The SSEC/CIMSS Web Map Service

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Outline

• Overview
• System architecture
• Example web interfaces
• Example products
• Summary
• Real-Time Demo
Web Map Service

- Open Geospatial Consortium (OGC) standard
- Digital image of geographic information
- URL-based addressing
- Independent of visualization
Why use a WMS?

• Open Geospatial Consortium (OGC) compliant Web Service.

• Ingest and process a myriad of data types with different temporal, spatial, and spectral scales and produce a suite of standard outputs.

• The outputs are independent of the client application (web browser, mobile device, Google Earth, etc.).

• The outputs have scalable complexity appropriate for audiences ranging from scientists to forecasters to pilots to policy makers.

• Output composites are easily generated by combining multiple layers from single or multiple server sources.
WMS Features

- Dynamic roam and zoom
- Product compositing
- Transparency
- Output is scaled to the display device
- Tile caching
WMS Enhancements

- Animation
- Product Ingest Manager
- Product Interface
- Overlay (polygons, contours, and text)
- Tile pre-caching
- Link to other WMS sites
Animation Control

- Adapts to varying temporal resolutions
- Transitions from current to future displays
- Author Configurable loop controls
System Architecture

Modular Design Permits:
- Flexibility
- Load Distribution
- Fault Tolerance
- Redundancy
- Scaling
- Packaging/Distribution

Server: RHEL 6
Virtual Machine Manager

CentOS VM1 (role 1)
CentOS VM2 (role 2)
CentOS VM3 (role 3)

Data

Ports: 22, 80, 5432

FTP
HTTP
PostgreSQL

Data Source

Clients
Web Apps

Google Maps

Simple Interface

http://wms.ssec.wisc.edu
Simple

- GIF or Animated GIF
- No Javascript
- Image is compressed and converted by server
- Works on wide range of clients
- Faster download
- No dynamic zoom, roam or popups
Google Maps

- Manages tiles served from WMS
- Dynamic zoom and roam
- Cached tiles
- Other APIs (Bing, Virtual Earth) are possible
Product Manager

- Lists current released products
- Ingest status of individual products
- Inspection tool

http://wms.ssec.wisc.edu/manager
Product Manager

http://wms.ssec.wisc.edu/manager
CIMSS

GOES Sounder Products
CSPP

VIIRS Granule Composites

- Stray light contamination
- Lightning streaking
SPC
Convective Outlook
AWC
Convective Outlook and SIGMET
CIMSS

DBCRAS Fire Danger Index
Notification Prototype

- Email, SMS and iPhone/Android notifications
- Configurable for regions
- GPS user tracking in native apps
- App receives notification which triggers WMS display
Upload Script

This shell script will verify and upload product data files.

Accepted formats include:
- GeoTIFF
- Shapefile
- McIDAS-X AREA

Usage: wmsupload [-h] [-u] file [product]
-h: Show help
-u: Check for update
file: Path to file
Format: /path/to/[product]_[YYYYMMDD]_[HHMMSS].???
product: Specify the product name (optional, cannot contain '_')
         Required when the file name does not contain [product]

Product List

Summary

48 products
44 on time
0 late
4 static
6 seeding cache

Link  Product  Status
24hrprecip  24hrprecip
           Running for 81s
aquafalsecolor  MODIS False Color (AQUA)
               277 tiles in 57s (0.2s/t)
WMSUPLOAD
Summary

• A WMS provides flexibility in staging a variety of data products

• A WMS can serve images to many different clients (desktop browsers, mobile devices, Google Maps, etc.)

• The use of VMs provides flexibility, redundancy, load balancing

• WMS to be installed at NSSL within the next couple of days