Making the Right Platform Choice to Best Support Your Cloud Deployment of SAP S/4HANA

Juan Herrera Utande
Head of SAP Technical Marketing
SUSE

SAPinsider
Las Vegas

2023

SAPinsider

Juan Herrera Utande

Experience:

- **SAP Technical Marketing**
- **SAP Technical Consultant**
- **SAP Technical Sales**

Social:

- **Linkedin: https://linkedin.com/in/juanherrerautande/**
- **Twitter: @jufherrera**

SUSE Linux Enterprise Server for *SAP*

SAP® Endorsed App
Premium Certified

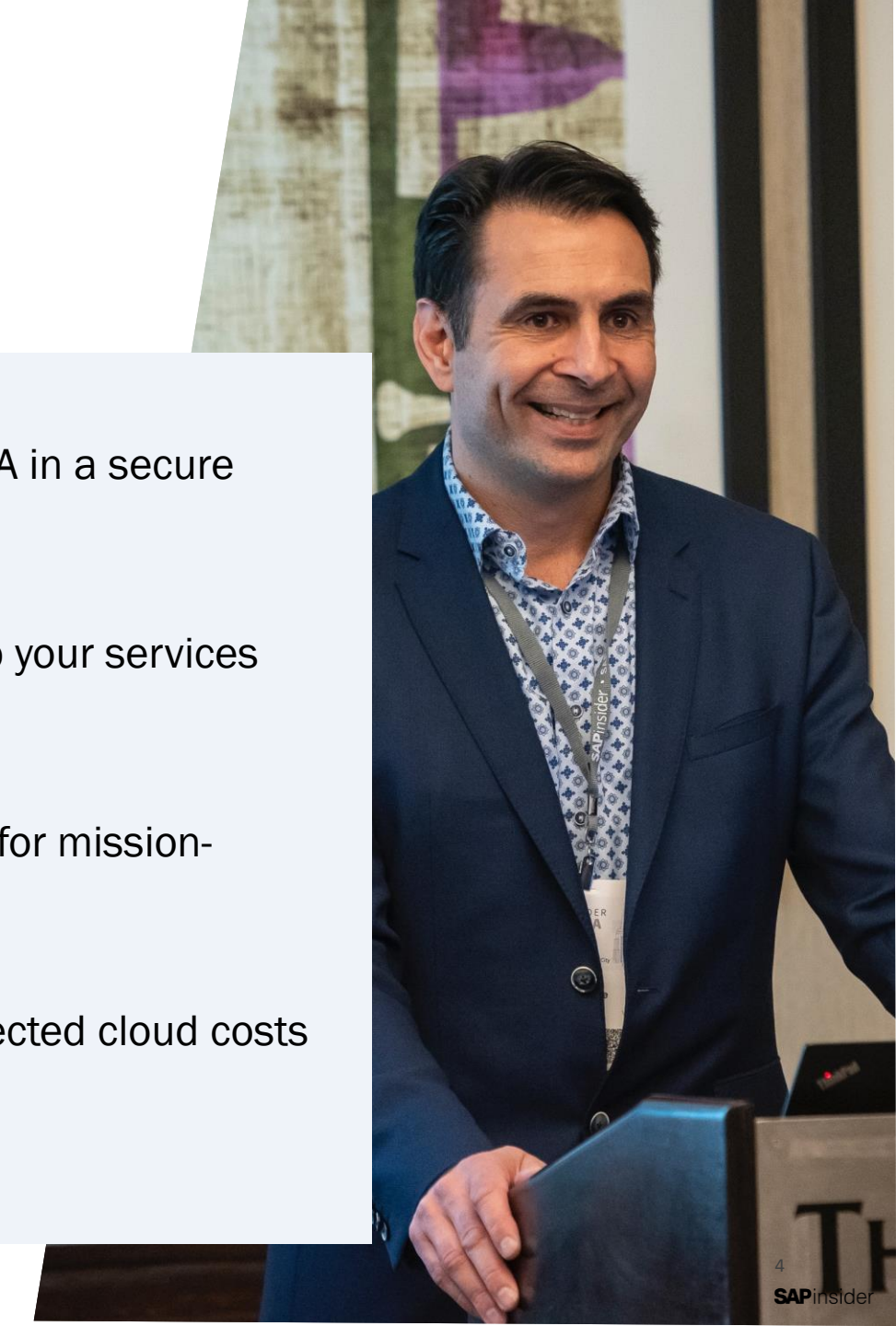
SAP Platinum Partner™

In This Session

We'll review the comprehensive set of High Availability scenarios developed by SUSE and validated in partnership with SAP in the Linux Lab and will introduce you to our proven "risk vs cost" design model that's built on top of those scenarios

What We'll Cover

- Learn how to accelerate the move to SAP 4/HANA in a secure cloud environment
- Understand how to minimize downtime and keep your services runningFourth Topic
- Discover how SUSE innovates with Hyperscalers for mission-critical SAP Workloads
- Maximize insights about your SAP S/4HANA expected cloud costs



Customer Challenges

- **Downtime** from planned maintenance and unplanned infrastructure glitches
- SAP HANA and Applications are **complex** and **resource demanding**
- **Many requirements** to follow to be SAP compliant
- **Long learning curve** in the new environment (OS, Cloud, etc.)
- **High Availability** deployments fail and cause outage
- **Configuration drifts** in High Availability cause outage
- **Lack of visibility and insights** into the SAP landscape, especially HA
- **Security** hardening the environment

SUSE's Thought Leadership in Solutions for SAP

SUSE's Solutions for Multi-Cloud Approach

ACCELERATE

- Automated SAP landscape deployment
- Built-in best practices to speed up provisioning and reduce errors
- Reduce deployment from months or weeks to days

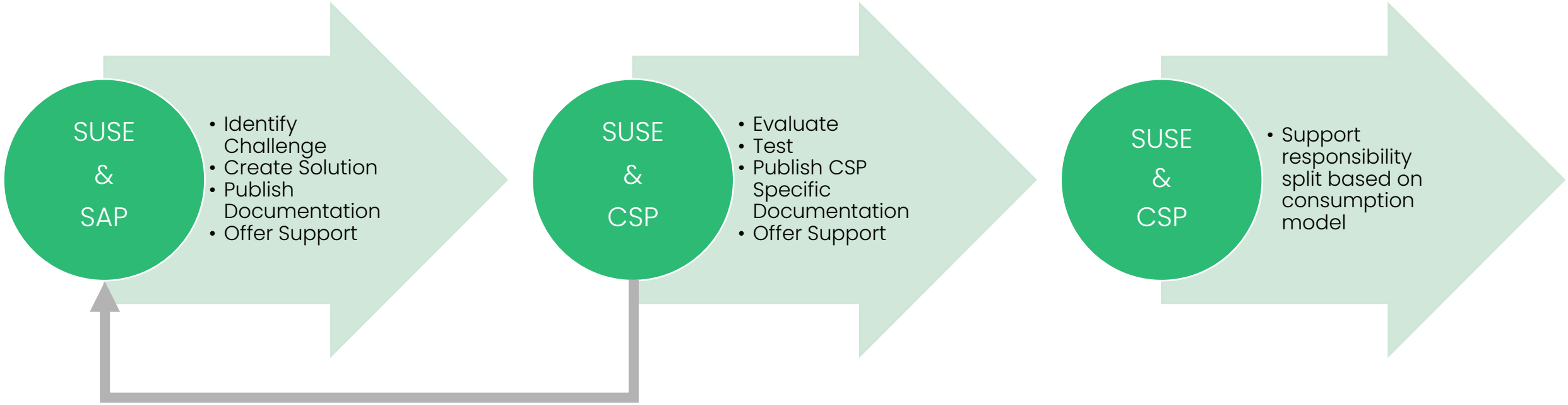
MINIMIZE DOWNTIME

- Developer of HA solutions
- Reduce planned and unplanned downtime
- Streamline lifecycle and security management

MAXIMIZE INSIGHTS

- Gain insights into SAP HA clusters - unique in the market
- Rule-based proactive validation and monitoring on the SAP landscape, prevent outage from accumulation of minor issues

Joint Innovation with Hyperscalers



Hyperscalers may request SUSE to create new solutions based on customer challenges

Customer Challenges

- **Downtime** from planned maintenance and unplanned infrastructure glitches
- SAP HANA and Applications are **complex** and **resource demanding**
- **Many requirements** to follow to be SAP compliant
- **Long learning curve** in the new environment (OS, Cloud, etc.)
- **High Availability** deployments fail and cause outage
- **Configuration drifts** in High Availability cause outage
- **Lack of visibility and insights** into the SAP landscape, especially HA
- **Security** hardening the environment

Solutions to Reduce Planned Downtime

- High Availability for 24/7 systems
  - SAP HANA rolling update in a cluster
- Keep SAP Systems Secure
  - Kernel Live patching & User space live patching
- Maintain a Cluster & Avoid Split-brain
  - SAP Application Server HA-Interface Certified
- Reduce Downtime After HANA Reboot (supported on selected Cloud)
  - SAP HANA on Persistent Memory
  - Intel Optane® DC NVDIMMs / IBM pMEM
- Consistent & automated patching with SUSE Manager

Live Patching – Update without Disruption

APPLICATIONS

- Update applications without disruption, when prerequisites are met, and the user space live patching toolkit is used

LIBRARIES

- Update key libraries (e.g., glibc, openSSL, dependencies of HANA) without disruption

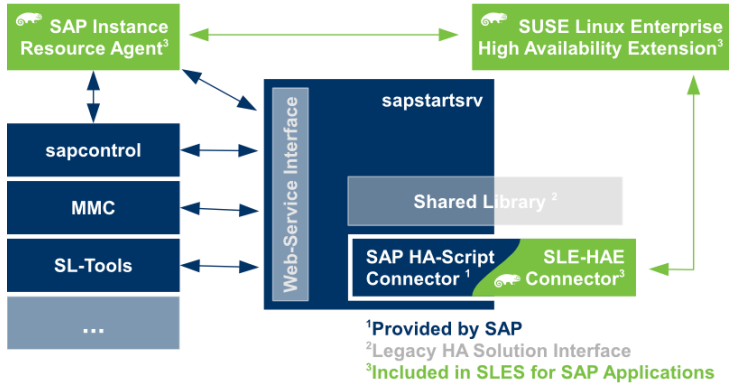
LINUX KERNEL

- Update the Linux kernel without disruption

User Space Live Patching
Only available from SUSE

Certified SAP Application Server HA-Interface

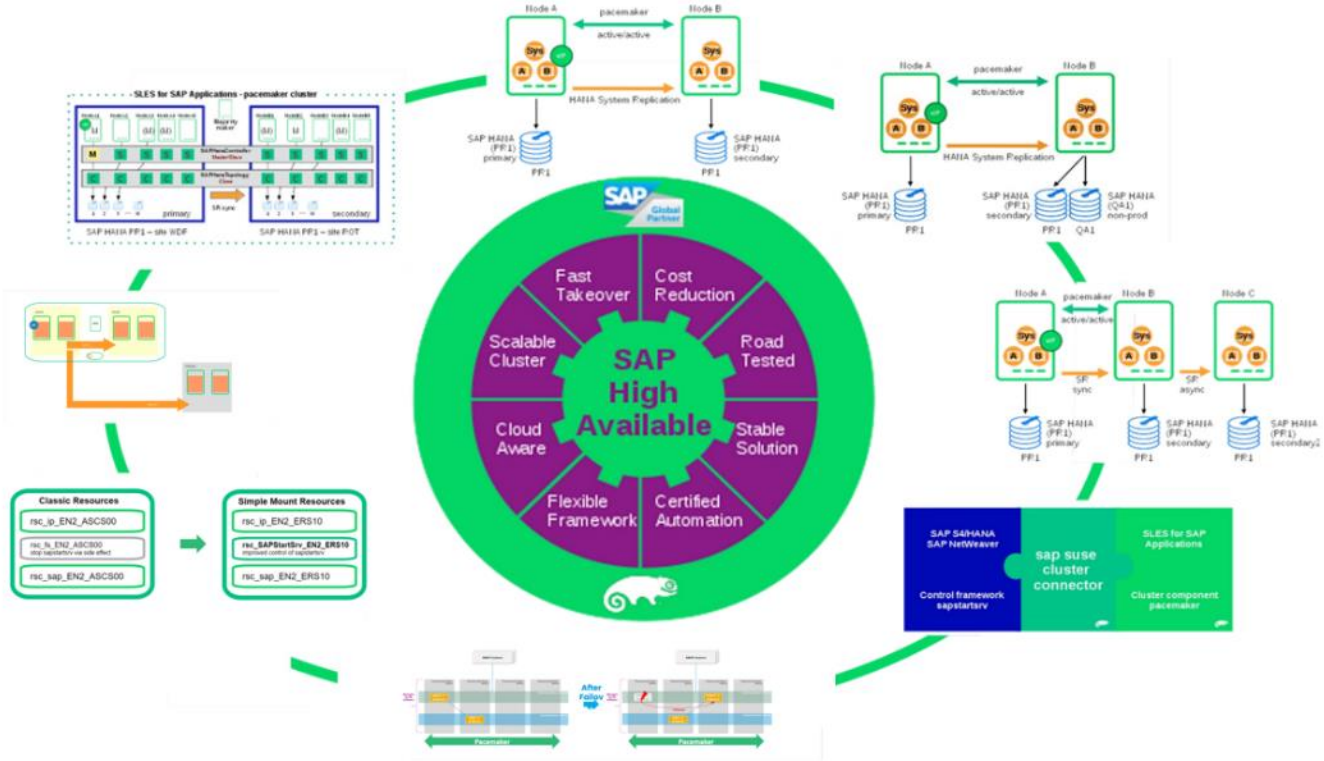
- Benefit from a certified start/stop infrastructure within the HA setups
- Establish a unified management interface
- Seamless Operations: Start/Stop, RKS (Rolling Kernel Switch), Switching Maintenance Mode, Failover, Config Check



Certificate	Certified OS Version	Certified SAP Kernel	Supported Databases	Standalone Enqueue Server	Number of Nodes in the Cluster
NW-HA-CLU_750	SUSE Linux Enterprise Server for SAP Applications 15	Netweaver 7.50+	SAP ASE, Oracle, IBM DB2, MaxDB, HANA DB	Standalone Enqueue Server 1 (ENSA1)	Only 2 nodes
S/4-HA-CLU 1.0	SUSE Linux Enterprise Server for SAP Applications 15	S/4HANA 1809	HANA DB 2.0	Standalone Enqueue Server 2 with the Enqueue Replicator 2 (ENSA2)	2 nodes or more

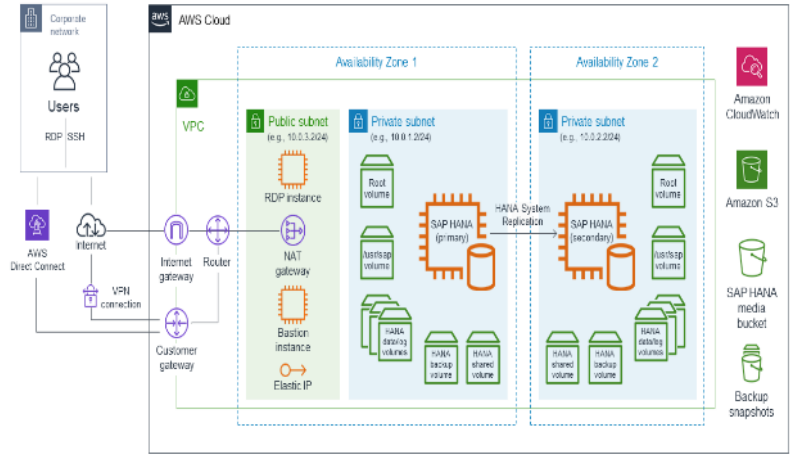
Solutions to Reduce Unplanned Downtime

- SUSE is the innovation leader, and source of the expertise
- SAP HANA HA Solutions developed by SUSE
  - Automated Failover of HANA System Replication
  - Scale-Up & Scale-Out
  - Various scenarios
- SAP NetWeaver and S/4HANA HA Solutions developed by SUSE
  - sap-suse-cluster-connector – certification reference for any Unix/Linux cluster vendor
  - ENSA1 certified ASCS/ERS HA
  - ENSA2 certified ASCS/ERS HA
  - Certified Simple Mount Structure
- Proactive Monitoring Solutions

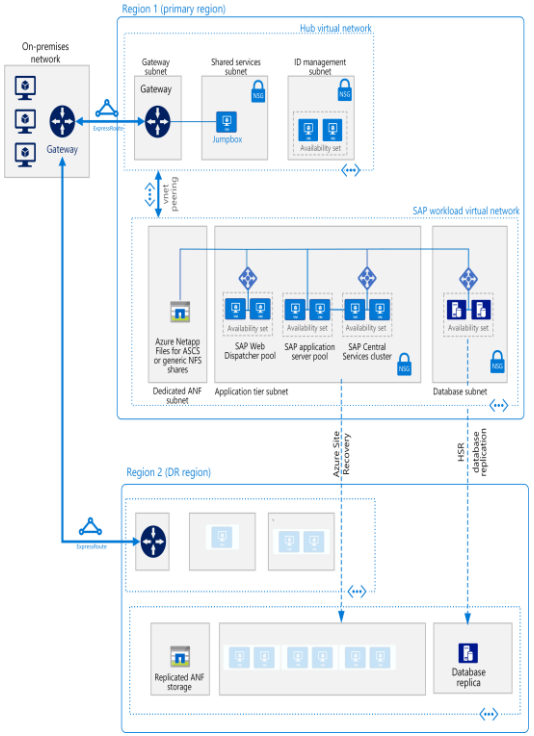


HA Reference Architecture in the Public Cloud

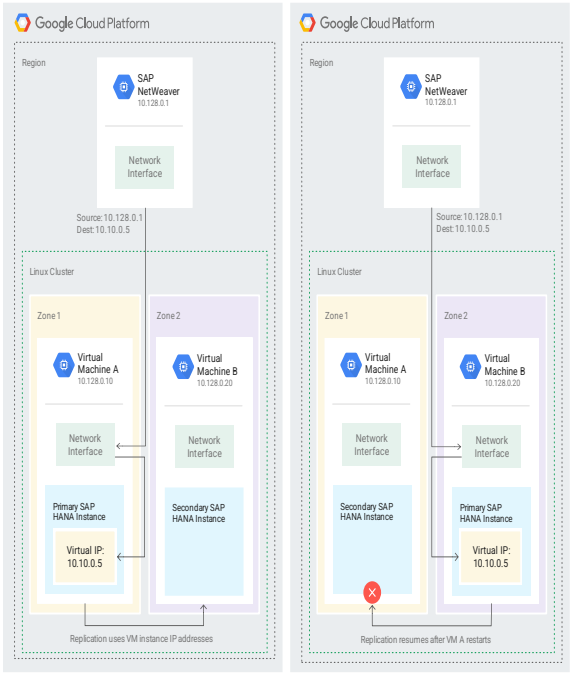
AWS



Azure



GCP



What's New

Fast-Dying HANA Indexserver HA Solution

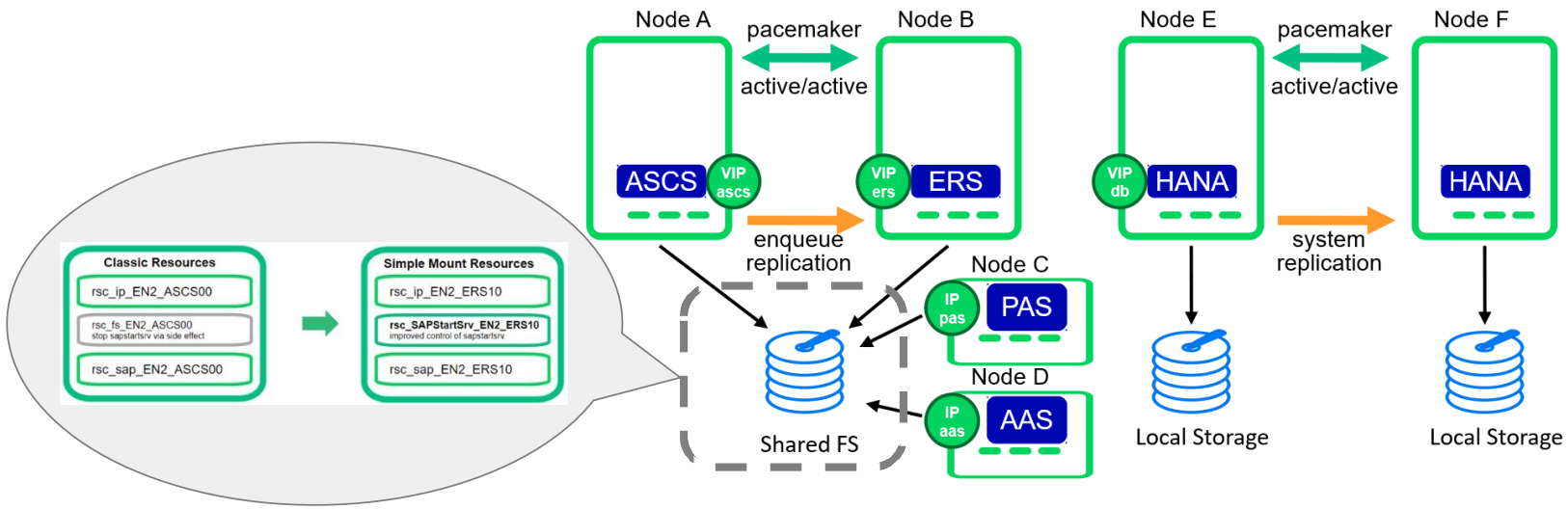
- Exclusive SUSE Solution
- When SAP HANA indexserver crashes, it takes a very long time for the service to fail completely to a point that a failover can be triggered by cluster
- SUSE has implemented a fast-dying indexserver solution, reducing recovery time after indexserver failure from hours to minutes
- This solution detects failing SAP HANA indexserver processes and triggers a fast takeover to the secondary site
- Supports HANA Scale-Up and Scale-Out
- https://www.suse.com/c/emergency-braking-for-sap-hana-dying-indexserver/

What's New

SAP® Certified
Integration with SAP NetWeaver®

Simple Mount NFS Architecture for NetWeaver ASCS/ERS HA

- Exclusive SUSE Solution
- More robust than using the traditional "Filesystem" resource
- Certified by SAP HA-Interface Certification



Customer Challenges

- Downtime from planned maintenance and unplanned infrastructure glitches
- SAP HANA and Applications are complex and resource demanding
- Many requirements to follow to be SAP compliant
- Long learning curve in the new environment (OS, Cloud, etc.)
- High Availability deployments fail and cause outage
- Configuration drifts in High Availability cause outage
- Lack of visibility and insights into the SAP landscape, especially HA
- Security hardening the environment

SUSE's Multi-Cloud SAP Automation Framework

	Proactive monitoring and visibility to the entire SAP landscape
HA Cluster Configuration	Configuration of the cluster and the resources for SAP HANA System Replication and SAP NetWeaver (ASCS/ERS)
SAP Installation	Production ready SAP installation
OS Preparation	Salt-minion installation, partitioning, mounting points, basic RPM packages installation, etc.
Operating System	SAP certified cloud image (SLES4SAP)
Infrastructure	Provisioning of the VMs, network, storage, etc. aws Azure Google Cloud IBM Cloud

Included on SLES for SAP Applications

Provided via SUSE Terraform open-source project

saptune: auto-tune SAP Systems

```
# saptune solution list
# saptune note list
```

saptune knows the following tuning solutions (groups of SAP Notes):

- **BOBJ**. Solution for running SAP BusinessObjects.
- **HANA**. Solution for running an SAP HANA database.
- **MAXDB**. Solution for running an SAP MaxDB database.
- **NETWEAVER**. Solution for running SAP NetWeaver application servers.
- **S4HANA-APPSERVER**. Solution for running SAP S/4HANA application servers .
- **S4HANA-APP+DB**. Solution for running both SAP S/4HANA application servers and SAP HANA on the same host .
- **S4HANA-DBSERVER**. Solution for running the SAP HANA database of an SAP S/4HANA installation .
- **SAP-ASE**. Solution for running an SAP Adaptive Server Enterprise database.
- **NETWEAVER+HANA**. Solution for running both SAP application servers and SAP HANA on the same host.
- **YOUR-SOLUTION**. saptune allows you to create your own solutions.

SUSE Manager

Single tool management solution for Linux

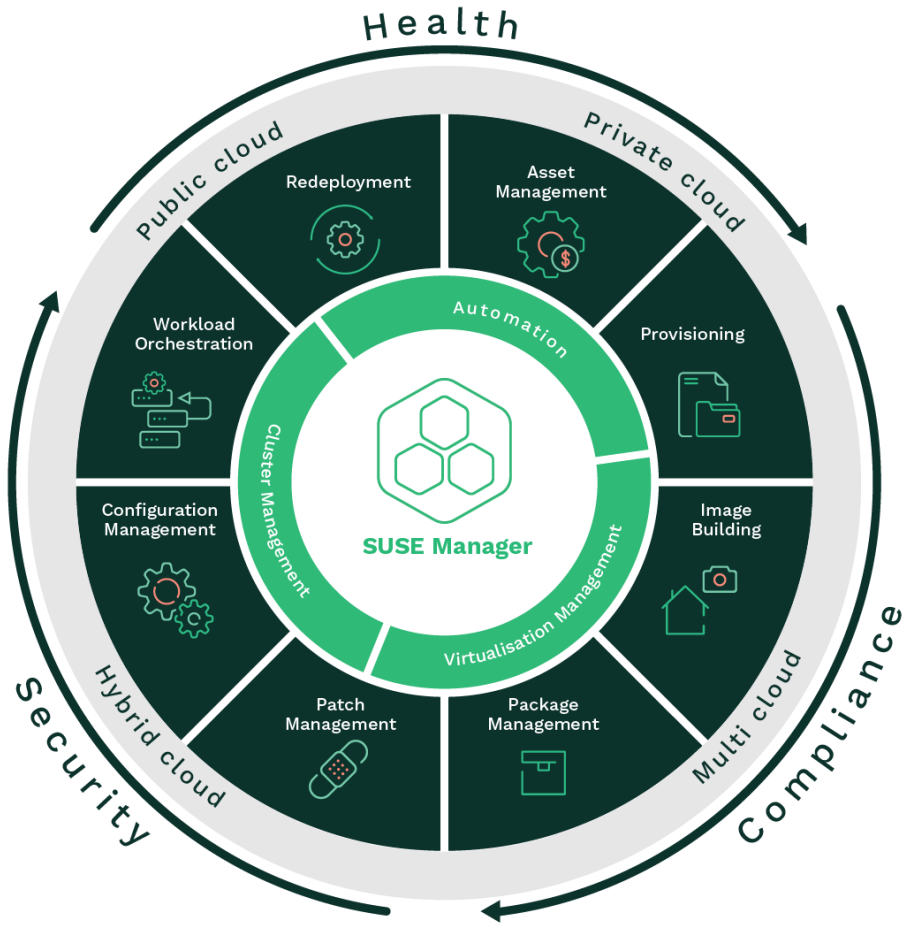
SUSE, Red Hat, CentOS & Ubuntu
– the only tool able to do this

CVE and openSCAP Audit
– keep the systems secure

Content Lifecycle
– one click promotion Dev -> QA -> Prod

Manage everywhere
– on prem, cloud, edge

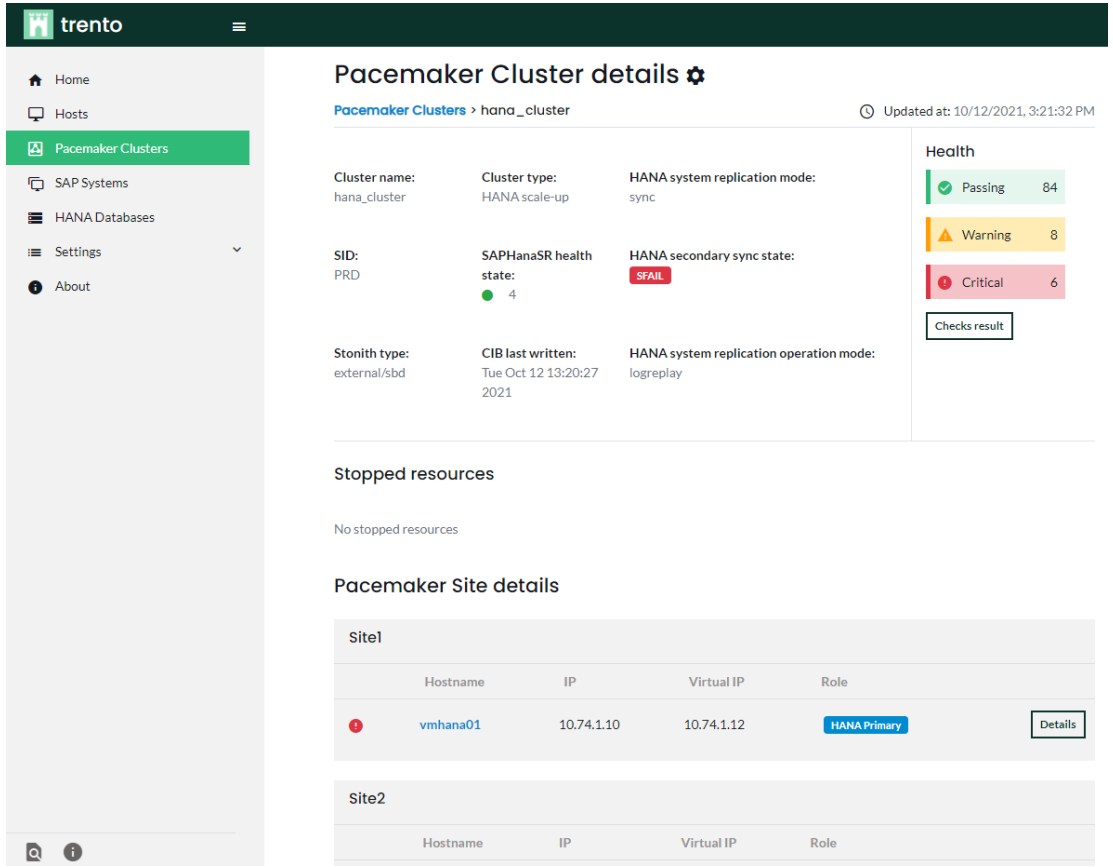
Audit and patch Container images
- Docker, dev/ops, Kubernetes



Customer Challenges

- Downtime from planned maintenance and unplanned infrastructure glitches
- SAP HANA and Applications are complex and resource demanding
- Many requirements to follow to be SAP compliant
- Long learning curve in the new environment (OS, Cloud, etc.)
- High Availability deployments fail and cause outage
- Configuration drifts in High Availability cause outage
- Lack of visibility and insights into the SAP landscape, especially HA
- Security hardening the environment

Trento: Safeguard your SAP landscape



Key Capabilities *(Ambition)*

- Automatically discover servers, clusters, systems and full landscapes
- Check their configuration against best practices
- Automatically reflect hyperscaler requirements
- Surface any issues in an easy-to-use web UI
- Continuously stay up-to-date with evolving SAP, SUSE and hyperscaler recommendations
- Monitoring of SAP landscape
- Visualization of complete SAP environment

Value to customers

- Peace of mind that all is setup correctly and running smoothly
- Audit readiness
- Actionable best practices help customers to quickly implement them and adapt systems

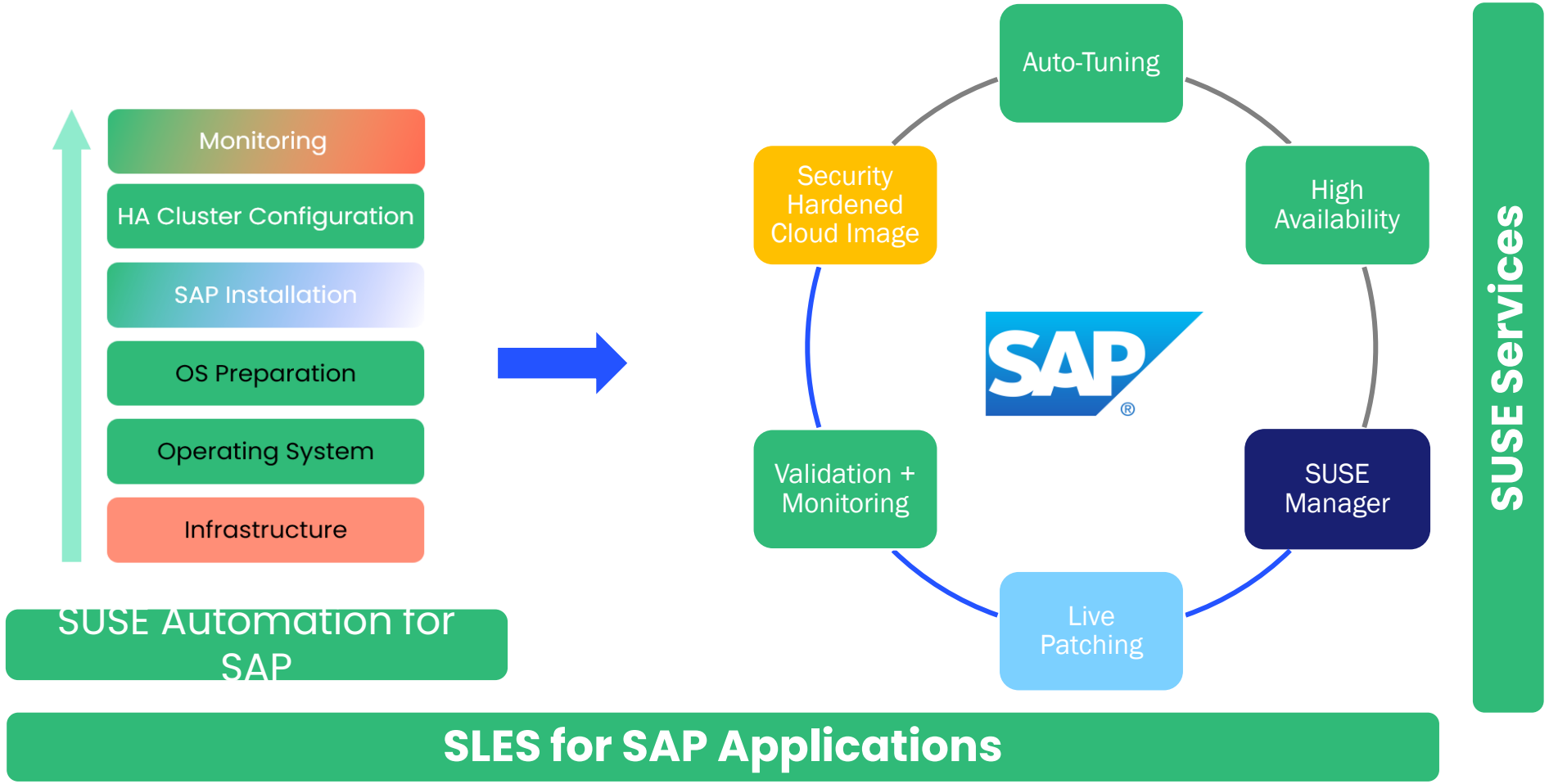
Customer Challenges

- Downtime from planned maintenance and unplanned infrastructure glitches
- SAP HANA and Applications are complex and resource demanding
- Many requirements to follow to be SAP compliant
- Long learning curve in the new environment (OS, Cloud, etc.)
- High Availability deployments fail and cause outage
- Configuration drifts in High Availability cause outage
- Lack of visibility and insights into the SAP landscape, especially HA
- Security hardening the environment

Security Hardened SLES for SAP Applications Cloud Image

- Pre-build cloud images of SLES for SAP Applications 15
- Hardened Based on STIG and CIS
- Tested for SAP workloads
- Available on Cloud Marketplace
- Based on profile https://github.com/ComplianceAsCode/content/blob/master/products/sle15/profiles/pcs-hardening-sap.profile

Safeguard Your SAP Landscape & Operations



SUSE Linux Enterprise Server for SAP Applications

Best Platform Choice to support your SAP workloads

Simplicity

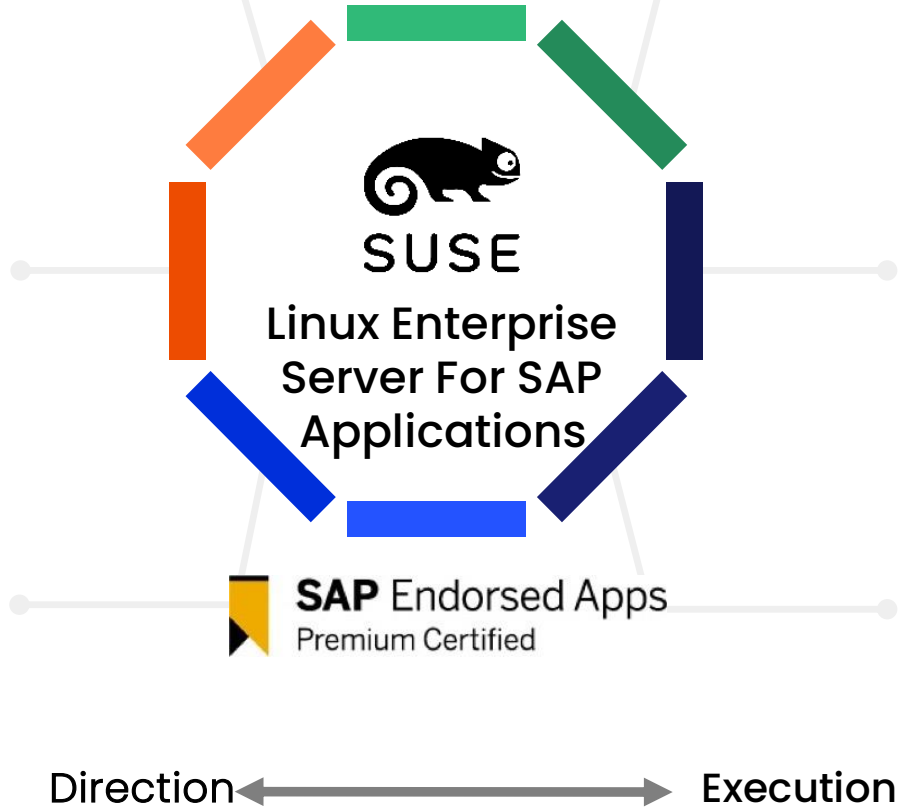
Provide a simple and robust configuration of OS for key SAP workloads

Strength

Stable and reliable, error proof foundation for SAP S/4HANA, SAP HANA and SAP NetWeaver

Ecosystem Standardization

Drive consistency of tools and features over delivery channels



SAP Tooling

Enhanced tools around SAP workloads to simplify adoption of SAP solutions on SUSE Linux

High Availability

Improve reliability and TCO through new and improved HA scenarios for SAP HANA and SAP NetWeaver

Deployment automation and monitoring

Streamlined initial setup of SAP applications on SUSE Linux and ongoing monitoring of the solution

Where to Find More Information

The Definitive Guide to Moving SAP S/4HANA to the Cloud

https://www.suse.com/campaigns/cloud-for-sap/

- Paper describing our strategy for a successful transition to SAP S/4 HANA in the Public Cloud

A More Secure SAP with SUSE

https://www.suse.com/secure-sap/

- Safely embrace Public Cloud for SAP with SUSE
- Improve agility with a secure software supply chain
- Leverage automation to build operational excellence
- Establish centralized vulnerability management
- Extend SAP security to containers and the edge

www.suse.com/sap

- Keep up to date with relevant SAP content an updates from SUSE

Key Points to Take Home

- Understand why **SUSE is the preferred solution** by SAP customers for their Cloud transition journey
- How SUSE can help you make **Public Cloud the perfect home** for your SAP workloads
- Easily achieve **99’99%** with SUSE High Availability and Best Practices in most Cloud Providers
- Understand how to achieve the **best RPO and RTO** with the **lowest cost**

Thank you! Any Questions?

Juan Herrera Utande - SUSE

Twitter.com/jufherrera

Linkedin.com/in/jherrerautande

Please remember to complete your session evaluation.

SAPinsider

SAPinsider.org

PO Box 982Hampstead, NH 03841

SAPinsider comprises the largest and fastest growing SAP membership group worldwide, with more than 600,000 members across 205 countries.