# Automating System Refreshes with Libelle System*Copy*

# About Libelle

- HQ in Stuttgart, Germany

- Offices in Atlanta, USA and Paris, France

- Develop & market standard enterprise software since '94

- 1,500+ installations at 400+ corporate customers worldwide

- 8 global Fortune 50 customers run Libelle software

- 25% of Libelle customers have >1bn$ annual revenue

# Libelle Solution Portfolio

## Data Replication

| |
|---|
| SAP HANA |
| Oracle/ RAC |
| SAP ASE |
| MSSQL |
| DB2/DPF |
| SAP MaxDB |
| Progress DB |
| MySQL/ MariaDB |
| dashDB |
| Flat File Replication |
| Cloud Replication |

## System Refresh Automation for SAP®

Libelle **System**Copy

**Client**Copy add-on

**System**Clone add-on

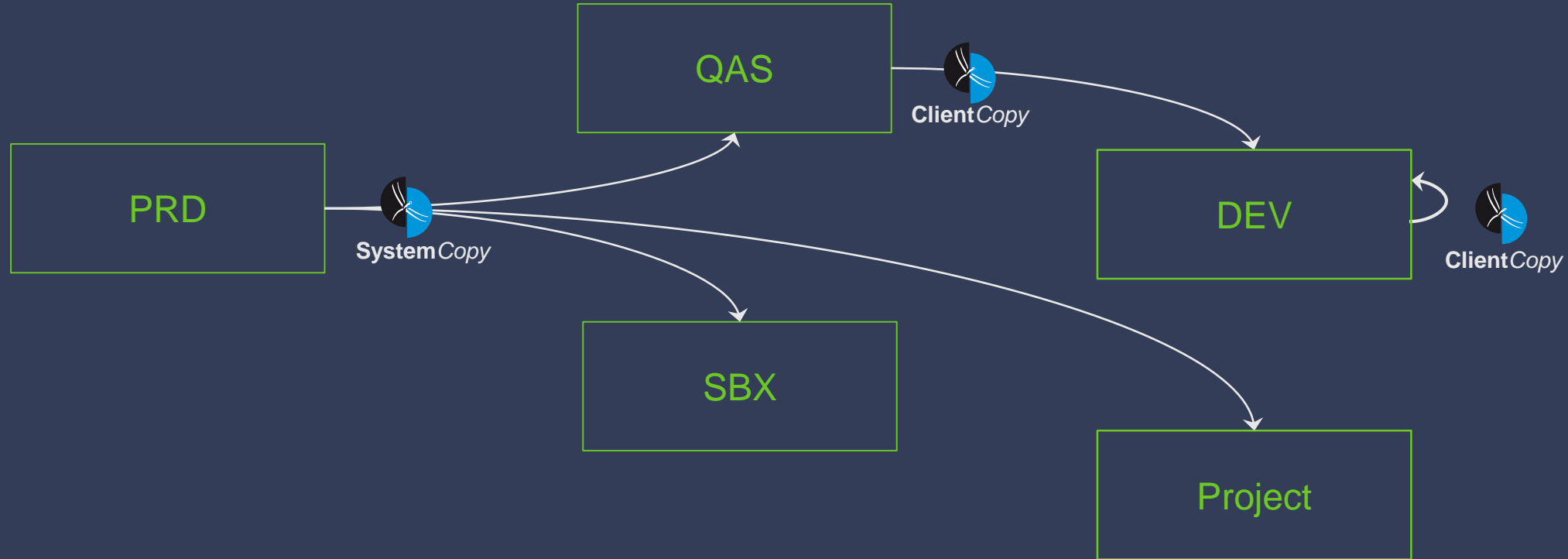**DB**Copy add-on

## Data Masking & Landscape Management

Libelle DataMasking

Libelle EDIMON
IDoc Monitor for SAP

Lift & Shift
Cloud Migrations

**Libelle software standardizes, automates, and optimizes IT operation.**

# The Homogeneous System Refresh



QAS

**Client**Copy

PRD

**System**Copy

DEV

**Client**Copy

SBX

Project

With 'System Refresh', we mean Homogeneous System Copies and Client Refreshes.
We do not include Data Slicing or heterogeneous migrations.

# Refresh Challenges & Opportunities

Time
intensive

Know-how
intensive

Labor
intensive

Highly
repetitive

Refresh Challenges
& Opportunities

Increased requests
for refreshes

Downtime during
execution

Small mistakes
have big impacts

High
complexity

Quality depends on
who executes

BDLS running
for hours

Manual refreshes are expensive for the business in multiple dimensions
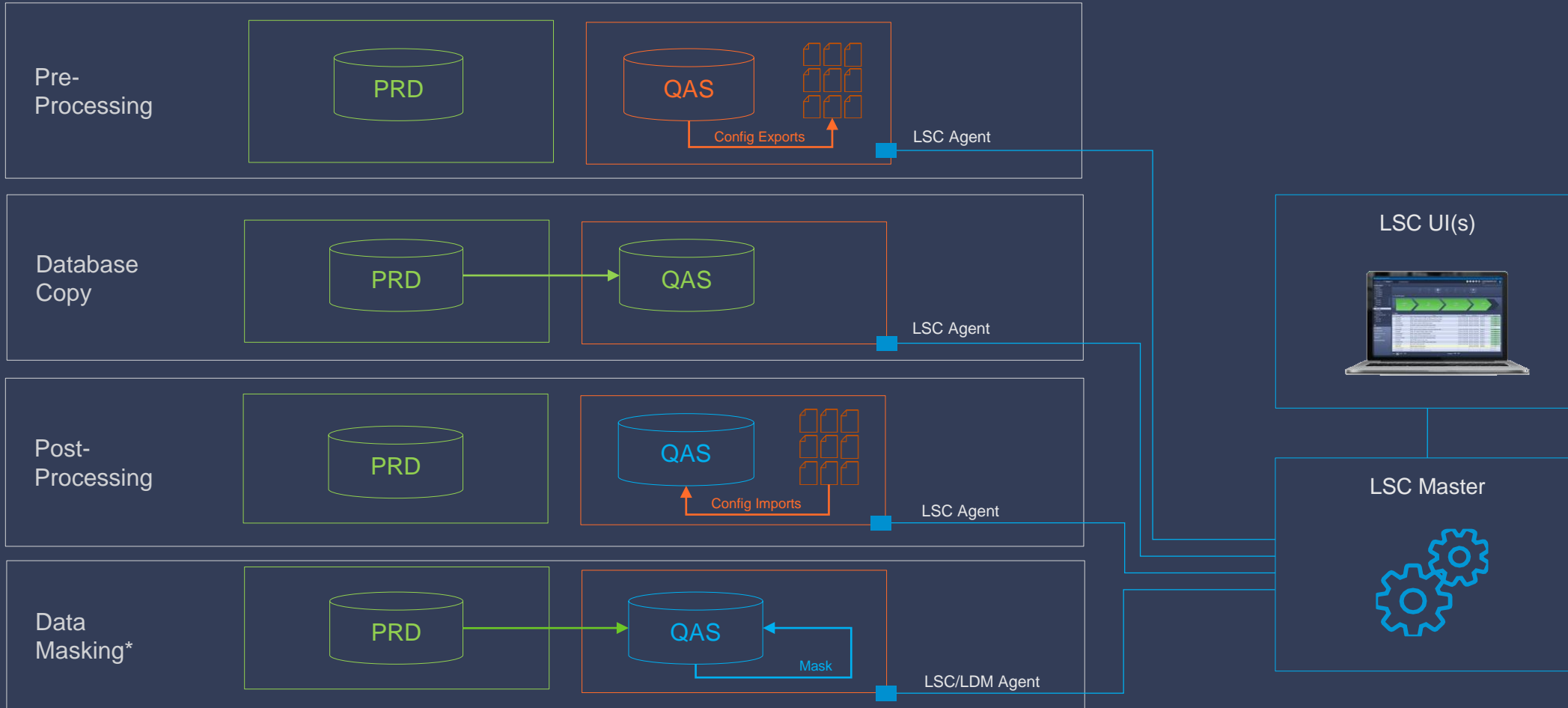
# What is Libelle **System**_Copy_?
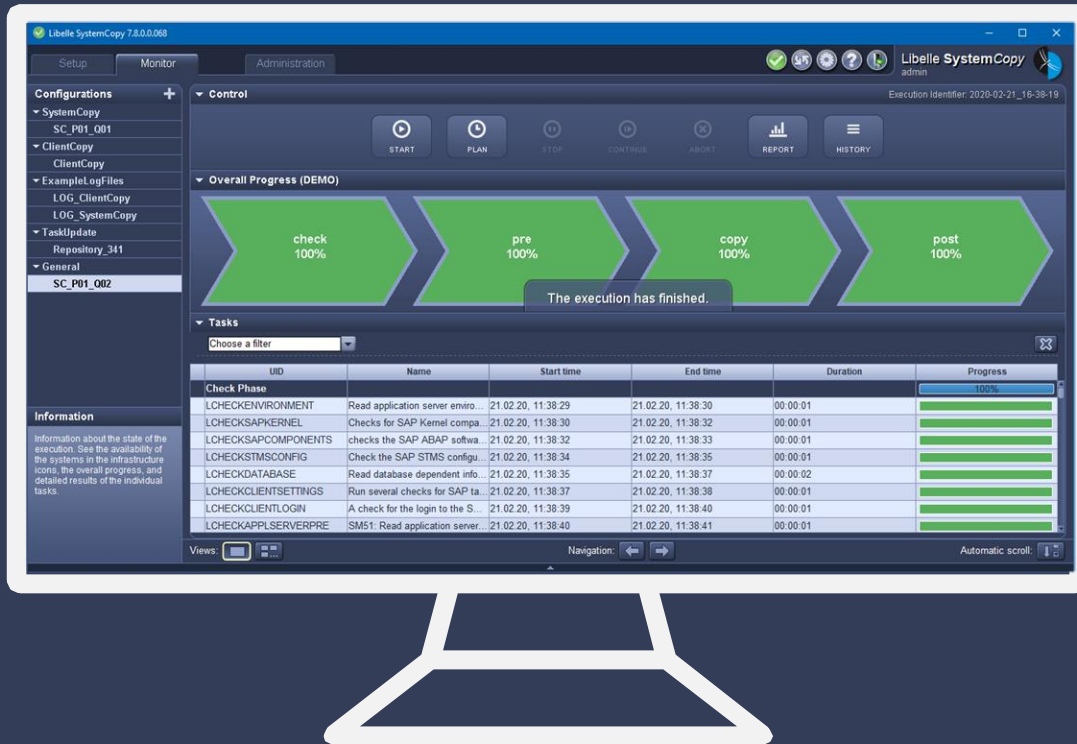


- LSC Software automates and accelerate refreshes end-to-end

- LSC is an automation framework with a modern, role-based UI

- LSC comes with 450+ pre-configured tasks covering
95% of typical refreshes

- LSC embraces automation following SAP standards

LSC has 3 main components: Automation Framework, Task Repository, and Admin UI
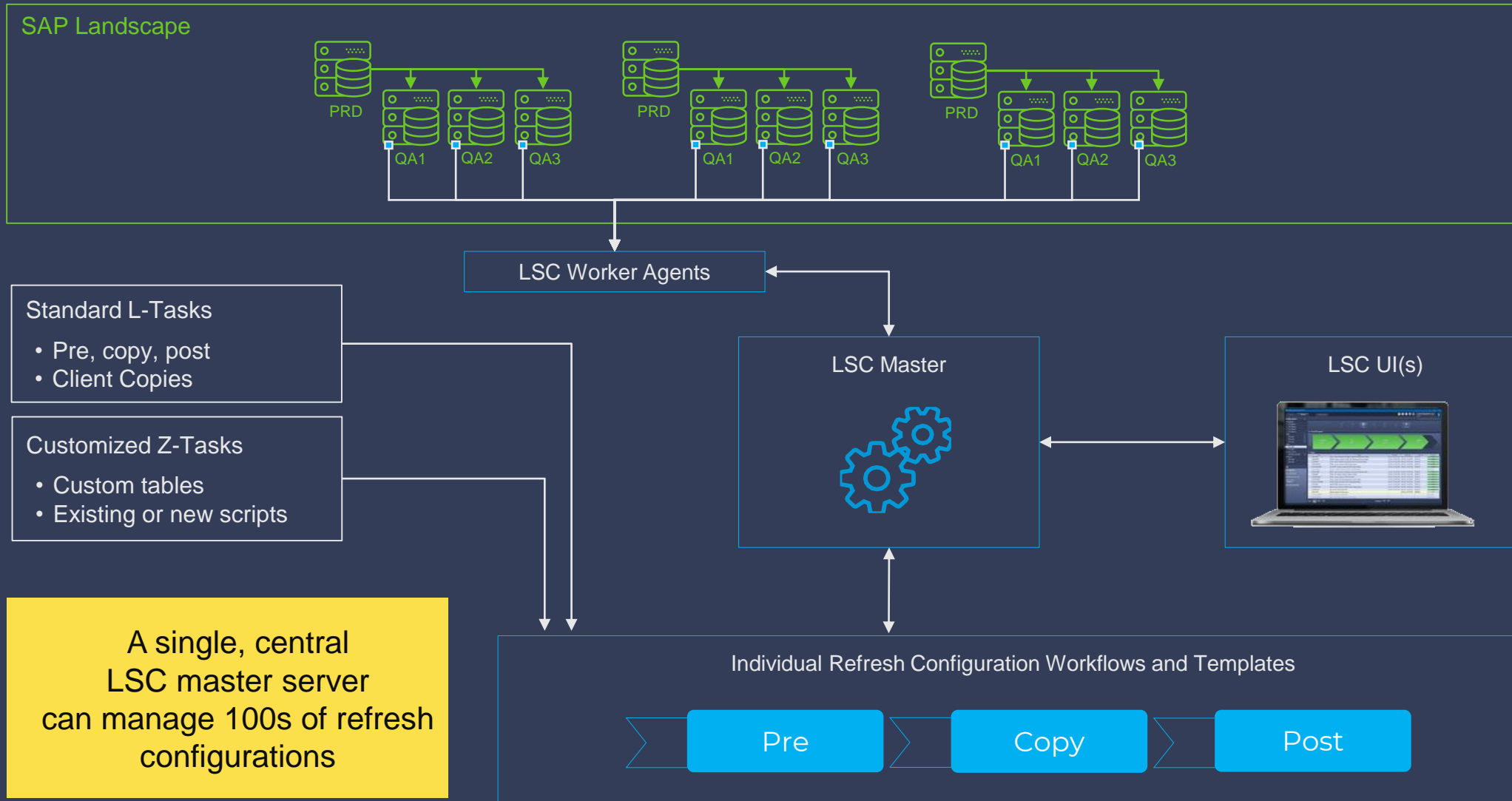
# System Refresh Workflow



**Pre-Processing**
PRD | QAS — Config Exports — LSC Agent

**Database Copy**
PRD → QAS — LSC Agent

**Post-Processing**
PRD | QAS — Config Imports — LSC Agent

**Data Masking***
PRD → QAS — Mask — LSC/LDM Agent

LSC UI(s)
LSC Master

Config Data is exported from current QAS, followed by DB copy,
followed by config data imports and (optional) masking.

*Optional. Requires separate Libelle **Data**_Masking_ tool which is integrated in LSC.

# LSC Master/Worker Architecture

**SAP Landscape**

PRD | QA1 | QA2 | QA3
PRD | QA1 | QA2 | QA3
PRD | QA1 | QA2 | QA3

**LSC Worker Agents**

**Standard L-Tasks**
- Pre, copy, post
- Client Copies

**Customized Z-Tasks**
- Custom tables
- Existing or new scripts

**LSC Master**

**LSC UI(s)**

A single, central LSC master server can manage 100s of refresh configurations

**Individual Refresh Configuration Workflows and Templates**

Pre | Copy | Post

# Worker Agent: Task and Connector Types

## Table and DB Operation

> Export table content (R3Trans)

> Delete table content (R3Trans)

> Import table content (R3Trans)

> SQL via Libelle DB Connectors

## Unix, Linux, and Windows Scripts

> Any shell scripts

> PowerShell scripts

> Libelle Shell scripts

> Python scripts

## Execute SAP Functions

> Generic R3Trans tasks

> Execute SAP Function Modules

> Run SAP executables

## Workflow Management

> Interactive tasks (Breakpoints)

> Multi-system sync tasks

> Email status tasks

**All tasks types are generic and can be used for Libelle- or Customer Tasks**

# LSC Task Repository: T-Codes and Areas

- BD54
- BDLS
- BRCONNECT
- BRCSADMIN
- DB/OP$
- DB13
- DB59
- HANA DB
- JAVA
- LC10
- LDAP
- LPCONFIG
- OAC0
- OAM1

- OSS1
- RSA1
- RSCUSTA
- RSCUSTV3
- RZ04
- RZ10
- RZ20
- RZ70
- SAP checks
- SAP start
- SAP stop
- SCC4
- SCC7
- SCC8

- SCOT
- SDCCN
- SolMan
- SE03
- SE06
- SE38
- SE61
- SE80
- SECSTORE
- SF01
- SICF / HTTP
- SLDAPICUST
- SLICENSE
- SM02

- SM14
- SM28
- SM37
- SM38
- SM51
- SM58
- SM59
- SM61
- SM65
- SM69
- SMLG
- SMQR
- SMQS
- SMT1

- SMW0
- SNC
- SP12
- SPAD
- SR13
- SS02
- ST03
- STMS
- STRUST
- THOST
- TST03
- WE20

LSC Task Repository provides 450+ pre-configured tasks. Typically, 95% of refresh activity comes 'out of the box'. Especially with SAP HANA, 100% of refresh tasks can be automated

# LSC Task Repository: Areas

## Standard Pre-Processing

- Export/ management of ~70 T-Codes with config data
- System stop sequences for SAP landscapes

## Standard DB Copy Tasks

- Libelle DBCopy tool for Oracle, DB2, MSSQL, HANADB, ASE, MaxDB
- Automated HANADB backup/ restore
- Snapshots for selected tools
- Command Line integration for Backup Tools
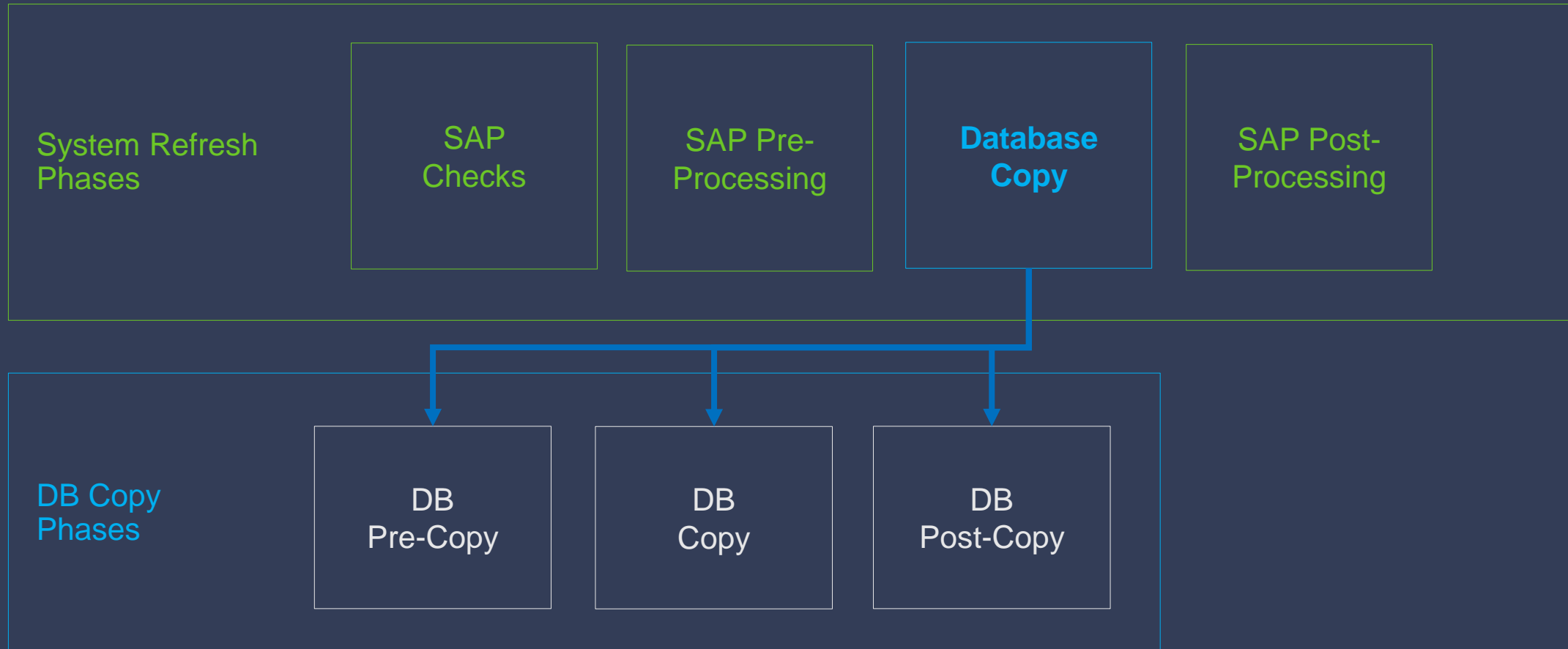
## Standard Post-Processing

- Import/ management of ~70 T-Codes with config data
- Accelerated BDLS
- TemSe
- System start sequences for SAP Landscapes

## Standard Functional and Cross-Functional Tasks

- BI systems
- LiveCache systems
- CRM middleware
- RSA admin table

- SOA Manager
- PI tasks
- Tasks for DEV refreshes
- Java import/ export

- User messages
- Background screens
- Batch processing
- Transport deltas

- Client-dependent tables
- Client-independent tables
- Etc.

**LSC covers typical refresh activity out of the box**

# Database Copy Phase Automation

**System Refresh Phases**

| SAP Checks | SAP Pre-Processing | **Database Copy** | SAP Post-Processing |
|---|---|---|---|

**DB Copy Phases**

| DB Pre-Copy | DB Copy | DB Post-Copy |
|---|---|---|

LSC can … (1) Provide a fully orchestrated DB Copy, (2) Integrate customer scripts, or (3) let customer continue handling the Copy Phase

# LSC Refresh Template Management

LSC Task Repository

LSC Refresh Templates  (Customer-Specific)

ECC Template

BI/HANA Template

S/4 Template

| ECC | BI/ HANA | S/4 HANA |
|-----|----------|----------|
| P01 | P01 | P01 |
| Q01 | Q01 | Q01 |
| Q02 | Q02 | Q02 |
| Q03 | Q03 | Q03 |
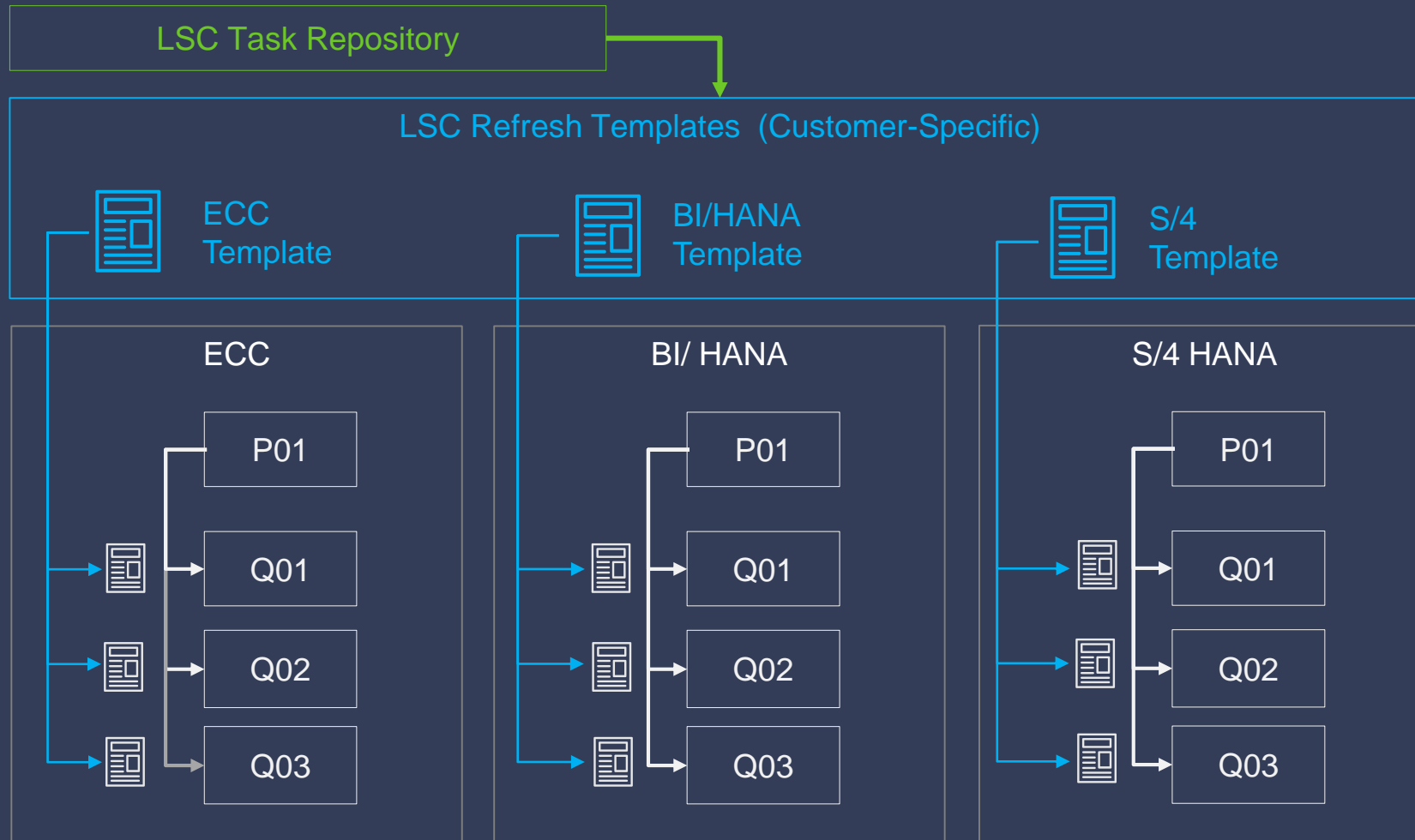
During Implementation, customer-specific Master Templates are configured.

Future changes to the configuration can be made in a Master Template and then be mass-pushed to the derived configurations.

# Enterprise Features

- Central LSC Server(s) managing 100s of configuration

- Configuration management, duplication, export, import, etc.

- Change audits

- Refresh history

- Refresh PDF reports with all logs

- LSC Standard Repository

- Role-based UI/ LDAP integrated; LDAPs

- Highly Customizable

- Extensive holistic Security Concept –

  - Digitally signed configurations,

  - Role-based access to configurations,

  - Secure password storage via public/private keys

# LSC Summary

- **Optimize –** Reduce manual overhead by automation

- **Standardize –** Automation forces standardization

- **Reduce Costs –** Do more with less

- **Predictability and Consistency –** Provide predictable and consistent refreshes

- **Traceability –** Each refresh step is documented in detail

- **Reduce Risks –** Reduce Business Risks when deploying new features

- **Faster Deployment** – Deliver Refreshes faster

- **Streamline SAP Operation –** Automate as much as possible

- **Automated Basis Admin: Difficult to find and retain highly skilled Basis Admins**

> Speed, Efficiency, and Consistency translate to Cost Savings.
> Automation Driver may be complexity of a single system,
> sheer number of refreshes, or both.