Upgrading GIS Web Application in a Production Environment

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Abstract:

The US Army Integrated Training Area Management (ITAM) Mapper based on ArcIMS 4.0.1, SDE 8.3, Oracle 8.i and IIS 5.0 has served the US Army Training community for 4 years.

Due to increase in users, systems shelf life and demand for high end functionalities which requires the latest technology, it has become imperative for a complete systems upgrade.

The challenge of this task becomes daunting due to interaction of security baseline tool with new software, massive data repository, network traffic and need for continuous production.

This presentation will highlight challenges encountered during the upgrade.
Background:

- United States Army Europe (USAREUR) Integrated Training Area Management (ITAM), is a land maintenance program of the Army Department.

- ITAM integrates elements of operational, environmental, master planning, and other programs that identify and assess land use alternatives.

- ITAM USAREUR has taken on the challenge of delivering accurate and current training area management geospatial data in an un-classified multi-layered secure network environment to its customers, the U.S. Army Europe.

- This presentation highlights challenges encountered during systems and application upgrade.
OCONUS Sustainable Range Program RSG
Background

• USAREUR SRP GIS program was initiated in 2000

• Provide support for:
  – EUCOM
  – CENTCOM
  – AFRICOM

• Supported sites
  – 120 current
  – 25 future

• Army Range Mapper (ARM) - formerly the ITAM Viewer was introduce in 2003
ITAM Mapper
https://srp.usareur.army.mil
ArcIMS Technological Integration:

- Software Configuration
  - Windows 2000 Server
    - OS configured to handle demand of web users, data loading, and local user access
  - Windows IIS 5.0
    - Web Server configured to handle web user load
  - Oracle 8i v 8.1.7.4.9
    - Configured for ESRI ArcSDE Standards
ArcIMS Technological Integration:

• Software Configuration
  – ArcSDE 8.3
    • Configured and tested to ESRI Standards for data loading and ArcIMS data handling
  – ArcIMS 4.0
    • Configured by ESRI standards to serve up the data that is requested by users and the web site
  – Isapi Servlet 4.0 Connector
ArcIMS Map Servers/Services

- Utilize Image Services

- Utilize 9 services for 1 Lat-Long and 8 UTM Zones

- Specific UTM Zones covered are Benelux, Germany, Italy, Romania, Bulgaria, Morocco and Afghanistan.
ITAM Server Data Architecture and Directory Structure
Army Website Requirements:

- Migration To Windows 2003 Servers
- Migration To IIS 6.0
- Utilization of CAC Authentication for Websites
- AKO Single Sign-ON
- .Mil Network
USAREUR SRP Requirements:

- Robust and Scalable Application
- Integration of Military Tools
- Efficient System
- GUI Modification
- Flexibility To Accommodate More Services when Required
Mapper Application

- New Mapping Application based on Java
- Deploy as Packaged Archive
- Utilize Java Software to Compile and Debug Code
- Restarting IIS And Servlet Is Required Before Deployment
- Integration of Web SDZ Tool
New System Environment:

- DOD PKL/SSL,
- AKO CAC Authentication
- ASP. Net 2.0, IIS 6.0, Windows 2003
- Isapi Servlet 5.0 Connector
- ArcIMS 9.1, ArcSDE 9.1, ArcGIS Server 9.1
- Oracle 9i
Constraints:

- Data Migration
- Security (Interaction of Software with DA Baseline Application Tool)
- ArcIMS – Https Configuration
- Network Traffic
- Physical Access of Contractors to Military Installation
Challenges:

- Lack of Adequate Testing Time Before Deployment
- Inadequate Documentation On Tool Integration
- Inadequate Contractor Knowledge Of Military Systems Or Environment
- Personnel Transition
Conclusion and Recommendation:

• Testing Is Essential Before Deployment

• Army Range Mapper (ARM) successfully disseminates geographic data to US Army Europe training community.
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