

Emerging Technologies Showcase and Social



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Emerging Web GIS Tools that Enhance Public Safety

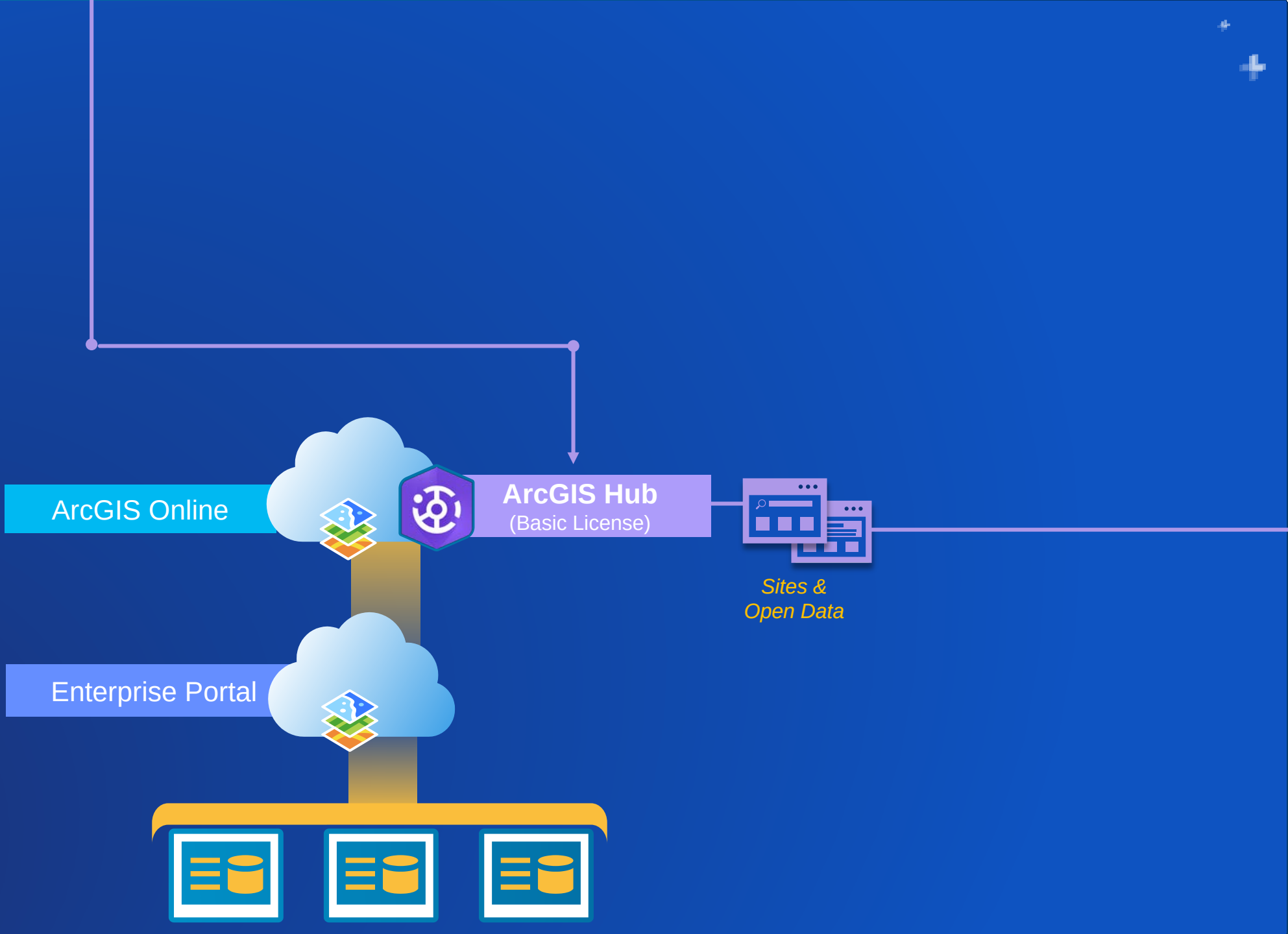
Stuart Rucker, Esri Public Safety Team

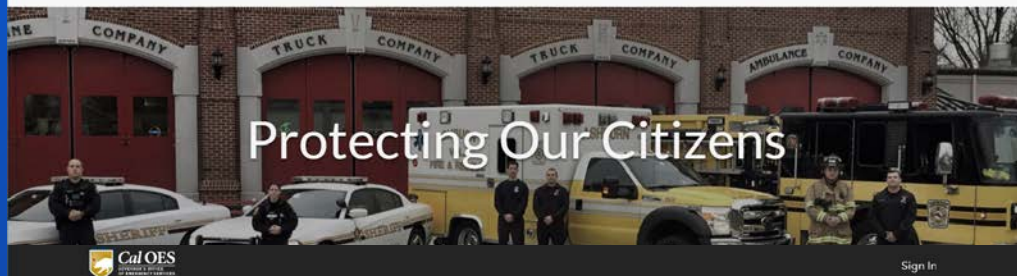


ArcGIS Hub is an easy-to-configure cloud platform that organizes people, data, and engagement tools to accomplish Initiative goals.

For each initiative (mission, project), ArcGIS Hub provides a framework for

- Data Sharing (open data/private data)
- Community Engagement (sites)
- Team Management
- Performance Tracking





Protecting Our Citizens

Sign In



California Governor's Office of Emergency Services GIS Data Hub

The California Governor's Office of Emergency Services (Cal OES) GIS data hub is for discovering public data layers and mapping applications to help with decision making during daily operations and incident operations.

Cal OES Mapping Applications

Explore Cal OES GIS Apps



California Preparedness Platform (Cal PreP)
The California Governor's Office of Emergency Services' (Cal OES) California Preparedness Platform

Launch



Cal OES Regional Contacts
An interactive, GIS-based contacts portal for Cal OES functions at the local and regional level to aid in

Launch



Cal OES Statewide Wildfire Situation Awareness Map
The California Governor's Office of Emergency Services' (Cal OES) Statewide Wildfire Situation

Launch



Cal PreP - Fire Situation Awareness
The California Governor's Office of Emergency Services' (Cal OES) Cal PreP Fire Situation Awareness app

Launch

Explore Data Categories

Search Cal OES



Florida Division of Emergency Management GeoPortal

Data and Maps for the Prepared

Search "Storm Surge"

This is the Florida Division of Emergency Management's Open Data Portal, which provides the ability to search, filter and download authoritative geographic data developed by the State Emergency Response Team's GIS Unit. To search for data of interest, enter search terms in the text box above or you can view featured interactive mapping applications and additional resources below.

Featured Web Applications



Tropical Weather



GATOR



Traffic



Rip Currents



Homeland Infrastructure Foundation-Level Data (HIFLD)

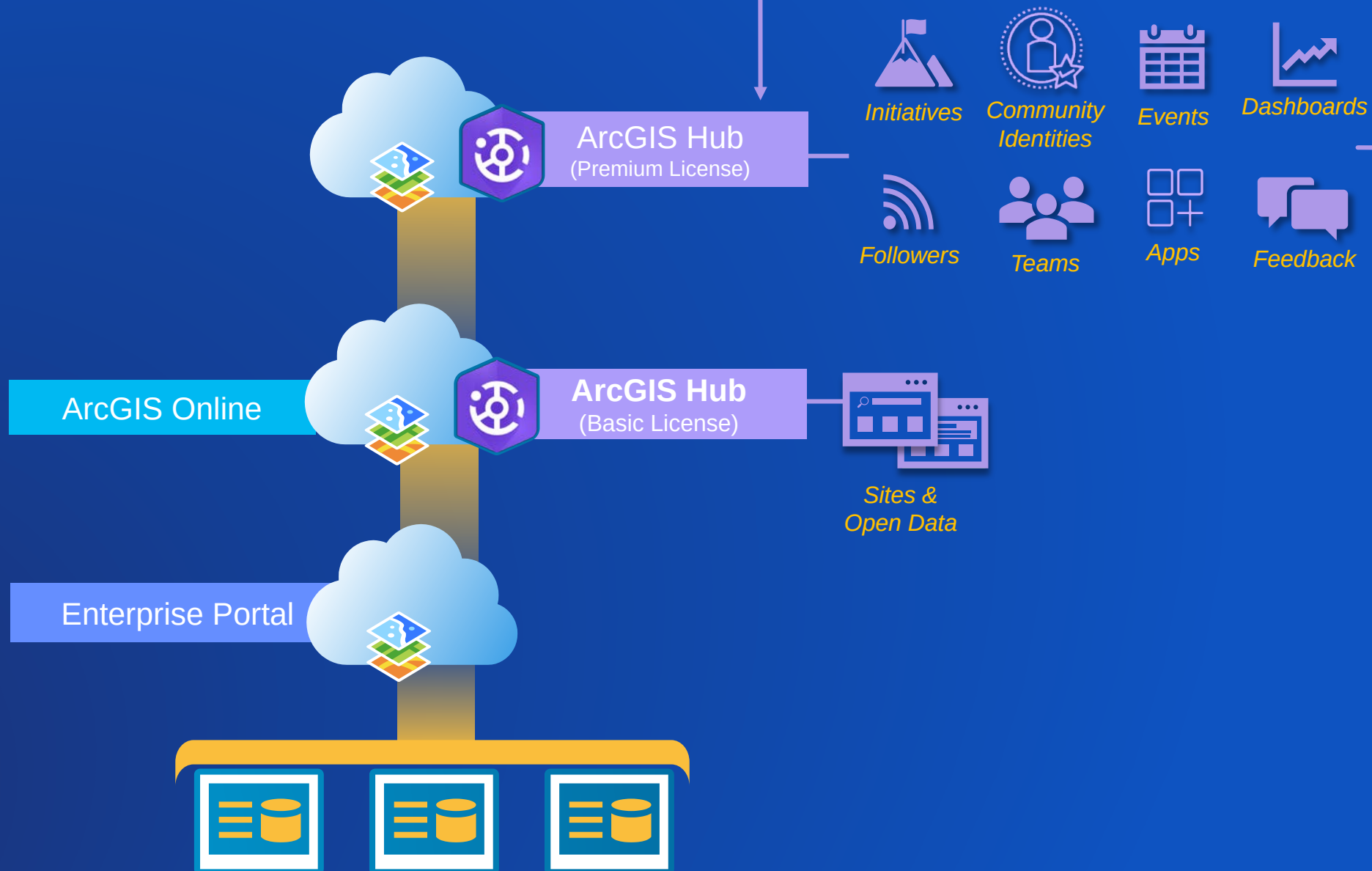
DHS.GOV DHS.GII FGDC.GOV HIFLD GEOPLATFORM



HIFLD Open Data

This site provides National foundation-level geospatial data within the open public domain that can be useful to support community preparedness, resiliency, research, and more. The data is available for download as CSV, KML, Shapefile, and accessible via web services to support application development and data visualization.

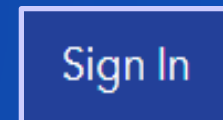
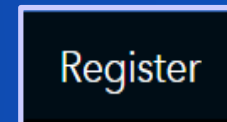
For updates about HIFLD data, guidance on metadata, and known shapefile conversion issues, please access the HIFLD notifications page.



Give Community Members Identities



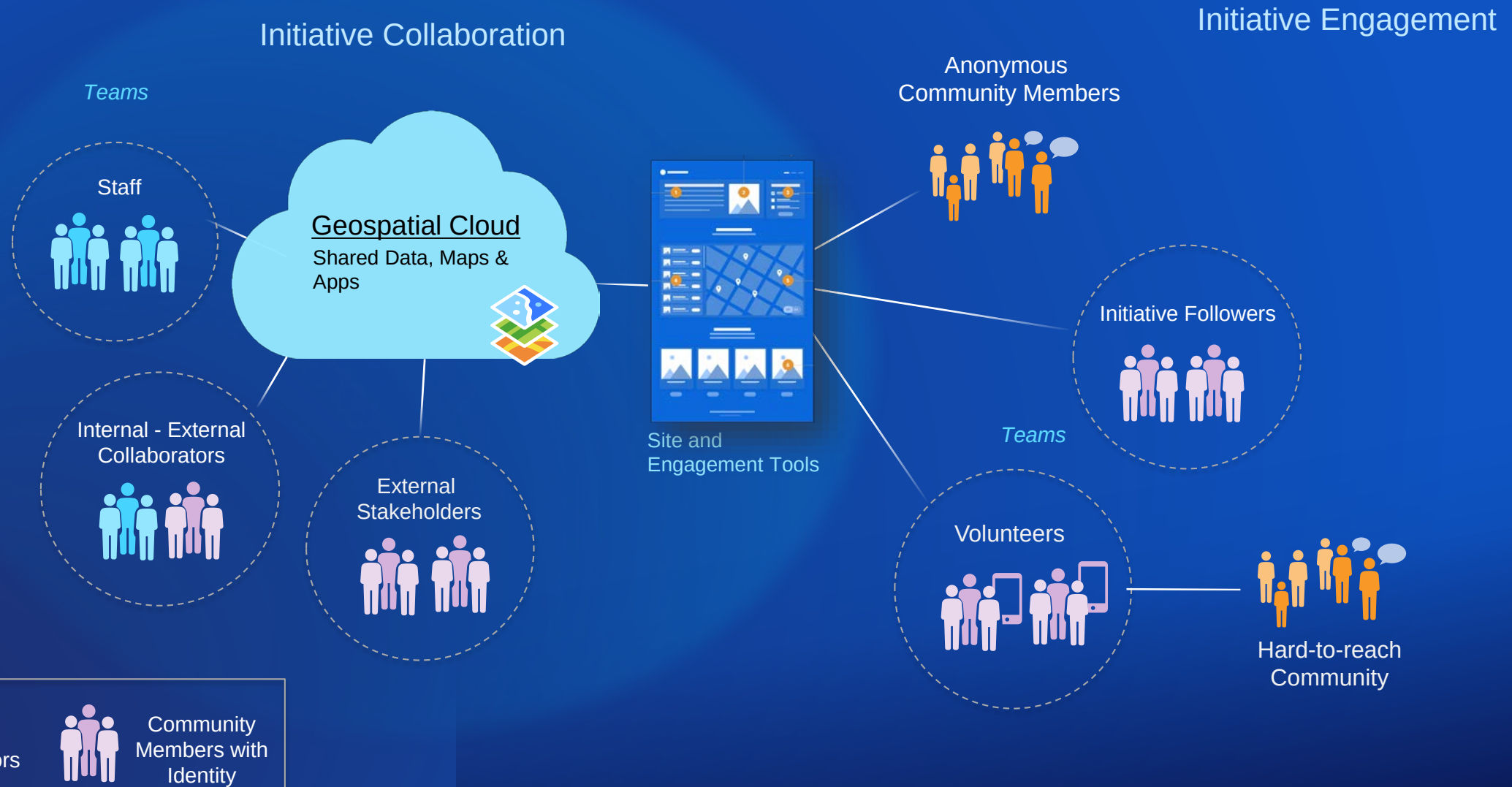
Mike Wheeler



Team-Enabled Collaboration and Engagement Pattern



Team-Enabled Collaboration and Engagement Pattern



Hub capabilities



Sites

Modern, Responsive Webpages



Community Identity

Consistent engagement and access to tools



Content + Apps

Easy to deploy & configure tools



Team(s)

Coordinate Activities + Sharing



Events

Schedule and Gather People



Feedback

Discussions, Surveys, Crowdsourcing



Initiatives

Organize Collaboration



Subscriptions

Community Notifications + Alerts



esri

THE
SCIENCE
OF
WHERE

Emerging Web GIS Tools That Enhance Public Safety

Stuart Rucker, Esri



Why a New StoryMaps?

Story maps have evolved over eight years. We're enhancing them as we enter a new era of easy, modern, and stylish storytelling.

Esri's StoryMaps team | August 29, 2019

<https://storymaps.arcgis.com/collections/f7c280b6daa64b40ab90616358b462db/present?item=2>



HERE Technologies Lightning Talk

James Nenaber

LiDAR

Introducing HERE LiDAR

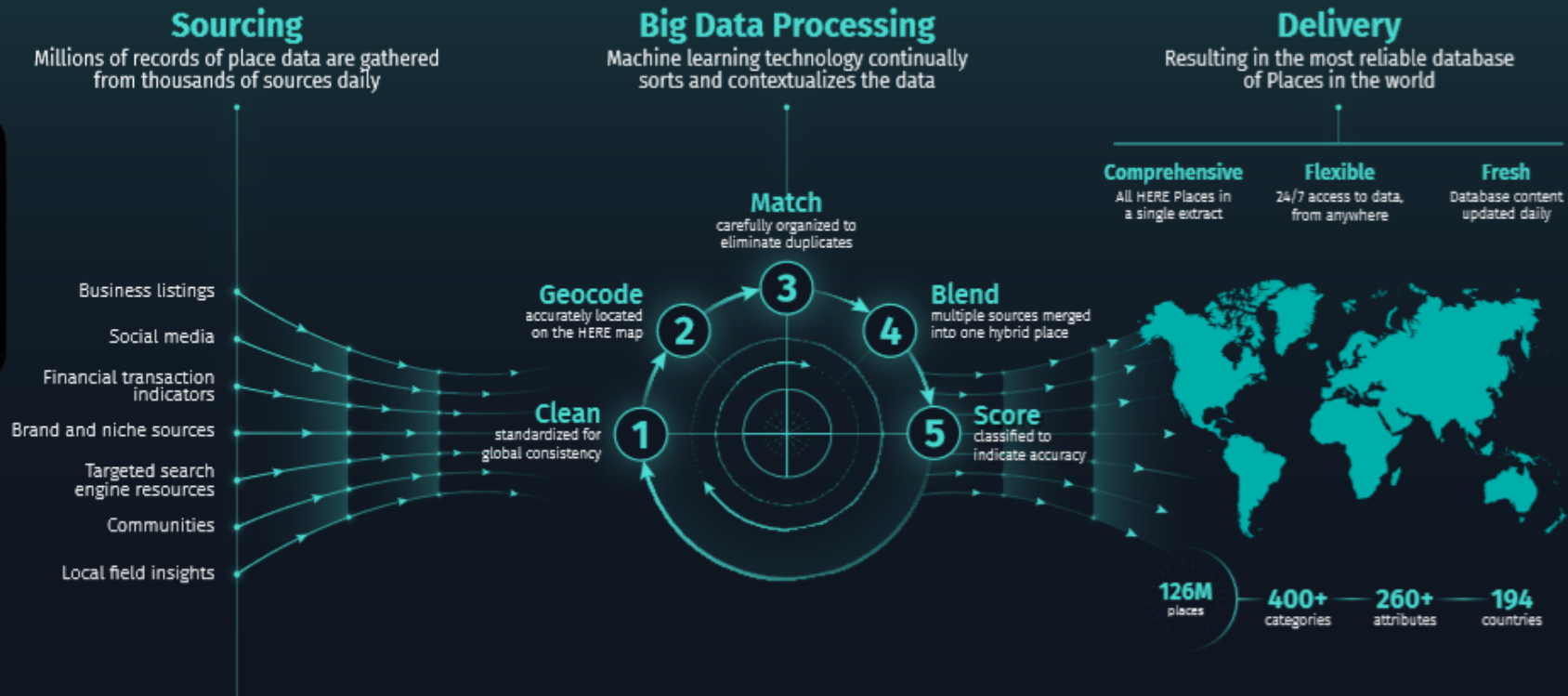
How is it collected and what does the LiDAR look like



Places Extract

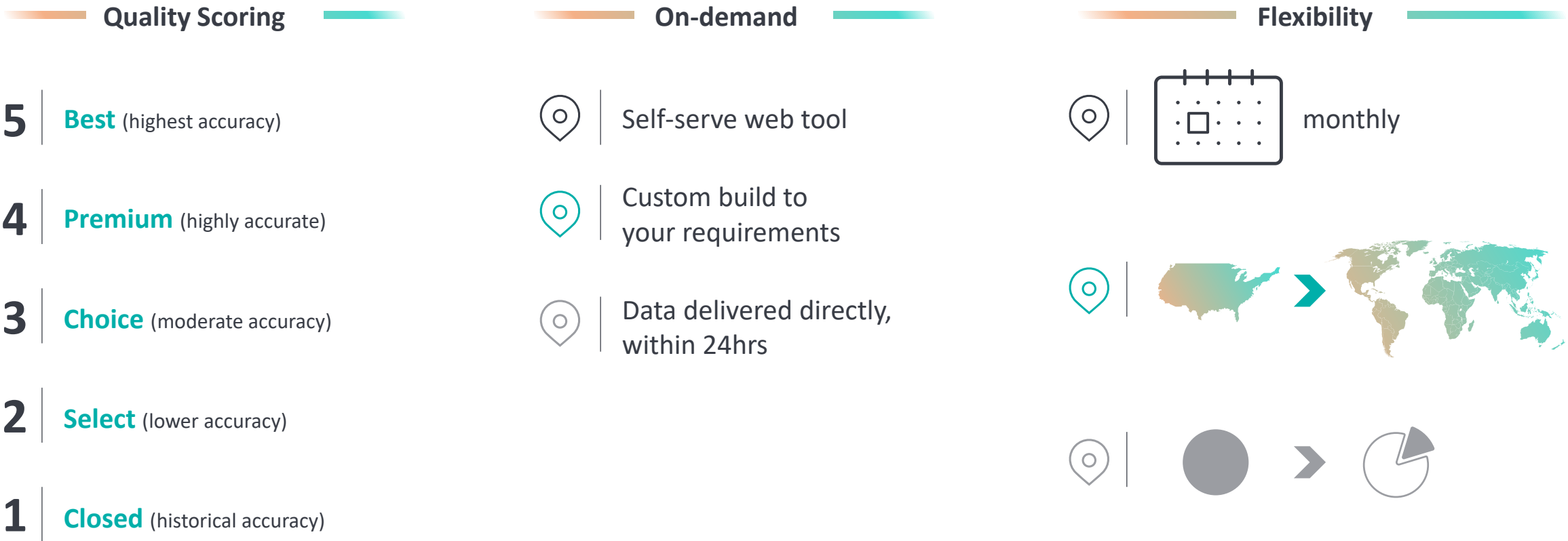
Places Extract

How HERE is building the most comprehensive database of Places in the world

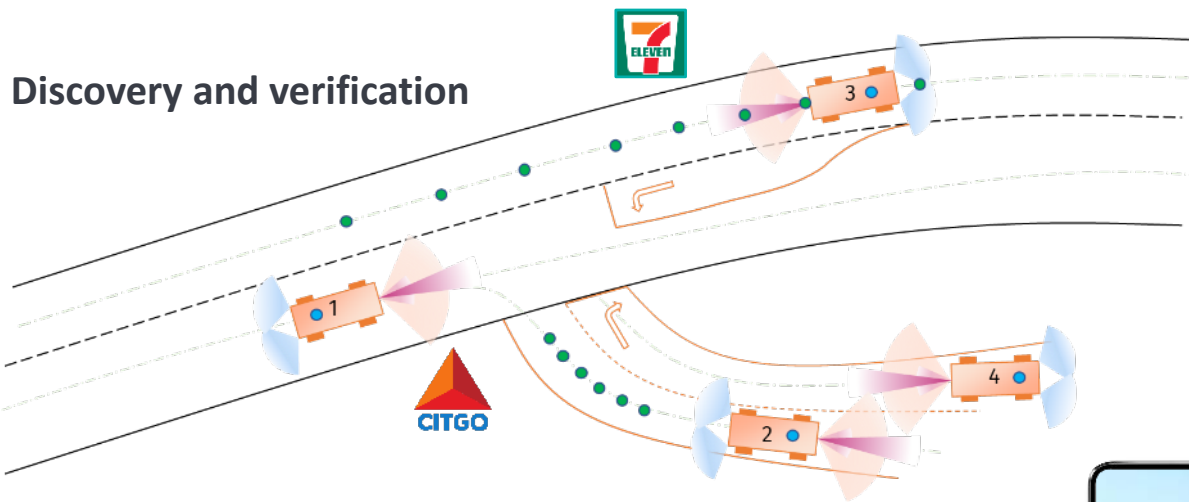


HERE differentiation

Not your old business points!



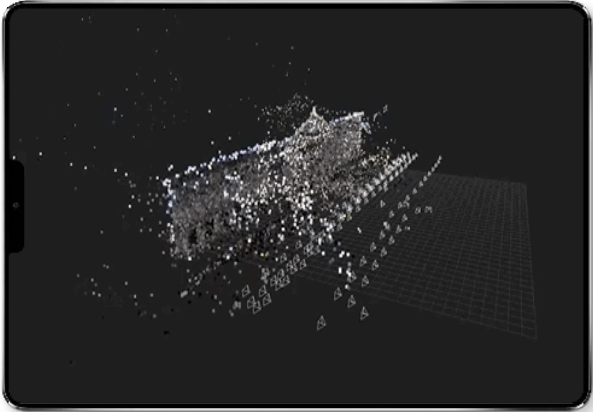
Street Level Capture Capabilities



Imagery



LiDAR, too!



Thank you

ARDENTMC

Migrating Geospatial Workloads to the Cloud



ARDENTMC

FEMA Preliminary Disaster Assistance (PDA)

Migrating to AWS GovCloud

ARDENTMC

Provide photo(s) of the damage:
1 of 3



image1-f93623c41a094ebba2e8eff08437bc2d.jpeg

2 of 3



image2-7e2395672d55436292f5f814791e620e.jpg

3 of 3

My Surveys


FEMA
Individual Assistance PD...


FEMA
Public Assistance PDA Survey v2.1.0

Level of damage assessed:

☐ Affected

☐ Minor

☒ Major

☐ Destroyed

☐ Inaccessible

☐ Unaffected

Single Family Dwellings

Choose the option that best describes the major damage:

☐ Failure or partial failure to structural elements of the roof to include rafters, ceiling joists, ridge boards, etc.

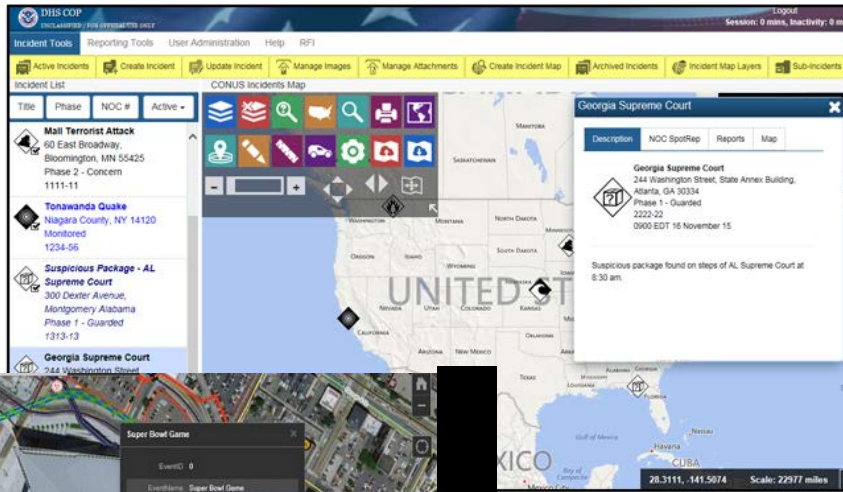
☐ Failure or partial failure to structural elements of the walls to include framing, sheathing, etc.

☐ Failure or partial failure to foundation to include crumbling, bulging, collapsing, horizontal cracks of more than two inches, and shifting of the residence on the foundation of more than six inches

☐ Residences with a water line 18 inches above the floor in an essential living space, a water line above the electrical outlets, or a water line on the first floor or when basement is completely full.

FEMA PDA

Multi-Tenant Cloud Hosting for DHS HQ/Geospatial Management Office



Challenge

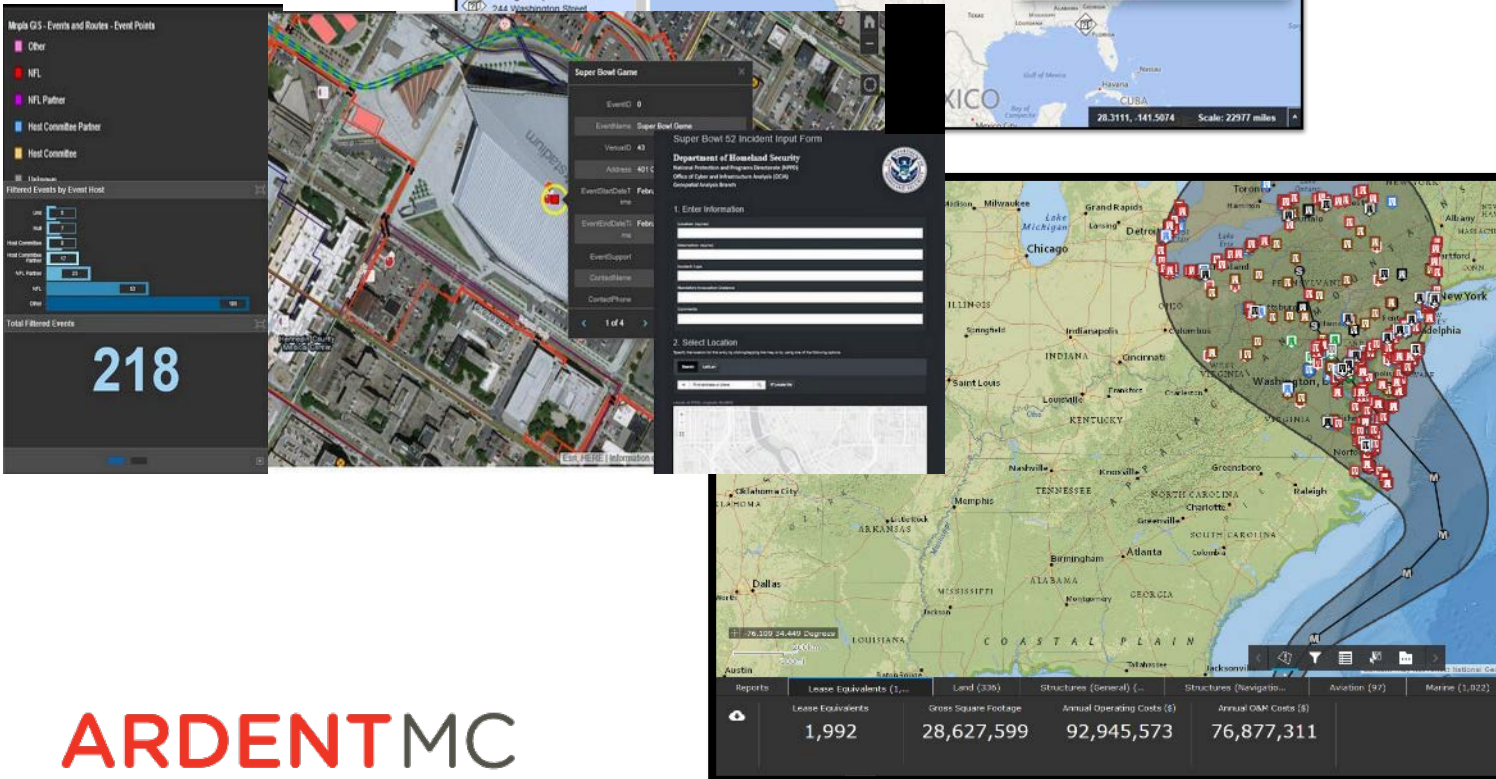
- DHS components had 20 stove piped situational awareness systems spanning multiple networks, Govt Data Centers, lack of identity management

Solution

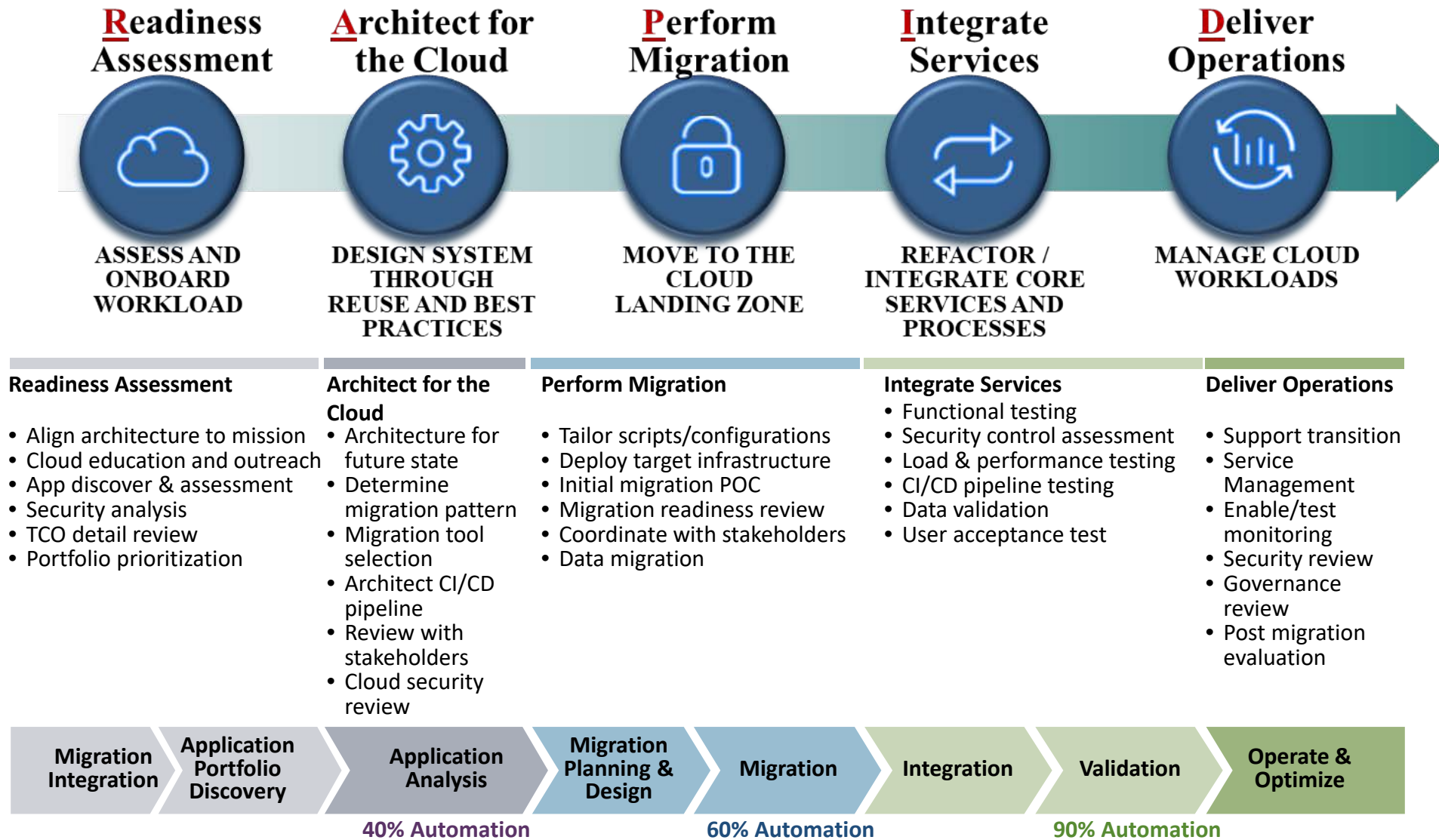
- GMO created a multi-tenant shared service platform called Geospatial Information Infrastructure (GII)
- Ardent has been running the GII for a decade and is migrating one of the largest Federal Esri solutions to AWS GovCloud

Results

- Unified Situational Awareness
- Common set of API's/Services
- Repeatable & scalable system/application design



ARDENTMC



AWS Disaster and Public Safety Competency Launch Partner Spotlight

Delivering Location Intelligence at the Speed of the Mission



Customer examples – Proven, Ready & Focused Solutions

- **FEMA**– Mobile Disaster Assessment Toolset to determine impact to Commercial and Residential infrastructure to determine amount of FEMA recovery resources required for response.
- **DHS GII** – 24x7x365 Situational Awareness for National Special Security Events, Ops Planning, man-made/natural threats against the US.
- **Responder Cloud/Public Safety Cloud** – IaaS and PaaS for First Responders to collaborate and visualize damage assessments, real-time response asset tracking, multi-jurisdictional CAD integration, and mutual aid sharing.

Noah Goodman
Principal
Noah.goodman@ardentmc.com
571.331.6138



ARDENTMC

Automating Secure Mission Critical Cloud Deployments

Robert Pitts

Program Manager

Dave Williams

Cloud Architect

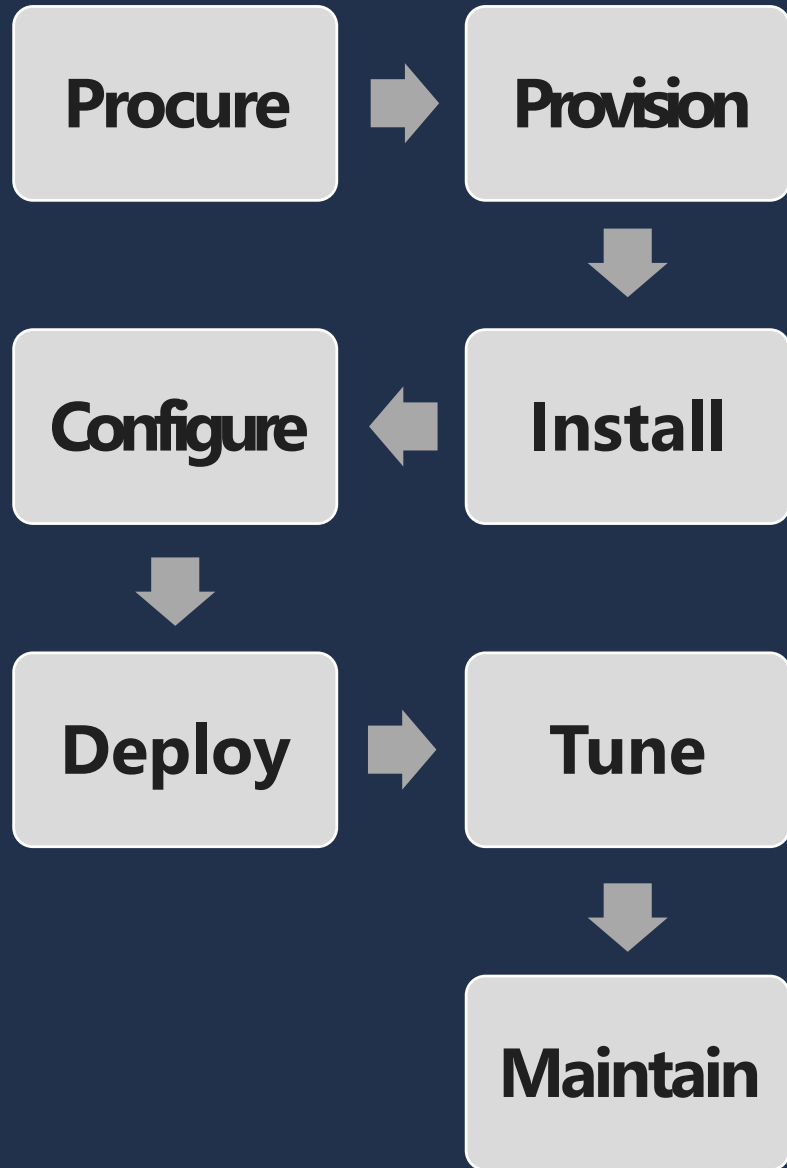


The Scenario

- **Large Disaster Event**
 - Cat 5 Hurricane Approaching Gulf Coast
- **Response Coordination Activities**
 - Evacuation, Logistics, Estimating Impacts, etc.
- **Massive Demand for Information**
 - Map & Data publishing, web requests, etc.
- **Large Diverse User Base**
- **Hours Until Landfall**

Requirements

- Need to **Quickly Deploy** New Online Mapping System to Support Missions
- Must **Serve Large Data** & be Robust to **Handle Massive User Traffic**
- Must **Include Tools** for Rapid Publishing, Data Viz, Navigation, App Dev etc.
- Must be Able to **Support Web, Desktop & Mobile User Base**
- Must **Comply with Important Security Requirements** – GovCloud, System Isolation, U.S. Residency, etc.



Infrastructure & Software Delivery Lifecycle

- Multistep process requiring specialized staff in technical and administrative roles
- Most steps are manual

Traditional DIY Approach

- Requires Specialized Expertise
- Slow Multistep Process
- Prone to Issues & Delays
- Expensive
- Provisioning Mismatch
- Limited Scalability
- Technical Debt



Modern Automated Approach

- Infrastructure-as-Code Best Practice

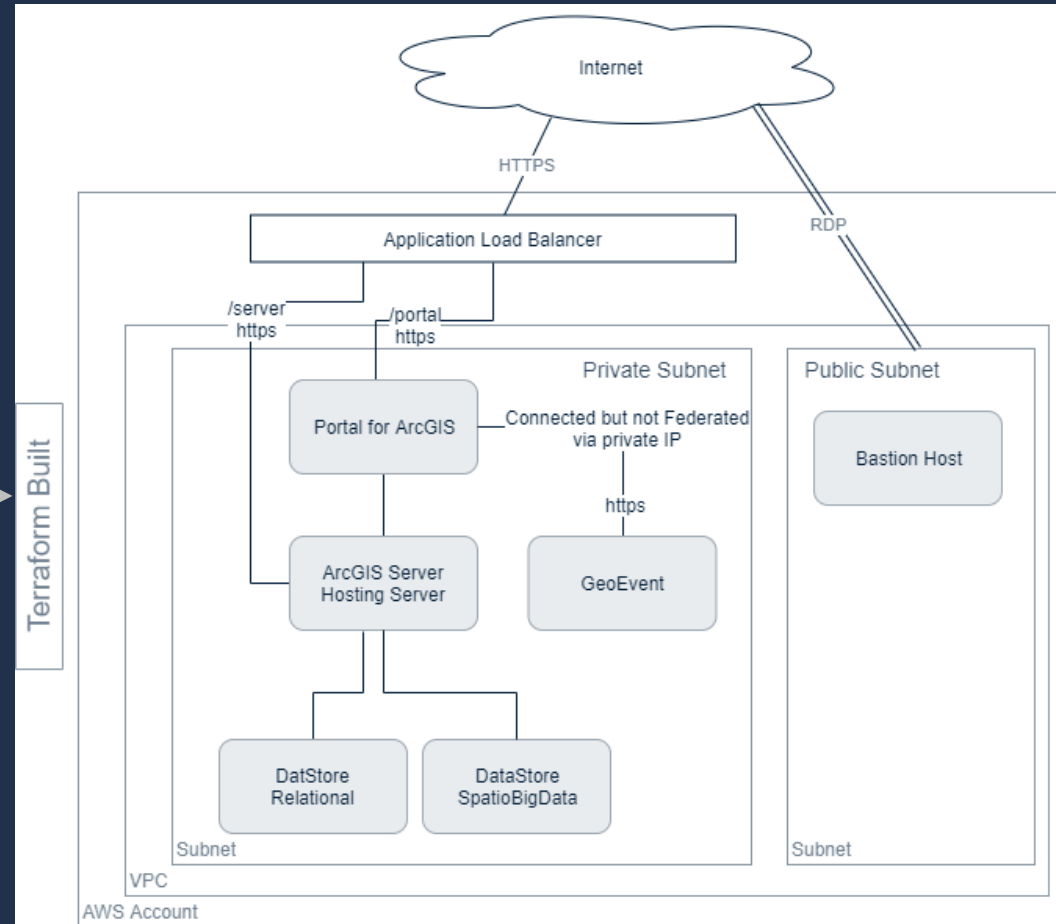
```
propagating_vms = (known after apply)
route = [
  {
    cidr_block      = "0.0.0.0/0"
    egress_only_gateway_id = ""
    gateway_id      = (known after apply)
    instance_id     = ""
    ipv6_cidr_block  = ""
    nat_gateway_id  = ""
    network_interface_id = ""
    transit_gateway_id = ""
    vpc_peering_connection_id = ""
  },
]
vpc_id = (known after apply)

# aws_route_table_association.rt_assoc will be created
resource "aws_route_table_association" "rt_assoc" {
  id            = (known after apply)
  route_table_id = (known after apply)
  subnet_id     = (known after apply)
}

# aws_security_group.mapbox_sg will be created
resource "aws_security_group" "mapbox_sg" {
  arn      = (known after apply)
  description = "Security group for the Mapbox MSO offering"
  egress   = (known after apply)
  id       = (known after apply)
  ingress  = (known after apply)
  name     = "sglintmapboxawc"
}
```

- Fast
- Documented
- Repeatable

- Full Automated Deployment of Environment & Application



- Security Rules Applied

Production

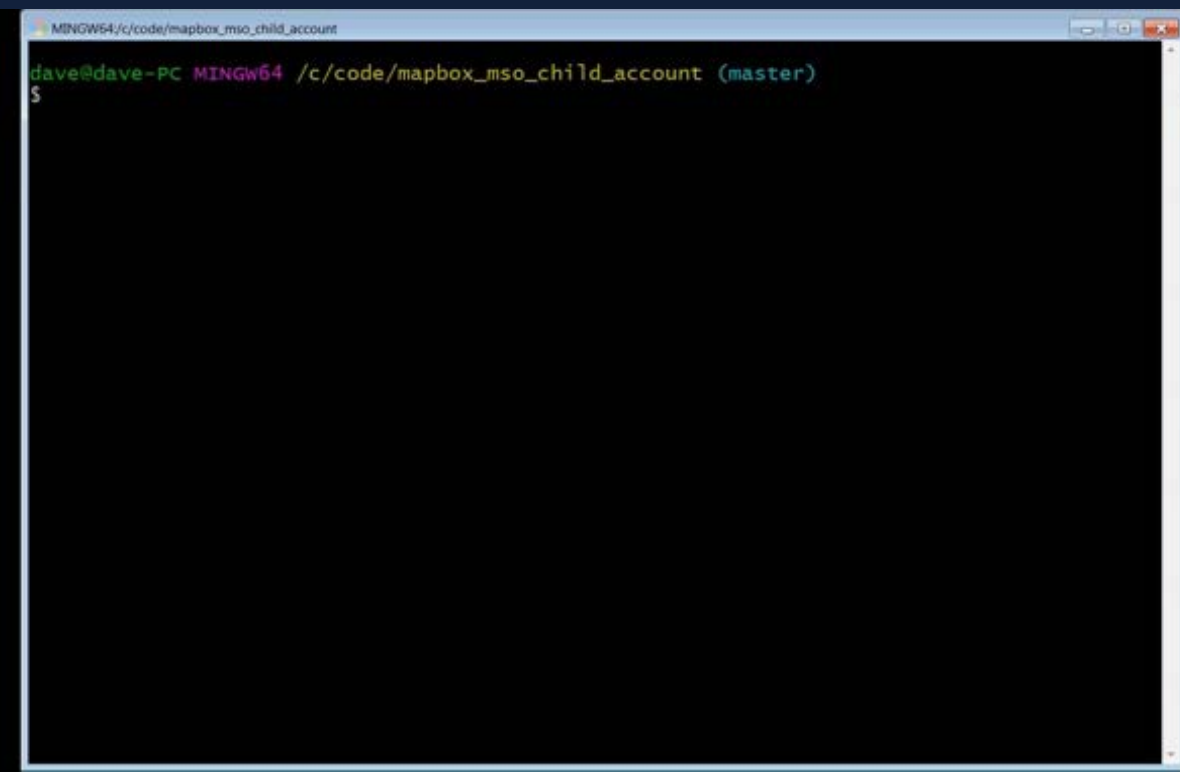
Staging

Dev

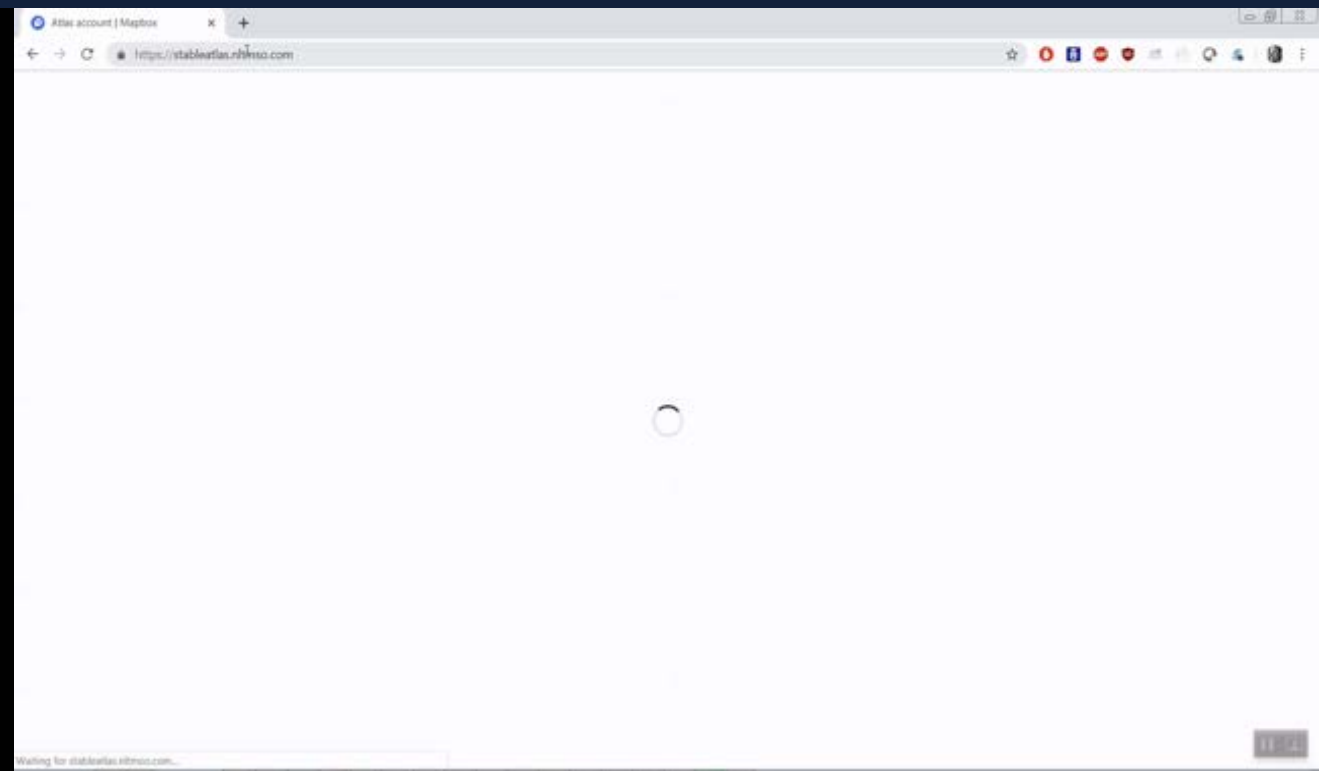
How Fast?

Full Cloud Environment Build

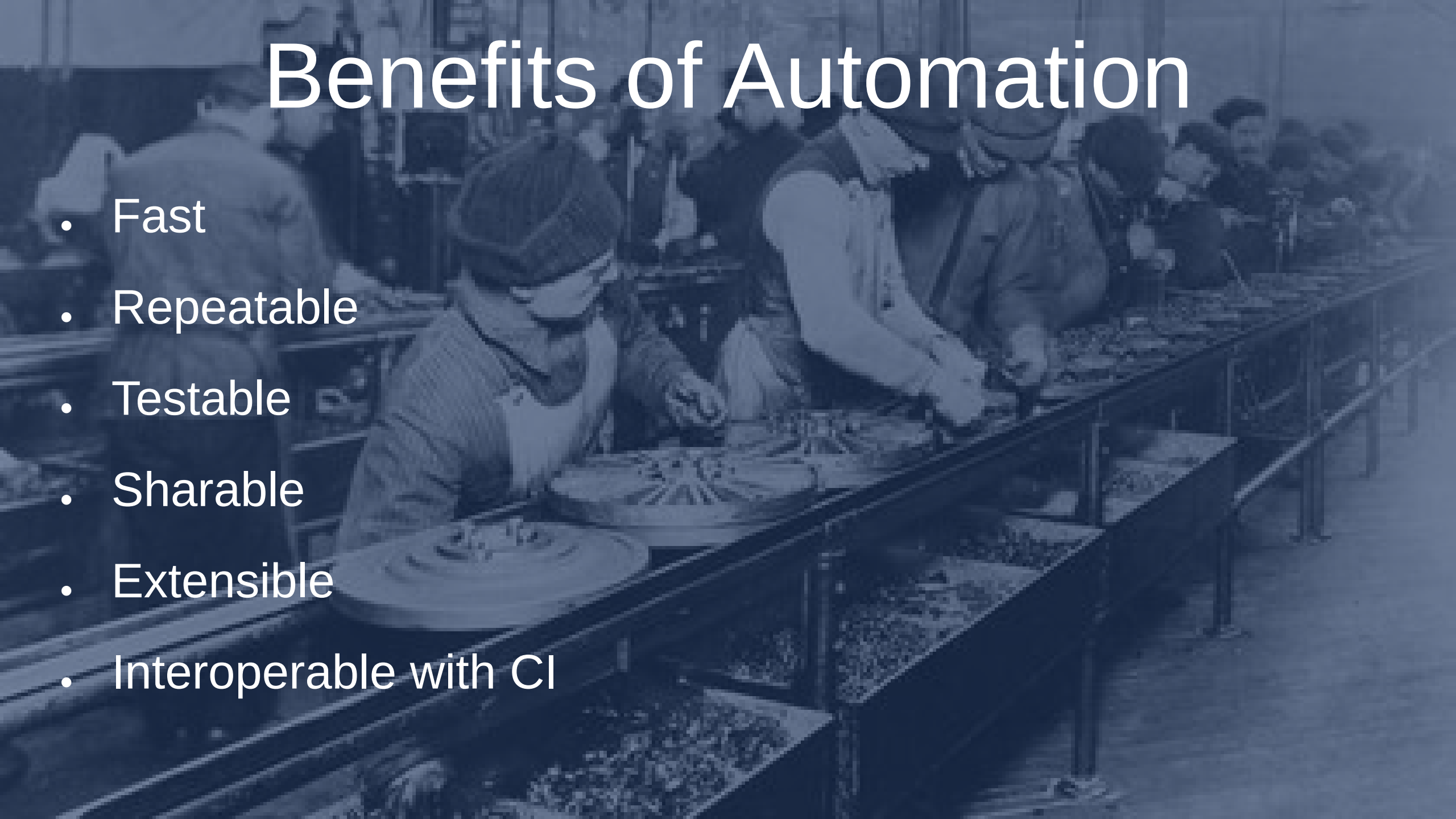
Ready to Use



```
MINGW64/c/code/mapbox_mso_child_account
dave@dave-PC MINGW64 /c/code/mapbox_mso_child_account (master)
$
```

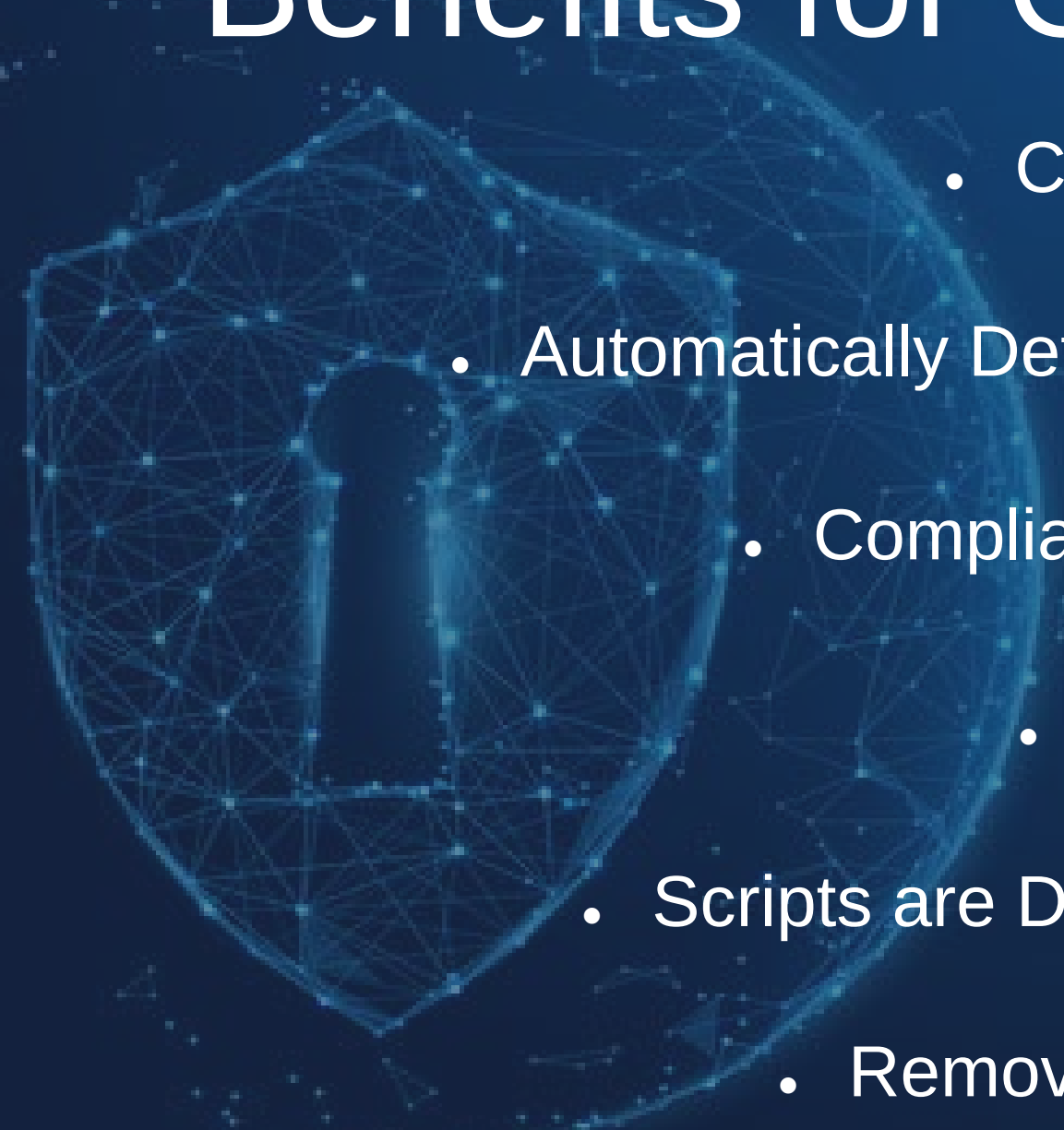


Benefits of Automation

A blue-tinted photograph of a busy food service line, likely in a school cafeteria or institutional kitchen. Several staff members, wearing aprons and hairnets, are working behind a long counter. They are preparing food, including what appears to be spaghetti and meat sauce. The image is used as a background for the text.

- Fast
- Repeatable
- Testable
- Sharable
- Extensible
- Interoperable with CI

Benefits for Cybersecurity

- 
- Compliance as Code
 - Automatically Define Security Policy Baseline
 - Compliance Enforcement & Drift Detection
 - Enforces Standardization
 - Scripts are Documented Security Artifacts
 - Removes Human Error

Automation = Faster & Safer