# Driving Standardization Across Cloud with Enterprise Linux

## Stable foundations are required as cloud buyers turn to hybrid models to drive innovation and modernize in an AI era.

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# Executive Summary

## Standardizing for Cross-Cloud Performance, Security, Scalability, and Reliability in the New Era of AI

**With the focus on AI, cloud-based infrastructure investments are now a priority for organizations as they shift toward open hybrid and multicloud deployments. "Hybrid" means organizations can run or 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.**

**However, the open hybrid approach to cloud and technology deployment can introduce risk as layers of complexity are added to the cloud portfolio. When cloud-based infrastructure is standardized around enterprise Linux foundations, these environments can provide the ability for seamless integration of services and interoperability, allowing for greater agility and speed of deployment. Another benefit is access to best-of-breed services and applications, many of which are being designed to meet industry requirements, which makes them a good fit for AI deployments.**

IDC's quarterly *Cloud Pulse Survey* captures the sentiments of cloud buyers around the world. This InfoBrief draws upon its 2024 findings. *Cloud Pulse* respondents are:

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

# Executive Summary (continued)

## Why standardizing on enterprise Linux promotes hybrid cloud use for AI:

- AI workloads are not static. Many will leverage a mix of traditional and cloud-based environments and different cloud platforms through application life-cycle stages. Location will also change depending on use cases. Choices around what operating system (OS) is used for cloud can help companies unleash benefits, including workload portability.
- Enterprise Linux is a Linux distribution (distro) assembled from curated content that 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 road map. Enterprise Linux offers technical support, updates, and security patches. This is different from community-delivered distros that require in-house expertise to provide self-support and maintenance.
- 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.
- With Linux now widely used, enterprise versions are helping to provide consistency across environments and systems by removing challenges realized through the adoption of hybrid cloud models. These challenges have included portability, access to skills, complex management, the ability to gain insights into application and operational requirements, and the deployment of automation tools and processes.
- The benefits of enterprise Linux include added layers of security, support, wider integration of services across partner ecosystems, and governable service-level agreements. These are all important when building solid foundations for future cloud and AI deployments.

# Laying Foundations for Business and Cloud Innovation

AI investments are firmly on the agenda. Cloud-based infrastructure is an important enabler for these workloads. 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.

### Top 5 Areas of Investment in New Technologies for the Next Five Years


n = 1,350; Source: IDC's *Cloud Pulse 2024*

Around three-quarters of cloud buyers say their cloud architecture can no longer meet their organization's IT or business needs. These organizations are undertaking cloud modernization programs to address concerns around security, risk, downtime, and application availability. AI increases the focus on efficiency, performance, and the need to build cloud foundations that can withstand technological and business change. Enterprise Linux offers standardized cloud-ready options with dedicated services to help protect companies as they scale and to ensure the robustness of infrastructure as cloud starts to perform a more critical business role.

### Cloud transformation/modernization goals

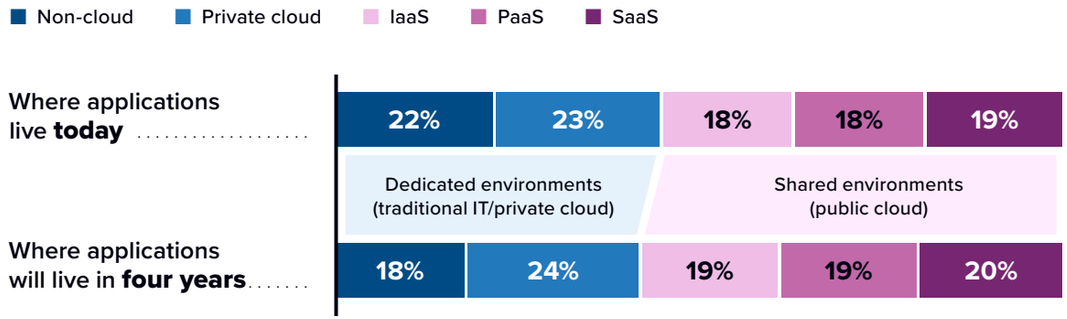
1. Increase efficiency
2. Increase performance
3. Better scalability
4. Build a more sustainable/durable cloud architecture

# The Great Application Migration

**60%** of companies say they get better returns on their cloud investment when multicloud capabilities are enabled.

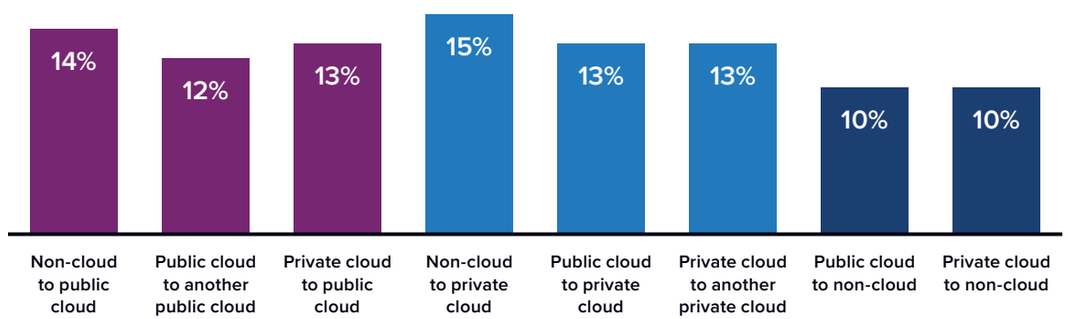
- **Cloud buyers identify different benefits from deploying on public or private cloud and across different cloud providers.** For public cloud, they like the ease of management and performance benefits, while for private cloud, they like the added privacy, control, and security.
- **35% of companies buying cloud services** today say they prefer a single-cloud architecture or software platform that can run consistently across multiple different hardware infrastructures.
- **25% have seen standardization across control planes** for consistent visibility and automation across clouds.
- **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 Four Years




## APPLICATIONS ARE ANYTHING BUT STATIC

### Where Will Existing Apps Move in the Next Year?




n = 1,350; Source: IDC's *Cloud Pulse 2024*

# AI Drives Movement Between Clouds and Dedicated Environments

It is more important than ever to build infrastructure foundations that allow for the migration of applications and movement of workloads with interoperability across cloud environments.

IDC's *Cloud Pulse* finds that **86% of cloud buyers have enabled interoperability between different cloud environments.**

Generative AI and other predictive AI requirements encourage the migration of applications across cloud environments.

**GenAI project requirements are the #2 driver of application movement from non-cloud to cloud environments** (behind sustainability). They are also the top reason for the **migration of applications from cloud to non-cloud and lead to migration between public and private clouds.**

## Criteria for Application Placement: **Top 4 Considerations in Order of Importance**

**Single-Tenant Architecture**

1. **Need to update applications faster**
2. Network costs and capacity constraints
3. Latency and application performance
4. Need to provide better service to end users across distributed locations

**Public Cloud**

1. **Storage cost and capacity constraints**
2. Access to suitable disaster recovery/business continuity options
3. Availability of local/in-country cloud solutions
4. Data egress costs

**Edge**

1. **Network cost and capacity constraints**
2. GDPR and related local data and privacy regulations
3. Need to update applications faster
4. Business partner or customer contractual requirements

n = 1,350; Source: IDC's *Cloud Pulse 2024*

# Standardizing to Improve Skills and Security

**Two of the biggest challenges companies moving to cloud face are having the right cloud management skills and the right security in place. Standardizing cloud foundations — including the OS — can remove complexity and risk, allowing for better management of security and reducing the burden on IT teams.**

Large Linux communities contribute to innovation, allowing commercial Linux providers to focus more on support across the infrastructure environment. Enterprise Linux options can also help 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.

**32% of cloud buyers spend 10% or more** of their total cloud budget on downtime caused by **hardware failures.**

**44% spend 10% or more** on downtime caused by **security breaches.**

n = 1,350; Source: IDC's *Cloud Pulse 2024*

## Skills

Skills challenges are real. Cloud buyers are increasingly looking to adopt automation in response to cloud management overheads. Many will also outsource functions.

- **56% of public cloud and 49% of private cloud buyers** use enterprise Linux as their operating system, benefiting from the additional services it offers.
- **64% of cloud buyers** say they lack the skills required for Linux development and administration.
- **27% of cloud buyers** say they require more diversity across their cloud skills set, with **27%** retraining and upskilling for automation and AI.

## Security

Security remains the #1 concern companies have as they move to cloud. Managed security services has become one of the fastest-growing cloud services markets as companies look to outsource risk.

- **60% of cloud buyers experienced an outage of their IT operations in 2023,** with the most common cause being IT operations failures followed by cloud network downtime.
- **Security** is one of the main reasons companies will migrate from one cloud environment to another and even back out of cloud into non-cloud environments.
- **47% of companies believe open APIs lead to better performance,** while **46%** believe open APIs help their organization to **be more secure.**

# AI Drives Requirements for an Open Approach to Cloud Management

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

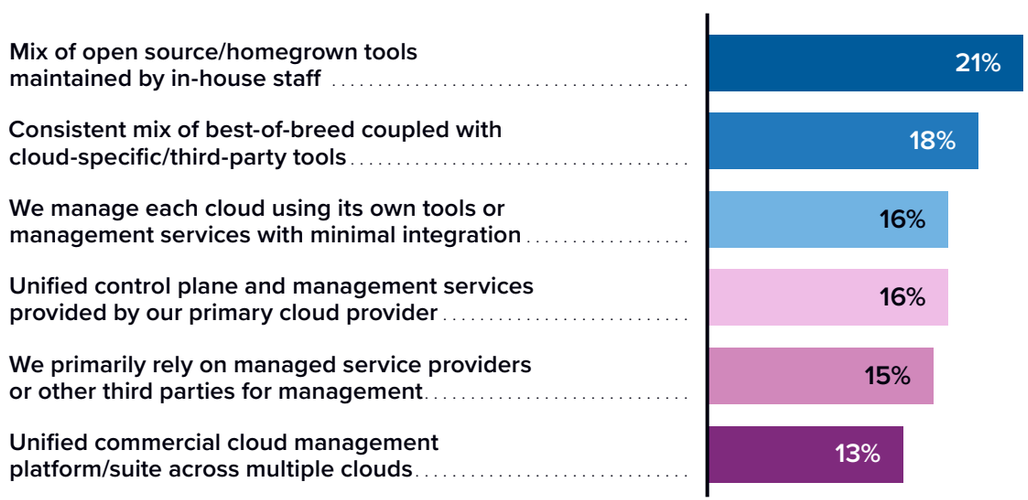
The complexities of hybrid cloud place an increased focus on cloud management and drive the need to automate. Companies are relying more on open-source management tools that can support multiple environments. Without standardization, these can add layers of complexity.

**44% of companies have automated the management of their cloud environment; this figure jumps to 49% for companies that say their focus is on hybrid cloud and 50% for those doing multicloud.** Enterprise Linux providers are expanding their observability and management capabilities to support Linux deployments across cloud environments as well as on premises to ensure consistent management experience independent of deployment platform.

**The tasks that are most automated:**

1. Optimizing infrastructure
2. Performance backups
3. Integration of hybrid clouds

## What Is Your Primary Multicloud Management Tools Strategy?



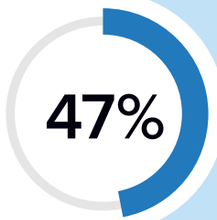

n = 1,350; Source: IDC's *Cloud Pulse 2024*

# Future Workloads: AI and Other Unforeseen Cloud Requirements

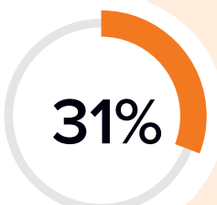
**IDC's Cloud Pulse respondents say the most critical workloads are those that improve operational efficiency and operational security.** The biggest transformation with existing workloads will be to provide **real-time analytics and integration** so they can better connect with other workloads. Companies will need to think about the best placement for every application they deploy. Performance will be a requirement for all critical applications — a factor that will drive future hardware decisions.

As the race toward AI has proven, new workload requirements can disrupt a business. Having the right cloud foundations can impact an organization's ability to meet new requirements. 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 and allow greater scalability for complex workloads with consistent foundations that allow for infrastructure choice.

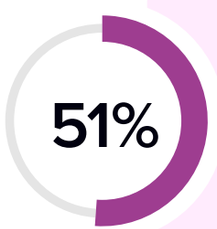
IDC research shows that many cloud buyers are choosing Linux when configuring and deploying servers for the cloud, and support is also growing across the public cloud, with more options available to meet new intensive workload needs.




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 **expect to spend more than 10% of their cloud budget on AI-related projects** in the next two years — up from 8% of companies at the end of 2023.




of applications deployed in a public cloud **are now considered edge** deployments, and **45% of private cloud deployments** are considered to be at the edge.

n = 1,351/1,350; Source: IDC's *Cloud Pulse 2024*

# 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 that 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, in virtual cloud on-ramps, in centers of excellence, in partner ecosystems, and in 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 to how hybrid cloud users will access new ecosystems and share data and applications across partner environments.

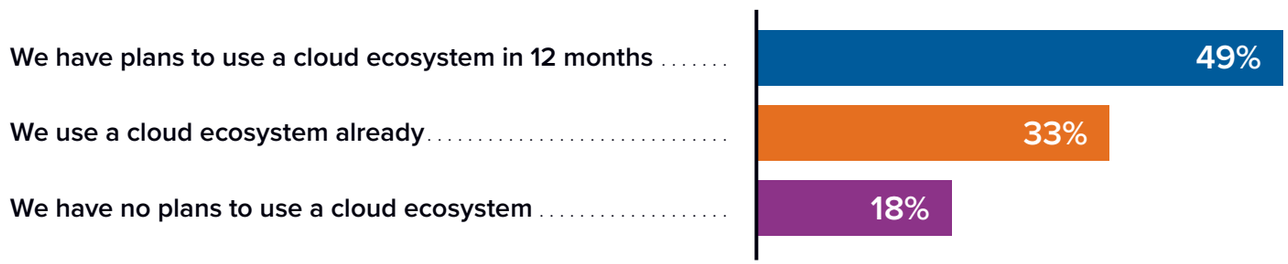
# Multicloud Requires Solid Ecosystem Options (continued)

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 enterprise Linux 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 Doing Hybrid Cloud




n = 1,350; Source: IDC's *Cloud Pulse 2024*

## Benefits of Using a Cloud Ecosystem

**Better visibility of services**

**Better access to cloud customers**

**Better multicloud/hybrid management**

# Summary: An Open Hybrid Cloud Strategy Fit for AI

### Get the right foundations in place for portability with support

As more applications such as AI move across platforms and environments, a 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

AI is proving that things can change fast. The great thing about taking an open approach to cloud infrastructure is it unlocks the door for future possibilities. New workloads, such as data mining and analytics, AI, and customer experience applications are already impacting 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 their cloud needs. 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 a company's cloud needs mature.

## Open source multicloud benefits

- Standardizing with enterprise Linux options prepares the company for building out new hybrid and 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 latest and best-of-breed hardware and software solutions.

# About the IDC Analyst

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Penny Madsen is a Senior Research Director within IDC's worldwide infrastructure research organization and part of the Cloud and Edge Services practice. Madsen is lead analyst for Cloud Pulse, IDC's flagship research service on cloud adoption trends, vendor strategies and investments. Her research takes a holistic view of the cloud infrastructure, platform, and software services markets.

More about Penny Madsen

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