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# Hybrid Cloud Strategy

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## **Learn:**

- Key cloud strategy considerations
- Architecting to maximize flexibility
- Unified IT management and more
- Ten reasons to develop a cloud strategy

Ed Tittel  
Gordon Haff  
Stephane Lefrere  
Matt Nolan  
Julio Villarreal Pelegrino  
Marty Wesley



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# Introduction

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**C**loud computing is proliferating and taking over the world of IT as we know it. Cloud computing also grows more complex and multi-faceted daily. Organizations can create their own private cloud infrastructures in-house, sign up for services from public cloud providers like Amazon Web Services (AWS), Google Cloud Platform, or Microsoft Azure, or create hybrid environments. Other vital choices come close behind. Architects and engineers must deal with an array of connections, integrations, portability issues among clouds, resource options, orchestration, storage, and more. And somehow it must all be managed and maintained.

You can probably see why a carefully thought-out and detailed approach to cloud computing — a strategy, in other words — is so important.

## *About This Book*

This book's topics are laid out in a logical order. But you don't have to read it that way unless you want to. Even so, we think Chapter 1 is a great place to start. That said, if you see a topic that catches your fancy, jump ahead (and around) the book as you like. Each chapter can stand on its own, so you can chart your own course. Read it in any order you like (but it's probably not smart to read it backwards).

Jumping onto the cloud is easy. Getting it right is somewhat trickier. Getting it right for the long term is even more challenging. A good cloud strategy helps you and your organization work things out, makes sure all the bits and pieces fit together well, and improves the odds of realizing your business goals. We hope that, if you read this book in its entirety, you'll agree that you've been handed the ingredients and a sequence of steps to put such a strategy together.

## Icons Used in This Book

We occasionally use special icons to focus attention on important items. Here's what you'll find:



This icon with the proverbial string around the finger reminds you about information that's worth recalling.



Expect to find something useful or helpful by way of suggestions, advice, or observations here.



Warning icons are meant to get your attention to steer you clear of potholes, money pits, and other hazards. Soft clouds can deliver hard knocks!



This icon may be taken in one of two ways: Techies will zero in on the juicy and significant details that follow; others will happily skip ahead to the next paragraph.

## Beyond the Book

This book can help you discover more about the cloud and strategies for its best deployment and use, but if you want resources beyond what's offered in this book, additional reading that's chock-full of useful info can be found at the following links:

- ✔ [www.redhat.com/en/resources/openstack-storage-dummies](http://www.redhat.com/en/resources/openstack-storage-dummies): *OpenStack Storage For Dummies*, Red Hat Special Edition, explains cloud-related storage matters for OpenStack.
- ✔ [www.redhat.com/en/resources/container-storage-dummies](http://www.redhat.com/en/resources/container-storage-dummies): *Container Storage For Dummies*, Red Hat Special Edition, explains containers like Kubernetes.
- ✔ [www.redhat.com/en/resources/the-business-value-of-red-hat-cloudforms](http://www.redhat.com/en/resources/the-business-value-of-red-hat-cloudforms): Analyst firm IDC offers a take on the business value of CloudForms, which is Red Hat's toolset to create, manage, and monitor private, public, and hybrid clouds.
- ✔ [www.redhat.com/en/explore/cloud-strategy](http://www.redhat.com/en/explore/cloud-strategy): The Red Hat website offers all kinds of useful cloud-focused information, including a collection of resources aimed at cloud strategy.

# Chapter 1

# Key Cloud Strategy Considerations

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## *In This Chapter*

- ▶ Identifying cloud strategy goals
  - ▶ Understanding specific terms, like hybrid cloud and multi-cloud
  - ▶ Examining why “cloud native” and “open source” rule
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**S**treamlining and strengthening an IT ecosystem’s foundation is essential to realizing business objectives. There’s no better way to do that than formulating an effective cloud strategy. Creating a cloud strategy involves pondering some key considerations, which you will discover in this chapter.



The Red Hat Global Customer Tech Outlook 2017 revealed that 70 percent of respondents put cloud infrastructure as a top funding priority. Even more telling is that 52 percent put cloud technologies as the top focus for IT spending that year. Discover more about this survey at [www.redhat.com/en/red-hat-global-customer-tech-outlook-2017](http://www.redhat.com/en/red-hat-global-customer-tech-outlook-2017).

## *Identifying Cloud Strategy Goals*

Building an effective cloud strategy begins with identifying goals. Ask yourself, “What’s a realistic end state?” If that’s too much to tackle, limit yourself to your next new project. Consider whether you’ll need auto scaling or not, whether continuous integration and continuous delivery for your infrastructure and your applications are called for, and how important proximity is to the data your project uses.



When building a strategy, complying with applicable policies or regulations around your data and processes is important during every step. Check each one!

## *Tie your project to success*

By tying your cloud project to clear business outcomes and benefits, you define your own yardstick for success. All your goals should have clear and specific KPIs and success criteria. That means making important decisions as you set your objectives. You must decide what represents success and how you'll measure its attainment. Is your business outcome "to accelerate software delivery through adoption of containers" or is it "to automate provisioning of servers and applications over the entire life cycle"? It makes a big difference. Is the real goal to replace a legacy infrastructure and to modernize IT delivery? Whatever your goals, you need KPIs and success criteria to match (and measure) them.

## *Overcome hurdles*

For cloud computing success, projects must address organizational challenges in implementing new systems. Failure to anticipate and handle challenges poses dangers to project success. While benefits from adopting a new cloud abound, change disturbs the status quo. That's why securing management sponsorship and buy-in is key, starting at the top of the org chart. Get all important stakeholders in your camp, and you'll have less trouble from other interests.

## *Identify major challenges*

Starting with easy apps (low-hanging fruit), identify your implementation challenges. Learn and then consider options to solve them. Can a public cloud handle your needs and concerns, or must you use a private cloud? Whatever you decide, be sure it matches organizational goals for automation, management, and scaling. Think about things from the perspective of business users. Ask yourself, "How can this cloud project serve them?" and "By opting to host my apps on a public cloud provider like Amazon Web Services or Microsoft Azure, what are the risks of locking myself to these public clouds? Would I rather get my core applications 'cloud-ready' so they can be run or migrated to any cloud infrastructure, in order to avoid vendor lock-in?"

Stressing benefits helps gain buy-in from decision makers. It also makes a project an easier “sell.”



When choosing cloud technologies, it's not always either private or public. You can create a hybrid and combine them.

## *Plan workloads*

Think about how easy it will be to bring your idea to life. That means learning about your environment to better understand your IT landscape and current constraints. Find out which of your applications can — through some refactoring — and which can't be moved to run on a cloud. Through analysis, and perhaps even a pilot project, determine the best plan to support your workload.



Start with low-hanging fruit: Migrate easy (that is, application web tier) applications; then work into the harder stuff (like databases or message bus hosting). Keep compliance in mind, as well.

## *Brace for impact*

Your new project will impact workflows, automation, management policies, and other changes for your operations team. Bring them into your process early and often. If you stress operational knowledge and skills, you'll help align your organization with new or re-engineered processes. The better Ops is prepared, the smoother your transition will be. This makes “inclusive” awareness and documentation vital because it captures changes during the transformation process and keeps folks informed.

# *Assembling Strategy Ingredients*

An open, hybrid, business-oriented cloud lets organizations focus on digital transformation and shortens time-to-market windows. To do this right, identify common private cloud use cases and then create architectures that fit their needs and requirements. For example, an IT organization may need a cloud strategy focused on security and compliance requirements, as well as regulatory or financial considerations. It may also want to transition to a hybrid environment in which applications can run across multiple clouds. The organization's use case would be the starting point from which it picks appropriate architectures.



Get all key questions answered before starting a cloud architecture. Don't zoom ahead with too many open issues.

## Putting Cloud in Perspective

To put the cloud in perspective for strategy purposes, check out the following two definitions:

- ✓ A *hybrid cloud* describes a mixture of public and private cloud resources. Such a mix offers the potential of portability among cloud elements but requires oodles of connections and integration points. Hybrid clouds normally employ technologies such as containers, container orchestration, common operating systems, runtime environments, flexible storage, and universal developer frameworks and tools. A hybrid cloud may also include dynamic resource allocation and migration among clouds (also known as *cloudbursting*) — although this is less common. Hybrid clouds designed with portability in mind can orchestrate cloud workloads under unified management.
- ✓ A *multi-cloud* is a broader term for any combination of multiple cloud resources. Thus, it may even be applied to Software-as-a-Service (SaaS) or to cloud-specific tools, such as those for data analytics, machine learning, or database functions.

## Why Cloud-Native, Open Source?

Where the term *cloud native* usually refers to developing, running, and optimizing applications on a dynamic infrastructure, a *cloud-native infrastructure* is designed specifically to support cloud-native apps.

Linux is often the heart (and soul and brains) of a cloud-native infrastructure. Open source code is everywhere in today's cloud environments. Open source software underlies cloud platforms that deliver business applications and environments. Cloud-native software is often developed, deployed, and managed using DevOps practices, serving the need for highly flexible and agile development environments with reduced IT complexity. Developers increasingly package application components in Linux containers that run as microservices across many different types of clouds.

## Chapter 2

# Architecting to Maximize Flexibility

### *In This Chapter*

- ▶ Considering your options for maximum cloud flexibility
- ▶ Iterating by going from idea to product, then back to cloud strategy
- ▶ Reassessing and adjusting your cloud strategy

Cloud computing's growth curve is expected to steepen. Trends such as containerization and serverless architectures are essential cloud computing phenomena. As the world gets more connected, users want everything to be software-defined. The growth of the Internet of Things (IoT) and cloud services should ramp up the cloud even further. Increasing popularity and reliance on the cloud means any good cloud strategy must be flexible to meet new (and possibly unforeseen) demands.

## *Planning for "Max Flexibility"*

If you want to plan for maximum cloud flexibility, you need to ponder a variety of different considerations:

- ✓ **Portability and manageability:** The biggest enabler for flexibility comes from adopting an open and extensible architecture. It also helps avoid vendor lock-in and proprietary implementations.
- ✓ **Regulatory requirements:** The private versus public decision often comes from the data itself, where regulatory concerns might specify that data can't leave a

certain country or be subject to certain audit requirements. Such data might best reside in a private cloud under tight control, while other parts of an application (such as stateless web servers) not subject to restrictions could reside in a public cloud.

- ✔ **Enterprise IT:** You need to continue running and supporting mission-critical, line-of-business applications and hosting intellectual property, confidential data, and proprietary materials of all kinds.
- ✔ **Geo-redundancy:** Applications that need strong resilience and high availability can benefit from a hybrid cloud model. This allows you to divide services and endpoints between multiple private and public clouds. In this kind of scenario, if a private cloud fails, you could elect to recover the service in a public cloud. Similarly, a hybrid cloud reduces risks of data loss or inaccessibility.
- ✔ **Best practices:** It's critical to consider software life cycles in the cloud as you test, develop, and eventually promote application environments into production. The same notion applies to private cloud infrastructure environments. After all, a private cloud infrastructure supports software applications that must be maintained and tested through their life cycle. This process lets the production environment run unhampered and unhindered while development and testing (on different versions) run in parallel.

As you work your way through this list, consider your own goals and priorities, and adjust accordingly. You might just need to be flexible when it comes to maximizing flexibility.



Conversations around cloud flexibility often default to the hybrid option. Getting the mix between public and private clouds right requires creating a roadmap. It begins with understanding overall goals for the cloud computing environment. Bring in all the business stakeholders (the business units that will benefit from cloud computing and their key decision makers) and start laying things out. Such a roadmap need not look years and years down the road, but it must be built to handle change with sufficient flexibility to adapt to and accommodate new services and deliverables. A forward-looking approach like this lets you take advantage of new capabilities and functionality from the cloud as it continues to innovate and expand.

## Getting from Idea to Production

After your roadmap is laid out, what's next? Good question! The next steps involve discovery and gap analysis. That's because making cloud decisions involves a lot of choices, both technical and non-technical. Making choices must begin with a careful analysis of your organizational constraints and the options ahead. In turn, this comes from thorough discovery and analysis of current processes and outcomes. Along the way, you'll have to observe (and later on, manage) how the options you choose (or experiment with) affect interactions between operational and development teams along with other stakeholders in the organization.

Selection is also closely tied to proof of concept (POC) stages. That's because a POC often provides the best way to inspect and experiment with service choices that follow from an initial evaluation. The POC provides a great opportunity to evaluate technologies and outcomes as they apply to specific business requirements. At the same time, you'll gain insight into possible or prospective integrations.

The next step on the road to production is architecture design. Thoughtful technology and organization design is important because it can impact the future direction for IT for a long time to come. It's never easy to go back and rework things if the design isn't right. Here again, you must work closely with the organization's stakeholders and with vendor partners to assess your workload and applications.



Architecture design is one exercise where redos are prohibitively expensive and can even be career-limiting (or -ending) maneuvers. This situation is clearly one where you *don't* want to follow that old maxim: "There's never enough time to do it right, but there's always enough time to do it over." Not so in this case, so don't even think about it.

## Circling Back to Cloud Strategy

As you make choices — particularly, those that involve choosing specific platforms, tools, or technologies — you'll notice their impacts on your organization, your processes, your policies, and even your business goals. It's important to recognize

that not all proofs of concept succeed. Often, such failures require circling back to and adjusting strategy to reflect an improved understanding of what's really needed. Don't be afraid to make adjustments as you go.

In fact, many experts would argue that developing a proper cloud strategy unavoidably includes at least a little bit of a “two steps forward, and one step back” motion. That's because you have to move forward to select possible options, and to implement POC experiments, while recognizing that not all such concepts actually prove themselves in practice — however attractive they may be in theory. Therefore, it's safest to assume that your progress won't always be straightforward — not that a chart of such progress will necessarily be a straight line from the starting point to the finish line. This is another reason why it's so important to be flexible when working with cloud strategy and related platforms, tools, and technologies.

## Chapter 3

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# Enabling Agile IT in the Cloud

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### *In This Chapter*

- ▶ Looking at the cloud age
  - ▶ Achieving agility with Infrastructure as Code (IaC)
  - ▶ Getting to the root of why IaC matters
  - ▶ Following IaC best practices
  - ▶ Following the four-phase approach to cloud infrastructure
- 

**F**lexibility is part and parcel of a cloud strategy. It allows many different technologies to run across various cloud architectures, whether private, public, or hybrid. For example, do you want to run storage services on-premises and in the public cloud for backup purposes? Or across clouds? You can do that. And, technologies such as containers and Kubernetes/OpenShift open the door for truly portable workloads because they can function the same wherever they run.

Automation makes cloud infrastructure and applications more streamlined and less complex, and it helps staff meet business objectives while adhering to organizational and regulatory constraints. Essentially, it's the sweet spot in a cloud strategy. In this chapter, you look at how the cloud and automation go hand in hand and how managing your infrastructure like you manage software code builds in a new level of flexibility.

## Welcome to the Cloud Age

Back in the day, getting a new server up and running was time-intensive, to say the least. An administrator had to work with a vendor to buy a physical server, then configure it, connect it to the network, install applications, test it, and image it. If something went wrong, everything had to start over. Weeks or months passed before the server went live. Consider the time involved with many servers across many different environments.

Enter the Cloud Age. Now admins and users can provision a server on demand, which takes minutes (not days, weeks, or months) by selecting parameters on a pretty user interface or with an API call. This enormous reduction in delivery time has, almost by reflex, caused the number of servers in use across enterprises to skyrocket. The challenge today is to find a flexible, robust solution to manage all of them.

## Understanding Infrastructure as Code

The answer to managing the burgeoning number of on-demand servers is *Infrastructure as Code (IaC)*, a construct that allows operators to provision and manage IT systems programmatically by using a template defined in software code. If you're thinking this sounds a lot like the application development world, you're right.

The crux of IaC is the definition file, from which the entire infrastructure — networks, storage, virtual machines, and so on — is defined. This recipe of sorts specifies not only infrastructure elements but also how they should be configured, and it sets the stage for consistency. After you have a definition file, automation and configuration management software, such as Ansible, Chef, or Puppet, can use it to configure and provision cloud infrastructure.

## Why IaC Matters: Snowflake Servers versus Phoenix Servers

The beauty of IaC is its tremendous flexibility. An administrator can take down a server and bring up a new one in its place much more easily than using traditional methods. IaC also helps to eliminate *Snowflake servers* — in computer-speak, they're servers that have lived a lifetime of undocumented and typically manual configurations, aren't easily replicated, and can't be changed without risk of breaking what's currently running on them. In a few words, they're delicate and unique in their own way.

Phoenix servers, on the other hand, are standardized, automated, and can be quickly spun up, spun down, and replaced. They're elastic by nature and lend themselves to automation, representing what the cloud is all about.



Here's another way to think about it: Snowflakes are unique in a way that makes them quick to fade into obscurity and disuse, whereas phoenixes are tough and beautiful, always ready to rise again for ongoing and continued reuse.

An infrastructure dotted with Snowflake servers is fragile. IaC creates a more agile and resilient environment through defining and automatically configuring Phoenix servers, enabling administrators to dispense with most Snowflake servers.

## Best IaC Practices

As IaC makes its way into more and more cloud environments, ensure your team follows best practices as a standard for execution. The following best practices apply to every IaC environment:

- ✔ **Use definition files as documentation:** Definition files are the essence of IaC — your blueprints for whatever type of resource you're creating — and they can serve as documentation. In short, your code becomes your doc.

- ✔ **Your documentation is built into your code:** Because everything that describes the infrastructure is in code, it's critical to ensure the code is crystal clear and that it can be self-explanatory.
- ✔ **Version everything:** Use a version control system, such as Git, to track changes, conduct peer reviews, and provide for good governance. Versioning will be especially handy in the event of an audit or to prove compliance.
- ✔ **Validate templates before putting them to use:** Validating a template before creating or updating resources lets you identify syntax errors, misconfigurations, and dependency problems.
- ✔ **Perform continuous testing:** This is the bigger picture of validating templates. Constantly test systems and processes to ensure that mistakes are corrected quickly and that changes don't create instability or unexpected performance issues.
- ✔ **Make small, incremental changes:** Making a small change allows you to quickly see the effect and roll it back if needed with minimal time expended. Batch changes may seem faster but are more difficult to troubleshoot if something doesn't work properly.
- ✔ **Keep services available:** If one server goes down, another should be in place to pick up the slack. The goal is to provide uninterrupted infrastructure services according to service level agreements.

## *The Six-Phase Iterative Approach to Cloud Infrastructure*

IaC is the payoff for cloud. If you're sold on incorporating IaC into your IT organization, follow a structured approach to planning and design for rollout. To work through your cloud strategy, follow this checklist:

- ✔ **Discover:** Nail down and sort out short-term and long-term requirements with IT and business partners. This process includes identifying challenges, articulating business objectives, and determining workloads to move to the cloud.

- ✔ **Design and build:** Make sure the design fits your specific business strategies and use cases for the delivery of a Minimally Viable Product (MVP) that can scale as your company grows.
- ✔ **Testing/Validation:** Validate your technical design and try service features, assess their life cycle (for example, how they're updated/upgraded), see how they work, and assess organization fit and impact.
- ✔ **Migration plan:** Set a strategy for how best to migrate your selected applications. Standardize and establish automation mechanisms and operational processes.
- ✔ **Operationalize:** Tune your cloud infrastructure to your performance needs and add/integrate the operational toolset you need to detect and respond to failures in lightning speed. It is not a question of whether your infrastructure or application will fail; it is when and how fast you will detect and recover from faults. The goal is that any failure isn't observed by your end-users.
- ✔ **Iterate:** Revisit your initial MVP design for further improvements. Design changes to accommodate new business needs. Don't try to "boil the ocean" in your first attempt. Define increments and sprints with clear achievable outcomes that are time bound.

This process helps you look at all possible technologies and solutions and to come up with a solid action plan. It creates the roadmap for seeing your cloud project through from beginning to end.



## Chapter 4

# Unified IT Management and More

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### *In This Chapter*

- ▶ Understanding the benefits of unified IT management
  - ▶ Exploring the challenges and various approaches of IT management
  - ▶ Solving IT management woes with unification
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**A**ccording to *Forbes*, from 2016 to 2017, hybrid cloud adoption grew from 19 percent to 57 percent — an astonishing threefold increase. That growth has driven the need for a platform that can provide unified views and management of multiple, heterogeneous environments.

This chapter looks at management challenges that organizations face today and how unified IT management achieves an efficient and streamlined cloud infrastructure.

## *What Unified IT Management Delivers*

Traditional IT management systems just don't cut it in the dynamic, agile environment of a hybrid cloud. The *legacy IT management model* is typically based on monolithic applications and often includes multiple point solutions with limited capabilities and insight. The different look and feel that each management system has, the different security models that never seem to be in sync, and the lack of integration with different platforms are contrary to the unified management

approach that a hybrid cloud strategy requires. More modern, adaptable tools are needed.

For hybrid cloud environments, unified IT management delivers the following:

- ✔ **Unified management and resource pooling across a hybrid infrastructure:** A unified management platform lets you view and manage private and public cloud resources, both used and unused, and containers from a single console. These tools enable you to allocate resources, perform capacity planning tasks, monitor resource allocations and quotas, and a whole lot more.
- ✔ **A public cloud experience for users under IT governance:** Users flock to public clouds because services are readily available and easy to use. Unified IT management can deliver the same experience for hybrid clouds, while giving administrators control over access, quotas, and workload placement.
- ✔ **Orchestration and monitoring of workloads across resource pools:** Administrators use unified IT management to deploy workloads and monitor them throughout their life cycle, while meeting service level agreements.
- ✔ **Automated enforcement through policy:** Automation is king in hybrid environments, and unified IT management follows suit with policy-driven automation. Whether alerting staff, fixing issues, or ensuring compliance requirements, administrator-created policies are behind unified management automation.
- ✔ **The reliability and performance that all types of users expect:** Hybrid clouds must be agile to meet varying workloads and user demand, especially during spikes, and must continuously optimize resource allocation and utilization. Unified management provides features for service monitoring and dynamic resource allocation, as well as the ability to map relationships between resources and track event timelines for root cause analysis.

Unified management delivers financial benefits, too. IDC recently reached out to customers using Red Hat CloudForms to ask them about their experience with unified IT management and how it enabled operations agility and speed across disparate environments. In the Red Hat report, “The Business Value of Red Hat CloudForms,” the companies cited huge

reductions in staff time for delivery of service requests and manual processes, resulting in significant savings. In fact, over a five-year period, the companies stand to reap an average of \$11,937 per 100 users per year, resulting in a whopping 436 percent return on investment.

## Challenges and Approaches

Achieving a flexible and manageable cloud infrastructure under the status quo isn't easy. There are lot of hurdles. Today, IT leaders and staff face three main challenges:

- ✔ **Disparate, fragmented systems:** IT operations environments usually run many different systems, which results in siloed data and resources, a plethora of issues that require hands-on attention, and a lot of complexity.
- ✔ **Brittle environments:** The mix of different systems, with various permission schemes and security models, leads to brittle environments that are error prone. They're also at a higher risk for security vulnerability exploits that may not get noticed immediately or acted on promptly.
- ✔ **Ambiguity:** Performance tracking and utilization trends take a hit because of many moving parts and data segmentation. There is simply too much left to interpretation and not enough data-driven analysis.

So how does an organization overcome these challenges? Red Hat recommends tackling them with this approach:

- ✔ **Unify:** Most importantly, unify IT management through a single-pane-of-glass model. This means bringing all the separate environments — physical, virtual, on-premises cloud, public cloud, and containers — into one view.
- ✔ **Get organized:** Group IT functions into defined collections, and define role-based access for end-user groups based on those functions.
- ✔ **Visualize and monitor:** Use the unified management platform to visualize all the various infrastructure environments. The data collected feeds into dashboards for at-a-glance trends, system issues, resource usage, and more, which enables faster, more informed decision making.



This multi-level approach gives you many benefits:

- ✔ Single-pane-of-glass management increases efficiency.
- ✔ Complex environments become easier to manage, with less hand-holding, and are more reliable and scalable.
- ✔ Because data gathered from the various environments will be more accurate, you're able to plan resources more appropriately for current and future workloads.
- ✔ Because unified IT management relies on automated policies in orchestration and provisioning, the platform ensures resource availability and applies correct permissions before approval. Rather than resorting to manual processes for approving requests, the whole process is automated and tracked.

## *Solving Unified IT Management*

While unified IT management sounds like a great way to achieve increased efficiency, scalability, and insight, how exactly do you get there? Management and automation solutions can help in the following ways:

- ✔ Choose a hybrid cloud management platform that lets you monitor and manage all kinds of cloud infrastructures through policies.
- ✔ Your solution should provide management for subscriptions and content, as well as tools for provisioning, patching, and configuration management. Tight integration of all these features helps you meet regulatory and organizational compliance, too.



Your goal is to automate routine tasks, but the solution should also support teams in complex environments, offering centralized automation, delegation, and role-based control geared toward infrastructure, networking, security, and other projects.

## Chapter 5

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# Ten Reasons to Develop a Cloud Strategy

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### *In This Chapter*

- ▶ Moving appropriate workloads to the cloud via a roadmap and checklist
  - ▶ Increasing agility and flexibility across disparate environments
  - ▶ Managing the whole shebang with unified views and tools
- .....

**E**ach *For Dummies* book ends with a Part of Tens chapter. This one gives you reasons to develop a cloud strategy.

### *You Get a Roadmap*

A cloud strategy provides a roadmap for becoming cloud native. You'll understand your goals and objectives, what you can migrate to the cloud, which challenges you face, and how to overcome them.

### *Increase Your Cloud Flexibility*

A cloud strategy also helps you ramp up cloud services appropriately to meet both existing and new (and possibly unforeseen) demands.

### *Go Open Source*

An architecture based on open source software is the cornerstone of a cloud strategy, according to Red Hat. Adopting an open and extensible architecture helps you avoid vendor lock-in and proprietary implementations.

## ***Meet Compliance Requirements***

A well-developed cloud strategy helps you ensure that you're meeting regulatory and internal compliance requirements.

## ***Follow a Proven Approach***

A cloud strategy provides a checklist to ensure nothing is overlooked. The checklist covers discovery, design and build, testing/proof of concept, and migration.

## ***Reach Your Goals More Quickly***

Making cloud decisions involves many technical and business choices, input from operational and development teams, and proofs of concept. A solid strategy ties it all together.

## ***Increase Your Agility***

Infrastructure as Code (IaC) lets you provision and manage servers automatically by using a defined template. There's no need to touch a physical box. IaC is the essence of agility.

## ***You Want "Phoenix" Type Servers***

A cloud strategy looks to replace Snowflake servers with cloud-based Phoenix servers that are standardized, automated, and can be quickly spun up, spun down, and replaced.

## ***Unified IT Management Is in Play***

Single-pane-of-glass management increases efficiency, makes complex environments easier to manage, and builds in reliability and scalability.

## ***Get Better Visibility***

Unified IT management results in highly accurate data. Plan better, spend more wisely, and lower overall IT costs.

## WHY RED HAT AND INTEL?

Intel knows how to compute. Red Hat unleashes the power of that compute through software. Together we accelerate digital transformation by jointly driving innovation through the technology ecosystem.

In our 20-year history of collaboration and co-development, we share a common strategic vision:

- **CHOICE:** We are leaders in open technologies.
- **FLEXIBILITY:** We deliver products that enable companies to be more flexible.
- **INDUSTRY-LEADING INNOVATION:** We invest in continuously pioneering the evolution of our markets.

The investment that we make by working together helps customers unleash the full power of new Red Hat and Intel innovations. Specifically, customers

- Bring products to market faster
- Get more value from the technology
- Achieve better security, performance, and reliability in applications

## Put together your hybrid cloud strategy

Cloud computing is taking over the IT world. It grows more complex each day, and organizations must deal with an array of connections, integrations, portability issues among clouds, resource options, orchestration, storage, and so on. You have to somehow figure out how to manage and maintain it all. With this book, you see how to put together your cloud computing strategy.

- ***Build an effective hybrid cloud strategy — begin by identifying goals***
- ***Maximize cloud flexibility — consider your own goals and priorities***
- ***Enable agile IT — manage on-demand servers with Infrastructure as Code (IaC)***
- ***Package application components in Linux containers — run microservices across different types of clouds***



Open the book and find:

- How to put cloud in perspective
- Best IaC practices
- The iterative approach to cloud infrastructure
- The benefits of unified IT management
- Ten reasons to develop a cloud strategy

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