WHITE PAPER

Enabling DevOps: Strategies for creating a hybrid cloud platform

NetApp

Why choose a hybrid cloud strategy to support DevOps?

Hybrid cloud solutions have become more and more popular in recent years, largely due to their extreme flexibility, which makes it easy for IT teams to move workloads among private and public clouds as needs and costs fluctuate. A hybrid cloud platform also offers clear technical, business, and financial advantages for DevOps, dramatically increasing speed and responsiveness while mitigating risk and reducing costs.

To get the most out of using a hybrid cloud platform for DevOps, you need to first identify the right hybrid cloud strategy for your organization, then set up and maintain the platform in ways that support your DevOps goals. To help you do so, we've drawn on our experiences and others' insights to identify several key considerations.

Two major business trends shaping enterprise IT

Today's enterprise IT departments are embracing two trends. In more traditional setups, critical business systems such as ERP, HR, CRM, and financial tools are moved to the cloud and SaaS for easier updates, better scaling, and added flexibility.

A newer trend uses DevOps to create and deliver custom apps for each business process, relying on dynamic cloud services to maximize speed, agility, and flexibility. Using hybrid cloud technologies with cloud-native application development frameworks, DevOps teams are dramatically speeding software development, delivery, and updates. To enable high-velocity application development and delivery, many organizations choose a hybrid multicloud solution—a complete developer ecosystem including all tools, platform software and technology, and the private and public cloud access DevOps teams need.

Factors to consider when creating a hybrid cloud DevOps environment

Your DevOps goals

Before implementing a hybrid cloud platform for DevOps, it's important to clarify your high-level business and technical goals. These might include:

- **Increase speed** of application updates or changes—for example, supporting regular weekly releases instead of larger monthly or quarterly updates
- **Focus developers on writing code** and building cloud-native applications, running microservices architectures in containers
- **Reduce deployment risk,** using automation to maximize uptime and application availability when adopting new technologies and architectures
- **Reduce costs** with open-source application stacks and cloud services

Security configurations

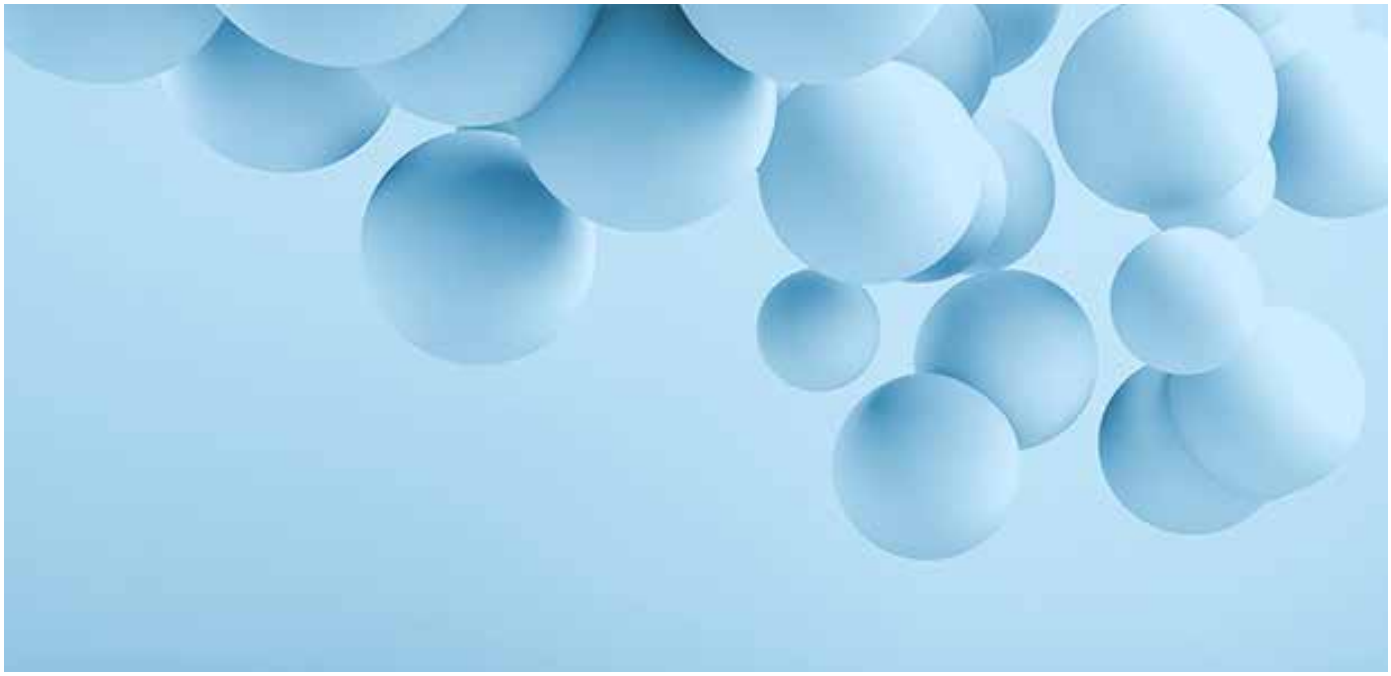
Security is a major consideration for any DevOps environment. Traditional security models rely on firewalls, which grow more complex the more applications they protect. More recent is the idea of security by default, in which security is built into the applications themselves. This approach radically simplifies perimeter security, is easy to automate, and secures applications by design.

Security by default operates on the principle of zero trust; uses a green bucket list for common network traffic; and protects the platform via existing cybersecurity processes including vulnerability management, incident response, and risk management.

Services and users

Next, consider your users and the services they need to do their jobs. Some frequent DevOps users and the services they use most:

DevOp users	Services needed
IT application developers	Full developer experience
Product software developers	Platform services
Business unit application developers	Container services
Cloud architects	Infrastructure services
Infrastructure architects	Infrastructure as code



The project team

To manage the transition to a hybrid cloud, you'll need to assemble a project team, including a "champion" who can sell the vision to company leaders. Make sure that team members consider all aspects of the project, including technical, cultural, and organizational change. Such transitions will be received much more enthusiastically when developers and operational leaders understand the full technical and business value of speed and automation.

A strong project team should include several members in each of these roles:

- **Visionary team.** A small team, led by a champion who can explain and sell the concept
- **Platform team.** Platform "product owners" who will oversee elements of the hybrid cloud
- **DevOps team.** Developers who can assess and identify user requirements
- **Outside experts.** Industry experts, partners, vendors, consultants, and others as needed to fill knowledge gaps

A continuing operating model

The project team will need to measure, deliver, and communicate DevOps results based on key milestones. Team members should set up governance and develop a comprehensive operating model to support continuing system performance and future improvements.

Some goals and processes to consider as part of a continuing operating model:

What to do	How to do it
Set maturity improvement goals	Keep key engineers engaged
Define a roadmap to deliver new platform capabilities	Establish regular governance meetings to track deliverables
Establish a supply-chain process for applications	Hold technology architecture meetings to address technical issues
Iterate through specific deliverables using agile practices	Institute a steering committee of key stakeholders

Four lessons from our hybrid cloud journey
In our experience establishing and running a hybrid cloud platform, we've found it useful to keep these perspectives in mind:

1. **Commit to a journey.** Though it could take years to build and refine your hybrid multicloud platform, the process can expand your perspective, make the organization more responsive, and yield tangible business results.
2. **Expect the unexpected.** Outages will happen. Stay in front of them, remain calm, and address your apprehension as well as the specific problem at hand.
3. **People are essential.** Spend the time and energy needed to get people up and running with new technologies and processes, and to keep them updated on project strategy and deliverables.
4. **Think long term.** Develop—and use—a detailed continuing operating model with a focus on long-term repeatable success.

The power of flexibility in a fast-moving businesses landscape
Investing in a hybrid cloud architecture gives your business the resources to respond quickly and flexibly to a business climate defined by ongoing change. Whether that means constantly innovating, pivoting for a quick competitive gain, quickly delivering new customer experiences, or making faster decisions, a hybrid cloud platform can give you the advantage you need to succeed.

NetApp's integrated hybrid cloud solutions
NetApp brings you what no other company can—a unified experience across the hybrid cloud environment that's both innovative and consistent. It uses common technologies on premises and in all major clouds, to enable DevOps teams to operate at the speed of change.

NetApp helps you meet your storage, data management, automation, and optimization requirements for cloud-native applications, traditional applications, or a combination, while setting the standard for hybrid cloud at the storage layer. Interested? Find out more about how NetApp can support your hybrid cloud solution.

About NetApp
In a world of generalists, NetApp is a specialist. We're focused on one thing: helping your business get the most out of your data. NetApp brings the enterprise-grade data services you rely on into the cloud, and the simple flexibility of cloud into the data center. Our industry-leading solutions work across diverse customer environments and the world's biggest public clouds.

As a cloud-led, data-centric software company, only NetApp can help build your unique data fabric; simplify and connect your cloud; and securely deliver the right data, services, and applications to the right people—any time, anywhere.

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