

Red Hat
Summit

Connect

Red Hat Enterprise Linux 10

reinvent your Linux

10



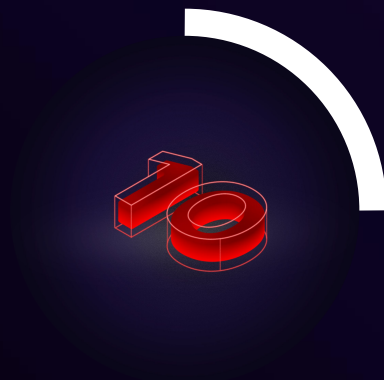
Red Hat
Enterprise Linux 10

Speaker introduction



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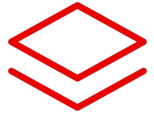
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Why Businesses Trust Red Hat Enterprise Linux



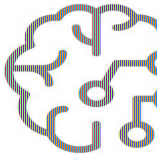
-  Streamlined management and automation
-  Integrated analytics and remediation
-  Security resources and tools
-  Partnership with a diverse ecosystem
-  Long-term life cycle support and flexibility
-  Developer-friendly design and features

Flagship New Features



1. Image Mode

Image Mode moves from “Tech Preview” to a GA, fully supported feature.



2. Command Line Assistant

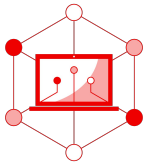
AI augmented assistant (RAG model with Watson X, no additional licensing needed)

*disconnected version in developer preview



3. Post Quantum Encryption Capable

Technologies and framework for applying post quantum requirements when they become available



4. Insights Advisor in Satellite

Proactively analyze and remediate availability, performance, and security risks in disconnected environments

Standardizing and innovating with containers

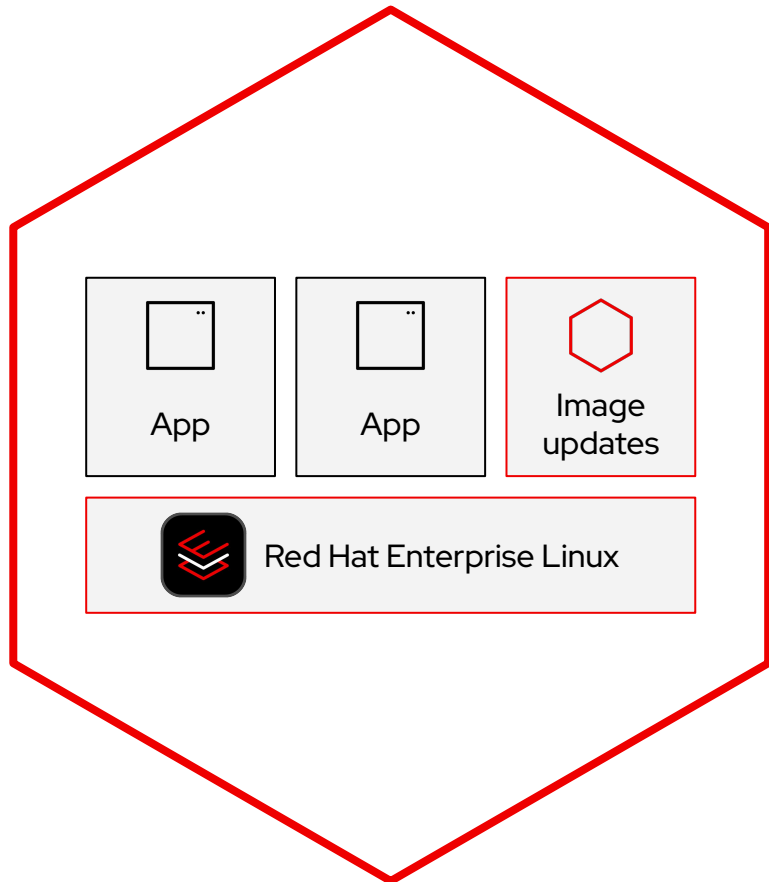
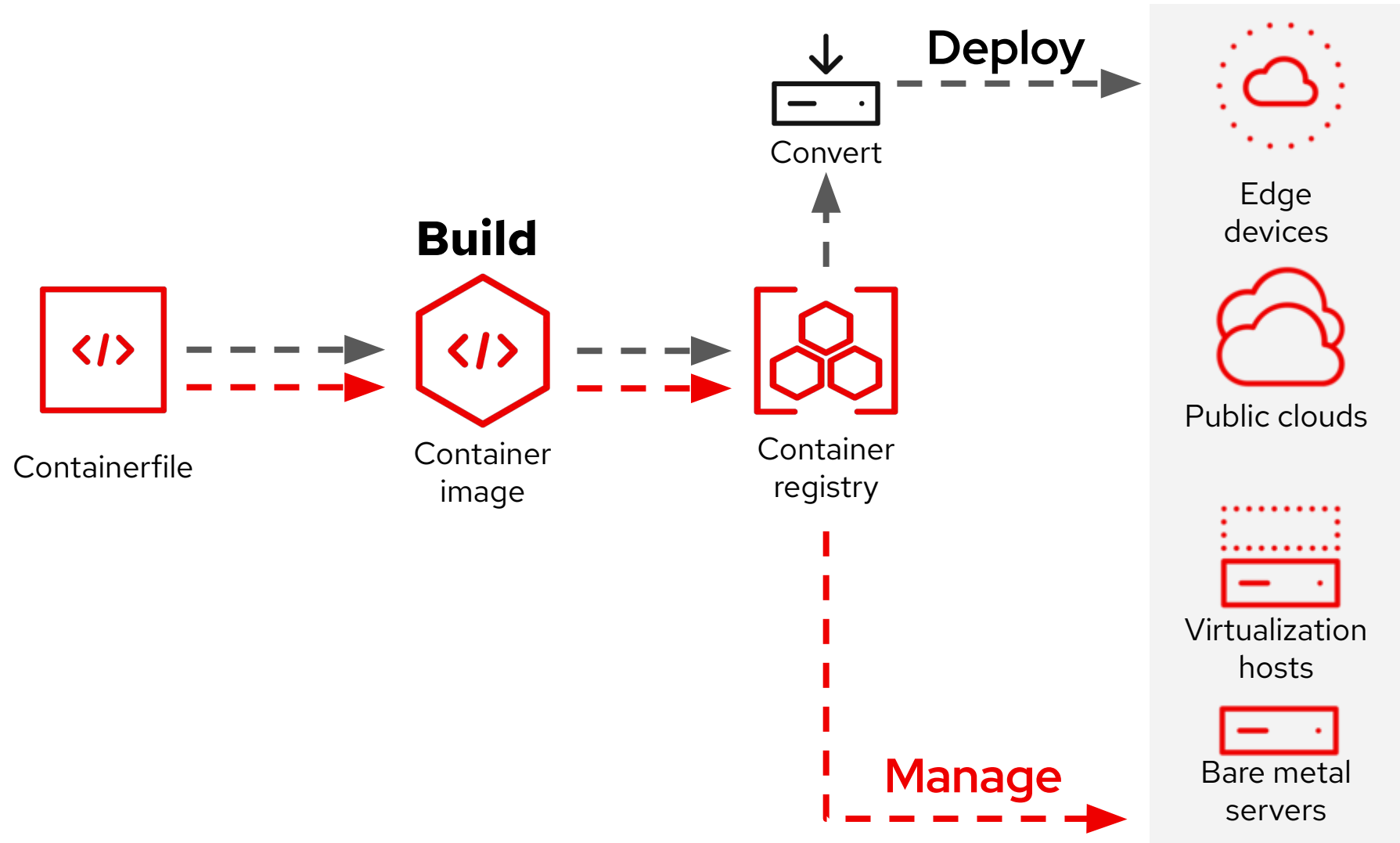


Image mode for Red Hat Enterprise Linux is a simple, consistent approach to build, deploy and manage the operating system using container technologies.

Now you can manage the operating system with the same tools and workflows as applications, promoting a common experience and language across teams.

Image mode for Red Hat Enterprise Linux

Simple. Consistent. Anywhere.



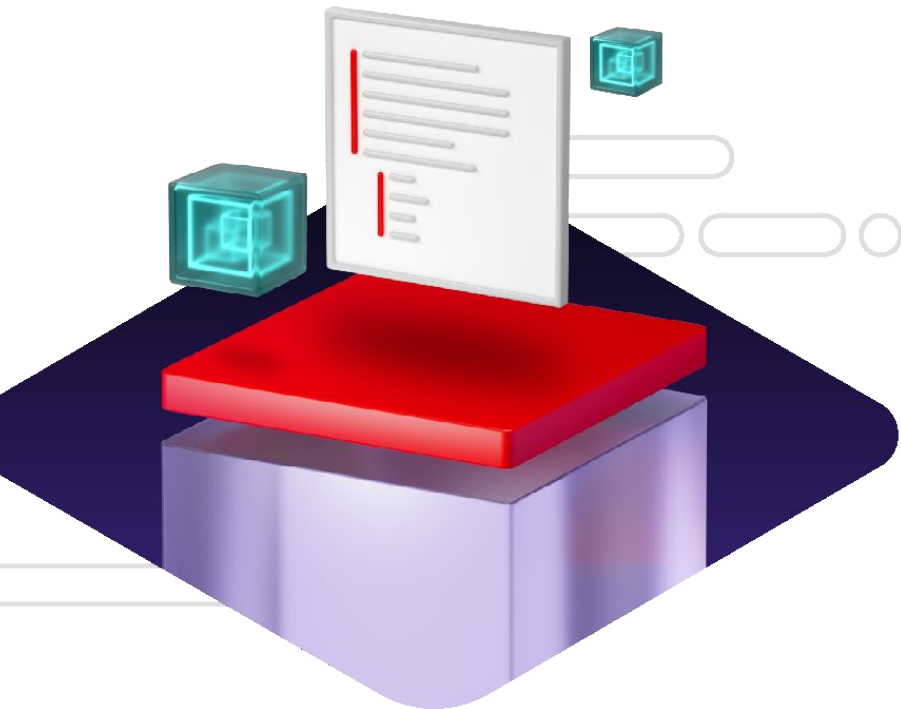
One RHEL, two modes

	Package mode	Image mode
Image creation	Image builder	Container tools
Updates	Packages (dnf)	Images (bootc)
Update distribution	rpm repository	Container registry
Management	Red Hat Insights, Satellite*, Ansible*	
Deployment footprint	Bare metal, VM, cloud, edge	

* On image mode roadmap

Contain drift and accelerate delivery

using container tools and technologies



With image mode for Red Hat Enterprise Linux, you can:

- ▶ **Speed time to market**
using DevOps and CI/CD practices, which now include the OS
- ▶ **Streamline operations**
by automating updates and rollbacks—just like your smartphone
- ▶ **Enhance security**
by reducing your attack surface with immutable system images
- ▶ **Simplify appliance creation**
by combining the OS with apps and drivers for faster development and delivery

Addressing the Linux skills gap

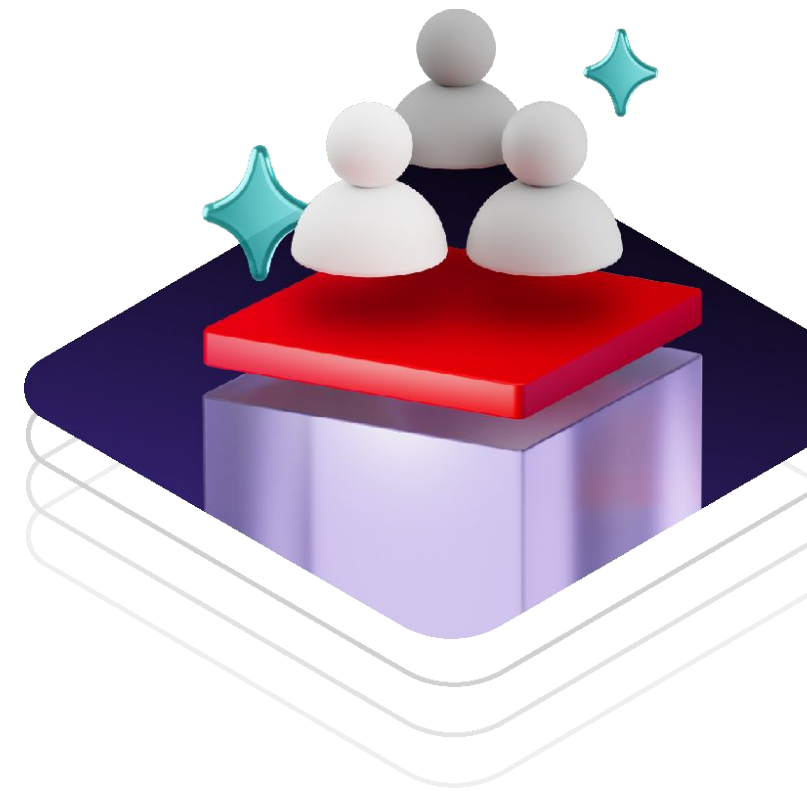
with decades of Red Hat's Linux knowledge and expertise

Red Hat Enterprise Linux Lightspeed

combines decades of Red Hat Enterprise Linux expertise with AI technologies to proactively inform and simplify how both newer and experienced IT professionals build, deploy, and manage Red Hat Enterprise Linux.

- ▶ Use plain language to simplify the way you interact with Red Hat Enterprise Linux
- ▶ Make better decisions with recommendations and actionable guidance

Simplify tasks. Amplify results.



A new command line assistant

Powered by Red Hat Enterprise Linux Lightspeed

```
[root@rhel9 ~]# iostat -dx 1 2 > iostat.out
[root@rhel9 ~]# c -a iostat.out "Summarize the provided iostat output"
*++ Asking RHEL Lightspeed
```

The provided iostat output shows disk I/O statistics for various devices on a Linux system running RHEL 9 (kernel version 5.14.0-570.51.1.el9_6.x86_64) as of October 07, 2025. Here's a summary:

1. ****dm-0****: This device has a read rate of 18.97 requests per second (r/s) with a read queue length of 0.00%. The average read wait time is 0.10 ms, and the average write rate is 0.44 r/s with a write queue length of 0.00%. The utilization is 0.27%.
2. ****dm-1****: This device has a very low activity level with 0.36 r/s and 0.00% read and write queue lengths. The average read and write wait times are also 0.08 ms and 0.00 ms, respectively.
3. ****dm-2****: This device shows minimal activity with 0.35 r/s and 0.00% read and write queue lengths. The average read wait time is 0.09 ms, and the average write wait time is 7.70 ms, with a write rate of 0.04 r/s.
4. ****dm-3****: This device has a read rate of 1.13 r/s and 0.00% read queue length. The average read wait time is 0.18 ms, and the write rate is 1.64 r/s with an average write wait time of 2.23 ms. The utilization is 0.17%.
5. ****vda****: This device has the highest activity level, with a read rate of 21.97 r/s and a read queue length of 0.10%. The average read wait time is 0.11 ms, and the write rate is 1.63 r/s with an average write wait time of 3.03 ms. The utilization is 0.41%.

In summary, the output indicates that the 'vda' device is experiencing the most significant I/O activity, while 'dm-1', 'dm-2', and 'dm-3' show minimal activity. The 'dm-0' device has moderate read activity with a low wait time. If you observe high wait times or utilization on any device, it might indicate a potential performance issue that could be investigated further.

Resist security attacks from hackers

when quantum computers become prevalent

- ▶ Data we encrypt today might not be secure in five years
- ▶ Red Hat Enterprise Linux 10 is the first enterprise Linux distribution to be post-quantum capable with new quantum-resistant algorithms so you can prepare now for future compliance mandates
- ▶ ML-KEM (FIPS 203) and ML-DSA (FIPS 204) algorithms

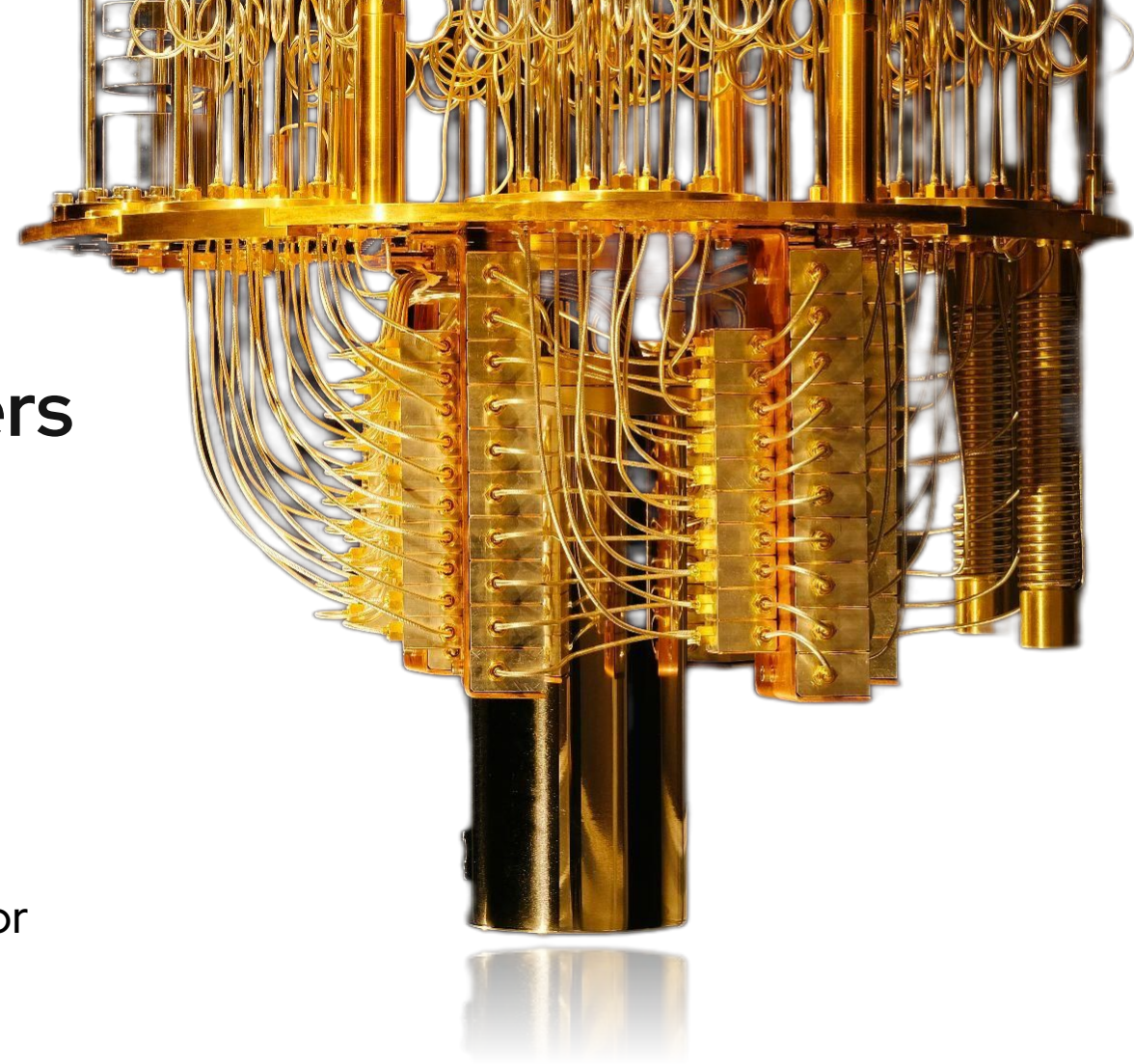
Source:

https://newsroom.ibm.com/download/quantum-computers-and-accelerated-discovery_40645906341_o.jpg

<https://quantum.ibm.com/services/resources?limit=50&view=table>

<https://security.stackexchange.com/q/87345>

<https://crypto.stackexchange.com/q/436>



Red Hat's transition phases

We anticipate having to support a long, hybrid transition period



Classical

Traditional Cryptography;
no quantum resistant
algorithms (QRAs) available.



PQ-Capable

Includes available QRAs
and PQC functions.
Not available for all
applications. Still classical
by default with configurable
use of available QRAs.



PQ-Ready

QRAs and PQC functions
by default where available,
configurable classical
where needed.



Deprecation & Removal

Classical Algorithms and
functions will be marked as
deprecated with eventual
removal. Capabilities and
solutions to be resistant to
downgrade attacks.

Top RHEL 10 security features everyone should be using

- Image Mode
- SBOMs
- Shift Left Security
- SELinux
- fapolicyd
 - Keylime: Remote Attestation
 - Identity Management
 - Encrypted DNS
 - Crypto-Agility
 - Post-Quantum Cryptography



Cloud-optimised Red Hat Enterprise Linux

Accelerate cloud adoption

Focus on initiatives that move your business forward,
rather than spending time on operational functions

- Benefit from seamless integration with the cloud provider's services
- Leverage integrated management tools to speed operations
- Apply built-in cloud-specific configurations that ensure performance, integration and observability for your cloud-based workloads
- Deploy a stable surface to build on without having to worry about the underlying technology

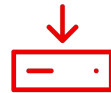
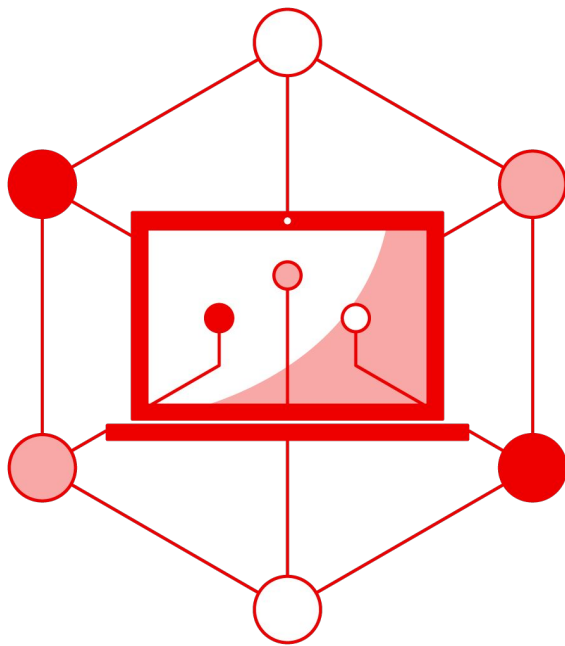
Hyperscaler optimized cloud offerings:

- ▶ Red Hat Enterprise Linux for AWS
- ▶ Red Hat Enterprise Linux for Azure
- ▶ Red Hat Enterprise Linux for Google Cloud



Red Hat Insights advisor in Satellite

Analyze and remediate availability, performance, and security risks in disconnected environments



Use Insights advisor's business rules and logic—codified from decades of Red Hat Enterprise Linux expertise—to **monitor system configurations, detect risks, and prescribe remediations without sending data off-premise**

- ▶ Flexible options for installing and upgrading
- ▶ Separation, minimal access, and ultimate control for highly regulated industries and geographies
- ▶ Proactive recommendations catch problems early, minimizing downtime



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Thank you



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