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THE ENTERPRISE COMMUNICATIONS CLOUD



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INTRODUCTION

Yes, clouds are here and they're here to stay. There's little argument against the inherent cloud benefits of immediate access to resources and services, subscription or pay-for-use consumption model, no upfront cost required to deploy hardware, and no need to over-engineer solutions to support spikes in resource needs or future growth. That's why clouds are everywhere, delivering almost everything imaginable as a service—storage, computing, applications, application or process development platforms, communications, and more.

This is great news for enterprises and many are already reaping the benefits of public clouds, private clouds or both. All the puzzle pieces seem to be falling into place when it comes to clouds, don't they? But it's still difficult to fathom the potential of a seamlessly unified enterprise communications environment—one where:

- Private enterprise clouds can communicate with public clouds and vice versa.
- Enterprise users anywhere in the world using any device can access any private/public cloud resource or enterprise application hosted at a private data center.
- And, let's not forget distributed enterprise users in branch offices, remote locations or in mobile environments. They too can communicate with each other and access corporate resources.

What is needed is a worldwide interconnecting unifier of sorts. Better yet, we need an enterprise communications cloud. Nirvana perhaps, but an enterprise communications cloud is a really exciting proposition from here on out.

On top of that, if we extend the unified environment beyond the three attributes mentioned above, it should also be able to connect public clouds to other public clouds. In accomplishing this, the worldwide interconnecting unifier essentially becomes the cloud of clouds. While an exciting proposition, let's first concentrate on what a unifier can do for enterprises now; the focus of this white paper.

ENTERPRISE COMMUNICATIONS CLOUD

The term “nirvana” may oftentimes denote the end-all, be-all that’s completely unattainable. The global enterprise communications cloud doesn’t have to be impossible. The virtualization technologies and networks of the world all exist, but it does require a wholly different cloud architecture and service provider. The enterprise communications cloud requires an architecture built from the ground up with the intent of becoming the unifier, with the inherent openness, scale and ubiquity and, most importantly, intellectual understanding and ability to serve for the good of all, not a few. Let’s take a deeper look into the key attributes of this unifying communications cloud model.

- **Open** - Open means allowing communications within the distributed enterprise, as well as to and between various private and public cloud services over any mix of underlying networks or underlying network carriers. It needs to connect to anyone and everyone. And it must do all of this while providing consistently high quality communications, application performance and security throughout.
- **Ubiquitous and Work at Entry** - This architecture needs to support a wide range of enterprise applications, including real-time, delay-sensitive applications. This is not an easy task, particularly as companies become more distributed and expand their presence around the world. This cloud needs to address application timeouts and slow response times, as well as the increased exposure to security threats when security resources are far from the end-users.

Therefore, the unifying cloud architecture needs to be ubiquitous. In addition to being able to access it from anywhere in the world, it needs to work immediately at or near access points. It needs to speed up applications as soon as possible. Further, it needs to immediately protect and secure the traffic coming from all sorts of end-user devices. This cloud cannot afford to route traffic to one centralized or even only a few regional data centers before it works.

- **Be a Cloud...Period** - It may seem obvious that this enterprise communications cloud needs to deliver on all the promises of a cloud. But let’s not minimize the fact that this cloud needs to be a cloud that’s open, ubiquitous and works immediately at entry. Those three elements combined make delivering on the inherent cloud benefits a non-trivial undertaking.

The cloud architecture must ensure improved application performance and less security threats or attacks in their enterprise communications environments between end-users using any device, to and from corporate resources, and to and from public and private cloud services. And it needs to deliver these services on-demand, in a highly consumable manner and with guarantees based on the end-users’ experience.

The enterprise communications cloud requires an architecture built from the ground up with the intent of becoming the unifier, with the inherent openness, scale and ubiquity and, most importantly, intellectual understanding and ability to serve for the good of all, not a few.

VIRTELA ESC (ENTERPRISE SERVICES CLOUD)

The best news is that we don't have to wait years for this unifying cloud. As mentioned previously, the virtualization technologies and networks of the world all exist. Virtela, an established and independent global managed network services company, is well positioned to deliver the enterprise communications cloud with Virtela ESC today.

Virtela operates a business model that integrates over 500 best-of-breed network carriers in the world into a multi-carrier, intelligent routing and switching infrastructure, delivering consistent end-to-end service quality. The company also offers technology- and vendor-independent services allowing its customers to deploy the best solutions to meet their unique needs. This business model, in and of itself, makes it significantly more feasible for Virtela to deliver the unifying cloud, compared with other service providers.

According to Virtela, it has built, from the ground up, a cloud architecture to be the enterprise communications cloud, optimized for enterprise networking, security and mobility. This cloud, called Virtela ESC, possesses the unique attributes discussed previously:

- **Open Cloud Architecture** - Since Virtela overlays Virtela ESC on top of its underlying multi-carrier backbone and access network, this cloud is inherently open. This openness provides credence to the company's claim of delivering any service, to any location or device, using any network. With this open architecture, Virtela ESC is seamlessly integrated with any public or private cloud such as storage, computing, and Software as a Service (SaaS). Additionally, Virtela ESC supports all enterprise locations and communications-enabled devices such as desktops, laptops and smartphones. Virtela ESC enables any-to-any enterprise communications, regardless of the underlying transport network, while ensuring end-to-end service performance.
- **Locally Distributed Cloud Close to End-users** - Within Virtela ESC, the company has Local Cloud Centers (LCC) deployed close to the end-users around the world. The Local Cloud Centers are like nearby on- and off-ramps to a virtualized worldwide network of express lanes. Virtela ESC begins to accelerate applications immediately at these on/off-ramps and provides a protective security barrier that mitigates security threats as quickly as possible.

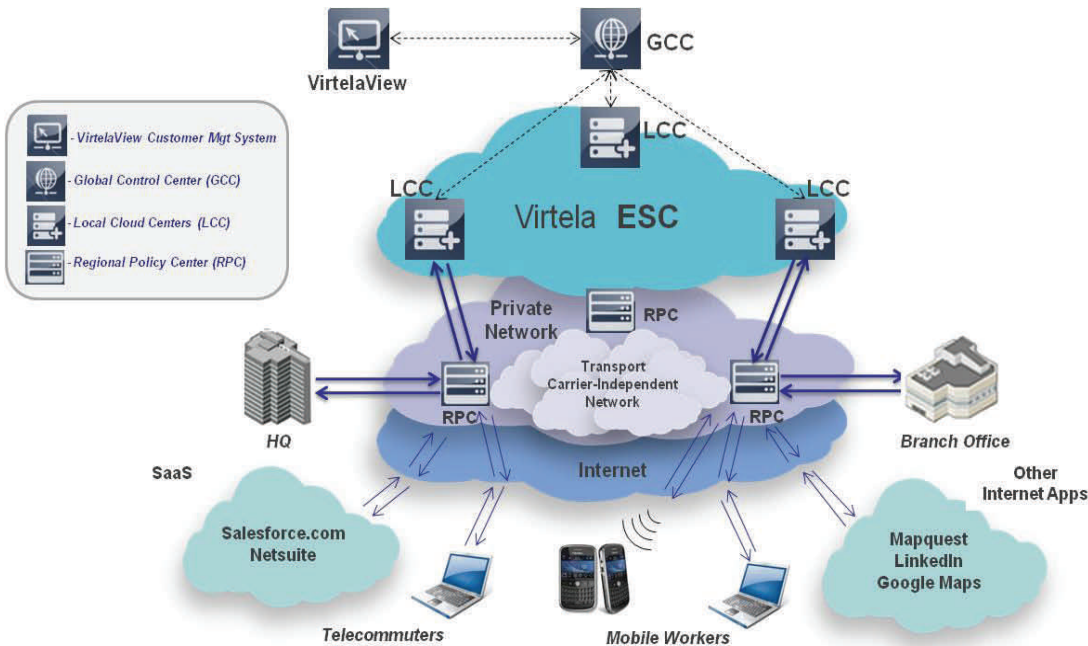
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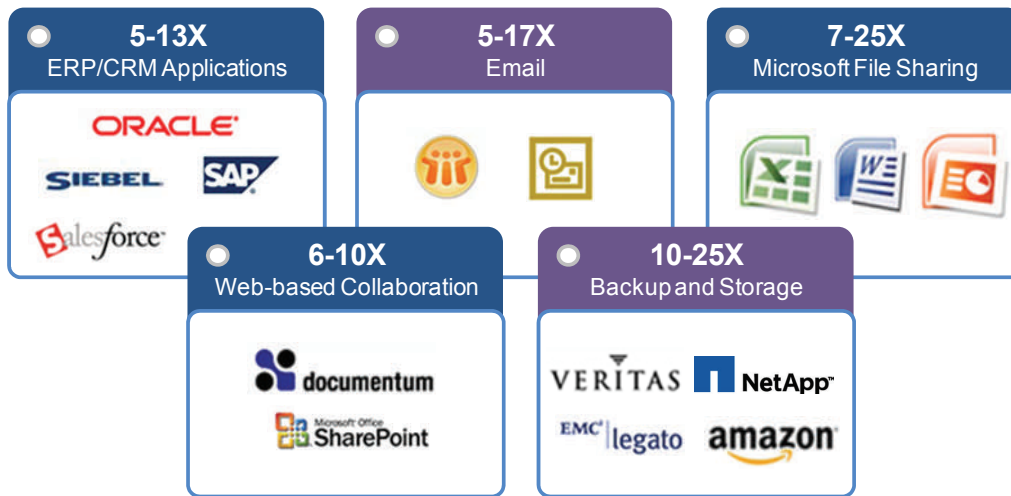
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The diagram below shows how Virtela ESC enables communications among various corporate locations, data centers and private/public cloud services via the public Internet and/or private networks.



Virtela is so confident of its ability to improve application performance that it offers a no haggle, 250% money back guarantee if end-users don't experience faster application response times.

- **Delivers consumable services on-demand at very low price points, backed by experience-based guarantees** - Virtela offers cloud-based enterprise networking, security and mobility services, enabled by Virtela ESC, such as:
 - ✓ **Application Acceleration Service** - Rather than purchase, configure, install, maintain and manage application acceleration devices at corporate sites, enterprises can turn on this service at a price that drives affordability down to the smallest of branch offices—just \$5 a day per branch office. The time and productivity benefits are substantial. According to Virtela, it has accelerated its customers' business applications by up to 25x. Examples of applications that Virtela can accelerate, and performance improvements, are shown in the figure below. Virtela is so confident of its ability to improve application performance that it offers a no haggle, 250% money back guarantee if end-users don't experience faster application response times.



Real-time distributed security services allow enterprises to mitigate security threats at the point of origin and contain the potential damage from within the cloud.

- ✓ **Real-time Distributed Security Services** - Real-time distributed security services allow enterprises to mitigate security threats at the point of origin and contain the potential damage from within the cloud. Again, no investments in hardware and expertise are required of the enterprise.

One example of Virtela's real-time distributed security services is in mitigating sleeper botnets. Sleeper botnets consist of malware that follows a two-step process. Step one: enterprise computers and servers are clandestinely infected with transparently operating botnet malware. This malware is typically acquired by visiting a contaminated website. Step two: once the operator of the botnet collects sufficient information on its intended victims (could be days, months, or even years from the time of infection), an attack sequence is launched. Virtela security service will use behavioral analysis to detect and pinpoint post-activation abnormal behaviors of botnet-controlled systems. Once identified, mitigation procedures can automatically be taken.

- ✓ **Managed Smartphone Services** - Managed smartphone services offer a range of capabilities available from the cloud, all aimed at improving an enterprise's control and monitoring of its smartphone devices and wireless usage. With this service, enterprise administrators can:
 - Configure, control and manage which applications and resources smartphones can access.
 - Configure and manage the different application access levels for smartphone users.
 - Provide smartphone end-users with self-service capabilities for various application features, formats, and functions.
 - Monitor and control smartphone wireless usage to, ultimately, lower wireless bills.

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The Last Word

The enterprise communications cloud, if done right, can quickly help companies in fully realizing the benefits of a seamlessly interconnected, globally distributed enterprise. In order to accomplish this, the enterprise communications cloud must enable fast and secure any-to-any communications between end-users using any device, corporate resources, as well as public and private cloud services using any underlying transport network.

With Virtela ESC's open architecture; locally distributed deployment; and cloud implementation optimized for enterprise networking, security and mobility; the company is strongly positioned to ultimately unify and connect end-users with end-users, end-users with clouds, and clouds with other clouds.

Additionally, Virtela's proven technology-, vendor- and network-agnostic business model; established working relationships and partnerships with various service providers; and track record of serving many distributed enterprises all over the world, places Virtela in a head start position. The company has the right pedigree to truly make the enterprise communications cloud a reality.

In fact, that reality is here today with Virtela's cloud-based application acceleration. This service accelerates applications up to 25x faster, for \$5 a day per branch office, and includes a 250% money-back guarantee. Other services, such as the company's real-time distributed security and managed smartphone services, further add to a cloud experience that will be better for all, not just for a few.

In essence, Virtela ESC is doing for enterprise networking, security and mobility what Amazon EC2™ has done for storage and computing.

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