Optimizing your cloud applications

The growing cloud

You've probably heard about "the cloud" for years. You've seen how it has taken the business world by storm, read up on why others are migrating more and more of their mission-critical applications to it and really studied the benefits it can bring.

But, what exactly is it? Cloud computing is the delivery of services — such as servers, storage, databases, software, analytics and others — using the Internet. It is generally broken down into four tiers: Business Process as a Service (BPaaS), Platform as a Service (PaaS), Infrastructure as a Service (IaaS) and Software as a Service (SaaS), with SaaS making up the lion's share of the cloud market.

SaaS makes up about **41%** of the cloud market

Source: Gartner

Never heard of SaaS? Chances are you know what it is, and you are likely using it in some form or fashion. Remember back in the day when businesses had to purchase software for a certain number of users and had to install those applications onto each individual device? Well, picture those very applications — such as Microsoft Office or Quickbooks — processing and storing your business data in secure, remote servers that are accessible to you and your employees via the Internet, no matter the device. Voila, SaaS in a nutshell!

Synonymous with "cloud applications," SaaS is showing no signs of slowing down: its market share is expected to increase to $113.1 billion by 2021, according to Gartner.

WORLDWIDE PUBLIC SAAS REVENUE FORECAST (BILLIONS OF U.S. DOLLARS)

Year	Revenue
2017	58.8
2018	72.2
2019	85.1
2020	98.9
2021	113.1
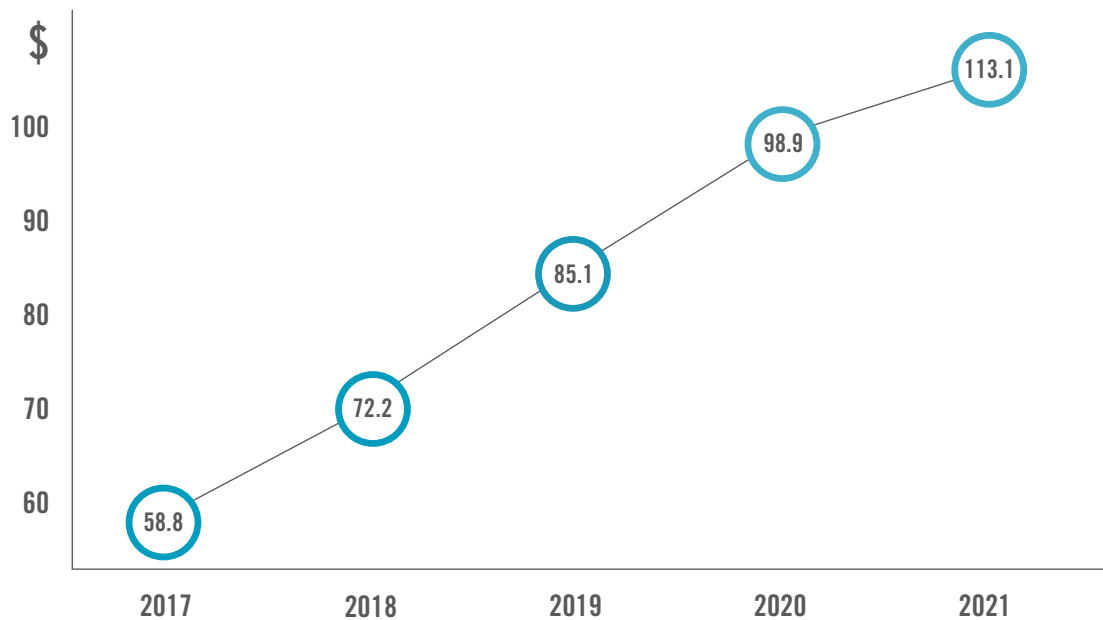
So, what's all the fuss about? Use this eBook to learn more about Software as a Service, its relationship with the Internet and some tips on optimizing your network to ensure your cloud applications are running at their best.
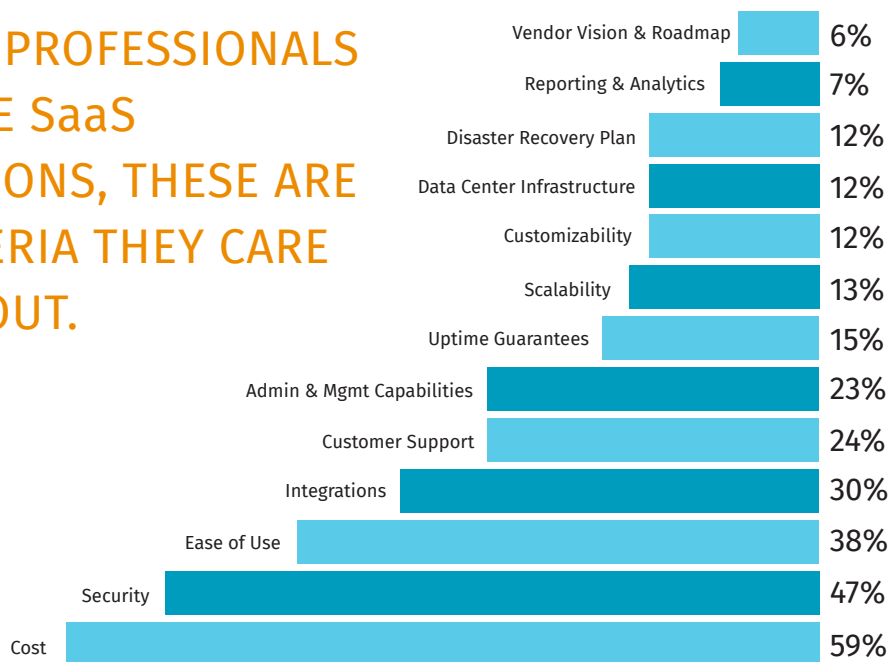
Why SaaS?

Today's companies are using an average of 16 SaaS apps, and 38 percent of businesses are running almost entirely on SaaS.

SaaS helps level out the playing field, giving small- and medium-sized businesses enterprise-quality services without breaking the bank.

It's not surprising, then, that the primary driver behind adopting cloud applications is cost.[1] With such apps, businesses are no longer paying a fluctuating capital expenditure to maintain bulky hardware or resources and are instead paying a predictable monthly expense per user.

WHEN I.T. PROFESSIONALS PURCHASE SaaS APPLICATIONS, THESE ARE THE CRITERIA THEY CARE MOST ABOUT.

Criteria	Percentage
Vendor Vision & Roadmap	6%
Reporting & Analytics	7%
Disaster Recovery Plan	12%
Data Center Infrastructure	12%
Customizability	12%
Scalability	13%
Uptime Guarantees	15%
Admin & Mgmt Capabilities	23%
Customer Support	24%
Integrations	30%
Ease of Use	38%
Security	47%
Cost	59%

Source: BetterCloud

Businesses are seeing benefits as they migrate more applications to the cloud, including, but not limited to:

- Adding flexibility to when, where and how employees can do their jobs
- Freeing up space on local computer hard drive storages
- Increasing business continuity through regular backups on servers housed off-site
- Updating software automatically
- Having more advanced security measures than what the budget may have allowed

Breaking down your business bandwidth

Business networks were originally created to support locally hosted applications. At that time, you had to purchase just enough Internet bandwidth to support email and occasional web browsing.

Now, as companies are relying more heavily on SaaS, networks are getting strained, cloud applications aren't performing as well as anticipated and employee productivity is taking a dive. Far from what you expected, right?

But, businesses don't have to be in that predicament — if only you take a good, hard look at your bandwidth consumption. Companies that are using more than 80 percent of their available bandwidth on a regular basis most likely experience drops in productivity.

Need a refresher on how to evaluate your bandwidth needs?

First, consider the following:

- Number of employees
- Number of connected devices per employee (desktops, laptops, smartphones, tablets)
- The web-based activities taking place on those devices, such as:

    - Large file transfers
    - Video conferencing
    - Streaming (music, video)
    - Managing a corporate website (updating content)
    - Digital advertising
    - SaaS applications, such as SalesForce, Office 365, Quickbooks Online, Docusign, etc.
    - Internet of Things (IoT) devices, such as alarm systems, cameras, thermostats, locks, etc.
    - Voice over IP (VoIP) phone services
    - Point-of-sale (POS) systems
    - Guest Wi-Fi access

Next, estimate the bandwidth needs of these activities and services:

1. **Identify the bandwidth needed to power high-quality voice services.**

    a. Check with your VoIP provider to get the bandwidth requirements for the service.

    b. Try online VoIP bandwidth calculators.

2. **Estimate your business Internet usage per employee.**

    a. Seek out recommended bandwidth requirements from your cloud service providers, many of which list out a suggested bandwidth or include calculators to determine bandwidth needs based on business activities, number of employees, number of devices and more.

    b. Add up basic Internet uses (email and surfing) and daily online business application uses — such as Skype for Business, OneDrive, Dropbox, Google's G Suite, Quickbooks Online, Office 365, Salesforce, DocuSign and others — giving special consideration for high-bandwidth activities, like video conferencing or large file uploads.

    c. Plan for additional bandwidth if you allow employees to access streaming sites, like Pandora, YouTube or Netflix, or if employees are connecting multiple devices to your network.

3. **Remember your business IoT devices are always connected to your network, too. IoT manufacturers may also have recommended bandwidth requirements.**

4. **Consider how much bandwidth you're willing to dedicate to a guest Wi-Fi connection ir you're planning on sharing from your office bandwidth.**

If you find that your connectivity needs are outpacing your current bandwidth, it may be time for an Internet speed upgrade. Remember, you'll want to aim for slightly more than what you determine your current needs are. Bandwidth needs double almost every 18 months, so having more than you need now will help accommodate any future demands.

When Lack of Bandwidth Isn't the Culprit

If you seem to have sufficient bandwidth to support all your employees, but your cloud application performance is still suffering, the next likely culprit is mismanaged bandwidth. And, that could look like a number of things: failing to regulate the amount of bandwidth consumed by guest Wi-Fi, failing to prioritize quality of service (QoS), allowing high bandwidth consumption for non-business activities, delegating too much bandwidth for certain applications, and the list goes on.

If your business is guilty of at least one of those, you're not alone. Two out of every three IT organizations don't prioritize applications or only do so in a static manner.[2]

But, you'll want to keep these three simple tips in mind to set your business network management on the right track:

1. **Put your voice applications first.**

    The quality of your VoIP services will start to suffer if you're running other high bandwidth applications at the same time, without prioritizing the voice traffic. A network connection that allows for QoS prioritization will ensure that your real-time voice traffic is always granted the necessary bandwidth to keep high-quality communications. This is even more important if your business runs close to your bandwidth limits.

2. **Prioritize mission-critical applications before entertainment.**

    Did you know that employees waste an average of 50.5 minutes in their workday? So what are they doing on the business network that isn't work-related? Browsing the Internet and interacting on social media are some of the big culprits, along with streaming video content.

What can you do? Take a look at your router. Most routers allow for some QoS prioritization by device or by application. Prioritize your mission-critical applications over personal applications. But, don't overprovision — dedicate too much bandwidth — to specific business applications, as doing so will tie up what's left for other business activities.

3.   Get visibility into your network.

The single most important step you can take to address poor cloud application performance and network sluggishness is to gain insight into what's actually going on.

By adding an SD-WAN overlay, you will gain both visibility and control over your business networks. SD-WAN draws on bandwidth across multiple connections and intelligently routes traffic based on predefined, customizable business policies, along with real-time network performance data. You'll get unparalleled insight into what applications are using up your bandwidth, allowing you to prioritize more efficiently. That, in turn, will dramatically improve SaaS performance and maximize your Internet investment.

Start moving your business forward to a higher-performance future by bringing the culprits of your sluggish network back in line today.

kinetic business
by windstream.

[1]BetterCloud, The 2017 State of the SaaS-Powered Workplace Report
[2]www.ashtonmetzler.com/Metzler-WAN-Survey-2014.pdf