IT10958 - Using IT Technology for Robust, Professional CAD/BIM Administration

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Class summary

Most IT professionals struggle to understand CAD, Building Information Modeling (BIM), or engineering workflow, not to mention manage those specialized technologies. Most CAD/BIM managers/administrators are power users who started as a drafter or engineer but lack advanced IT skills. Both skill sets are highly valued assets in any organization, but when the two come together, some amazing things can start to happen—Distributed File System Replication, Domain Name System (DNS), Active Directory, Group Policy, Security Groups, Sites and Services, User Account Control, DNS Aliases, Shadow Copy, and the list goes on. As an IT professional, do you understand how these technologies can affect and benefit your CAD/BIM users? As a CAD/BIM manager/administrator, do you know how to capitalize on these technologies or even what they are or why you should care? This session will explain how these 2 groups can come together and capitalize on IT to accelerate your users and not hinder them.

Key learning objectives

At the end of this class, you will be able to:

- Discover IT specific technologies and how they may be of benefit
- Discover why as back-end IT, technology matters to our daily work
- Discover best IT practices for managing CAD/BIM technologies
- Engage your counterparts in IT or CAD/BIM management to provide a best in-class experience to your users

What's the big deal?

Example:

User's downloading CAD software, SP's, etc. Multiple / Redundant copies of software all over the place wasting storage space.

Traditional IT Answer:

- Block access to Autodesk download site.
- Restrict write access to servers.
- Angry / Frustrated users
- Delays getting users what they need

Better answer:

- Proactively provide downloads everywhere needed
- Copy to server as it's available before users ask
- Create a "self help" location for users to install themselves
- Happy users
- Minimal delays getting users what they need
- Option for users who prefer to DIY

Philosophy

- Minimize user exposure to technology environment and processes
- Provide more than is needed, before it's needed
- Centralize administration
- Make your environment more complicated if it makes the users less complicated
- Build self help portals for users
- Take control of the environment
- Get to know your server and networking (CAD/BIM mgrs/admins)
- Polish your solutions (from user's perspective)
- Think about failover and redundancy
- Think about what could go wrong
- Make small improvements w/each touch
- Minimize maintenance

Technologies

Virtual Servers:

A “virtual” computer vs a physical computer.

- 1 service per server
- Minimizes disruption of other services when one fails
- Minimize hardware costs
- Backup/Restore/Rebuild easily
- Snapshot before changes to rollback easily when issues
- Minimize hardware failure risk

DNS Aliases:

Alternate name used to reference Servers / IP addresses.

- User's don't access server by name - only DNS alias
- Server change doesn't affect users
- Server change doesn't require reconfiguration of clients
- 1 simple DNS change to migrate an entire user base to a new server

Active Directory (AD) Security Groups:

AD is like the “Registry” of your network (sort of). Security groups define groups of users and/or computers that can be used to grant/deny access.

- Create groups based on user type or service type
- Minimize (if possible) nested groups
- Use groups exclusively to grant/deny access. Never assign at the user level
- Don’t use for distribution

Active Directory (AD) Distribution Groups:

AD is like the “Registry” of your network (sort of). Distribution groups define groups of users and/or computers for the purpose of Emailing large numbers of users at once.

- Create groups based on user type or service type
- Minimize (if possible) nested groups
- Don’t use for security

Shadow Copy:

Automatic “backup” snapshots of files.

- Use as a quick and dirty almost “real time” backup/restore solution
- Don’t replace traditional backup practices, used to enhance existing strategies
- Use when getting restore from tape takes too long
- Allows users to restore their own files

Distributed File System (DFS):

DFS can wrap multiple locations/servers into a single folder path masking true location of data.

- Use to allow quick access to multiple sites from a single folder
- Use to allow a single path to pull from the closest server
- Allows for a “Single” configuration regardless of geographic location
- Allows for redundant servers allowing you to take one off line for maintenance during business hours.
- Use with or without Replication
- Use to troubleshoot replication
- Do ***NOT*** use if your IT isn’t string on Active Directory skills

Distributed File System Replication (DFSR):

DFSR is the replication component of DFS. You can let DFS handle replication or use other replications technologies with DFS only providing directory service.

- Use for more static data sets needing replication
- Use for “read-only” datasets needing replication
- Not ideal for lots of changes in multiple sites
- Does NOT provide real-time file locking across servers

Alternative Replication technologies:

- Manual Copy
- RoboCopy
- PeerSync
- GlobalScape
- Panzura
- Autodesk Vault
- Bentley Projectwise
- Dropbox, etc.

Registry Edits:

Registry is the “Brains” behind most of your system and software

- Use Registry imports to control settings
- Can be easily turned into a “self help” portal.
- Can automate config / eliminate manual config

Path Variables:

Built in System Variables that take you to a specific path when the path may vary based on system or user.

- Use in shortcuts
- Use in scripts (Batch files, VBScript, PowerShell
- Provides a more resilient solution less prone to editing

Offline Files:

Horribly, horribly implemented technology that can be your friend if you're willing to put in the time.

- Only use for read/write data that's for a SINGLE USER
- Do ***NOT*** use for enterprise rear/write data
- Can be used (cautiously) for enterprise read-only data
- One of most hated technology by IT professionals
- You can't support it unless YOU use it.
- Use Group/Local policy for greater control
- Use to provide "single" config whether online or offline.
- Minimize user training…you support it or don't use it.

Scheduled Tasks:

Used to run programs or scripts automatically at pre-determined times.

- Keep servers updated
- Keep data replicated

Login Scripts:

Run programs or scripts upon user logon or logoff.

- Can use “Startup” folder
- Can use registry
  - HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Run
  - HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\RunOnce
- Can use Group Policy
  - Computer Configuration -> Windows Settings -> Scripts
  - User Configuration -> Windows Settings -> Scripts

Group Policy:

Compliance rules your systems & users

- Use to control just about everything…
  - Startup Scripts
  - Offline Files
  - …etc…

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