The Business Value of Red Hat Solutions Compared to Unpaid Alternatives

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Navigating this White Paper

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BUSINESS VALUE HIGHLIGHTS

Click on highlights below to navigate to related content within this PDF.

573%
three-year ROI

21% fewer
servers required

35% faster
development life cycles

6 months
to payback

32% more efficient
IT infrastructure teams

81% less
unplanned downtime

16% lower
three-year cost of operations

65% faster
to identify security risks

$9.23M average
higher net revenue per year
per organization

Executive Summary

IT organizations are adopting a variety of open source software solutions to perform system infrastructure tasks including configuration, deployment, and management functions. Open source software can be obtained as community-based (unpaid and unsupported) distributions or as vendor-based paid commercial-grade distributions with maintenance and support services. Unpaid, unsupported open source software reduces the expense of licensing or subscription costs; however, it places the burden of maintenance and support onto the IT organization. Paid solutions, while incurring licensing or subscription fees, can bring efficiencies that achieve higher value and minimize overall costs when compared with unpaid alternatives.

IDC spoke with organizations that have invested in paid Red Hat solutions (including Red Hat Enterprise Linux, which comprises Red Hat Insights and Red Hat Smart Management with Satellite) to understand the value they achieve by paying for Red Hat subscriptions compared with unpaid, unsupported software. Study participants reported that they gain staff, cost, and business efficiencies that collectively far outweigh the additional cost of Red Hat subscriptions. As a result, despite taking on the cost of Red Hat subscriptions, the organizations end up realizing cost savings and other value that IDC quantifies as being worth nearly seven times (573% three-year ROI) the investment costs.

Paid solutions can bring efficiencies that achieve higher value and minimize overall costs when compared with unpaid alternatives.

This is achieved by:

▶ Reducing the overall cost of running equivalent workloads by optimizing infrastructure requirements and saving staff time

▶ Enhancing security to minimize operational risk and enable teams responsible for security

▶ Creating more agile IT environments that allow for more timely and effective development efforts

▶ Improved business results via a more scalable, high-performing IT infrastructure foundation

These results highlight the extent to which organizations often have far more to gain by investing in software that can deliver the levels of efficiency, agility, and performance that their businesses demand than by focusing on costs in weighing the comparative value of a software solution.

Situation Overview

Open source software has become widely accepted and adopted as a source for innovative and alternative solutions across many categories of infrastructure and applications software. These include operating systems, virtualization software, systems management software, development tools, and DevOps-enabling life cycle, deployment, configuration, and operational management products, middleware, database software, and many others. Often there are multiple open source technologies offering alternatives to traditional proprietary solutions.

For the majority of these product categories, there are vendors that have taken a popular open source project/technology and provided a commercial distribution with a subscription-based support service for that technology.

Vendors take a popular open source project/ technology and provide a commercial distribution with a subscription-based support service.

The value proposition of commercially supported open source software is manifold, with the following providing examples of that value:

▶ **Hardened, commercially ready software:** A commercial vendor provides a highly valued service of "hardening" community software products. That work may include the hardening of new features in a community project and the exclusion of features that are unstable, still in heavy development, or otherwise not yet ready for mainstream consumption. In addition, commercial providers may make security or other reliability enhancements to the community code base.

▶ **Remediation of security threats:** When vulnerabilities are discovered, commercial vendors provide security fixes and patches that they have qualified. This greatly reduces the due diligence required by customers in order to verify not only that the solution resolves the security concern but also that the fix itself won't break existing installed software. Further, if a problem should arise post-installation, the commercial vendor provides support to resolve any issues. Community-supported technologies offer none of these resources.

▶ **Predictable costs:** Customers can easily predict their licensing costs based on number of servers, installations, or other use metrics. These costs are not dependent upon internal employees who have deep expertise in an open source software technology – people who could move on, forcing an organization to hire new talent to deeply support the technology.

▶ **A clear upgrade path:** Because most customers are unable to embrace open source software that is revised daily, weekly, or monthly, they must selectively upgrade in a cadence that works for their business and offers a suitable level of backward compatibility from version to version. Using community open source software solutions may lead to a disruptive upgrade, especially in cases where multiple interim releases were skipped. A commercially supported open source solution offers version-to-version upgrades that maintain compatibility for customer investments.

Red Hat Paid Solutions

The products included in this IDC Business Value study are Red Hat Enterprise Linux (RHEL), Red Hat Smart Management with Satellite, and Red Hat Insights (included with RHEL).

Red Hat Enterprise Linux (RHEL) is a Linux distribution developed and supported by Red Hat for commercial use. It is Red Hat's flagship product, providing a proven foundation for deploying traditional and next-generation applications across different deployments and delivery methods.

Red Hat Smart Management with Satellite is an infrastructure configuration management platform designed specifically to maintain the health and security of RHEL and related Red Hat and third-party infrastructure products that are distributed as RPMs. Satellite is based on several open source projects and is packaged as an on-premises management platform and architected for large-scale operation across distributed environments. This product enables RHEL users to define and maintain standard operating environments across their RHEL environment.

Red Hat Insights is a configuration analytics SaaS service that has been included with the Red Hat Enterprise Linux subscription since the release of RHEL 8 for use by RHEL 6, 7, and 8 users (with their existing subscriptions). Insights helps customers proactively identify systems that are at risk of critical security vulnerabilities as well as performance and stability issues caused by oversights or misconfigurations. Insights can proactively recommend configuration remediations and generate Ansible playbooks to automate many recommended actions.

The Business Value of Red Hat Paid Solutions

Study Demographics

IDC interviewed nine Red Hat customers about their experiences with Red Hat Enterprise Linux, Red Hat Insights, and Red Hat Smart Management with Satellite. Interviews were designed to discover the impact for each organization of having Red Hat support for these solutions versus using unpaid, unsupported versions of similar software.

Table 1 presents an overview of important characteristics of the interviewed Red Hat customers. On average, study participants had an enterprise profile of 40,900 employees and $16.99 billion in annual revenue (with medians of 12,500 and $6.03 billion, respectively). Most interviewed organizations were based in the United States; however, the study also includes representation from Australia and India. There was also diversity in experience by industry vertical, including the financial services (4), manufacturing (2), healthcare, higher education, and insurance sectors.

TABLE 1

Demographics of Interviewed Organizations

	Average	Median
Number of employees	40,900	12,500
Number of IT staff	2,231	1,000
Number of developers, total	452	300
Number of business applications	1,399	275
Revenue per year	$16.99B	$6.03B
Countries	United States (7), Australia, India	
Industries	Financial services (4), manufacturing (2), healthcare, higher education, insurance	

n = 9, Source: IDC In-depth Interviews, February 2021

Choice and Use of Red Hat Paid Solutions

All study participants had decided to invest in Red Hat subscriptions despite having experience with (and access to) unpaid, unsupported software alternatives. This indicates that they understood that despite being able to achieve short-term cost savings by using unpaid alternatives, they would incur significantly higher direct costs as well as the opportunity costs of opting for unpaid, unsupported alternatives. In explaining their decision to invest in Red Hat, they cited expectations of achieving longer-term efficiencies, cost savings, and business enablement, the importance of which would far outweigh shorter-term cost considerations.

Interviewed Red Hat customers spoke to these types of growth in efficiencies and performance gains:

▶ **Must ensure availability of mission-critical applications (higher education)**
"We moved applications to paid Red Hat support because they are mission-critical and must be available. It also made more sense from a total cost of ownership perspective to have an actual supported product."

► **Manage diverse infrastructure more efficiently (financial services)**
  "We have a diverse infrastructure with various tools and technologies, and RHEL and Red Hat solutions allow us to manage the infrastructure more efficiently than with unpaid solutions."

► **Support infrastructure simplification as part of cloud initiative (financial services)**
  "We felt that the support of Red Hat, in addition to some of the features and benefits like provisioning, patch, and content management, would be helpful in terms of simplifying our infrastructure as we are trying to move more viable processes to the cloud."

Study participants reported running substantial workloads in their Red Hat environments across both on-premises and cloud environments, as displayed in Table 2. This mixture demonstrates their ability to create hybrid environments running on Red Hat technologies. Despite making significant use of Red Hat solutions, interviewed organizations had substantial experience with unpaid, unsupported software alternatives. More than half migrated to Red Hat paid solutions from an unpaid, unsupported alternative. The remaining organizations either also use unpaid, unsupported alternatives for other workloads or considered using unpaid, unsupported alternatives before choosing to invest in Red Hat. Unpaid alternatives that study participants reported using or considering most prominently were CentOS, Foreman, Pulp, and Ubuntu.

"We felt that the support of Red Hat, in addition to some of the features and benefits like provisioning, patch, and content management, would be helpful in terms of simplifying our infrastructure as we are trying to move more viable processes to the cloud."

TABLE 2

Red Hat Paid Solutions Use by Interviewed Organizations

	Average	Median
Number of physical servers	533	70
Number of cloud servers	2,254	2
Number of VMs	29,222	300
Number of applications	730	23

n = 9, Source: IDC In-depth Interviews, February 2021

Business Value Results

Red Hat customers interviewed attributed strong value to investing in paid Red Hat solutions to establish more efficient, cost-effective, and high-performing IT infrastructures for their businesses. As a result, study participants are achieving value that far outweighs the incremental costs of using Red Hat paid solutions as opposed to unpaid, unsupported alternatives.

Interviewed Red Hat customers cited substantial cost savings, efficiency, agility, and performance factors that include:

▶ **Improved agility across on-premises and cloud environments (manufacturing)**
"The most important benefit of using Red Hat solutions is the agility; how much faster we can deploy to both physical as well as virtual environments in the cloud."

▶ **Ability to scale business as needed (financial services)**
"Red Hat solutions just give us the ability to scale our business. We've got lots of different types of applications and we have a pretty large cloud. So being able to holistically manage our complex infrastructure is the strength of the Red Hat environment."

▶ **Lean and efficient IT teams (manufacturing)**
"The value of Red Hat solutions is all about production and expertise…. In the past, we had more dedicated staff for maintaining infrastructure, but as we move toward cloud and hybrid cloud environments, the number of people maintaining our infrastructure is going down."

Overall, IDC calculates that study participants will realize an average annual value of $43,600 per 100 users of IT services ($17.82 million per organization) as the result of investing in paid Red Hat solutions in the following areas (see Figure 1):

▶ **IT staff productivity increases:** Red Hat customers reported that IT infrastructure, security, and application management teams benefit from functionality such as patching and updates provided by Red Hat as well as from best practices and direct support. Further, development teams are more effective by virtue of having agile, high-performing infrastructures. On average, IDC calculates that study participants will realize annual value in IT staff efficiencies and productivity gains worth $20,400 per 100 users ($8.33 million per organization).

▶ **Business productivity increases:** Red Hat customers linked enhanced IT agility and improved application performance to their ability to address business opportunities and deliver high-quality services to customers and employees. IDC quantifies the value of revenue and productivity gains to be an annual average of $14,900 per 100 users ($6.10 million per organization).

▶ **Risk mitigation:** Red Hat customers benefit from reduced risk by having a more reliable and resilient IT infrastructure that limits the frequency and duration of business-impacting outages. IDC values increased revenue and productivity at an annual average of $7,200 per 100 users ($2.93 million per organization).

▶ **IT infrastructure cost reductions:** Red Hat customers require fewer servers and compute resources to run equivalent workloads and reduce costs associated with operating their IT infrastructures. IDC calculates that they will realize infrastructure-related cost savings worth an annual average of $1,100 per 100 users ($0.46 million per organization).

"The most important benefit of using Red Hat solutions is the agility; how much faster we can deploy to both physical as well as virtual environments in the cloud."
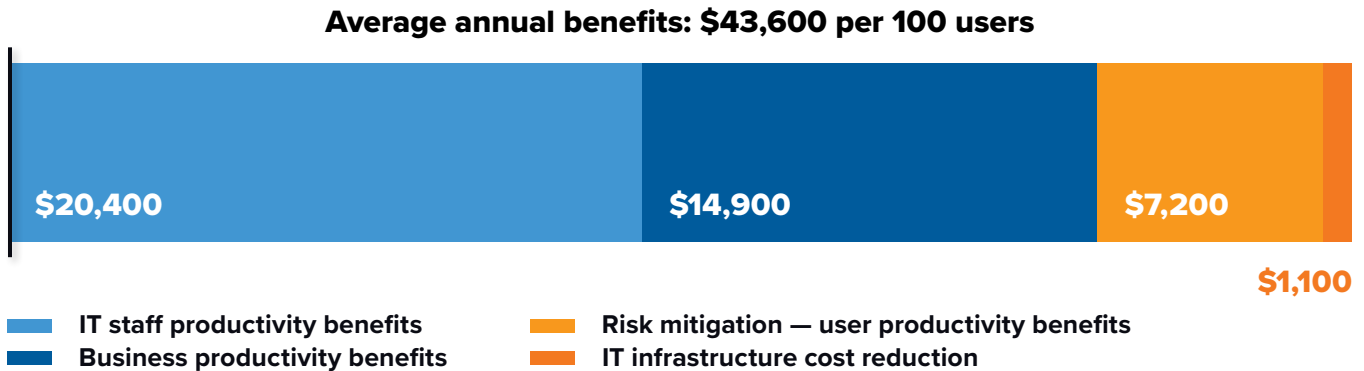
Red Hat customers benefit from reduced risk by having a more reliable and resilient IT infrastructure which limits the frequency and duration of business-impacting outages.

FIGURE 1

Average Annual Benefits per 100 Users
($ per 100 users)

Average annual benefits: $43,600 per 100 users

$20,400	$14,900	$7,200	

$1,100

■ IT staff productivity benefits
■ Business productivity benefits
■ Risk mitigation — user productivity benefits
■ IT infrastructure cost reduction

n = 9, Source: IDC In-depth Interviews, February 2021

Lower Cost of Operations

Study participants reported that they anticipated a reduction in the total cost of running their IT infrastructure environments by investing in Red Hat paid solutions. They acknowledged that using Red Hat involves a known additional cost (which makes this outcome somewhat counterintuitive), but emphasized that their investment easily pays off through their ability to establish optimized infrastructure environments and more efficient IT teams.

One study participant from the healthcare sector described the way in which paying for Red Hat decreases total costs:

▶ *"Our unpaid solution was definitely more expensive because of the hidden costs that come in. On paper, the unpaid solution looks cheaper. But when you start using these services and something goes wrong, you have to think about add-ons. We get everything with Red Hat at no additional cost. With the unpaid solution, all add-ons are charged, so if you extrapolate for the entire year based on our customer need with the licenses, the support, the IT staff, it is more expensive to have [the unpaid solution] compared to Red Hat."*

Study participants linked their use of Red Hat to establishing and running more cost-effective infrastructures. They reported requiring fewer servers to run equivalent workloads, thereby lowering their infrastructure, power, facilities, and even licensing costs. An interviewed insurance company commented: "Moving to paid Red Hat has actually lowered our infrastructure and licensing costs. It reduces the cost of hardware. We have a lot of servers for our applications, mostly on-premises but also a bunch in the cloud. If we were using the unpaid version, we would probably need 10% more servers at around $25-30K per server." On average, study participants required 21% fewer physical servers with Red Hat, driving a commensurate overall infrastructure cost efficiency (see Figure 2).

An interviewed insurance company commented: "Moving to paid Red Hat has actually lowered our infrastructure and licensing costs.

FIGURE 2
Number of Physical Servers Required
(For equivalent workloads/activities)

671   21% fewer   533

Before/without Red Hat solutions   **With Red Hat solutions**
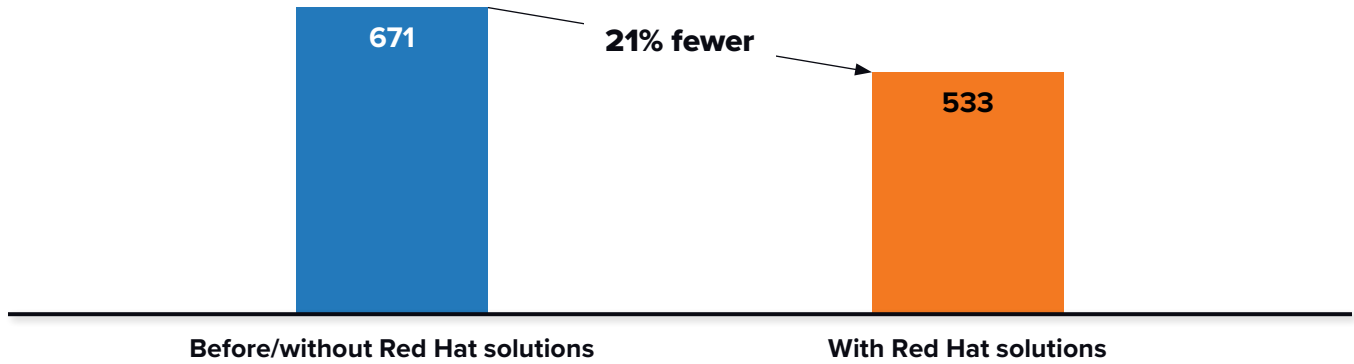
n = 9, Source: IDC In-depth Interviews, February 2021

Study participants noted that having Red Hat subscriptions and support is especially important for their IT teams. They noted that IT teams (including infrastructure, application management, and security teams) benefit greatly from access to timely and relevant patches and updates as well as best practices and direct support from Red Hat and its partner ecosystem. As a result, IT teams spend less time searching for information and handling routine tasks, which frees them up to take on other activities and business- and innovation-driven projects.

Interviewed Red Hat customers cited the following features and functionalities that are accessible to them through a subscription model as impactful in helping them maintain lean and efficient IT operations:

▶ **Availability of security patches lowers staff time requirements, ensures performance levels (financial services)**
  "Red Hat Insights helps us in terms of managing our environment by remediating potential performance issues. This is one of the biggest things that's helped us keep labor costs down in closing configuration gaps…. Security patches are provided with the paid version with Red Hat, whereas these aren't available with the unpaid version."

▶ **More sophisticated, automated IT environment (manufacturing)**
  "Red Hat Satellite provides sophistication that we might not get out of unpaid tools, so what we call the standard operating procedures for using the Satellite setup would be different than not having such sophistication. Going one level deeper with Red Hat Insights, that wouldn't even be in the picture with an open source solution. We have some checks and balances for auditing our IT environment using Insights under the RHEL umbrella, so that is automated and runs without any manual intervention."

Table 3 shows the significance for study participants of investing in paid Red Hat solutions in terms of IT staffing requirements. Study participants reported efficiencies in IT infrastructure, application management, and security teams of 32%,

"Red Hat Satellite provides sophistication that we might not get out of unpaid tools, so what we call the standard operating procedures for using the Satellite setup would be different than not having such sophistication"

22%, and 56% respectively. For interviewed organizations, these IT team efficiencies alone represent much higher value than the additional costs of Red Hat subscriptions. These results reinforce the fact that while unpaid solutions may cost less at first glance, they create significant additional costs that organizations can readily quantify by the need for additional valuable IT team time.
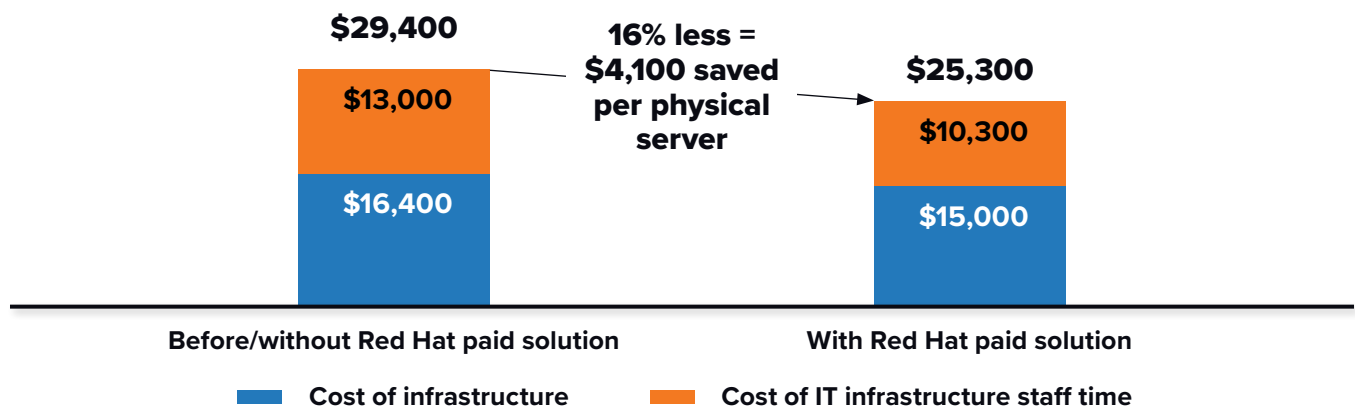
TABLE 3
IT Staff Impact

	Before/Without Red Hat Paid Solutions	With Red Hat Paid Solutions	Difference	% Benefit
Staff time to manage infrastructure, FTEs	30.6	20.9	9.7	32%
Staff time for application management, FTEs	163.0	127.7	35.3	22%
Staff time to manage security, FTEs	37.0	16.3	20.7	56%

n = 9, Source: IDC In-depth Interviews, February 2021

The combination of lower IT infrastructure costs and IT staff efficiencies results in substantial total savings across study participants' Red Hat environments. IDC calculates that they reduce costs of operation by an average of 16% over three years, resulting in savings of over $4,100 per physical server in their Red Hat environments (see Figure 3).

FIGURE 3
3-Year Cost of Operations
($ per 100 users over three years)

$29,400
$13,000
$16,400

16% less = $4,100 saved per physical server

$25,300
$10,300
$15,000

Before/without Red Hat paid solution   With Red Hat paid solution

■ Cost of infrastructure   ■ Cost of IT infrastructure staff time

n = 9, Source: IDC In-depth Interviews, February 2021

More Effective Security

Security looms as an ever more important consideration for many organizations. Costs associated with security breaches or incidents can be challenging to quantify; however, organizations understand that such incidents can exert substantial direct financial burdens or even more impactful reputational damage and loss of business confidence. As a result, organizations require IT solutions and environments that allow them to effectively and efficiently secure operations.

Study participants reported that investing in Red Hat subscriptions pays off in the form of having more robust and efficient security. They identified the functionalities Red Hat paid solutions provide that allow them to better monitor and identify security threats and to respond and remediate security events when they occur.

Interviewed Red Hat customers provided examples of these security-related benefits:

▶ **Timely and robust security alerts (healthcare)**
   "With our unpaid solution, it took us a while to detect security vulnerabilities. For example, when a data breach occurred, we were not even aware of it until the next day. With Red Hat, there was a mild scare, but within 30 minutes we got a call saying: 'This has been happening.'"
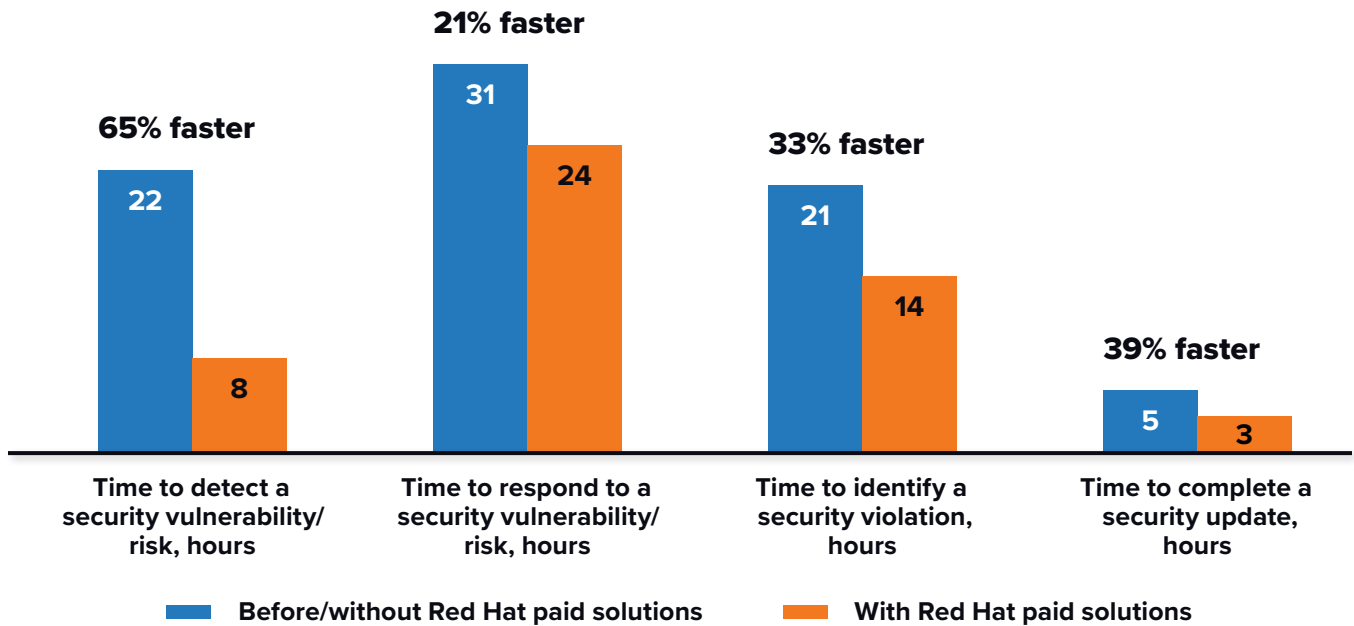
▶ **Access to know-how improves security posture (manufacturing)**
   "The major difference is the know-how. We don't have folks guiding us how to do it with the unsupported version. Red Hat is willing to share knowledge without hesitation. They know what the vulnerabilities are, and they audit our setups. They'll say, 'Hey, we see that one of your buckets is open to the public, you want to go and patch up and make it private.'"

Study participants identified direct and significant security gains from their use of Red Hat solutions. As shown in Figure 4, organizations can detect and respond to security vulnerabilities and violations and complete security updates much faster (21%–65% faster on average). As a result, fewer security vulnerabilities develop into impactful security events, and those that do are resolved more quickly and with less detrimental impact on business operations. Again, for study participants, the value of these security-related benefits (whether actual or imputed) far outstrips the incremental cost of Red Hat subscriptions.

"Red Hat is willing to share knowledge without hesitation. They know what the vulnerabilities are, and they audit our setups, they'll say, 'Hey, we see that one of your buckets is open to the public, you want to go and patch up and make it private.'"

Impact on Security KPIs
(Number of hours)

65% faster 22 / 8	**21% faster** 31 / 24	**33% faster** 21 / 14	**39% faster** 5 / 3

Time to detect a security vulnerability/risk, hours | Time to respond to a security vulnerability/risk, hours | Time to identify a security violation, hours | Time to complete a security update, hours

■ **Before/without Red Hat paid solutions**   ■ **With Red Hat paid solutions**

n = 9, Source: IDC In-depth Interviews, February 2021

Improved Agility and Development

Study participants credited investment in Red Hat solutions with enabling greater IT agility. Like most organizations, they must distribute IT resources in an efficient and timely manner to support their businesses, including development activities and growth efforts. As such, they can incur substantial opportunity costs when their IT environments are not sufficiently agile and flexible.

Interviewed organizations reported that their decision to invest in Red Hat paid solutions has helped them minimize friction and increase agility across their IT environments. For example, they reported the ability to deploy new server resources 32% faster with Red Hat than with unpaid alternatives. This helps their IT organizations react to fluctuations in business demand in a timely manner. An interviewed manufacturing organization commented: "With Red Hat, we're cutting down server setup time, which makes us more confident in terms of having the compute resources needed to keep up with our fast-paced business."

Gains in agility attributable to Red Hat enable development teams to provide their organizations with timely and robust new applications and features.

> **"With Red Hat, we're cutting down server setup time, which makes us more confident in terms of having the compute resources needed to keep up with our fast-paced business."**

Study participants connected their use of Red Hat solutions (including functionalities of Red Hat Insights and Red Hat Smart Management with Satellite) with smoother development processes and improved ability to integrate other solutions into their development processes:

▶ **Faster and more robust deployments (manufacturing)**
  "Deployment rollouts are definitely faster when we use tools like Red Hat Insights and Satellite. For example, our DevOps team did an installation, but something didn't work, and we wanted to go back and scratch what we did and then restart. That is easier with the paid version because we have sophisticated tools."

▶ **Enable development across environments (financial services)**
  "Red Hat solutions help us develop in different environments. For example, we are integrating more third-party software and applications, so the support provided by Red Hat is more helpful and timely as opposed to doing it ourselves or hiring consultants."

For study participants, the net result of investing in Red Hat solutions compared with using unpaid, unsupported alternatives was higher output and efficiencies from their development teams. They linked use of Red Hat to delivery of substantially more new applications (69% more) and features (79% more) and the whittling down of development life cycles (35% faster for new applications, 30% for new features).
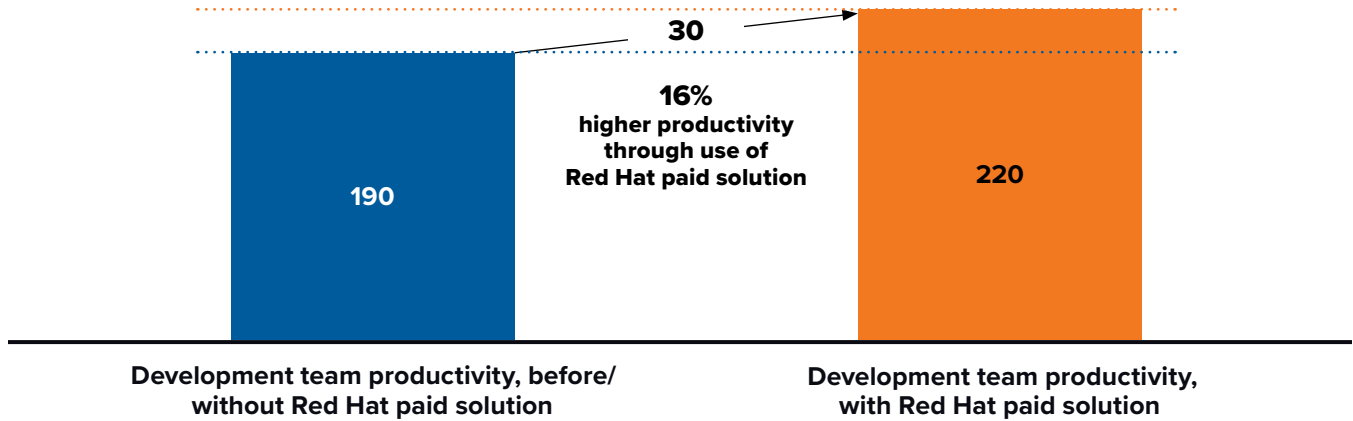
TABLE 4

Application Development, KPIs

	Before/Without Red Hat Paid Solutions	With Red Hat Paid Solutions	Difference	% Benefit
Development volume				
Number of new applications per year	155	261	106	68%
Number of new features per year	1,083	1,936	853	79%
Development life cycle, weeks				
New applications	26	17	9	35%
New features	7.5	5.2	2.3	31%

n = 9, Source: IDC In-depth Interviews, February 2021

These gains in development performance translate to higher productivity levels for their development teams. IDC places the average increase in productivity attributable to the use of paid Red Hat solutions at 16%. This means that development teams

working with Red Hat solutions deliver considerably more value to their organizations, which again highlights a potentially significant opportunity cost for study participants had they decided against investing in paid Red Hat solutions.

Impact on Development Team Productivity

(Equivalent productivity, FTEs per organization)

30

16%
higher productivity
through use of
Red Hat paid solution

190

220

Development team productivity, before/
without Red Hat paid solution

Development team productivity,
with Red Hat paid solution

n = 9, Source: IDC In-depth Interviews, February 2021

Enhanced Performance and Reliability

Study participants linked their investment in Red Hat subscriptions to higher-performing and more reliable IT infrastructures. They cited improved application performance through infrastructure optimization as well as experiencing fewer impactful outages, linking both to the management capabilities of Red Hat Smart Management with Satellite. An interviewed manufacturing organization explained: "Performance at the local level is very high with Red Hat solutions because of the architecture of centralized Satellite and local servers. The other aspect of the business value proposition is that we can virtualize more and do more with the same servers." Meanwhile, an interviewed financial services company spoke about enhanced stability and the salutary effect on development activities: "With the Red Hat subscription, we feel there's more stability, which means that we have a solid foundation to launch future production environments."

Table 5 provides IDC's analysis of the impact of using Red Hat paid solutions in terms of limiting the frequency, duration, and impact of unplanned outages. Overall, study participants reported experiencing 81% less impactful unplanned downtime with Red Hat, ensuring the availability of important applications and services to both employees and customers. As shown in Table 5, this yields substantial productivity gains for interviewed Red Hat customers as their employees face fewer impactful outages than they would with unpaid, unsupported alternatives. Meanwhile, as Table 6 shows, organizations' businesses also depend on having reliable and resilient IT infrastructures. Study participants reported that investment in Red Hat has helped a number of them avoid large-scale business losses associated with unexpected outages.

TABLE 5

Impact of Unplanned Downtime

	Before/Without Red Hat Paid Solutions	With Red Hat Paid Solutions	Difference	% Benefit
MTTR, hours	10.3	2.8	7.5	73%
Hours of lost productivity per user per year	0.4	0.1	0.3	81%
Value of lost productive time per organization per year, FTEs	9.5	1.8	7.7	81%
Equivalent value of lost productive time per organization per year	$667,500	$126,800	$540,700	81%

n = 9, Source: IDC In-depth Interviews, February 2021

Business Enablement

IT success is increasingly measured in terms of ability to support business operations. There has been a corresponding shift away from the view of IT as primarily a cost center toward viewing it as a center for innovation and delivery of digital experiences. IT is now more often evaluated according to its ability to drive business results. As with other areas of value discussed, interviewed Red Hat customers justified their decision to invest in Red Hat subscriptions by referencing business-related benefits, including higher revenue and user productivity.

The feedback of study participants makes clear that having an IT infrastructure that is not optimized in terms of efficiency, scalability, and performance would create significant business-related opportunity cost. As such, the respondents have generated substantial value for their businesses and operations through their investment in Red Hat paid solutions.

Interviewed organizations provided specific examples of ways in which they believe Red Hat subscriptions have allowed them to differentiate their business operations:

▶ **Ability to respond to changing environment as well as need to digitize (higher education)**
   "With Red Hat solutions, we were able to transform much more quickly than we really wanted to with COVID-19 coming on fast. To keep up, we had to stand up more servers than we usually do and offer new functions like Zoom."

> ▶ **Incurring substantial downtime costs previously (healthcare)**
>
> *"We were using [an unpaid solution] for several years before we switched to RHEL.... RHEL adds costs but paying for a supported version became necessary to have the support always there. Any downtime that we had with [the unpaid solution] took a long time for the system to get back. We're dealing with lives here, so we don't want to be in a situation where we cannot provide software to your providers on the front line, or even have a back-end system that is not up and running."*

Table 6 presents IDC's findings as they relate to direct business gains that study participants could link to their use of Red Hat paid solutions. On average, study participants reported achieving higher revenue in the amount of $45.38 million per organization per year by better addressing business opportunities through enhanced agility, scalability, and performance. They also reported an average of $16.12 million in higher revenue by reducing business losses associated with unplanned downtime. This results in average overall revenue gains of $61.50 million per organization per year, which IDC has quantified as $9.23 million of additional net revenue per organization per year for purposes of its ROI model.

TABLE 6

Business Productivity Benefits, Increased Revenue

	Per Organization	Per 100 Users
Business impact — revenue from better addressing business opportunities		
Total additional revenue per year	$45.38M	$110,900
Assumed operating margin	15%	15%
Recognized higher revenue per year (IDC model)	$6.81M	$16,600
Business impact — revenue from reducing unplanned downtime		
Total additional revenue per year	$16.12M	$39,400
Assumed operating margin	15%	15%
Recognized higher revenue per year (IDC model)	$2.42M	$5,900
Higher total additional revenue per year	$61.50M	$150,300
Higher total net revenue per year	$9.23M	$22,500

n = 9, Source: IDC In-depth Interviews, February 2021

In addition to direct business gains, study participants also linked their use of Red Hat paid solutions to improved ability to respond to service requests from line-of-business users. They found they can fulfill such requests faster, thus providing

users with needed functionality to do their jobs most effectively. An interviewed insurance company commented: "We have automated provisioning through Red Hat Satellite. That's a big difference…. It's affected service provisioning in a positive manner because it's faster and with backward compatibility based on automation." IDC calculates the value of user productivity gains linked to improved service request fulfilment to be $188,600 per organization per year.

ROI Analysis

Table 7 presents IDC's analysis of the benefits and costs for study participants of investing in Red Hat paid solutions as opposed to using unpaid, unsupported open source alternatives. IDC projects that interviewed Red Hat customers will realize discounted benefits worth an average of $42.22 million per organization ($103,200 per 100 users) over three years in infrastructure cost savings, IT staff efficiencies and productivity gains, higher user productivity, and increased revenue. These benefits substantially outweigh the incremental investment costs of using paid Red Hat solutions, which IDC places at a discounted three-year average of $6.27 million per organization ($15,300 per 100 users). These levels of benefits and costs related to Red Hat subscriptions would yield an average return on investment of 573% over three years and allow study participants to break even on their investment in an average of six months.

TABLE 7

ROI Analysis

	3-Year Average per Organization	3-Year Average per 100 Users
Benefit (discounted)	$42.22M	$103,200
Investment (discounted)	$6.27M	$15,300
Net present value (NPV)	$35.95M	$87,900
Return on investment (ROI) (%)	573%	573%
Payback period	6 months	6 months
Discount rate (%)	12%	12%

n = 9, Source: IDC In-depth Interviews, February 2021

Challenges/Opportunities for Red Hat

Challenge: Perception that community versions of open source software are less expensive. The commercial open source software vendor community has long faced the dilemma that the costs associated with long-term support of community open source software are buried in the organization's staffing costs, staff productivity, and other factors such as time to deploy and uptime. Identifying and measuring these costs requires a thoughtful, long-term analysis. By comparison, the cost of a subscription is immediately obvious because the total shows up on a requisition or a purchase order. This can lead to IT professionals' needing to defend the decision to use commercial products over community solutions.

Opportunity: This is an opportunity to educate IT professionals. The reality is that unless you are a software supplier yourself, your core business is likely something unrelated to infrastructure software. Banks are better off focusing on improving the customer's banking experience, a retailer on the store and online experience, and a manufacturer on improving manufacturing efficiency. Differentiation for winning businesses does not come from infrastructure software directly, but rather from what can be built on top of infrastructure software along with the reliability and opex associated with that infrastructure.

Challenge: The commoditization of open source software. Today, every public cloud vendor offers services based on open source software, and it becomes less clear why any individual commercially supported open source solution is a preferable alternative.

Opportunity: Today, few companies operate all of their IT in a single physical location. Most companies have a traditional on-premises (or hosted) datacenter, they may have a private cloud, and they likely use one or more public cloud environments. While each deployment environment offers certain unique value to customers, cross-platform portability usually is not one of these value propositions. A solution from a software vendor that is not tied to a singular cloud environment offers customers portability, flexibility, and the opportunity to change their mind in the future.

> **Differentiation for winning businesses does not come from infrastructure software directly, but rather from what can be built on top of infrastructure software along with the reliability and opex associated with that infrastructure.**

Conclusion

Open source software has matured in the last 20 years to the point that most enterprises today consider it a mainstream choice for their infrastructure, application development, and application deployment environments. Enterprises may find free versions of open source software enticing, believing that they can optimize IT costs by lowering software costs. While they may intuitively understand that free software can carry additional operational costs, they often have insufficient understanding of those costs to accurately evaluate the actual costs of free software as they use it to support their business operations over time.

Numerous IDC studies done in this time frame have demonstrated that use of free software often carries operational costs and inefficiencies that substantially outweigh the cost of commercial subscription support, especially when the software is used for business-critical applications and workloads. In particular, free software places additional burdens on IT teams with regard to requisite expertise, application of fixes and patches, and executing upgrades. These activities not only can consume significant amounts of staff time but also put the performance and reliability of key applications at risk if not done properly.

This IDC study once again demonstrates that the value of using paid Red Hat subscription software, specifically Red Hat Enterprise Linux (including Satellite and Insights), substantially outweighs the subscription costs for these Red Hat products. Interviewed organizations explained that they have not only made their IT environments more cost-effective and efficient by paying for Red Hat solutions but also established a more robust and higher-performing IT foundation for their business operations. Based on interviews with this sample of Red Hat customers, IDC calculates that they will reduce their three-year cost of operations by 26% by paying for Red Hat subscriptions compared with using free open source software alternatives and will realize an average three-year ROI of 573% on their investment in paid Red Hat subscriptions.

Appendix

IDC Business Value Methodology

IDC's standard Business Value and ROI methodology was utilized for this white paper. This methodology is based on gathering data from organizations currently using Red Hat paid solutions, including Red Hat Enterprise Linux, Red Hat Insights, and Red Hat Smart Management with Satellite, to run and support their IT environments as the foundation for the model. Based on interviews with these study participants, IDC has calculated the benefits and costs to these organizations of using Red Hat paid solutions versus comparable unpaid, unsupported software.

IDC used the following three-step method for conducting the ROI analysis:

1. Gathered quantitative benefit information during the interviews using a before-and-after assessment of the impact of using Red Hat paid solutions to develop and run various business applications and workloads. In this study, the benefits included staff time savings and productivity benefits, revenue gains, and IT infrastructure—related cost savings.

2. Created a complete investment (three-year total cost analysis) profile based on the interview responses. Investments go beyond the initial and annual costs of using Red Hat paid solutions and can include additional costs related to migrations, planning, consulting, and staff or user training.

3. Calculated the ROI and payback period. IDC conducted a depreciated cash flow analysis of the benefits and investments for the organizations' use of Red Hat paid solutions over a three-year period. ROI is the ratio of the net present value (NPV) and the discounted investment. The payback period or breakeven time is the point at which cumulative benefits equal the initial and ongoing investment costs up until that time.

IDC bases the payback period and ROI calculations on a number of assumptions, which are summarized as follows:

▶ Time values are multiplied by burdened salary (salary + 28% for benefits and overhead) to quantify efficiency and manager productivity savings. For purposes of this analysis, based on the geographic locations of the interviewed organizations, IDC has used assumptions of an average fully loaded $100,000-per-year salary for IT staff members and an average fully loaded salary of $70,000 for non-IT staff members. IDC assumes that employees work 1,880 hours per year (47 weeks x 40 hours).

▶ Downtime values are a product of the number of hours of downtime multiplied by the number of users affected.

▶ The impact of unplanned downtime is quantified in terms of impaired end-user productivity and lost revenue.

▶ Lost productivity is a product of downtime multiplied by burdened salary.

▶ The net present value of the three-year savings is calculated by subtracting the amount that would have been realized by investing the original sum in an instrument yielding a 12% return to allow for the missed opportunity cost. This accounts for both the assumed cost of money and the assumed rate of return.

Because every hour of downtime does not equate to a lost hour of productivity or revenue generation, IDC attributes only a fraction of the result to savings. As part of our assessment, we asked each interviewed organization to determine what fraction of downtime hours should be used in calculating productivity savings and the reduction in lost revenue. IDC then taxes the revenue at that rate.

Further, because IT solutions require a deployment period, the full benefits of the solution are not available during deployment. To capture this reality, IDC prorates the benefits on a monthly basis and then subtracts the deployment time from the first-year savings.

Note: All numbers in this document may not be exact due to rounding.

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Tim Grieser is Research Vice President for Enterprise System Management Software. His coverage includes software and SaaS solutions for managing systems, applications, and IT operations across a wide variety of deployment models including on-premises and private and public clouds. Tim has published IDC research in market sizing, market forecasting, technological trends, vendor strategies, and IT user needs and priorities. Current interests include IT operations analytics encompassing both log analysis and predictive insights and cognitive/AI technologies.

More about Tim Grieser

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Matthew is responsible for carrying out custom business value research engagements and consulting projects for clients in a number of technology areas with a focus on determining the return on investment (ROI) of their use of enterprise technologies. Matthew's research often analyzes how organizations are leveraging investment in digital technology solutions and initiatives to create value through efficiencies and business enablement.

More about Matthew Marden

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Ashish Nadkarni is Group Vice President within IDC's Worldwide Infrastructure Practice. He leads a team of analysts who engage in delivering qualitative and quantitative research on computing, storage, and data management infrastructure platforms and technologies, via syndicated research programs (subscription services), data products (IDC Trackers), and custom engagements. Ashish's vision for his team is to take a holistic, forwarding-looking, and long-term view on emerging as well as established infrastructure-related areas in the datacenter, in the cloud, and at the edge. His core research starts with an objective assessment of heterogeneous, accelerated, fog, edge, and quantum computing architectures, silicon, memory, and data persistence technologies, composable and disaggregated systems, rackscale design, software-defined infrastructure, modern operating system environments, and physical, virtual, and cloud computing software. It is complemented by research on current and next-gen applications and workloads, vertical and industry-specific use cases, emerging storage and server form factors and deployment models, and upcoming IT vendors. Ashish also takes a keen interest in tracking the ongoing influence of open and open source communities like OpenStack and Open Compute Project on infrastructure.

More about Ashish Nadkarni

Message from the Sponsor

Red Hat is the world's leading provider of enterprise open source software solutions, using a community-powered approach to deliver reliable and high-performing Linux, hybrid cloud, container, and Kubernetes technologies. Red Hat helps customers integrate new and existing IT applications, develop cloud-native applications, standardize on our industry-leading operating system, and automate, secure, and manage complex environments. Award-winning support, training, and consulting services make Red Hat a trusted adviser to the Fortune 500. As a strategic partner to cloud providers, system integrators, application vendors, customers, and open source communities, Red Hat can help organizations prepare for the digital future.

The world's open source leader

Red Hat is the world's leading provider of open source solutions, using a community-powered approach to provide reliable and high-performing cloud, virtualization, storage, Linux, and middleware technologies. Red Hat also offers award-winning support, training, and consulting services. Red Hat is an S&P 500 company with more than 80 offices spanning the globe, empowering its customers' businesses.

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