

Advance your business with AI/ML

Discover how organizations speed artificial intelligence and machine learning adoption with Red Hat OpenShift AI

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Turn your data into a valuable business asset

Artificial intelligence and machine learning (AI/ML) technologies employ data to deliver business insight, automate tasks, and advance system capabilities. These technologies can help you transform all aspects of your business to achieve valuable, measurable outcomes.

Red Hat delivers technology, proven expertise, and strategic partnerships to help you meet your goals. [Red Hat® OpenShift® AI](#) is an AI-focused portfolio that provides tools for training, tuning, serving, monitoring, and managing AI/ML experiments and models on [Red Hat OpenShift](#). OpenShift AI gives data scientists and developers the tools they need to gather insights and build AI-powered applications. Teams can move from experiment to production in a collaborative, consistent environment that integrates key certified partner offerings.

This e-book shows how organizations across industries are using Red Hat technologies to build AI/ML solutions that deliver real business value.

Key technologies

This e-book discusses several technologies for actionable data analysis:

- ▶ [Artificial intelligence](#) involves machines imitating human behavior to perform tasks that typically require human intervention.
- ▶ [Machine learning](#) is a subset of AI that uses algorithms and statistical models to perform tasks without explicit instructions.
- ▶ [Deep learning](#) is a subset of ML that uses layers to progressively extract high-level features from raw input, similar to a human brain.
- ▶ [Machine learning operations \(MLOps\)](#) encompasses the tools, platforms, and processes needed to create, train, deploy, monitor, and improve AI/ML models for use in cloud-native applications.

Read [Top considerations for building a production-ready AI/ML environment](#) to learn more.

AI/ML use cases across industries

Across industries, AI/ML can help you deliver real business outcomes faster.



Financial services

- ▶ Personalize customer services and offerings.
- ▶ Improve risk analysis.
- ▶ Detect fraud and money laundering.



Telecommunications

- ▶ Gain insight into customer behavior.
- ▶ Enhance customer experiences.
- ▶ Optimize 5G network performance.



Retail

- ▶ Optimize supply chains and inventory management.
- ▶ Improve customer insight and experiences.



Automotive

- ▶ Support autonomous driving technologies.
- ▶ Predict equipment maintenance needs.
- ▶ Improve supply chains.



Healthcare

- ▶ Increase hospital and clinic efficiency.
- ▶ Boost diagnosis speed and accuracy.
- ▶ Improve patient outcomes.



Energy

- ▶ Optimize field operations and maintenance.
- ▶ Improve worker safety.
- ▶ Streamline energy trading.



Manufacturing

- ▶ Predict equipment failures.
- ▶ Perform preventative maintenance.
- ▶ Improve factory floor safety.

Telecommunications customer success

NTT East

[Nippon Telegraph and Telephone East Corporation \(NTT East\)](#) uses its robust information and communications technology (ICT) foundation to support local communities. The service provider began the Regional Edge with Interconnected Wide-Area Network (REIWA) project to deliver edge computing data analysis to regional businesses and organizations. NTT East used Red Hat OpenShift to build the first phase of the project, a Video AI Service.

The new service has helped customers in a variety of industries improve their sales, marketing, and operations—and created a foundation for ongoing AI innovation. For example, footfall measurement AI counts traffic volume to physical stores and provides analysis of visitor attributes like gender, age, and durations of stay. Modular, scalable container infrastructure helps speed NTT East's data collection and analysis of millions of videos, with the flexibility to add new capabilities as needed to enhance the service. And customer service support AI enables detection and notification of purchasing, along with shoplifting predictive behavior.

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[...] Red Hat OpenShift has made it possible to **stably develop and operate innovative video AI services** through collaboration with AI developers.

—

Masashi Toyama

Manager, Server Infrastructure, Technology Cloud Server Engineering Department, Advanced Promotion Division, Network Business Headquarters, NTT East



Created new Video AI Service to deliver business insights



Reduced service operating costs by 50-60%



Improved developer experience with self-service tools

Financial services customer success

Banco Galicia

Banco Galicia wanted to become the most customer-focused bank in its financial market and set itself a goal of reducing the time to verify new corporate clients from three weeks to just one. Working with Red Hat Consulting, it built an AI-based intelligent natural language processing (NLP) solution on Red Hat OpenShift Container Platform, Red Hat Integration, and Red Hat's single sign-on (SSO) technology.

An initial proof-of-concept reduced the data processing time for verifying corporate clients from days to minutes. It also achieved 90% accuracy, exceeding the project's initial goal of 80% and proving that reducing analysis times was feasible.

Now, waiting 20 days for verification is a thing of the past. The bank's corporate customers enjoy an onboarding process that is 100% digital, transparent, and self-managed. Analyzing documents is practically a real-time process where customers can open and start using their account in minutes. The NLP platform represents a significant step in the bank's journey to transform its technologies, processes, and culture.



Red Hat plays a role in implementing NLP within Banco Galicia by providing us with the technology and architecture. Through Red Hat, we managed to **understand everything to do with Red Hat OpenShift.**

Matias Lorusso
Solution architect, Banco Galicia



Cut customer onboarding times from 20 days to minutes



Cut application downtime by 40%



Improved agility by 4x

Government customer success

U.S. Department of Veterans Affairs

The [U.S. Department of Veterans Affairs \(VA\)](#) is looking for innovative ways to address the issue of veteran suicide with its Mission Daybreak grand challenge. In response, Red Hat joined global consulting services provider Guidehouse and Philip Held, Ph.D. of Rush University Medical Center to develop new data-driven means of identifying veterans at risk for suicide.

The solution combines the REACH-VET suicide prevention risk model with Guidehouse's (in) Sight Health Catalyst, which uses publicly available social media data to identify cases of veterans who need immediate suicide intervention support. To help accelerate and amplify ML capabilities, Red Hat OpenShift AI provides the team with a fully supported environment to rapidly develop, train, and test models in a public cloud environment before deploying them into production.

The combined group was named 1 of 30 Mission Daybreak finalists and proceeded to the final round of phase 2. As final round winners, the combined team will continue working with the VA to put the prototype solution into production.



Identified veterans in need based on public data



Used AI/ML technologies to process vast volumes of data



Connected to real-time data streams for faster responses

Transportation customer success

Airbus Helicopters

[Airbus Helicopters](#), a division of Airbus and a leader in designing, manufacturing, and delivering helicopters, sought to expand the capabilities of its container platform to support new development features and data science needs. With help from technology partner Capgemini, the company upgraded from a virtualized Red Hat OpenShift Container Platform 3 environment to Red Hat OpenShift Platform Plus running on bare metal. The new security, compliance, application, and data management capabilities have helped Airbus Helicopters support processing of massive volumes of data, speed up applications deployment, and complete cluster maintenance more efficiently.

To continue building on the successful evolution of its container environment, Airbus Helicopters is exploring new technologies from Red Hat, including Red Hat OpenShift AI, where data scientists and developers can rapidly train, deploy and monitor ML workloads and models on site and in public clouds.



Established a scalable data science foundation



Reduced application deployment times to hours



Shortened cluster upgrades from days to hours

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We see Red Hat OpenShift as a strategic technology asset. Every month, we share KPIs [key performance indicators] with our executive team to highlight its performance. It's a **critical part of our digitalization strategy and meeting our goals** for the future.

Alexandre Barbier

Product Owner, Containers and End-to-End Monitoring, Airbus Helicopters

Government customer success

Lockheed Martin

[Lockheed Martin](#), a global security and aerospace company, collaborates with Red Hat to advance AI innovation at the edge. By adopting [Red Hat Device Edge](#), Lockheed Martin can support U.S. national security by applying and standardizing AI technologies in geographically constrained environments.

Red Hat Device Edge delivers an enterprise-ready and supported distribution of [MicroShift](#), a lightweight Kubernetes orchestration solution built from the edge capabilities of Red Hat OpenShift, along with an edge-optimized operating system built from Red Hat Enterprise Linux®.

Lockheed Martin used Red Hat Device Edge on an unmanned aerial system (UAS) to handle its AI workloads, which were previously too large and complex to manage. Once the UAS detected a simulated target, project engineers could update the software in-flight, allowing the UAS to deploy updated AI-based recognition capabilities. As a result, the UAS could more accurately classify military targets, providing more useful data and enhancing the situational awareness of the threat environment for U.S. military decision-makers.



Gained faster, data-backed decision-making



Improved accuracy for identification of military targets



Improved situational awareness of threat environments



With Red Hat Device Edge Lockheed Martin is leading the infusion of cutting-edge commercial technology into military capabilities that deliver advanced solutions to our customers. Unlocking these **AI technologies can help national security decision makers stay ahead of adversaries**, enabling a safer and more secure world.

—
Justin Taylor

Vice President, Artificial Intelligence, Lockheed Martin

Healthcare customer success

HCA Healthcare

[HCA Healthcare](#), one of the largest healthcare service providers in the United States, uses data and technology to support modern healthcare. Its leadership identified sepsis rates as a challenge that data could help solve. Sepsis is a treatable condition that commonly affects hospital patients. Even short delays in diagnosis and treatment can greatly affect patient outcomes. Previously, nurses manually diagnosed sepsis in patients at HCA Healthcare’s hospitals, evaluating patients only every 12 hours. HCA Healthcare wanted to use ML models and algorithms to help nurses diagnose and treat sepsis more effectively and in less time.

A cross-functional team of clinicians, data scientists, and technology professionals at HCA Healthcare used Red Hat OpenShift Container Platform and Red Hat Ansible® Automation Platform to create a real-time predictive analytics product, SPOT (Sepsis Prediction and Optimization of Therapy). SPOT collects and analyzes clinical data—like patient location, vital signs, and pharmacy and laboratory data—and signals caregivers in real time to initiate early sepsis care. With SPOT, the company can more accurately and rapidly detect sepsis, helping to save lives across more than 160 hospitals.

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About 80% of a patient chart is not computable. Working with great colleagues at Red Hat means we can **use new tools like natural language processing and machine learning to develop new insights** from that unstructured data.”

—
Dr. Jonathan Perlin
 Chief Medical Officer, HCA Healthcare



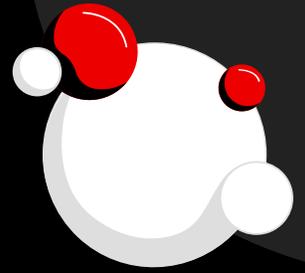
Sped sepsis detection
by up to 20 hours



Gained new insights using
machine learning algorithms



Reduced risk and
cost of innovation



Ready to begin your journey to AI/ML?

AI/ML and MLOps are transforming nearly every aspect of business.

Red Hat can help you build a production-ready AI/ML environment that accelerates development and delivery of intelligent applications to support your business goals.



Learn how Red Hat OpenShift AI can accelerate AI/ML workflows and delivery of AI-powered intelligent applications:

red.ht/openshift_ai

Learn what analysts are saying about the value of open source AI platforms for enterprise business transformation.

Get started faster with Red Hat Consulting

Work with Red Hat experts to jump-start your AI/ML projects. Red Hat offers consulting and training services to help your organization adopt AI/ML.

- ▶ Learn about our [Red Hat OpenShift AI Pilot consulting engagement](#).
- ▶ Learn about our [MLOps Foundation consulting engagement](#).