Demystifying the Edge

Unlocking opportunities in (somewhat) unusual places

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What we'll discuss today

- How edge can open up opportunities
- Red Hat's edge computing strategy
- Red Hat's edge solutions
- Customer / Partner examples

How Edge Computing Can Open Up Opportunities

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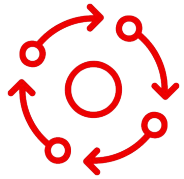
Solve complex business problems and discover new opportunities

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 / drive new revenue streams



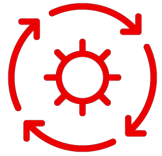
Higher app and process resiliency

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

Edge computing also brings challenges



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

Create flexibility and opportunity with edge computing

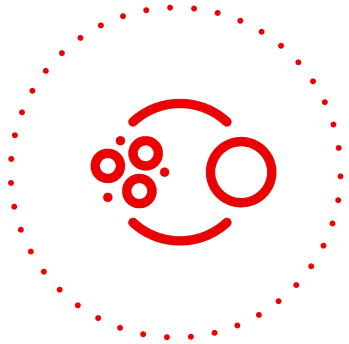
Application flexibility

Deploy applications anywhere

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

Operational agility

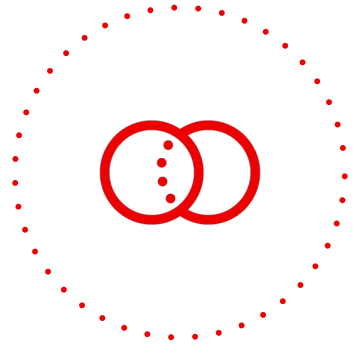
Minimize operational challenges



Provide new solutions for a variety of distributed application environments

Business innovation

Address new opportunities

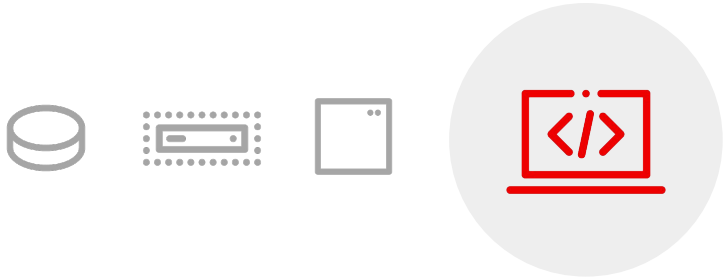


Enhance innovation, increase productivity, and offer better products and services

Edge computing:

Extends digital transformation to where business happens

Software-defined platforms



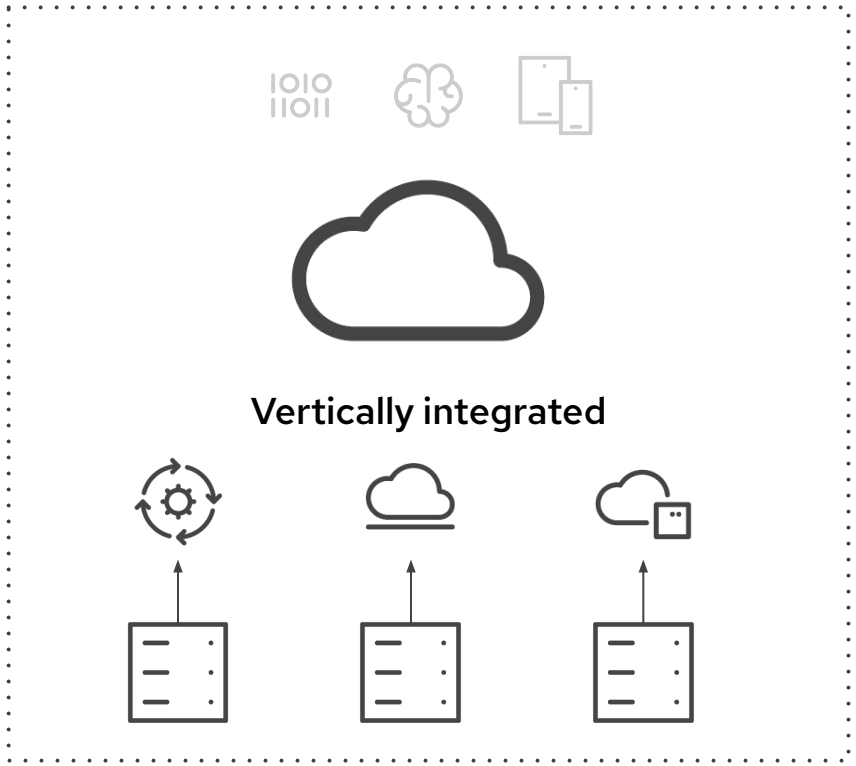
- Standard, scalable hardware
- Cloud-native applications
- Flexibility and agility
- Convergence of data platforms

Software-defined everything

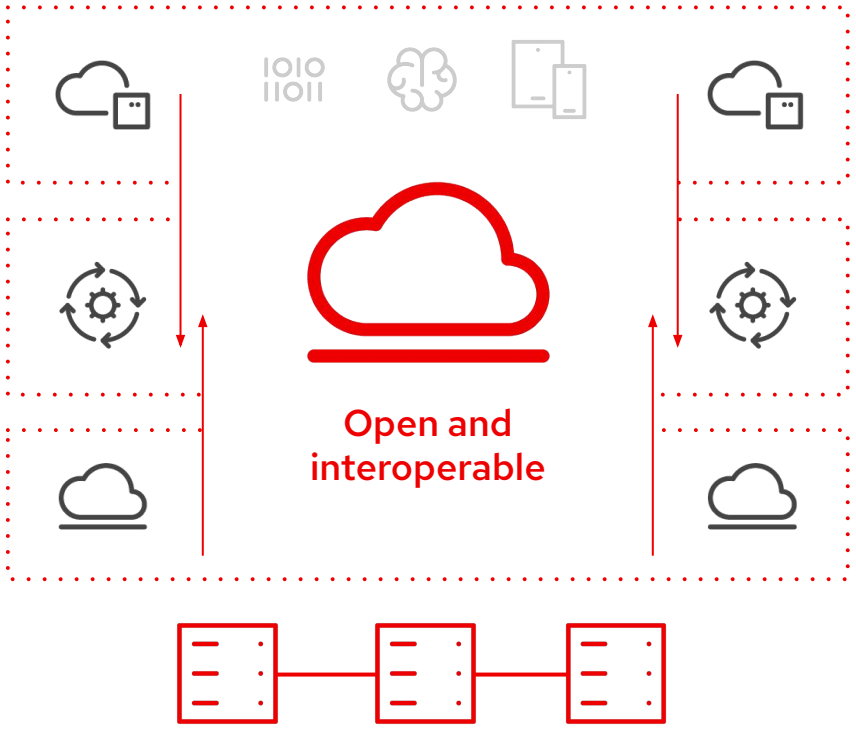
- Real-world, real-time interaction
- Convergence of planning and execution
- Implementation of data-driven insights
- Integration of formerly closed systems

Edge is an extension of open hybrid cloud

Every organization faces decisions on how to implement edge



Dedicated point solutions



Continuous open source innovation

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Red Hat's Edge Computing Strategy

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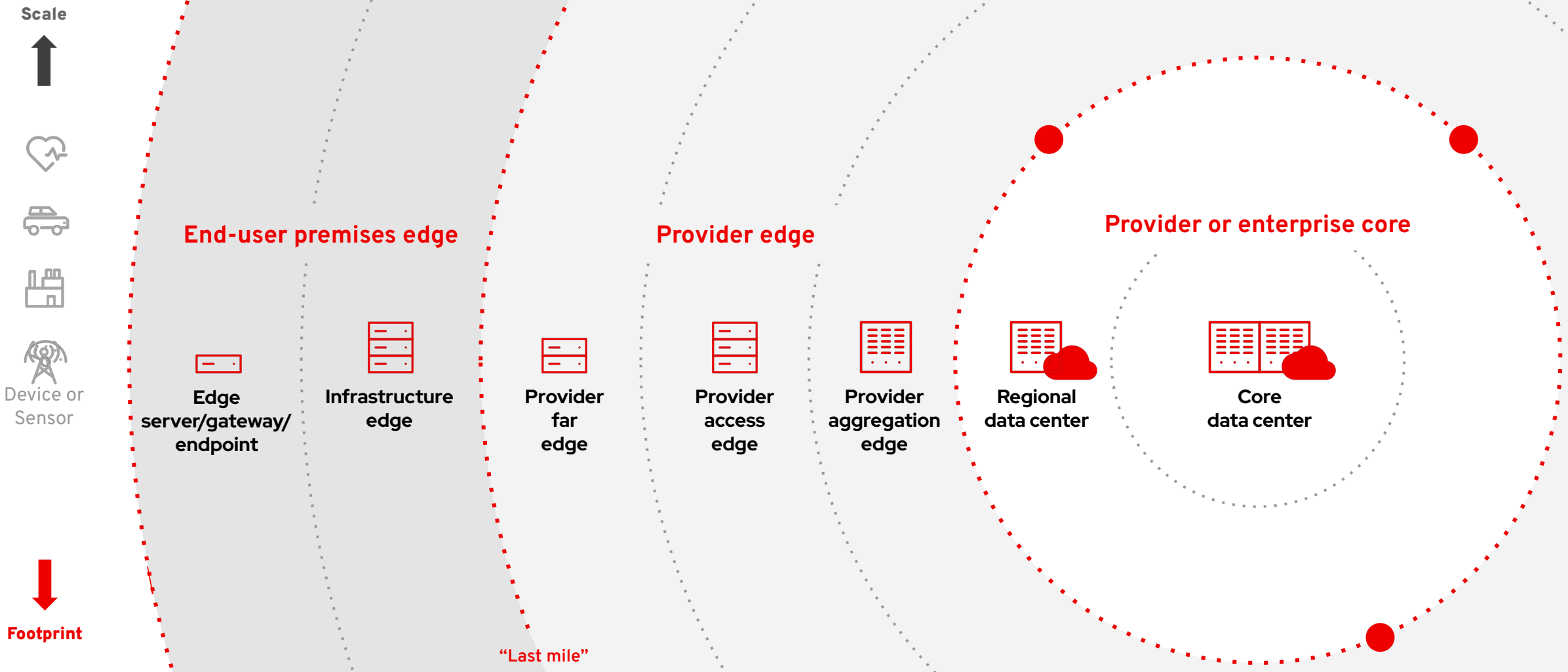
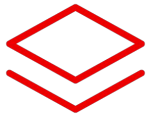
Red Hat's coverage from core to edge



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

Red Hat 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® at the heart of it 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

An edge platform to meet your needs

A consistent platform that’s adaptable to all use cases

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

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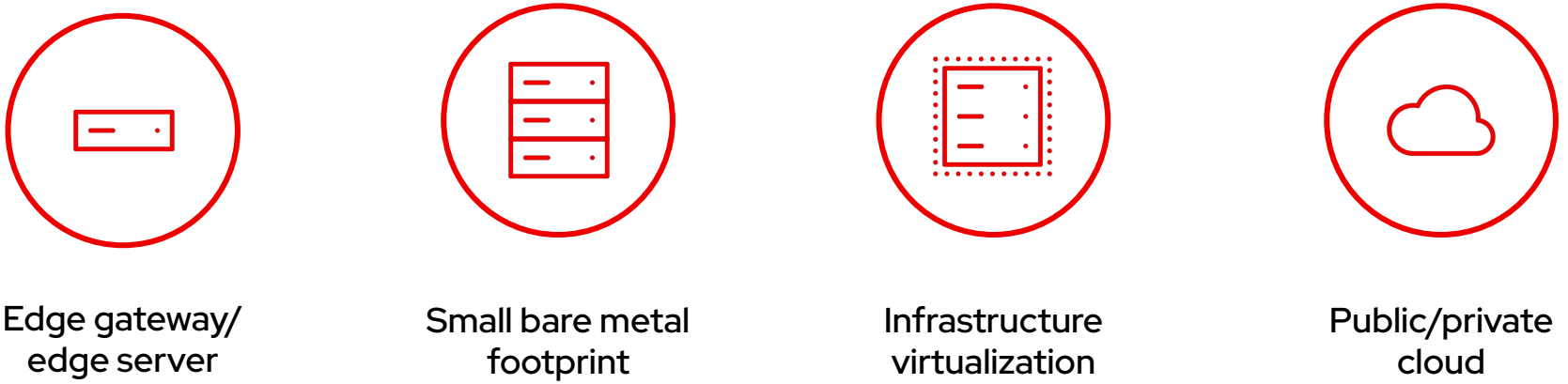

Edge gateway/ edge server

Small bare metal footprint

Infrastructure virtualization

Public/private cloud

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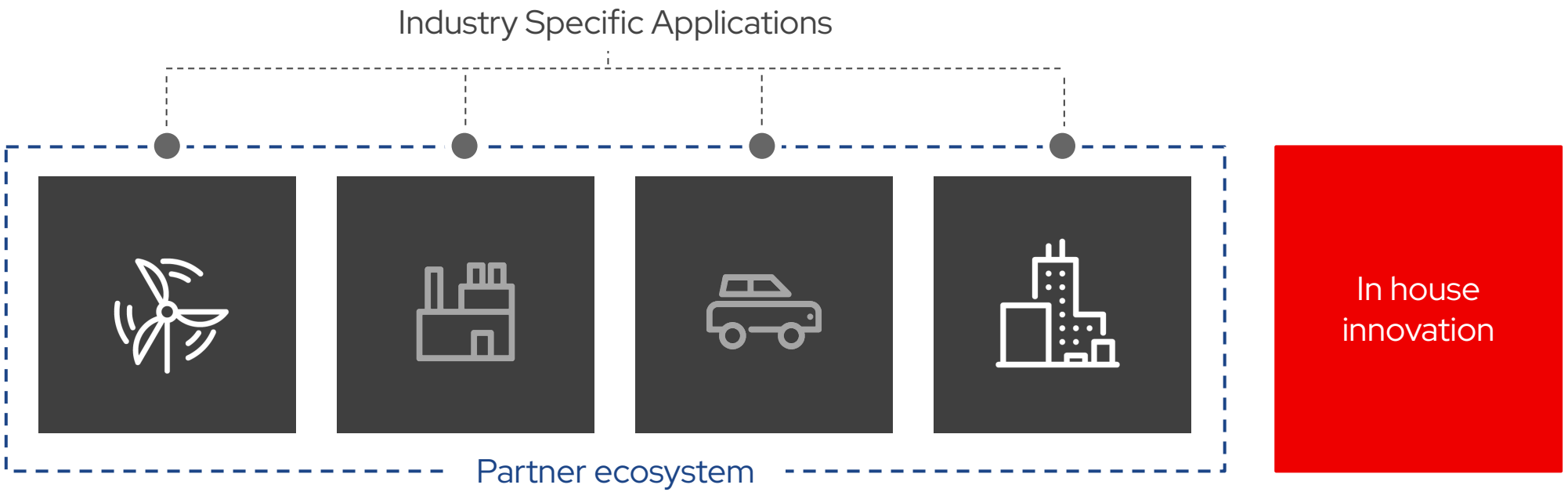
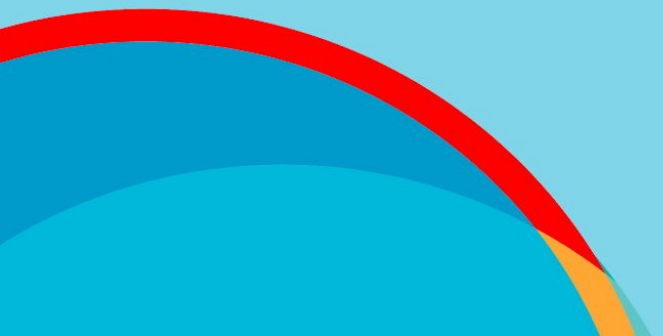
A solutions approach

Industry support through our ecosystem



Red Hat's Edge Solutions



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Red Hat platforms for the edge

New

Device Edge platform

RHEL minimal profile and tooling for Edge devices + MicroShift

Red Hat Device Edge

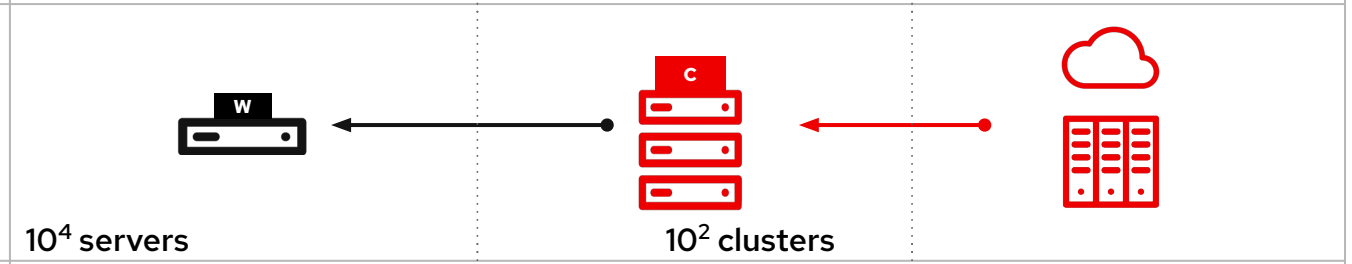
Red Hat OpenShift

Single-node edge servers

Low bandwidth or disconnected sites

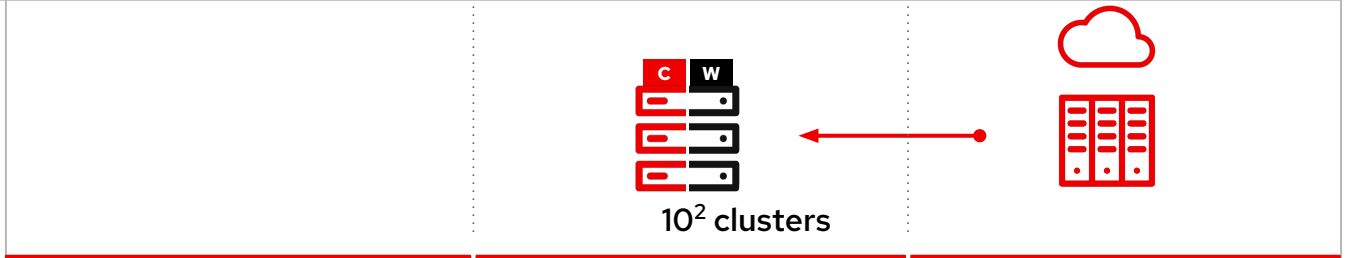
(Remote) worker nodes

Space-constrained environments



3 node Clusters

Low footprint clusters with high availability



Edge(s) | de-centralized DC | Cloud(s) or DC

Red Hat Ansible Automation Platform

Minimum System Requirements (per node):

	w/o k8s:	with k8s::
Control node	1 Core 2 GB RAM	2 Core 2GB RAM
Worker node		4 Cores 16GB RAM
Worker:	1 Core 8 GB RAM	Control: 2 Core 16GB RAM
Worker node		6 Cores 24GB RAM

Cluster management and application deployment

Kubernetes node control

C Control node

W Worker node

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Simplify the creation of edge stacks with validated patterns

Bringing the Red Hat portfolio and ecosystem together - from services to the infrastructure

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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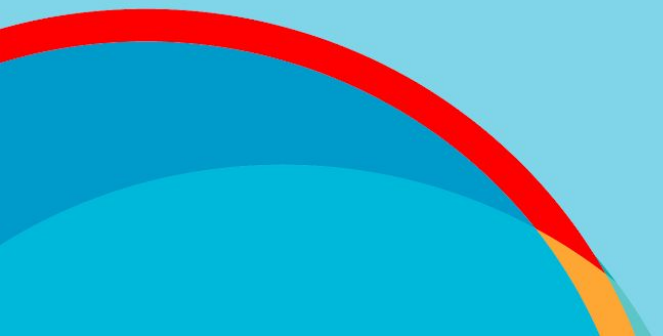
Customer Examples



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Customer & Partner success with edge computing

ALSTOM

verizon

Telefónica

SCALE COMPUTING

Upstream

Türk Telekom
Değerli Hissettirir

PROMARE
Promoting Marine Research and Exploration

SCHWARZ

LIDL | Kaufland | SCHWARZ Produktion | prezero

NTT EAST

ABB

SIEMENS

SBB CFF FFS

T2

airtel

Red Hat

Nonprofit: EMEA

FIWARE powers eco-smart cities

"Solutions that were previously only available to large cities will **now be available for any city in the world**, thanks to the combination of FIWARE technologies and Red Hat® solutions."

Juanjo Hierro
CTO,
FIWARE

Opportunity

Improving quality of life for citizens despite growing and complex environmental, economic, and social challenges.

Partnership & solution

FIWARE, a non-profit organization, collaborated with Red Hat to develop an open source, eco-smart city platform.

Results

Implemented with various use cases (such as air quality sensors, waste collection management, and traffic) allowing city/regional governments to focus on building services on for their citizens instead of worrying about infrastructure management.

Source: FIWARE success story. Sept. 2022.

Manufacturing: EMEA

ABB and Red Hat partner to deliver scalable digital solutions across industrial edge and hybrid cloud

"The agreement demonstrates ABB's commitment to meet customer needs by seeking alliances with market leaders. This partnership will help our customers improve their operations as they navigate a rapidly evolving digital landscape, by giving them the tools they need to reduce risks and improve performance."

Bernhard Eschermann,
Chief Technology Officer,
ABB Process Automation

Challenge

Improve operational efficiency while ensuring safety, security, and productivity of the collection, management, and analysis of industrial plant data.

Solution

A global partnership between Red Hat and ABB to deliver ABB's automation and industrial software solutions at the intersection of information technology (IT) and operational technology (OT).

Results

- Unlocking data from numerous devices and systems, making it available for cloud applications, and supporting real-time decision-making at the edge of the network.
- Greater flexibility to deploy smart edge applications.
- Bring Operational and Information Technology together to increase manageability and consistency across plant environments.

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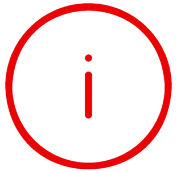
Source: Red Hat press release, "ABB and Red Hat partner to extend bring scalable, trusted solutions across industrial edge and hybrid cloud," July 2022.



For more information:

- Red Hat Edge Solutions
- Red Hat Edge validated patterns
- Red Hat Hybrid Cloud patterns
- Red Hat Edge GitOps patterns
- Red Hat Open Hybrid Cloud

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Other edge sessions @ Summit: Connect

Tactical Edge - Power at the Edge of the Network

Adrian Keward - Red Hat

Track #1, Room = CMD, 3pm

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