



How the Cloud Improves the Reliability and Availability of Your Data



Anatomy of a Cloud-Based Solution

“The cloud” is a popular buzzword these days, but as with any new technology trend, there’s still a bit of confusion about exactly what it means. At the most basic level, cloud computing simply means moving the computing resources your practice depends on from your own local servers to professionally managed offsite server farms that you access through a secure connection on the Internet. This type of web-based solution is commonly referred to as “software as a service” or “SaaS.”

Modern dental practices rely on their practice management software always to be available, and they pay a high price if it fails—even for a few minutes. When they move to cloud-based practice management solutions they must have confidence that they are at least as available as traditional client-server systems.

In fact, cloud-based solutions can actually be more reliable than client-server systems—especially in dental practices or other small businesses. Because the basics of what makes a technology system available are constant, it’s important to understand the differences between how traditional software and cloud-based software provide availability. There are critical steps you can take to create the most reliable environment for a cloud-based solution.

Software Availability 101

To understand what makes a cloud-based system more reliable than client-server software, we must establish what “availability” means. In the information technology world, “availability” is the amount of time a complete system or service—such as your practice management solution—is up, running properly and fully accessible. In most cases, it is defined by two key factors: How often a system goes down and how long it takes to get it up and running again. Availability is often measured in terms of a percentage, where “99.9 percent availability” means a system is down .1 percent of the time. Although there are different ways to calculate availability, most measurements include planned maintenance outages as well as unplanned downtime caused by hardware failures, software glitches, power outages, natural disasters and other unexpected issues.

Problems with Client Server Software

Most small business systems, including traditional practice management software, have disruptions that reduce data availability for a number of reasons. First, basic

client-server software has many different potential points of failure—from a bad hard drive, failing memory chip or malfunctioning fan on a server to a glitchy router or bad network cable—any of which can bring your whole system down. Next, most dental practices don't have their own dedicated onsite IT staff. As a result, systems don't receive proper maintenance, and when problems inevitably occur it can take hours to find an outsourced IT technician to fix them. Finally, most dental practices purchase consumer-grade computer hardware and then house it in a closet where dust, humidity, temperature and other environmental factors can cause components to fail more often than they normally would. When you put all these factors together, you end up with a situation where downtime is fairly common—along with those desperate calls to your IT provider wondering how fast they can get to your office.

Throwing Money at the Problem

Large enterprises compensate for these weaknesses and potential failure points by investing in redundant, fault-tolerant commercial-grade systems, environmentally controlled data centers and dedicated teams of IT professionals. But creating the same kind of self-contained, highly available technology infrastructure for a dental practice—even a large multisite practice—just doesn't make sense. It's not that dental practices don't need the same levels of availability as Fortune 500 companies; it's just that they traditionally haven't been able to afford them.

Small Practice Work Around

Some dental practices try to compensate for risk of a failure by finding creative ways to back up their data, including manually saving data to external hard drives or relying on data backup services. Some dental practices try to compensate for risk of a failure by finding creative ways to back up their data, including manually saving data to external hard drives or relying on data backup services. Many dentists manually back up data to a portable hard drive and take it home after hours for fear that data might be lost which adds further risk of data theft. Restoring data from a backup service can be complicated and expensive.

Harnessing the Power of the Cloud

Cloud-based software-as-a-service (SaaS) solutions have become attractive options for small businesses because they fundamentally change the availability equation. With a cloud-based solution, small businesses and large can tap into the same kind of highly available technology infrastructure that enterprises use for a modest monthly fee using a basic Internet connection. This model essentially makes it possible for you to “rent” part of a robust, complete and highly available technology infrastructure, rather than trying to build and maintain one from scratch. As a result, cloud-based practice management systems can actually be more reliable and available than an on-premise client-server solution for the following reasons:

Redundant and fault-tolerant architecture

How many backup servers do you have sitting in your server closet—ready to take over if the main server fails? For most practices, the answer is zero, because this solution is not realistic. But in world-class data centers, every server, hard drive and other major hardware component has a backup ready to take over the instant something fails. And thanks to sophisticated high-availability software, the switch from a primary system to a backup system happens automatically and nearly

instantaneously. That means even if a hard drive goes bad or a server fails, your practice management system stays up and running without disruptions.

A dedicated team of technology experts

How valuable would it be to have a team of dedicated, experienced IT experts monitoring, managing and maintaining your practice management hardware and software 24/7? Once again, it's impractical for most dental practices, but standard for business class cloud-based systems. That means hardware and software problems get fixed quickly and professionally the moment something goes wrong—even on weekends and holidays. It also means there's always a team of professionals with the most advanced monitoring tools available watching every part of the system, so most issues get addressed before you ever realize there's a problem. And of course, a team of developers is working constantly to refine the software, so you get a better, more reliable experience. Unlike in-office systems, the cloud allows for these updates and fixes to be implemented immediately. This eliminates the time-consuming hassles of manual updates



More than a Server Closet

State-of-the-art network operations centers use the latest technology to deliver world-class availability.

- Redundant, fault-tolerant server architecture
- Carefully maintained hardware and software
- Clean, dust-free environment
- Precise climate and humidity controls
- Backup power generators
- Advanced fire suppression
- 24/7 monitoring and maintenance

Professional, ongoing hardware maintenance

The “If it ain't broke, don't fix it” mentality works great if you're talking about lawn mowers or refrigerators, but it's the wrong approach for maintaining business-critical technology systems. Most hardware manufacturers publish service guidelines with recommended replacement schedules, but because of limited time and resources, following those guidelines is not always feasible with your own in-office systems and hardware. Business-class data centers, on the other hand, follow these recommendations to the letter. That means with a SaaS system, key pieces of your practice management infrastructure are being replaced behind the scenes on a regular set schedule—rather than when they simply stop working.

A clean and protected data center environment

Most dental practices stash their server and other equipment in a closet or back room, where it's vulnerable to dust, temperature fluctuations, power outages or even a careless receptionist who bumps the power strip while looking for that box of envelopes. The hardware that powers many of these business class cloud providers, on the other hand, is housed in a dust-free, earthquake safe network operations center (NOC) with industrial climate and humidity controls, backup power generators, advanced fire suppression systems and much more. This type of industrial-strength environment is designed specifically to increase availability by protecting sensitive equipment and minimizing the risks of power outages and natural disasters.

Together, all of these capabilities and characteristics contribute to a best practices technology infrastructure that's capable of delivering the levels of availability that large enterprises enjoy—and most small businesses (including dental practices) have only wished they could afford.

Protecting Your Connection

If your practice management solution, including patient information, lives in the cloud rather than on a local server, what happens if your Internet connection goes down? Although a cloud-based system helps solve other availability challenges, your Internet connection is your primary potential point of failure.

Fortunately, there are some relatively simple and affordable solutions. First, you can check to see if internet service providers (ISPs) in your area can provide you with uptime and reliability statistics, so you can choose the most reliable option and get a rough baseline for how often you can expect outages. Some ISPs also offer business service agreements that guarantee response times when problems occur. After you find the most reliable option for your main Internet connection, you can also create an inexpensive secondary connection by purchasing a hotspot from a wireless carrier. With two independent connections that use different technologies to access the Internet, you can reduce the risk of Internet outages to nearly zero.

Power to Your Practice

The only major remaining point of failure to consider is an actual loss of power, which obviously affects more than your practice management system. However, with a battery-powered wireless hotspot, it's not difficult to keep your practice management solution up and running through a temporary power outage—you just need to provide power to the computers you're using to access the Internet. Of course, if you use mostly laptops and tablets, it's a non-issue, since they will switch to battery power automatically if the power goes out. For desktop machines and other essential hardware, you can purchase relatively inexpensive uninterruptible power supplies (UPSs) to provide temporary battery power to computers, monitors and other essential hardware.

Ascend to the Cloud with Dentrrix Ascend

Your practice management solution is the technology engine that drives your practice, which means you need a solid, reliable system you can absolutely depend on. Henry Schein Dentrrix Ascend is a cloud-based solution that taps into all the advantages of a security enabled, web-based architecture that gets better and smarter every time you log in. Dentrrix Ascend provides instant access to the tools you need from any location, and frees you from the expense and hassle of buying and maintaining your own hardware.

For more information on how Dentrrix Ascend can protect your sensitive data records from theft and loss, visit www.DentrrixAscend.com.

www.DentrrixAscend.com | 855.232.9493