REGION FOCUS: GLOBAL

Why Enterprise Linux is Becoming More Relevant for Hybrid Cloud

The foundations required for cloud buyers looking to maintain an even keel as the business seeks agility and speed

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Executive Summary

Building Infrastructure for Cross-Cloud Performance, Security, Scalability, and Reliability

Cloud-based infrastructure investments are a priority for organizations as they shift towards open hybrid and multicloud deployments. "Hybrid" means organizations can consume cloud while keeping a foot in the datacenter, while "open" allows for portability across on- and off-premises environments, as well as across providers. When cloud-based infrastructure is based upon Enterprise Linux, these environments can be more open, providing the ability for seamless integration of services and interoperability, allowing for greater agility and speed of deployment. They can also unlock access to best-of-breed services and applications and/or options specifically designed to meet industry requirements.

IDC's quarterly *Cloud Pulse* survey captures the sentiments of cloud buyers around the world. This InfoBrief draws upon its 2022 and 2023 findings. *Cloud Pulse* respondents are:

- Increasingly looking to deploy across public and private cloud
- Mostly hybrid in nature, hosting applications and workloads off- and on-premises
- Seeking infrastructure options that allow for greater flexibility across their IT operations and better workload portability.

Executive Summary (continued)

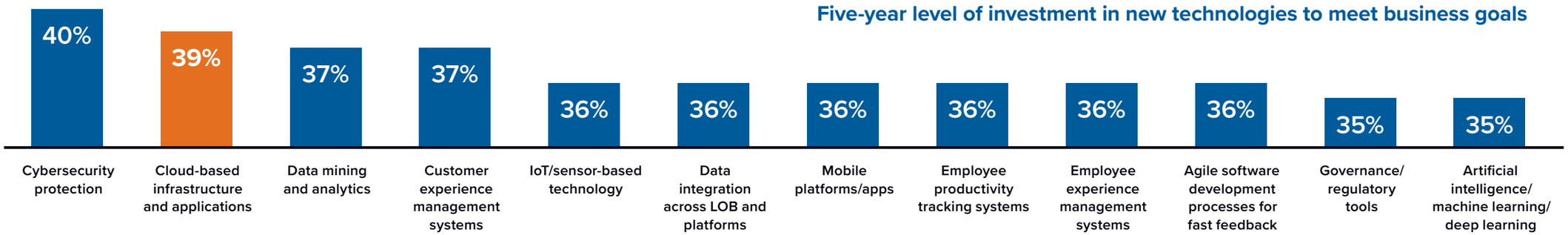
Why enterprise Linux is becoming more relevant for hybrid cloud

- Choices around what operating system (OS) is used for cloud can help companies unlock many benefits, including workload portability.
- Enterprise Linux is a Linux distribution (distro) assembled from curated content which undergoes rigorous testing and quality control by a broad ecosystem of hardware and software partners. It undergoes its own security certifications, with single-vendor controls over its roadmap. Enterprise Linux offers the benefit of technical support, updates and security patches. This is different to community-delivered distros that require in-house expertise to provide self-support and maintenance of that distro.
- Support for Linux by major hyperscale providers offering public cloud is growing, along with traditional technology companies providing on-premises private cloud options and cloud on-ramps.
- While many companies seek free Linux OSs during the development of cloud services, Enterprise Linux can be more beneficial to companies seeking broader deployments at scale, especially when seeking similar experiences on- and off-premises.
- Benefits include added layers of security, support, wider integration of services across partner ecosystems, and governable SLAs. These are all important when building solid foundations for future cloud deployments.

Laying Foundations for a Secure, Flexible, Hybrid Cloud

Investments into cloud-based infrastructure will be the second-most important of all new technology investments for cloud buyers in the next five years. As more companies invest in cloud, the focus will be on cloud-ready software platforms and hardware as well as technologies that better enable pathways to the cloud.

Five-year level of investment in new technologies to meet business goals



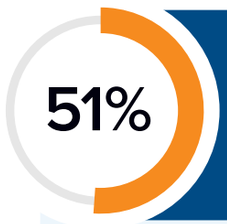
n = 1,350; Source: IDC's *Cloud Pulse 2022*

Security remains paramount. Concerns around managing risk, downtime, performance and application availability will also guide many decisions, from where the cloud lives to what technologies and services are consumed. Enterprise Linux has a role to play here, offering cloud-ready options with dedicated services to help protect companies in the cloud as they scale, and ensure the robustness of infrastructure as cloud starts to perform a more critical role across the business.

Cloud investments in the next two years:

1. Comprehensive security
2. Disaster recovery and backup
3. Application performance and response times
4. Application availability (uptime and reliability)
5. Risk management
6. Compliance and regulatory capabilities

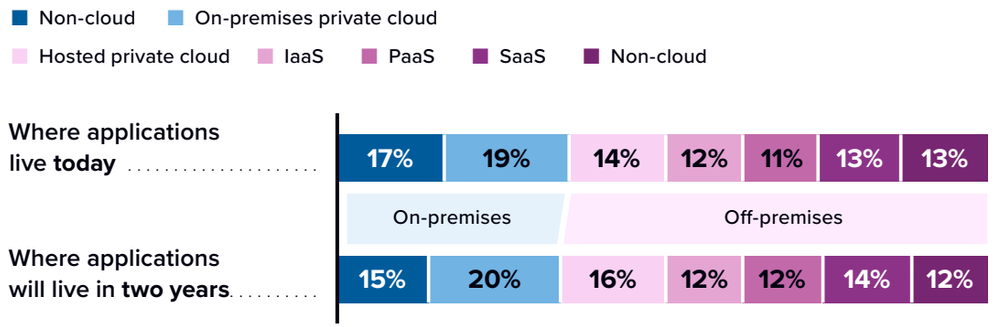
The Great Application Migration



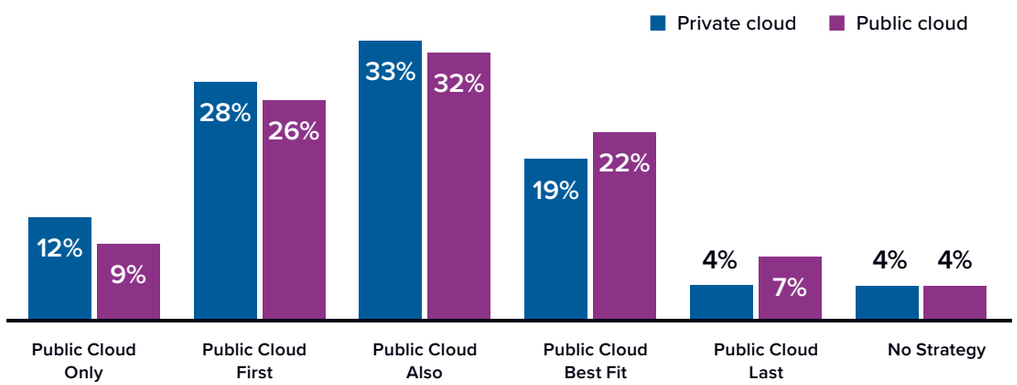
of companies say equal benefits are seen across public and private clouds as more companies adopt a hybrid cloud strategy.

- **Cloud buyers identify different benefits from deploying on public or private cloud.** For public cloud, they like the ease of management and reduced costs, while for private cloud they like the added privacy and performance.
- **51% of companies buying cloud services** today also say they have a preference for a single cloud architecture or software platform that can run consistently across multiple different hardware infrastructures.
- **79% of companies** using PaaS today say **50% or more of the applications** they developed over the last year were compatible with Linux (IDC *PaaS View survey*).
- **Use of Enterprise Linux ensures testing and certification** for private cloud and other on-premises deployments as well as public cloud infrastructure.

Where applications live today and where they will be located in two years



Preferred cloud strategy



n = 1,350; Source: IDC's *Cloud Pulse 2022*

Movement Between Clouds and Back on Prem is Already Happening

Current macroeconomic pressures have led to increased pricing across cloud environments, leading many organizations to think carefully about where their applications are best placed.

As a result of these challenges, **19% of organizations that say they have suffered economic pressures say they will look to consume more public cloud services over the next year.**

IDC's *Cloud Pulse* already finds that **40% of cloud buyers have some level of interoperability between different public clouds and between on-premises and public cloud.**

This further highlights the importance of building infrastructure foundations that allow for the migration of applications and movement of workloads with interoperability across cloud environments.

Criteria for application placement: **Top 4 considerations in order of importance**

On-Premises

1. **Network cost and capacity constraints**
2. Storage cost and capacity constraints
3. Availability of adequate in-house staff and skills to support
4. Business partners prefer to keep apps/workloads on-premises

Public Cloud

1. **Storage cost and capacity constraints**
2. Latency and application performance
3. Availability of business specific/vertical cloud solutions
4. Availability of adequate in-house staff and skills to support

Edge

1. **Need to update applications faster**
2. Need to provide better service to end users across distributed locations
3. Age/cost of current infrastructure resources
4. Availability of suitable providers

n = 1,350; Source: IDC's *Cloud Pulse 2022*

Solving Skills and Security Challenges in the Cloud

Ensuring the right skills for the ongoing management of cloud and making sure the right security is in place are two of the biggest challenges companies moving to cloud face.

Large Linux communities contribute to innovation, allowing commercial Linux providers to focus more on support across the infrastructure environment, whether that be solving new enterprise IT challenges or helping with migrations and management across platforms.

Similarly, Enterprise Linux options can help ensure open-source OS users get the most up to date security distributed in real time to ensure infrastructure stays up and running, reducing concerns over downtime.

33% of cloud buyers spend 10% or more of their total cloud budget on downtime caused by **hardware failures.**

38% spend 10% or more on downtime caused by **security breaches.**

n = 1,350; Source: IDC's *Cloud Pulse 2022*

Skills

Cloud buyers are increasingly looking to adopt automation in response to skills challenges.

- **23% of companies** say they currently suffer from a shortage of, or rising cost, of skills.
- **Only 8% of companies** say they have no skills challenges when it comes to deploying and managing cloud environments.
- **The biggest challenges are:** attracting the right staff; a lack of diversity across the skills set; the move of developers into operational roles.

Security

Security remains the number 1 concern companies have as they move to the cloud. Managed security services are one of the fastest-growing markets with more companies looking to outsource risk.

- **23% of companies** say they believe they are at high risk of cyber-espionage/warfare that can cause infrastructure outages.
- **Security** is actually one of the main reasons companies will migrate from one cloud environment to another, and even back out of cloud into non-cloud environments.
- **41% of companies** believe Open APIs - as well as leading to better performance - help their organization to be more secure.

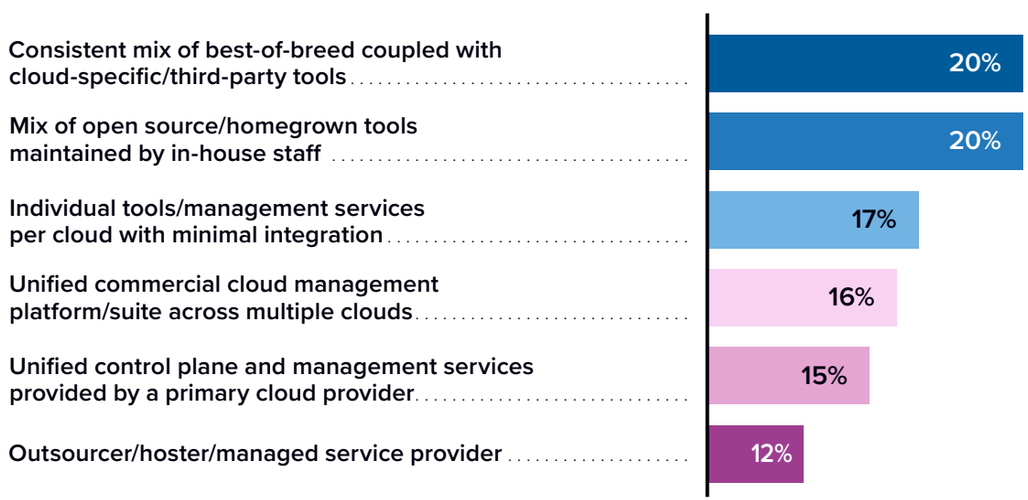
The Open Commercial Approach to Cloud Management

As more companies move application development and deployment to the cloud, the emphasis shifts towards application-ready platforms that support a range of infrastructure options and cloud management tools.

The complexities of truly hybrid cloud is placing an increased focus on cloud management. Companies are relying more on best-of-breed options as well as open-source management tools that can support multiple environments. These are now the first and second-most important considerations for companies managing multicloud. With a growing focus on cloud management, commercial Linux options may offer the best of both worlds.

- **53% of companies** have already automated the management of their cloud environment — this figure jumps to 59% for companies that say their focus is on hybrid cloud. Enterprise Linux providers are expanding their observability and management capabilities to support Linux deployments across cloud environments as well as on-premises to insure consistent management experience independent of deployment platform.
- **59% of cloud buyers** already deploy cloud infrastructure analytics for managing cloud. Measuring application performance is one of the main use cases for cloud infrastructure analytics followed by infrastructure resilience and capacity management.

What is your primary multicloud management tools strategy?



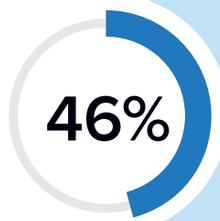
n = 1,331; Source: IDC's *Cloud Pulse 2023*

Future Workloads: The Unforeseen Cloud Requirements

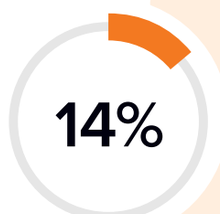
IDC's *Cloud Pulse* respondents say the most critical workloads will be those that improve operational efficiency and employee productivity. The biggest transformation with existing workloads will be to connect or integrate them with other data so they can provide real-time analytics for the business. Companies will need to think about the best placement for every application they deploy with performance a requirement for all critical applications, a factor that will drive future hardware decisions.

Some workload requirements may not even be realized yet, which places an emphasis on getting cloud foundations right. The combination of enterprise-grade services and Linux allows for greater flexibility across future operations with commercial open-source options that lower the entry barriers to cloud native and allow greater scalability for complex workloads with consistent foundations that allow for infrastructure choice.

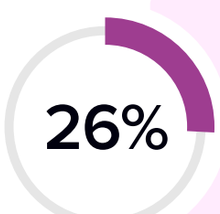
IDC research shows that many cloud buyers are choosing Linux when configuring and deploying servers for the cloud, and support is also growing across the public cloud with more options available to meet new intensive workload needs.



of companies expect **major change across the IT or digital infrastructure environment** over the next five years. Many of these organizations will look to **use data to uncover business opportunities and drive strategy.**



of companies using public cloud today spend **10% or more** of their total public cloud spend **on emerging technologies they cannot access anywhere else.**



of companies are already **placing workloads at the edge.** IDC expects the number of **applications running at the edge will grow** as edge technologies mature.

n = 1,351/1,350; Source: IDC's *Cloud Pulse 2023*

Multicloud Requires Solid Ecosystem Options

Companies that are already investing in multicloud with truly hybrid levels of interoperability are most likely to rely upon cloud ecosystems which present valued partner options. Ecosystem use is as prevalent for private cloud as it is for public cloud. Certified Enterprise Linux ecosystems can ensure service performance and availability, as well as service compatibility as participants test and certify code allowing for open and truly hybrid multicloud deployments.

Ecosystems include those found in colocation, through network service providers, virtual cloud on-ramps, centers of excellence, partner ecosystems and vertical industry clouds.

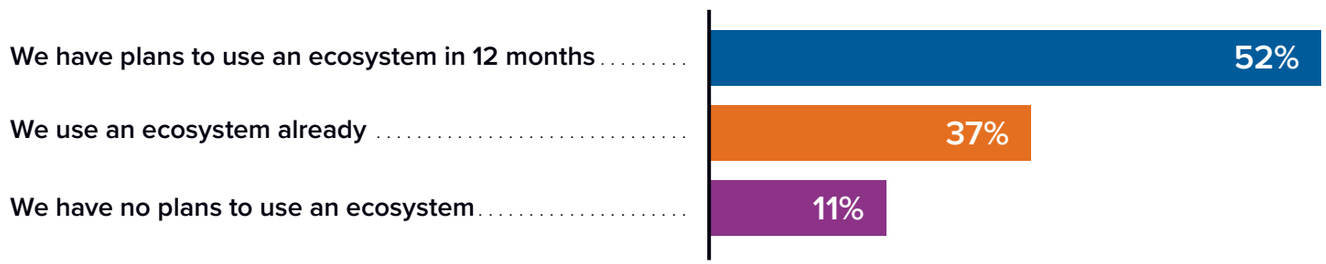
Enterprise Linux providers are increasingly a part of these ecosystems and provide their own access building on marketplace options — especially in the public cloud. Consideration must be given not only to the value of the operating system in bringing cloud services together, but also how hybrid cloud users will access new ecosystems and share data and applications across partner environments.

Multicloud Requires Solid Ecosystem Options (continued)

There are many options for open source in the cloud available through various ecosystems. Hyperscale cloud providers have enhanced partnerships with Enterprise Linux providers to increase their own infrastructure software options. At the same time, the use of open APIs allows for greater levels of interoperability for companies deploying multicloud and hybrid clouds, particularly for container orchestration platforms and automation tools.

Deploying commercial open source can help ensure security and data protection mechanisms are in place while allowing companies to build services that work in unison with their own business partners/ecosystems.

Ecosystem use by companies already doing hybrid cloud



n = 1,350; Source: IDC's *Cloud Pulse 2023*

Benefits of Using a Cloud Ecosystem

Better visibility of services

Better access to cloud customers

Better access to our customers

Summary: Building an Open Hybrid Cloud Strategy

Get the right foundations in place for portability with support

As more applications move across platforms and environments, your company will want to standardize on a single OS. Enterprise Linux enables the use of open source with enterprise-grade cloud tools and services, as well as access to growing third-party ecosystems and public cloud with a consistent user and management experience backed by a trusted support provider.

Don't forget to prepare for future workloads

The great thing about taking an open approach to your cloud infrastructure is you are opening the door for future possibilities. New workloads, such as data mining and analytics, AI and customer experience applications will impact future requirements. Consider the role the OS will play in preparing the organization for technological change.

Consider the role of the ecosystem

Few companies will work with a single provider for all of their cloud needs, so think carefully about the breadth of options a provider can offer beyond its own product and services stack. Enterprise Linux can help provide a single experience across these options as your company's cloud needs mature.

Open source multicloud benefits

- Enterprise Linux options allow for building out multicloud scenarios from the core datacenter to the edge and across public and private cloud.
- The open-source community ecosystem brings added innovation for new cloud tools and services with contributions from other cloud users and a wide range of participating vendors/companies delivering cloud services.
- Access to API libraries with fewer coding demands on internal skills.
- Availability of tools and options helps companies build their clouds with a focus on the most recent and best-of-breed hardware and software solutions.

About the IDC Analyst

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Penny Madsen is a senior research director for IDC's BuyerView research, focusing on Cloud Pulse, which provides quarterly insights into cloud adoption and investment trends. Her research covers software and infrastructure trends, offering insights that help leading vendors and infrastructure providers to develop strategy for future customer deployment scenarios.

More about Penny Madsen

Message from the Sponsor

Why us? *Consistency is key.*

At Red Hat, we know that a standardized approach to IT environments and infrastructure gives organizations the consistency they need to reduce complexity as well as the cost and friction of change. Red Hat Enterprise Linux is engineered with this in mind, and the Red Hat Enterprise Linux cloud experience delivers the same superior security, performance, scalability, manageability, and reliability that our customers have come to expect on any other deployment footprint. It is the thread that ties it all together – the one thing that remains the same when everything else changes. Red Hat Enterprise Linux empowers organizations to retain skills, standards, processes, best practices, and management tools – reducing the difficulty and cost of cloud migrations and providing simplified management across their entire new estate from a single console.

Learn more about hybrid cloud with Red Hat Enterprise Linux

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