



# Emergency Management Issues Special Interest Group Annual Meeting

## *Cloud Computing* Emergency Operations Center

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May 2-5, 2011 Charleston Marriott • Charleston, South Carolina



## What is an Emergency Operations Center (EOC)

**EOC:** A central command and control facility responsible for carrying out the principles of emergency management functions at a strategic level in an emergency situation.



# ***Strategic Upgrades to Cloud Computing the INL EOC***

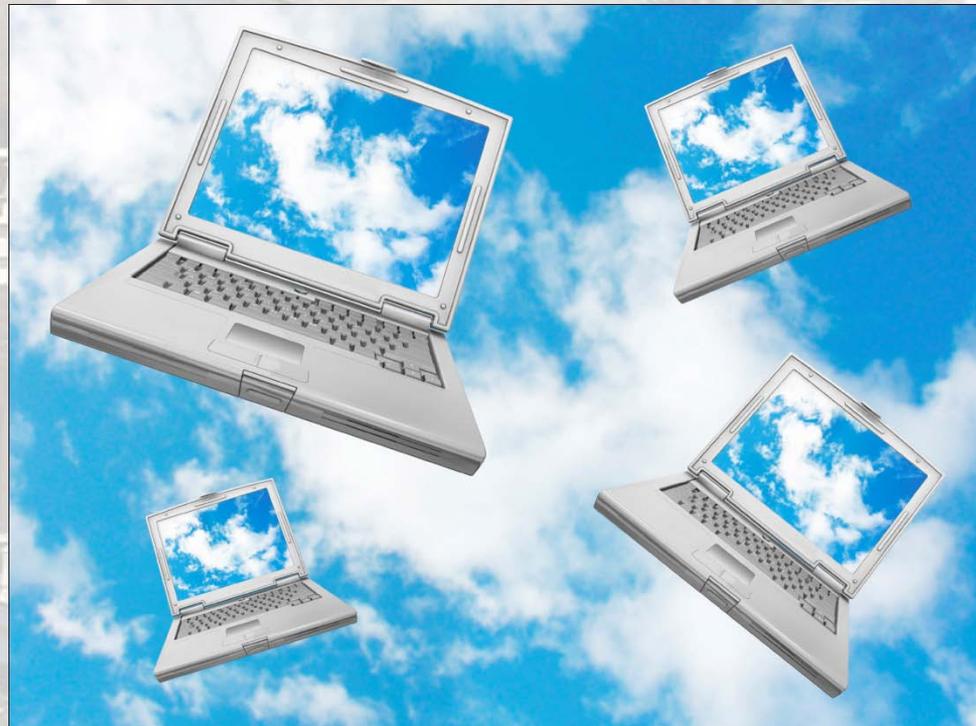
## ***Five Themes to upgrades in no particular order***

- Centralized Information Management
- World-Class Image and Reputation
- Facilities and Technology for the Future
- Fluid Communication and Collaboration
- Workforce Mobility.

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# INL EOC Cloud Computing....

- **What do we mean?**
- **What is “Cloud Computing”**



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# Definition of Cloud Computing

... National Institute of Standards and Technology  
(NIST)

Cloud computing is a model for enabling network access to:

- **Shared Pool** of computing resources

Hardware

- Networks
- Servers

Software

- Applications
- Services

- Can be **Rapidly Changed**
- Requires **Minimal Management**

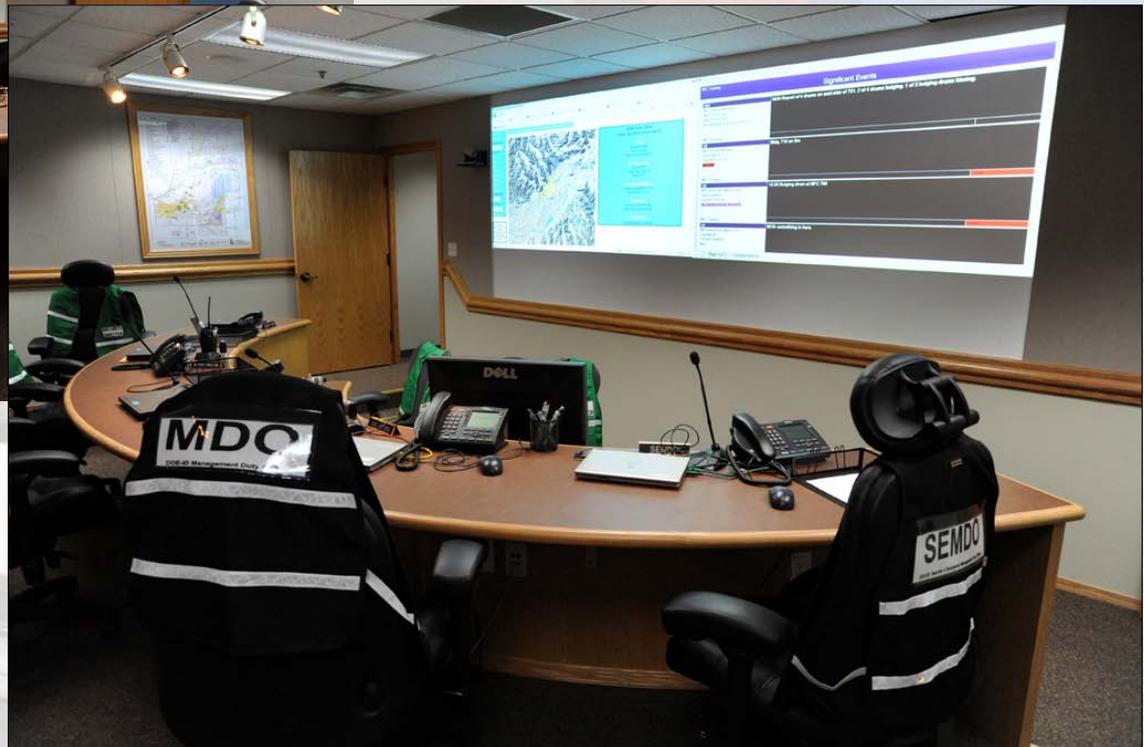


# Upgraded INL EOC Added Additional 1,200 sq/ft



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# Improved Command Room



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**emi sig**

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# Planning Room HVAC System Upgrades



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# Built New COOP Facility/Public Affairs Room



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# Centralized Information Controls



Deployed Video Conference Capability

# Cloud Delivery Model

	Crisis Information	Applications	Live Video
Prime Contractor DOE	Emergency Notification Significant Events Mission/Tasks Plume Models Facility Maps Critical Data Position Logs Aerial Photos	RSAC INL VIZ ALOHA Hysplit EPI Code Google Earth IWTS	<ul style="list-style-type: none"> <li>•Video Conference</li> <li>•Security Camera's</li> <li>•Howe Peak Camera</li> <li>•East Butte Camera</li> <li>•Incident Command Vehicle Camera*</li> <li>•Command Bridge Video Conference</li> </ul>
Subcontractor State DHS	Emergency Notification Significant Events Mission/Tasks Plume Models	INL VIZ	Howe Peak Camera East Butte Camera

**INL Controls  
Access**



**\* Deploy in 2012**

# Cloud Computing Benefits

- What does it mean to INL?
  - **Lower Cost**
    - Initial
    - Hardware upgrades
    - Software upgrades
  - **Higher Reliability**
    - Maintenance
    - Software Quality
  - **Always Current**
    - Hardware and Software



# INL EOC Web



Dose Consequence Analysis Tools

Significant Event Displays

Air Dispersion Model Tools

Emergency Notifications Facility Maps

Mission/Task Assignments

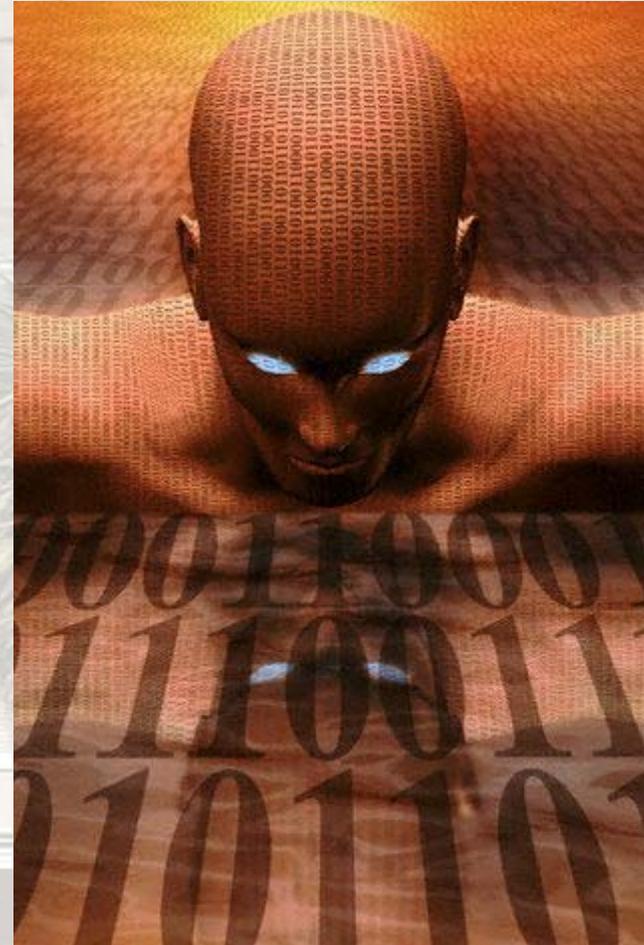
Plume Models Security Cameras

ERO Position Logs Video Conference

Aerial Photos Hazard Assessment Doc.



# But ..... What about Security?



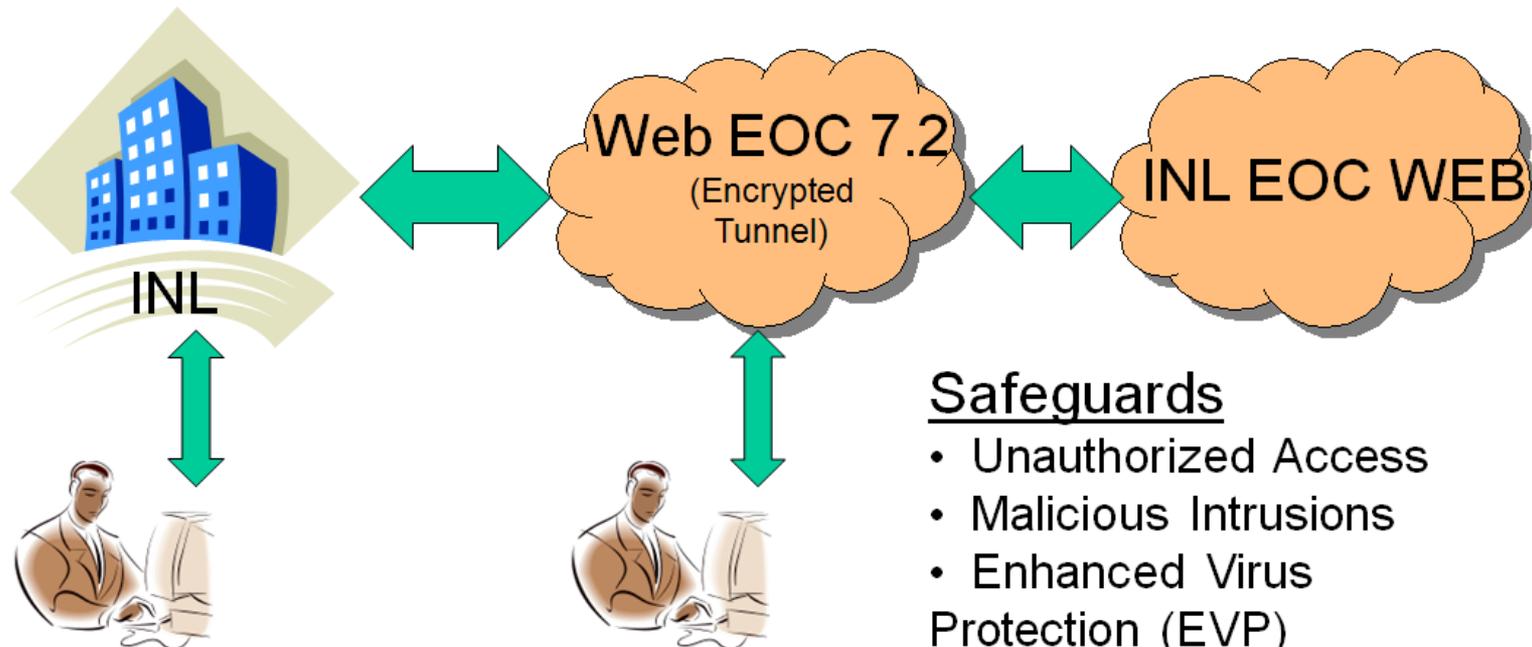
# IT Security and Systems Management

## INL

- FISMA certification

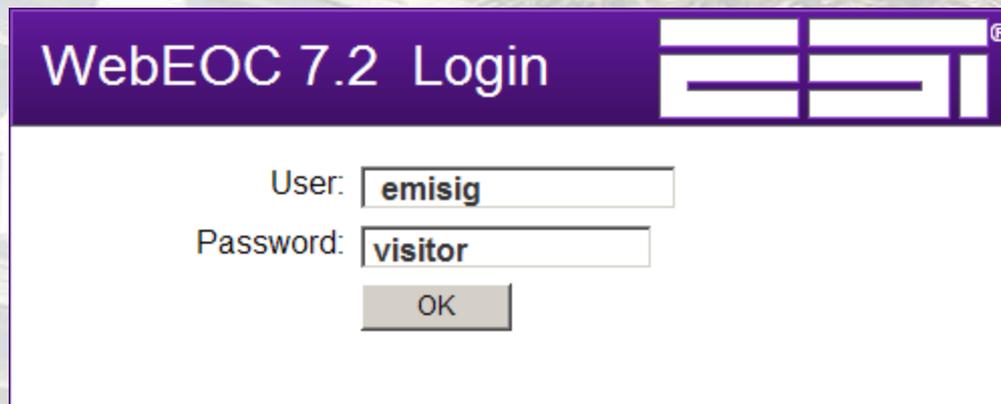
## EOC Web Cloud

- FISMA certification



# Gateway to the INL EOC Cloud

- Gateway to the INL EOC Web Cloud is controlled by WebEOC 7.2.
- <https://eocweb.inl.gov/eoc7>

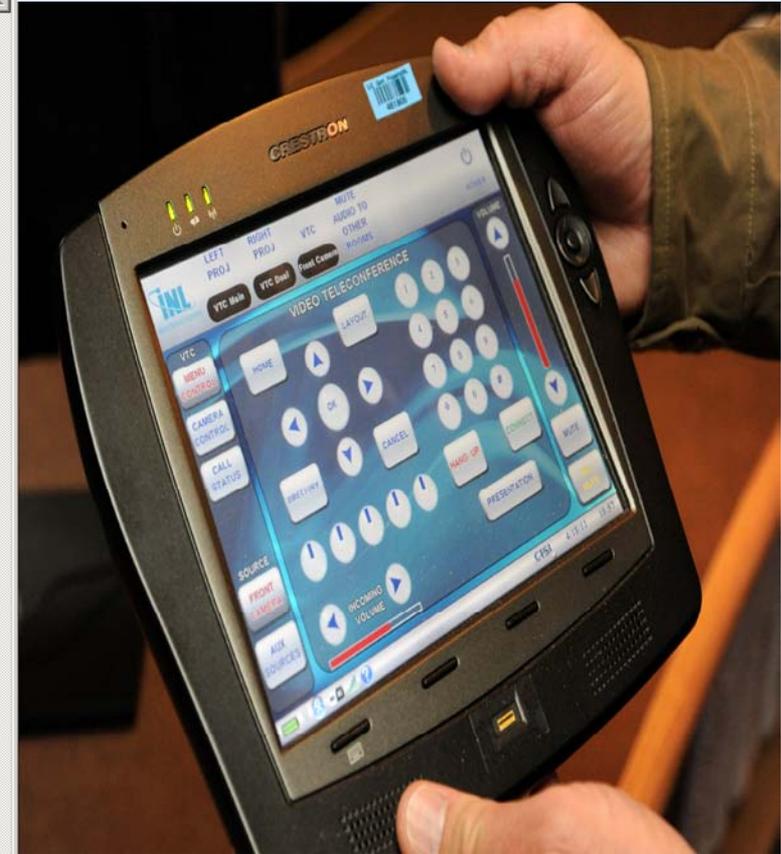
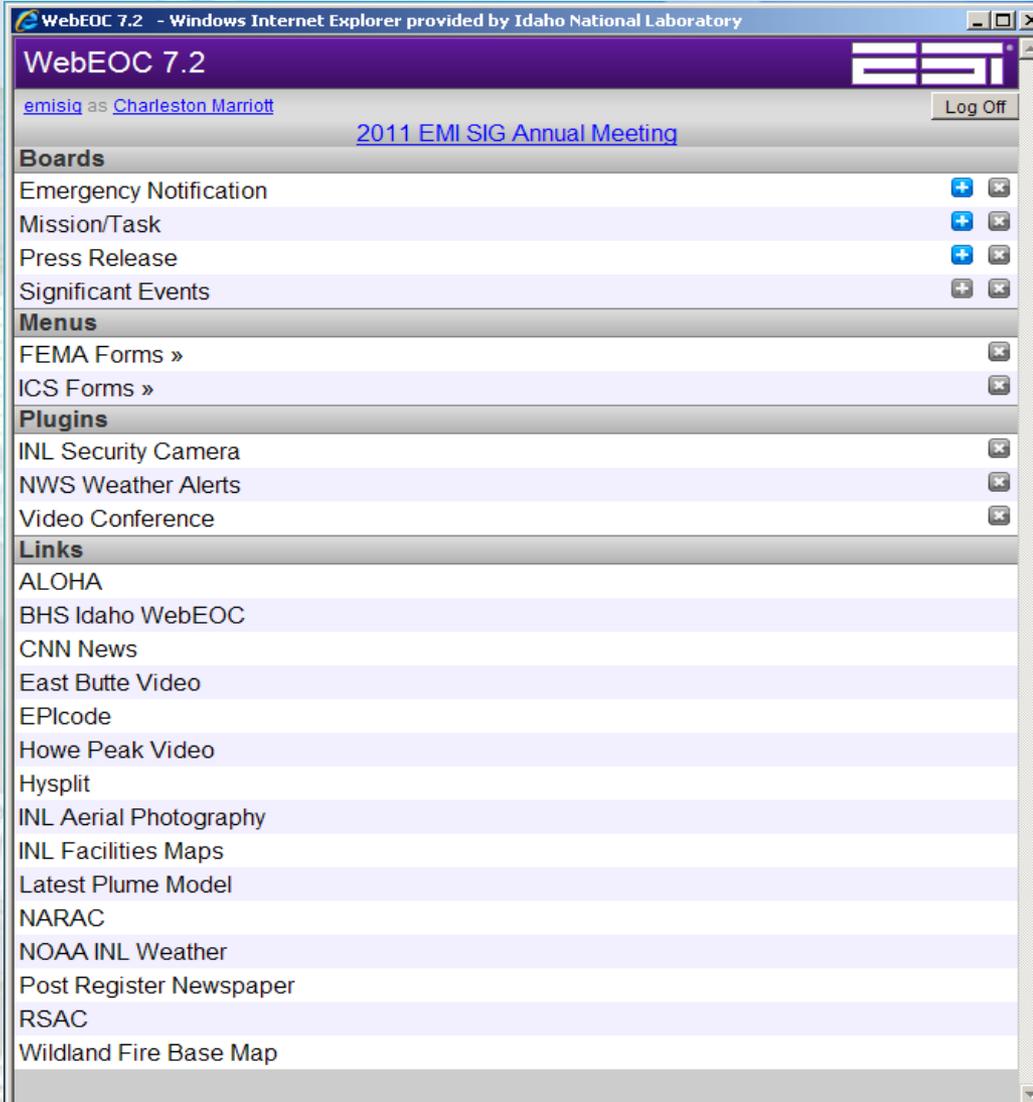


WebEOC 7.2 Login 

User:

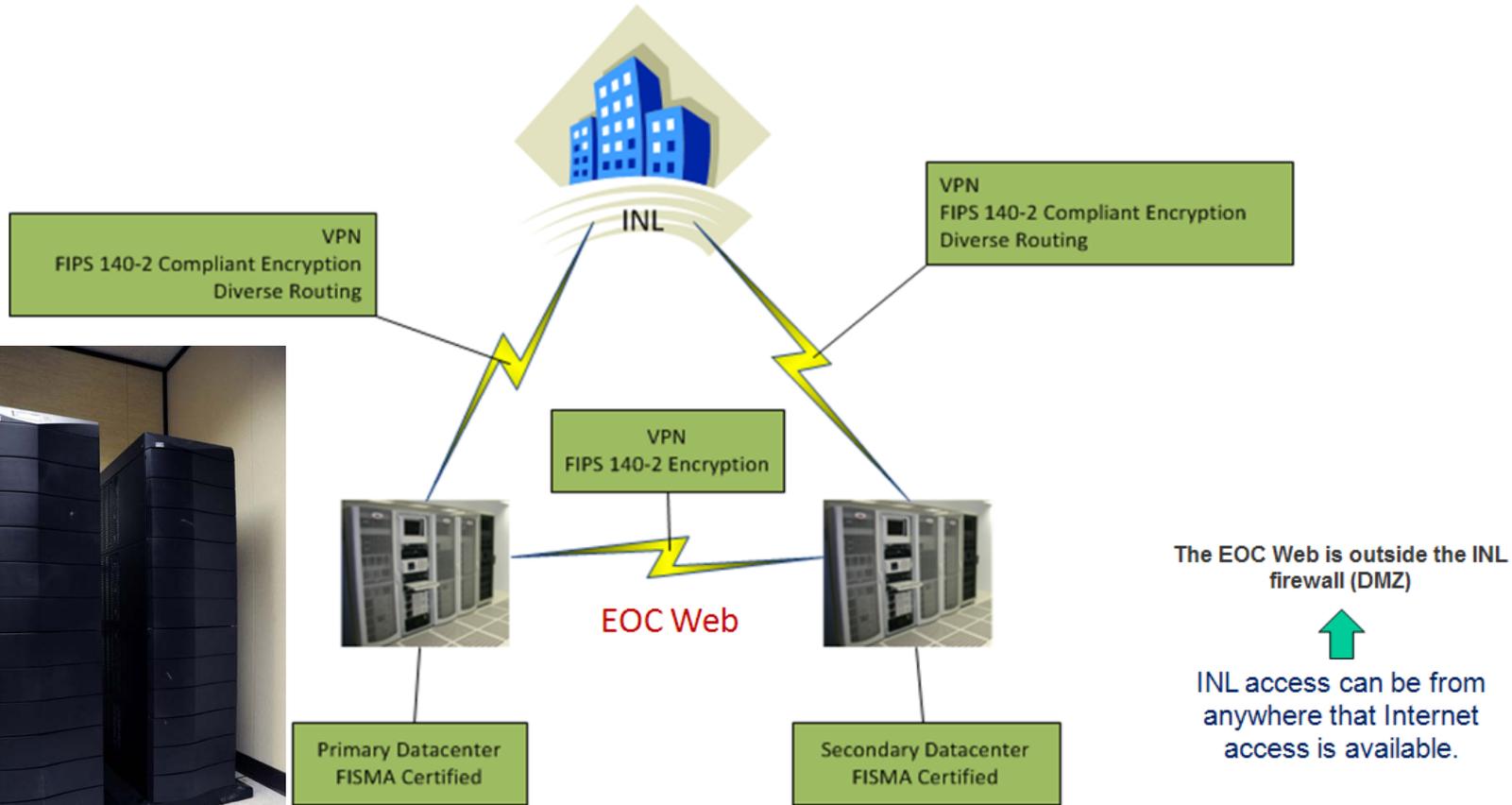
Password:

# INL EOC Cloud Menu



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# How is the INL EOC Wired for Backups?



# New COOP Facility



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# Federal Government's Move to the Cloud



Jeffrey Zients, Office of Management and Budget now require federal agencies to default to cloud-based solutions "whenever a secure, reliable, cost-effective cloud option exists." (Washington Post, November 22, 2010)

## "Cloud First" Mandate

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### Go to the Cloud Mandate

Federal Agency CIOs are charged with identifying three "Must Move" services and creating a project plan for migrating each of them to cloud solutions and retiring the associated legacy systems



Vivek Kundra, U.S. Chief Information officer (CIO)

# Benefits to Cloud Computing

DOE F 1325.8  
(08-93)

United States Government

Department of Energy

## Memorandum

DATE: April 1, 2011

Audit Report Number: OAS-RA-L-11-06

REPLY TO:

ATTN OF: IG-34 (A11TG021)

SUBJECT: Report on "Department's Management of Cloud Computing Services"

TO: Administrator, National Nuclear Security Administration  
Acting Under Secretary of Energy  
Under Secretary for Science  
Chief Information Officer

### INTRODUCTION AND OBJECTIVE

Cloud computing enables **convenient, on-demand access** to shared computing resources that can be rapidly provided to users. According to the National Institute of Standards and Technology (NIST) and industry experts, benefits of the cloud computing model include the ability to more **effectively manage Information Technology (IT) resources** while **reducing operating costs**. For instance, it permits organizations to plan computer usage and add or subtract resources as necessary rather than invest in hardware and software that may be needed but not necessarily frequently used. In addition, the **cloud computing model** can increase **employee mobility** by allowing access to computing resources regardless of physical location. Furthermore, it allows IT personnel to be more flexible in the allocation of resources, allowing them to focus **less on maintenance and more on innovation**.

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# INL Emergency Management Contact Us



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# Questions



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