hazelcast®

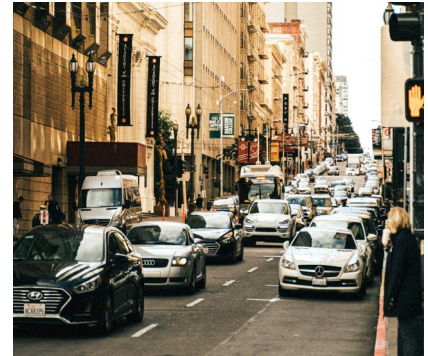# Hazelcast and IBM – Edge-to-Cloud Applications

White Paper

Instantaneous processing; that is what Hazelcast delivers to enable the next level of user experiences. It takes 300 milliseconds to blink. In that time, a car has entered an intersection, a manufacturing robot has missed its mark, and a video camera image has lost its usefulness. In today's connected world, an instant can be the difference between success and failure, a missed opportunity, or even life and death.

E-Commerce/Retail

Touchless Logistics

Connected Vehicles

In the digital world, applications have become channels for multi-device experiences. This new reality has been accelerated by technologies such as mobile, IoT, AI, 5G, edge computing, and augmented reality. Edge computing, which places compute close to the interaction, person, device, vehicle, or sensor, provides a truly seamless and even touchless level of interaction. Yet this new world demands technologies capable of previously unknown levels of scale, data volumes, and resilience.

Benefits

Hazelcast and IBM are working together to provide new technologies to leverage this digitally-connected world. IBM enables applications to be delivered and managed autonomously from edge to cloud to data center. Hazelcast enables fast, intelligent applications that can run anywhere, yet scale to the world's most demanding workloads. Together, they enable innovative applications that support new paradigms of engagement, applications that can:

- **Sense** – what is happening in the physical world,
- **Think** – with advanced cognitive capabilities,
- **Act** – to directly change the behavior of applications and the systems they control.
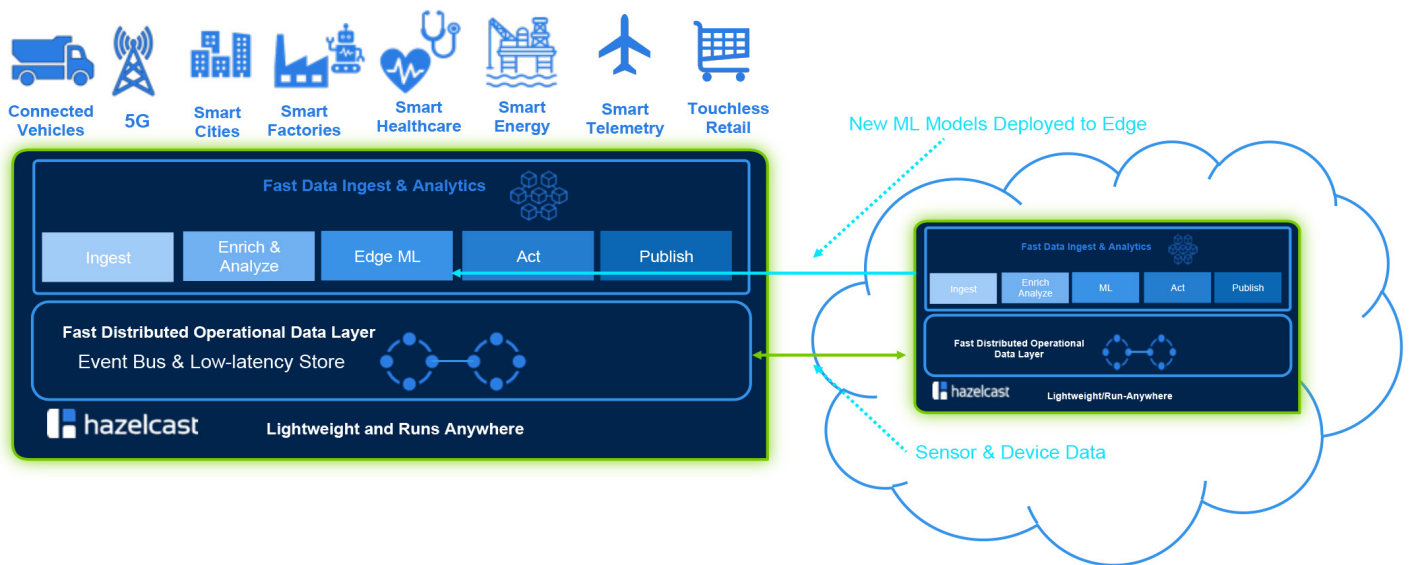
Examples of innovative applications:

- **Predictive Maintenance** through equipment sensors for real-time monitoring
- **Touchless Industrial Controls** through condition-based monitoring
- **Inventory Monitoring and Optimization** through warehouse and supply chain tracking
- **Branchless Digital Banking** through smart ATMs and contactless payments
- **Smart Roadways and Airways** through continuous vehicle telemetry and connected vehicles
- **Touchless Retail** through buy-online, pick up curbside, and kiosk-driven experiences
- **Touchless Border Security and Customs** through computer vision and smart passport processing

The Solution

What is the Hazelcast Platform? It is a run-anywhere, in-memory-optimized solution for storing and processing data at any scale, delivering instant insights. Because it can run at the edge, out in the physical world, and in public/private clouds and data centers, it creates a common layer of data and insights. It connects these worlds into a continuous, integrated application, as depicted here. Computation occurs in every layer, driving application latencies to less than the blink of an eye.

Hazelcast at the Edge – Connecting Applications to the Physical World

When deployed at the edge, Hazelcast can bring real-time machine learning together with the data the instant it is created to bring true intelligence to devices.

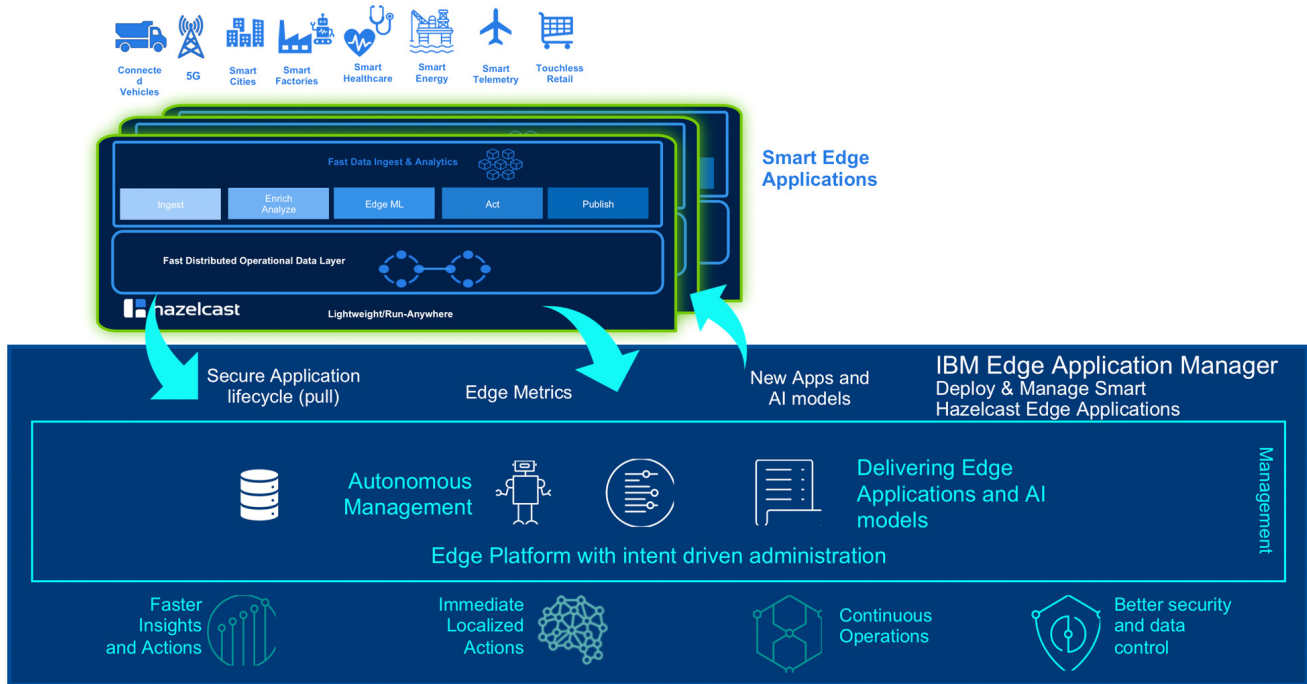## Application Intelligence from Edge to Cloud

The Hazelcast Platform brings intelligence through fast ingest and analytics to edge devices. Combined with IBM Watson Cognitive Computing, you can deploy machine learning into previous unexplored environments. This enables you to continuously ingest and process events at the edge to: **Sense** – see what is happening with devices and sensors, **Think** – run real-time machine learning models at the edge for real-time intelligence, and **Act** with low latency and proximity to the devices operating in the physical world.

Application Performance and Seamless Data Availability

The Hazelcast Platform provides a fast operational data plane that can synchronize data from the edge to the cloud to the data center. This enables applications in each layer to have low-latency access to data, while concurrently sharing data across these environments. This ensures that application decisions operate on consistent data while bringing zero-downtime resilience.
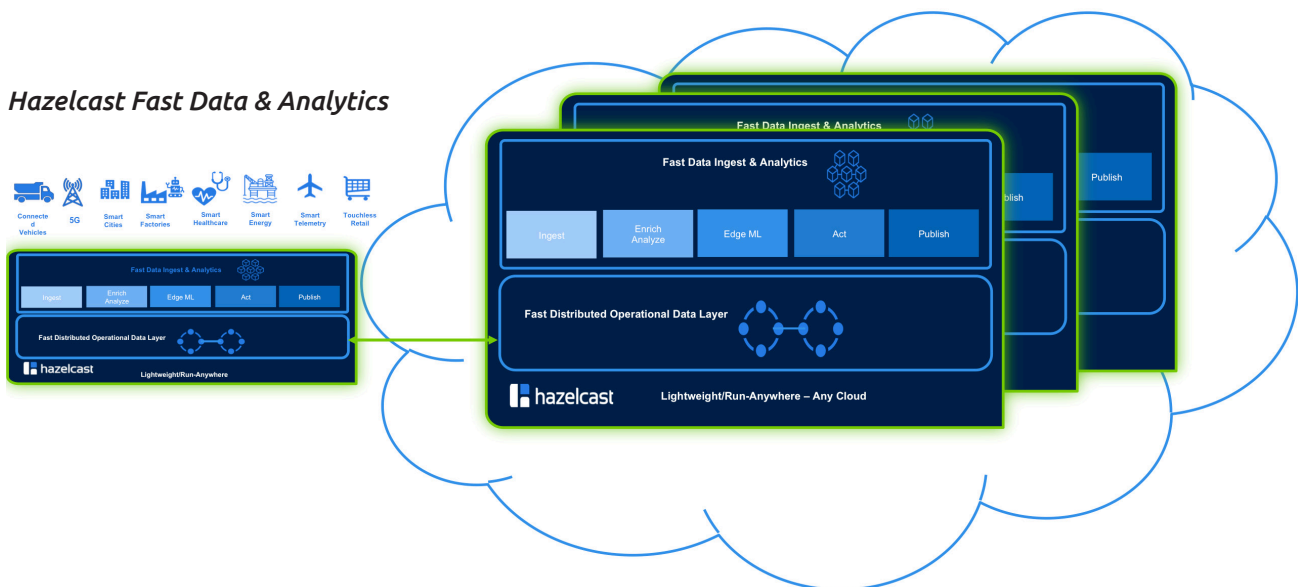
IBM Edge Application Manager – Deploy and Manage Smart Hazelcast Edge Applications to the Edge and Devices

IBM Edge Application Manager provides the platform to deploy, manage, and scale any edge applications. It integrates seamlessly with Hazelcast to accelerate time-to-market and simplify operating smart edge applications.
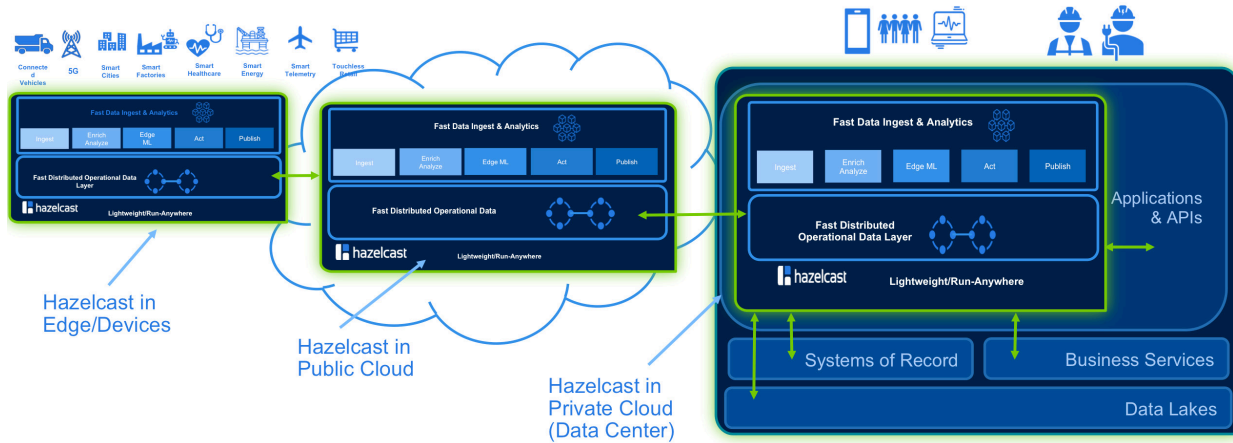

Hazelcast Fast Data in Hybrid Cloud

Hazelcast is cloud-native, which brings cloud scale and resilience to smart applications. These integrate seamlessly from edge to public cloud to private cloud and data centers, thus enabling a single pane of visibility and operation for truly boundaryless applications.
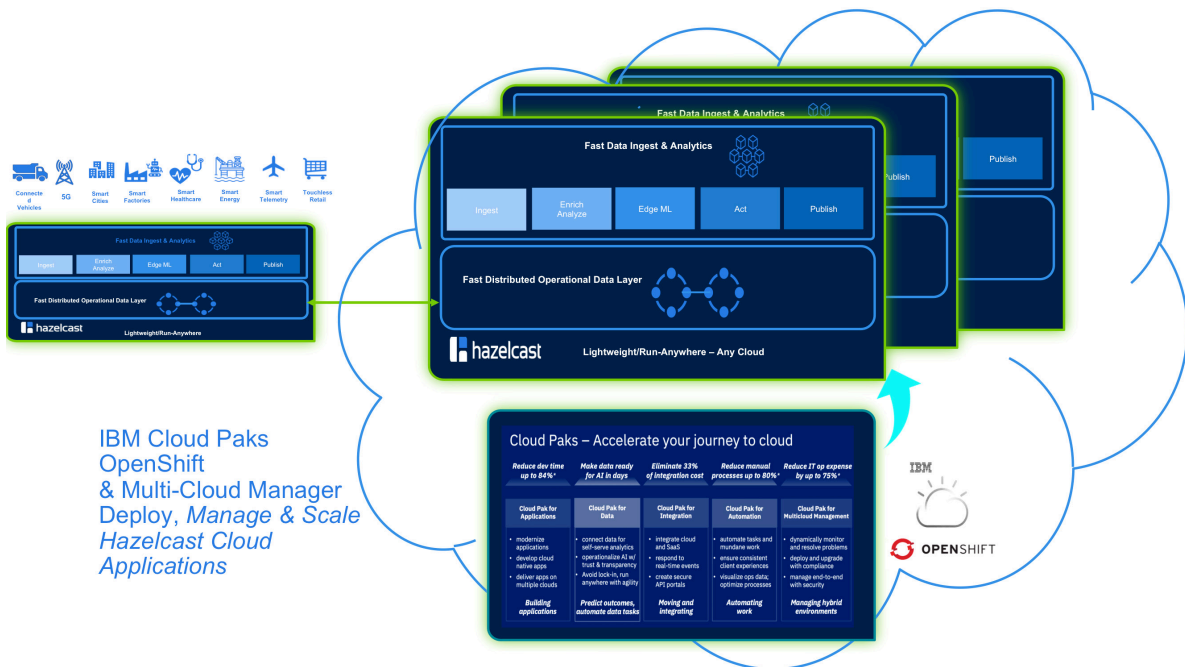
Hazelcast Fast Data from Edge-to-HybridCloud (Public, Multi-Cloud, Private Cloud)

Hazecast's "run-anywhere" capability enables a seamless data and compute plan from edge to cloud to data center, delivering consistent application experiences across devices and interaction points.

IBM Cloud Solutions and Cloud Paks - Deploy, Scale, and Manage

IBM Cloud Paks, OpenShift, and Multi-Cloud Manager enable you to easily deploy, scale, and manage data in any cloud. This enables applications to change with the speed needed to deliver today's engaging experiences and innovate to create tomorrow's.

Why Choose Hazelcast and IBM for Edge Computing

Today, more than ever, customers demand intelligent, always-on experiences. They want and expect a simple, frictionless experience when it comes to using products and services. Engage with them!

With IBM and Hazelcast, you have an integrated, end-to-end capability that combines operational simplicity, the speed of edge computing, and the innovations of cognitive machine learning. When combined with the power of IBM cloud and edge solutions, we can bring this solution to market faster than ever before.

Learn More about Hazelcast Platform and Edge

Learn more about edge computing and Hazelcast solutions via the links below.

Hazelcast Gets Edgy: Accelerating IBM Cloud Edge (blog) https://hazelcast.com/blog/accelerating-ibm-cloud-edge

The Hazelcast demo video of connected vehicle monitoring, deployed at the edge
https://hazelcast.com/resources/iot-edge-connected-car-demo/

Ready to get started? Let's have a discussion, show you a demo of what's possible, and work with you on how we can realize your innovative applications at the edge. https://www2.hazelcast.com/IBM-Consultation-Request

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