



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

Sherry Yu
SUSE

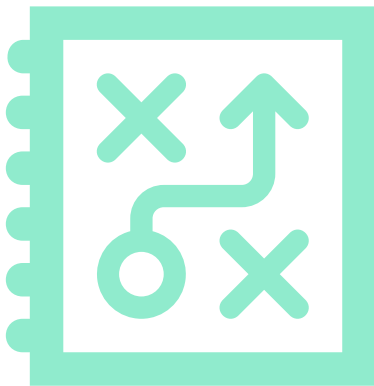


What We'll Cover

- Customer Challenges
- SUSE's Thought Leadership for SAP Solutions
- SUSE Solutions for Multi-Cloud Approach
- Joint Innovations with Hyperscalers
- Solutions to address the challenges
- Customer Stories



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

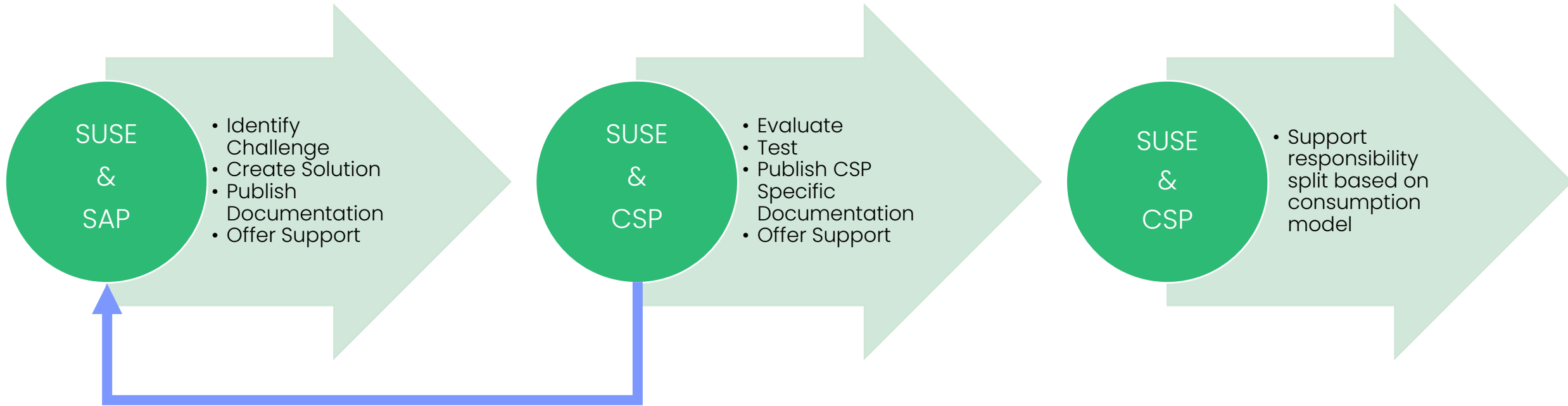


MAXIMIZE INSIGHTS

- 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



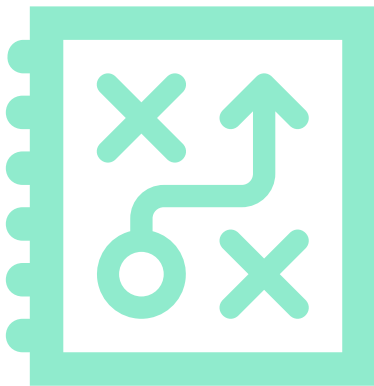
Joint Innovation with Hyperscalers



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



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Solutions to Reduce Planned Downtime

- High Availability for 24/7 systems
 - SAP HANA rolling update in a cluster
- Keep SAP Systems Secure
 - 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



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

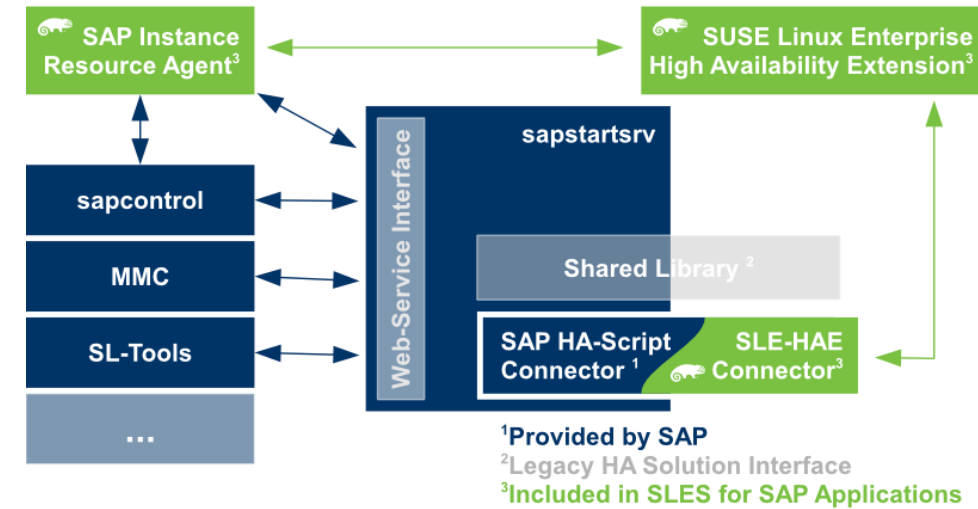
- Update the Linux kernel without disruption

User Space Live Patching
Only available from SUSE



Certified SAP Application Server HA-Interface

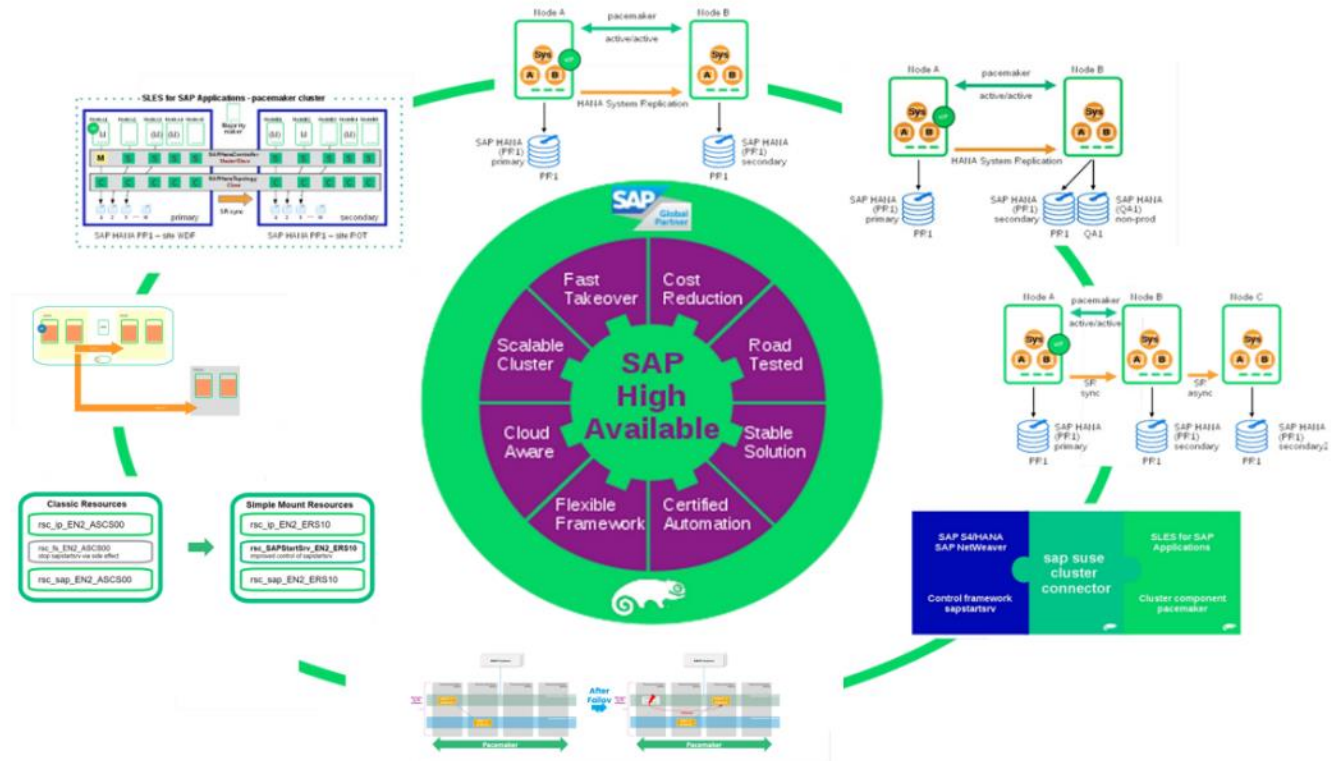
- Benefit from a certified start/stop infrastructure within the HA setups
- Establish a unified management interface
- Seamless Operations: Start/Stop, RKS (Rolling Kernel Switch), Switching Maintenance Mode, Failover, Config Check



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

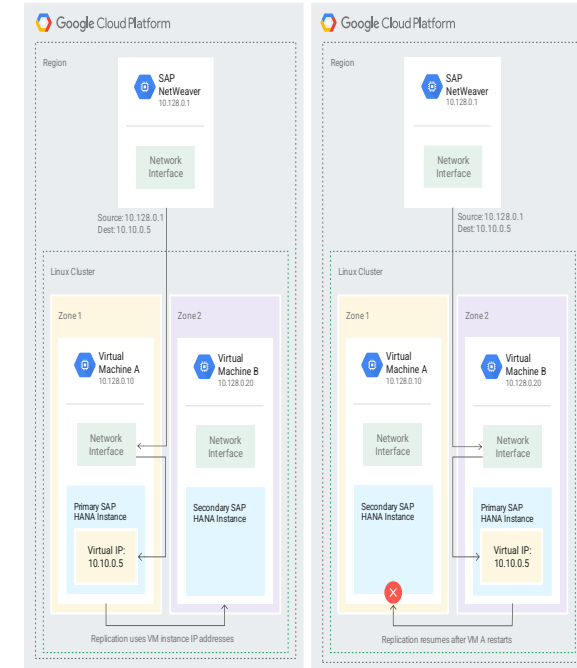
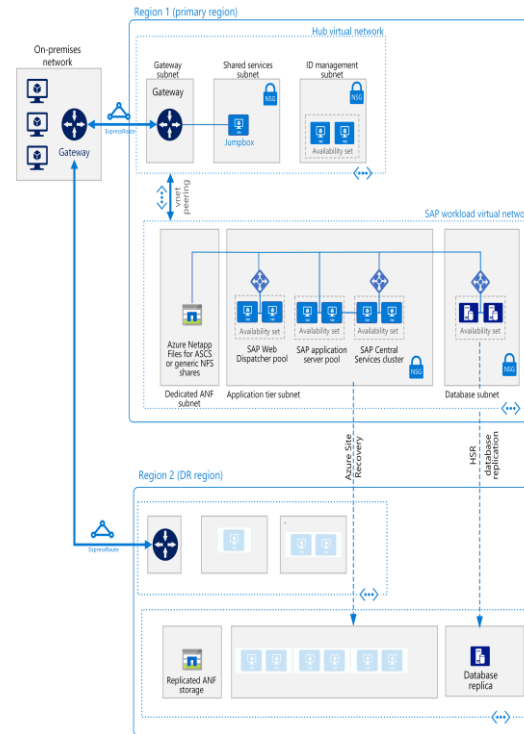
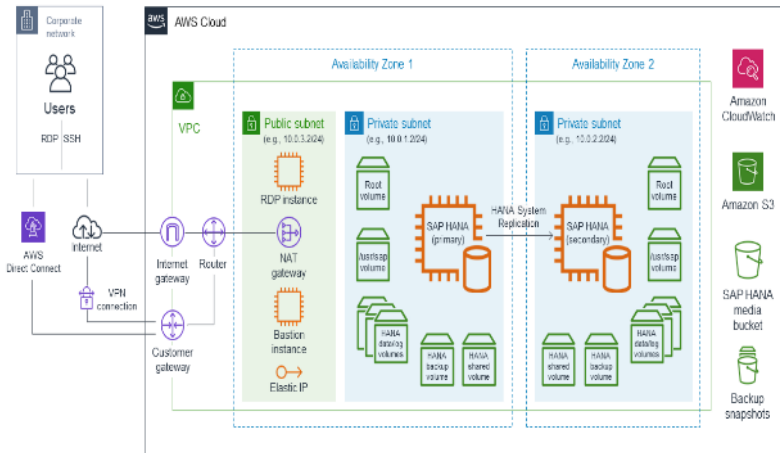


HA Reference Architecture in the Public Cloud

AWS

Azure

GCP



What's New

Fast-Dying HANA Indexserver HA Solution

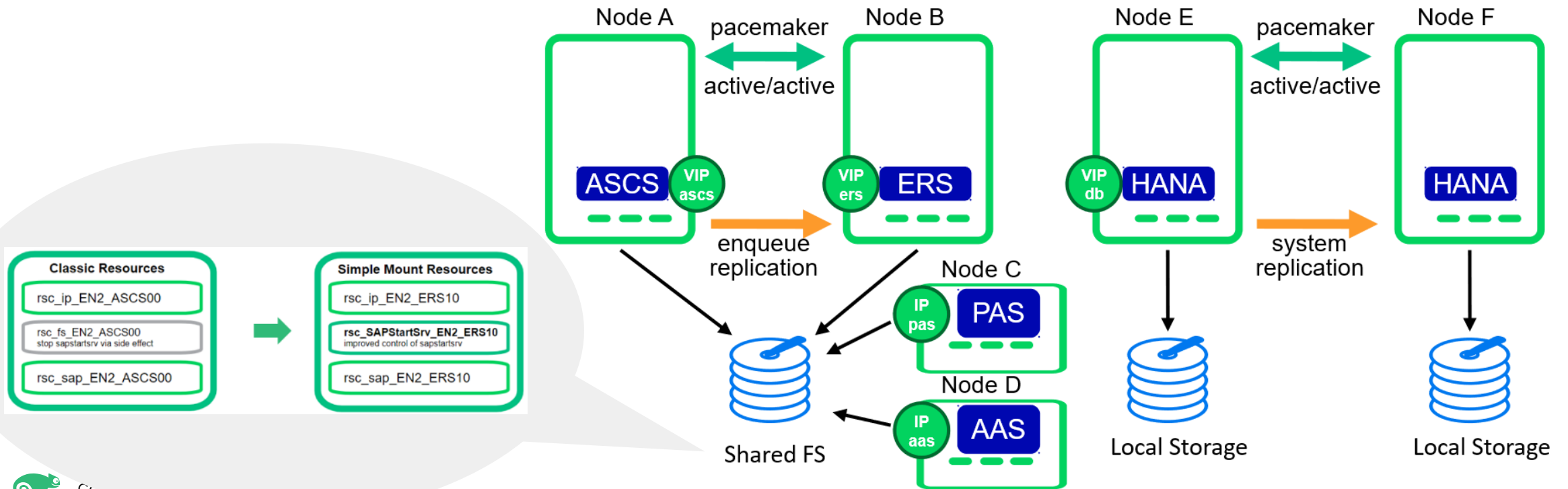
- Exclusive SUSE Solution
- When SAP HANA indexserver crashes, it takes a very long time for the service to fail completely to a point that a failover can be triggered by cluster
- SUSE has implemented a fast-dying indexserver solution, reducing recovery time after indexserver failure from hours to minutes
- 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

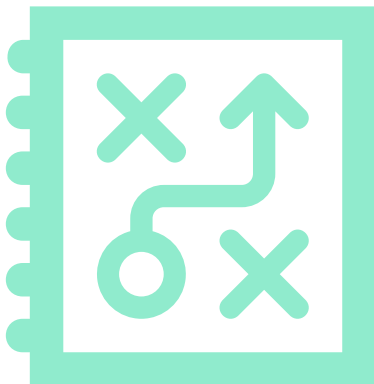
SAP Certified
Integration with SAP S/4HANA

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



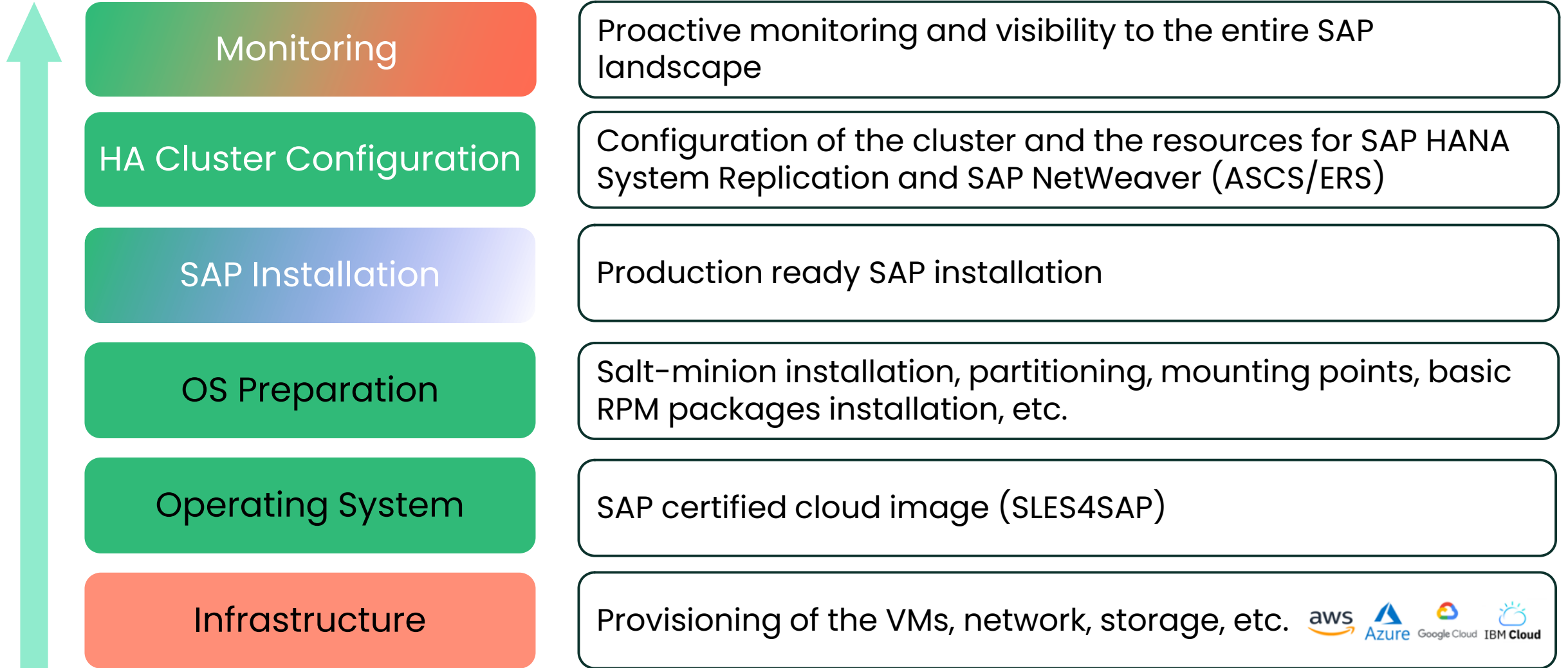
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SUSE's Multi-Cloud SAP Automation Framework



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

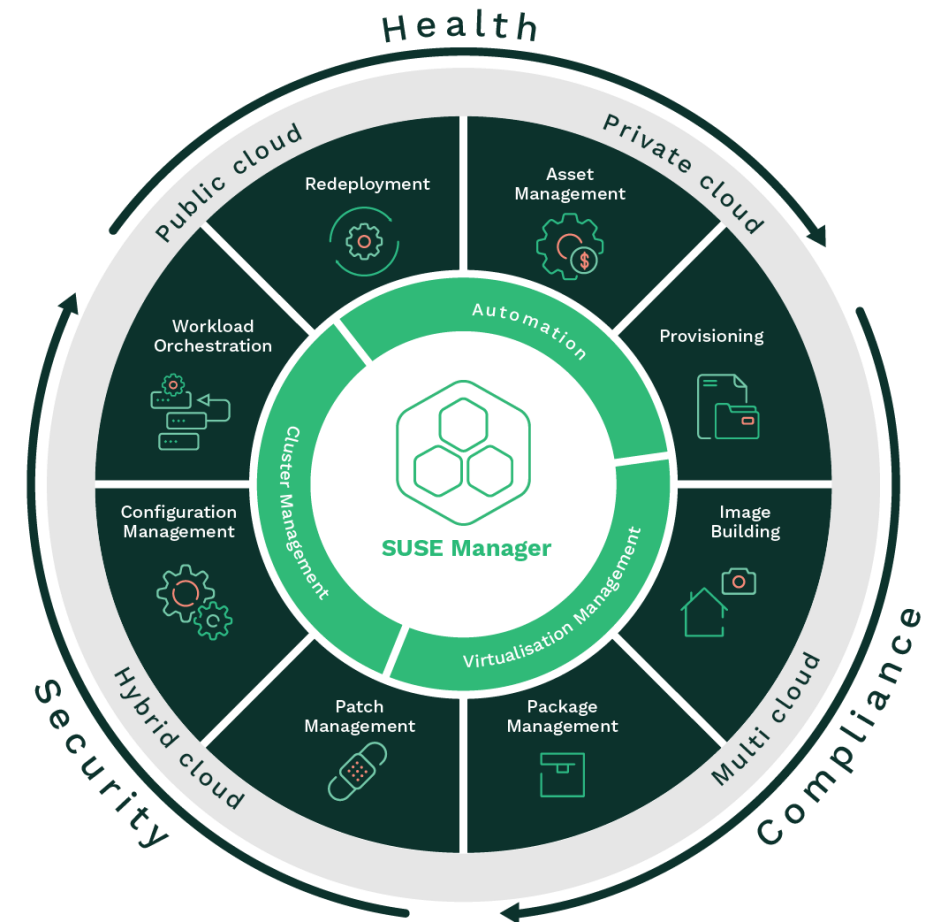
SUSE, Red Hat, CentOS & Ubuntu
– the only tool able to do this

CVE and openSCAP Audit
– keep the systems secure

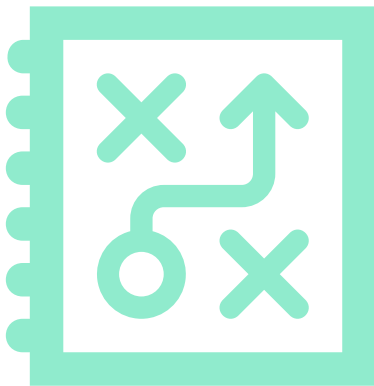
Content Lifecycle
– one click promotion Dev -> QA -> Prod

Manage everywhere
– on prem, cloud, edge

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



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Trento: Safeguard your SAP landscape

The screenshot displays the Trento web interface. On the left is a navigation sidebar with options: Home, Hosts, Pacemaker Clusters (highlighted), SAP Systems, HANA Databases, Settings, and About. The main content area is titled 'Pacemaker Cluster details' for 'hana_cluster', updated at 10/12/2021, 3:21:32 PM. It shows various cluster parameters and a health summary.

Parameter	Value
Cluster name:	hana_cluster
Cluster type:	HANA scale-up
HANA system replication mode:	sync
SID:	PRD
SAPHanaSR health state:	● 4
HANA secondary sync state:	FAIL
Stonith type:	external/sbd
CIB last written:	Tue Oct 12 13:20:27 2021
HANA system replication operation mode:	logreplay

Health Summary:

- Passing: 84
- Warning: 8
- Critical: 6

Buttons: Checks result

Stopped resources: No stopped resources

Pacemaker Site details:

Site	Hostname	IP	Virtual IP	Role
Site1	vmhana01	10.74.1.10	10.74.1.12	HANA Primary
Site2				

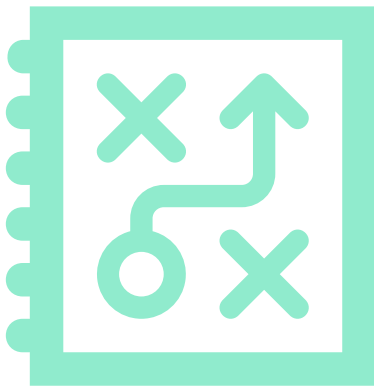
Key Capabilities (Ambition)

- 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

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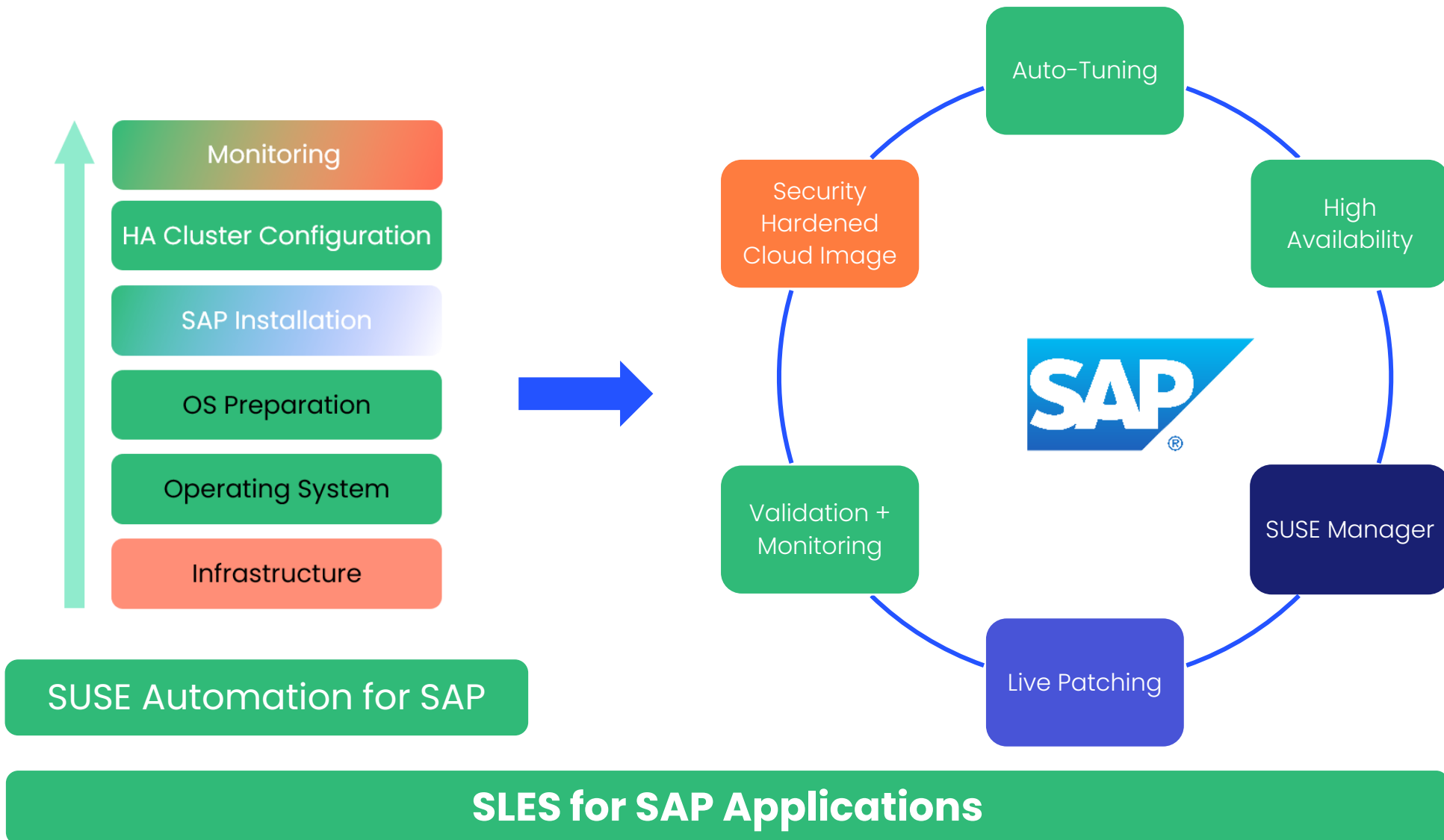


Security Hardened SLES for SAP Applications 15 Cloud Image

- 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>

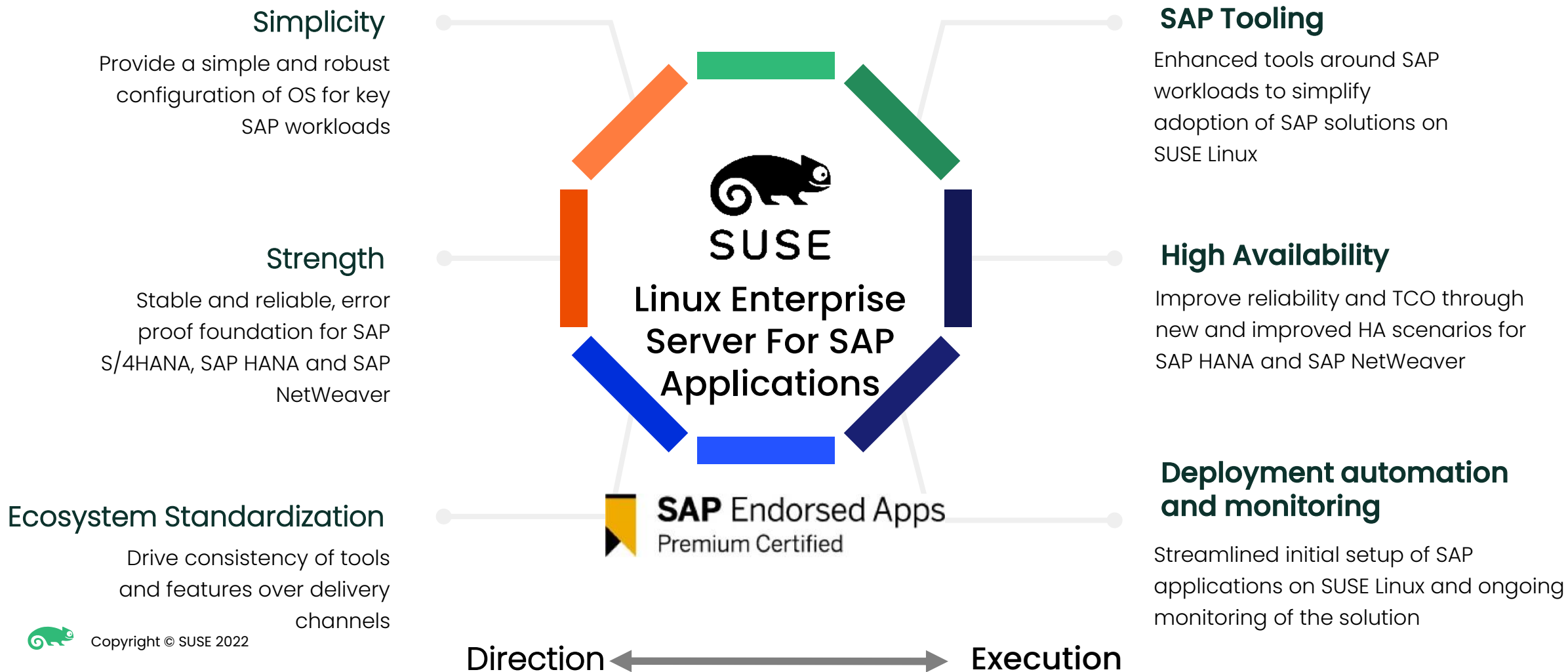


Safeguard Your SAP Landscape & Operations



SUSE Linux Enterprise Server for SAP Applications

Best Platform Choice to support your SAP workloads

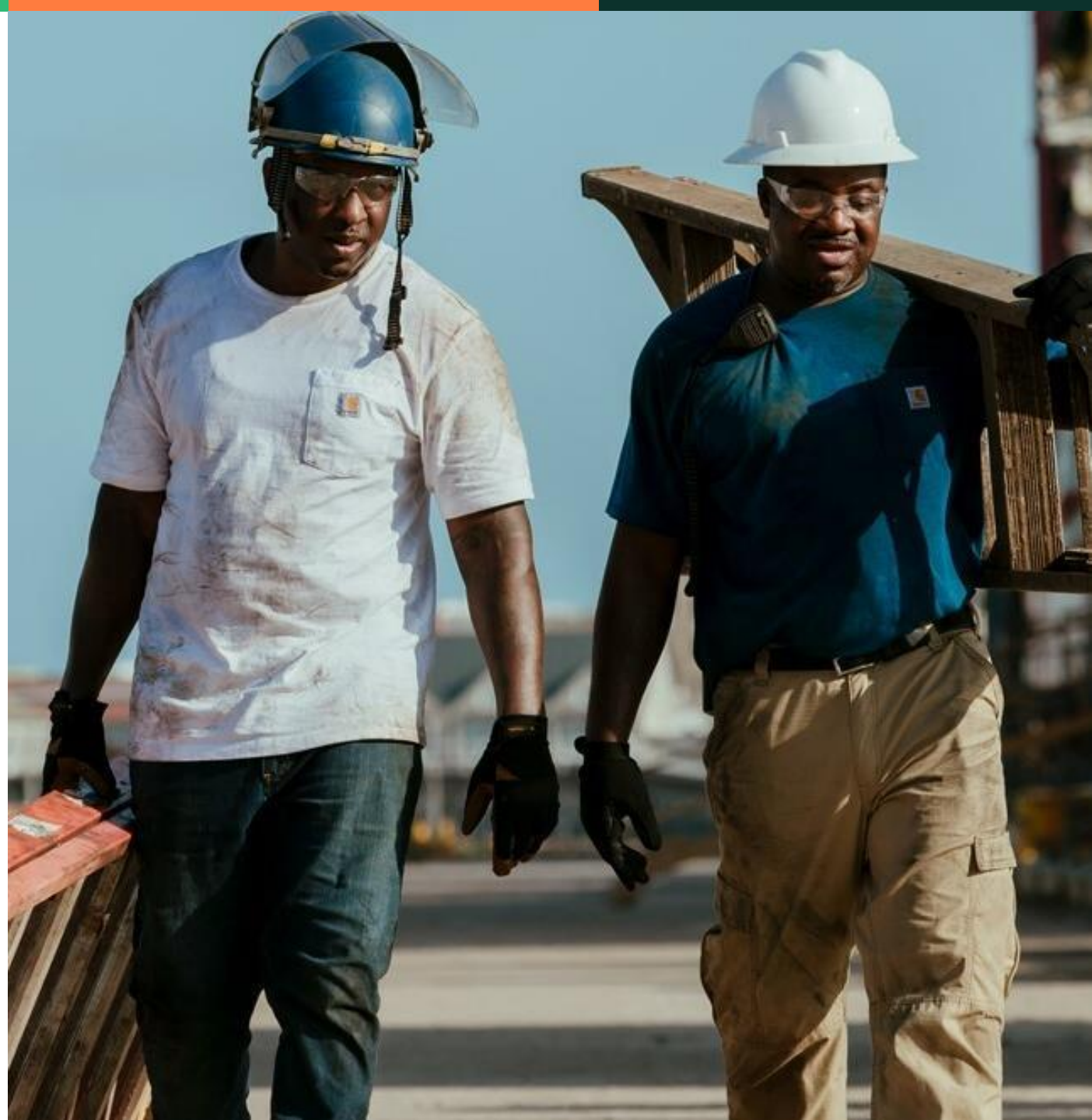


Carhartt

When Carhartt chose to migrate their applications to the cloud, they were not shy and chose their SAP central, wholesale business to be their first. The infrastructure they chose was **Microsoft Azure and SUSE Linux Enterprise Server for SAP for their SAP systems.**

- Zero downtime saves the company millions of dollars
- Stability and simplicity create more time for innovation
- Patches and updates for a mixed environment are managed from a single point with ease

<https://www.suse.com/success/carhartt/>



Lemongrass

Lemongrass Consulting Ltd combines **SUSE and AWS** for greater agility, efficiency and reduced costs with monolithic on-premises SAP landscape. Using **SUSE Linux Enterprise Server (SLES) and SUSE Manager**, Lemongrass enables customers to smoothly transition workloads from on-premises to the cloud.

- Daily cost transparency
- Business operation automation – maintains and patches systems without having to shut them down

<https://www.suse.com/success/lemongrass/>



Coming Next:

Achieve Day 2 Operational Excellence and Safeguard your SAP Landscape





Thank you

For more information, contact SUSE at:

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