

How the Complexity of Cloud Creeps Up Behind You

Introduction

For users of the cloud, its key value proposition is often its simplicity. But like a graceful swan, there is often a lot of frantic energy, and complexity, just below the surface. As a cloud service provider, it's your job to do the hard work and present a graceful swan to your customers.

Your Customers Seek Simplicity.

To them, this could be a simple pay-per-use model, but for cloud providers this requires careful capacity planning to be both cost efficient and to always have available capacity. That's not always straightforward.

Enterprise users also value simple management interfaces, but again, this often needs cloud service providers to carry out the complex engineering below the surface to manage the necessary compute, storage, networking, operating systems, hypervisors – all at multiple locations.

The cloud allows enterprise customers to always have access to the latest hardware and software. But, a cloud service provider still has to manage all of the different vendors, hardware models, and software versions. **Again, more complexity for you to manage.**

It's Clear That The Cloud Is Not Simple.

Rather, it is the outsourcing of complexity from the user of cloud services to yourself, the provider of cloud services (who hopefully charges enough of a premium to make a profit).

Let's explore how complexity has recently crept up behind cloud service providers, and how you can start to reduce it within your cloud service operation.

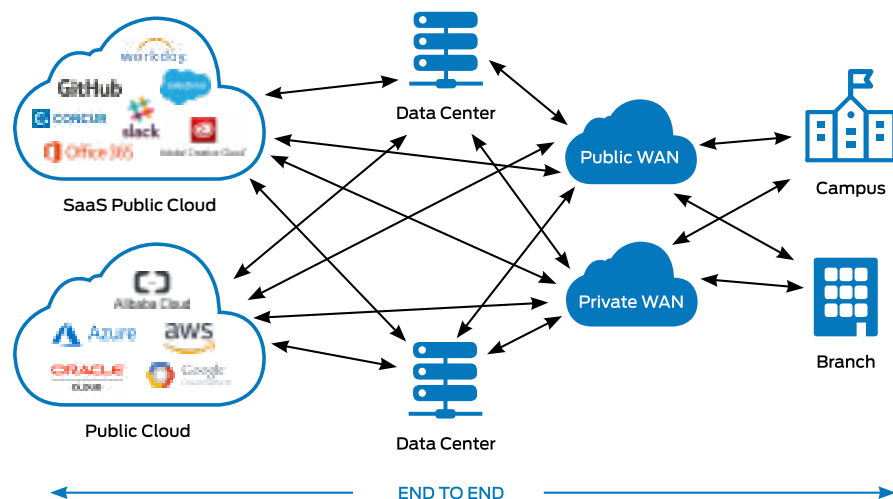


There Is No Such Thing As 'The Cloud', There Is Only Multicloud

Cloud is the new normal for enterprises. Clearly, the benefits of scalability, and the outsourcing of the complexity of the IT platform to expert service providers have great benefits for today's enterprise organizations.

However, it is also apparent that no single solution for cloud exists. At one extreme, there has been a seismic shift from running local applications on your own PC, or the office server, to SaaS applications. Only ten years ago, most businesses would have run their own email server, PBX, shared drives, CRM server, and many more. Now the normal approach for all of these applications is to run them as a SaaS application in the cloud.

While the availability of the internet is the obvious cloud enabler, it is worth noting that perhaps the biggest driver of the shift to SaaS is the smartphone. Ten years ago, most business was done via the PC, but now the smartphone is the primary device for many people, and almost everyone uses multiple devices.



This multi-device (and multi-user) model of working has driven a need to centralize data so that it can be accessed instantly from any device.

At the other end of the spectrum is the rise of the cloud in an IaaS type of model, also known as public cloud. There are fundamentally two things at the core of the value proposition for IaaS:

1. The ability to pay for use of IT infrastructure, even down to micro increments
2. Outsourcing the complexity of managing the IT infrastructure (often to someone that can do it better)

As with any service, there are some trade-offs for enterprises. Perhaps the two major ones are:

1. A loss of control as you hand over technical choices to the cloud provider
2. A price premium as the public cloud provider needs to make a profit. Though, this is only really evident when an enterprise reaches significant scale in its IT requirements

These limitations of public cloud have led to many businesses deciding that they must also use some private cloud (i.e. their own dedicated data center) capability alongside a public cloud.

But, there is another layer of complexity: many businesses often want to use multiple public cloud providers. This may be to de-risk the business, provide greater geographical coverage, or for optimized performance for different applications.

With all of this, it's clear that the future is what is now being commonly referred to as multicloud.

Businesses will increasingly use a mixture of IT infrastructure that includes SaaS applications, public cloud, and private cloud (in dedicated or shared hosting facilities).

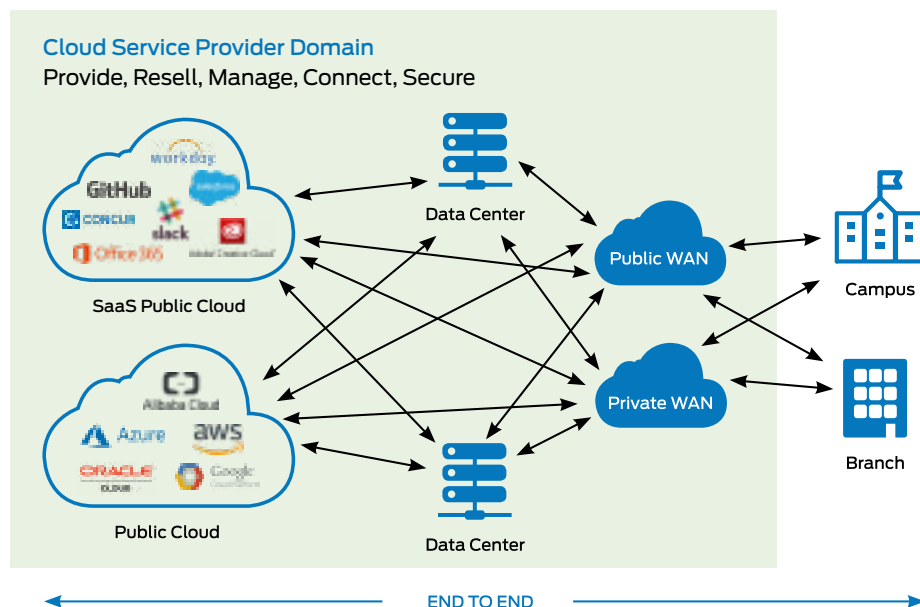
The multicloud reality has driven many simplifications for enterprise IT, but it is also bringing new complications such as:

- How can you manage the connectivity between all the clouds?
- Can you reliably deploy consistent security policies across all clouds?
- How can you manage costs and optimise where applications are deployed?

The Role of Cloud Services Providers – Making It All Work Together

As a cloud service provider, you're likely to be helping enterprise customers with many of the cloud use cases above. But, perhaps the most important part of this is the design of the overall multicloud service, and the provision of the glue to make it all work 'seamlessly' for the end customer. Inevitably, this will include your own services and alongside those of your technology partners.

For many cloud service providers, this is the key value proposition. You may be focussed upon a specific vertical, geography, or even a unique application. **But to have long-term success, all cloud service providers need to embrace making multicloud a seamless and great user experience.**



It's a Now Now World

CloudSeeds are a Juniper customer who have already embarked upon this transformation to offer simplicity to their customers. As their CEO and Founder, Kevin Fibich, explains in the video below they have to meet the customer expectations of a “Now Now World” where everything is delivered instantly



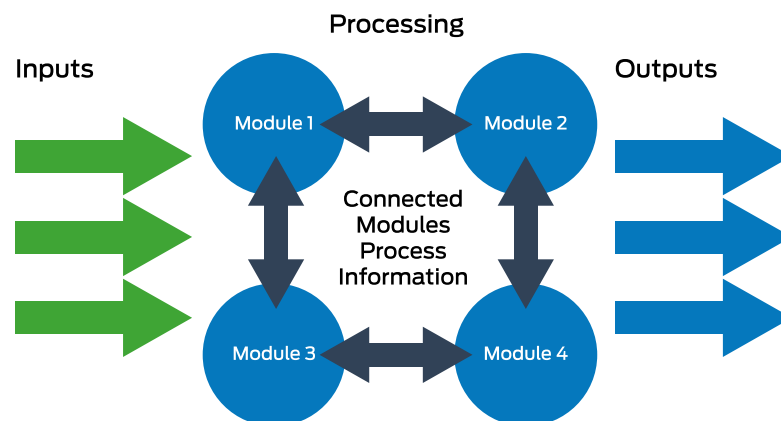
CloudSeeds automates IaaS using SDN and a high-performance network from Juniper

Keep Operations Slick and Simple

To deliver this great user experience requires a slick and simple approach. Automation is at the heart of almost every technology strategy, and in this case, it is no different. **Nobody, ever said that they want to have more manual process!**

In a very simple sense, all systems have three functions within them:

1. Information inputs
2. Information processing
3. Functional outputs



In any complex business, it is impossible to have a single software product to manage all functions across your business. So, it is inevitable that many modules must exist, all passing information back and forth in a complex system of workflows. It is these interfaces to the data processing, and within the different processing modules, that need to be automated.

In deciding to embrace more automation, two principles should apply that help to simplify the approach:

1. Limit the number of interfaces between systems, and
2. Where interfaces exist use standardized, open (and rich) interfaces between them

By taking this approach, additional components can be integrated easily. These can be commercial software, open source projects, or your own code.

This Is Well and Good, but How Do I Do It in My Cloud Business?

It's likely that your business has many years of complexity built in to it. This could be from legacy services and customers; or from many years of technology choices that have never been decommissioned (is anything ever really decommissioned?).

So, it is clear that you won't be starting with a greenfield operation. But you also can't press pause on the business whilst you re-engineer your entire technology platform. A smart approach to take here is inspired by the way Juniper tackles our customers' toughest problems.

Big Thinking

Articulate a clear strategy of where you are going. As discussed, the guiding principles here are how to secure and automate systems.

Humble Beginnings

Think about the 80/20 rule here and consider where you can achieve the greatest impact from small amounts of innovation.

Rapid Progress

Find quick wins and keep executing on them. If something isn't working, determine this quickly and re-focus on the wins whilst keeping an eye on the overall vision.

Three Simple Yet Powerful Strategies to Remove Operational Complexity in the Cloud

At Juniper, we're focussed upon networking solutions for multicloud. We have a webinar that covers this in more detail.

In this webinar, we demonstrate three practical strategies you can implement today to simplify your operation and ensure your business can service new customer revenue in the era of secure multicloud.

- **Simplify the delivery of new services using automation**
- **Gain actionable customer insights from vast operational data**
- **Manage risk through a simplified and consistent security posture**

We hope you get a moment to check it out and to talk to Juniper further about how we can help you tackle complexity head on within your operation.

[View the eGuide here](#)

Juniper Networks brings simplicity to networking with products, solutions and services that connect the world. Through engineering innovation, we remove the constraints and complexities of networking in the cloud era to solve the toughest challenges our customers and partners face daily. At Juniper Networks, we believe that the network is a resource for sharing knowledge and human advancement that changes the world. We are committed to imagining groundbreaking ways to deliver automated, scalable and secure networks to move at the speed of business.

Additional information can be found at Juniper Networks or connect with Juniper on [Twitter](#) and [Facebook](#).



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