

SUSEcondigital ²⁰

Converting From HELiOS to SUSE Linux Enterprise Server: The GE Healthcare Experience

CAS-1274

Thomas Keeley, SUSE Consulting

Andy Peed, GE Precision Healthcare

Agenda

1. Genesis

- HELiOS
- Historical Use of SUSE® products

2. SUSE Linux Enterprise Server™ 15 Strategies

- GEHC Curation
- Deployment Infrastructure
- Transition Approaches

Agenda (continued)

3. Transformation

- Milestones
- Early Results
- Paths Forward



Genesis



HELiOS

- **H**ealthcare **E**nterprise **L**inux **O**perating **S**ystem
- GE-internal derivation from Scientific Linux and RHEL, with a limited subset of packages from EPEL, Software Collections, and internal platform applications development groups
- Internal maintenance and support
- Two release families entering End Of Life: HELiOS6 (2021) & HELiOS7 (2024)



Historical Use Of SUSE® Products

- Highly-customized, product-specific, internally built ISO files (CSELx)
- Highly customized, product-specific, SUSE-built ISO files (CT platform)
- Largely manually constructed and maintained
- Neither maintainable nor scalable to a growing set of current and new product introductions



SUSE® Linux Enterprise Server™ 15 Strategies



Why SUSE Linux Enterprise Server 15?

- SUSE modular philosophy and emphasis on ‘Internet of Things’ highly coherent with GEHC strategic move toward services-based architecture.
- Ongoing experience with certain product development organizations within GEHC provides a near-seamless transition to this architecture.
- Several key SUSE support staff were already known to various product development organizations
- SUSE deemed to be more cost-efficient over the lifetime of support.



GEHC Curation

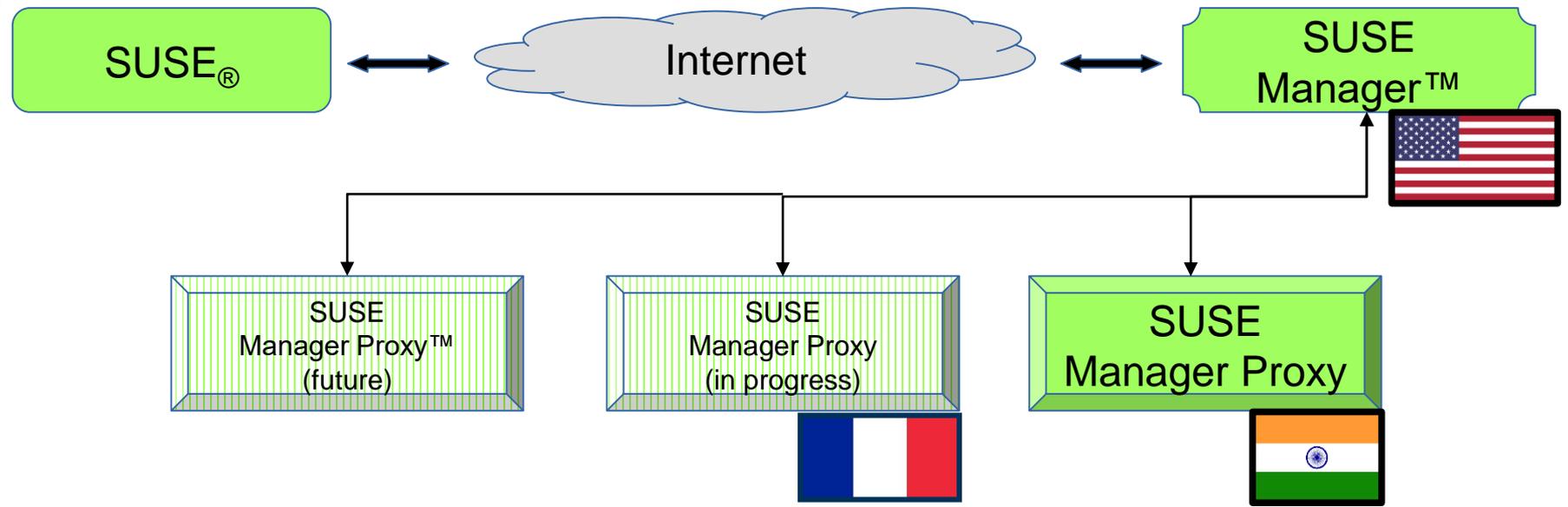
- Guided analysis and mitigation of GEHC risks and concerns associated with OS updates
- Management of GEHC product interactions
- Championship of GEHC product interests with the SUSE® product development process through participation in the SUSE Partner Program.
- Coordination of YES™ testing for GEHC representative hardware platforms and configurations
- Generation / collection of documentation suitable for inclusion in GEHC product Design History Files
- Coordination of ongoing Anomaly Review process



Deployment Infrastructure

- GEHC-administered installation of SUSE® Manager™, located in Waukesha WI, as master repository authority for GEHC applications
- Pulling SUSE Linux Enterprise Server™ 15 artifacts from SUSE as well as driver and other support artifacts from nVidia and other vendor sources
- Serving these collected platform components to multiple instances of SUSE Manager Proxy™ located at other GEHC Development sites: India, Europe, Asia (future)

Deployment Infrastructure





Transition Approaches

- Weekly risk assessment meetings to review upstream changes and inform product migration teams of relevant updates
- Twice-quarterly roundtable discussions between GEHC OS support staff, SUSE® support staff, and GEHC development communities
- Introduction of Kiwi and AutoYaST™ build philosophy and software appliance architectures
- Migration away from 32-bit architectures and dependencies
- Facilitation of inter-product group communication to leverage innovation



Transformation



Milestones

- June 2019: GEHC SUSE® Manager™ goes live
- July 2019: Launch of SUSE Linux Enterprise Server™ 15 (SLES15) announced to GEHC
- August 2019: Bangalore SUSE Manager Proxy™ goes live
- September 2019: SLES15 Service Pack 1 (SP1) released to GEHC
- November 2019: SLES15 SP1 Quarterly Update 1 released to GEHC
- December 2019: First X-Ray Image Collection project on a SLES15-based prototype platform
- January 2020: First product qualification testing on a SLES15-based platform
- February 2020: SLES15 SP1 Quarterly Update 2 released to GEHC



SUSE® Professional Services

Dedicated SUSE staff provides easily accessed subject matter expertise as well as valuable perspective of external best-in-class philosophies.

Past Red Hat experience is leveraged in HELiOS support as well as conversion to SUSE Linux Enterprise Server™ adoption and automation.

On-site SUSE Consultant as staff augmentation provides integration of installation, customization, and documentation into the transition activities and enables a clear and streamlined experience.



Early Results

- Internal partnerships with hardware groups and exposure to YES™ testing for representative platforms is pushing modalities to adopt similar hardware profiles across product lines.
- Roundtable discussions are breaking down product silos and allowing development teams to leverage each others work.
- Partnership with SUSE® has created new SUSE strategies for introducing new functionality into SUSE products.
- SUSE focus on a services architecture is encouraging GEHC product groups to adopt new ways of implementing and delivering functionality to a health-services environment.



Paths Forward

Continue to focus on the idea of packaging functionality as software appliances rather than monolithic systems, encouraging more flexibility in hardware interfaces and service deployment.

Leverage build automation to generate not only internal process documentation, but also end-user and support technical documentation.

Encourage GEHC product and support groups to leverage SUSE® Manager™ to manage the deployment of their own software to internal groups as well as to external customers.

Existence is change.

Survival is the ability to **adapt** to change.

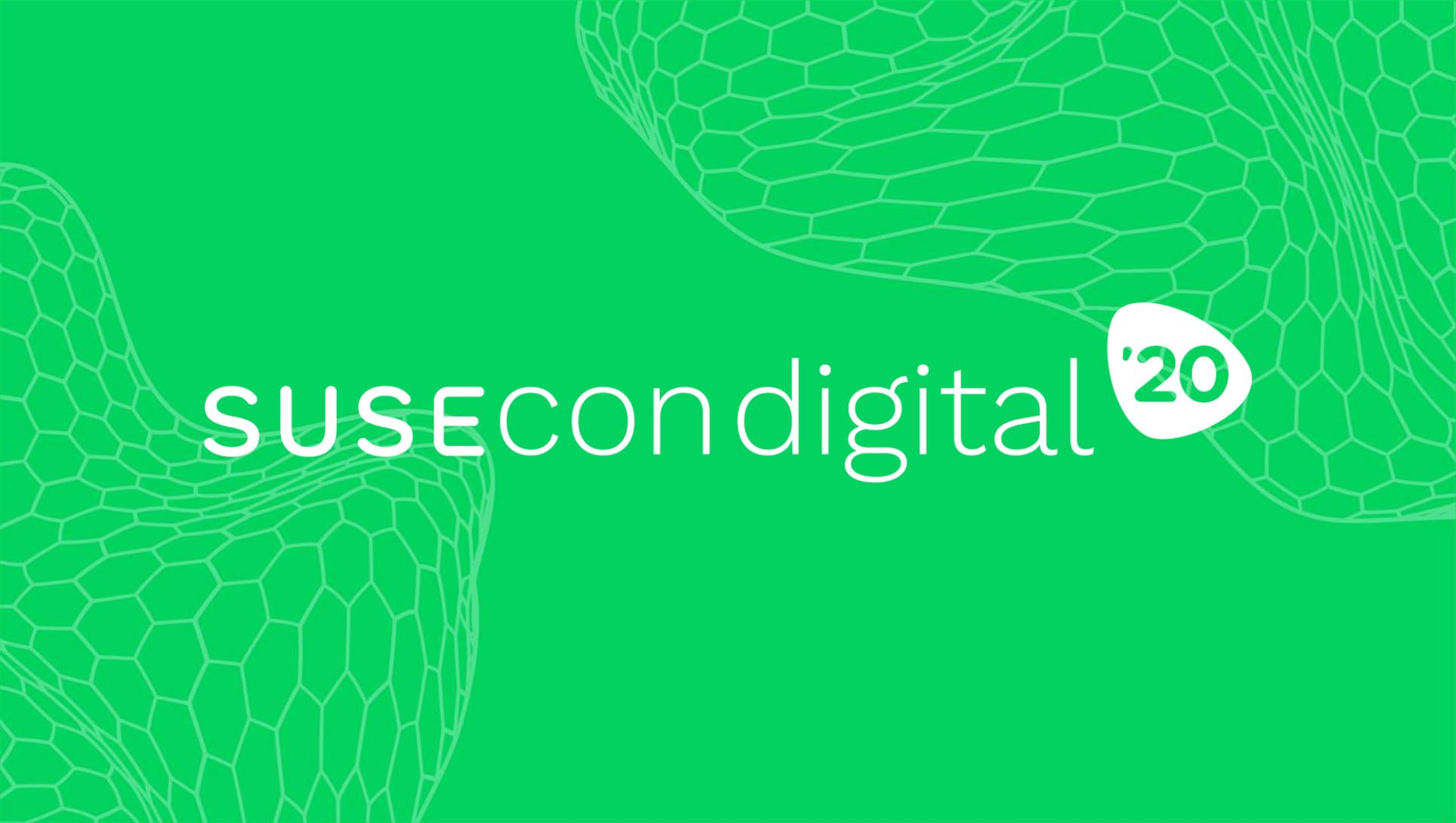
Mastery is the ability to **create, direct, mitigate**
and **leverage** change.

-- Andy Peed

Please post your questions online

General Disclaimer

This document is not to be construed as a promise by any participating company to develop, deliver, or market a product. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. SUSE makes no representations or warranties with respect to the contents of this document, and specifically disclaims any express or implied warranties of merchantability or fitness for any particular purpose. The development, release, and timing of features or functionality described for SUSE products remains at the sole discretion of SUSE. Further, SUSE reserves the right to revise this document and to make changes to its content, at any time, without obligation to notify any person or entity of such revisions or changes. All SUSE marks referenced in this presentation are trademarks or registered trademarks of SUSE, LLC, Inc. in the United States and other countries. All third-party trademarks are the property of their respective owners.

The background is a solid green color with a white grid pattern that forms wavy, organic shapes. The grid lines are thin and create a mesh-like texture. The overall aesthetic is clean and modern.

SUSEcon digital '20