

TAKING ADVANTAGE OF THE CLOUD!

Turning a Tedious Delivery Process into a Thing of Beauty

Shelley Broyles - NCTCOG
Sam Moffat - Woolpert

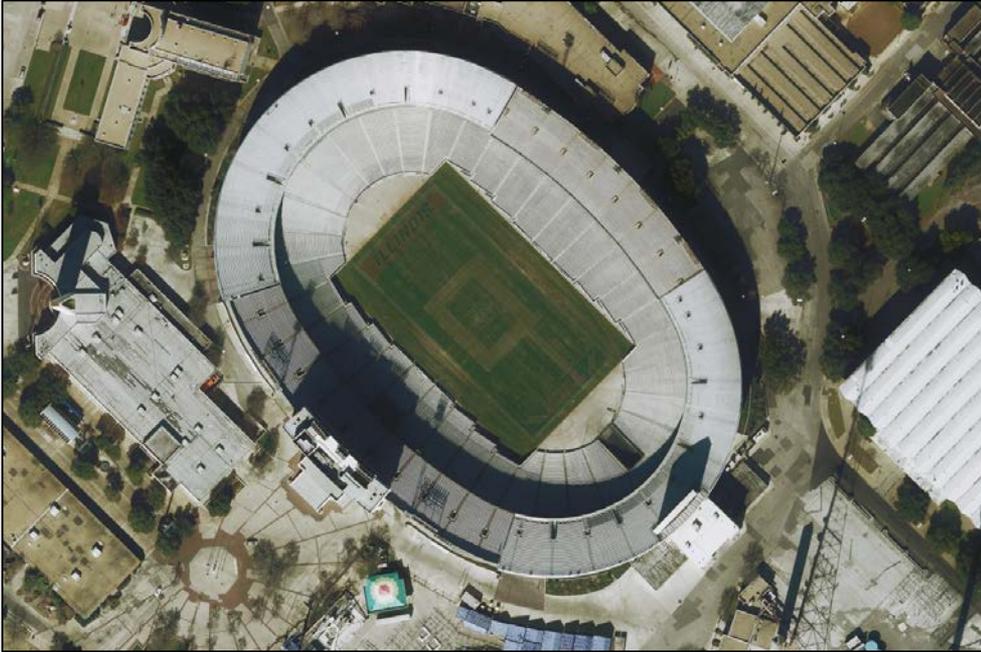
What We Will Discuss

1. History of the NCTCOG Cooperative Data Project
2. Past Data Delivery Hurdles
3. Deciding on the Cloud in 2015
4. What Worked the First Time Around?
5. What Needs Improvement?
6. What's Next?

The background of the slide features a bright blue sky filled with large, fluffy white cumulus clouds. A light blue dotted pattern is overlaid on the sky, particularly visible in the upper and lower portions of the frame. The text is centered in the middle of the image.

History of the NCTCOG Cooperative Data Project

Regional Spatial Data Cooperative Program



Cooperative purchase of
High Resolution
Orthophotography, LiDAR,
Contours, Planimetrics &
More!



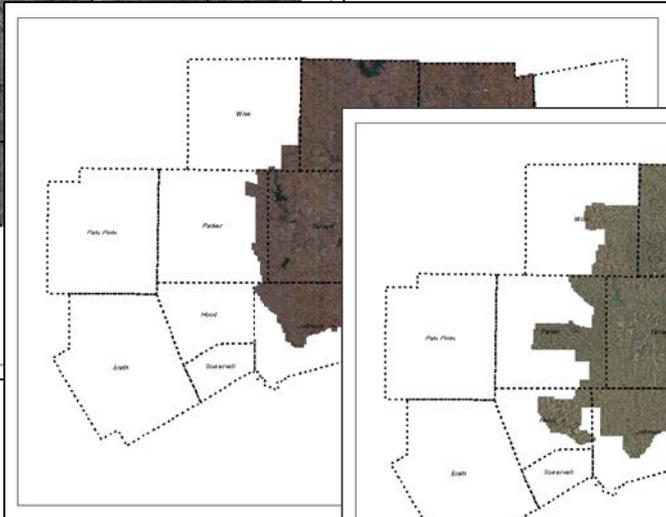
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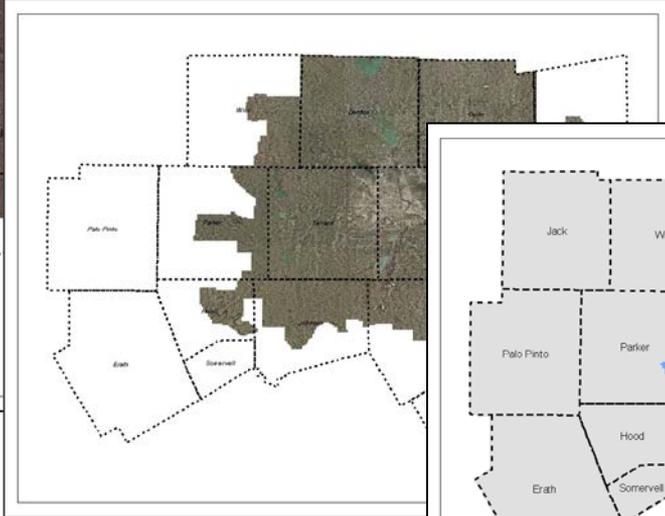




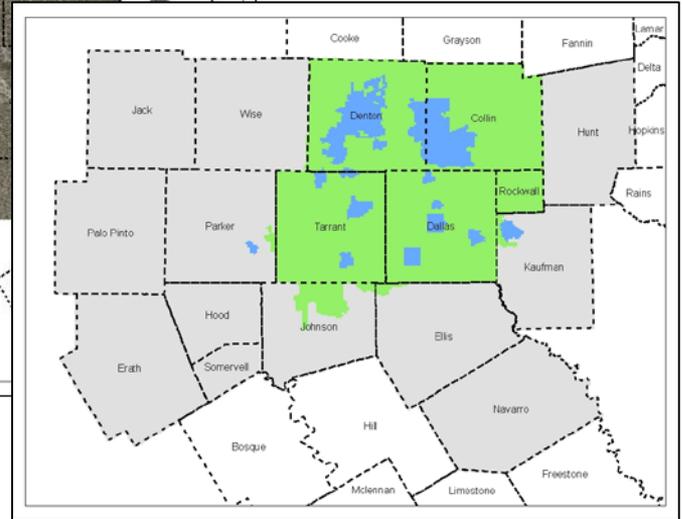
2007



2009



2013



Potential 2017



Past Data Delivery Hurdles

Discussion Topic

- Who was involved with the 2001 cooperative flight?
- What do you remember about the delivery?



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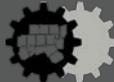
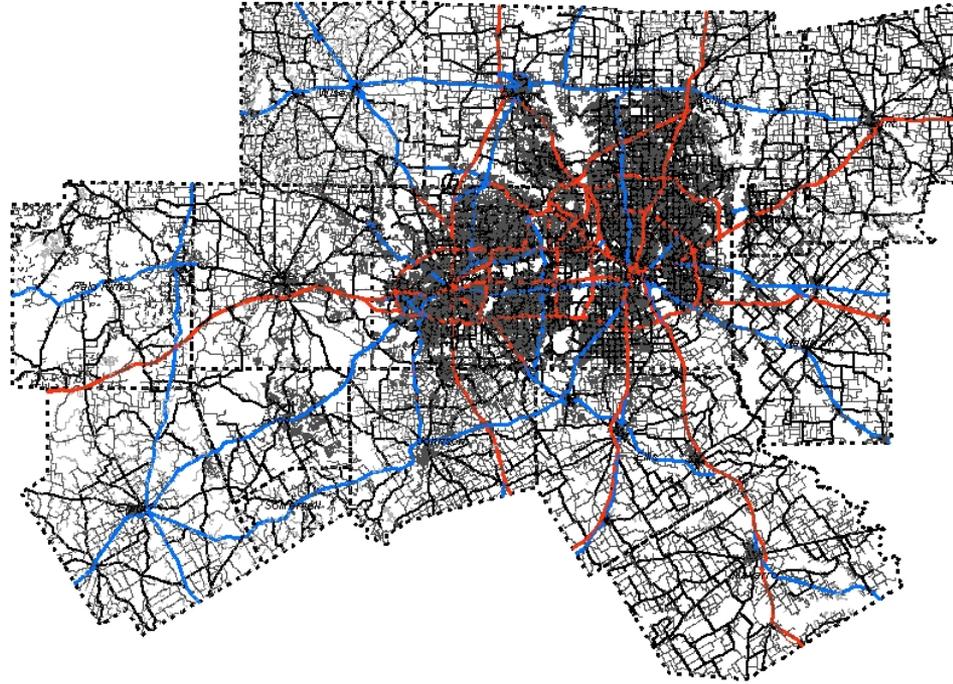


Copying Data - Batch by Batch

- Took an enormous amount of time
- Batch DVD burner/labelers are just fun (not!)
- Drives & cables everywhere
- Larger deliveries would take multiple drives (especially before the advent of the terabyte drive)
- Very easy to make mistakes



Hand Delivery & Snail Mail



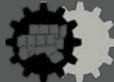
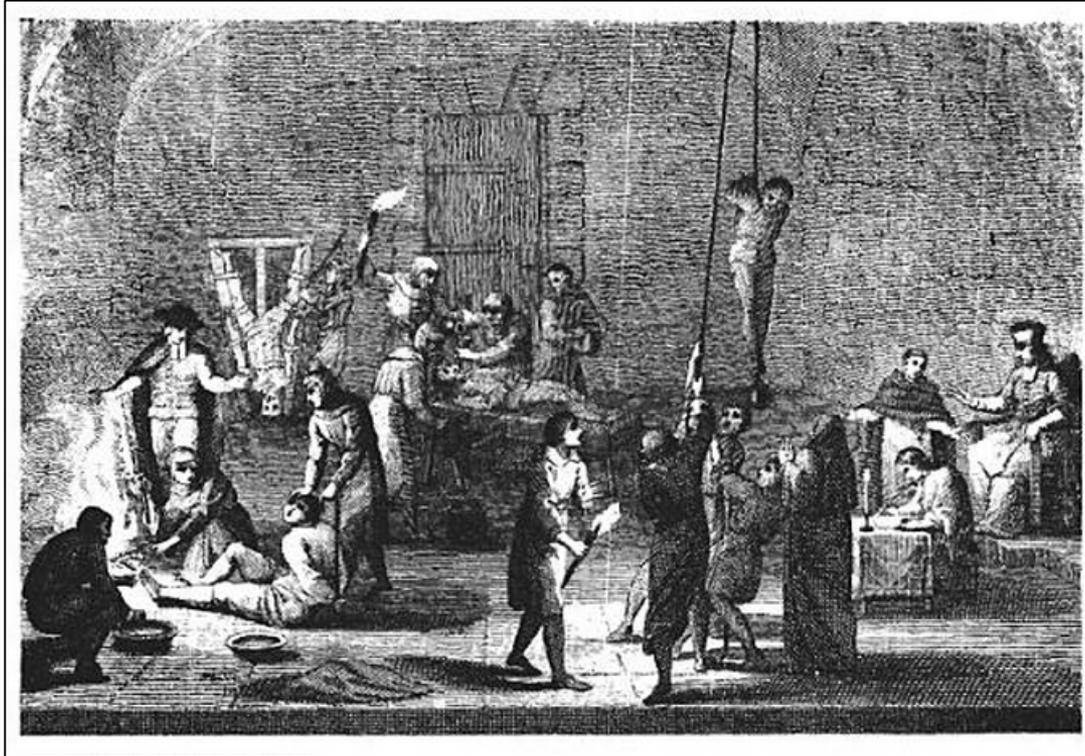
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Redelivery



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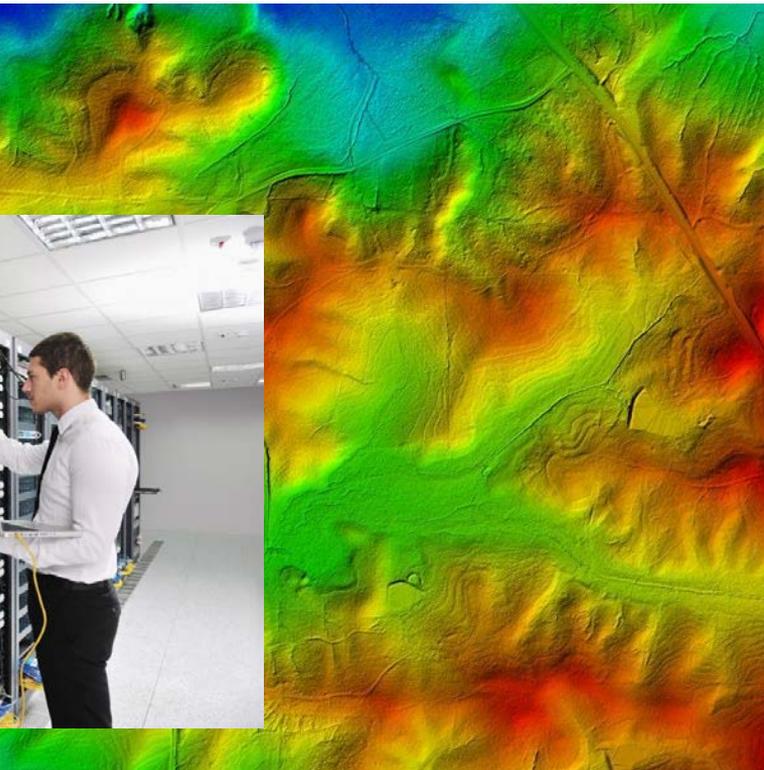


WOOLPERT

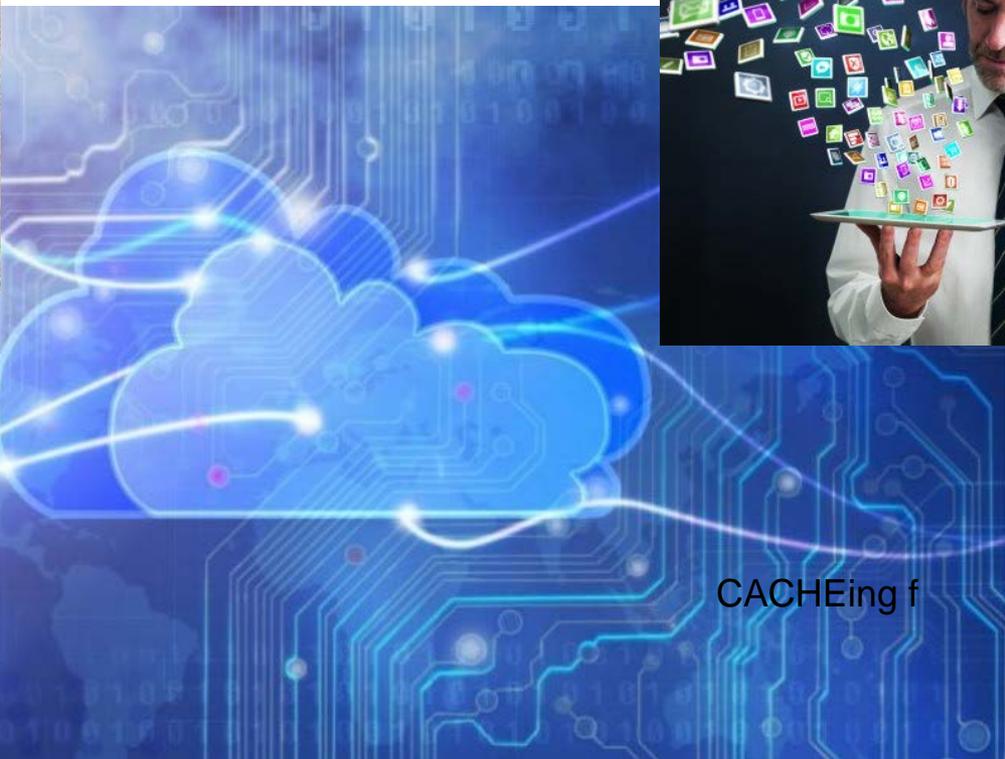
The background of the slide is a photograph of a bright blue sky filled with large, fluffy white cumulus clouds. A light blue dotted pattern is overlaid on the top and bottom portions of the image, creating a grid-like texture. The text is centered horizontally and vertically in the middle of the slide.

Deciding on the Cloud in 2015

Where We Are

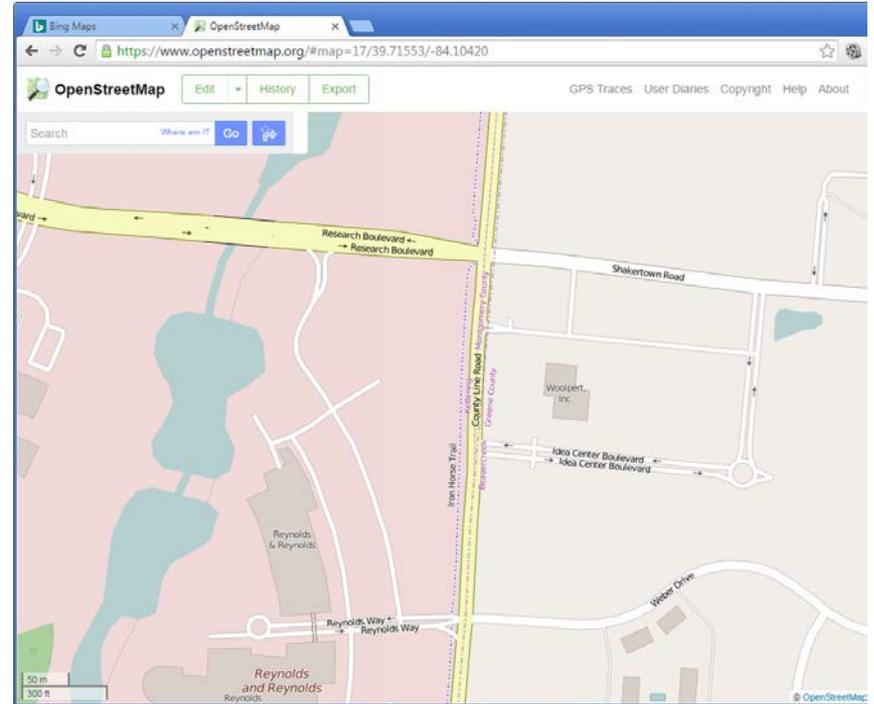
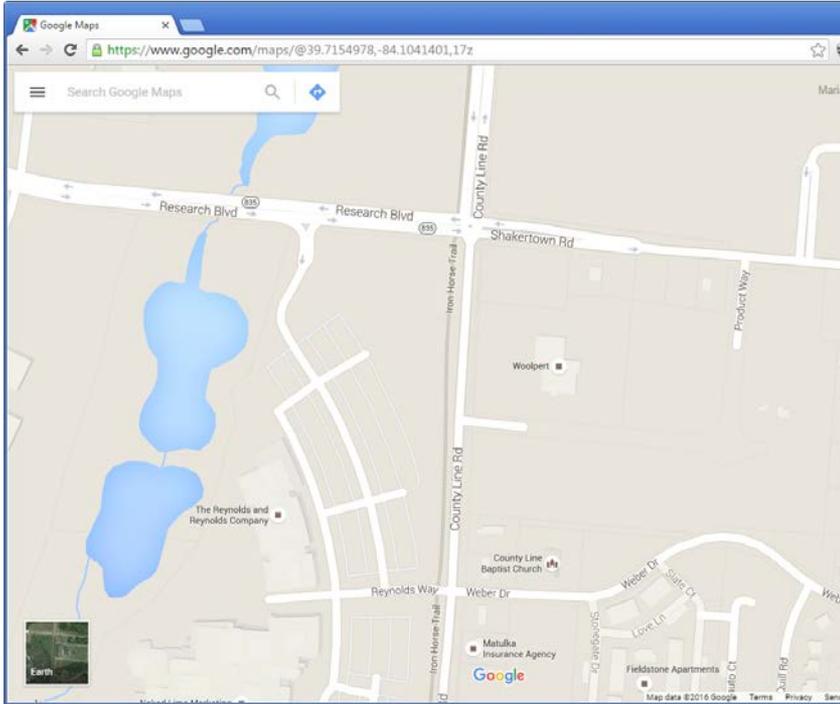


Where We Are Going



CACHEing f

Online Basemaps



Vector Data Hosting



Software as a Service (SaaS) In The Cloud

Move to host applications “in the cloud”

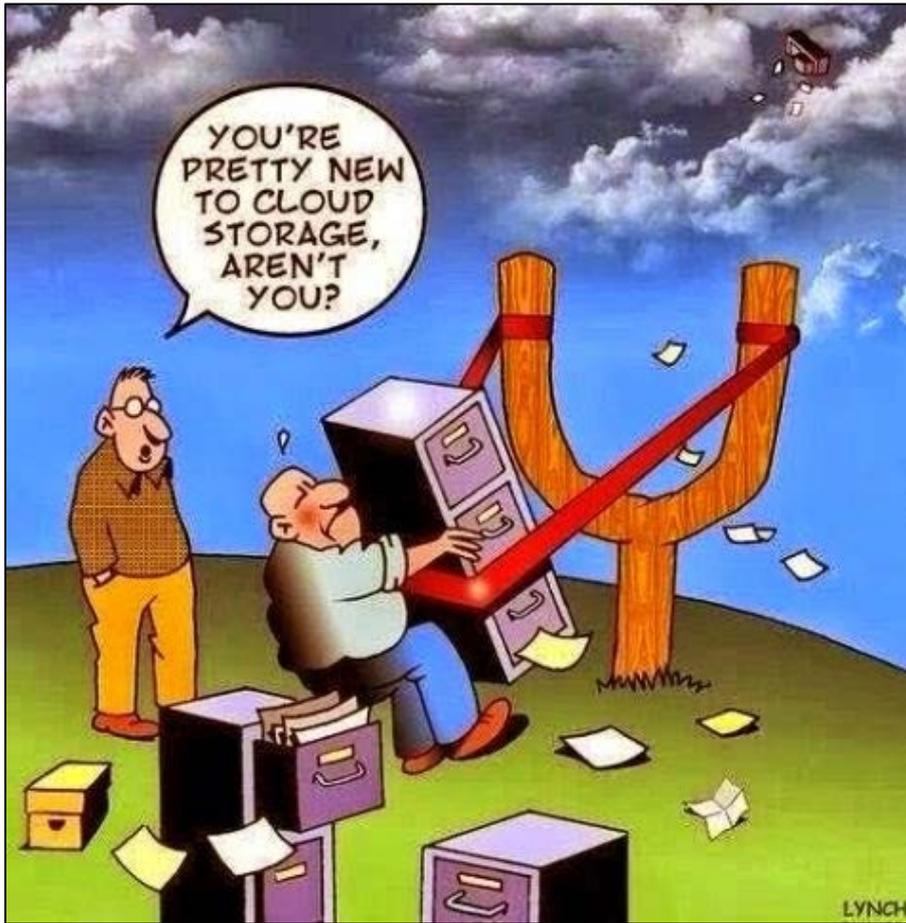
Advantages:

- Immediate release of new functionality
- No need for installation on each computer
- Easier to maintain

Disadvantages:

- Need to take browser versions into account. Older browsers may not support functionality.
- Need to take device into account. Phone? Tablet? Desktop computer?





Platform as a Service



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Amazon web Service (AWS) Download

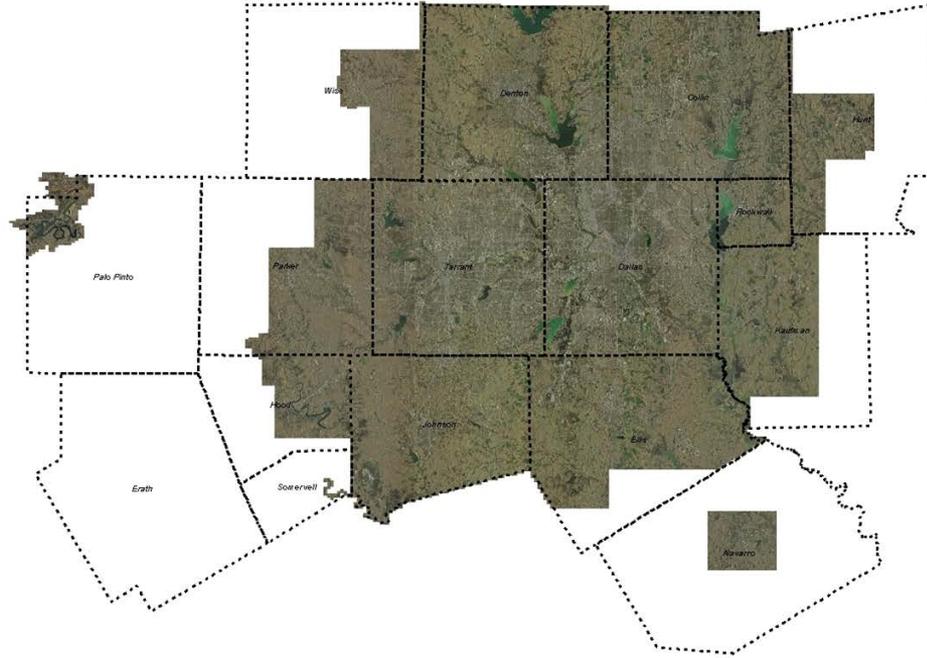
- Relatively easy to use
- Scalable
- Command line driven
- Each entity given individualized access

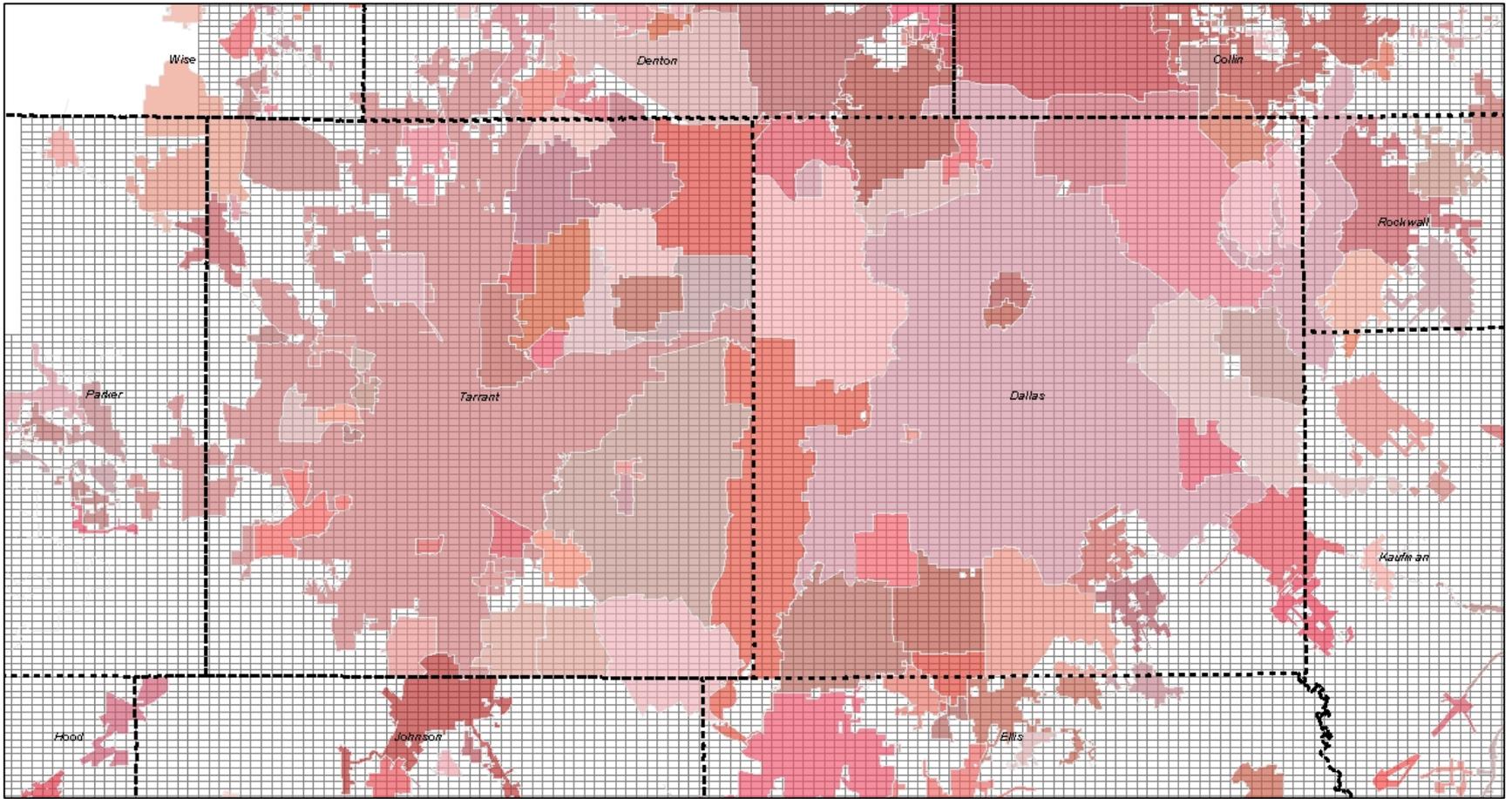




What Worked the First Time Around?

The 2015 Delivery





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Cloud Success Rate

85%

The Takeaway

- Much, much faster! Cut delivery time from months to weeks.
- Saved NCTCOG money - both in terms of man hours, gas and shipping and purchasing physical drives
- Made the participants happy. They got their data faster, had control of the process and learned a new technology.

The image features a bright blue sky filled with large, fluffy white cumulus clouds. A semi-transparent grid of small white dots is overlaid on the entire scene, creating a textured effect. The text "What Needs Improvement?" is centered in a dark blue, sans-serif font.

What Needs Improvement?

Communication

Need to improve the method and effectiveness of communication between Vendor/Client/SubClient

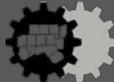
- One point of contact for each project participant
- Centralized discussion platform
- User verification of coverage area and file type prior to download
- Create Frequently Asked Questions document of known issues/fixes





509

Bandwidth Limit Exceeded



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Interface

Ortho Imagery Download Instructions

This document is intended to be a comprehensive walkthrough of setting up the Amazon Web Services (AWS) Command Line Interface (CLI), authenticating to the AWS Simple Storage Service (S3), and downloading one or more imagery datasets to your local computer.

Preparing to download imagery

Before you can download your imagery dataset from the Amazon Cloud there are a few quick steps that you must perform in order to prepare your computer to talk to the Amazon Simple Storage Service (S3).

Installing the Amazon AWS Client tools

In order for your computer to communicate with S3, you need to download and install the AWS CLI provided by Amazon at the following link: <http://aws.amazon.com/cli/>.

AWS Command Line Interface

The AWS Command Line Interface (CLI) is a unified tool to manage your AWS services. With just one tool to download and configure, you can control multiple AWS services from the command line and automate them through scripts.

The AWS CLI introduces a new set of simple file commands for efficient file transfers to and from Amazon S3.



Windows

Download and run the 64-bit or 32-bit Windows installer.

Mac and Linux

Requires Python 2.6.6 or higher. Install using pip.

`pip install awscli`

Everything you need to install the CLI can be found on this page.

Configuring the Amazon CLI

Once you have the CLI installed, you must configure it using the Access Key ID and Secret Access Key provided to you in a separate email. An example access key set is as follows:

	A	B	C	D	E	F
1.	User Name	Access Key Id	Secret Access Key			
2.	nctcogaddison	AIUAKP7BFEMTCWBKA	ZwELCH5iHjPGm6agMFES4K1L5A6rcHm3w24D			

To configure the CLI, please follow the steps below:

1. Open up the command prompt on your PC.

2. Enter the following command: "aws configure"
3. When prompted for your AWS Access Key ID enter: <the shorter of the two keys>
4. When prompted for your AWS Secret Access Key enter: <the longer of the two keys>
5. Leave the next two prompts blank, <just press enter>.

Once you've successfully authenticated you can enter the following command to get a directory listing: "aws s3 ls". Please do this now to ensure you are properly authenticated.

You should see list of buckets, one of which is labeled "nctcog"... If you don't, please contact Jon Downey.

Getting ready to download your dataset

As part of your deliverable you should receive the following two files (at a minimum) in a separate email:

- s3download.bat
- files.txt

The set of files you receive will be dependent on your deliverable. You will receive a pair of files for each deliverable to be downloaded. The names may be different.

These two files are exclusively for your use and should not be shared with others users within your organization or with other organizations who wish to have access to your data.

Before you get started downloading your imagery you need to create a folder on your computer to store your imagery in. Just make sure your folder has enough storage space to store all of your data. Once you have your new folder created, place the files you received (above) inside of that folder. For example, we created our "myimagery" folder in the "d:\temp\myimagery" location on our hard drive and placed our s3download.bat and files.txt files inside it.



If you are receiving more than one deliverable, you can make sub-directories to keep your deliverables organized. Just make sure to put a single pair of file in each sub-directory.



Discussion Topic

- Any thoughts on the 2015 delivery?
- What did you love?
- What didn't work for you?



What's Next?

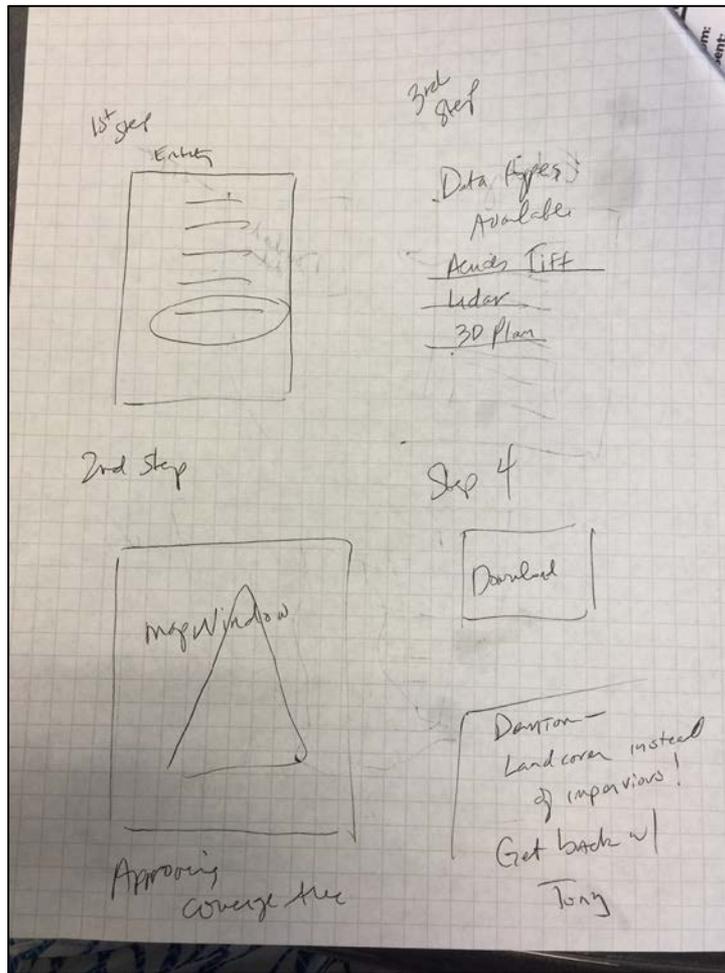
Cloud Delivery Priorities - Woolpert

- Data is secure
- Load functionality must be easy to use
- Clients download only their data
- Client has his/her own login
- Client can download data via the web
- Download raster data by tile
- Efficient upload process so PMs can upload data
- Desktop client for bulk downloads
- Hosting the data as a Web Mapping Service through the cloud.



Cloud Delivery Priorities - NCTCOG

- New interface with drop down menu - simplify the steps into just a few clicks
- Ability to download multiple products - not just raster based (LiDAR, contours, etc.) & formats
- More user-friendly



This is what Shelley wants!



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Woolpert Electronic Delivery



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ARCHITECTURE | ENGINEERING | GEOSPATIAL

Username:

Password:

Select Folder:

Progress:

File Transfer Status Log:

```

Status: Starting upload of K:\02\Projects\76367_Kocouko-WebAchCo_Bk_Imagery_2016\Ortho\Delivery\Kocouko_Co_Bk\Kocouko\Ortho16_TFSPW_Bk\2016_0202120_06.th
Status: File transfer successful, transferred 60.8 in 1 second
Status: Starting upload of K:\02\Projects\76367_Kocouko-WebAchCo_Bk_Imagery_2016\Ortho\Delivery\Kocouko_Co_Bk\Kocouko\Ortho16_TFSPW_Bk\2016_0202130_06.th
Status: File transfer successful, transferred 60.8 in 1 second
Status: Starting upload of K:\02\Projects\76367_Kocouko-WebAchCo_Bk_Imagery_2016\Ortho\Delivery\Kocouko_Co_Bk\Kocouko\Ortho16_TFSPW_Bk\2016_0202145_06.th
Status: File transfer successful, transferred 65.5 MB in 27 seconds
Status: Starting upload of K:\02\Projects\76367_Kocouko-WebAchCo_Bk_Imagery_2016\Ortho\Delivery\Kocouko_Co_Bk\Kocouko\Ortho16_TFSPW_Bk\2016_0202220_06.th
  
```

Local drive: K:\02\Projects\76367_Kocouko-WebAchCo_Bk_Imagery_2016\Ortho\Delivery\Kocouko_Co_Bk\Kocouko\

- Kocouko
 - WebAch_Co_Bk
 - DEM
 - Kocouko
 - Metadata
 - Ortho
 - RF
 - WebAch
 - Warehouse
 - Project_Management
 - RemoteSensing

Remote site: J:\Deliveries\2016\Indiana-states\del\Kocouko-county

- Box + Webport Shared folder
 - Deliveries
 - 2016
 - Indiana-states\del
 - Kocouko-county
 - documents
 - pictures
 - projects
 - url

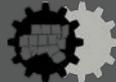
Filename	Filesize	Filetype	Last modified
Ortho16_ExtSPW_Bk		File folder	2016-09-30 10:21
Ortho16_TFSPW_Bk		File folder	2016-09-30 11:24
SmartView_EditCabs		File folder	2016-09-29 09:08
File_Index		File folder	2016-09-29 12:40

Filename	Filesize	Filetype	Last modified	Permissions	Owner/Group
Ortho16_ExtSPW_Bk		File folder	2016-11-01 11:38		
Ortho16_TFSPW_Bk		File folder	2016-11-01 12:18		
SmartView_EditCabs		File folder	2016-11-01 11:17		
File_Index		File folder	2016-11-01 11:14		

Selected 1 Directory.

Server/Local File	Direction	Remote File	Size	Priority	Status
K:\02\Projects\76367_Kocouko-WebAchCo_Bk_Imagery_2016\Ortho\Delivery\Kocouko_Co_Bk\Kocouko\Ortho16_TFSPW_Bk\2016_0202120_06.th	-->	J:\Deliveries\2016\Indiana-states...	95.5 MB	Normal	Transferring
K:\02\Projects\76367_Kocouko-WebAchCo_Bk_Imagery_2016\Ortho\Delivery\Kocouko_Co_Bk\Kocouko\Ortho16_TFSPW_Bk\2016_0202130_06.th	-->	J:\Deliveries\2016\Indiana-states...	95.5 MB	Normal	Transferring
K:\02\Projects\76367_Kocouko-WebAchCo_Bk_Imagery_2016\Ortho\Delivery\Kocouko_Co_Bk\Kocouko\Ortho16_TFSPW_Bk\2016_0202145_06.th	-->	J:\Deliveries\2016\Indiana-states...	95.5 MB	Normal	Transferring
K:\02\Projects\76367_Kocouko-WebAchCo_Bk_Imagery_2016\Ortho\Delivery\Kocouko_Co_Bk\Kocouko\Ortho16_TFSPW_Bk\2016_0202157_06.th	-->	J:\Deliveries\2016\Indiana-states...	95.5 MB	Normal	Transferring
K:\02\Projects\76367_Kocouko-WebAchCo_Bk_Imagery_2016\Ortho\Delivery\Kocouko_Co_Bk\Kocouko\Ortho16_TFSPW_Bk\2016_0202196_06.th	-->	J:\Deliveries\2016\Indiana-states...	95.5 MB	Normal	Transferring
K:\02\Projects\76367_Kocouko-WebAchCo_Bk_Imagery_2016\Ortho\Delivery\Kocouko_Co_Bk\Kocouko\Ortho16_TFSPW_Bk\2016_0202213_06.th	-->	J:\Deliveries\2016\Indiana-states...	95.5 MB	Normal	Transferring
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K:\02\Projects\76367_Kocouko-WebAchCo_Bk_Imagery_2016\Ortho\Delivery\Kocouko_Co_Bk\Kocouko\Ortho16_TFSPW_Bk\2016_0202205_06.th	-->	J:\Deliveries\2016\Indiana-states...	95.5 MB	Normal	Transferring

Quoted files (4827) | Failed transfers (279) | Successful transfers (379)



Discussion Topic

What do you want?

Contact

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