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Red Hat Edge

What We'll Discuss Today

- How Edge can Transform Businesses
- Red Hat's Edge Computing Strategy
- An Architectural Approach to Edge Computing

How Edge Computing can Transform Businesses

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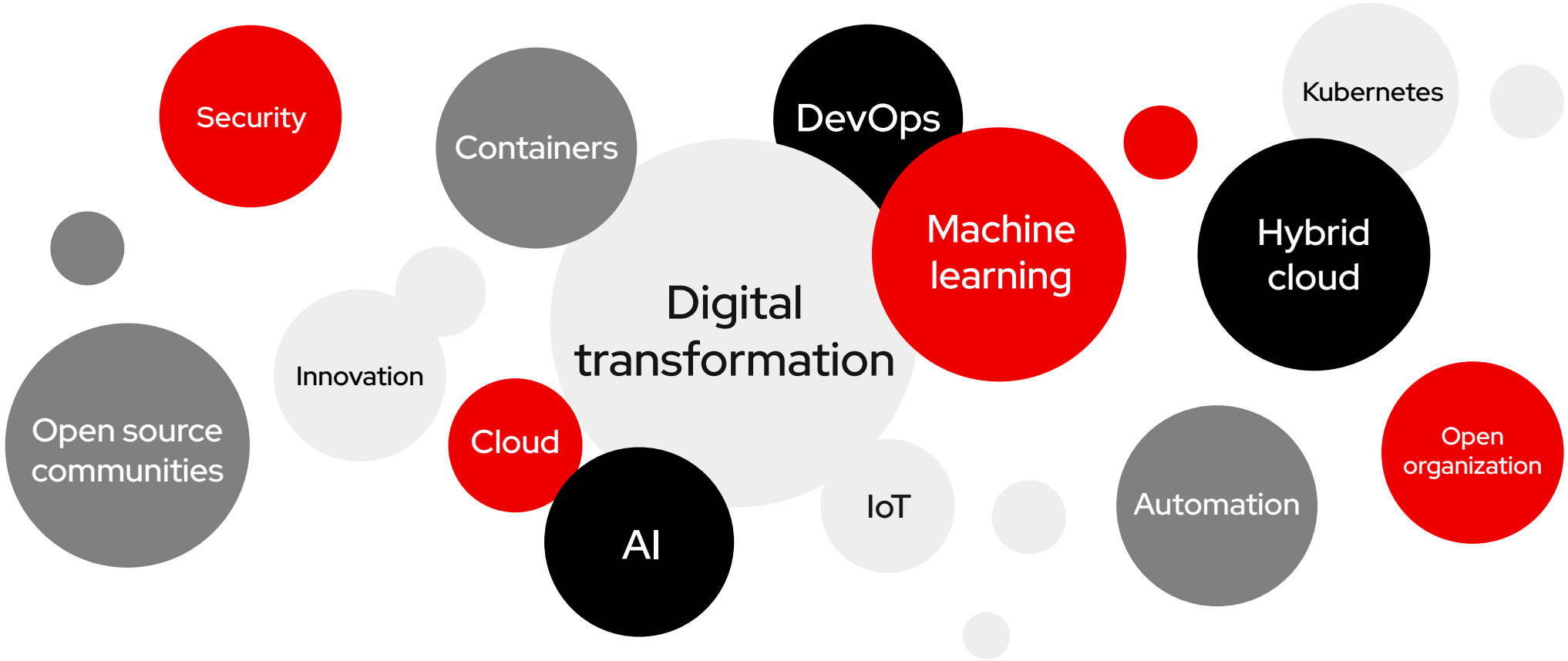
Innovation Velocity, Operational Agility

New Platforms Enable Digital Transformation



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Edge Computing Extends Digital Transformation to where Business Happens

Software-defined Platforms

- Standard, scalable hardware
- Cloud-native applications
- Flexibility and agility
- Convergence of data platforms

Software-defined Everything

- Real-world, real-time interaction
- Convergence of planning and execution
- Implementation of data-driven insights
- Integration of formerly closed systems

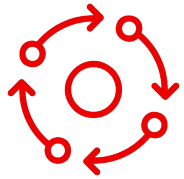
Solve Complex Business Problems and Discover New Opportunities

Faster data-driven operational outcomes

Leverage data and analytics on-site to make critical decisions faster, automate operations, and develop new service offerings

Better end-user experiences

Place applications and data closer to the end user to provide real-time engagement and drive new revenue streams



Higher app and process resiliency

Ensure critical operations on edge sites continue despite limited connectivity or security and regulatory concerns

Data residency and sovereignty

Securely process and manage sensitive data on-site and maintain regulatory compliance across boundaries

Create Flexibility and Opportunity with Edge Computing

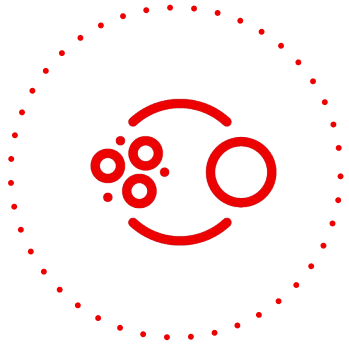
Application Flexibility

Deploy applications anywhere

Act with speed and agility and adapt to the needs of the business

Operational Agility

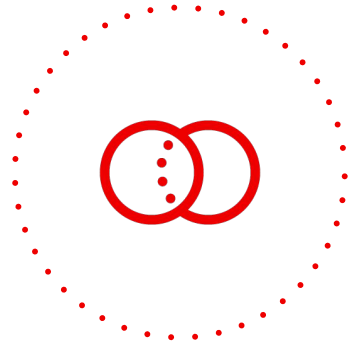
Minimize operational challenges



Provide new solutions for a variety of distributed application environments

Business Innovation

Address new opportunities



Enhance innovation, increase productivity, and offer better products and services

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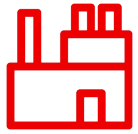
Edge Computing is Already Happening

Industrial Use Cases with AI/ML

Telecommunications

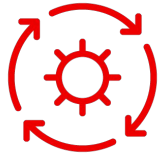


Manufacturing

Energy

	Telecommunications	Manufacturing	Energy
Use cases	Private networks vRAN Distributed core	Predictive maintenance Factory automation AR + remote export	Process control Environment monitoring Autonomous vehicles
Benefits	Better user experience Scale to meet demand Greater network flexibility Improved resilience	Reduced downtime Increased productivity Longer asset lifetime Improved factory safety	Reduced downtime Lower OpEx and CapEx Lower workforce risk Less environmental impact

Edge Computing is Complex



Management at scale

Managing hundreds of thousands workloads in many locations with enough people to scale efficiently

Complexity of infrastructure

Supporting heterogeneous infrastructure increases costs and skill sets

Accelerated innovation to meet business needs

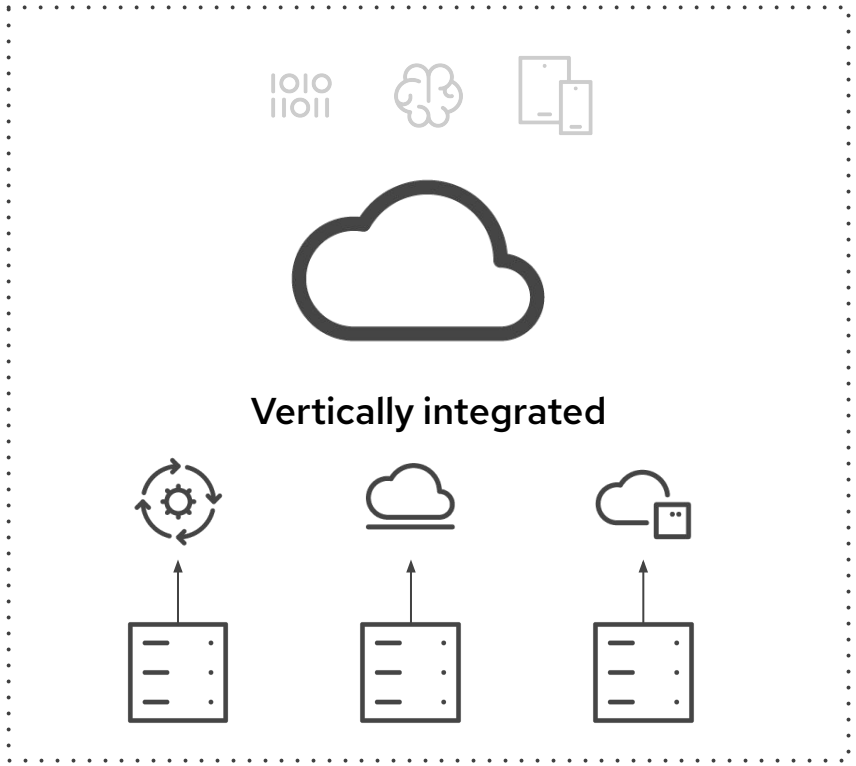
Building an edge infrastructure that supports in house innovation and partnering with specialized 3rd party providers

Security and compliance

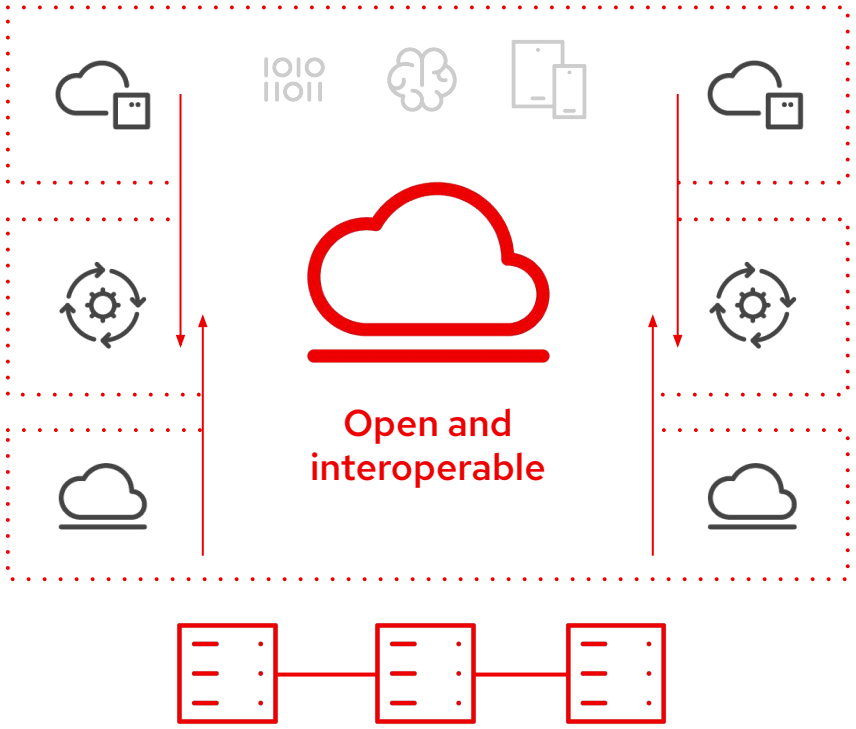
Processing and managing data at the edge to make decisions while protecting sensitive information and supporting latency-sensitive applications

Edge is a Continuum of and Open Hybrid Cloud

Every Organization Faces Fundamental Questions for a Modern Edge



Dedicated point solutions



Continuous open source innovation

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Red Hat's Edge Computing Strategy

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Red Hat Can Help

"If edge computing is going to be a realistic future for enterprise IT, it needs the hybrid cloud and open source to thrive."

Paul Cormier

Red Hat Chairman

Hybrid cloud provides operational consistency across your architecture—all the way to the edge

Open source harnesses the power of collaboration to propel innovation and interoperability

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Our Vision

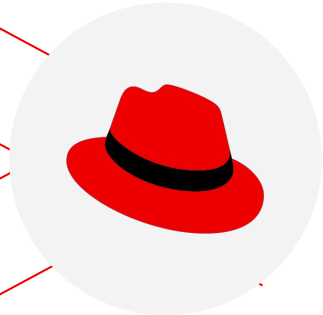
Community-Powered Innovation

Business requirements drive the need for transformation

Open source enables choice and innovation

Communities are the catalyst for innovation

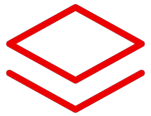
Edge is a cultural change for companies



Red Hat is a leader in commercial open source solutions

Red Hat Edge: Any Workload, Any Footprint, Any Location

Red Hat's Approach to Edge Computing



Platforms and portfolio

Powerful building blocks including application services, management, storage, and services, with Red Hat OpenShift® and Red Hat Enterprise Linux® in the heart of all

Open source leadership

Enhancing the development of open standards while providing hardened, fully supported enterprise-grade platforms

Partner ecosystem

Partnering with hardware and software vendors to provide solutions that meet customer needs

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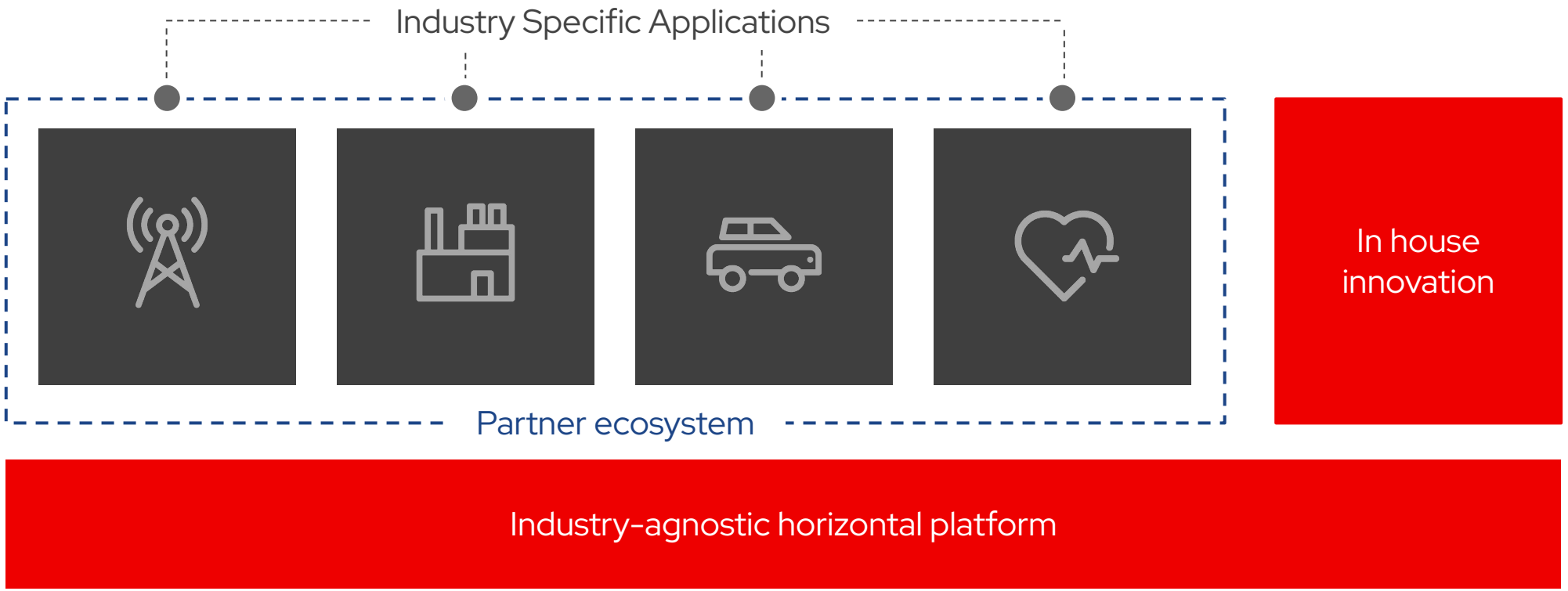
Our Role

Industry Alignment through Our Ecosystem



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An Edge Platform to Meet Your Needs

A Consistent Platform: Adaptable to All Use Cases

Develop once, deploy anywhere | Address diverse use cases | Consistent operations at scale

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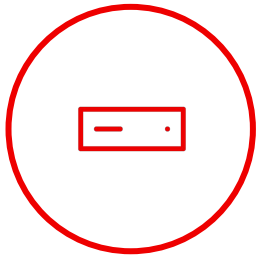
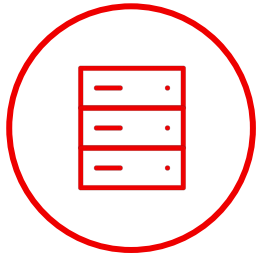
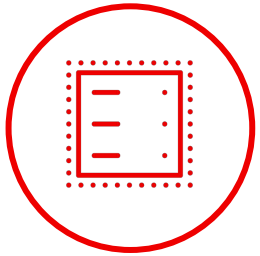


Edge gateway/
edge server



Small bare metal
footprint

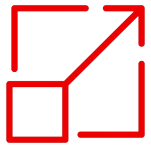


Infrastructure
virtualization

Public/private
cloud

Edge Computing can be a Business Differentiator

Red Hat can Help You Get There



Consistency

Scale securely without added complexity while minimizing headcount impact

Innovation

Embrace industry-wide open standards

Versatility

Place applications where the business needs them

An Architectural Approach to Edge Computing

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Edge footprints

- Red Hat Enterprise Linux
- Single node OpenShift
- Remote worker nodes
- 3-Node high availability clusters

Event driven data / pipeline management

- **Red Hat** Application Services
- **Red Hat** Data Services

Management & Automation

- **Red Hat** Advanced Cluster Management for Kubernetes
- **Red Hat** Advanced Cluster Security for Kubernetes
- **Red Hat** Ansible Automation Platform
- **Red Hat** Smart Management

Common Platforms

- **Red Hat** Enterprise Linux
- **Red Hat** OpenShift
- **Red Hat** OpenShift Data Foundation
- **Red Hat** OpenStack Platform

Edge | Bare metal | Virtualization | Private clouds | Public clouds

Security

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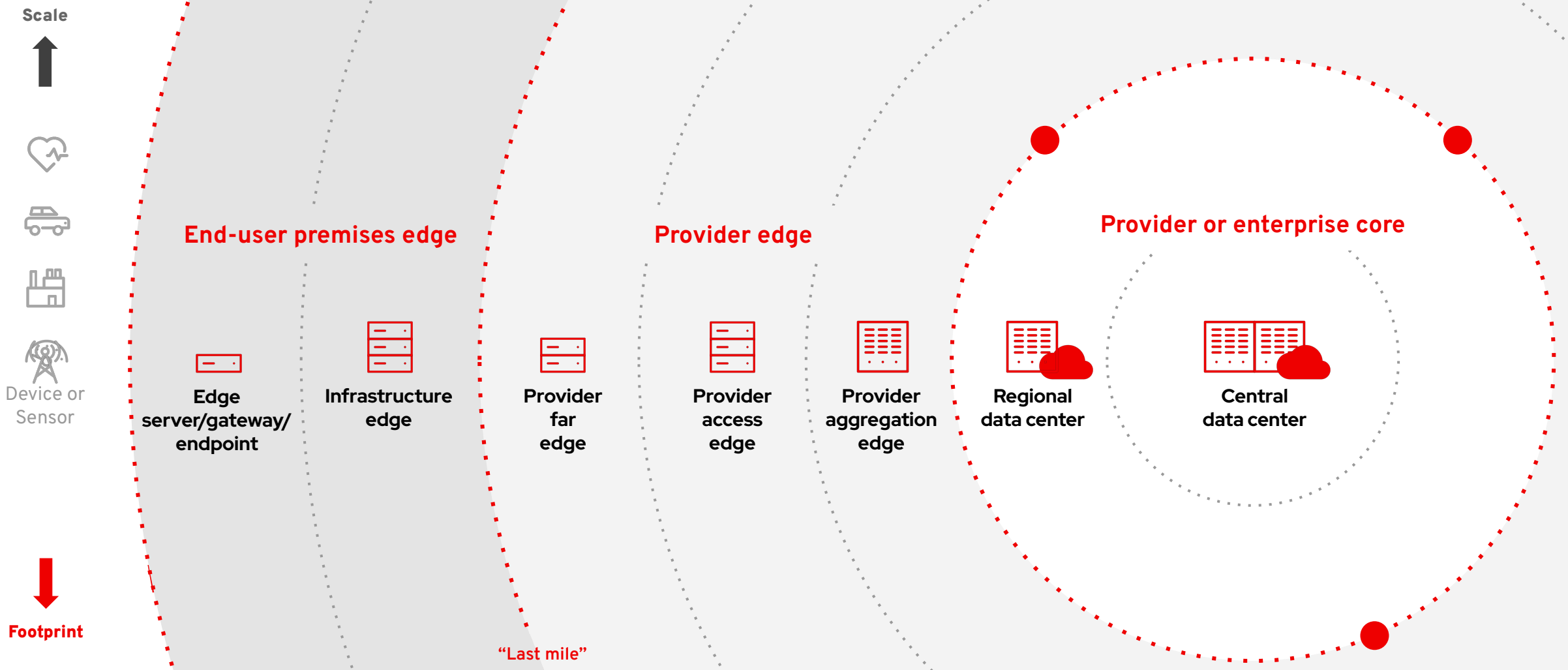
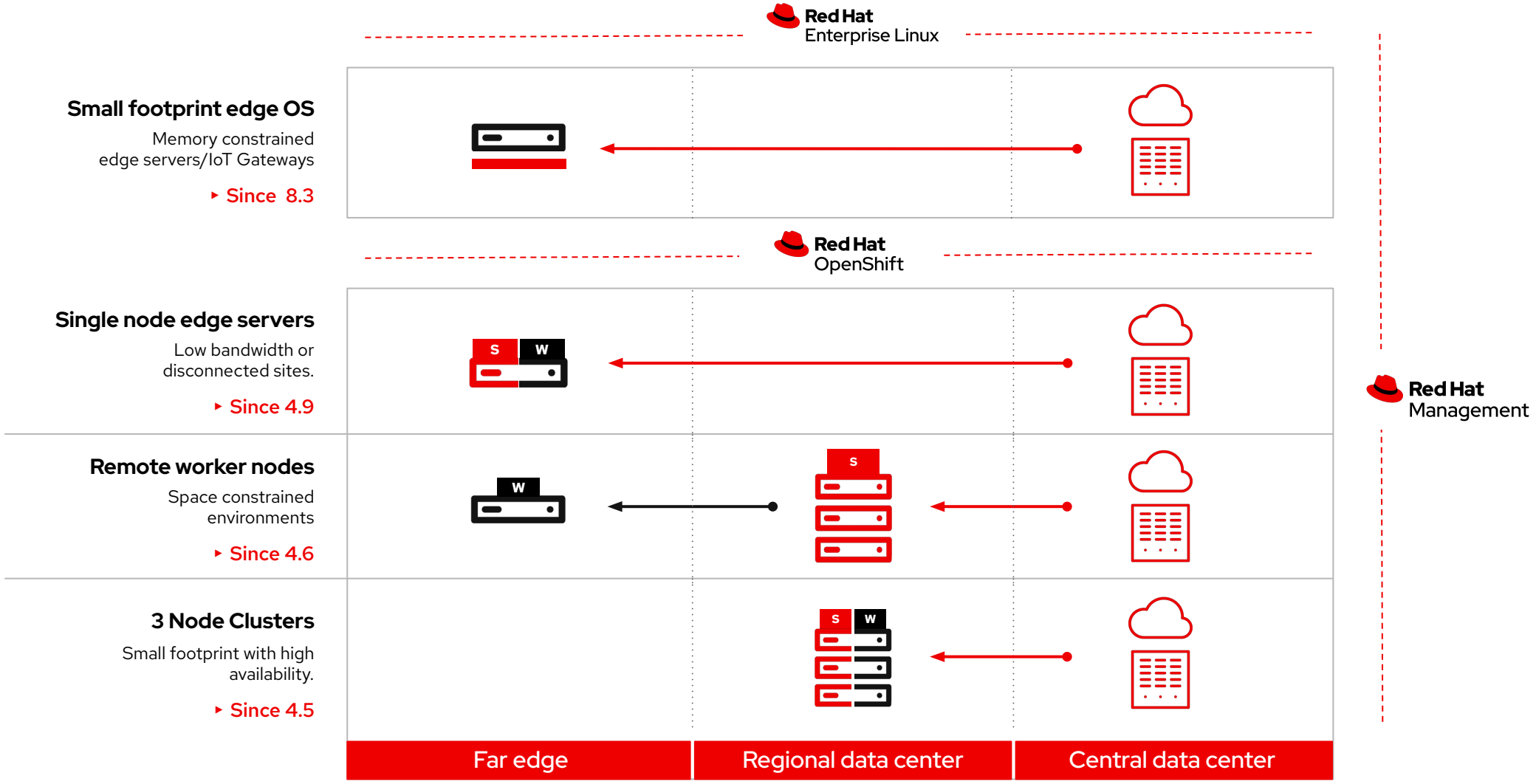
Red Hat's Coverage from Core to Edge



* Edge computing = Fog computing (there is no real difference other than marketing)


Red Hat
Enterprise Linux
Small footprint edge OS
Memory constrained
edge servers/IoT Gateways
Since 8.3
Red Hat
OpenShift
Single node edge servers
Low bandwidth or
disconnected sites.
Since 4.9
S
W
Remote worker nodes
Space constrained
environments
Since 4.6
3 Node Clusters
Small footprint with high
availability.
Since 4.5
Red Hat
Management
Far edge
Regional data center
Central data center
Cluster management and
application deployment
Kubernetes
node control
Control
node
Worker
node

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Simplify the Creation of Edge Stacks with Validated Patterns

Bringing the Red Hat Portfolio and Ecosystem Together

Configuration as code

Go beyond documentation using GitOps process to simplify deployment

From POC to production

Ensure your teams are ready to operate at scale

Highly reproducible

So that you can scale out your deployments with consistency

Open for collaboration

Anyone can suggest improvements and contribute to it

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Thank you

Red Hat is the world's leading provider of enterprise open source software solutions. Award-winning support, training, and consulting services make Red Hat a trusted adviser to the Fortune 500.


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