AutoCAD® WS

AutoCAD WS Security – Cloud Computing and More

The purpose of this white paper is to discuss the importance of security in AutoCAD WS and to demonstrate the part cloud computing plays in maintaining that security.

Autodesk®

Cloud Computing Has Arrived

In 1961, John McCarthy, who later coined the term 'Artificial Intelligence', delivered an address at MIT where he suggested that computing power could be sold as a utility, like water or gas. McCarthy's ideas fell out of favor for a number of years. Then in 1999 a new company called Salesforce began to market its customer relationship management software on a subscription basis.

This was the start of what we now know as cloud computing. Today companies as diverse as Google, Apple, Microsoft and Amazon use cloud computing to support many of the services they offer. Amazon established Amazon Web Services (AWS) in 2002 and was the first to offer cloud-based services including storage and computation.

Benefits of Cloud Computing

Pricing
Cloud computing is costed incrementally on a pay-as-you-use basis. Autodesk takes advantage of the pricing benefits of cloud computing and passes them to the user, offering AutoCAD WS as a free app both on the web and for iOS and Android phones and tablets.

Virtualized resources
Cloud computing relies on the sharing of resources by a diverse group of users. This provides economies of scale and allows each client to receive the service he needs when he needs it.

Autodesk guarantees that you will always be able to access the drawings in your online account however large or small the account.

Mobility
Users can access key information wherever they are without the need to install and maintain software in multiple locations. AutoCAD WS leverages the full spectrum of cloud computing resources to deliver a design experience dedicated to the mobile world.

Automatic Updates
Cloud computing is the logical extension of outsourcing. There is no need for businesses to spend time updating their software or build transition plans for new releases. Everything is managed automatically in the cloud so that you always have the most up to date version of the product.

Figure 1. AutoCAD WS used at a construction site.

How Secure Is The Data I Upload to AutoCAD WS?
HTTP/1.1 is the most commonly used protocol today. But, HTTP is not secure by itself. Only when you combine HTTP with additional secure protocols can you achieve the tight security necessary to transfer sensitive data. This combined protocol, HTTPS, means all traffic is securely encrypted before transfer and decrypted at its destination.

All communications emanating from the AutoCAD WS web client and from the AutoCAD WS mobile app are fully encrypted and delivered over the HTTPS protocol. This is the acknowledged industry standard for data and documentation security used by international banks and internet payment services for securing the transmission of sensitive business data.

Of course the effectiveness of HTTPS can be let down if the place where are you are storing the decrypted data isn't equally secure.

Where Does AutoCAD WS Store My Data?

All data imported into AutoCAD WS is stored on Amazon Simple Storage Service (S3). This was a key decision undertaken to ensure that AutoCAD WS users can benefit from a recognized leader in data hosting and security. All Amazon Web Services deliver end-to-end security and end-to-end privacy in accordance with security best practices. Amazon's servers have achieved the highest levels of certification and accreditation for their security.

Amazon Web Services has achieved ISO 27001 certification of the Information Security Management System (ISMS) covering infrastructure, data centers, and services including Amazon Simple Storage Service (Amazon S3).

> *"ISO 27001/27002 is a widely-adopted global security standard that sets out requirements and best practices for a systematic approach to managing company and customer information that's based on periodic risk assessments appropriate to ever-changing threat scenarios."*

In addition, AWS has successfully completed a Statement on Auditing Standards No. 70 (SAS70) Type II Audit obtaining a favorable, unbiased opinion from its independent auditors. SAS70 certifies that a service organization has undergone a thorough audit of its controls relating to performance and security to protect customer data. AWS will continue with periodic audits to maintain this status.

The servers themselves are housed in secure data centers around the world.

"*Only those within Amazon who have a legitimate business need to have such information know the actual location of these data centers, and the data centers themselves are secured with a variety of physical barriers to prevent unauthorized access.*"

For more information about Amazon's server security, go here: http://aws.amazon.com/security/

In January 2011 Amazon's S3 servers were storing over 262 billion files, up by almost 150% over the previous 12 months.

NB: In the two days of disrupted service that Amazon experience in April 2011, AutoCAD WS remained **unaffected**. At no time were users unable to access their drawings in AutoCAD WS.

What If I Still Don't Want to Store My Work on Amazon's Servers?

AutoCAD WS has addressed data migration concerns with the "Connect to Service" function. This allows you to store your files with an external storage solution of your choice such as Dropbox, Box.net, Buzzsaw, or even on your own self hosted SharePoint site or File server and still view and edit them using AutoCAD WS through your web browser,

iOS or Android mobile device. Connect to Service means you can maintain the security, roles and permissions you already have in place without migrating your files to a new server.

For details about using the Connect to Service feature you can refer to the following tutorials:

- Connect AutoCAD WS with **Box.net**

- Connect AutoCAD WS with **Buzzsaw**

- Connect AutoCAD WS with **Dropbox**

- Connect AutoCAD WS with **SharePoint or other Windows Server**

Comparing AutoCAD WS

The combination of secure transfer and secure storage of data provided by AutoCAD WS is the best of all options.

AutoCAD WS is a more secure choice for uploading and transferring sensitive drawings than a popular alternative like FTP. The File Transfer Protocol (FTP) was not designed to be a secure protocol and it cannot compete with the modern security provisions of HTTPS. There are many security flaws that have been identified for FTP including vulnerability to 'spoof attacks', 'bounce attacks' and 'sniffing'.

Essentially, FTP was developed before the introduction of modern encryption standards SSL and TLS and it is unable to provide any of the built in encryption security of HTTPS.

The adoption of HTTPS as a security standard puts AutoCAD WS in the same security bracket as online email clients like Gmail, Hotmail and Microsoft Exchange. Anyone who is used to sending drawing files to clients via email will experience at least the same level of security with AutoCAD WS.

Who Can Access My Drawings in AutoCAD WS?

AutoCAD WS is designed to be both highly secure and highly collaborative. The only people who can access your drawings apart from you are the people you explicitly define as part of the Sharing process.

When you share a drawing in AutoCAD WS, you grant access to a specific user based on their email address.

Sharing can also be time-sensitive. You can invite a client or colleague to a meeting. During that time the drawing may be available to them to view and comment on, but when the meeting has finished you can remove the share so the drawing is no longer accessible to them.

At any time, you will be able to see the names and control the permissions of people with whom you have shared a drawing. There is also an indication whether the people with whom a drawing is shared are viewing the drawing at the same time.

Setting Permissions

The originator of a drawing can precisely control the sharing permissions associated with that drawing. The permissions that may be toggled are Edit and Download.

There are four possible combinations for Permissions.

Figure 2. Setting permissions in AutoCAD WS

- Edit and Download - The user receiving the Share link is able to edit the drawing and to download it for editing offline.
- Edit Only - The user receiving the Share link is able to edit the drawing, but is not able to download it and work on it offline.
- Download Only - The user receiving the Share link is not able to edit the original drawing. He may add to the drawing and mark it up without changing any of the existing objects. In addition, he may download the drawing including his mark ups for editing offline.
- No Edit and No Download - The user receiving the Share link is able to add to the drawing and mark it up without changing any of the existing objects. These markups may be performed within the AutoCAD WS application only. The user will not be able to download any version of the drawing.
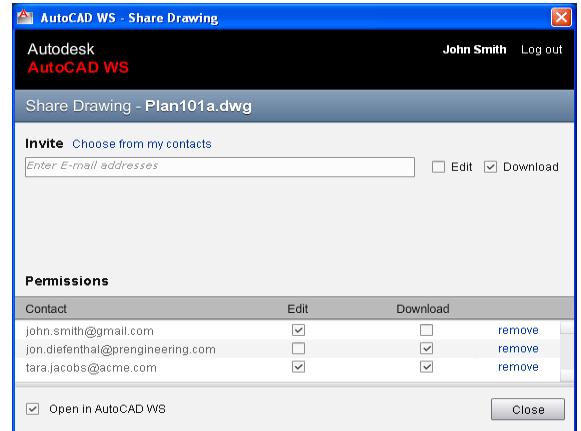
You always maintain control over your drawings and you can rescind or change sharing permissions at any time.

Summary

AutoCAD WS combines the best practices in document security at every stage from creation through transfer to storage. AutoCAD WS is able to maintain the highest standards of security by using cloud computing to provide unparalleled access and support with unlimited scalability.

More than any other medium that has existed until now, AutoCAD WS provides the security and collaborative tools needed by today's CAD users to serve their clients and colleagues efficiently and safely from anywhere on the planet.

For more information about using AutoCAD WS to store your designs securely contact us at feedback@autocadws.com.