

RED HAT: COLLABORATIVE SOLUTIONS FOR INNOVATIVE GOVERNMENT

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RED HAT FAST FACTS

- Founded in 1993
- Annual revenues exceed \$2B
- Red Hat solutions are being used throughout the federal government – from processing Medicare claims at the Centers for Medicare and Medicaid Services (CMS), to handling airplane traffic at the Federal Aviation Administration (FAA), and enhancing every tactical vehicle in the Department of Defense (DoD) – and in all 50 states.

PRODUCTS COVER FIVE PRIMARY TECHNOLOGY AREAS:

- Cloud computing
- Middleware
- Operating platform
- Storage
- Virtualization

INDUSTRY OVERVIEW

Innovation creates opportunity and challenge. Exciting new technology concepts such as bi-modal IT, digital transformation, containers, cloud computing, and big data offer multiple avenues for federal agencies to improve operational efficiencies and mission performance. But charting a secure and affordable path forward is not always clear. Plus, tight budgets leave little room for error. You don't want to get locked into solutions that will limit options or prove expensive to modify once in place, but neither can you afford to stand still in today's rapidly evolving IT landscape.

How can you maximize the benefits of today's innovative technologies while avoiding the risks, including costly vendor lock-in? Red Hat takes the best innovation from the open source community, stabilizes it, and makes it consumable for your mission. Red Hat® open source solutions provide the security and performance government agencies require, while offering more value per dollar than proprietary solutions and greater flexibility to evolve with technical and mission requirements. As a result, many agencies are using Red Hat technologies to process Medicare claims at the Centers for Medicare & Medicaid Services (CMS), handle airplane traffic at the Federal Aviation Administration (FAA), enhance every tactical vehicle in the Department of Defense (DoD), and in all 50 states.

RED HAT SUPPORTS GOVERNMENT INNOVATION

Our software and tools solve today's challenges with an eye toward the future, helping your team collaborate to build new solutions for tomorrow's needs. Plus, our open source solutions are interoperable across a wide range of technologies, letting you take advantage of existing investments while giving you more options as you grow. Red Hat's open source solutions for the enterprise provide the foundation for secure, cost-effective operations and continuous innovation across the government IT landscape.

Our portfolio of software products and solutions focuses on these primary technology areas:

Automation: Automation is key for datacenter consolidation, optimization, and cloud deployment. Red Hat provides tools and technologies to automate existing workloads and pave the way for your migration into multiple cloud providers.

- **Ansible by Red Hat.** A radically simple IT automation engine that automates local and cloud provisioning, configuration management, application deployment, intraservice orchestration, and many other IT needs. Ansible by Red Hat and Ansible Tower by Red Hat help organizations of any size implement DevOps quickly and efficiently. Regardless of what is being deployed, and where it's being deployed, Ansible by Red Hat can manage the complete application life-cycle management process.
- **Red Hat Satellite.** Red Hat Satellite is a systems management solution that makes Red Hat infrastructure easier to deploy, scale, and manage across physical, virtual, and cloud environments. Red Hat Satellite helps users provision, configure, and update systems to ensure they are running efficiently, securely, and in compliance with government standards like DoD STIG and NIST 800-53. By automating most tasks related to maintaining systems, Red Hat Satellite helps organizations increase efficiency, reduces operational costs, and enables IT to better respond to your mission demands.



“We believe in using and contributing back to open source software as a way of making it easier for the government to share data, improve tools and services, and return value to taxpayers.”

WHITEHOUSE.GOV/DEVELOPERS
(SEPT 2012)

Cloud: The explosive growth and success of cloud computing is driven largely by its commitment to open standards and free-to-use APIs. Red Hat is committed to helping our customers avoid vendor lock-in. We offer a complete range of cloud solutions for:

- **Cloud management.** Red Hat CloudForms offers unified management for hybrid environments, providing a consistent experience and functionality across virtualization, private and public cloud platforms, and container-based infrastructures. Red Hat CloudForms helps enterprises accelerate service delivery through self-service, including complete operational and life-cycle management. It provides greater operational visibility through continuous discovery, monitoring, and deep inspection of managed resources, while ensuring compliance and governance using automated policy enforcement and remediation.
- **Infrastructure-as-a-Service (IaaS).** Building on OpenStack®, the industry’s fastest-growing cloud infrastructure platform, Red Hat Cloud Infrastructure is a comprehensive offering that addresses the challenges of managing the long-term shift from traditional datacenter virtualization to a cloud-enabled architecture. The solution helps enterprises build and manage an IaaS cloud that is based on datacenter virtualization and management technologies for traditional workloads. It also provides an on ramp to a highly scalable, public-cloud-like infrastructure based on OpenStack.
- **Red Hat OpenShift Container Platform.** The perfect solution for creating and deploying any application, quickly and easily, on virtually any infrastructure. Whether you’re interested in deploying existing workloads or microservice-based workloads, Red Hat OpenShift Container Platform offers everything you need to be successful, combining Red Hat’s leadership contributions to Docker and Kubernetes into a single DevOps solution.

Middleware: Red Hat JBoss® Middleware provides a comprehensive portfolio of standards-based products that enable you to cost-effectively develop, deploy, and manage applications; integrate applications, data, and devices; and automate business processes across heterogeneous environments. Our portfolio includes Red Hat JBoss Enterprise Application Platform (EAP), Red Hat JBoss Data Grid, Red Hat JBoss Fuse, Red Hat JBoss A-MQ, Red Hat JBoss BPMS, Red Hat JBoss BPM Suite, and more.

Mobile: Red Hat Mobile Application Platform extends an organization’s development capabilities to mobile environments, simplifying the development of mobile applications that securely integrate with enterprise systems and services. The cloud-based mobile application platform, based on open technologies, accelerates the development, integration, deployment, and management of enterprise mobile apps.

Operating platform: As the world’s leading open source operating platform, Red Hat Enterprise Linux® provides a feature-rich, stable, high-performance platform with an extensive certification ecosystem. It’s also one of the most secure operating systems available today, passing the Common Criteria process 15 times on four different hardware platforms. You can deploy Red Hat Enterprise Linux across a broad range of physical and virtual environments, in public, private, and hybrid clouds, from small and mid-sized businesses needs to big data – in all enterprise computing environments.

Storage: Red Hat Storage is a unified, open, software-defined storage portfolio that delivers a range of data services and accelerates the transition to modern IT infrastructures. Our storage platforms scale across physical, virtual, and cloud resources to drastically reduce costs, prevent vendor lock-in, add capacity without degrading performance, and scale independently and beyond individual hardware components. Our portfolio includes two solutions:

- Red Hat Gluster Storage is an open, scalable, reliable, and cost-effective data management platform that streamlines file and object access across physical, virtual, and cloud environments.
- Red Hat Ceph Storage is a robust, highly scalable block and object storage platform for agencies deploying public or private clouds. Red Hat Ceph Storage is the number one choice for block storage, according to the April 2016 OpenStack Survey (57% of all OpenStack deployments use Ceph storage).¹

Virtualization: Red Hat Virtualization is a platform to base large-scale virtualization initiatives and internal and private cloud deployments. The complete virtualization management system lets customers centrally and effectively manage their entire virtual environments. From virtualized on-premise datacenters to clusters, hosts, virtual servers, desktops, networking, and storage.

RED HAT IN GOVERNMENT TODAY

Red Hat's open source products are widely used across all levels of government. In addition to deploying Red Hat Enterprise Linux and Red Hat JBoss Middleware, government organizations today are turning to Red Hat for major government initiatives such as datacenter consolidation, virtualization, cloud computing, big data, and technologies like containers.

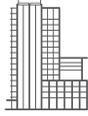
The Department of Defense (DoD) hired technology consulting firm Booz Allen Hamilton to transform its aging and inflexible architecture into one that supports elasticity and flexibility during spikes in user demand. Using Red Hat Enterprise Linux, Red Hat JBoss Middleware, and Red Hat Virtualization, the DoD saved \$5.1 million through fiscal year 2015 and increased agility and flexibility with a private cloud and elastic infrastructure.

A large defense agency has deployed Red Hat OpenShift to provide Platform-as-a-Service (PaaS) cloud capability for its customers. The agency is using this capability to provide development, test, and production environments for secure computing, storage, network infrastructure, and software (middleware), reducing time to market by two years.

The U.S. General Services Administration (GSA) turned to Acuity Systems and Red Hat to build and implement the GSA's new Data to Decisions (D2D) platform that pulls together the massive amount of data it collects. The federal government is embracing open source technology for the same reason as businesses: it delivers cost savings and continuous innovation. As a result, the GSA gained unified, easier data access and analysis, and the flexibility and scalability to meet growing data needs.

NASA's Jet Propulsion Laboratory (JPL) has built a private cloud based on Red Hat OpenStack Platform, saving significant time and resources spent on datacenters by retooling and consolidating their in-house hardware. JPL, NASA's primary center for robotic exploration of the solar system, used Red Hat's OpenStack and Linux technology to modernize its on-premise storage and server capacity, giving them the ability to support hundreds of JPL mission scientists and engineers. Red Hat supports the technology behind planetary exploration, helping JPL maximize server and storage capacity to process flight projects and research data through an OpenStack private cloud. Deploying Red Hat OpenStack Platform offers JPL enterprise-scale computing capacity that lets researchers tap into their own private cloud and use external cloud resources, such as Amazon Web Services (AWS), during peak demand. Red Hat's experience from long-term participation in the OpenStack Foundation and key upstream contributions to specific platform projects made us a well-suited partner for JPL.

¹ <https://www.openstack.org/assets/survey/April-2016-User-Survey-Report.pdf>.



ABOUT RED HAT

Red Hat is the world's leading provider of open source software solutions, using a community-powered approach to reliable and high-performing cloud, Linux, middleware, storage, and virtualization technologies. Red Hat also offers award-winning support, training, and consulting services. As a connective hub in a global network of enterprises, partners, and open source communities, Red Hat helps create relevant, innovative technologies that liberate resources for growth and prepare customers for the future of IT.

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The University of North Carolina at Chapel Hill (UNC-CH) built an open development and hosting environment with Red Hat. The UNC-CH Middleware Services Group within Information Technology Services (ITS) needed a comprehensive, dynamic solution for frequent server provisioning requests and, in particular, managed servers. Moving to a fully interoperable PaaS offering built on Red Hat OpenShift Platform allowed the team to deliver a flexible development and hosting environment that fostered innovation and increased peace of mind.

A civilian agency implemented Red Hat Virtualization in place of an existing proprietary virtualization solution. The agency is also using Red Hat CloudForms to manage the mixed virtual environment and is adopting Red Hat OpenShift so its developers can test new code more quickly and easily in a cloud environment.

As part of the Massachusetts Open Cloud, "Red Hat Ceph Storage 2 is a powerful, scalable and unified software-defined storage platform that has enabled us to liberate data services to the many and varied needs of researchers. With Red Hat Ceph Storage, the problem of taming and retaining vast amounts of research data is no longer a grand challenge, and as a testament to that scalability we have built the largest Ceph deployment in the southern hemisphere. Using Red Hat Ceph Storage 2, we are able to manage massive workloads encompassing five petabytes of data in a single infrastructure. We would not have been able to achieve this without the block and object storage capabilities of Red Hat's solution, and we look forward to adding several petabytes of new storage in Q3 and trialing CephFS with this feature-packed new release." *Piyana Saowarattitada, director of engineering, Massachusetts Open Cloud.*

To support a world-class research university, [Penn State's computing infrastructure](#) needed to be responsive and flexible enough to meet a wide variety of changing researcher requirements. The university upgraded and expanded their Red Hat implementation to Red Hat Cloud Infrastructure, which includes [Red Hat CloudForms](#), [Red Hat OpenStack Platform](#), and [Red Hat Satellite](#) for better performance and will continue to implement more Red Hat solutions to improve its infrastructure.

To meet Gov. Pat McCrory's mandate to improve the state government's websites, the [North Carolina Department of Information Technology](#) needed to overcome complex processes and limited technical resources. Together with the state's cabinet agencies, NC.gov, and the North Carolina Innovation Center, the department formed the Digital Commons project to make the state's websites more informative and easier to use. As the foundation for the project, the team chose a Drupal content management system built on Red Hat OpenShift Dedicated and hosted on AWS. With this new solution, the project team reduced the maintenance and staffing costs by \$400,000 a year after creating and updating the state's websites, made it easier for web managers to launch and update content, and improved the user experience – leading to increased site traffic by 58%.

To learn more about how Red Hat can help government IT innovate, visit redhat.com/government.