

The Top Ten Reasons to Move to Composable Infrastructure



Provision IT the way you want it, when you want it, through a platform that automates operations. That's Composable Infrastructure.



To succeed in the Idea Economy, businesses must turn their ideas into value faster than the competition. IT must now maintain traditional operations while also creating new applications and services for mobile, social, and cloud technologies. In this environment, on-demand, high-performance applications are the name of the game.

Traditionally, enterprise IT was built as a siloed physical infrastructure with networks, servers, and storage systems dedicated to specific company applications. As companies accumulated more data, datacenters expanded accordingly and required all manner of bolted-on hardware to keep things running smoothly. Task-driven, sluggish, and focused on stability over agility, these legacy infrastructures have become expensive and unsustainable behemoths that impede progress.

IT is being asked to lower operating costs in traditional environments while simultaneously increasing operational velocity in the development of new applications. A new architecture is needed, one designed to power innovation and value creation for this new breed of applications while running traditional workloads more efficiently.

“A Composable Infrastructure enables you to manage your infrastructure resources (physical, virtual, general-purpose, application-optimized, on-premises, and cloud) to deliver a better mix of performance, security, scalability, and cost for your workloads. It’s as if a child’s set of Lego bricks came with the ability to replicate blocks as needed and programmed instructions to configure those blocks into a ninja temple today and a working race car tomorrow¹.”

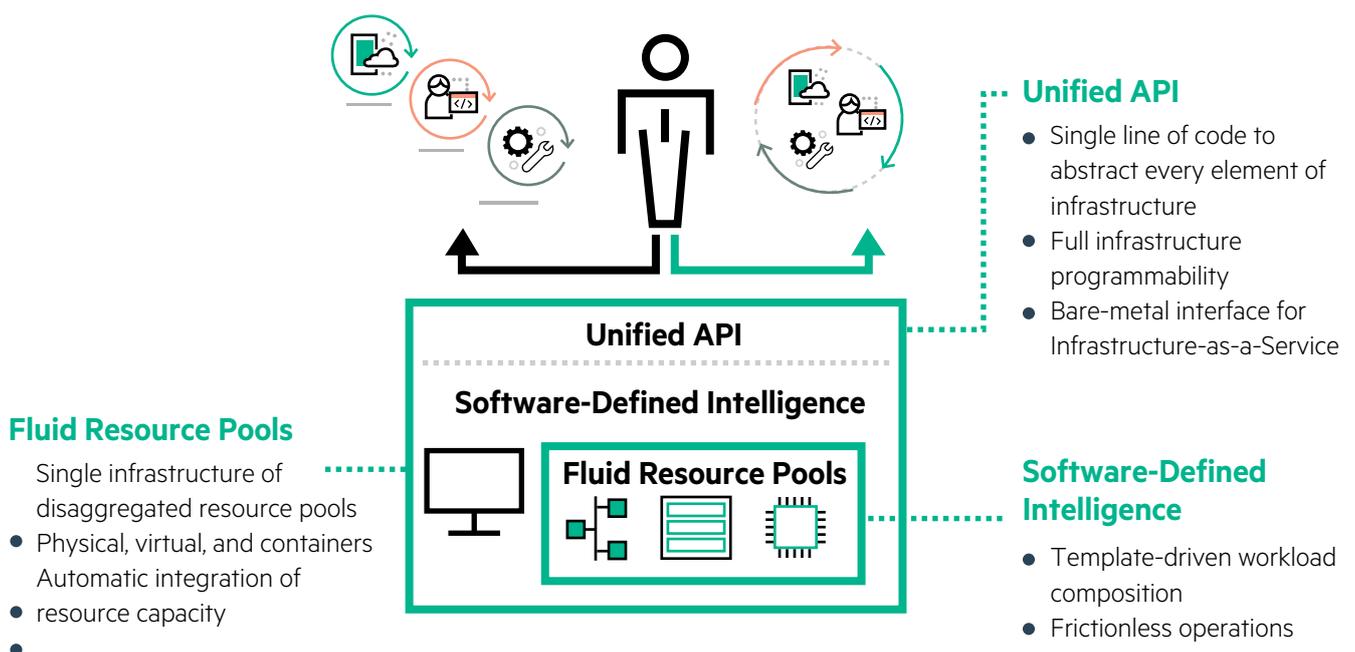
– Frost & Sullivan



Composable Infrastructure offers a compelling solution. Architected with fluid pools of compute, storage, and networking fabric that can be dynamically configured, Composable Infrastructure enables IT to meet the demand for a wide range of apps from traditional to cloud, mobile, or web services. A set of flexible infrastructure building blocks that can be automatically assembled and re-assembled to meet changing application needs, Composable Infrastructure makes it possible to provision on-premises resources easily and quickly in a way similar to the public cloud.¹ In fact, you can program an entire infrastructure with a single line of code through a unified application program interface (API).

Composable Infrastructure

Architectural design principles



¹How the Right Infrastructure Can Prepare Your Data Center for Business Disruptors, Frost & Sullivan, 2015

²For a more detailed explanation of Composable Infrastructure—what it looks like and how it works—see these [resources](#)

Why Composable Infrastructure matters to your business

HPE Synergy is the world's first platform designed specifically for Composable Infrastructure. It was built to bridge traditional and new IT, providing the agility, speed, and near-continuous delivery needed for today's applications.



1



Cloud-like speed

Within a secure data center

In the Idea Economy, the speed at which a company can get new services to market defines success. Traditional infrastructures simply can't create the new generation of mobile and cloud-native applications quickly enough, and the proliferation of these apps is only accelerating. Mobile apps now drive the way the Internet is consumed and designed. According to TechCrunch, 88% of phone usage is spent on apps and the app market generates billions of dollars per year.³ Producing these apps quickly requires a flexible, development-friendly infrastructure that can be set up and changed easily. Composable Infrastructure enables DevOps teams to spin-up new services in minutes, putting new experiences into customer hands faster.

2



Single platform

One infrastructure for two IT environments

Traditional infrastructure is characterized by rigid hardware divided into siloes and optimized for workloads rather than applications and service delivery. IT must continue to maintain these traditional operations while investing in new infrastructure to support a hybrid environment that mixes public and private cloud to reduce overhead and increase efficiency. However, the path to a hybrid infrastructure presents its own set of challenges.

Composable Infrastructure overcomes those challenges by bridging the gap between these disparate demands. Composable Infrastructure is not limited to a single operating paradigm and can run virtual machines, bare-metal deployment, and containers. This allows IT to align behind a single platform while reducing datacenter complexity and cost.

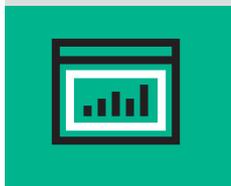
³ tech.co/inevitability-mobile-device-2015-07

The addition of composable infrastructure technology to the current mix of virtualization abstractions and automation tools...moves the potential for a complete SDDC that much closer to reality.*

– Richard Fichera, Forrester



3



Software-defined

Accelerate innovation through software-defined infrastructure

Traditional IT is about managing and maintaining hardware that may reside in multiple physical locations. In contrast, Composable Infrastructure is software-defined and abstracted from traditional hardware constraints. It is able to pool compute, storage, and fabric resources, re-assembling (or composing) these resources as needed. This software intelligence allows IT to automatically connect, aggregate, and control infrastructure resources in exciting new ways. The benefits include:



Automatic integration

Plug in a new device and it's recognized and automatically added to the resource pool



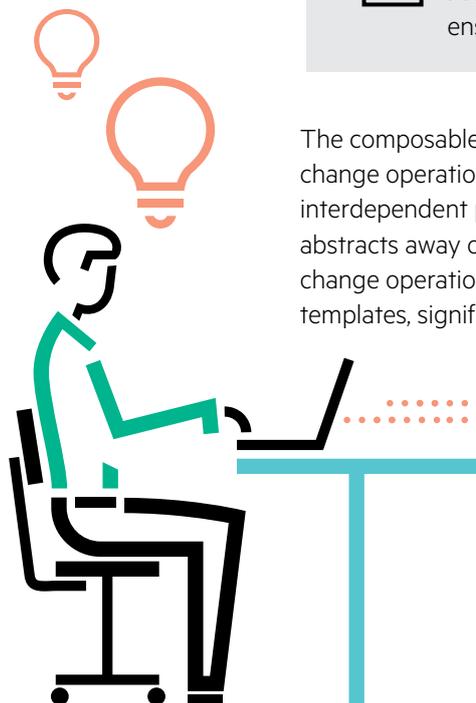
Frictionless operations

Updates can be made without impacting regular IT operations

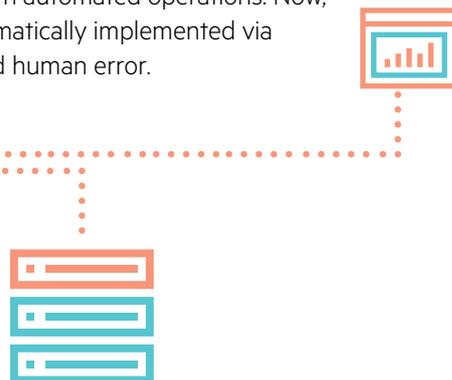


Template-driven provisioning

Provision bare-metal and virtual resources from predefined templates, ensuring consistency and policy compliance and reducing risk exposure



The composable approach changes the paradigm for managing infrastructure. Historically, change operations required coordination across multiple teams, multiple tools, and complex, interdependent processes that often took weeks to complete. Composable Infrastructure abstracts away operational minutiae, replacing them with automated operations. Now, change operations such as updating firmware are automatically implemented via templates, significantly reducing manual interaction and human error.



*Composable Infrastructure: A Hardware Foundation for Extreme Service Agility, April 2016 reprints.forrester.com/#/assets/2/76/'RES132661'/reports

The Composable Infrastructure API enables developers to integrate with development, testing, and production automation tool chains, driving a more aligned and responsive delivery of IT services.



4



Operational efficiency

Cloud-giant operational efficiency

The biggest cloud-computing providers in the world—the cloud giants—have the luxury of buying thousands of servers (and their associated networking and storage) at one time and provisioning everything in advance to meet the specifications of a handful of unique applications.⁴

Traditional enterprise IT cannot match the efficiency of these cloud giants' custom server environments while maintaining traditional infrastructure. Composable Infrastructure changes the game, removing the need to stand up separate environments for different types of applications. By automating the provisioning process, operational practices become much more efficient. Through the unified API, infrastructure applications can be provisioned in minutes instead of days, giving enterprise IT a real shot at cloud-giant efficiency.

5



Continuous development

Instant and near-continuous development processes

In the Idea Economy, developers are under enormous pressure to deliver more apps faster. DevOps can now automate applications through infrastructure deployment, scaling, and updates. Composable Infrastructure allows developers to request exactly the amount of compute, storage, and networking fabric they need. The unified API aggregates physical resources in the same way as virtual and public-cloud resources so developers can code without needing a detailed understanding of the underlying physical elements.

Integration with tools like Chef, Puppet, Ansible, and Docker mean developers can provision and control bare-metal resources from their applications, giving them true infrastructure-as-code capabilities. Technicians can quickly, confidently, and non-disruptively deliver changes to applications and infrastructure on demand. These improvements extend to testing as well, as it becomes easier to create and manage test environments and drive greater infrastructure consistency between test and production environments.

For more, watch [**Choosing the ideal infrastructure for your DevOps team.**](#)

HPE Flexible Capacity provides a pay-per-use financing model for on-premises infrastructure, providing the necessary capacity for the data center with a buffer of additional capacity to use when needed.



6



Fluid IT

Fluid, flexible IT in-step with the business

In the not-too-distant past, companies running legacy infrastructure needed up to six months to move from the birth of an idea to implementation. With Composable Infrastructure, IT can accelerate the application development cycle by leveraging infrastructure-as-code. Application developers using DevOps methodologies can rapidly provision infrastructure and applications together in a single action because infrastructure becomes code through the unified API.

With this fully-programmable infrastructure, changes are no big deal. Developers can tinker and refine applications to meet customer needs as they arise. In addition, IT has the flexibility to create multiple environments quickly, conducting A/B testing on offers and services, for example.

7



IT economics

Transformed IT economics

With support agreements, day-to-day upkeep, and teams of specialized administrators, maintaining legacy infrastructure is frighteningly expensive. The average enterprise spends nearly three times as much on labor as equipment.⁵ Infrastructure is often over-provisioned due to inefficiencies in utilization caused by resource siloes.

Composable Infrastructure allows you to address these cost-control issues by reducing operational effort through template-driven, frictionless operations made possible by software-defined intelligence. Templates define how the infrastructure functions and the infrastructure's internal, software-defined intelligence implements the necessary changes programmatically and without human intervention. Composable Infrastructure is made to accommodate changes on the fly in just a few mouse clicks. Hardware is deployed and managed automatically, further reducing labor costs.

The ability to compose resources on demand increases utilization and reduces overprovisioning, stranded capacity, and hardware costs while delivering right-sized resource allocation for every application.

⁵Forrester Research, "Business Technographics Global Budgets Survey," August 2014. In traditional IT, labor is 39 percent of operational cost while hardware is only 14 percent.

We're now living in an idea economy where success is defined by the ability to turn ideas into value faster than your competition.

– Meg Whitman, HPE CEO



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Competitive advantages

New competitive advantages through IT leadership

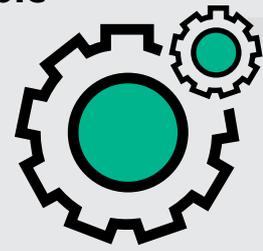
In the Idea Economy, anyone can change the world. This has created an age of relentless competition. Every enterprise is at risk of missing a market opportunity and being disrupted by a new idea or business model. The winners in this world are the companies that embrace good ideas and deliver value faster than their competitors.

Traditional IT was about keeping the lights on and managing costs with a focus on back-office services such as business processing, email, web, and IT infrastructure. With Composable Infrastructure, IT can move to the forefront of the business, driving growth initiatives that deliver new value. By making it easier to manage IT projects and systems, the composable approach frees up significant time and resources that can then be dedicated to customer-facing improvements. Business and IT can now put their heads together for serious collaboration, capitalizing on new ideas and responding to threats with greater ease.



As IT organizations become familiar with composable infrastructure over the next few years, market demand is likely to increase to include a wider range of workloads and use cases.

– **Moor Insights & Strategy: HPE Bridges the Traditional and New IT with Composable Infrastructure**



9



Future-proofed data center

A data center for tomorrow

The Idea Economy is forcing enormous change. How can you be sure the steps you take now will support your business in the years to come? Big Data is already a challenge for many organizations, and the Internet of Things will continue to create even greater new demands. It's simply impossible to respond to these changes with a conventional approach. The scale and the demand for instant access already require an infrastructure that can grow with ease to support new applications. There will be ever-increasing demands to deliver those applications faster, placing ever-greater strain on infrastructure resources.

Composable Infrastructure offers the speed, flexibility, and partner ecosystem that can deliver real benefits for both IT and the business. As an extendable platform and the foundation for hybrid IT, Composable Infrastructure is designed with the capacity and flexibility to handle future generations of computing.

10



Seamless evolution

Easy deployment and evolution

It's easy to get started integrating Composable Infrastructure into the data center. The technology can be deployed incrementally, side-by-side with existing resources. It takes less than half a rack of gear to get started, and can then scale from nodes to frames to rows. Composable Infrastructure can be deployed as part of your standard refresh cycle, giving you the ability to grow your capabilities at a pace that makes sense for your business.

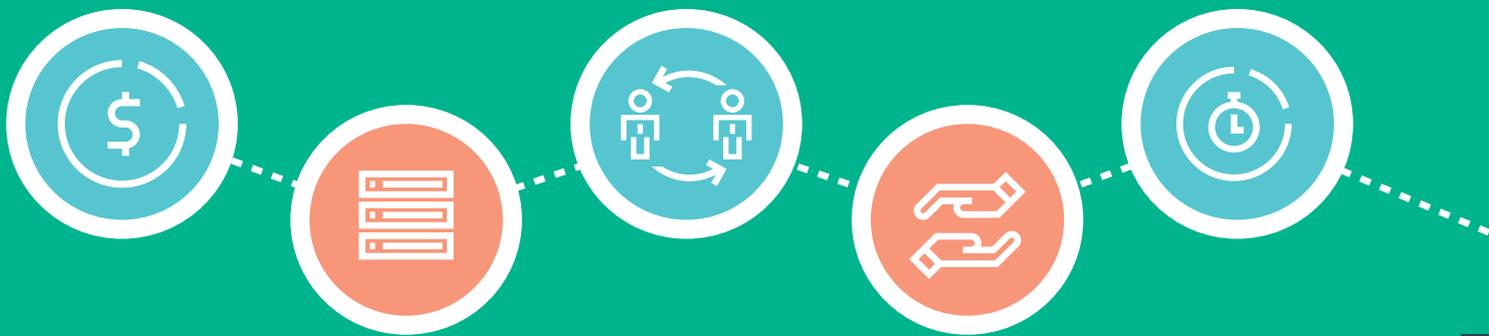


Don't walk, run

We're at the dawn of a new technology revolution. By bridging the performance and control of dedicated infrastructure with the flexibility and benefits of the cloud, Composable Infrastructure represents a key competitive advantage for any company. The technology breaks down operational and resource siloes, delivers stability and reliability for traditional applications, and offers speed and agility for new web and cloud-native applications—all within a single infrastructure. It is precisely what IT needs to operate effectively in the Idea Economy.

When you accelerate IT, everything speeds up. Operations teams can easily automate and accelerate internal processes. Developers can take advantage of the open API to access infrastructure resources and quicken the application-development process. This means the ideas coming out of the lines-of-business can be realized faster so the business can deliver timely, relevant experiences for customers while staying ahead of the competition and growing revenue.

With Composable Infrastructure, IT can break free from the ordinary and accelerate the extraordinary to become a value creation partner for the entire enterprise.



The answer to a truly Composable Infrastructure: HPE Synergy

HPE Synergy, the first platform built for Composable Infrastructure from the ground up, empowers IT to create and deliver new value on demand. HPE Synergy provides a single infrastructure that reduces complexity for traditional workloads and increases operational velocity for new applications and service. It is able to compose physical and virtual compute, storage, and fabric pools into any configuration for any application. As an extendable platform, HPE Synergy easily enables a broad range of applications and operational models such as virtualization, hybrid cloud, and DevOps. With HPE Synergy, IT leaps from internal service provider to valued business partner.

Learn more at

hpe.com/info/synergy

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