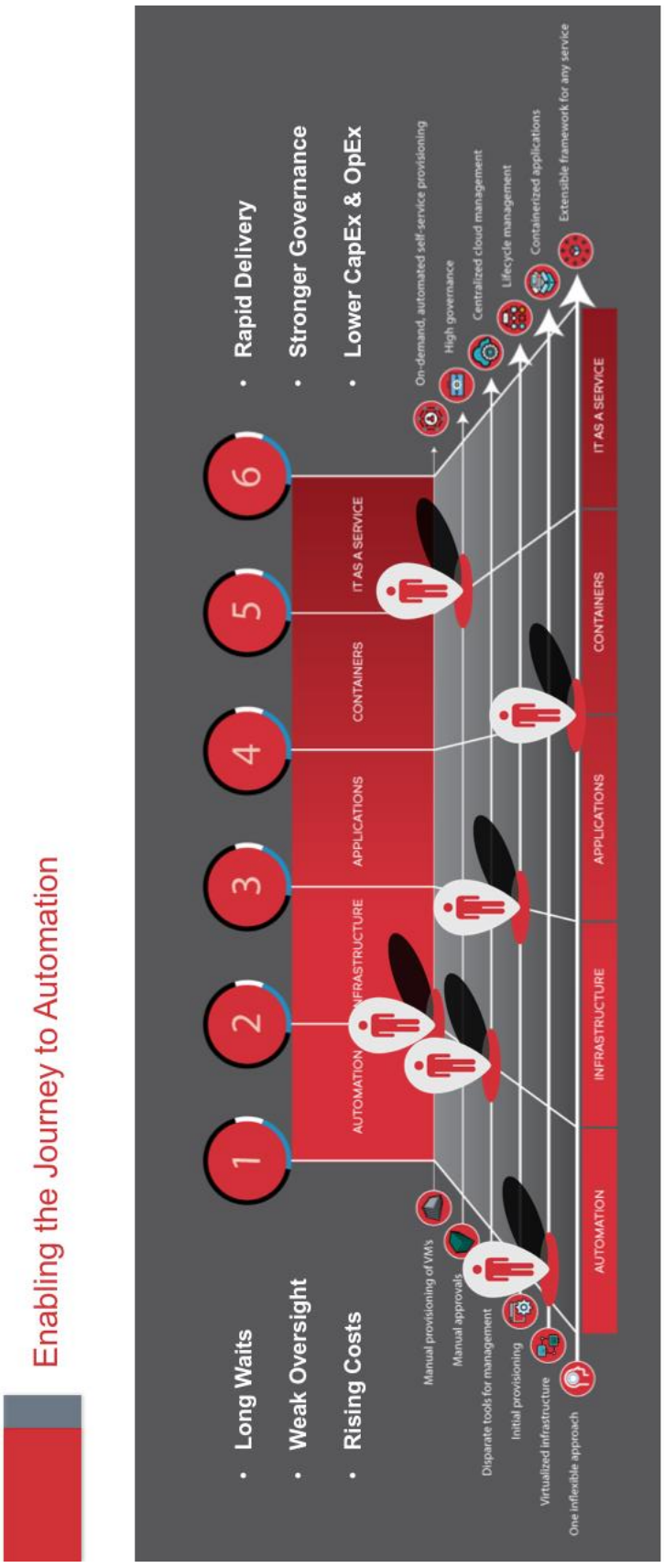
Enabling the Journey to Automation – Delivering VM's & Apps in Minutes Not Weeks

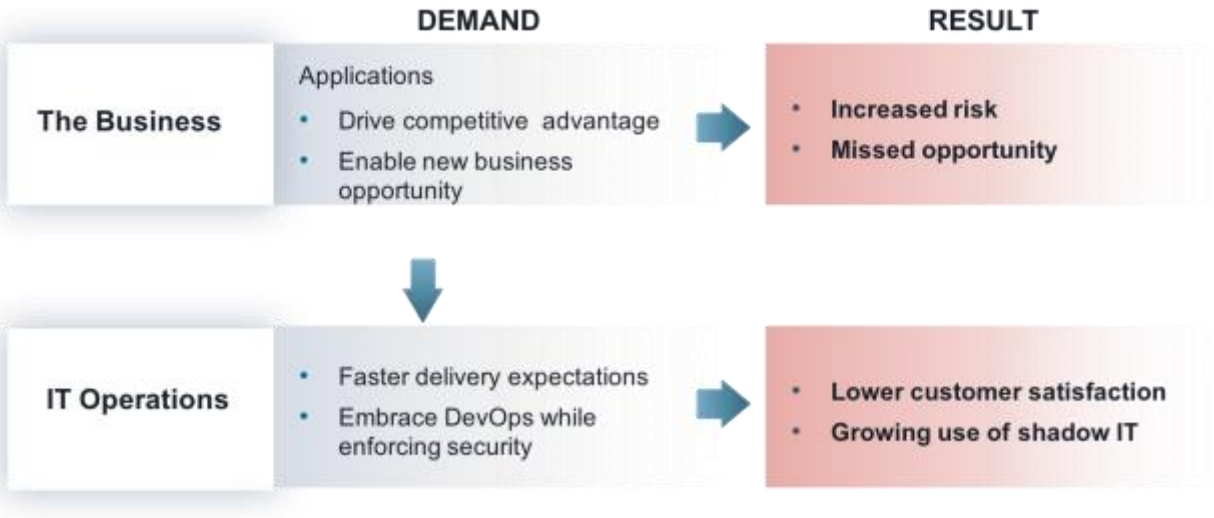
With the move towards digital transformation, many organizations are looking to achieve business agility by speeding up the delivery of infrastructure and application services. While the move towards automating provisioning workflows may seem like an obvious step that should be adopted by IT teams, many organizations are reluctant to make drastic changes to the existing processes without understanding the impacts first

In this white-paper, we will cover the best practices for embarking on the "journey to automation" to deliver services to business teams faster. This journey has multiple entry points. You can start by moving towards an **automated, self-service provisioning** model to deliver VM's on Hyper-V or 15+ clouds for IT efficiency, or by **containerizing your existing applications** to turbocharge DevOps. Learn how HyperForm can automate not just the VM provisioning, but the approval workflows and granular entitlements needed to provide personalized infrastructure services to meet unique IT and business needs.


Enabling the Journey to Automation
• Long Waits
• Weak Oversight
• Rising Costs
1
2
3
4
5
6
AUTOMATION
INFRASTRUCTURE
APPLICATIONS
CONTAINERS
IT AS A SERVICE
• Rapid Delivery
• Stronger Governance
• Lower CapEx & OpEx
Manual provisioning of VM's
Manual approvals
Disparate tools for management
Initial provisioning
Virtualized infrastructure
One inflexible approach
On-demand, automated self-service provisioning
High governance
Centralized cloud management
Lifecycle management
Containerized applications
Extensible framework for any service
AUTOMATION
INFRASTRUCTURE
APPLICATIONS
CONTAINERS
IT AS A SERVICE

The Move Towards Digital Transformation

Many organizations are looking to deliver applications to enable new business opportunities. The reliance on new applications to drive competitive advantage increases the risk for organizations that may not have the right technology, processes or expertise to drive such initiatives. The search for speed in the software supply chain, fueled by agile methodologies and DevOps practices, has put a tremendous pressure on IT organizations to deliver services to developers faster while enforcing security and governance. The long waits experienced by business end users often result in IT losing control as the business turns to unsanctioned infrastructure as a faster alternative, at the expense of security, governance, and visibility.



HyperForm Enabling the Journey to Automation

HyperForm (www.dchq.io), a DevOps Platform delivering application lifecycle management, containerization, and cloud automation on 18+ clouds, enables the journey to automation so that you can deliver services to your teams faster.

- **Sign Up for free on HyperForm SaaS**
  - http://dchq.io
- **Download HyperForm On-Premise Standard Edition for free**
  - http://dchq.co/hyperform-on-premise.html

This journey has multiple entry points.

- You can start by moving towards an **automated, self-service provisioning** model to deliver infrastructure on any cloud for IT efficiency, or
- by **containerizing your existing applications** to turbocharge DevOps

Are You Ready to Embark on this Journey?

Many organizations are looking to achieve business agility by speeding up the delivery of infrastructure and application services. While the move towards automating provisioning workflows may seem like an obvious step that should be adopted by IT teams, many organizations are reluctant to make drastic changes to the existing processes without understanding the impacts first. After all, there are many questions that IT teams need to answer before embarking on any automation journey.

- If an automated, self-service model is adopted for provisioning, how can IT ensure that **approval workflows** and **entitlements** are enforced for governance?
- How can IT enforce **quota** and **cost metering** policies to ensure appropriate usage of infrastructure with showback reports to track the cost of infrastructure and application services?
- How can IT manage resources, workloads, and operations across **multiple clouds**?
- How can IT manage not just the initial provisioning workflows but the **life-cycle management** operations for infrastructure and applications post-provision?
- How can IT support **container services** that accelerate application development and that turbo charge DevOps?
- How can IT **"lift and shift" existing legacy applications** to containers to reap the benefits of agility and application portability?

In this whitepaper, you will have a chance to evaluate your existing processes on a scorecard and understand the benefits of automation across different areas of IT services.

The High Cost of Manual VM Provisioning

Here are the drawbacks of adopting a manual process for provisioning virtual machines.

- **Long waits**. After a request is made, it typically takes days or even weeks for IT to deliver new infrastructure.
- **Rising costs**. Manual processes reduce IT efficiency, while increased use of infrastructure outside of IT's control leads to over-provisioning and overspending.
- **Inconsistent infrastructure**. Poorly executed manual tasks can lead to configuration errors, requiring time-consuming reworking.

By adopting an **automated, self-service provisioning** model to deliver infrastructure IT can achieve the following benefits.

- **Rapid delivery**. Self-provisioning for business users means infrastructure is delivered in minutes, not days, reducing the likelihood of shadow IT.
- **Fewer errors**. Reduces configuration errors that are a natural consequence of manual processes.
- **Lower CapEx and OpEx**. Eliminates underutilization of VMs and improves IT efficiency.

Enabling Governance & Cost Metering

Whether an organization is delivering infrastructure or application services, approvals are often needed to control the capacity used and to enforce security policies

Here are the drawbacks of adopting a manual process for approving provisioning requests and monitoring the usage of infrastructure.

- **Loss of control.** The business turns to unsanctioned infrastructure as a faster alternative, at the expense of security, governance, and visibility.
- **Weak oversight**. Manual enforcement of granular entitlements and other security policies leads to errors and inconsistencies across clouds.
- **Rising costs**. Infrastructure cannot be adequately monitored across clouds, leading to overspending.

By enabling consistent deployment, security policy enforcement, visibility, and governance for all applications, running on premises or in the cloud, IT can achieve the following benefits.

- **Strong governance.**
  - Users get automated policy enforcement and a consistent workflow for provisioning infrastructure on any cloud.
  - Automatically enforces policies and quotas that prevent the underutilization of resources and insecure access policies.
- **Lower CapEx and OpEx**. Cohesive utilization and expense monitoring means you can see where to optimize for better cost efficiency.

Hybrid Cloud Management

Many organizations are looking to deploy their application workloads on multiple or hybrid clouds. As a result, organizations end up with separate teams and skill sets, different management tools, and different operating processes to manage multiple clouds.

Here are the drawbacks of managing multiple clouds using disparate tools.

- **Fractured organizations.** You need to appoint separate teams with varying skill sets, tools, and operating processes to manage multiple clouds.
- **Lack of visibility**. Use of multiple management tools impairs your ability to oversee utilization and policy enforcement.
- **Rising costs**. Infrastructure cannot be adequately monitored across clouds, leading to overspending.

By automating the provisioning, management, monitoring and cost metering of infrastructure across 15+ clouds, HyperForm delivers a single console to manage resources, workloads, and operations across any cloud. As a result, organizations can gain holistic management while empowering your lines of business to use public clouds securely.

Here are the benefits of using a centralized cloud management platform for managing multiple clouds.

- **IT efficiency.** Supervise all workloads using a single interface.
- **Holistic management**. A centralized console enables you to manage resources, workloads, and operations across any cloud, ensuring secure use of public clouds.
- **Lower CapEx and OpEx**. Cohesive utilization and expense monitoring means you can see where to optimize for better cost efficiency.

Managing Infrastructure & Apps Post-Provision

Many organizations focus on the initial provisioning workflows to deliver infrastructure and application services in a timely manner. Unfortunately, however, it's the day-2 operations that end up being more of a bottleneck for IT teams struggling to apply patches, scale out resources, and make configuration updates.

Here are the drawbacks of focusing on initial provisioning only.

- **Manual Updates by IT.** Day-2 operations end up being a major bottleneck for IT teams struggling to manage infrastructure and applications post-provision.

HyperForm automates both the provisioning and the life-cycle management operations for both infrastructure and application services – allowing teams to access to monitoring, backup, in-browser

terminals, log analysis, scale in or out, continuous delivery workflows and applications updates to speed up DevOps processes.
By adopting **automated lifecycle management,** IT can achieve the following benefits.

- **Full lifecycle management.** Automates downstream operations, lowering the cost to apply patches, scale out resources, and update configurations.

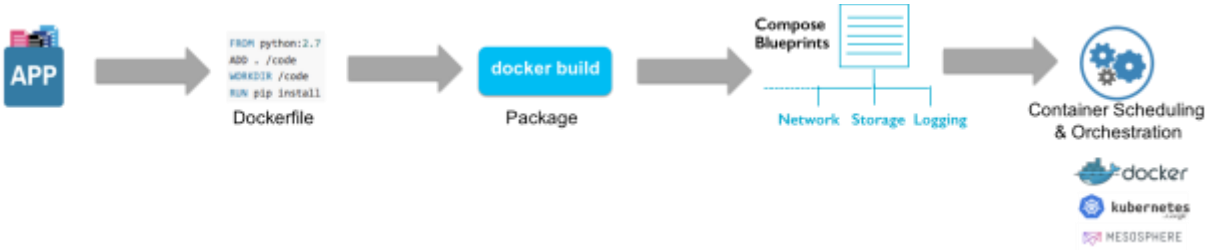
Lift, Containerize & Shift Legacy Applications

While traditional virtualization technologies provided resource allocation and isolation benefits for running mission-critical applications on premise, such technologies have prevented many enterprises from migrating to the cloud or other infrastructure platforms. As a result, cloud migration projects have become extremely costly and time-consuming.

Moreover, the search for speed in the software supply chain, fueled by agile methodologies and DevOps practices, has put a tremendous pressure on organizations to deliver services to developers faster. While virtual machines (either on premise or on public clouds) continue to be the main way developers consume infrastructure, organizations are pressed to find faster ways to deploy applications to accelerate development.

Here are the drawbacks of focusing on virtualized infrastructure for running applications.

- **Orphaned legacy apps.** The cost of migration delays efforts to modernize and migrate legacy apps to lower-cost infrastructure.
- **Insufficient automation**. Containers are designed to improve application portability, but typically require code changes and a long learning curve.
- **Manual service discovery**. Services to aid integration require additional effort and expertise to containerize.



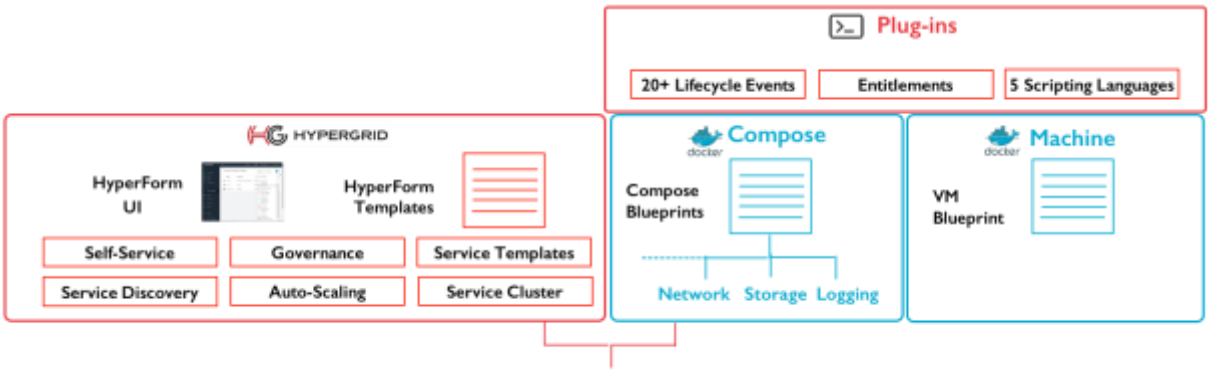
HyperForm enables developers to run their applications on lightweight containers that run exactly the same across any infrastructure, from on-premises datacenters to public clouds, across a vast array of network and storage providers. The application portability benefits of containers have enabled enterprises to accelerate *application migration* and the shift to *hybrid cloud*. Enterprises do not have to be "locked in" to a specific virtualization platform or cloud to run their applications.

Compared to virtual machines, containers are much more lightweight as they eliminate the need for a guest operating system that requires more storage overhead and a longer time to boot up. As a result, developers use containers to turbo charge DevOps and speed up continuous delivery into production.

By containerizing existing applications using HyperForm, IT can achieve the following benefits.

- **Agility.** Eliminates IT bottlenecks and turbocharges DevOps for rapid business innovation.
- **Portability.** Automates the modernization of legacy applications so they can run anywhere.

- **Zero learning curve.** Requires no app code changes; performs on-the-fly containerization.
- **Ease of integration.** Automates service discovery for no-effort integration with any external service.



Extending Docker Compose & Docker Machine through Plug-ins written in BASH, PowerShell, Python, Ruby or Perl

Enabling IT as a Service

With the emergence of innovative cloud services that simplify application development, testing and deployment, organizations are now pressed to provide such services on premise to speed up the software supply chain. Many platform-as-a-service solutions address some of the application deployment needs – but these platforms are extremely rigid with limited extensibility and vendor lock-in expected.

Here are the drawbacks of adopting a rigid approach to deliver IT services.

- **Rigid Approach.** Many cloud management & PaaS solutions are extremely rigid with limited extensibility and vendor lock-in expected.

By adopting an **extensible framework** leveraging HyperForm's advanced plug-ins, IT can achieve the following benefits.

- **Extensible Framework.** HyperForm's advanced plug-ins, which can be invoked at more than 15 different lifecycle stages **enable any service on any cloud**.
    - The plug-ins framework, which relies on custom scripts that can be written in BASH, PowerShell, Perl, Ruby or Python, enables advanced application deployment and facilitates integration with any external service.
    - The plug-ins can run inside the containers or on the underlying machines to support a wide range of use cases like: on-the-fly containerization of existing enterprise applications, service discovery for non-cloud native applications, and automated
    - storage management.

Conclusion

The journey to automation has multiple entry points. The scorecard presented in this whitepaper should have given you an opportunity to identify areas of weaknesses in your organization and understand the benefits of automation across different areas of IT services. You can start by moving towards an **automated, self-service provisioning** model to deliver VM's on Hyper-V or 15+ clouds for IT efficiency, or by **containerizing your existing applications** for agility and application portability.