System Administration
IT4GIS
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Today’s Topics
- Users
- Privileges, Permissions, and Sharing
- User groups
- Other Topics:
  - Mapped drives
  - ROI
  - TCO
  - Data retention and deletion
- Think “Enterprise”

Users
- Local
- Remote
- Account profiles
  - Guest
  - Administrator
  - Others
Privileges, Permissions and Sharing

• Privileges
• Rights
• Permissions and Sharing permissions

User Groups

• Administrators
• Guest
• Others:
  – User
  – Power User
  – Backup Operator, etc.

User “Needs”

• What is the user’s functional need?
• What is the user’s level of “sophistication” or “computer literacy”.
• What is the user’s job description.
• Do not confuse rank with authority
Assigning Privileges and Permissions

- Based on these considerations, add the user to the appropriate user group(s). This gives them Privileges
  - Basic = User
  - Advanced = Power User
  - Basic + Temporary = User + Guest
- Apply Permissions to their workspace
  - Administrator always has full control
  - The user (owner) always has full control
  - Everyone has read access only (if any)

Sharing Resources

- Files and folders
- Devices
- Important for ArcGIS
- Geoprocessing
- Servers

Ownership

- Who (one account) ultimately owns a file or folder
- Administrators can take ownership
Security

• We have talked about data integrity (information assurance) when we discussed servers.
• We now need to discuss data security (information security) in detail as it is an important topic in system administration.

Data Security

• Why is it important?
  – Aside from ethical reasons
  – There are compelling legal reasons
  – Idaho’s CyberSecurity initiative

Professional Hints and Tips

• Create passwords that are:
  – Strong, Unique, Random
  – Do not use the same username/password combo more than once
• Visit http://www.passwordmeter.com

What did you learn?
Primary Target...

- Personal information
- So, how can we secure the desktop?
  - Disable anonymous log in
  - Use Firewalls
  - Employ Intrusion Prevention/Intrusion Detection software/hardware at the LAN (AKA IP-ID or IDS [Intrusion detection systems])

The Desktop

- Well-trained/educated workforce
- E-mail is an easy “IN”

Professional Hints and Tips

- Administrators should consider increasing authentication requirements
  - What is authentication?
  - Proving your credentials that then give you access to the system and network, where you have privileges and permissions
Authentication

- Single factor
- Two factor
- Three factor

Questions & Other Topics

Mapped Drives

- Remote drives
- Same as “Connect to Folder” with ArcGIS
**ROI**

- Return on investment

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**Policies**

- Writing and seeking approval for administration policies or procedures
  - Data retention and deletion
  - Data sharing
Considerations

- Once you decide what must be kept, you must still consider:
  - Format of data in archive
  - Archiving media
  - Archiving frequency
  - Task delegation
- In Idaho, Geospatial Data are listed as perpetual records

Thinking Enterprise

- What is meant by the term “Enterprise”

An Enterprise...

- Is Amorphous
- Shrinks and swells with the scope of the question, problem, or task
- Works toward a “goal” as a group
- Is connected
GIS and the Enterprise

• GIS is part of the enterprise
  – Tends to be a technical resource
  – Information supplier
  – Analyzer
  – Integrator
• GIS is NOT
  – THE enterprise
  – THE decision maker

A GIS Manager Must

• Keep the “goal” of the enterprise in mind
• Communicate the benefits and capabilities of GIS to decision makers
• Understand GIS, networks, servers, system administration, ROI, TCO, and People

Key Concepts

• We have explored several important GIS and IT topics
• New terms of significance - Enterprise, ROI, and TCO
  – Keep these in mind throughout the semester along with effectiveness
Your Assignment

• Complete the exercise
• Review the GIS TReC *Data Retention and Deletion Procedures and Data Sharing* documents
• Prepare for the first exam (mid-term)
• Grad students… proposal due Friday

Questions?

Get ready for the 2-minute write

Preparation

EXAM ONE