



Plex Systems Infrastructure: The SaaS Advantage

Plex Online
White Paper

At a Glance

- There are key strategic advantages when the manufacturing enterprise requires only a web browser to access a full-featured manufacturing ERP system.
- This paper addresses concerns of those companies that hesitate to let mission-critical data leave their building.
- Read about infrastructure that incorporates the most sophisticated and secure systems available in a manufacturing environment.
- Provided is detailed information about connectivity, security, crash protection, disaster recovery, storage, and data back-up.



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Effective IT Solutions?

As manufacturers go lean and linked, many are discovering their management systems software is neither lean nor able to link locations and operations in real time. In the past that has meant either living with systems or a patchwork of systems that do not meet current needs, or making large investments in IT personnel, computer and network storage upgrades, and expensive software that will meet the needs of the company, their customers and their suppliers until it is time for the next upgrade.

Still, the fact is most manufacturers would rather not continue to divert resources into purchases of sophisticated software systems that do not represent their core business – not to mention adding costly IT resources.

That is why software as a service (SaaS) is becoming an increasingly attractive choice for manufacturers. The SaaS provider's IT experts handle it, while your company gets back to doing what it does best.

Yet, for some, there is a strong reluctance to let mission-critical data leave their building in the care of an outside vendor or be accessible on the Internet. These concerns are an understandable gut reaction based on the assumption that data is more secure if it remains inside your physical plant—however, it is an assumption that is no longer true.

The SaaS Advantage

That is why more manufacturers and providers of traditional software solutions are moving to SaaS models that meet today's competitive needs for agility and real-time information, without requiring manufacturers to make a large up-front financial outlay. Confidence continues to increase thanks to pioneering SaaS providers who are able to point to a history of successful implementation. And while some software vendors are just beginning to realize the potential SaaS benefits that exist for customers, there is one company that has years of experience in building the necessary infrastructure to sustain full SaaS in manufacturing and medical device climates.

Plex Systems has been toiling in the tough manufacturing landscape, helping companies that need to go lean in order to survive. That is why the last couple of years have seen enormous growth for Plex as it builds its SaaS components and continues to prove itself under real-life conditions, providing a system with a simple-to-use interface on the front end (no software or servers required in-house) that is backed by an infrastructure that incorporates the most sophisticated and secure systems available in a manufacturing environment.

As Plex Online is proving daily, SaaS is not only the logical lean alternative, but there are also added benefits and protections in entrusting your data to our experts.

Security

How can I be certain my data remains secure from hackers and thieves?

A company building a sophisticated infrastructure charged with mission-critical data from a growing number of locations and facilities not only spends a great deal of time building the system, it also spends a great deal of time looking at every way the system could possibly fail at any given moment, under any conditions. Plex plans for the unexpected in many different ways, including the use of a system known as Failure Mode & Effects Analysis (FMEA), a way of saying, “expect the unexpected.”



A security FMEA is continuously trying to find security holes in the system and attack vulnerabilities, staying ahead of potential hackers. One Plex customer, Ralco Industries in Auburn Hills, Michigan, reports assigning an employee who once worked for the CIA to spend a month trying to break into Plex Online. He could not do it.

The Plex Control Room is a secure environment, protected by five layers of physical security. That is a much higher level of data security than would otherwise be affordable for most companies. In addition, all activities within the Control Room are recorded via an IP camera.

Crash protection

I just “feel” safer if we back up our own servers and keep it in the building. Servers crash all the time, right? What if that happens, and you are half a continent away?

Built-in redundancy: There is a much greater likelihood that a company’s on-premises system will fail. Just compare your own company’s experience to Plex,

where there are not only backups, but backups to the backups. It is costly, but the built-in redundancies in our various systems ensure that your data remains safe and accessible by multiple fiber cables. The Storage Area Network (SAN) run by Plex is designed to be “fault-tolerant,” ensuring that there is no single point of failure that could crash the entire system. Every single operation is performed and then performed again in an isolated backup system— just in case.

Unreliable Internet

That is great that your internal servers are so safe and secure, but it seems like the weakest link here is the Internet. In our plant the Internet connection is frequently down. It is one thing for us not to be able to access our e-mail for a few hours, but right now an Internet failure would not shut down our operations. What if we outsource our software and the Internet goes down?

It is true that the single most common point of failure in any business is the Internet connection.

That is why Plex connects to three different Internet service providers for optimal connectivity and robust “fail over” connections to ensure uninterrupted service. Sprint, Verizon, and Cogent supply daily traffic. If one goes down, traffic is balanced over the other two circuits automatically through Border Gateway Protocol (BGP) and there is no perceived disruption in service.

Originally set up by the U.S. military (as was the Internet, itself), BGP was meant to ensure the survival of Internet communications in case of nuclear attacks. The Cold War ended without such a disaster, but today’s IT world benefits from its legacy with a highly stable Internet. The protocol enables autonomous routers to “talk” to each other and figure out the best path between the message’s starting point and where it is supposed to go.

Additionally, the Sprint and Verizon connections are delivered through a SONET ring, a self-healing path to your business that automatically reroutes traffic if a fiber line goes down. Fix the fiber, and SONET detects that everything is OK again.

But what if the SONET ring goes down?

All traffic will be automatically routed over the Cogent Internet connection, a “fail over” land line from a different telco utilizing a different physical path, a 100-megabits-per-second Ethernet connection.

Electrical Power

The Plex Control Center has backup systems here, too. Alternate electrical feeds are available, along with generator systems and battery operated uninterruptible power supplies.

Disaster preparedness

Our state-of-the-art data center in Auburn Hills was constructed with solid concrete and steel, using the same techniques as a bank vault. It is built to withstand high winds, tornadoes, snow storms, and other natural disasters, as well as burglary and other physical attacks. It has been designed and constructed with the most advanced principles and techniques.

But what happens if a fire, earthquake, flood or other disaster impacts that center?

Again, there is a backup. In this case, Plex has a second data center located in Asheville, North Carolina, more than 500 miles away from our main Control Center, which can be up and running quickly. As customers make data changes at the primary data center, they are streamed down to a backup SAN at the Asheville data center.

Always-on

I need real-time, on-demand, 24/7 access to data, and I don't want to wait for it.

Plex offers the first true on-demand ERP system. All of our servers are on a 24x7 support contract with Hewlett-Packard. In addition, Plex maintains a stock of spare server parts, including hard drives, hard disk controllers and other critical components. Servers are leased on an aggressive cycle so that they are frequently replaced. This ensures that Plex is using the fastest servers available at all times.

“Manufacturers are no longer burdened with managing an enterprise-class application infrastructure.”

Finally, Plex Systems experts are committed to delivering optimal performance of the system. Faster connection and processing comes from continuously improved infrastructure, including a newly implemented content switch cluster that improves processing speed for those companies with browser compression enabled.

Further, Plex Systems experts are committed to delivering optimal performance of the system. Faster end user experience comes from a continuously improved infrastructure including a newly implemented content switch cluster that optimizes the amount of data sent over the internet connection for those companies with internet browser compression enabled. This reduces Plex Online's footprint on valuable wide area or Internet connections.

Storage space

Can you hold all of my data? Will you run out of room? My business is growing. Will Plex be able to keep up?

Plex Systems' main facility can support the construction of two additional data storage modules in the future. So, as you grow, Plex will, too.

Plex servers currently host well over 142 terabytes of data for the production, test and development environments. That's more than 140 million megabytes.

Integration, uniformity

I want to get rid of our old system of competing and incompatible software programs in each department.

That is one of the key advantages of Plex Online SaaS. The software is highly configurable to meet your company's Enterprise Resource Planning (ERP) system needs, from payroll to inventory to manufacturing operations in multiple locations that require coordination with partners and suppliers. Our modules meet the latest accounting and inventory standards,

and you will not have to worry about budgeting extra money for upgrades since Plex Online constantly undergoes improvements. Everybody in your network will always be using the most up-to-date version.

Customizable

Our company has different needs than some of our competitors and the ability to institute further changes is critical.

That is why we have engineered Plex Online to be highly configurable. In addition to manufacturing operations, Plex Systems offers a customized visual control panel and configurable dashboard that will display relevant data as selected by the user for a range of environments such as medical device, food processors, automotive, aerospace and others.

Your business must meet changing competitive conditions to prosper. Plex provides that ability.

Conclusion

Plex offers you state-of-the-art software, facilities, and security along with a staff of highly trained, accessible and experienced professionals. Our SaaS model allows you to conserve capital while focusing on being competitive and meeting customer expectations in your core business, rather than building and maintaining your own costly IT systems and backups, or worrying about whether your systems are up-to-date and meet internal and external requirements and regulations. That is good for your company and a reason why Plex Online — with two decades of experience — is a leader in the growing Software as a Service field.

About Plex Online

Plex Online, built on a “Software as a Service” (SaaS) model, offers more than 350 functional modules, providing manufacturers instant access to vital information and management functions using a simple Web browser. The on-demand solution features product lifecycle management (PLM) functions such as program and change management, enterprise resource planning (ERP) functions such as accounting and finance modules, customer relationship management (CRM) features such as order entry and tracking, manufacturing execution systems (MES) functions such as production scheduling and machine integration and supply chain management (SCM) functions such as supplier quality and traceability.

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