Demystifying the Edge
Unlocking opportunities in (somewhat) unusual places

Mark Swinson
Solution Specialist
mark.swinson@redhat.com
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
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

**Operational agility**
Minimize operational challenges

**Business innovation**
Address new opportunities

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

Provide new solutions for a variety of distributed application environments

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 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

Vertically integrated

Dedicated point solutions

Open and interoperable

Continuous open source innovation
Red Hat’s
Edge Computing
Strategy
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

Edge gateway/edge server | Small bare metal footprint | Infrastructure virtualization | Public/private cloud
A solutions approach

Industry support through our ecosystem

Industry Specific Applications

Partner ecosystem

Industry-agnostic horizontal platform

In house innovation

ABB
NVIDIA
FIWARE
Red Hat
Red Hat’s
Edge Solutions
Red Hat platforms for the edge

Device Edge platform
RHEL minimal profile and tooling for Edge devices + MicroShift

Single-node edge servers
Low bandwidth or disconnected sites

(Remote) worker nodes
Space-constrained environments

3 node Clusters
Low footprint clusters with high availability

Minimum System Requirements (per node):

- w/o k8s:
  - 1 Core
  - 2 GB RAM
- with k8s:
  - 2 Core
  - 2 GB RAM

Cluster management and application deployment
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

Highly reproducible
So that you can scale out your deployments with consistency

From POC to production
Ensure your teams are ready to operate at scale

Open for collaboration
Anyone can suggest improvements and contribute to it
Customer Examples
Customer & Partner success with edge computing
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.

Juanjo Hierro
CTO, FIWARE

“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.”

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

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.

“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

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
Tactical Edge - Power at the Edge of the Network

Adrian Keward - Red Hat
Track #1, Room = CMD, 3pm
Thank you

linkedin.com/company/red-hat
youtube.com/user/RedHatVideos
facebook.com/redhatinc
twitter.com/RedHat