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Powering Network Performance

GET THE BEST OF BOTH WORLDS

Adopt a Hybrid Cloud Solution with Confidence

Cloud Computing

The Cloud has revolutionized the way end users access their data and applications. Gaining popularity with consumers at first, organizations have begun to see the benefits and are now moving more applications from their on-premise servers to the Cloud. Flexibility, accessibility and progressive pricing have made the Cloud an increasingly attractive option.

The key advantage is simple: it doesn't require a VPN to be accessed remotely. All that's required to access corporate data and applications such as email and CRMs (traditionally hosted on-premise and offering limited accessibility to external users) is Internet access and login credentials.

+ A Brief History of the Cloud

As early as the 1960s, concepts of time-sharing were starting to emerge and it was the 1990s that saw the introduction of the first virtual private networks.

The concept of clouds in the network came into existence around 2000, and only achieved mainstream status in the 2010s. It's still relatively new in its present form, which is why most people still struggle to grasp how it works.

Cloud computing is the on-demand availability of shared computing resources which are hosted elsewhere. In short, a Cloud (there are many) is a portion of a datacentre accessible through the Internet. It can be replicated across geographic zones; it can be peered with other Clouds; it can be private, or it can be operated by a Cloud provider (e.g. Amazon Web Services, Google Cloud Platform, Microsoft Azure).

+ Adoption Rate

The Cloud marketplace has grown at an incredible pace. Think of Microsoft Office, which until recently, was predominantly installed locally on end-user terminals. As early as 2017, Office 365 sales had overtaken on-premises Office sales[1]. Gartner further predicts that global IT spending will hit the $3.76 trillion mark in 2019, with as-a-service models (including Cloud offerings) at its core[2]. It's expected that over 80% of companies will be running or planning to run applications on public cloud platforms in 2019[3].

[1] https://www.cloudpro.co.uk/collaboration/productivity/6931/microsofts-office-365-is-now-more-lucrative-than-on-premise-sales
[2] https://www.gartner.com/en/newsroom/press-releases/2019-01-28-gartner-says-global-it-spending-to-reach--3-8-trillio
[3] https://www.statista.com/statistics/511467/worldwide-survey-public-coud-services-running-application

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HOW DOES CLOUD STACK UP AGAINST ON-PREMISE SOLUTIONS?

	Cloud	On-Premise
Ease of Access	**Internet Connection and login required.**	VPN access to the LAN or WAN required.
Security	Anyone with the right login information can access corporate data (mitigated by two-factor authentication) .	**Corporate data is protected behind the firewall and other threat management solutions. Remote access is encrypted.**
Scalability	**Cloud-based solutions can usually be scaled easily by adding or upgrading licenses.**	Typically involves an entire new scope of work.
Control	Limited control of the environment and its data. Client is at the mercy of the service provider's encryption and data policies.	**Full control over the environment, data and security.**
Ease of Migration	**Simple (although may incur costs).**	Complex.
Interoperability	**Often made easier by the use of APIs.**	Often limited by the corporate threat management solutions in place.
Total Cost of Owership	**Typically lower, recurring, open costs tied to the service tier or usage. Low implementation costs.**	Typically very high implementation costs. Lower maintenance costs.
Deployment	**Near turnkey, with no local adjustments required.**	Requires time, space and equipment.
Technical Expertise Needed	**Limited.**	Significant.

As businesses and applications become more interconnected, it's easy to think that Cloud-based services will become the new norm: the adoption rate certainly supports that idea.

There are several reasons why an organization would rather adopt on-premise services. The following are a few of the scenarios where a particular deployment type should be prioritized.

Security

One of the major concerns around moving to the Cloud is security. On-premise solutions that are deployed locally behind the firewall will benefit from the security measures put in place by the organization, for better or for worse. While by itself this doesn't ensure that it can't be hacked, it does ensure that no one will randomly find themselves on a login page.

Organizations with high aversion to risk, or with tight security policies can be expected to lean toward on-premise solutions.

Regulations

Beyond corporate policies, certain countries or geographic areas have regulations in place (e.g. GDPR for the European Union) that simply make it illegal for organizations to store critical data across borders. While there are now Cloud solutions that are compliant with this requirement, it may be easier to simply adopt an on-premise solution, instead of adapting to every new piece of legislation.

Lack of Interest

Sometimes, it's simply not worth it to move to the Cloud. Business functions with a centralized staff and no remote workers can be satisfied with a locally hosted application. The Cloud is meant to simplify and expand the reach of services but, as the saying goes – *"if it ain't broke…"*

Hybrid Cloud: The best of both worlds?

In reality, it's more likely that your organization will adopt a mix of both Cloud and on-premise services. After all, corporate policies may call for the payroll system to be locally hosted, but that doesn't mean that your web servers also need to be.

This is where the Hybrid Cloud comes into play. Hybrid Cloud is the use of various Cloud and on-premise services or resources, typically orchestrated from a single interface. This poses several issues, namely in terms of monitoring and interoperability.

MONITORING

With systems scattered across different environments, it can become tedious to keep track of all your applications and objects. Every new interface represents a new login and new password to remember. On-premise systems may require remote access, which adds another layer of complexity.

With these platforms unable to talk to each other, except using APIs, (which can be an ordeal by itself) there are no other ways to automatically screen and organize the countless alerts or health statuses generated by each of them.

MAINTAINING SERVICE UPTIME

As services continue to share more resources and data, keeping all of them up and running at all times is critical. An outage in one service can result in a cascade of errors, which can have severe consequences on your brand image and your bottom line.

It can be challenging to prioritize errors or issues without a way of showing how they collectively affect your business. In cases where end-users are affected, red flags can be raised by the dozens. Resolving the underlying cause will likely take care of some, if not all of the errors.

In reality, there are often signs to warn you that a service outage may occur: performance degradation, increasing synchronisation errors, etc. In a complex environment, the challenge is to know where to look, and to organize your data in a way that allows you to prevent outages altogether.

ROOT CAUSE ANALYSIS IN A COMPLEX ENVIRONMENT

The more systems you use and interconnect, the more complex it becomes to pinpoint the source of an issue. Think of companies with multiple points of sale (POS), who need to incorporate legacy on-premise systems in older branches with newer cloud-based systems, while sustaining their online store. When the unified billing system flags an error, it can be a nightmare to identify what caused it.

The challenge organizations face is that the interactions between these systems are not easily visible, except conceptually. If the IT team troubleshoots the right system on its first attempt, then it's not so bad; but with each new platform that needs to be checked, it becomes increasingly frustrating for the IT team and for the end-user.

Network Considerations

When adopting a hybrid IT environment, one aspect is often overlooked: network access. Many assume that if they can access their resources today, there's no reason to fine-tune their network infrastructure. The result is almost always the same: performance issues.

Cloud-based and on-premise environments are accessed in a very different way, as we've seen earlier. Cloud-based resources can be accessed from anywhere, provided the user has access to the Internet. Resources deployed within an organization's own servers can only be accessed from within the Wide Area Network (WAN), or through VPN. The best way to guarantee stellar user experience on a Hybrid Cloud deployment is to sustain it with an underlying Hybrid WAN architecture.

Much like the Hybrid Cloud, the Hybrid WAN leverages the benefits of multiple technologies. In this case, it would imply using private connections (such as MPLS or T1s) for traffic destined for premise-based resources, and Internet connections (such as DSL) for accessing Cloud-based resources. This has the added advantage of preventing saturation, which can occur when all of your traffic goes through a single path.

While IT System failures are growing scarcer, network failures are on the rise, and can still prevent your users from accessing strategic resources, wherever they may be hosted[4]. Making sure that your network architecture is resilient and flexible is part of the solution.

[4] https://data-economy.com/data-centre-outages-conjured-1m-direct-and-indirect-damage-costs-this-year/

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The **Hybrid Cloud** approach gives organizations a way to benefit from the security of on-premise systems, and the flexibility of a Cloud-based environment. It can however become difficult to maintain, as your data becomes scattered across different tools and systems hosted in a variety of locations. With solutions like Martello's, you can control your entire Hybrid Cloud from a single pane of glass and overcome these challenges. Backed with a Hybrid WAN architecture, you can further improve application delivery and performance while reducing your overall infrastructure costs.

Martello Solutions for Hybrid Cloud

Through its extensive suite of solutions, Martello provides clarity and control for complex IT environments. These solutions extend beyond dashboarding, and incorporate monitoring capabilities as well as fault remediation for both application and network issues.

ONE SINGLE SOURCE OF INSIGHT

All your existing monitoring, cloud, and service management tools integrate with Martello, so you can have an overview of all your data while retaining the benefits and strength of each tool, wherever they may be hosted. Track your applications across different domains and control their live status through a smart layer that sits on top of your IT environment.

The more scattered your resources are, the more difficult it becomes to monitor and maintain each of them. Streamlining and reorganizing alerts by areas of impact and priority is one of the keys to a successful Hybrid Cloud deployment.

CASE STUDY
LEIDEN UNIVERSITY MEDICAL CENTER

Leiden University Medical Center (LUMC), located in Leiden, Netherlands, is the university hospital affiliated with Leiden University. Its unique research practice, including fundamental medical research and applied clinical research, places LUMC among the top institutions of its kind in the world. Offering patient care and education in line with the latest international insights and standards they needed a solution that would continue to enable them to continue to create unique possibilities for medical innovation in Leiden and the surrounding area.

The Challenge

Cloud computing has changed the way applications and services are delivered and has transformed many businesses from private to hybrid cloud environments. Datacenters and networks are no longer easily controlled, and it can be challenging to deliver reliable service quality in hybrid cloud environments that mix public and private components. Martello is helping organizations like LUMC solve this problem.

The Solution

Martello's iQ IT visualization software integrates with the industry's most common IT monitoring and service management tools, as well as cloud-based services like Microsoft Office 365 and Azure, to deliver a range of performance data and analytics from a single dashboard. "Leiden University Medical Center has depended on

Martello's solutions to deliver insight and reliability for our mission-critical IT infrastructure for close to ten years. Over this period, Martello's solutions have grown with us and helped us manage our hybrid cloud environment more effectively," said Willem Bouwman, IT Specialist, SQL Database and SCOM Monitoring in the Information Technology and Digital Innovation department of Leiden University Medical Center. "Most recently, we've again expanded our relationship with Martello to gain better control of our Office 365 service delivery."

LUMC has integrated several IT monitoring and management tools into its iQ dashboard, including SCOM, TOPDesk, SolarWinds and Zabbix, and recently brought its Microsoft Office 365 deployment onto this system, for a single view of all relevant performance data in its IT hybrid cloud infrastructure.

"Leiden University Medical Center is both innovative and proactive when it comes to managing its IT infrastructure, a critical asset for the organization," said Stefanie Richheimer, Chief Revenue Officer of Martello Technologies. "Never satisfied with the status quo, LUMC is always looking to improve service delivery for its users, and we're pleased to work with them to provide solutions."

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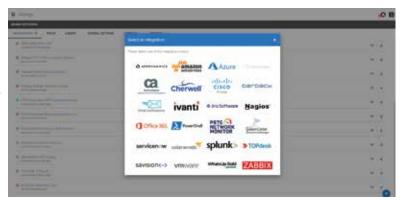
About Martello

Founded in 2009, Martello Technologies is headquartered in Ottawa, Canada with staff in Canada, the Netherlands, the United States and France. We offer solutions that deliver confidence in the performance of real-time services on cloud and enterprise networks. Our products include unified communications (UC) performance management software, IT systems visualization software and SD-WAN technology.

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FUTURE-PROOFING AND FLEXIBILITY

There's no way of knowing today what the future has in store for your business. The only thing you can do is to be prepared for it. Whether your IT environments are exclusively premise-based or in the cloud, Martello can help you make sense of these multiple streams of information.

Martello can adapt to all sorts of changes in your environment, future-proofing your IT Operations. If you need to add a tool, scale up or migrate part of your environment to the cloud, you can easily add additional integrations and control everything from a single control panel. If you need to remove a tool, you can remove an integration from your subscription and save costs.

Future proofing your IT environment is all about having the flexibility to face new challenges.

CROSS-PLATFORM AUTOMATION AND TEAM COLLABORATION

Martello allows you to automatically correlate alerts and create incidents in your Service Management tool. It helps you stay in control of your environment by organizing alert storms into actionable, easy-to-prioritize tickets. You will be able to save time and automatically fire scripts to resolve recurring issues without the need for manual intervention.

Not only can Martello map all your services and applications into organized boards, it can also automatically import all the mapping and groups from your monitoring and service management tools, so your hard work will not be wasted. You will be able to immediately assess which services and applications are available, allowing you to quickly drill down to the root cause if a service becomes affected.

Furthermore, it allows the IT Operations team to create and customize business value dashboards to present service and device health, Service Level Agreements (SLA), or the financial impact of outages, which can be personalized for each stakeholder. Calculate your SLA's coming from various applications, when applicable, and share with the CxO, or helpdesk so everyone has access to the data.

NETWORK PERFORMANCE OPTIMIZATION

When it comes to accessing resources, whether they are Cloud or premise-based, network health needs to be considered. Most Hybrid WAN solutions today are delivered with varying degrees of orchestration and automation, and are marketed as Software-Defined WAN (SD-WAN).

In addition to providing clarity over your Hybrid Cloud, Martello also allows you to upgrade your network infrastructure to gain control over application traffic, thus improving its performance.

By relying on Deep Packet Inspection, agent-based testing and various other monitoring mechanisms, Martello can proactively redirect traffic across network connections (i.e. links) to optimize overall network and application performance. This is a safe way to ensure that network outages don't get in the way of your business critical operations.

Conclusion

Cloud computing has come a long way since the early 2000's, and the demand for more flexibility in business has encouraged it to evolve over the last almost two decades. The mobile workforce has demanded the ability to access their email, files and internal infrastructure while away from the office, to allow them to travel for business or be away on personal matters. Having a Cloud infrastructure allows for business continuity, even if an employee can't be at their desk.

Moving to the Cloud can be challenging, but with the right monitoring and visualization tools, as well as the right infrastructure in place, the benefits vastly outweigh the costs. Whether you're adopting a Hybrid Cloud solution to leverage the benefits of multiple technologies, or you're looking to add to your existing configuration, the Cloud can offer you the flexibility to future proof your IT environment.

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Martello Technologies Group Inc. (TSXV: MTLO) brings clarity to complex digital environments and control of evolving technologies. Their solutions monitor, manage and optimize the performance of real-time services on cloud and enterprise networks, while giving IT teams and service providers control and visibility of their entire network infrastructure. Martello's products include SD-WAN technology, performance management software, and IT analytics software.

Martello Technologies Group is a public company headquartered in Ottawa, Canada with offices in Montreal, Amsterdam, Paris, Dallas, and New York.

POWERING NETWORK PERFORMANCE

SOLUTIONS THAT FIT YOUR NETWORK

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