language for the installation

Choose *Next* to begin the installation with the setup wizard
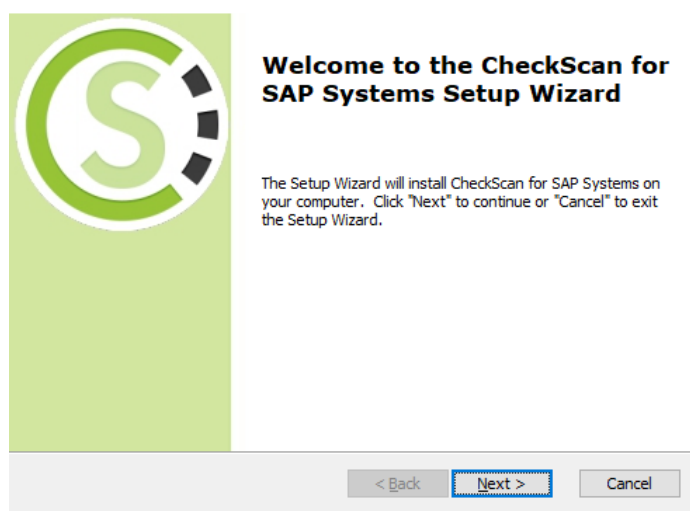
Figure 2 - Starting the installation wizard

Confirm the notes to the actual release with *Next*:
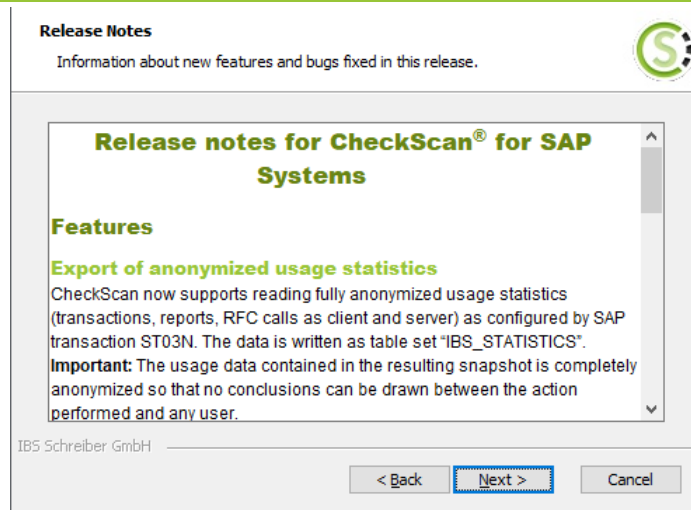
Figure 3 - Notes to the release

Select the radio button *I accept the terms in the licensing agreement*
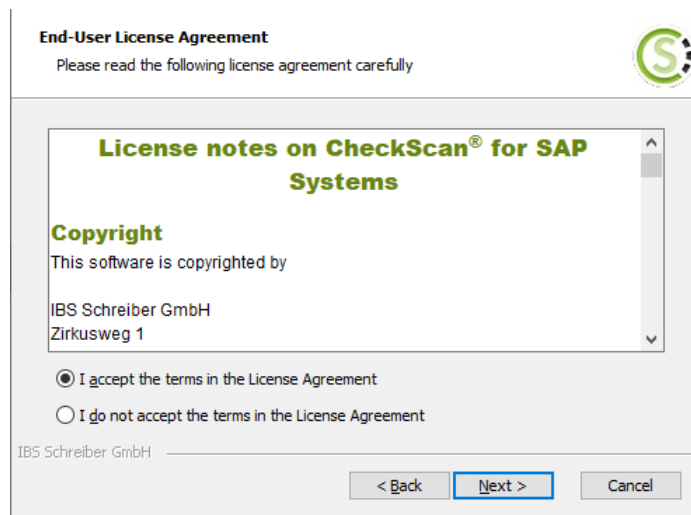
Figure 4 - Accept license agreements

Choose *Next*

The following dialog asks, how the installation should be executed, only for the logged on user or for all users on this copmuter:
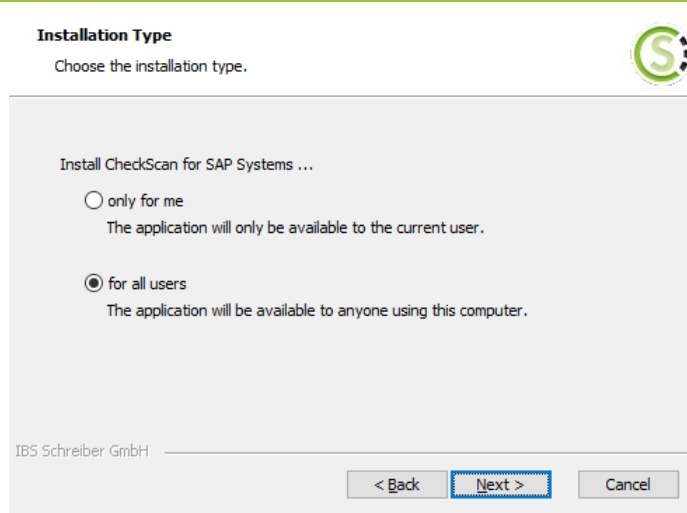
Figure 5 - Choose installation mode
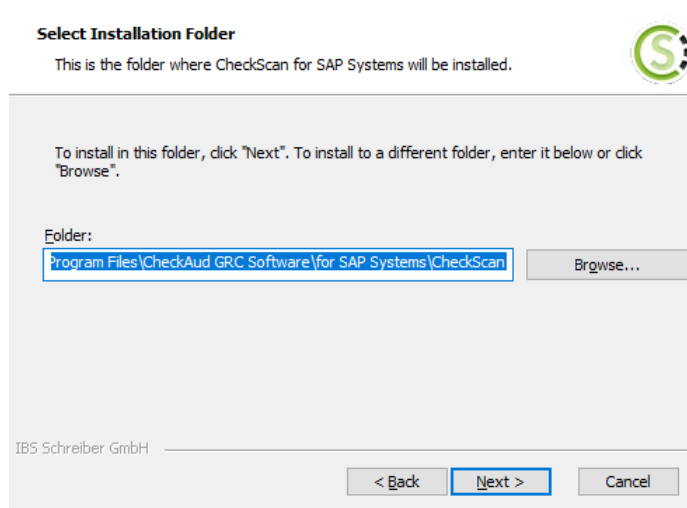
Figure 6 - Choose installation path

You can select the installation path of your choice. As a default option, the scan module is installed under:

C:\Program Files\CheckAud GRC Software\for SAP Systems\CheckScan

Choose *Install* to start the installation.
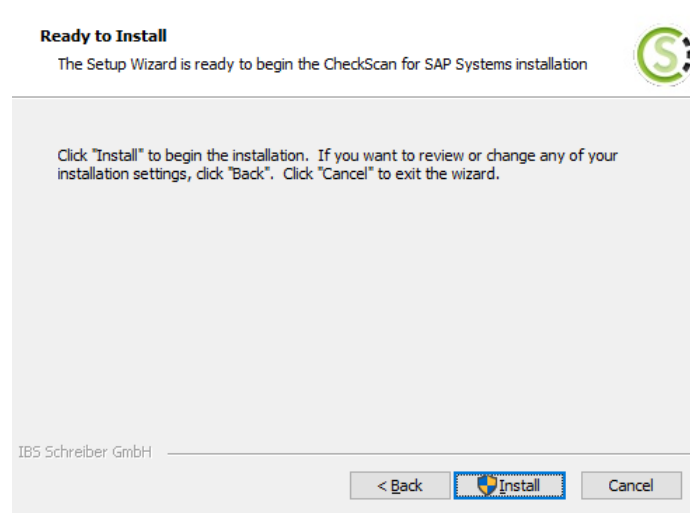
Figure 7 - Completing the preparations for the installation
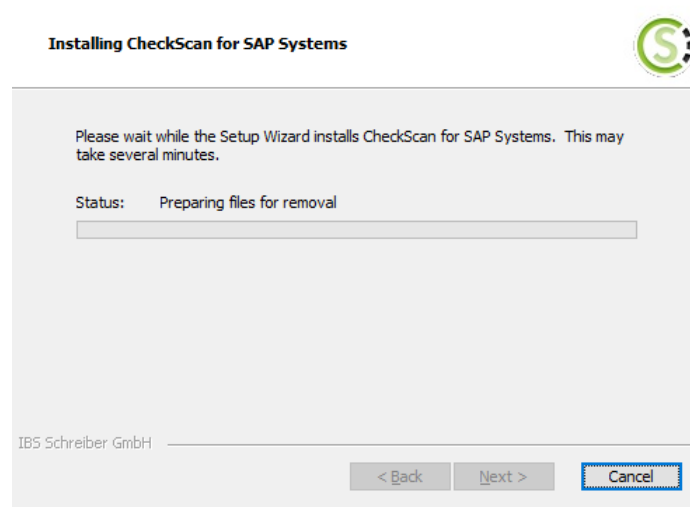
Figure 8 - Performing the installation

Successfully completed CheckScan installation:
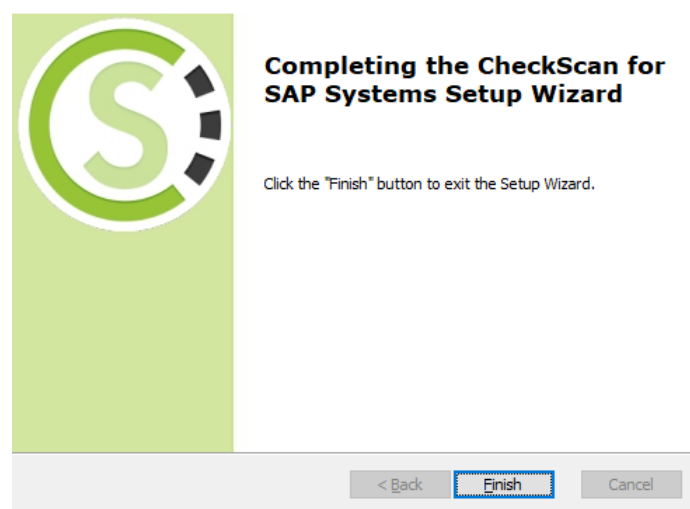
Figure 9 - Installation complete

Chapter IV   -   Rights required in the SAP-System

IV   Rights required in the SAP-System

The following chapters describe the needed and the optional authorizations for the technical communications user in the SAP-System.

New authorization values in CheckAud 2023.2 will be marked in **bold, red**.

IV - 1   Table set AUTH

Users log onto the SAP system with CheckScan 2023.2 via the RFC interface. Note that CheckScan supports only release level 7.00 or later of the software component SAP_BASIS. Users need a user account (system user) with the following rights:

Authorization object: S_RFC

Activity: 16

RFC_NAME:
AUTH_TRACE_GET_USOBHASH, DDIF_FIELDINFO_GET, EM_GET_NUMBER_OF_ENTRIES, GET_SYS_COMP_REL, RFCPING, RFC_FUNCTION_SEARCH, RFC_GET_FUNCTION_INTERFACE, RFC_METADATA_GET, RFC_METADATA_GET_TIMESTAMP, RFC_PING, RFC_READ_TABLE, RFC_SYSTEM_INFO, SNC_GET_MY_INFO, SYSTEM_RESET_RFC_SERVER

RFC_TYPE: FUNC

Authorization object: S_TABU_NAM

Activity: 03

Table:
AGR_1016, AGR_AGRS, AGR_DEFINE, AGR_FLAGS, AGR_TEXTS, AGR_USERS, CVERS, CVERS_REF, DD02L, DD02T, DD03L, DD03M, DD03T, DD04T, DEVACCESS, GTB_ROLE_DEF, GTB_ROLE_DEF_T, GTB_ROLE_TABLE, GTB_ROLE_VALUE, **HTTP_WHITE_LIST**, **ICFDOCU, ICFSERVICE, ICFSERVLOC,** PRGN_CUST, **SFW_ACTIVE_B2, SLDW_ELEMENTS, SLDW_HEADER, SLDW_HEADERT** T055, T055F, T055G, T055T, T77S0, TAPPL_LOCK, TDDAT, TOBC, TOBCT, TOBJ, TOBJ_CHK_CTRL_R, TOBJ_CHK_CTRL_RH, TOBJ_OFF, TOBJT, TRDIR, TSTC, TSTCT, USER_ADDRS, USGRP_USER, USGRPT, USOBAUTHINACTIVE, USOBHASH, USORG, USR_CUST, **USRACL,** USR02, USR06, USR10, USR11, USR13, USR21,USREFUS, UST04, UST10C, UST10S, UST12,WDY_COMPONENT, WDY_COMPONENTT, **/CHECKAUD/FIORI_PROPERTIES** , **/IWFND/I_MED_SRH, /IWBEP/I_MGW_SRT,** /IWEP/I_MGW_SRT, /IWFND/I_MED/SRT

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1 As per SAP Note 460089 (Minimum authorization profile for external RFC programs), authorization for the function module SYSTEM_RESET_RFC_SERVER is always required
https://launchpad.support.sap.com/#/notes/460089

To read more table sets in addition to the standard table set AUTH, separate authorizations are required for each individual table set in the SAP system. The permissions required for each table set are listed below:

IV - 2   Table set IBS_AUTH_ADVANCED

Authorization object*:* S_TABU_NAM

Activity: 03

Table:
AGR_BUFFI, AGR_1251, AGR_1252, **AGR_APPL_VARS, AGR_HIER, AGR_HIERT,** ORGCRACT, ORGCRATT, ORGCRATT_T, ORGCRFLD, ORGCRIT, ORGCRIT_T, USOBT_C, USOBX_C, **USOBX_CD**

IV - 3   Table set IBS_BW

Authorization object*:* S_TABU_NAM

Activity: 03

Table:
RSECBIAU, RSECTXT, RSECUSERAUTH

IV - 4   Table set IBS_CO

Authorization object*:* S_TABU_NAM

Activity: 03

Table:
CEPC, CSKS, TKA01, TKA02

IV - 5   Table set IBS_FI

Authorization object*:* S_TABU_NAM

Activity: 03

Table:
FM01, FM01T, NRIV, T001, T001B, T003, T003T, T004, T004T, T010P, T014T, T043, T880, TGSB, TGSBT, TNROT, TNRO

IV - 6   Table set IBS_GDPR

Authorization object*:* S_TABU_NAM

Activity: 03

Table:
SXC_ATTR, SXC_CLASS, SXC_EXIT, SXS_ATTRT, SFW_SW_BF, SFW_SWITCH_STATE, SFW_SWITCHT, T77PADDUR_DEF, T77PADDUR_KEY, T77PADDURATION

IV - 7   Table set IBS_MM

Authorization object*:* S_TABU_NAM

Activity: 03

Table:
T001L, T024E, T024W, T024Z, T025, T030, T134

IV - 8   Table set IBS_HCM

Authorization object*:* S_TABU_NAM

Activity: 03

Table:
T001P, T500P, T501T, T503T, T526, T569U, T582A, T582S, T585A, T585B, T585C, T591A, T591S, T599R, T77EO, T77UA

IV - 9   Table set IBS_ISU

Authorization object: S_TABU_NAM

Activity: 03

Table:
EDSC, EPREI, ETRF, ETTA, TE069, TE218, TE265, TE408, TE669

IV - 10   Table set IBS_SD

Authorization object: S_TABU_NAM

Activity: 03

Table:
TVKO, TVKOT, TVKWZ, TVTW, TVTWT

IV - 11   Table set IBS_SYSTEM

Authorization object: S_TABU_NAM

Activity: 03

Table:
ADIRACCESS, **ADMI_FILES**, **ADMI_RUN**, **ADMI_VARIA**, **ARCH_DEF**, **ARCH_OBJ**, **ARCH_TXT**,
CCCFLOW, DB6AUDITHD, DD02L, DD09L, DLV_SYSTC, ORGCRACT, HTTP_WHITE_LIST,
PAT03, RFCCBWHITELIST, RFCCBWHITELIST_A, RFCDES, RFCDESSECU, RFCDOC,
RFCSYSACL, **RFCSYSACL_CLNT**, RFCTRUST, **RFC_TT_ACL**, **RFC_TT_ACL_SAMEU**,
RSAUPROF, SEC_POLICY_ATTR, SEC_POLICY_RT, SLDW_ELEMENTS, SLDW_HEADER,
SLDW_HEADERT, SXPGCOSTAB, T000, TADIR, TBRG, TBRG_AUTH, TBRG_AUTHT, TBRGT,
TCDOB , TMSCSYS, TMSPCONF, TPLOG, TRNSPACE, TRNSPACETT, USR01, USR05, USR40,
USR41_MLD

IV - 12   Authorizations for reading parameter values

This function will only be available since SAP Releases 7.40!

Authorization object: S_RFC

Activity: 16

RFC_NAME: PFL_GET_SERVER_PARAM_VALUES   ***RFC_TYPE:***   FUNC
Authorization object: S_TABU_NAM   ***Activity:***   03   ***Table:***   DOKIL, DOKTL, TPFET, TPFHT, TPFID
Authorization object: S_RZL_ADM   ***Activity:*** 03

IV - 13   Authorizations for reading the default org level values

Authorization object*:* S_TABU_NAM   ***Activity:***   03   ***Table:***   DD07T, FM01, FM01T, LLOCT, LLOCTT, RFCDES, RFCDOC, T001, T001W, T004, T004T, T014, T014T, T024, T024E, T077D, T077K, T077X, T077Y, T16FG, T16FH, T300, T300T, T500P, T501, T501T, T503K, T503T, T549A, T549T, T582A, T582S, T750E, T750F, T750K, T777P, T778P, T880, TACT, TACTT, TBKK01, TBKK01T, TBKK80, TBKK80T, TF150, TF151, TGSB, TGSBT, TKA01, TKEB, TKEBT, TSPA, TSPAT, TTDS, TTDST, TVAK, TVAKT, TVBUR, TVFK, TVFKT, TVGRT, TVKBT, TVKGR, TVKO, TVKOT, TVST, TVSTT, TVTW, TVTWT

IV - 14   Authorization for reading anonymized user statistics

Authorization object: S_RFC   ***Activity:***   16   ***RFC_NAME:***   SWNC_COLLECTOR_GET_AGGREGATES   ***RFC_TYPE:***   FUNC

IV - 15 Authorization for reading personalized user statistics

In addition to the permissions from Chapter IV-14 (Reading anonymized user statistics), the following permissions are also required:
Authorization object: S_RFC
Activity: 16

RFC_NAME:
AUTHORITY_CHECK

RFC_TYPE: FUNC

Authorization object: S_TOOLS_EX

AUTH = S_TOOLS_EX_A

IV - 16 Predefined SAP role for the RFC interface user (Scan-User)

In the customer section of the www.checkaud.de website, you can download a predefined role for scan users. This SAP role includes the necessary authorizations for the SAP communication user that is used for scanning the SAP systems to be checked. The authorizations are limited to access of remote-capable SAP function modules, as well as to the SAP tables that are relevant for authorization evaluation.

The customer section on www.checkaud.de provides the individual SAP roles for the newly added table sets in CheckScan for download.

Note:
Note that older SAP systems do not offer any functions for maintaining function modules. The authorizations are based on function groups. The roles provided in the customer area on www.checkaud.de are based on the provision of authorizations via function modules. If you experience problems when creating snapshots in older SAP systems, check whether the roles that you imported are complete. It is entirely possible that the imported roles were not created completely in the SAP system. In this case, we recommend that you use the authorizations via the function groups.

Chapter V - Rights required on the HANA database

V   Rights required on the HANA database

The following chapters describe the needed and the optional authorizations for the technical user on the HANA database.

New authorization values in CheckAud 2023.2 will be marked in **bold, red**.

V - 1   General authorizations for reading tables and views

The following HANA database authorizations are used for logon and read access for tables and views.

```
system privilege: CATALOG READ;
catalog sql object "SYS"."DUMMY": SELECT;
catalog sql object "SYS"."M_DATABASE": SELECT;
catalog sql object "SYS"."TABLE_COLUMNS": SELECT;
catalog sql object "SYS"."VIEW_COLUMNS": SELECT;
catalog sql object "SYS"."REPOSITORY_REST": EXECUTE;
```

V - 2   Table set AUTH

The following object authorizations are used for accessing relevant tables and views which are responsible for authorization regulation in the HANA database. These object authorizations are mandatory.

```
catalog sql object "SYS"."GRANTED_PRIVILEGES": SELECT;
catalog sql object "SYS"."GRANTED_ROLES": SELECT;
catalog sql object "SYS"."PRIVILEGES": SELECT;
catalog sql object "SYS"."REMOTE_USERS": SELECT;
catalog sql object "SYS"."ROLES": SELECT;
catalog sql object "SYS"."STRUCTURED_PRIVILEGES": SELECT;
catalog sql object "SYS"."USERGROUPS": SELECT;
catalog sql object "SYS"."USERGROUP_PARAMETERS": SELECT;
catalog sql object "SYS"."USERS": SELECT;
catalog sql object "SYS"."USER_PARAMETERS": SELECT;
catalog sql object "SYS"."OWNERSHIP": SELECT;
catalog sql object "SYS"."OBJECT_PRIVILEGES": SELECT;
catalog sql object "SYS"."OBJECTS": SELECT;
catalog sql object "SYS"."SCHEMAS": SELECT;
catalog sql object "SYS"."SYNONYMS": SELECT;
catalog sql object "_SYS_REPO"."PACKAGE_CATALOG": SELECT;
```

V - 3   Table set IBS_System

The following object authorizations are used for accessing relevant tables and views which are responsible for authorization regulation in the HANA database. These object authorizations are optional and must be used, when the table set *IBS_SYSTEM* has been activated in the scan module.

```
catalog sql object "SYS"."AUDIT_POLICIES": SELECT;
catalog sql object "SYS"."CREDENTIALS": SELECT;
catalog sql object "SYS"."ENCRYPTION_ROOT_KEYS": SELECT;
catalog sql object "SYS"."INVALID_CONNECT_ATTEMPTS": SELECT;
catalog sql object "SYS"."M_CONNECTIONS": SELECT;
catalog sql object "SYS"."M_CUSTOMIZABLE_FUNCTIONALITIES": SELECT;
catalog sql object "SYS"."M_ENCRYPTION_OVERVIEW": SELECT;
catalog sql object "SYS"."M_HOST_INFORMATION": SELECT;
catalog sql object "SYS"."M_INIFILES": SELECT;
catalog sql object "SYS"."M_INIFILE_CONTENTS": SELECT;
catalog sql object "SYS"."M_INIFILE_CONTENT_HISTORY": SELECT;
catalog sql object "SYS"."M_PASSWORD_POLICY": SELECT;
catalog sql object "SYS"."M_PERSISTENCE_ENCRYPTION_STATUS": SELECT;
catalog sql object "SYS"."M_REMOTE_CONNECTIONS": SELECT;
catalog sql object "SYS"."M_SYSTEM_OVERVIEW": SELECT;
catalog sql object "SYS"."REMOTE_SOURCES": SELECT;
catalog sql object "_SYS_SECURITY"."_SYS_PASSWORD_BLACKLIST": SELECT;
```

V - 4   Predefined HANA database role for the technical user (Scan-User)

In the customer section of the www.checkaud.de website, you can download a predefined role for scan users. This HANA database role includes the necessary authorizations for the technical user that is used for scanning the HANA database to be checked. The authorizations are limited to access of tables and views that are relevant for authorization evaluation.
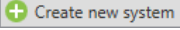
The customer section on www.checkaud.de provides the individual HANA database roles for the optional table sets in CheckScan for download.
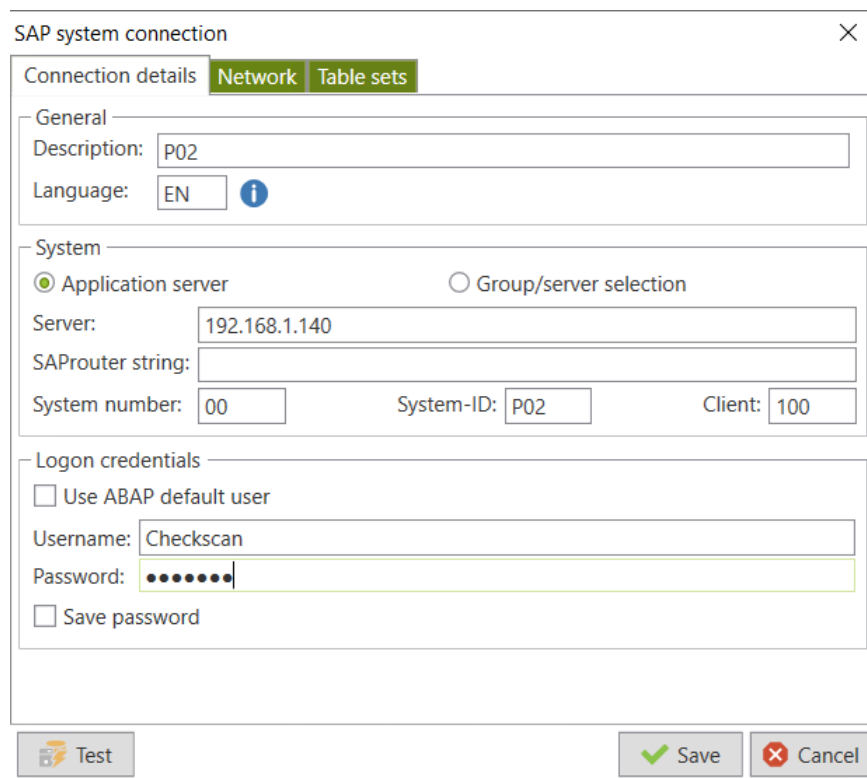
Chapter VI - CheckScan 2023.2

VI   CheckScan 2023.2

VI - 1   Creating a new system connection (ABAP-Scan)

Note: To create system connections, you need detailed information about the SAP source systems to be exported (TCP/IP address, DNS address or SAProuter string, message server, server group, client, sys-tem number, etc.). This information should be available from SAP Basis administration.

You can use the button <kbd>⊕ Create new system</kbd> to create a new connection to a SAP source system. Previously created source systems can be exported or imported using the <kbd>📁 Import/Export ▾</kbd> button. In this way, information about SAP source systems can be exchanged between different scan module installations.

This button can still be used to load the *SAPLOGON.INI* of an existing SAP LogOn installation. In the process, the connection information available in *SAPLOGON.INI* is copied and must only be supplemented by the client or the SAP communication user's logon information.

The following dialog box for establishing a new system connection is displayed:

Figure 10 - Entering the connection information for an SAP system

Description	User-defined description of the source system to be created
System	Choose between a connection via application service or groups/server selection
Server	TCP/IP address or DNS address of the SAP host
SAProuter-String	Alternative connection via the SAProuter string

System number	Instance number of the SAP source system
System-ID	System designation of the SAP source system
Client	Client to be read out from the SAP source system
Credentials	Name and password of the SAP communication user for logging the scan module onto the source system (alternatively, the SAP standard user saved to the settings can be enabled here using the flag)
Safe password	As long as this flag has not been enabled, each time a snapshot is created, a prompt for the SAP communication user's password will appear

You can use the button [Test] to check whether it is possible to connect to the source system using the saved information.

VI - 1.1 Select the table sets

On the [Table sets] tab, you can select additional table sets that are also relevant to this system connection in addition to the mandatory table set AUTH. The table sets:

- IBS_AUTH_ADVANCED,
- IBS_BW,
- IBS_FI,
- IBS_GDPR
- IBS_HCM,
- IBS_ISU,
- IBS_MM,
- IBS_SD and
- IBS_SYSTEM

are provided as predefined additional options. Your own table sets are displayed dynamically in the main menu item Table Sets (Tabellen-Sets) and on this tab.

The figure below shows the additional selection of the table set *IBS_AUTH_ADVANCED*:
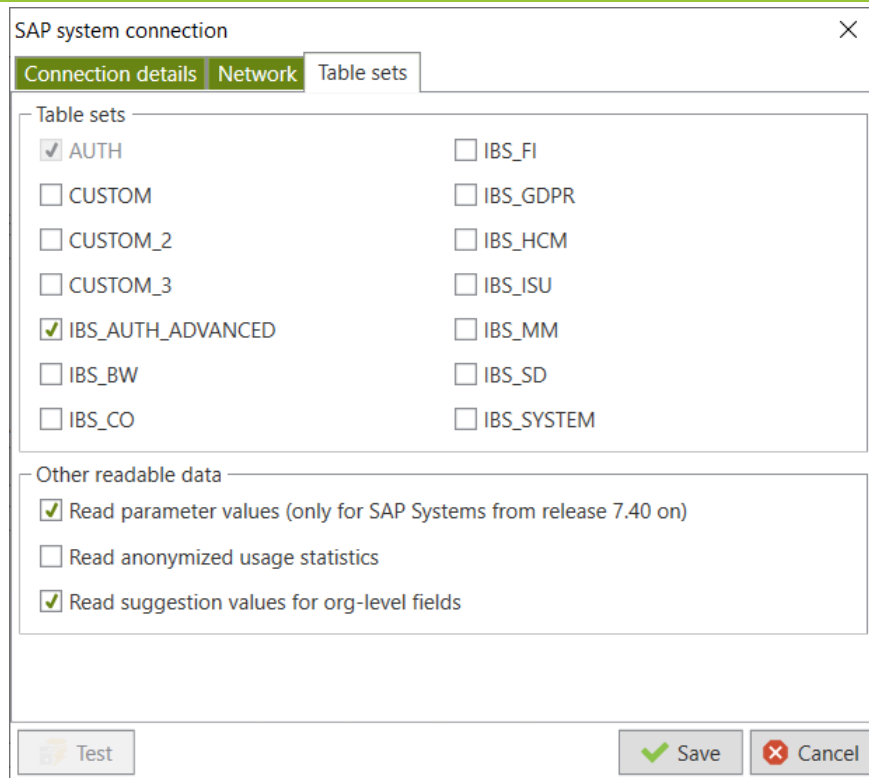:

Figure 11 - Selecting additional table sets

Use the *Save* button to save the new system connection. In the *Table Set* column in the SAP source system overview, you can see which table sets have been enabled.

VI - 1.2 Reading out parameters

In addition to table sets, the   Table sets   tab also contains additional options for the information to be read out:
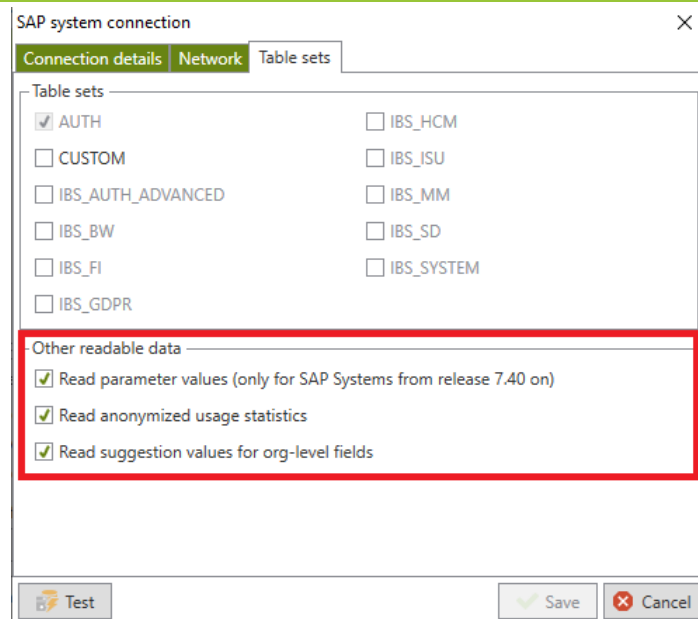
Figure 12 - Reading out parameter values

To check the parameters of an SAP system in CheckAud, the parameters must be read out. Readouts of parameter values are activated by default in CheckScan. As well as the existing authorizations for the AUTH table set, additional authorizations are required to read out the parameter values. You can read out system parameters only with SAP Release 7.40 or later. For older releases, it is not possible to read out parameter evaluations in CheckAud even when the option is set.

VI - 1.3 Reading out default values for org levels

In addition to table sets, the tab also contains additional options for the information to be read out:
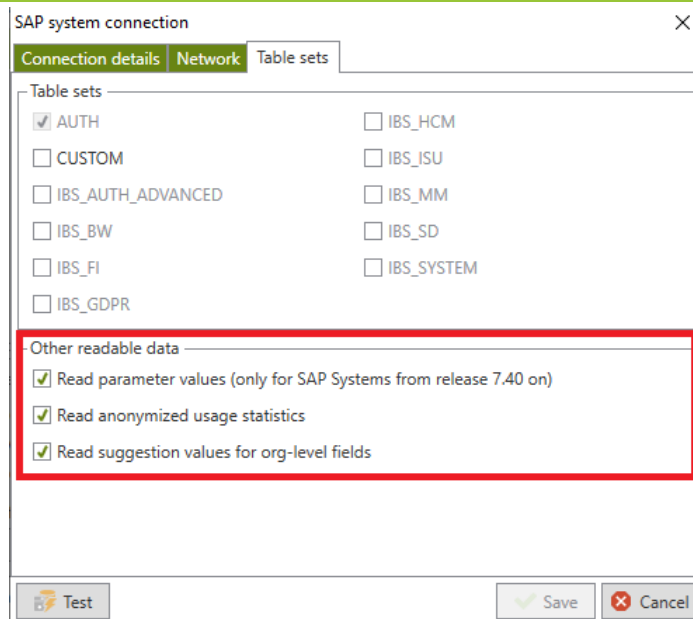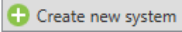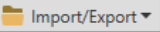
Figure 13 - Reading out default values for org levels

To be able to use the default values for organization levels (e.g. for company code BUKRS) in CheckAud, these values must also be read out. Readouts of the default values for org levels are activated by default in CheckScan. Additional authorizations are required on top of the existing authorizations for the AUTH table set.

Note: If the readout of the SAP system results in longer runtimes, this option for reading out the org levels can be disabled to improve the runtimes. As a result, however, the default values for org levels cannot be provided during the evaluation and must be entered manually.

VI - 2   Creating a new system connection (HANA-Scan)

Note: To create system connections, you need detailed information about the HANA source database to be exported (TCP/IP address, DNS address, instance number, etc.). This information should be available from SAP Basis administration.

You can use the button $\boxed{\oplus \text{ Create new system}}$ to create a new connection to a HANA source database.

Previously created source systems can be exported or imported using the $\boxed{\text{Import/Export} \blacktriangledown}$ button. In this way, information about HANA source database can be exchanged between different scan module installations.

This button can alsol be used to load the conecction information from the SAP HANA Cockpit or the SAP HANA Studio.In the process, the connection information available from the SAP HANA Cockpit/Studio is copied and must only be supplemented by the communication user's logon information.

The following dialog box for establishing a new system connection is displayed:

Figure 14 - Entering the connection information for a HANA database

Description	User-defined description of the source system to be created
Server	TCP/IP address or DNS address of the HANA database
Instance number	Instance number of the HANA database
Mode	Mode selection of the HANA database wether the database works as a single container or multiple container. In that case, the tenant hast to be specified
Logon credentials	Name and password of the communication user for logging the scan module onto the source system (alternatively, the HANA database standard user saved to the settings can be enabled here using the flag)
Save password	As long as this flag has not been enabled, each time a snapshot is created, a prompt for the communication user's password will appear

You can use the button [Test] to check whether it is possible to connect to the source system using the saved information.

VI - 2.1 Select the table sets

On the [Table sets] tab, you can select additional table sets that are also relevant to this system connection in addition to the mandatory table set AUTH. The table sets:

- IBS_SYSTEM

are provided as predefined additional options.
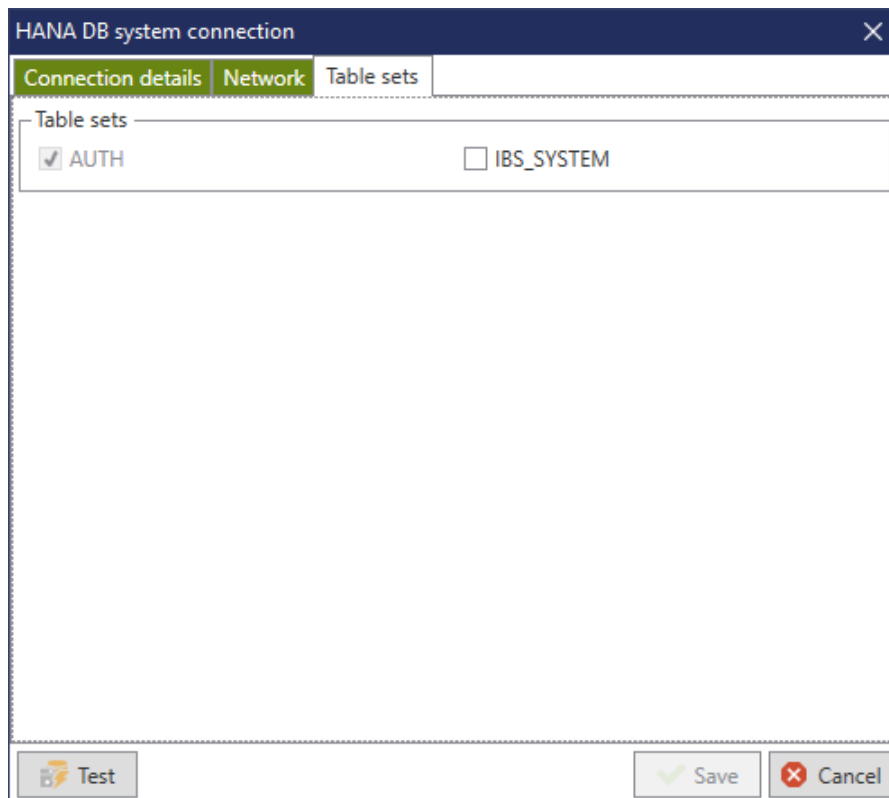
Figure 15 - Selecting additional table sets

VI - 3   Creating a snapshot (ABAP- & HANA-Scan)

To create snapshots of the required SAP or HANA database source systems, one or more system connections must be marked with a flag in the list or group view:
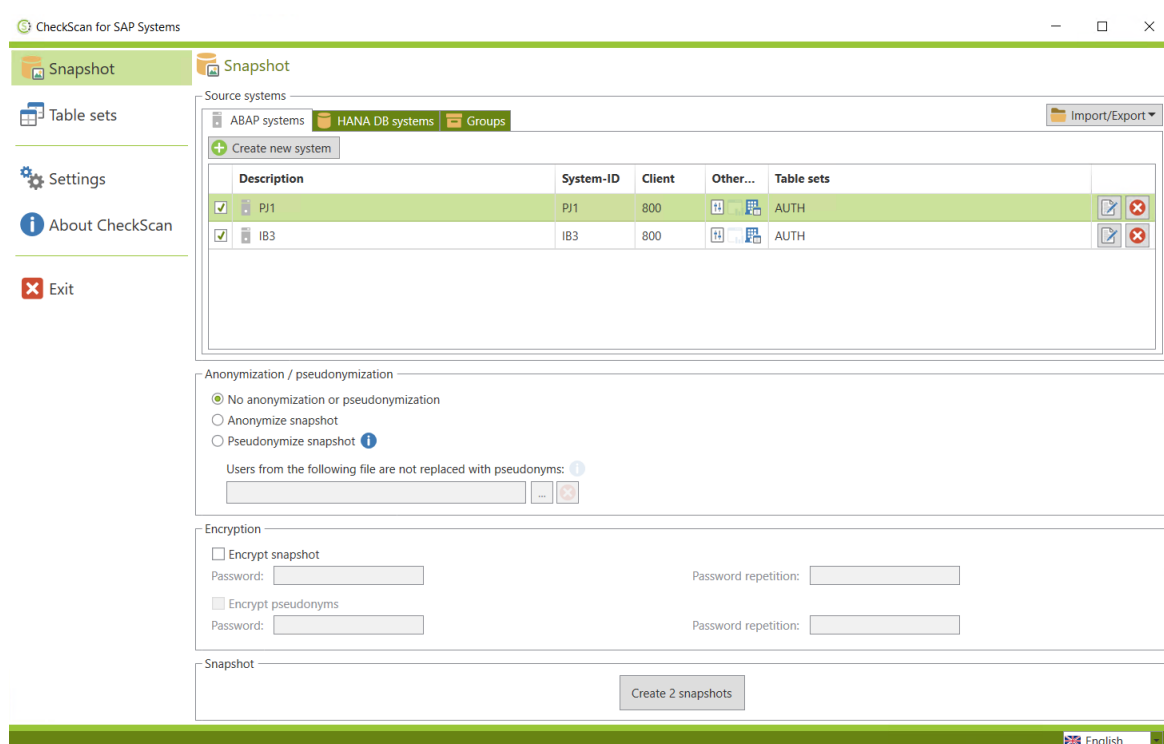
Figure 16 - Systems marked for creating snapshots in the list view

If several systems are marked for snapshots, the scan module reads them out sequentially and the relevant snapshots are saved in the target directory listed.

If necessary, the snapshots can also be encrypted using a password. This password is requested when the snapshot is imported to the evaluation module database.

Figure 17 - Optional snapshot encryption

If the "Read all users" option is selected, all users of the ABAP or HANA DB system are listed in the snapshot. On the right side, there are also options for data protection:
When anonymizing, the assignment of user names is not possible. They are stored anonymously in the snapshot and it is not possible to infer the original name.
In the case of pseudonymization, an additional Excel file is created in addition to the snapshot. The pseudonyms and the corresponding user names are stored in this file, which enables a back translation. If required, this mapping file can also be encrypted to protect personal data.

Figure 18 - Selection: All users, pseudonymization, pseudonym encryption

Besides selecting all users, it is also possible to select only a part of them. This part can be composed arbitrarily on the basis of the following user properties:

- Belonging to the ABAP/HANA DB standard users (see 🛈 for a complete list of all standard users)
- Membership to a specific user type (only for ABAP users)
- Naming of the user name in a stored text file (one name per line)

Example 1: The following figure shows the configuration of a user subset containing only users of the types "System" and "Communication".

Figure 19 - Subset with users of selected user types

Example 2: The following figure shows the configuration of a user subset consisting of all standard users, all users of the types "Dialog" and "Service", and the users named in the text file.

Figure 20 - Subset with users of different properties

To the right of the user selection is a selection option that determines what should happen to the remaining, unselected users. By default, these are skipped during readout and are therefore "not available" in the snapshot.

Figure 21 - Options for handling unselected users

However, if required, the unselected users can also be included in the snapshot anonymized or pseudonymized.

Choose the [Create snapshot] button to create the snapshot. A dialog box for saving the snapshot file opens:
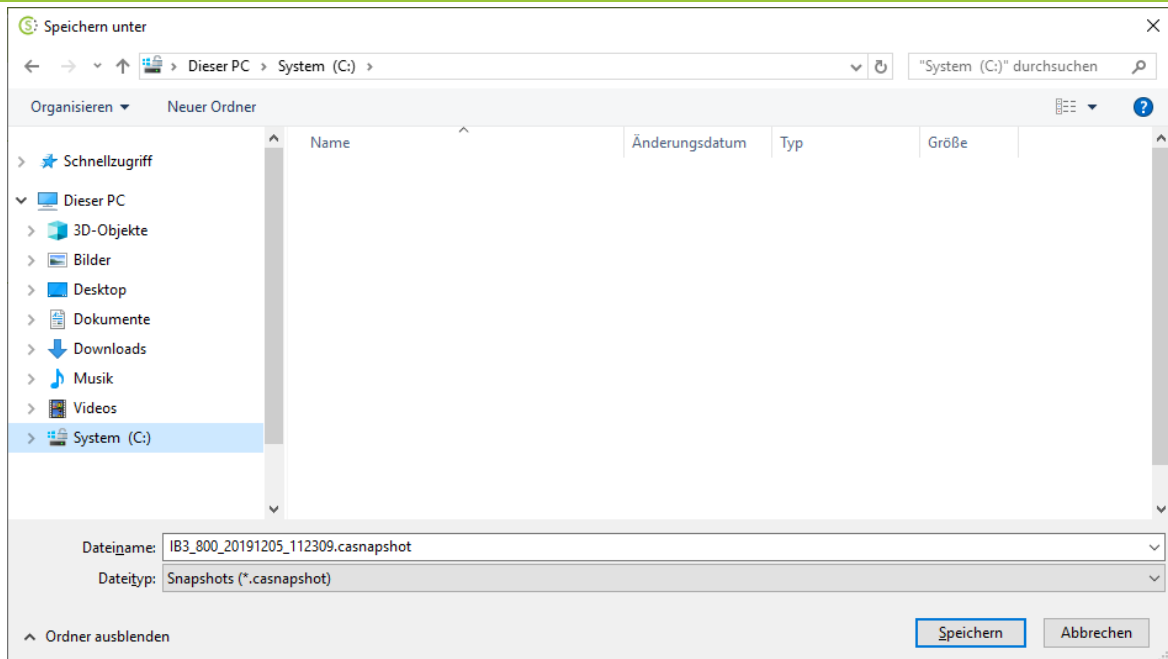
Figure 22 - Standard Windows dialog window for saving the snapshot

The name of the file to be saved is composed as follows:

SystemID_Client_Date_Time.casnapshot
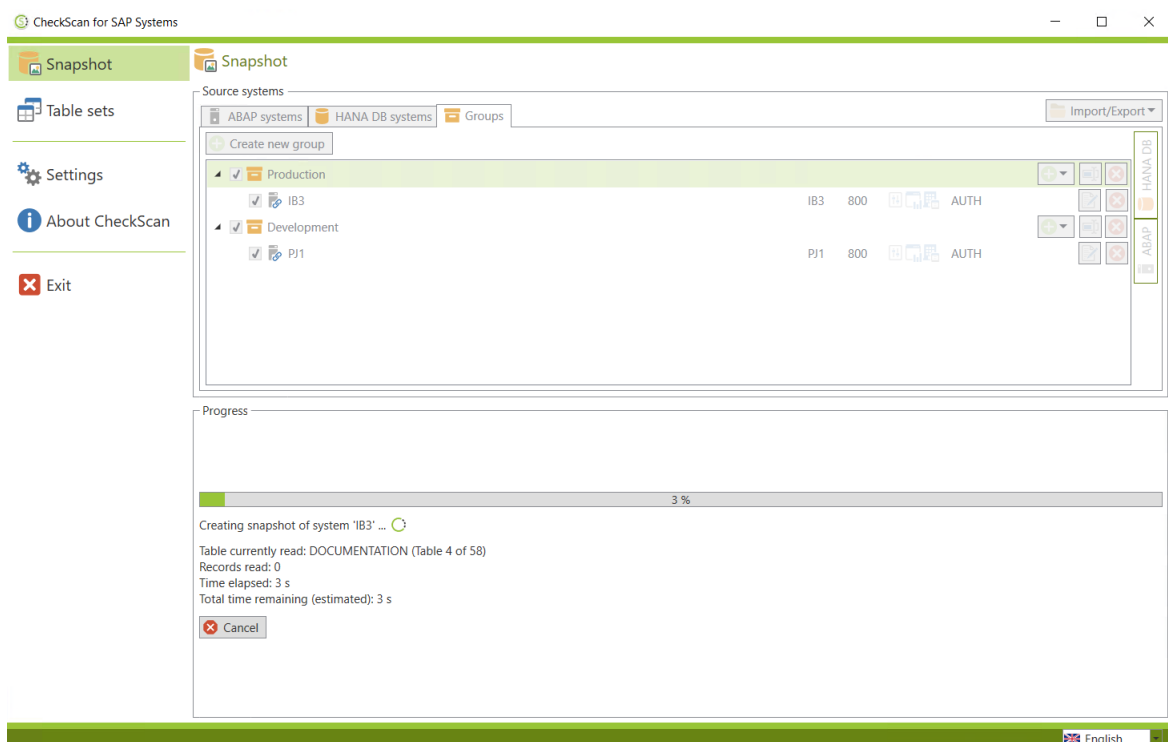
Figure 23 - Scan progress

After you start the scan, the system selection is deactivated and the lower area displays the tables to be scanned and the estimated time required to complete the scan. Once the scan is successfully completed, a results window is displayed:
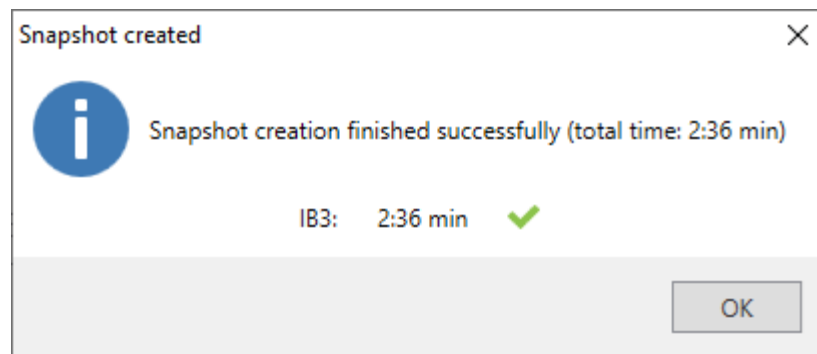
Figure 24 - Results window for the successful scan

Note:

A ⚠ icon in the results window indicates that some optional tables were not included in the snapshot. However, the snapshot was created successfully. If you place the mouse cursor on the icon that is displayed, a window appears that shows the tables that were skipped in the associated table set.

Please be prepared to deliver the snapshot file (*.casnapshot) during the presentation via USB flash drive.

Note:

The procedure has to be done for ABAP-Scans and HANA-Scans seperately. With switching from Tab *ABAP Systems* to *HANA DB Systems* the scans can be started.

Chapter VII - Technical appendix

VII   Technical appendix

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VII - 3.4 ANTLR 3

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VII - 3.5 NPGSQL

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IQToolkit
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Chapter VIII   -   Liability

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