

**Hewlett Packard  
Enterprise**

# **SAY “NO” TO DOWNTIME**

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HPE Serviceguard for Linux

April 2021



# **HPE SERVICEGUARD FOR LINUX PREMIUM EDITION FOR SAP HANA**

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2021



# INVEST TO PROTECT, AVOID PAYING FOR FAILURES

**31%**

of downtime situations are caused by network and servers

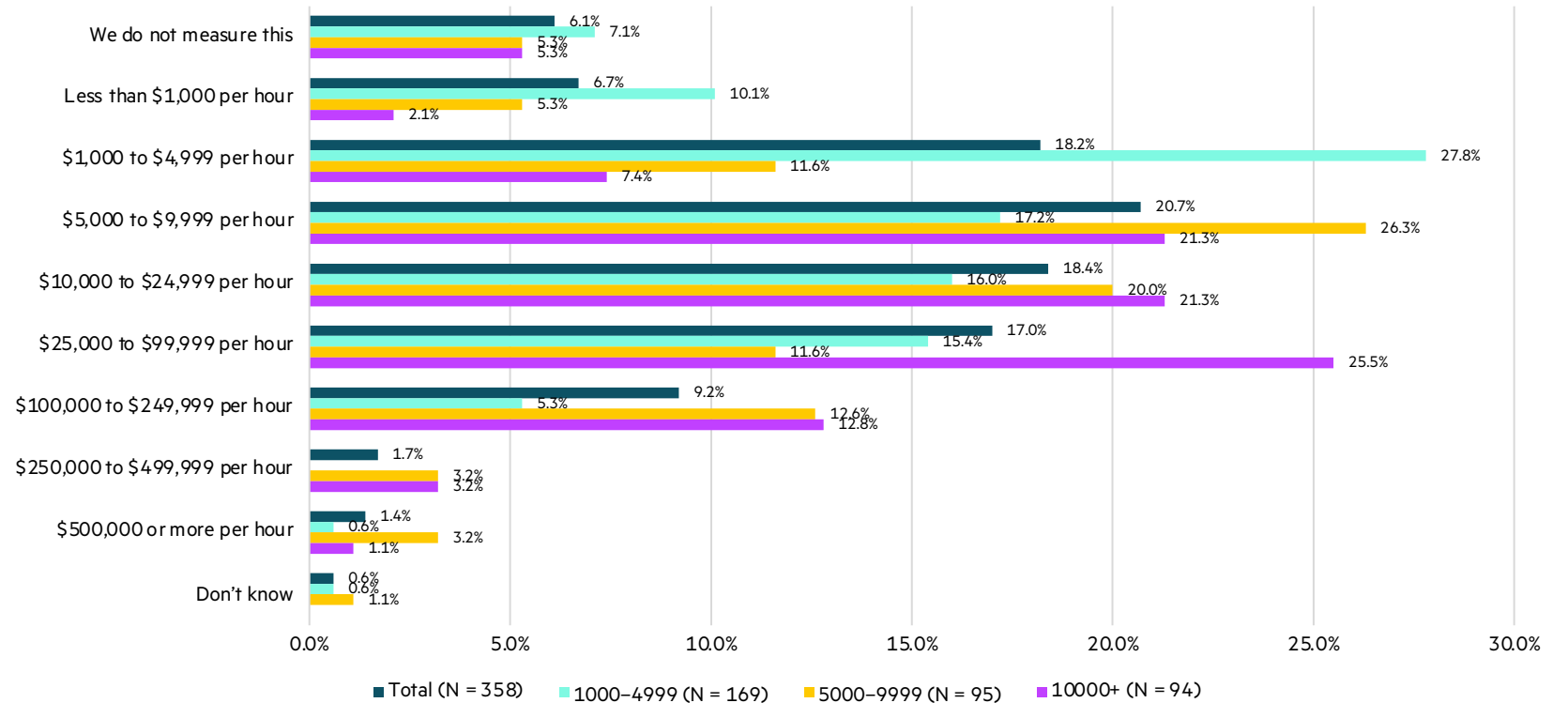
**\$25K USD per hour**

is the cost of downtime for about **29.3%** of enterprises of all sizes

**\$100K USD per hour**

is the cost of downtime for about **17%** of large enterprises\*

Q: What is the average hourly cost of downtime for workloads in your highest availability tier?



**For many customers avoiding a single downtime event could easily pay for the cost of protecting against it**

Source: IDC, What Are Some of the Leading Causes of Application Downtime? How Much Does Application Downtime Cost Businesses?, Doc # US45065819, May 2019  
Based on data from Server & Storage Infrastructure Availability Survey, IDC, December, 2018, n = 358

\* > 5000 employees

# HPE SERVICEGUARD FOR LINUX

Leading high availability and disaster recovery clustering solution from HPE

## Maximize application uptime

- Minimize unplanned downtime
- Eliminate planned downtime

## Recover rapidly and automatically

- Quick failure detection and automatic recovery
- Seamlessly add disaster recovery protection

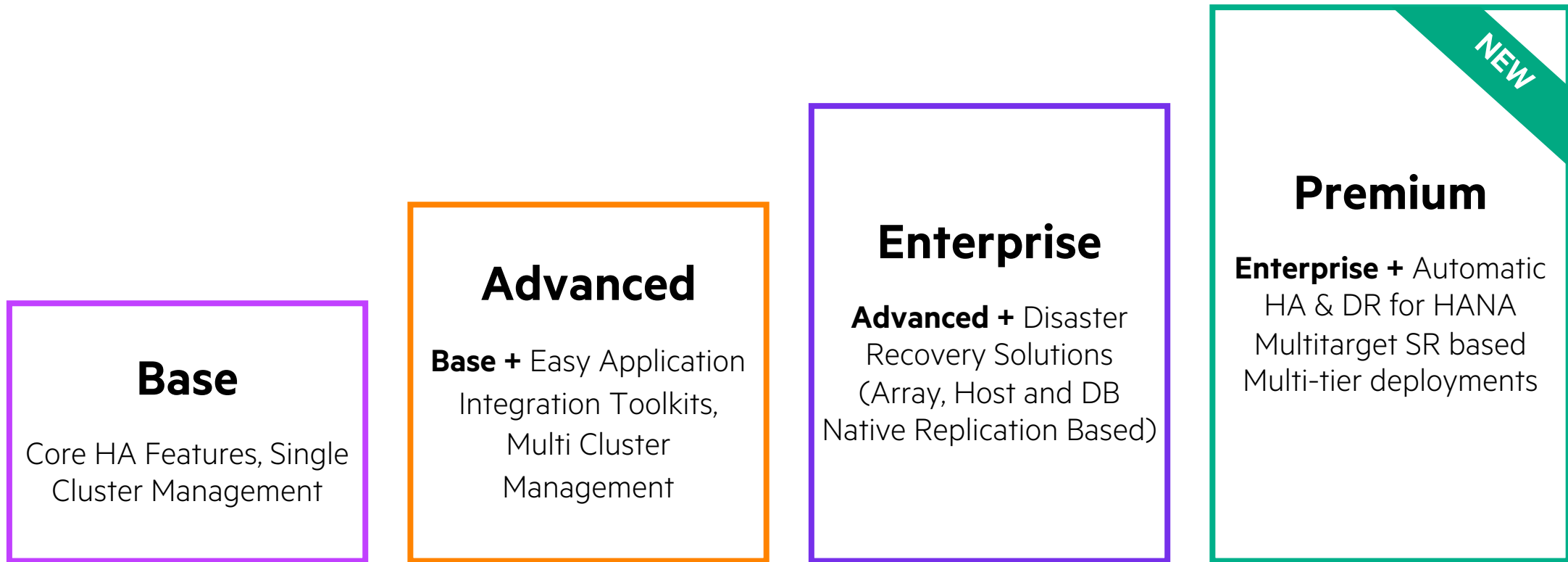
**Out-of-box  
application  
awareness**

## Preserve data integrity

- Assured data integrity under any failover scenario
- Proven, unique algorithms to ensure robust recovery

# FOUR PROTECTION TIERS TO MATCH YOUR ENVIRONMENT REQUIREMENTS

All editions available in perpetual and 1- or 3-yr. subscription models for any x86\_64 server/storage array<sup>1</sup>

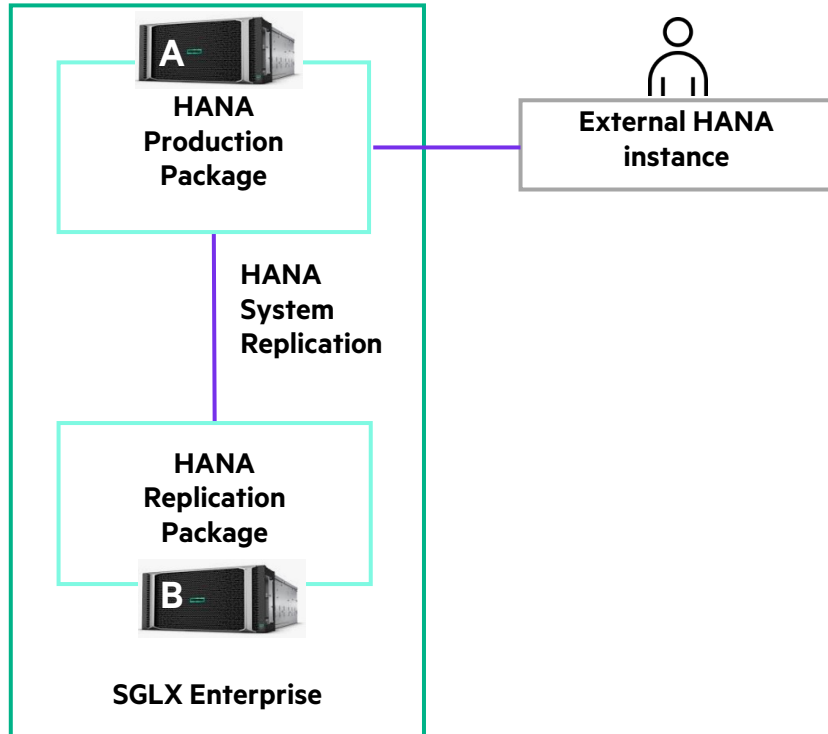


**Continentalclusters add-on available for all editions**

<sup>1</sup> Refer [SGLX certification and support matrix](#) for details on supported platform

# TOP CUSTOMER CHALLENGES WITH EXISTING HANA CLUSTERING OPTIONS

Management of DR is fully manual

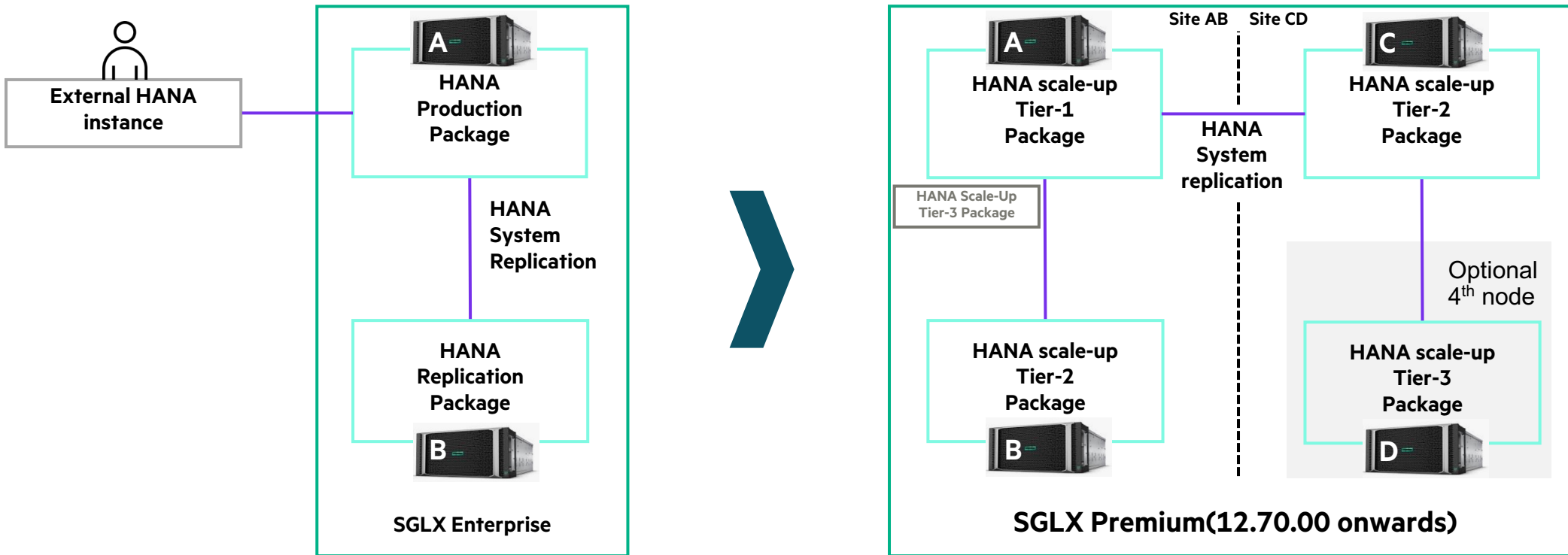


- In many industries having DR (more than one redundant tier) is a mandate
- Adoption of HANA multitier ( 3 / 4 tiers ) will become the default

Phase of Operation	Complexity of Manual DR
<b>Normal Operation</b>	<ul style="list-style-type: none"> <li>• Monitoring replication to DR</li> <li>• Is the DR ready for recovery</li> </ul>
<b>When failure occurs</b>	<ul style="list-style-type: none"> <li>• Ensuring DR is current and not corrupted</li> <li>• Ensure DR meets RPO needs</li> <li>• Manually shut down dev / QA instance in DR</li> <li>• Manually recover DB and application tier</li> </ul>
<b>Operating from DR</b>	<ul style="list-style-type: none"> <li>• No HA protection in DR site any failure leads to immediate downtime</li> <li>• Recovery will become extremely complex</li> </ul>
<b>On recovery of primary</b>	<ul style="list-style-type: none"> <li>• Reconfiguring DB roles as per current operation states</li> <li>• Ensuring primary is synced with DR</li> </ul>
<b>Failback to Primary</b>	<ul style="list-style-type: none"> <li>• Manually reconfiguring DB roles to original state</li> <li>• Manually reinstate operation from production</li> <li>• Ensuring there is no data loss</li> </ul>

# NEW MULTI-TARGET HANA CLUSTERING OPTIONS

Industry first fully automatic HA & DR solution for SAP HANA with 3 Tiers (Multi-Target)



Industry Leading HA & DR for complete SAP stack (NetWeaver, S/4 HANA, HANA)

Industry first automatic HA / DR across multiple Multi-Target Tiers

Co-ordinated recovery of SAP application and Database in same cluster



# AUTOMATE SAP HANA DISASTER RECOVERY

Overcoming current DR challenges

Phase of Operation	Current Disaster Recovery Challenges	SGLX Premium for HANA capabilities
<b>Normal Operations</b>	<ul style="list-style-type: none"> <li>Monitoring replication to DR</li> <li>Is the DR ready for recovery?</li> </ul>	<ul style="list-style-type: none"> <li>Automatic</li> <li>Continuously monitored by SGLX</li> </ul>
<b>When failure occurs</b>	<ul style="list-style-type: none"> <li>Ensuring DR is current and not corrupted</li> <li>Ensure DR meets RPO needs</li> <li>Manually recover DB and application tier</li> </ul>	<ul style="list-style-type: none"> <li><b>Automatic</b> recovery on DR including</li> <li>Ensure <b>RPO</b> sensitive recovery</li> <li>Support <b>Dual Purpose</b></li> <li><b>Coordinated</b> recovery of <b>S/4 HANA</b></li> </ul>
<b>Operation from DR</b>	<ul style="list-style-type: none"> <li>No HA protection in DR site</li> <li>Any failure leads to immediate downtime</li> <li>Recovery will become extremely complex</li> </ul>	<ul style="list-style-type: none"> <li>Full <b>HA protection</b> from <b>Operating from DR</b></li> <li>Recover immediately and automatically</li> </ul>
<b>On recovery of primary</b>	<ul style="list-style-type: none"> <li>Reconfigure DB roles as per current DB roles</li> <li>Ensuring primary is synced with DR</li> </ul>	<ul style="list-style-type: none"> <li>Choice of <b>automatic or push button</b></li> <li>SGLX performs all operations to <b>reinstate recovered production</b> site to cluster</li> </ul>
<b>Failback to Primary</b>	<ul style="list-style-type: none"> <li>Manually reconfiguring DB roles to original</li> <li>Manually reinstate operation from production</li> <li>Ensure there is no data loss</li> </ul>	<ul style="list-style-type: none"> <li><b>Automated failback</b> with few commands</li> <li>Seamlessly reinstate to original state</li> <li>Quick at the same time ensure no data loss</li> </ul>





# UNMATCHED AVAILABILITY FOR SAP HANA SCALE-UP DATABASES

Introducing Serviceguard for Linux  
Premium for SAP HANA



**SAP® Certified**  
Integration with SAP NetWeaver

**SAP® Certified**  
Integration with SAP S/4HANA

**Industry first<sup>(1)</sup>** fully automatic high availability (HA) and disaster recovery (DR) solution that leverages HANA Multi-target system replication to provide unattended recovery across multiple HANA tiers

- **Protect SAP HANA with enhanced redundancy stretching across multiple HANA tiers**
- **Deploy up to three HANA standby instances in a SGLX cluster** to achieve HA & DR for the production instance and achieve full HA capability when operating from the DR site
- **Support for dual purpose, automatically stop all DEV/QA instances** before recovering production workload on DR
- **On recovery of primary site, automatically reinstate HANA standby instances** into the cluster and seamlessly move back operations when desired
- **Consolidate SAP applications ( S/4 HANA, NetWeaver)** in the same cluster to achieve coordinated failover of application and DB layer

<sup>1</sup>Source: HPE Internal. At the time of publication no other comparable solution delivers this capability

# HPE LEADERS IN SAP HANA

HPE is your trusted solutions partner for mission-critical SAP HANA workloads

**34,000+**

HPE SAP HANA  
servers deployed

**Innovation**



**HPE IT runs HANA**

With nearly **50 TB** in production

**Thousands**

of customers running SAP HANA  
on HPE

**#1 for SAP HANA**

~40% SAP HANA hardware market share

**25,000**

Customers run SAP apps on  
HPE infrastructure

**#1 in scalability**

Scale-up and scale-out  
for HANA

**Always on**

Offering fully automated HA failover  
and DR for SAP HANA

**130 TB**

World's largest HANA system  
in production

**2017 SAP Partner  
Excellence Award**

Building on our 30-year partnership

**From days to minutes**

Time saved achieving SAP HANA  
security compliance

# SGLX - INDUSTRY LEADING AVAILABILITY – ENSURE HIGHEST UPTIME

Unique Feature and advantages – SGLX solutions for HANA DB Scale-up (SU) and Scale-out (SO)

## Fastest recovery times for HANA

- **Pre-emptive take over:** Sophisticated algorithms that pre-empts HANA Index server restarts (SU) or auto host failover (SO)
- **Concurrent shutdown and takeover:** Complete secondary takeover without waiting for primary to fully shutdown (Quarantine based isolated primary shutdown)
- **Unique SADTA** to provide automated takeover for scale-out HANA DB with support for 64 nodes (2\*32)
- **Advanced rapid monitoring** in addition to standard SAP provided probing
- **Deep SQL Monitoring** to detect DB hangs
- **Out-Of-Box Dual Purpose :** Automatic shutdown Dev/QA instance on takeover

## Near Zero Maintenance downtime

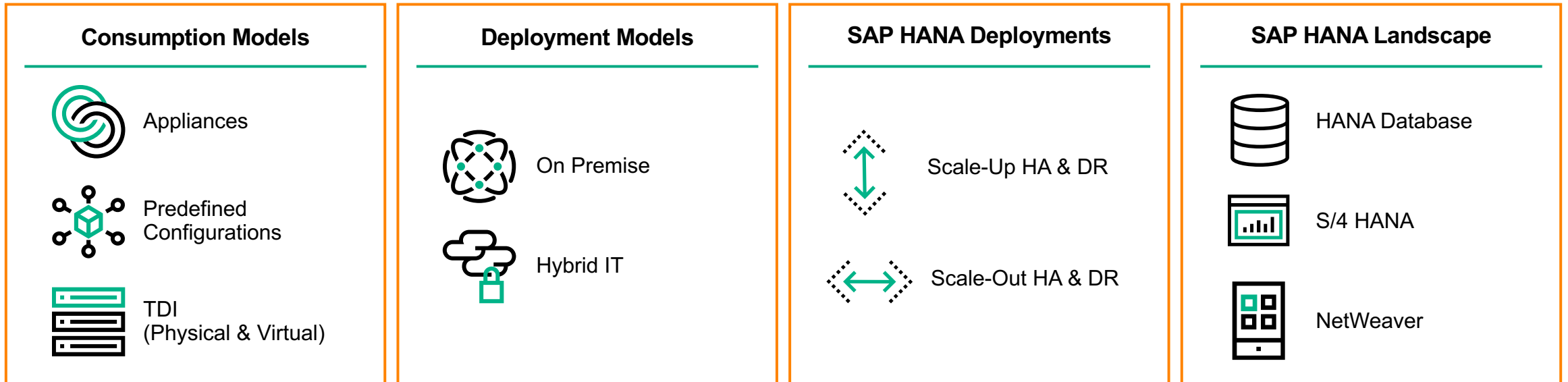
- **Rolling Upgrade:** Initiate take over for rolling maintenance with minimal downtime to DB
- **Concurrent shutdown and takeover:** Complete secondary takeover without waiting for primary to fully shutdown (Quarantine based isolated primary shutdown)
- **No disruption to application tier :** Takeover DB for rolling maintenance without application shutdown by quiescing application server backend “Graceful Package Shutdown”
- **Live Application Detach** - Patching of cluster software without application downtime

## Assured HANA DB Integrity Superior features to maximize uptime

- **Unique Safesync Mode:** Ensure HANA DB integrity on takeover (assured RPO)
- **Unique Smart Quorum:** Eliminates any unintended / unnecessary takeover
- **Support for SAP Features :** Out-of-box support for SAP feature like, MCOS, MCOD, Dynamic Tiering, XS engine
- **Deploy in a few clicks :** Accelerate deployment and eliminate errors with auto-detection of SAP instances & assisted setup.
- **Self-optimizing timeouts :** Zero manual timeout calibration required, robust and stable cluster out-of-box

# SGLX – BUSINESS CONTINUITY FOR ENTIRE SAP LANDSCAPE

Only integrated HA & DR Solution for complete SAP Stack : Certified by SAP in close partnership with HPE



- **HA&DR** solutions for **S/4 HANA** and **NetWeaver**, well integrated with HANA DB
- **Only out-of-box** solution to offer **fully automatic HA&DR** for scale-up and scale-out **HANA** DB
- **Industry leading availability** with **unique** feature and capabilities
- **Industry first** automatic **DR** across **HANA Multitarget** SR based **Multitier** deployments
- **One stop** support and **HANA COE** service from HPE

SAP® Certified  
Integration with SAP S/4HANA®

SAP® Certified  
Integration with SAP NetWeaver®



vmware®



# TRY SERVICEGUARD FOR LINUX

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## Try Serviceguard for Linux A.12.xx.xx Today

Download 90 Days FREE Evaluation copy of Serviceguard for Linux A.12.xx.xx Premium Edition at:

<https://www.hpe.com/us/en/resources/servers/serviceguard-linux-trial.html>



# RESOURCES

## Product Page:

[www.hpe.com/servers/sglx](http://www.hpe.com/servers/sglx), [Brochure](#), [Quick Specs](#)

## Product Documentation:

[www.hpe.com/info/linux-serviceguard-docs](http://www.hpe.com/info/linux-serviceguard-docs)

## Maximize the uptime of SAP HANA environments with HPE Serviceguard for Linux – April 2021

<https://www.hpe.com/h22228/video-gallery/us/en/8c9ab611-4675-46fb-b11d-53dbe8b2c926/video/>

## SGLX Customer Webinars: August 2019

<https://media.now.hpe.com/program.aspx?key=Serviceguard28Aug19>

## Say “No” to downtime with HPE SGLX: Podcast

<https://www.hpe.com/h22228/video-gallery/us/en/700000804/EN/US/a26d22b6-19ab-4ad3-b9e2-9b000db6fc66/say-no-to-downtime-with-hpe-serviceguard-for-linux/video>

## Technical Videos—SGLX Integrations with

- SAP HANA differentiators—[https://www.youtube.com/watch?v=-nsu1g61\\_Hs&t=403s](https://www.youtube.com/watch?v=-nsu1g61_Hs&t=403s)
- SAP HANA Demo—<https://youtu.be/v9ZLf-rF9f0>
- Oracle ASM mirroring—<https://youtu.be/3cAZ6hpu8RU>
- IBM Db2—<https://youtu.be/TNeNG3fMwZI>
- Microsoft® SQL Server on Linux—AOFI—<https://youtu.be/9prs9wxjFtg>
- Microsoft® SQL Server on Linux—AOAI—<https://youtu.be/wkH5E2H88Tk>
- 3 Data Center DR with HPE 3PAR SLD—[https://youtu.be/D6\\_dpsuU9mc](https://youtu.be/D6_dpsuU9mc)
- **Root disk monitoring**—<https://youtu.be/VqCY99ZMoDc>



# THANK YOU

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