7 New Ways to Orchestrate Your Hybrid Cloud Infrastructure

From connecting multi-cloud environments to empowering end-users with self-service – and everything in between.

stonebranch

The cloud has proven to be an engine of innovation for organizations around the world. With a host of well-documented advantages ranging from agility and scalability to granular control and potential cost-savings, it's hardly surprising that cloud adoption has been gaining momentum for years. Gartner forecasts additional growth in worldwide public cloud spending of 18.4% in 2021, amounting to a total of $304.9 billion.[1] Flexera's 2021 State of the Cloud Report puts the ubiquity of the cloud into context, revealing that 92% of enterprises currently rely on a multi-cloud strategy, with the average respondent taking advantage of 2.6 public and 2.7 private clouds.[2]

Multi-cloud infrastructures commonly run on various cloud computing and storage solutions operating as a single network. They often combine platforms from Amazon Web Services (AWS) or Microsoft Azure for storage and third-party applications from Salesforce or NetSuite for specific functionalities. With the security and compliance concerns surrounding public cloud platforms and their accompanying application latency, organizations frequently opt to build private clouds alongside their public platforms. According to research from Volterra, almost all IT managers (97%) are leaning on multiple clouds to improve resilience, address compliance challenges, and utilize the most capable solutions from a range of providers.[3] At the same time, very few companies have completely graduated from their use of on-premises infrastructures. Flexera's report estimates that 82% currently rely on a hybrid approach combining public and private clouds with on-premises systems, and Deloitte anticipates this figure will increase to 90% by 2022.[4] Disparate cloud ecosystems create their own sets of challenges, and for organizations to extract what McKinsey estimates is $1 trillion in value up for grabs in the cloud, they'll need to fundamentally rethink how their existing IT infrastructure is set up if they want to maintain current SLAs.[5]

The Perils of Progress

Today, the myriad benefits of the cloud also mean the concept has become conflated with progress, and organizations are rushing to put cloud solutions in place in a well-meaning attempt to unlock transformative change. There are two common paths CIOs take as they undergo these transitions.

First, when most of an organization's applications are running inside a datacenter supported by traditional IT, persistent issues like cost, performance and availability can understandably push a business to try and improve everything. After outlining a thorough plan, project management initiatives and a Total Cost of Ownership (TCO) relegated to the IT organization produce improvements, but they're almost always materially incremental and aren't aligned with the cloud's true intended capabilities.

[1] https://www.gartner.com/en/newsroom/press-releases/2020-11-17-gartner-forecasts-worldwide-public-cloud-end-user-spending-to-grow-18-percent-in-2021
[2] https://info.flexera.com/CM-REPORT-State-of-the-Cloud
[3] https://www.businesswire.com/news/home/20200309005328/en/Infrastructure-Security-Challenges-Threaten...
[4] https://www2.deloitte.com/xe/en/insights/industry/technology/technology-media-and-telecom-predictions/2021/cloud-migration-trends-and-forecast.html/#endnote-4
[5] https://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/building-a-cloud-ready-operating-model-for-agility-and-resiliency

Second, organizations opt out of incremental progress and go all-in, attempting to change everything with cloud-first initiatives. This approach is often spearheaded by eager, cloud-focused developers, and in certain IT organizations, it's an exciting prospect that promises to prioritize product releases and updates. Unfortunately, it comes with shortcomings. New operational silos, an unknown and increasing TCO, and emergent change that eschews any roadmap (and may or may not align with corporate objectives) are just a few of the problems with this less-measured approach. In both cases, the lesson must be realized — ***the cloud holds tremendous potential, but organizations in a rush to capitalize on it risk sabotaging their digital transformation initiatives.***

Mastering Hybrid Cloud Challenges

The transition from on-premises legacy systems to a hybrid cloud infrastructure is fraught with obstacles, but organizations will need to start by migrating certain applications, databases, and platforms that offer the greatest potential to reduce costs and make IT a profit center. That gradual shift requires IT and Operations to manage a much larger ecosystem that includes the same on-premises legacy systems along with a new cloud infrastructure. The approaches that work for the former won't necessarily apply to the flexible nature of the latter, and staff will have to learn new skillsets and potentially execute an organizational re-design.

For many enterprises — particularly those in highly regulated industries like banking, finance, healthcare, and insurance — a transition to the cloud will require "residency" in a hybrid-cloud purgatory. Although companies may want to minimize the time spent in this stage — with some parts of the business being on-premises while the others are in the cloud — this purgatory can last for years. It is in their best interest to understand what hybrid means and endure. Cloud-chasing companies might behave as though there is only on-prem or cloud, but leading organizations are addressing the hybrid stage head-on, starting with a fundamental transformation of IT infrastructure that best satisfies the consumer of the IT services.

Building a Bovine System

Remember the adage about cattle and pets? Mainframes and on-premises servers continue to anchor many enterprise IT infrastructures. These workhorses receive all the care and attention of a beloved family pet. They're irreplaceable, so when Zeus is struggling to keep up with workloads or goes down for a period of time, everyone notices, and it's all hands on deck to get him back up and running. Because of the time and money invested in carefully chosen on-premises computing systems, organizations are relegated to adding future applications and solutions based on their ability to play nice with the prized pets.

In the cloud, cattle rule. Servers are numbered instead of named, and they're organized into arrays so that the loss of any one machine will have no tangible impact on the organization's ability to deliver vital services. When a cattle rancher loses a cow, there's no need to panic because the butcher will still get the beef. With infrastructure-as-a-service (IaaS) enabled by the cloud, agility is built-in, and servers are easily replaced as needed.

In a hybrid environment, pets and cattle must function together. So, sticking with the same analogy, what enterprises really need is a sheepdog herding the livestock. As long as companies can manage this relationship, no one will get trampled, and the service delivery will continue to improve SLAs.

The Importance of Seamless Integration to Deliver the Service

I&O leaders have a wide array of infrastructure management solutions at their disposal, but almost all of these options fail to bridge the gap between pets and cattle and offer a true integration between on-premises and cloud-based platforms. It's a tall order thanks to the complexities of hybrid infrastructure management, which requires management of on-prem applications, SaaS applications, containerized services, and on-prem, mainframe, and/or distributed systems. These components are all tied together with interconnecting data pipelines and multi-cloud environments with various platforms and providers of their own, complicating the picture even further. Without integrated management tools, enterprises are left with a tangled technology stack of disparate solutions that can't hope to support today's march towards modernization.

According to the 2021 Connectivity Benchmark Report compiled by MuleSoft and Deloitte Digital, enterprises spend an average of $3.5 million per year on the labor necessary to juggle their custom integrations.[6] It isn't just about the money: the same report finds that integration issues are putting the brakes on crucial digital transformation initiatives for some 87% of organizations. Thanks, in part, to the demands imposed by manual processes, less than 40% of IT teams meet their commitments to the business side of the organization. One of the reasons for missing the mark is that compared to last year, the number of IT projects has increased by 30%, unfairly matched by a mere 6% increase in budgets.

[6] https://www.techrepublic.com/resource-library/whitepapers/connectivity-benchmark-2021/

Gone are the days when an IT project involved responding to simple helpdesk tickets fixing laptops, and setting up printers. Today, IT serves as the keystone for service delivery in nearly every business. IT departments face mounting pressure to build customer experiences that generate revenue and simultaneously reduce the risk for the organization. The cloud is a critical enabler of these innovations. However, legacy applications and manual operations still hold sway in many companies, with personnel submitting tickets for updates and making changes to production environments to resolve incidents. Because the incident resolution is such a high priority, dozens of specialists might be called in to work on a problem. When a lack of clearly delineated responsibilities makes it difficult to determine exactly whose problem it is, it shouldn't be surprising when the resolution falls through the cracks. With legacy IT infrastructure run by siloed teams using manual processes, the transition to a hybrid cloud is likely to be frustrating, expensive, and ultimately unsuccessful. To make the most of the cloud, organizations will need to reimagine their existing infrastructure to handle (on average) more than 800 apps, each of which can be expected to remain in place for about four years. Compounding the IT complexity even further, just over 25% of these applications will be integrated. Clearly, organizations need new processes based on orchestration and automation to make sense of the chaos and deliver the best possible level of service with the lowest level of acceptable risk.

IT infrastructure Reimagined with a Little SOAP and Elbow Grease

In the last few decades, IT automation has undergone a seismic shift. What began as simple batch processing evolved into more complex job scheduling, which eventually translated into enterprise-wide workload automation. Most recently, I&O teams have turned to Service Orchestration and Automation Platforms (SOAPs) – yet another step in an evolution from traditional on-prem focused workload automation tools. Gartner coined the term SOAP in 2020 to describe a category of automation-as-a-service products that could orchestrate automation across on-premises and cloud environments. SOAPs have a range of functions and capabilities which include:

[6] https://www.techrepublic.com/resource-library/whitepapers/connectivity-benchmark-2021/

1. *Simplify IT Operations Across Hybrid IT Environments*

Along the path to digital transformation, organizations will rely on infrastructure in both public and private clouds, and on-premises. SOAPs are the means to connect these systems, offering a way for IT teams to orchestrate complex workflows and link cloud platforms with on-premises applications or vice versa. Because of the SOAP architecture and the flexibility of the cloud, ITOps, DataOps, DevOps, and security teams have a common centralized solution to troubleshoot and configure/reconfigure any barriers to service delivery.

2. *Connect Multi-Cloud Environments*

With the average enterprise leveraging two to three cloud service providers, it's essential to be able to keep data and systems in sync. The legacy way of syncing clouds is via intermediate storage systems — a somewhat clunky approach that adds opportunities for something to go wrong.

SOAPs help you directly connect cloud services. By eliminating the need for intermediate storage and halving the number of copies and data transfers necessary to function, SOAPs offer significant efficiency and performance improvements. Plus, SOAPs don't stop at the cloud. In a hybrid IT environment, a SOAP will sync data and move it between multi-cloud and on-prem storage, as well as containerized microservices.

3. *Deliver Cloud Infrastructure as a Service with Infrastructure as Code*

Business users have historically relied on IT to manage infrastructure and automation for specific tools and platforms. By contrast, SOAPs allow non-IT staff to turn cloud infrastructure on and off while IT maintains central control and visibility. Instead of opening a ticket for every request and waiting on the helpdesk or cloud service team to manually create a cloud instance, end-users are empowered with automated workflows that spin up infrastructure on-demand. This level of automation is a win-win for end-users and IT Ops. Users gain speed, and IT centrally controls which cloud provider and how much cloud infrastructure is used while gaining visibility into the whole process.

[6] https://www.techrepublic.com/resource-library/whitepapers/connectivity-benchmark-2021/

4. *Alleviate ITSM Pain with Service Automation — Creating Citizen Automators*

To reduce the burden on IT service management (ITSM) resources, SOAPs equitably empower a new breed of IT resource consumers who are different from the traditional IT automation power users. Current and emerging consumers of automation include analysts, data scientists, developers, and a new generation of line of business end-users. These citizen automators expect such features as simple drag-and-drop workflow creation, the ability to trigger workflows by event, and complete visibility into workflow status/progress. In addition, they do not want to wait for manual intervention or action from the services team, so real-time access to automation is an important feature.

5. *Empower End-Users with Code, Low Code, or No-Code Access*

Another benefit of a modern SOAP is the ability to allow citizen automators to access workflow automation by preference or skillset. In a world where not all end-users want or need to know scripting and coding, SOAPs allow flexibility between using code or no-code depending upon the preference of the end-user. For example, SOAPs empower end-users to access and use automation from familiar tools like Microsoft Teams, Slack, and ServiceNow. And, of course, developers or more technical team members can dive right into the scripts and code within the platform itself.

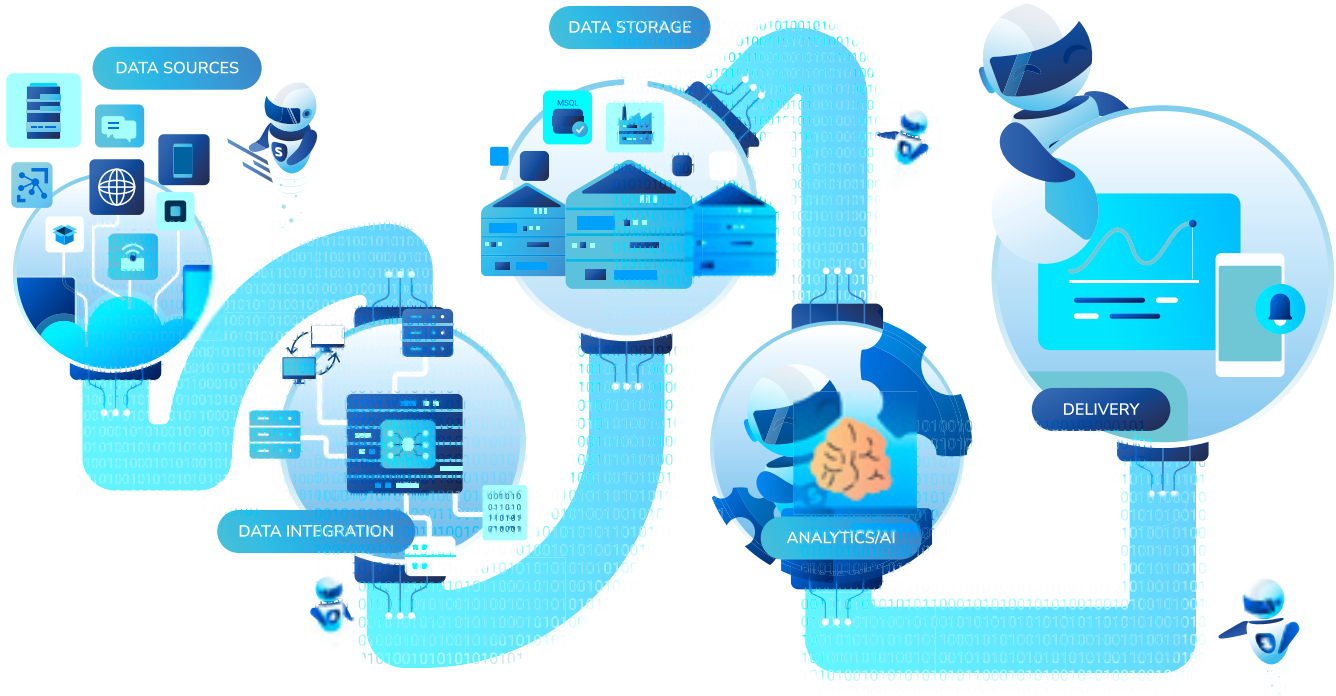
6. *Unify DevOps and IT Ops Priorities*

SOAPs help close the gap between DevOps and IT Ops with centralized control and better visibility across complex workflows — essential attributes for improved collaboration. Nothing collapses operational silos like a common solution and framework, which is why SOAPs can bring Developers and IT Ops teams responsible for cloud architecture and infrastructure together. SOAPs offer DevOps agility and independence which is much appreciated by the developers used to living and working in the fast lane. For IT Ops, the benefits come down to the decreased levels of service-ticket volumes, real-time alerts for proactive responses when needed, and the ability to drive actionable insights from the embedded analytics engine — all while keeping the Dev side happy and productive with self-service enablement. By centralizing management and orchestration of the DevOps tool-chain and supporting the DevOps lifecycle, SOAPs also help eliminate random acts of rogue automation.

[6] https://www.techrepublic.com/resource-library/whitepapers/connectivity-benchmark-2021/

7. *Orchestrate Data Pipelines End-to-End*

With advanced scheduling and managed file transfer capabilities, SOAPs are used to orchestrate the flow of data through each stage of the data pipeline, from ingestion to data storage and processing to delivery of insights to end-users. In other words, a SOAP acts as a centralized platform that manages integrations and visibility between each data tool leveraged along a data pipeline. It's important to note that there is no need to replace existing data pipeline tools. Instead, a SOAP acts as the meta-orchestrator of the solutions you already have in place, eliminating the need for custom scripts and point-to-point integrations. SOAPs also offer container support, allowing organizations to easily fuel cloud applications with databases that sit on-premises — or anywhere else.



A Bright Cloud Future

In the last decade, the cloud has overcome various self-made obstacles and misconceptions and continues to validate the forward thinkers. It now enjoys unprecedented adoption verging on creating our most ubiquitous – and chaotic – IT infrastructure environment. With the ever-expanding cloud adoption, the number of infrastructure orchestration platform solutions has also expanded. Most enterprise organizations are now tapping into the flexibility of private clouds alongside their dependence on public ones.

Managing such a large and growing service-delivery toolbox is a difficult proposition for any company, and it's made more daunting by the reliance on legacy infrastructure as they transition more assets to the cloud. The good news is that the right SOAP gives you visibility to your hybrid cloud chaos and reduce your service-delivery risk. In bringing it all together into an integrated, orchestrated infrastructure, you are able to see what can be automated with as little human intervention as possible, freeing up valuable resources for more pressing IT problems. As organizations move beyond their legacy roots, SOAPs will continue to provide value by managing the flow of data from one cloud to the next, making these platforms a worthy investment for any enterprise in pursuit of service delivery excellence.

Elevating Your IT Infrastructure

The cloud is all about enterprise-wide visibility and developing a simpler method for provisioning infrastructure and to power the applications delivered from it. It offers great speed, scale, savings, and more. But enterprises can only reach this pinnacle if they first arrive at the hybrid cloud basecamp and orchestrate the flow of data between their historic legacy systems and the cloud infrastructure that powers the application stack. For an organization to effectively glean value from this stage, the complex, disparate systems deployed in a hybrid IT environment must be simplified with effective automation and macro-level orchestration.

The Stonebranch Universal Automation Center (UAC) was created to holistically support the entire hybrid IT environment, including on-premises systems, cloud, and containerized microservices. By centralizing control of automated jobs, tasks, and workloads across multiple on-prem and cloud instances, the platform powers all real-time automation from a central platform. The UAC is designed to help enterprises orchestrate the movement of data and manage complex automated workflows that connect historically disconnected systems. The UAC is made up of six primary pillars:

- Workflow Automation and Orchestration
- Self-Service Automation
- Infrastructure and Service Automation
- Management of Data Pipelines
- Analytics and Visibility
- Event-Driven Automation

UAC is a source of business agility and digital innovation for your organization. To learn more about SOAPs, the UAC, and Stonebranch, browse through our customer success stories, fill out a contact form, or reach out to our sales team for a demo.

About Stonebranch

Stonebranch builds IT orchestration and automation solutions that transform business IT environments from simple IT task automation into sophisticated, real-time business service automation, helping organizations achieve the highest possible Return on Automation.

No matter the degree of automation, Stonebranch platform is simple, modern, and secure. Using the Stonebranch Universal Automation Platform, enterprises can seamlessly orchestrate workloads and data across technology ecosystems and silos.

Headquartered in Atlanta, Georgia, with points of contact and support throughout the Americas, Europe, and Asia, Stonebranch serves some of the world's largest financial, manufacturing, healthcare, travel, transportation, energy, and technology institutions.

www.stonebranch.com

UAC works in hybrid IT environments across multiple platforms and business applications in real-time. Available on-premises or as a SaaS-based deployment, the UAC is a modern platform built to scale with your business.

To learn more about how an automation platform can drive your business forward, contact us today.

START FREE TRIAL **SCHEDULE DEMO**

stonebranch