



SAP ON CLOUD AUTOMATION

myNav Cloud Migrate

July 2024



myNav Cloud Suite for SAP

Our unique set of tools offer Speed to Market, Increased Quality, Standardization and Cost Efficiency



Cloud Builder



Cloud Migrate



Cloud Admin



Secure Zero Trust Protection OSLogin+

Auto-deploy and landscape life-cycle management	Pre-Migration & Post-Migration Automation	Supervised SAP Basis automation	Self-Awareness and Self-Alertness to our Practitioners
<ul style="list-style-type: none">• Automated Infrastructure and SAP Apps deployment on Public IaaS platforms based on validated landscape(s), including network, compute, storage & SAP modules• Agile development based on DevOps tools Terraform & Ansible• Deploy infrastructure and SAP configuration as a code• Automated validation & documentation of provisioned infrastructure• Industrialization of best practices for SAP deployments on Public Cloud	<ul style="list-style-type: none">• Prechecks, Basis config extracts, validations & selective updates at Source/Target systems<ul style="list-style-type: none">• SAP Application (Basis)• OS• Database• Selective Cutover & Post Migration steps across multiple layers• Orchestrated database migrations	<ul style="list-style-type: none">• Scripted SAP Basis operations as per best practices• Schedule-based starting / stopping SAP servers for restricted business hours – pay for actual usage• Single pane of glass to manage large SAP estates• Remote execution in multiple SAP systems simultaneously• Alleviates SME intervention• Foundation for self-healing with myWizard integration• User friendly Web based UI	<ul style="list-style-type: none">• Mitigates accidental errors/risks by including• Self-Awareness to VM users with enhanced login controls• Self-Alert to VM users with enhanced Visualized Prompt on critical systems• Controls to restrict use of critical commands at operating system level
✓ Consistent Landscapes & efficiencies in Infrastructure & SAP Basis provisioning on cloud	✓ Efficiencies in Basis migration effort ✓ Consistent & validated source & target (Cloud) state systems	✓ 35+ automation scenarios ✓ Kernel upgrade, System Refresh, Client Administration, Transports, HANA patching, Auto Start/Stop, Cluster Administration ✓ Self healing scenarios	✓ Improved User awareness for critical missions ✓ Prevents unwanted downtimes

Cloud Migrate Value Proposition

Migration Activities

- Basis Config Extracts at ABAP, OS & DB Layers
- Config Validation
- Config Updates
- Database Migration#

- Ansible
- Terraform

Target Build

Using Cloud Builder 2.0
Infrastructure Build
SAP Vanilla Build

Stack: Netweaver ABAP

Source/Target OS: Windows, Linux (SLES, RHEL, AIX, Solaris)

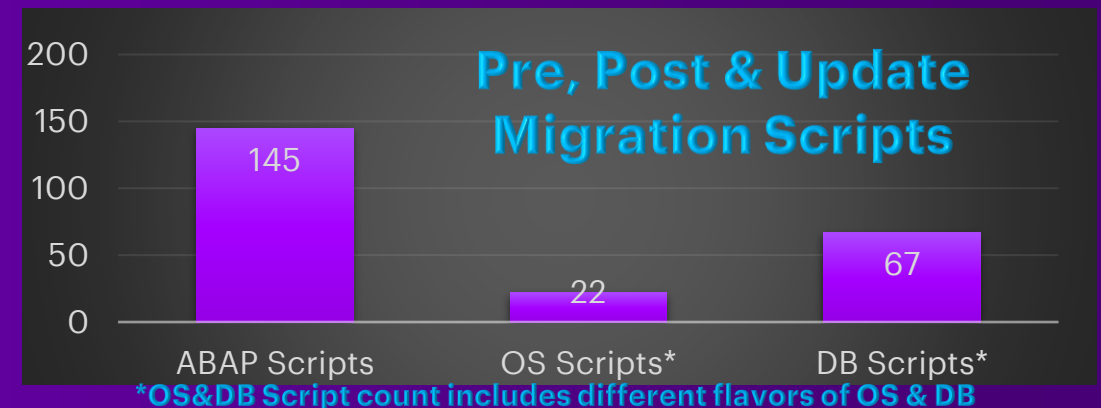
Source/Target DB: Oracle, MSSQL, HANA, Sybase, DB2

- Feature to be pilot tested

Effort savings potential per instance based on migration complexity (very complex to simple)

- ***9% - 19%** for **Heterogeneous**
- ***14% - 29%** for **Homogeneous**

- Agile development based on DevOps tools Ansible and Terraform
- Accelerated speed to market for new features & enhancements
- Scripted Basis config extract from Source system during Pre-migration, Ramp-Down checks and validation/update of essential Basis config on target during Post-Migration
- Automated provisioning of Cloud resources and SAP systems using Cloud Builder 2.0
- **Just introduced** - Automated Homogeneous / Heterogeneous Database migrations, Automated Backup/Restore, SWPM Export/Import of database and Automated HANA – HSR DB replications from source to target systems



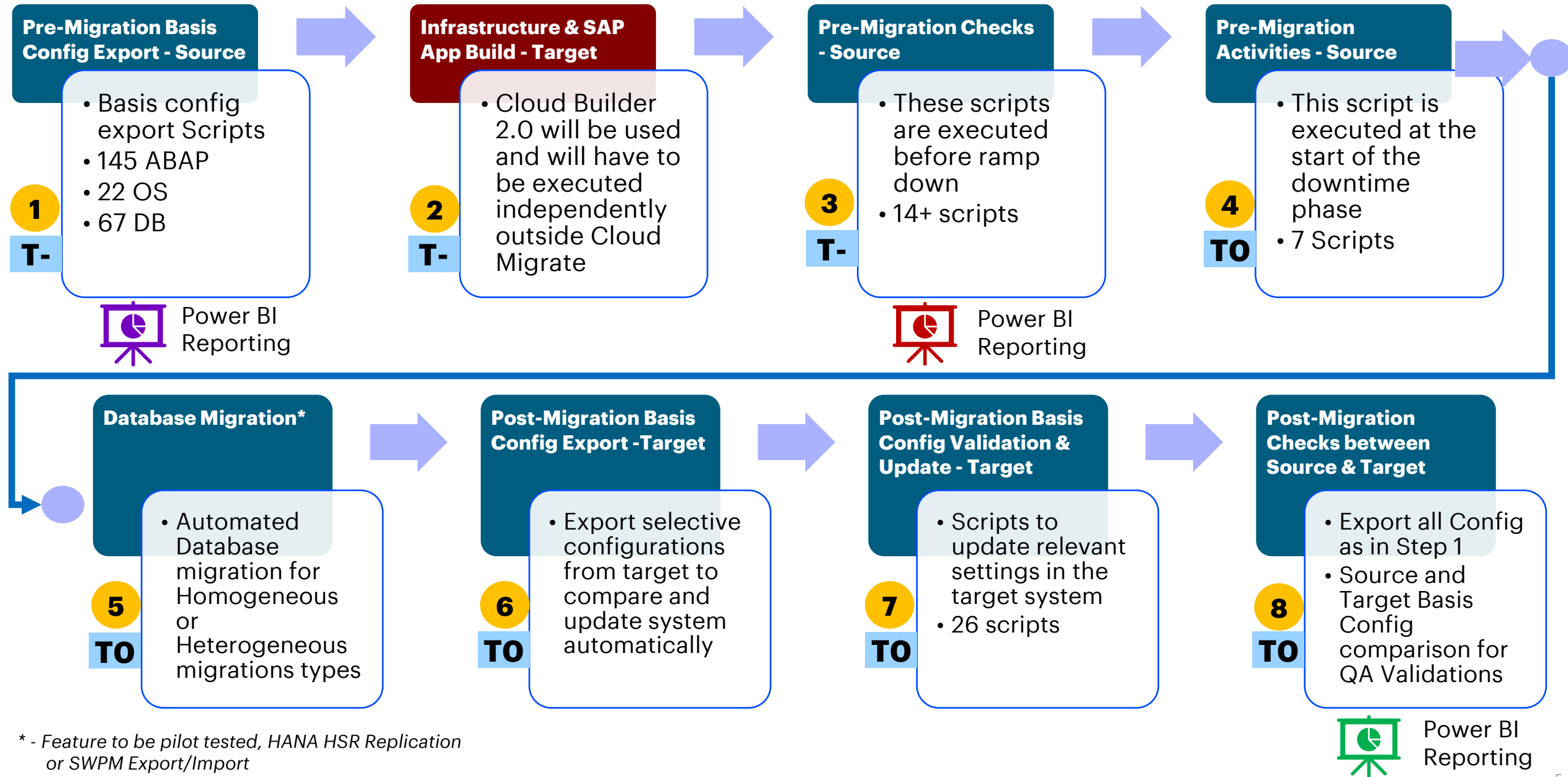
Overview videos

Demo Links

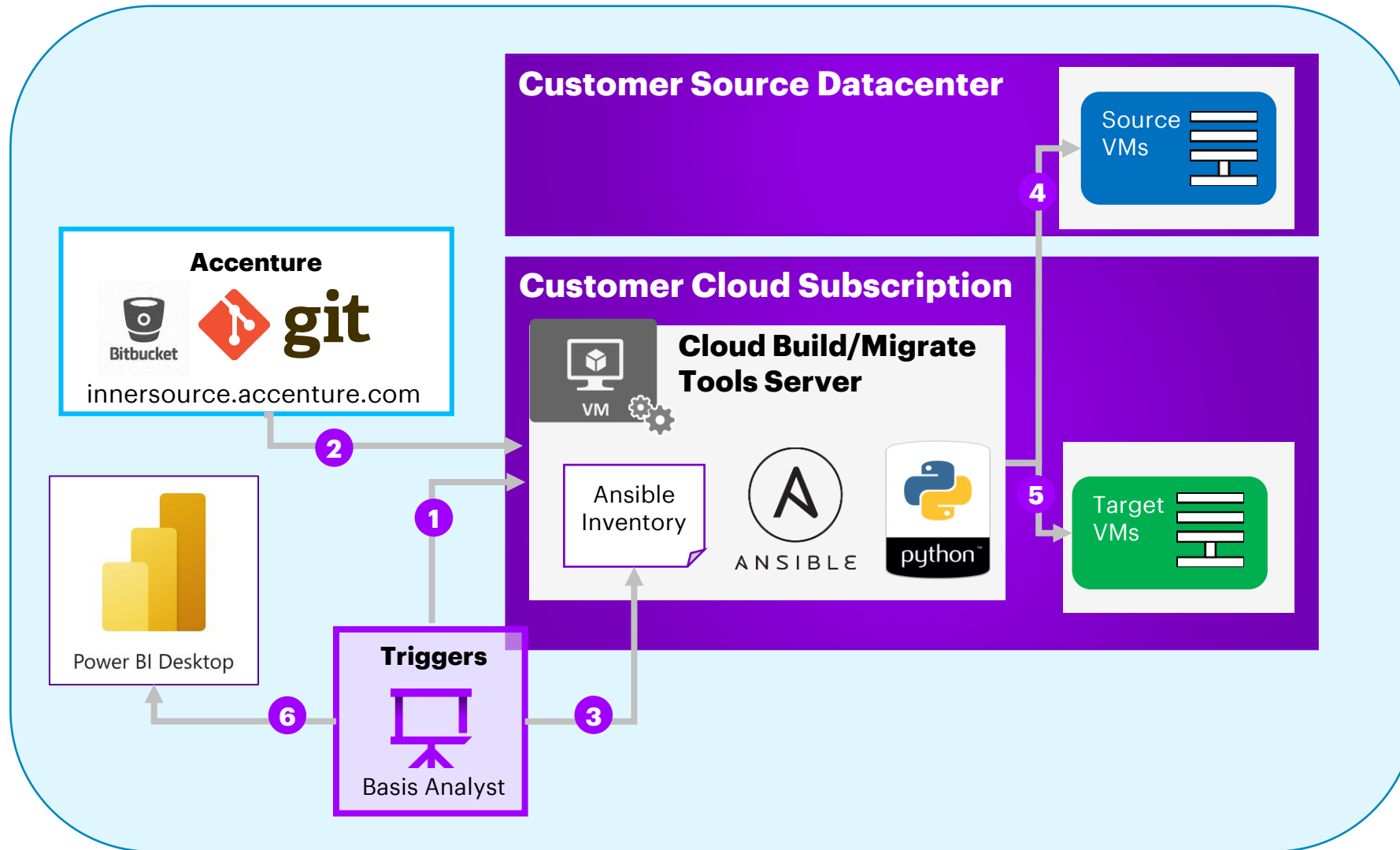


SAP Cloud Migrate -Demo

Cloud Migrate – Logical Workflow




Cloud Migrate – Architecture



- 1** Engineer provisions & install Cloud Migrate Tools server with relevant libraries as PyRFC
- 2** Engineer clones Ansible Git repositories to tools server
- 3** Engineer updates Ansible Inventory & Credentials to execute Cloud Migrate scripts
- 4** Engineer runs Ansible scripts to extract Basis Configurations data during Pre-migration
- 5** Engineer runs Ansible scripts to validate and update essential Basis config during Post migration
- 6** Analyse Power BI Dashboards in various steps

Cloud Migrate Pre-Requisites

Area	Requirements
Infrastructure	Setup Ansible Controller server as per the user guide (Cloud Builder Tools VM can be re-used) <ul style="list-style-type: none">• VM with 4 CPU, 16GB RAM, 100GB Disk & 25GB SWAP memory is recommended for Ansible Controller (Azure - D4a_v4, AWS - m5.xlarge, GCP - n2 standard 4)• Python, NWRFCSDK & pyrfc packages will be installed
Network (Ports)	Enable network to SAP & OS ports between the Migration controller and Source and Target machines (Port details given in next slide)
SAP System Access  CM_inventory.txt	Identify and obtain the required migration source systems and target system details <ul style="list-style-type: none">• OS - Credentials to connect into SIDADM (Password or SUDO permissions to SIDADM and root)• DB - User credentials with permission to extract Database Configurations• ABAP - R3 Username and password for connecting into ABAP system. (A user that has read access for exports and edit access for update scripts execution) <p>Note: Use ZACN_CLOUDSUITE_ROLE_READ role for only Pre , Post and Update activities Use Z_ACN_CM_ALL_FEATURES role for Pre, Post, Update and Ramp-down activities</p>
ABAP Application Requirement	<ul style="list-style-type: none">• ABAP Version >= 731• Import Transport<ul style="list-style-type: none">• FIOK900931 into Source system to enable PyRFC connectivity• FIOK901386- This will enable the execution of OS commands/DB in Linux systems at ABAP level via SM69• FIOK901390- This will enable the execution of OS commands/DB in Windows systems at ABAP level via SM69• Backout objects imported in above TR import<ul style="list-style-type: none">• FIOK900685 and FIOK900687 - Reversal TR of objects deployed via FIOK900931• FIOK901388 - Reversal TR of objects deployed via FIOK901386 for Linux systems• FIOK901392 - Reversal TR for objects deployed via FIOK901390 windows systems
Dashboarding	<ul style="list-style-type: none">• Install Power-BI for Desktop on a Jump Server with recommended 4CPU and 16GB RAM for reporting dashboards• Require WinSCP on Laptop/Jump Server to copy JSON files from controller machine (These JSON files will be the input for Power-BI Dashboards)

Required Ports

Between SAP and Cloud Suite tools

Port Type (TCP/UDP/ Other)	Port Number*	Purpose
TCP	33XX	For Cloud migrate to connect SAP Application Servers, (to be opened for all App servers)
TCP	32XX	For Cloud migrate to connect SAP Dispatcher server port (to be opened for all App servers)
TCP	36XX	For Cloud migrate to connect SAP Message server port
TCP	22	SSH Port for connecting Linux systems
TCP	5985	WinRM port for Windows System connection
TCP	5986	WinRM port for Windows System connection (as required)
TCP	1433	MSSQL Port (as required)
TCP	3XX13	HANA SYSTEM Database Port (as required)
TCP	3XX15	HANA TENANT Database Port (as required)
TCP	5000	ASE Default Port (as required)
TCP	50000	DB2 Default Port (as required)
TCP	1521	Oracle Listener default port (as required)

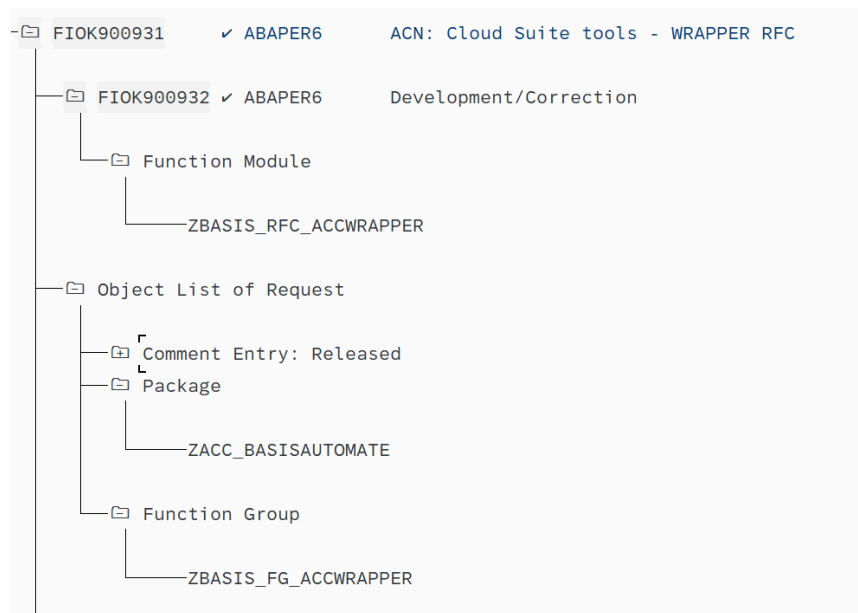
* - Respective ports as per client customization

Cloud Migrate Pre- Requisites

Managed system TR

Transport *FIOK900931 to be imported to enable the RFC Program for the connectivity from Migration controller server to SAP**

- This transport comprises 3 objects Package - ZACC_BASISAUTOMATE, Function Group - ZBASIS_FG_ACCWRAPPER and RFC-enabled Function Module - ZBASIS_RFC_ACCWRAPPER that will facilitate processing within the SAP system.



Reversal TR to delete all the above-mentioned objects

FIOK900685* - ACN: Cloud Suite tools - WRAPPER RFC - Reversal 1

FIOK900687* - ACN: Cloud Suite tools - WRAPPER RFC - Reversal 2

** - TR numbers are likely to change based on the development progress*

Ansible Playbooks

Ansible play books are saved in the location below and gets copied to individual folders as we perform migration:

/<<CM install path>>/sc01-abap-migration_sourcesid_targetsid/ansible/playbooks

No.	Playbook Name	Usage
1	01_source_pre_migration_basisconfig_export.yml	Export Basis configurations from Source Systems from ABAP, OS and DB Layers
2	02_target_system_build.yml	Build target system, this will in turn call Cloud Builder 2.0 Code to build target system landscape
3	03_source_pre_migration_rampdown_checks.yml	These scripts are executed to validate the readiness for migration before the ramp down of the source system
4	04_source_pre_migration_rampdown_activities.yml	These scripts are executed on the source system as a preparation for the migration on the source system
5	05_db_migration.yml	This step automates the DB migration automatically from Source to Target. As of today, MVP available only for selective scenarios . More patterns are coming soon
6	06_target_post_migration_basisconfig_export.yml	This step export selected configurations required to validate and update system as in next step
7	07_target_post_migration_basisconfig_validate_update.yml	In this step, the target system is compared against the source system and updated to meet the required target state system.
8	08_target_post_migration_basisconfig_export_final.yml	Reexport all the setting on target as given in Step 1 to provide a consolidated comparison between source and target system


Migration Basis Config Export – Source – ABAP – 1/2

Pre-Migration Basis
Config Export - Source

1

T-

- Basis config export Scripts
- 145 ABAP
- 22 OS
- 67 DB


Power BI Reporting

Post-Migration
Checks between
Source & Target

8

TO

- Export all Config as in Step 1
- Source and Target Basis Config comparison for QA Validations

Power BI Reporting

CORE BASIS CONFIGURATIONS
Capture time zone (STZAC)
Capture ABAP Dumps (ST22)
Capture table HTTPURLLOC
Capture SAP Application server Instances (SM51)
Capture Update Requests (SM13)
Capture Client Settings (SCC4)
Export System Change options (SE06)
Capture Update Administration Status (SM13)
Capture ICM ports, HTTP, HTTPS or SMTP (SMICM)
Capture Login Screen Info (SE61)
Capture Enqueue Statistics (SM12)
Capture SAPOSS Technical Settings (OSS1)
Capture System Id
Capture Installed Product Version
Capture Operating System Commands in SM69
Check SAP Initial Consistency Check (SICK)
Capture Unicode Status (Yes/No)
Capture ICM Running Status (SMICM)
Capturing errors in System Logs (SM21)
Capture system kernel and patch data (SM51)
Capture operation type sets and exception operation modes (RZO4/SM63)
Capture system component version details (CVERS Table)
Capture Enqueue lock entries (SM12)
Capture Kerberos Configuration (SPNEGO)
Read System messages (SM02)

DB SPECIFIC CONFIGURATIONS
Oracle DB only: Check the contents of the TAORA and IAORA database tables and ensure that the entries are consistent
Heterogeneous system copies only - Make sure that the tables TATGPC and TATGPCA are empty
Verify or Run Database consistency Check (DB13)
Make sure that the log backup is enabled during the import (DB02)
Capture the database connection information (DBCO)
Capture Missing Tables & Indexes (DBACOCKPIT)
Check Database Encryption DB2
Check Database Encryption HANA
Check Database Encryption SYBASE
Last Log & Database backup
Top Tables in HANA
Top Tables in ORACLE
Top Tables in MS SQL SERVER
Top Tables in SYBASE
Top Tables in DB2
Capture current and free database size
Current and free DB size for SYBASE system
Capture DB Planning calendar Job Schedule (DB13)
Check & run for validity of DB stats on source system, and update if necessary (DB13)
Capture current and free DB size for MSSQL DB
Check for DB encryption

CONNECTIONS & INTERFACES
Capture Secure Store entries (SECSTORE)
Check RFC Connections RSRFCCHK (SM59)
Capture SMTP Nodes Details in SCOT
Capture Trusted RFC (SMT1)
Capture Trusting RFC (SMT2)

QUEUES & INTERFACES
Capture Partner Profile details (WE20)
Capture Failed IDocs (WE02)
Capture Outbound Queue (SMQ1)
Capture Inbound Queue (SMQ2)
Capture Logical systems (BD54)
Capture Port in IDOC processing (WE21)
Capture Inbound Queue (SMQR)
Capture Outbound Queue (SMQS)
Capture RFC destinations (SM59)
Export Failed tRFCs (SM58)
Capture bgrfc items (SBGRFCMON)

BUSINESS CONFIGURATIONS
Capture Active Business Functions (SFW5)
Capture SAP Directories (AL11)
Capture Failed or Held jobs in the Last 1 week (SM37)
Batch processing: failed jobs - SM35

* Evolving list


Migration Basis Config Export – Source – ABAP – 2/2

Pre-Migration Basis
Config Export - Source

1

T-

- Basis config export Scripts
- 145 ABAP
- 22 OS
- 67 DB

 Power BI Reporting

SLD CONFIGURATIONS
Capture RZ70 SLD Registration (RZ70)
Check SLD Connection (SLDCHECK)
Capture SLD Configuration (RZ70)
Capture contents of SLDAPICUST (SLDAPICUST)

PERFORMANCE CONFIGURATIONS
Capture server groups (SM61)
Capture Logon Groups (SMLG)
Capture SAP Buffer Parameters (ST02)
Capture RFC Server Groups (RZ12)
Capture workload history data from ST03N
RZ03 - Capture CCMS server status & alerts
Capture CPU, Memory, LAN, Disk details (ST06)


TRANSPORT MANAGEMENT CONFIGURATIONS
Capture table E070L
Capture Import Queue Status (STMS)
Capture Transport system overview (STMS)
Capture list of open TRs (i.e - not released)
Transport consistency check (STMS)
Check Transport Tool (Report RSTPTEST)

Post-Migration
Checks between
Source & Target

8

TO

- Export all Config as in Step 1
- Source and Target Basis Config comparison for QA Validations

 Power BI Reporting

OUTPUT MANAGEMENT CONFIGURATIONS
Capture spool requests that are in error state (SP01)
Capture TEMSE Objects consistency checks (SP12)
Capture Spool Devices (SPAD)
Capture Printer Lock Unlock (SPAD)

OTHER APPLICATION CONFIGURATIONS
Export VMC Status & Server List (SM52)
Capture Content repository connection (OAC0)
Run report RS_SCRP_D020S_CLEAN to check if entries are there D020S and DYNPSOURCE
Check ADS Connectivity (Report FP_TEST_00)
Verify table entry (RSADMINA, RSBASIDOC, RSLOGSYSMAP, RSLOGSYSDEST, RSPOR_T_PORTALL, HTTPURLLOC, RSDANLCON)

SECURITY CONFIGURATIONS
Capture contents of PRXYINFO (SMGW)
Capture contents of REGINFO (SMGW)
Capture contents of SECINFO (SMGW)
Capture SNC Status (SM51)
Capture certificate and PSE details (STRUST)
Capture web dispatcher SSL certificate and PSE details (STRUST)

* Evolving list

Power BI Reporting

Migration Basis Config Export – Source (ABAP)

1 - Cloud Migrate - Premigration Basis Config Export → Cloud Migrate - Premigration Basis Config Export_ABAP.pbit

Diagram illustrating the Pre-Migration Basis Config Export - Source. A blue box labeled "Pre-Migration Basis Config Export - Source" points to a list of items: Basis config export Scripts, 145 ABAP, 22 OS, and 67 DB. A yellow circle with the number "1" and a blue box with the letter "T-" are also shown. Below the list is a purple icon of a presentation screen with a pie chart, labeled "Power BI Reporting".

FileHomeInsertModelingViewHelp

Get data

Refresh

New visual

Sensitivity

Publish

System Status

Database Information

DB Client Library	SQLDBC 2.06.061.1604085925
Database Releases	HANA 1.0, HANA 2.0
DBSL Version	753.02
DBSL Patch Level	NULL

System Information

IP Address	172.16.136.23
SAP Versions	740, 750, 751, 752, 769
Operating System	Linux
OP Release	3.10.0-1160.25.1.el7.x86_64

Host Data

Operating System	Linux
Machine Type	x86_64
Server Name	fiorivm1_FIO_41
Platform ID	390

SAP System Data

Installation Number	0020848296
License Expires On	99991231
Unicode System	Yes

Home PageSummarySCC4 & SM51System Status 01System Status 02ST22-System DumpsST22-DataSM69RZ04SM13 & Unicode

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Migration Basis Config Export – Operating System

Pre-Migration Basis Config Export - Source



- Basis config export Scripts
- 145 ABAP
- 22 OS
- 67 DB

1

T-



Power BI
Reporting

Post-Migration Checks between Source & Target

- Export all Config as in Step 1
- Source and Target Basis Config comparison for QA Validations

8

TO



Power BI
Reporting

Operating System Configurations

- Fetch Default and Instance Profiles Parameter
- Capture available space for source and target directories (Mount Points)
- Capture Java Version
- Capture CPU information
- Capture R3load version
- Capture ULIMIT Settings (Linux flavors only)
- Capture OS version
- Capture memory
- Capture scheduled Cron Jobs at OS level
- Capture /etc/hosts & /etc/services file
- Profile Parameters

Note : All the OS and DB scripts can be executed at ABAP level

Migration Basis Config Export – Database

Pre-Migration Basis Config Export - Source

- Basis config export Scripts
- 145 ABAP
- 22 OS
- 67 DB

1
T-



Post-Migration Checks between Source & Target

- Export all Config as in Step 1
- Source and Target Basis Config comparison for QA Validations

8
TO



HANA Database Configurations

Get HANA version
Get HANA logmode check
Get HANA DB size
Selective HANA tables
Get HANA datafile layout
Get last log backup
Get HANAdb_last_backup
Get HANAdb_system_user_status
Get HANA license
Get HANA log backup frequency
Get HANA complete backup frequency
Get HANA incremental backup frequency
Get HANA differential backup frequency
Get HANA log backup duration
Get HANA complete backup duration
Get HANA incremental backup duration
Get HANA differential backup duration
Get HANA landscape details

MSSQL Database Configurations

Get SQL version
Get Datafile layout
Get Log mode
Fetch DB size
Update statistics
Selective tables
Get sqldb last log backup

Oracle Database Configurations

Get Oracle version
Get Oracle datafile layout
Get Oracle log mode
Fetch Oracle db size
Update Oracle statistics
selective Oracle tables
Get Oracledb last log backup
Get Oracledb last backup
Get Oracle parameter backup
Get Oracle db connection status
Get Oracle db information
Get Oracle db installed components
Get Oracle patch version
Oracle delta growth
Get list of top lob
Get list of top tables
Get Oracle tablespace information

SYBASE Database Configurations

Get Sybase version
Get Sybase logmode check
Get Sybase db size
Update Sybase statistics
Selective Sybase tables
Get Sybase datafile layout
Generate DBCC checktab

DB2 Database Configurations

Get DB2 version
Get db2 datafile layout
Fetch DB2 db size
Update DB2 statistics
Selective DB2 tables
Get DB2 last_backup
Get DB2 connect_status
Get DB2 fix_pack_level
Get DB2 license_status
Get DB2 lock_timeout
Get DB2 tablespace_status
Get DB2 tablespace_validation
Get DB2 backup_status
Get DB2 parameter configuration
Get db2 log mode
Get DB2 last log backup
Get DB2 parameter validation
DB2 Consistency Check

Power BI Reporting

Migration Basis Config Export – Source (OS & DB)


1 - Cloud Migrate - Premigration Basis Config Export → Cloud Migrate - Cloud Migrate - Premigration Basis Config Export_DBOS.pbit

Pre-Migration Basis Config Export - Source

1

T-

- Basis config export Scripts
- 145 ABAP
- 22 OS
- 67 DB


 Power BI Reporting

Post-Migration Checks between Source & Target

8

TO

- Export all Config as in Step 1
- Source and Target Basis Config comparison for QA Validations

 Power BI Reporting

Cloud Migrate - Premigration Basis Config Export_DBOS - Power BI Desktop

File Home Insert Modeling View Help

Get data Refresh New visual Sensitivity (preview) Publish

Suse OS Version

SLES_SAP Linux name	SUSE variety	15 major_version
15	0	release

OS CPU Details

x86_64 Architecture	20 CPU(s)	1 Core(s) per s...	6 CPU family	2,394.22 CPU MHz
32-bit, 64-bit	VMware	Intel(R) Xeon...	GenuineIntel	full
CPU op-mo...	Hypervisor v...	Model name	Vendor ID	Virtualization ty...

OS Memory Details

105141 real.free	257928 real.total	152787 real.used	0 swap.cached	2047 swap.free
2047	0	130954	126974	
swap.total	swap.used	nocache.free	nocache.used	

OS File System Layout

Filesystem	Mounted_on	Size	Avail	Used	Use%
/dev/mapper/system-root	/	60G	32G	28G	0.47
/dev/mapper/system-root	/snapshots	60G	32G	28G	0.47
/dev/mapper/system-root	/boot/grub2/1386-pc	60G	32G	28G	0.47
/dev/mapper/system-root	/boot/grub2/x86_64-efi	60G	32G	28G	0.47
/dev/mapper/system-root	/home	60G	32G	28G	0.47
/dev/mapper/system-root	/opt	60G	32G	28G	0.47
/dev/mapper/system-root	/root	60G	32G	28G	0.47
/dev/mapper/system-root	/srv	60G	32G	28G	0.47
/dev/mapper/system-root	/tmp	60G	32G	28G	0.47
/dev/mapper/system-root	/usr/local	60G	32G	28G	0.47
/dev/mapper/system-root	/var	60G	32G	28G	0.47
/dev/sdb1	/hana/shared	200G	180G	21G	0.11
/dev/sdc1	/hana/data	300G	22G	78G	0.27
/dev/sdd1	/hana/log	300G	287G	14G	0.05

HANA DB Version

branch	version
fa/hana2sp04	2.00.044.00.1571081837

HANA DB Size

database_name	database_size_in_gb
QBH	34.31

HANA Last Full Backup

entry_type_name	state_name	sys_end_time
complete data backup	successful	4/26/2021 1:08:14 PM

HANA Last Log Backup

entry_type_name	state_name	sys_end_time
log backup	successful	4/27/2021 8:07:52 AM

HANA DB Logmode

database_name	host	log_mode	system_id	port
QBH	saphqhb01	normal	QB3	31040
QBH	saphqhb01	normal	QB3	31043

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Title HANA DB Information HANA Datafile Layout Suse OS Information Suse Host-Services

Cloud Migrate - Premigration Basis Config Export_DBOS - Power BI Desktop

File Home Insert Modeling View Help

Get data Refresh New visual Sensitivity (preview) Publish

HANA DB Version

branch	version
fa/hana2sp04	2.00.044.00.1571081837

HANA DB Size

database_name	database_size_in_gb
QBH	34.31

HANA Last Full Backup

entry_type_name	state_name	sys_end_time
complete data backup	successful	4/26/2021 1:08:14 PM

HANA Last Log Backup

entry_type_name	state_name	sys_end_time
log backup	successful	4/27/2021 8:07:52 AM

HANA DB Logmode

database_name	host	log_mode	system_id	port
QBH	saphqhb01	normal	QB3	31040
QBH	saphqhb01	normal	QB3	31043

Page 2 of 5

Title HANA DB Information HANA Datafile Layout Suse OS Information Suse Host-Services

Pre-Migration Checks - Source

Pre-Migration Checks
- Source

➔

Basis readiness checks prior to start of system downtime activities

3
T-

- These scripts are executed before ramp down
- 14+ scripts



Power BI
Reporting

Basis readiness checks prior to start of system downtime activities	
1	Validates if the Target Kernel patch level is greater than or equal to source and is of the same release version
2	Validates if canceled or pending update requests exist in the system
3	Checks in source if Operation modes are active
4	Check for QCM Tables from Source system
5	Checks if database log backups are enabled to mitigate log overflow
6	Executes report RS_SCRP_D020S_CLEAN to check if entries exist in D020S and DYNPSOURCE
7	Heterogeneous system copy only – Checks if tables TATGPC and TATGPCA are empty
8	Captures missing tables and indexes
9	Executes Database consistency Check
10	Captures failed IDocs
11	Extracts tRFC & qRFC queue details
12	Extract list of failed background jobs (t-1)
13	Export list of top 100 tables by size and row
14	Oracle DB only: check consistency of TAORA and IAORA database tables content

Power BI Reporting

Pre-Migration Checks - Source

2 - Cloud Migrate Checks → Cloud Migrate Checks.pbit

Pre-Migration Checks
- Source

- These scripts are executed before ramp down
- 14+ scripts



Power BI
Reporting

Cloud Migrate Rampdown Checks - Copy - Power BI Desktop

Search

Kalpna Venkatesan

FileHomeInsertModelingViewHelpExternal Tools

Get dataRefreshNew visualSensitivityPublish

Please click on the colored button below to navigate

Kernel Patch Level Comparison

Compares Kernel Patch version between Source and Target systems

Kernel Release Comparison

Compares Kernel version between Source and Target systems

Pending Failed Updates

Verify if there are any failed updates available on the system

Active Jobs

Check for Active jobs

QCM Table Check

Check if the entries in Invalid temp. table QCM table is deleted

TAORA Check

Consistency check for contents of the TAORA tables

IAORA Check

Consistency check for contents of the IAORA tables

D020S Check

Checks if there are invalid entries in tables D020S and DYNPSOURCE

Log backup Enabled

Checks if log backup is enabled on the source systemx

SMQR Queue

Check for SMQR Queue

SMQS Destination

Check for SMQS Destination

For Heterogeneous System Copy

Checks if the tables TATGPC are empty

For Heterogeneous System Copy

Checks if the tables TATGPCA are empty

Missing table and Index Check

Checks if there are missing tables and indexes

Failed IDOCs Check

Checks if there failed IDOCs available on the source system

SMQ1 Check

Check for processing SMQ1 and SMQ2 entries on Source system

SMQ2 Check

Check for processing SMQ1 and SMQ2 entries on Source system

Failed Jobs Check

Check for Failed jobs on the system

DB consistency Check

Checks if Database is consistent

Failed TRFC

Check for failed TRFC

Running TRS

Check for STMS Running TRS

DB Statistics

Check for DB Statistics

Home PageChecks 01DB Top 100 TablesKernel VersionPending Failed UpdatesQCM Table CheckTAORA and IAORA CheckLogbackup checkD02

Pre-Migration

Selective Basis Steps - Source

Pre-Migration Activities - Source



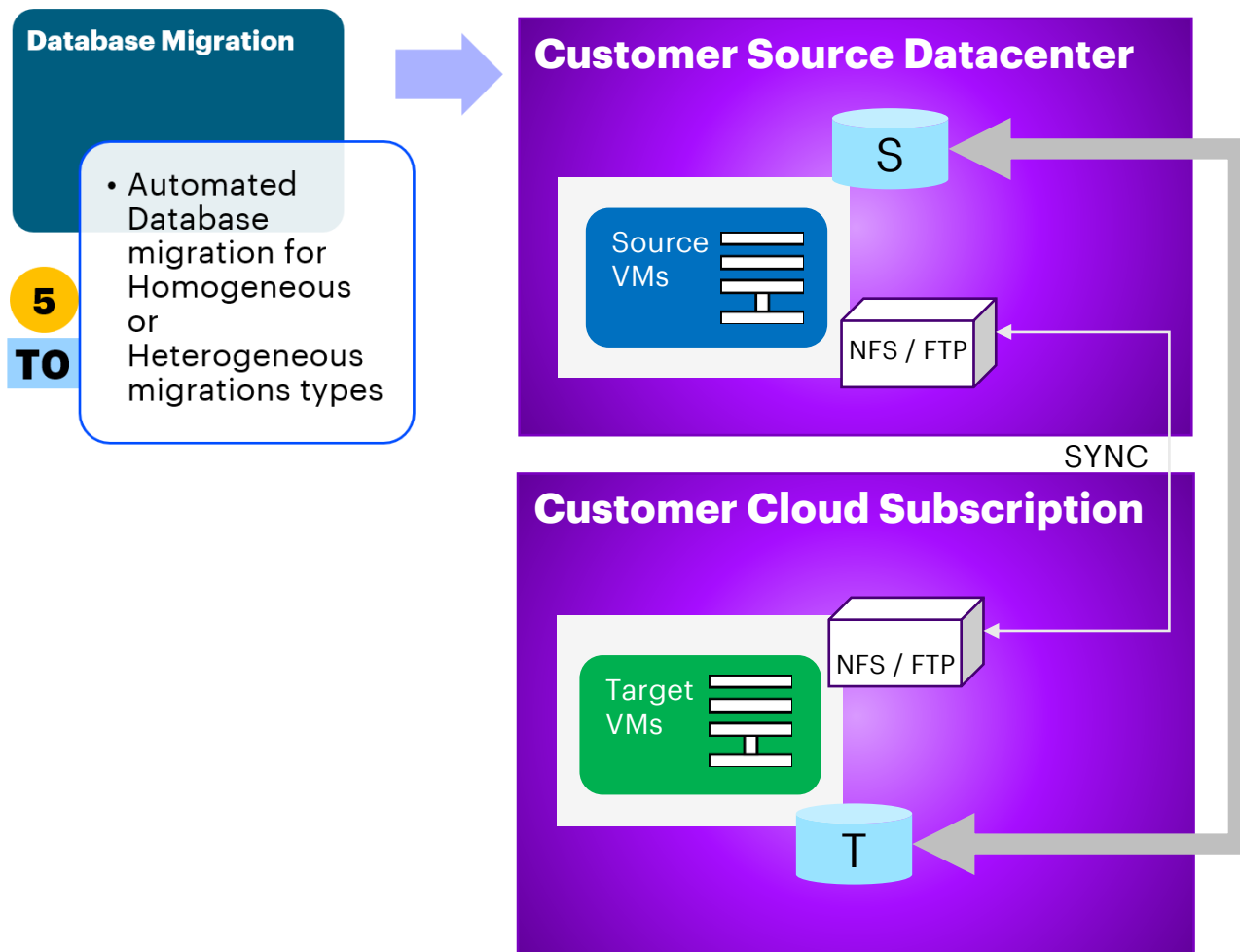
- This script is executed at the start of the downtime phase
- 7 Scripts

4

TO

No	Pre-Migration Execution Scripts
1	Delete TEMSE Objects
2	Delete Invalid Temporary Tables (QCM Tables)
3	Execute SMIGR_CREATE_DDL Report
4	Run report BTCTRNS1 to Suspend Background jobs
5	Create SM02 Message
6	Delete Failed Updates

Database Migration



FEATURES AVAILABLE

Automated Export/Import

- ✓ Parallel Export/Import
- ✓ Automation for Oracle PL/SQL splitter
- ✓ Table splitting logic
- ✓ FTP or NFS based Export files sync
- ✓ Export import Pre checks and comparison
- ✓ Advanced configuration using checkers as:
 - ✓ Object Checker
 - ✓ Table Checker
 - ✓ Package Checker
 - ✓ Time Analyzer
 - ✓ Export and import time stamps for further tuning
 - ✓ Table row count can be validated for tables - single table, multiple tables, product specific tables or all SAP schema tables.
- ✓ Automation to resume SWPM in case of errors
- ✓ Tested Automation Scenarios
 - ✓ Oracle to MSSQL (Linux to Windows)
 - ✓ Oracle to HANA (Linux to Linux)
 - ✓ Oracle to Oracle (Linux to Linux, Linux to Windows)
 - ✓ HANA to HANA (Linux to Linux)

Automated HANA-HSR

- One Click HANA System replication for RHEL and SUSE systems
- HSR Pre checks and comparison

Post-Migration Basis Config Validation & Update - Target

Post-Migration Basis Config Validation & Update - Target



- Scripts to update relevant settings in the target system
- 26 scripts

7

TO

No	Post-Migration Update Scripts
1	Restore Logon Group (SMLG)
2	Verify and Update time zone (STZAC) Client Specific
3	Verify Partner Profile details and Activate
4	Verify and update Background jobs group SM61
5	Verify and Activate Update status in (SM13--> Administration)
6	Verify and update SLD Settings RZ70
7	RZ21 Remove old application servers
8	Restore Client Settings
9	Restore HTTPURLLOC table
10	Update Logical system post migration
11	Restore System Settings
12	Restore SMQR Queue
13	Restore SMQS Destination
14	Activate & Deactivate Operation Modes in SM63
15	Verify and Update Spool Servers (SPAD)
16	Verify and Update SLDAPICUST
17	Lock/Unlock Printers (SPAD)
18	Scheduling Jobs as per DB Calendar
19	Verify and Update RFC Groups (RZ12)
20	Import missing certificates to PSE in target system
21	Restore operation modes in target system
22	RUN SGEN
23	Compare Profile Parameters and selective update in target
24	Run report BTCTRNS2 to Resume Background jobs
25	Deletion of entries from TU02
26	AL11 Path Updates
27	SM59 RFC updates

Power BI Reporting (Example 1)

Post-Migration Checks between Source & Target – ABAP 1, 2 & 3

3 - Cloud Migrate - Postmigration Basis Config Compare → Cloud Migrate - Postmigration Basis Config Compare - ABAP1.pbit
Cloud Migrate - Postmigration Basis Config Compare – ABAP2.pbit
Cloud Migrate - Postmigration Basis Config Compare – ABAP3.pbit

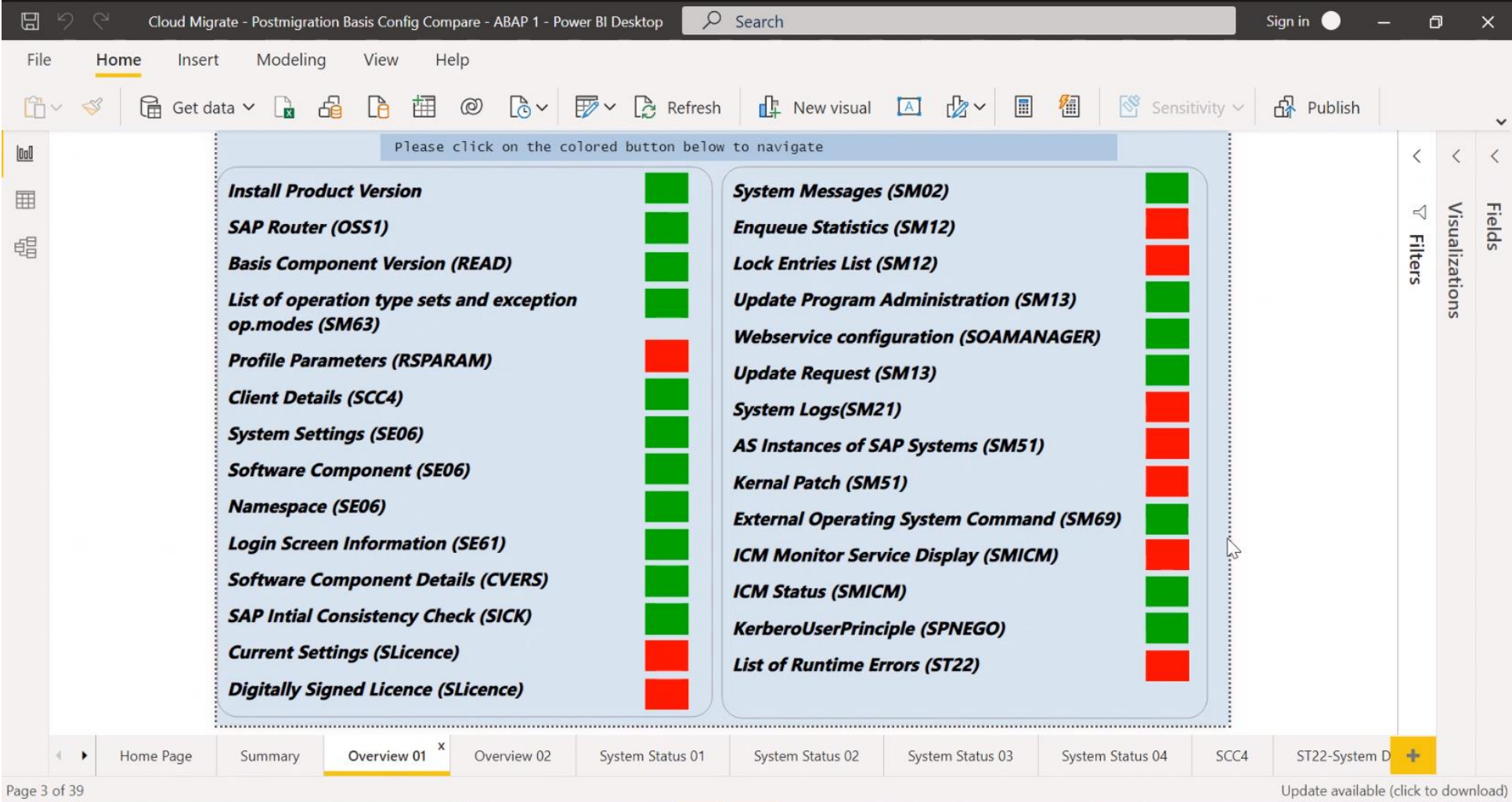
Post-Migration Checks between Source & Target

8

TO

Power BI Reporting

- Export all Config as in Step 1
- Source and Target Basis Config comparison for QA Validations



Power BI Reporting (Example 2)


Post-Migration Checks between Source & Target – ABAP 1, 2 & 3

3 - Cloud Migrate - Postmigration Basis Config Compare → Cloud Migrate - Postmigration Basis Config Compare - ABAP1.pbit
Cloud Migrate - Postmigration Basis Config Compare – ABAP2.pbit
Cloud Migrate - Postmigration Basis Config Compare – ABAP3.pbit

Post-Migration Checks between Source & Target

8 TO

- Export all Config as in Step 1
- Source and Target Basis Config comparison for QA Validations

Power BI Reporting

Cloud Migrate - Postmigration Basis Config Compare - ABAP 2 - Power BI Desktop

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SM59: RFC Destinations		
Source		
RFC destination	RFC options	
B53B1153F924C140E100000022248A8E	H=smportaldev.corp.halliburton.com;I=X;L=80;N=/WS_UMEService/UME;Q=8;w=SAP_BC_SOAP;F=0 0000;t=DEFAULT;	
BACK	t=1;	
C7A422544281D801E100000022248A92	H=np2appg638v;I=X;L=50014;N=/SAPControl.CGI;v=%P_WD;Q=A;w=SAP_BC_SOAP;F=0 0010;t=ANONYM;	
CALLTP_Linux	N=/usr/sap/DSR/DVEBMGS10/exe/tp	
CALLTP_WindowsNT	N=D:/usr/sap/CSR/DVEBMGS00/exe/tp.EXE	
CBULCNT100	H=sapcli01-d.s=00;M=100;U=BWREMOTE;L=E;Y=2;h=2;z=-2;v=%P_WD;q=0;I=Y;R=N;	
CD67F251C9095370E100000022248A8E	H=np2appg634v;I=X;L=1128;N=/SAPOScol.CGI;Q=A;w=SAP_BC_SOAP;F=0 0010;t=ANONYM;	
CEN_ALERT	H=34.224.232.78;S=00;M=100;U=H8AT363;L=E;Y=2;h=2;z=-2;v=%P_WD;	
CentralMonitoringServer-XIAAlerts	H=HOUARPL121.corp.halliburton.com;S=01;M=100;U=PRRWUSER;Y=2;h=2;z=-2;v=%P_WD;q=0;R=N;	
CGRCLNT100	H=10.243.220.104;S=01;M=100;I=X;Y=2;h=2;z=-2;Q=Y;R=N;	
CHU(C) NT100	H=34.224.232.78;S=00;M=100;I=X;Y=2;h=2;z=-2;v=%P_WD;	

Target		
RFC destination	RFC options	
AFA422544281D801E100000022248A92	H=np2appg638v;I=X;L=50013;N=/SAPControl.CGI;Q=A;w=SAP_BC_SOAP;F=0 0010;t=ANONYM;	
B267F251C9095370E100000022248A8E	H=np2appg634v;I=X;L=50014;N=/SAPControl.CGI;Q=A;w=SAP_BC_SOAP;F=0 0010;t=ANONYM;	
B421A15328CCC973E100000022248A8E	H=smportaldev.corp.halliburton.com;I=X;L=80;Q=8;w=SAP_BC_SOAP;F=0 0010;t=ANONYM;	
B53B1153F924C140E100000022248A8E	H=smportaldev.corp.halliburton.com;I=X;L=80;N=/WS_UMEService/UME;Q=8;w=SAP_BC_SOAP;F=0 0000;t=DEFAULT;	
BACK	t=1;	
C7A422544281D801E100000022248A92	H=np2appg638v;I=X;L=50014;N=/SAPControl.CGI;v=%P_WD;Q=A;w=SAP_BC_SOAP;F=0 0010;t=ANONYM;	
CALLTP_Linux	N=/usr/sap/DSR/D10/exe/tp.d=2	
CALLTP_WindowsNT	N=D:/usr/sap/CSR/DVEBMGS00/exe/tp.EXE	
CBULCNT100	H=sapcli01-d.s=00;M=100;U=BWREMOTE;L=E;Y=2;h=2;z=-2;v=%P_WD;q=0;I=Y;R=N;	
CD67F251C9095370E100000022248A8E	H=np2appg634v;I=X;L=1128;N=/SAPOScol.CGI;Q=A;w=SAP_BC_SOAP;F=0 0010;t=ANONYM;	

RFC destination	RFC options	RFC type
CALLTP_Linux	N=/usr/sap/DSR/D10/exe/tp.d=2	T
SAPDSRAP01_DSR_10	H=SAPDSRAP01;S=10;d=2;	I

Fields Visualizations Filters

Summary Overview 01 Overview 02 Overview 03 AL11 SMT1 & SMT2 SFW5 SLDCHECK SECSTORE RZ70 SLDAPICUST SMT1

Power BI Reporting (Example 3)

Post-Migration Checks between Source & Target – ABAP 1, 2 & 3

3 - Cloud Migrate - Postmigration Basis Config Compare → Cloud Migrate - Postmigration Basis Config Compare - ABAP1.pbit
Cloud Migrate - Postmigration Basis Config Compare – ABAP2.pbit
Cloud Migrate - Postmigration Basis Config Compare – ABAP3.pbit

Post-Migration Checks between Source & Target

- Export all Config as in Step 1
- Source and Target Basis Config comparison for QA Validations

8
TO



Power BI
Reporting

Cloud Migrate - Postmigration Basis Config Compare - ABAP 3 - Power BI Desktop

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SMGW : Prxyinfo File

Source	Target
Data	Data
gw/prxy_info file not found	gw/prxy_info file not found

SMGW : Secinfo File

Source	Target
Data	Data
#	#
# file /usr/sap/DSR/DVEBMGS10/data/secinfo not found, use internal default	#
#VERSION=2	#VERSION=2
P TP=* USER=* USER-HOST=internal HOST=internal	P USER=* USER-HOST=internal HOST=local TP=*
P TP=* USER=* USER-HOST=local HOST=local	P USER=* USER-HOST=local HOST=internal TP=*
	P USER=* USER-HOST=local HOST=local TP=*

SMGW : Reginfo File

Source	Target
Data	Data
#	#
# file /usr/sap/DSR/DVEBMGS10/data/reginfo not found, use internal default	# file /usr/sap/DSR/D10/data/reginfo not found, use internal default
#VERSION=2	#VERSION=2
P TP=* HOST=internal	P TP=* HOST=internal
P TP=* HOST=local	P TP=* HOST=local

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Add data fields here

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Power BI Reporting

Post-Migration Checks between Source & Target – Profile Parameter Comparison

3 - Cloud Migrate - Postmigration Basis Config Compare → Cloud Migrate - Postmigration Profile Parameter Comparison.pbit

Post-Migration Checks between Source & Target

8

TO

- Export all Config as in Step 1
- Source and Target Basis Config comparison for QA Validations

Power BI Reporting

Cloud Migrate - Postmigration Profile Parameter Compare - Power BI Desktop

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	Source Name	Target Name	Parameter	Source Value	Target Value
✖	DEFAULT (1).PFL		abap/data_aging	ON	
✖	DEFAULT (1).PFL		dbms/name	hdb	
✖	DEFAULT (1).PFL		dbms/type	hdb	
✖	DEFAULT (1).PFL		dbms/hdb/dbname	hdb	
✖	DEFAULT (1).PFL		dbms/hdb/schema	SAPBS7	
✔	DEFAULT (1).PFL	DEFAULT (1) (1).pfl	enqueue/process_location	REMOTESA	REMOTESA
✖	DEFAULT (1).PFL	DEFAULT (1) (1).pfl	enqueue/serverhost	fiorivm1	dbora
✔	DEFAULT (1).PFL	DEFAULT (1) (1).pfl	enqueue/serverinst	01	01
✔	DEFAULT (1).PFL	DEFAULT (1) (1).pfl	gw/acl_mode	1	1
✔	DEFAULT (1).PFL	DEFAULT (1) (1).pfl	gw/sec_info	\$(DIR_GLOBAL)\$(DIR_SEP)secinfo\$(FT_DAT)	\$(DIR_GLOBAL)\$(DIR_SEP)secinfo\$(FT_D
✔	DEFAULT (1).PFL	DEFAULT (1) (1).pfl	icf/user_recheck	1	1
✔	DEFAULT (1).PFL	DEFAULT (1) (1).pfl	icm/HTTP/ASJava/disable_url_session_tracking	TRUE	TRUE
✖	DEFAULT (1).PFL		icm/TCP/enable_keep_alive	30	
✖	DEFAULT (1).PFL		icm/TCP/enable_keep_alive	TRUE	
✔	DEFAULT (1).PFL	DEFAULT (1) (1).pfl	is/HTTP/show_detailed_errors	FALSE	FALSE
✖	DEFAULT (1).PFL		login/no_automatic_user_sapstar	0	
✔	DEFAULT (1).PFL	DEFAULT (1) (1).pfl	login/password_downwards_compatibility	0	0
✔	DEFAULT (1).PFL	DEFAULT (1) (1).pfl	login/system_client	001	001
✖	DEFAULT (1).PFL	DEFAULT (1) (1).pfl	rdisp/mshost	fiorivm1	dbora
✖	DEFAULT (1).PFL	DEFAULT (1) (1).pfl	rdisp/msserv	sapmsFIO	sapmsNWO
✔	DEFAULT (1).PFL	DEFAULT (1) (1).pfl	rdisp/msserv_internal	3901	3901
✖	DEFAULT (1).PFL	DEFAULT (1) (1).pfl	rsdb/ssfs_connect	0	1
✔	DEFAULT (1).PFL	DEFAULT (1) (1).pfl	rsec/ssfs_datapath	\$(DIR_GLOBAL)\$(DIR_SEP)security\$(DIR_SEP)rsecssfs\$(DIR_SEP)data	\$(DIR_GLOBAL)\$(DIR_SEP)security\$(DIR_
✔	DEFAULT (1).PFL	DEFAULT (1) (1).pfl	rsec/ssfs_keypath	\$(DIR_GLOBAL)\$(DIR_SEP)security\$(DIR_SEP)rsecssfs\$(DIR_SEP)key	\$(DIR_GLOBAL)\$(DIR_SEP)security\$(DIR_
✖	DEFAULT (1).PFL	DEFAULT (1) (1).pfl	SAPDBHOST	fiorivm1	dbora
✖	DEFAULT (1).PFL	DEFAULT (1) (1).pfl	SAPGLOBALHOST	fiorivm1	dbora
✖	DEFAULT (1).PFL	DEFAULT (1) (1).pfl	SAPSYSTEMNAME	FIO	NWO

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THANK YOU