



**Red Hat**  
**Summit**

# Red Hat Enterprise Linux

## Roadmap Session

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**Red Hat**

# Disclaimer

Sharing a product roadmap sets the stage for a strategic discussion

We can all have a conversation, learn, and innovate together

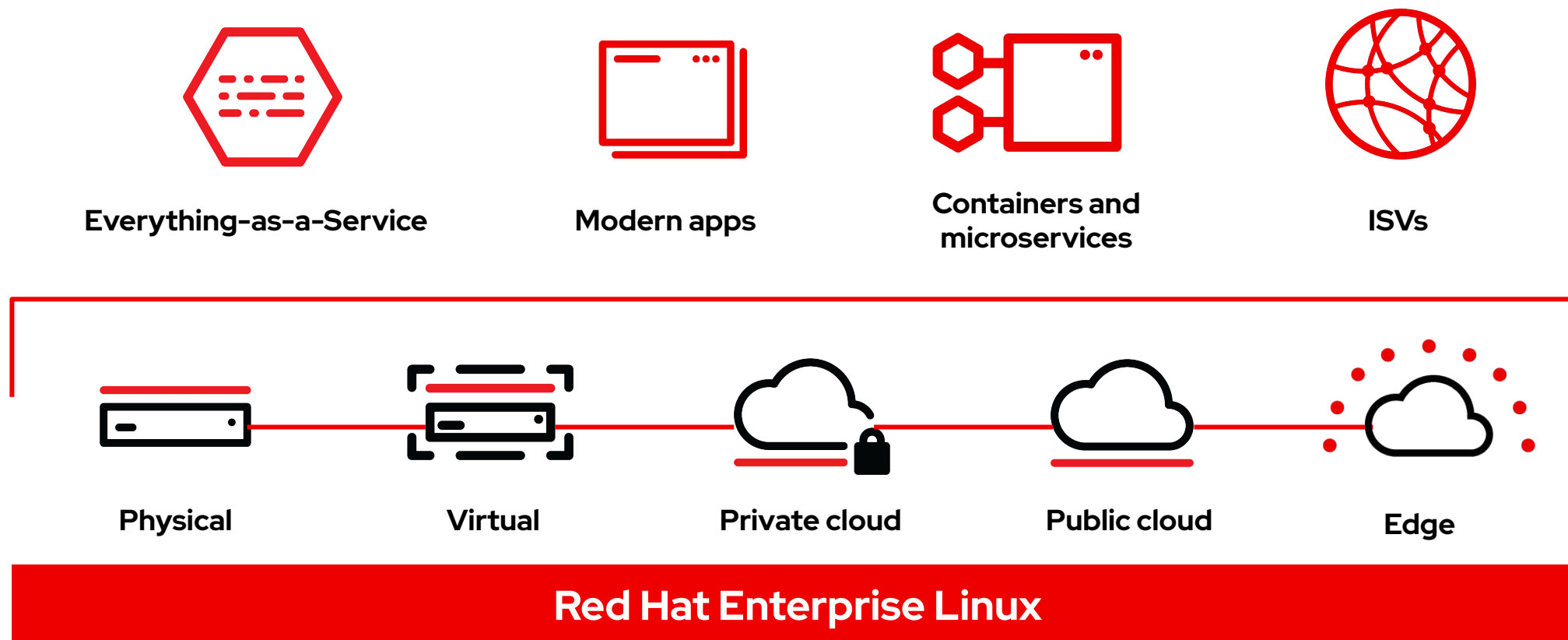
However this is NOT a promise for future delivery

It is simply our vision for the product - a medium to express our long term product plans though sometimes those plans change

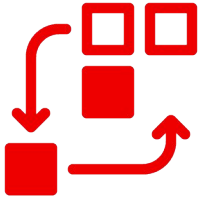
# Agenda

- Roadmap
- Demos
- Check it out!

# Hybrid is the new datacenter



# 18 Month Outlook



## Migration and Installation

- Seamless migrations to latest versions
- Bring your Linux to Red Hat
- Fastest time to 'Hello World'



## Automation and Management

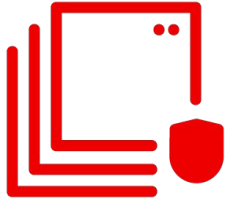
- Consistent management interface across releases
- Easily build 'your' RHEL
- Web-based administration and reporting



## Performance

- Recommendations for optimal performance
- Tools for tracing and tuning
- Improved access to kernel tunables

# 18 Month Outlook



## Security and Compliance

- Keep security vulnerabilities out of the board room
- Ongoing security configuration management
- Reduced barrier to entry for regulated environments



## Strategic Workloads

- Continue to forge strategic partnerships
- Optimize the workload experience on RHEL
- Drive partner solutions in emerging markets



## Subscription Management

- Frictionless deployment of RHEL
- Unified reporting of deployments
- Deliver sane offerings

# 18 Month Outlook



## Developers

- Provide the content developers will consume
- Support the “Red Hat Developer” experience
- Continue to attract new developers



## Hybrid Cloud

- Streamline the cloud experience
- Enable ISV workloads in the cloud
- Increase adoption in the cloud for developers

## A diverse community ecosystem

Red Hat's proposed approach for CentOS is part of a broader focus to engage with communities and developers that better aligns with the modern IT world. Along with CentOS Stream, Red Hat now provides platforms to address a broad spectrum of developer needs, including:

- The Fedora Project, foundation of the Fedora operating system, for those looking to contribute to the leading-edge of operating system innovation.
- CentOS Stream for ecosystem developers who need to see what is coming in the next minor release of RHEL and need to introduce changes in order to enable their hardware or software.
- The Red Hat Universal Base Image, a cost-free, redistributable and developer-ready image for creating cloud-native enterprise applications. With the Red Hat Universal Base Image, developers can more easily create certified applications for production deployment on RHEL and across Red Hat's open hybrid cloud portfolio, including Red Hat OpenShift.
- The RHEL Developer subscription, a free, self-supported subscription for developers, provides a dev/test environment for applications that are meant to be deployed into production on the stable, more secure and high-performance foundation of RHEL.





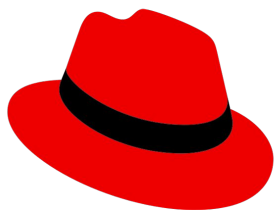
## What is CentOS Stream?

CentOS Stream is a new Linux release from the CentOS Project in partnership with Red Hat Enterprise Linux (RHEL) engineering. Focused on the next minor release of RHEL, CentOS Stream increases the transparency and collaboration of the RHEL development process and provides a platform for products shipping on the next RHEL.



## Find out more

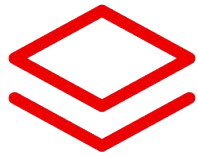
Visit the Fedora/CentOS Area of Community Central - watch the presentations and talk to the community experts



## Get it today

<https://centos.org/stream/>

# RHEL 8.2 Highlights



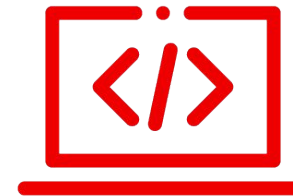
## Consistent Platform

- 6 month release cadence facilitates upgrade planning
- Ease of upgrade from earlier releases
- Simplified installation and configuration
- Monitor and manage at scale with Insights



## Hybrid Cloud

- Build and deploy on bare metal, VM or public clouds
- Simplify workload mobility
- CoreOS and Universal Base Images are RHEL based for consistency across the Red Hat Portfolio



## For Developers

- Latest developer tools and languages delivered in application streams
- Freedom to share UBI based containers
- Certification programs for partners expands ecosystem of supported solutions



## Performance

- Architecture specific tuning
- Tracing and monitoring tools help identify bottlenecks across complex deployments
- Monitor throughput of Microsoft SQL Server databases on RHEL

## Some updates we've been working on are not so far in the future



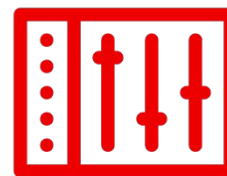
### **cgroup v2**

Control Groups v2 is fully supported in Red Hat Enterprise Linux 8.2. This means additional memory controller features for hard and soft reservations as well as the ability to adjust or disable swap.



### **NUMA**

systemd has added the ability to set NUMA and sub-NUMA policies. With CPU pinning, it is now possible to use cpu-partitioned tuned profiles for optimizing sensitive workloads like never before



### **Tuned**

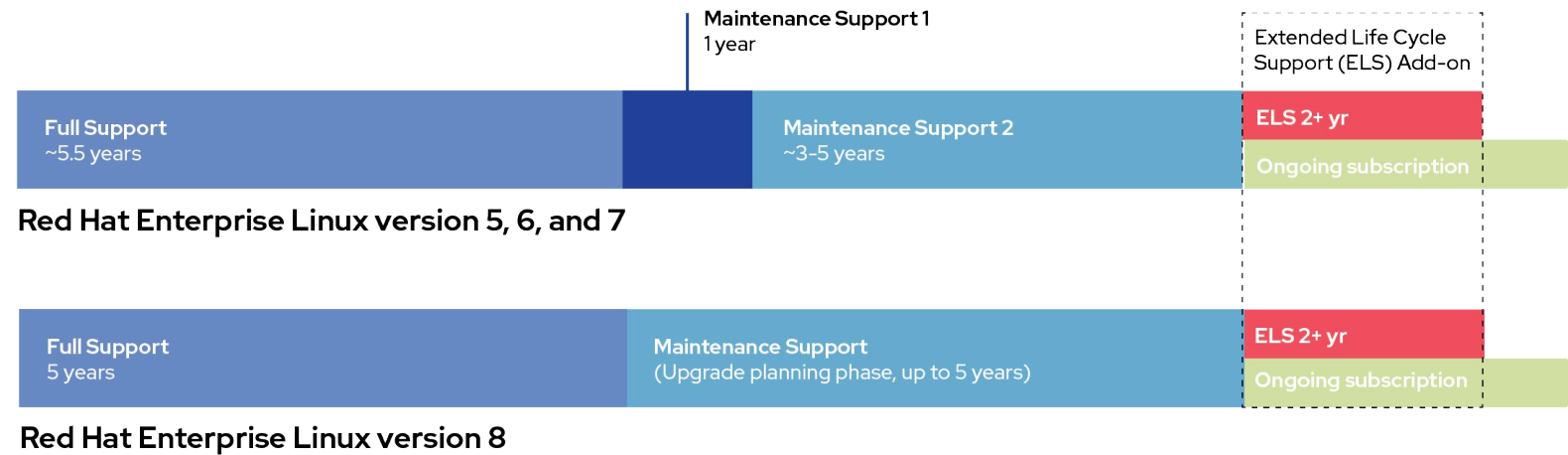
Tuned is used to automatically tune systems according to a specific workload and the most recent release has seen updates to sap-hana, latency-performance, and realtime profiles



### **Universal Base Image**

Red Hat Universal Base Images have expanded to include OpenJDK and .net 3.0. It is also easier than ever to download source code associated with a given UBI image.

## Updating to RHEL 8.2



- RHEL 7.8 general availability 3/31/2020
- RHEL 7 is now in its initial maintenance phase
  - New features will not be added going forward
  - Customers have 4 years to plan their upgrade strategy
- With the release of RHEL 8.2, the **in-place upgrade** tooling ensures a simple, risk-free move to the latest release from 7.8 to 8.2
- On the roadmap: Upgrades at scale in Satellite 6.8.



Filters

Remediations

Title	Risk Factor	Description	Tags
Packages not signed by Red Hat found in the system	High	Remediation	sanity
chrony using default configuration	Medium		services time management
Postfix has incompatible changes in the next major version	Low		services email
The subscription-manager release is going to be set to 8.0	Low		upgrade process
Schedule SELinux relabeling	Low		selinux security
SELinux will be set to permissive mode	Low		selinux security
Some enabled RPM repositories are unknown to Leapp	Low	Remediation	repository
OpenSSH configured not to use privilege separation sandbox	Low		authentication security network services
Syntax error detected in grub configuration	Low		boot
Dosfstools incompatible changes in the next major version	Low	Remediation	filesystem tools
Grep has incompatible changes in the next major version	Low	Remediation	tools

30 per page

## Detail

## Title

Packages not signed by Red Hat found in the system

## Time

04.03.2020 03:42:36

## Risk factor

High

## Summary

The following packages have not been signed by Red Hat and may be removed in the upgrade process: - gpg-pubkey

## Remediations

Add to Remediation Plan

Command: yum -y remove gpg-pubkey

☐ select all

- ☒ system1.lab.redhat.com
- ☒ system2.lab.redhat.com
- ☒ system3.lab.redhat.com
- ☒ system4.lab.redhat.com

## Related resources

Package

# Management services available with Red Hat Enterprise Linux subscription

Increasing the value of the Red Hat subscription

Greater visibility and awareness with **Insights**.

Action & management at scale with the **Smart Management** upgrade.



**Red Hat**  
Enterprise Linux



**Red Hat**  
Smart Management

Theme	Use Case	Analysis Service	Description	Smart Management upgrade
Total Cost of Ownership	Avoid unplanned downtime	Advisor	Proactive recommendations informed by support database	<div>Execute remediation</div> <p>Drive action at scale across Satellite(s) with simple and secure execution of the prescriptive resolution generated by Insights.</p>
Security	Manage risk from vulnerabilities	Vulnerability*	Common vulnerabilities & exposures (CVEs)	
	Ensure continuous compliance	Compliance*	Level of compliance to OpenSCAP policies	
Operational Efficiency	Standardize my operating environment	Patch	Systems that need patching based on available updates	
	Quickly resolve operational issues	Policies	Manage custom policies to act upon system configuration	
		Drift*	Compare systems to identify drift against golden images	No action currently provided for Drift or Subscriptions.
	Grow my environment without worry	Subscription Watch	Dashboard of Red Hat subscription utilization across all environments	

\* Previously only available to subscribers of Red Hat Smart Management



## Dashboard

## Advisor

Recommendations

Topics

## Vulnerability

## Compliance

Reports

Policies

Systems

## Policies

## Drift

Comparison

Baselines

## Subscription Watch

Red Hat Enterprise Linux

Red Hat OpenShift

## Patch

## Inventory

## Remediations

## Documentation

## Overview

Friday, January 24 2020 08:44:45 UTC

Insights system inventory

**109,452** 24% of total systems 

Systems running insights-client

2,423 stale systems

134 systems to be removed

Subscription watch utilization summary

Red Hat OpenShift 212%

Red Hat Enterprise Linux 72%

Patch

576 systems affected



- 254 security advisories
- 400 bug fixes
- 100 enhancements

## Advisor recommendations

6 new rules impacting 230 systems Report

**25** Incidents detected


512 Critical 132 Important 121 Moderate 76 Low

1325 Systems with rule hits

## Compliance

Report


Policy: PCI DSS v3  
Business objective: Project Gemini  
471 Systems 75% Passes

Policy: HIPPA  
Business objective: Project Gemini  
322 Systems 42% Passes

Policy: my\_internal\_policy  
Business objective: Project Gemini  
348 Systems 75% Passes

4 more compliance policies

## Vulnerability

Learn about CVSS scores Report

**231** CVEs impacting your systems


19 CVSS 8.0 - 10 32 CVSS 4.0 - 7.9 221 CVSS 0.0 - 3.9

## Remediations

Report

Running

custom\_playbook A

Started, Jan 20 2020 08:44:42

156

Last 90 days

62

Last 30 days

44

Last 7 days

# Demo: Take a look at what's new in the Red Hat Enterprise Linux Web Console

The screenshot shows the Red Hat Enterprise Linux Web Console interface. The top header displays 'RED HAT ENTERPRISE LINUX' on the left, 'Privileged' status in the center, and a user profile 'Administrator' on the right. A sidebar on the left contains navigation links: 'svr1.mynet', a search bar, and a list of system components including Overview, Logs, Networking, Podman Containers, Virtual Machines, Accounts, Services, Applications, Diagnostic Reports, Kernel Dump, SELinux, Software Updates (marked with an 'i' icon), and Terminal. The main content area is titled 'svr1.mynet running Red Hat Enterprise Linux 8.2 Beta (Ootpa)' with a 'Restart' button. It is divided into four panels: 'Health' with a 'Bug Fix Updates Available' notification, 'Usage' showing CPU at 0% of 1 CPU and Memory at 0.5 / 0.8 GiB, 'System information' with details like 'Model: QEMU Standard PC (i440FX + PIIX, 1996)' and 'Machine ID: a3984ecb0c8842c9b2d6adc56f81360e', and 'Configuration' with settings for Hostname, System time, Domain, Performance profile, Secure Shell keys, and Store metrics.

## Console - A better way to manage

Web Console provides a web interface (even a bash shell)

## Troubleshoot Selinux

We'll see an SELinux issue, troubleshoot it, and fix it

## Discovering ansible

Deploy the fix at scale with Ansible

## Remote Access

Web Console can be accessed from a windows machine or your mobile phone



## Automation Script

Shell Script

Ansible

```
semanage import <<EOF
boolean -D
login -D
interface -D
user -D
port -D
node -D
fcontext -D
module -D
ibendport -D
ibpkey -D
permissive -D
boolean -m -1 httpd_enable_homedirs
```

 Copy to clipboard

Close

# Demo: Install an up-to-date RHEL, registered with Insights



Samantha Bue...

at.com/~mkolman/anaconda\_rhsm\_integration/virtual\_summit\_2020\_demo/rhsm\_demo\_3-2020-04-02\_18.01.45.mp4



Search



## INSTALLATION SUMMARY

## RED HAT ENTERPRISE LINUX 8.2 INSTALLATION

us

Help

### LOCALIZATION

 **Keyboard**  
English (US)

 **Language Support**  
English (United States)

 **Time & Date**  
Americas/New York timezone

### SOFTWARE

 **Installation Source**  
Red Hat CDN


 **Software Selection**  
Red Hat CDN  
Installation source set up

### SYSTEM

 **Installation Destination**  
Automatic partitioning selected

 **Connect to Red Hat**  
Registered

 **KDUMP**  
Kdump is enabled

 **Network & Host Name**  
Wired (ens3) connected

 **Security Policy**  
No profile selected

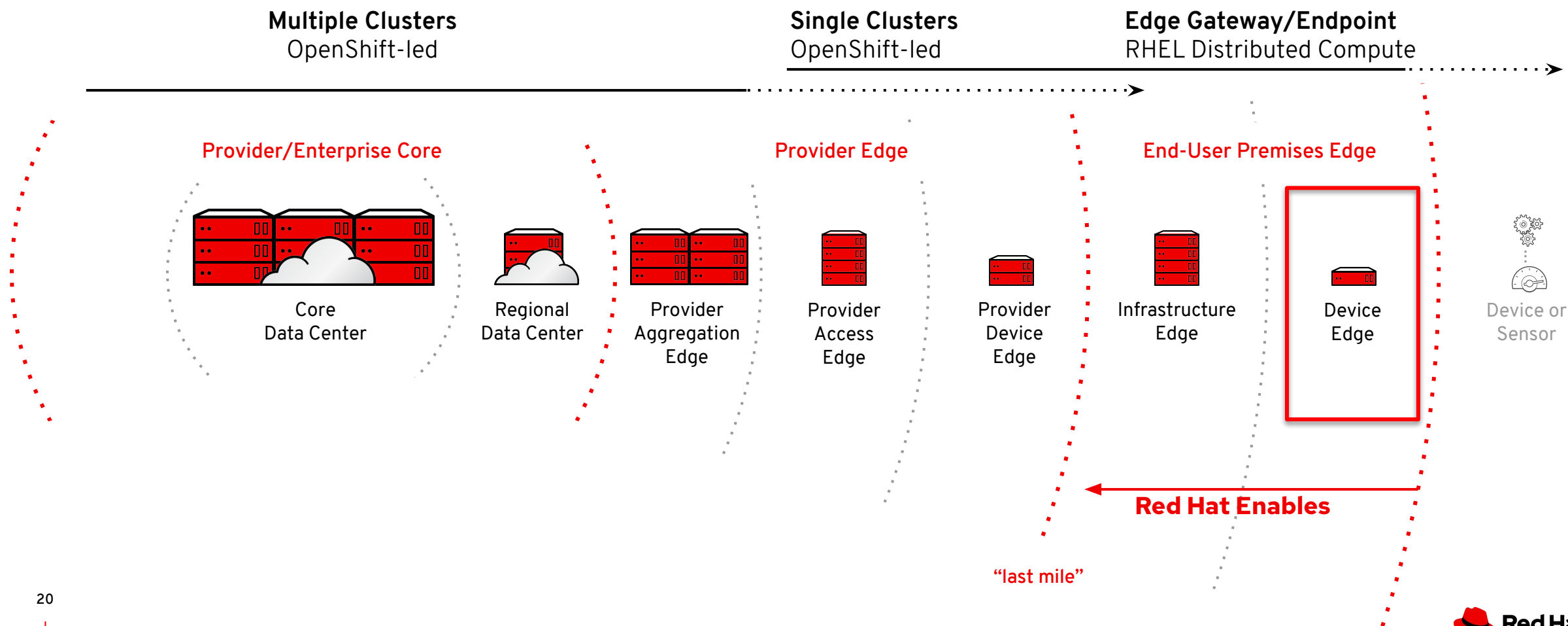
Quit

Begin Installation

We won't touch your disks until you click 'Begin Installation'

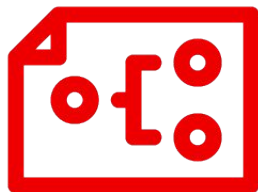
 Please complete items marked with this icon before continuing to the next step.

# Edge Tiers and GTM



# Deliverables for Edge

Bringing the technology from Fedora IoT to the enterprise



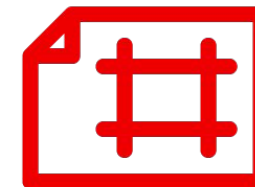
## Transactional Updates

Rpm-ostree ensures a known-good state for each update. OTA payloads are optimized for low-bandwidth environments.



## Intelligent OS Rollbacks

Greenboot provides additional resilience and peace of mind by allowing custom healthchecks to trigger node rollbacks.



## Delivered as a Flexible Blueprint

RHEL's Image Builder enables the right level of flexibility for OS content, configuration, update cadence, and image life cycle

Red Hat  
**Summit**

Thank you



[linkedin.com/company/Red-Hat](https://www.linkedin.com/company/Red-Hat)



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