State of 911 Webinar

NATIONAL 911 PROGRAM

APRIL 14, 2015

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State of 911 Webinar Series

Designed to provide useful information about Federal and State participation in the planning, design, and implementation of Next Generation 911 (NG911) coupled with real experiences from leaders overseeing these transitions throughout the country

Webinars are held every other month and typically include presentations from a Federal-level 911 stakeholder and State-level 911 stakeholder, each followed by a 10-minute Q&A period

For more information on future webinars, access to archived recordings and to learn more about the National 911 Program, please visit 911.gov

Feedback or questions can be sent to: National911Team@mcp911.com

Questions?

For WebEx Technical Assistance, please call: (866) 229-3239, Option 1

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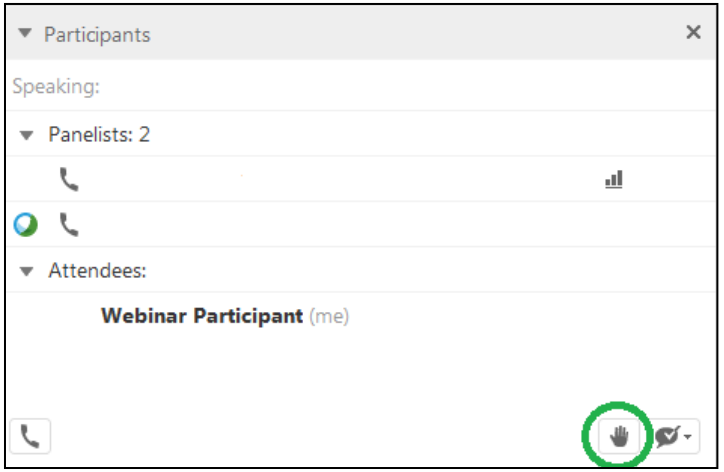
During the Q&A portion of the webinar, please click on "Raise Hand" and your phone will be unmuted.



State of 911 Webinar

2014 National Progress Report

PRESENTED BY: LAURIE FLAHERTY
COORDINATOR, NATIONAL 911 PROGRAM

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Agenda

- Overview
- Data Collection Process
- Results of data collection
- Next Steps

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What is the National 911 Profile Database?

The Profile Database contains 2 kinds of data:

- Demographic data that characterizes the status and basic functions of state 911 systems
- Data that measures and reports state progress in implementing advanced (NG) 911 systems

Profile Database Overview

- The National 911 Program worked with NASNA on a list of 55 data elements - both useful and feasible to collect
- The National 911 Program worked NASNA team to develop data definitions and online data submission tool – The National 911 Profile Database
- NASNA members worked with local PSAPs to compile data, and with National 911 Program team to refine data definitions

A very special thanks to NASNA Board and its members for their efforts!

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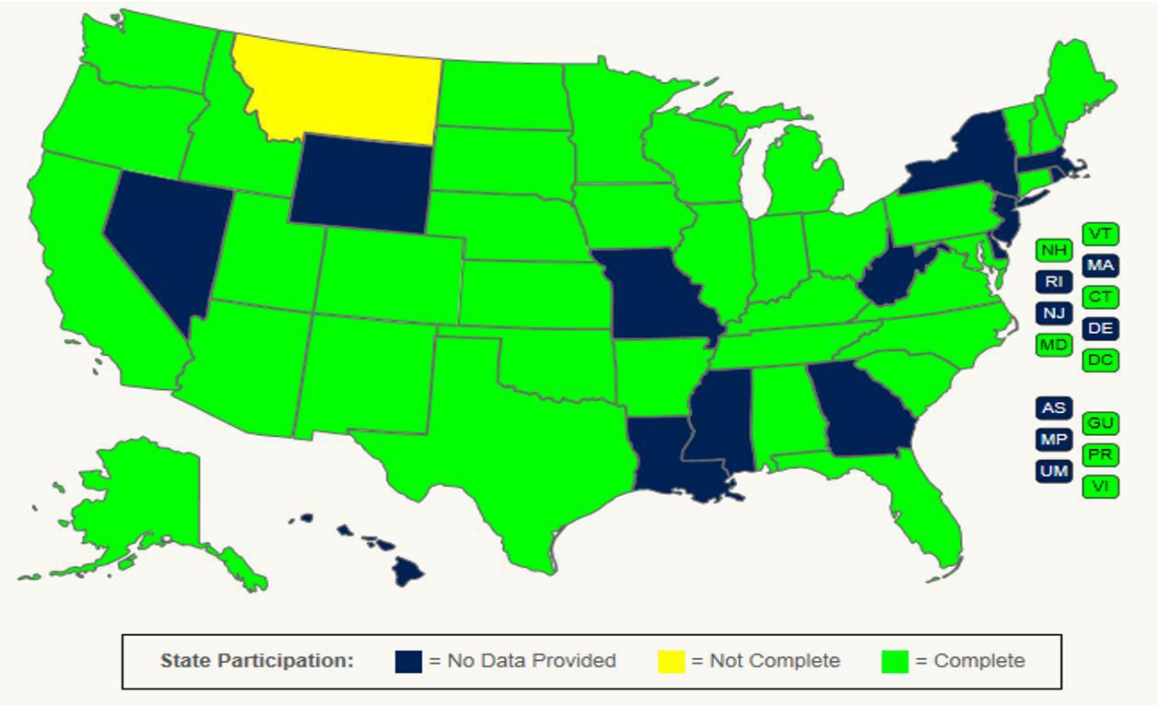
Profile Database: Challenges



39 States Submitted Data (Green)

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Baseline Data – Overview

- ***Baseline Data*** reflect the current status and characterizes the status and basic functions of state 911 systems
- Data in this section include:
  - Calls Received (Total: Wireline, Cellular, VoIP)
  - Sub State 911 Authorities
  - Highest Level of Service Provided Compared with Population
  - Highest Level of Service Provided Compared with Geographic Area
  - Use of Common Definitions for Levels of Service
  - Number of Primary and Secondary PSAPs
  - Revenue
  - Costs

Profile Database Overview

- These data are useful to states and 911 stakeholders in the development of effective policies, planning, and implementation strategies at all levels of government
- For example, the 911 Board in the Commonwealth of Virginia asks:

How do we compare to other states?

- There are two approaches to answer this question:
    1. Review the data of the states that share borders with VA
    2. Review the data of the states whose data closely resembles VA data

Baseline Data – Number of Calls

- Captures the total number of 911 calls received, even if not answered or no dispatch occurred
- These calls include:
  - Wireline
  - Wireless
  - VoIP
  - MLTS
  - Telematics

State	Response	State	Response
TX	24,922,909	KS	2,853,576
CA	23,763,398	AR	2,749,079
FL	17,180,890	CT	2,276,679
PA	8,850,159	OR	1,662,290
NC	6,855,379	GU	1,400,000
MI	6,334,188	DC	1,368,582
WA	5,888,870	NM	1,262,218
CO	5,872,368	NE	1,156,517
AZ	5,845,282	UT	928,744
IN	4,610,105	IA	760,386
VA	4,566,206	ME	669,936
MD	4,519,037	ND	326,194
MN	4,172,742	SD	297,270
KY	3,349,617	VT	208,367
PR	3,003,386	VI	35,631

UNKNOWN: AK, AL, ID, IL, MT, OH, OK, SC, TN, WI

For the 30 States that responded, the total number of calls is: 147,690,005

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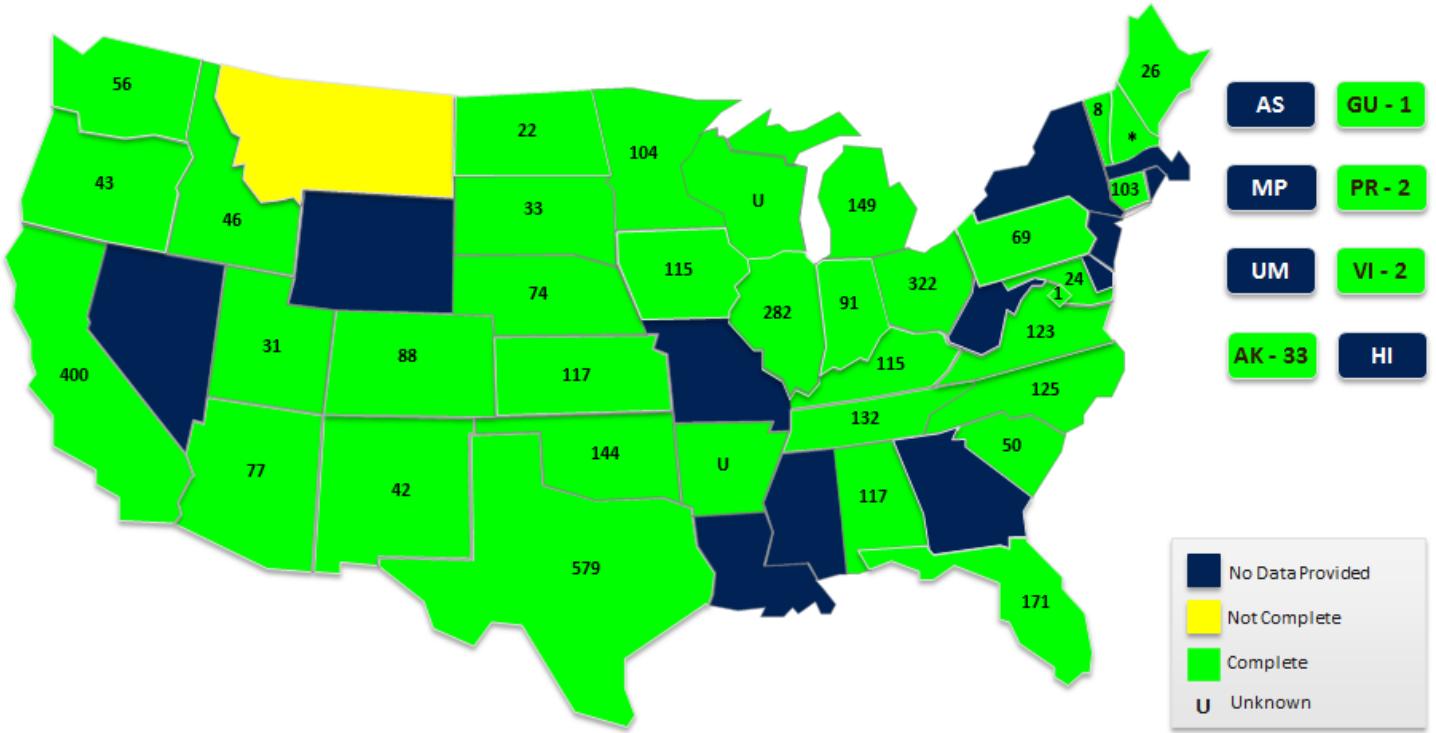
Baseline Data – Number of Primary PSAPs



Captures the number of Primary PSAPs within a state

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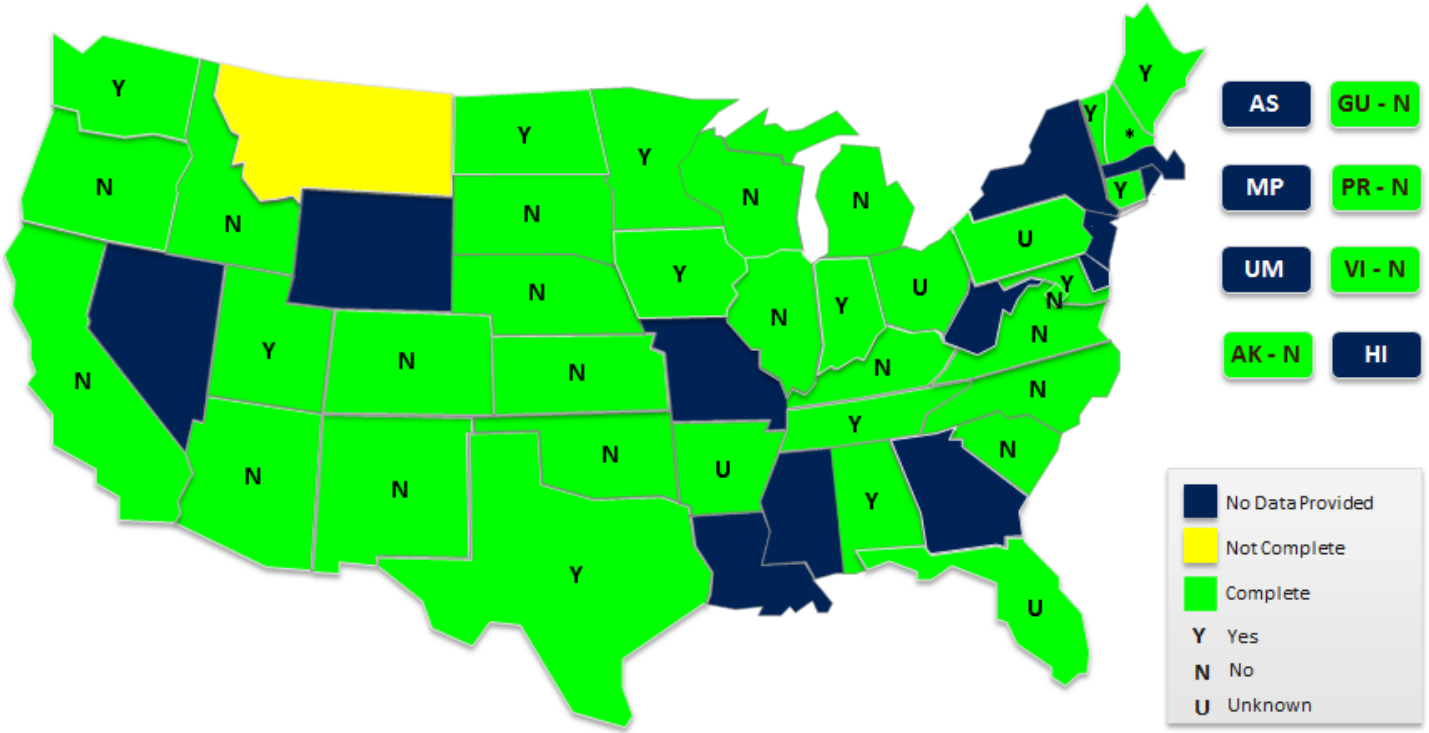
Progress Benchmarks – Overview

- ***Progress Benchmarks*** reflect the status of State efforts to implement NG911 systems and capabilities
- NG911 Progress Benchmarks:
  - State Plan
  - Concept of Operations
  - Request for Proposals
  - Contracts in Place
  - Components being Installed/Tested
  - Agreements with Originating Service Providers
  - Percentage of NG Systems (as identified in State Plan) that is Operational for Call Taking
  - Percentage of NG Systems (as identified in State Plan) that can Coordinate Directly (over the IP-based Network) with External Organizations (First Responders, Third Parties, etc.)

Progress Benchmarks – 13 Awards



Captures whether a state contract for the NG911 part, function, or component has been awarded

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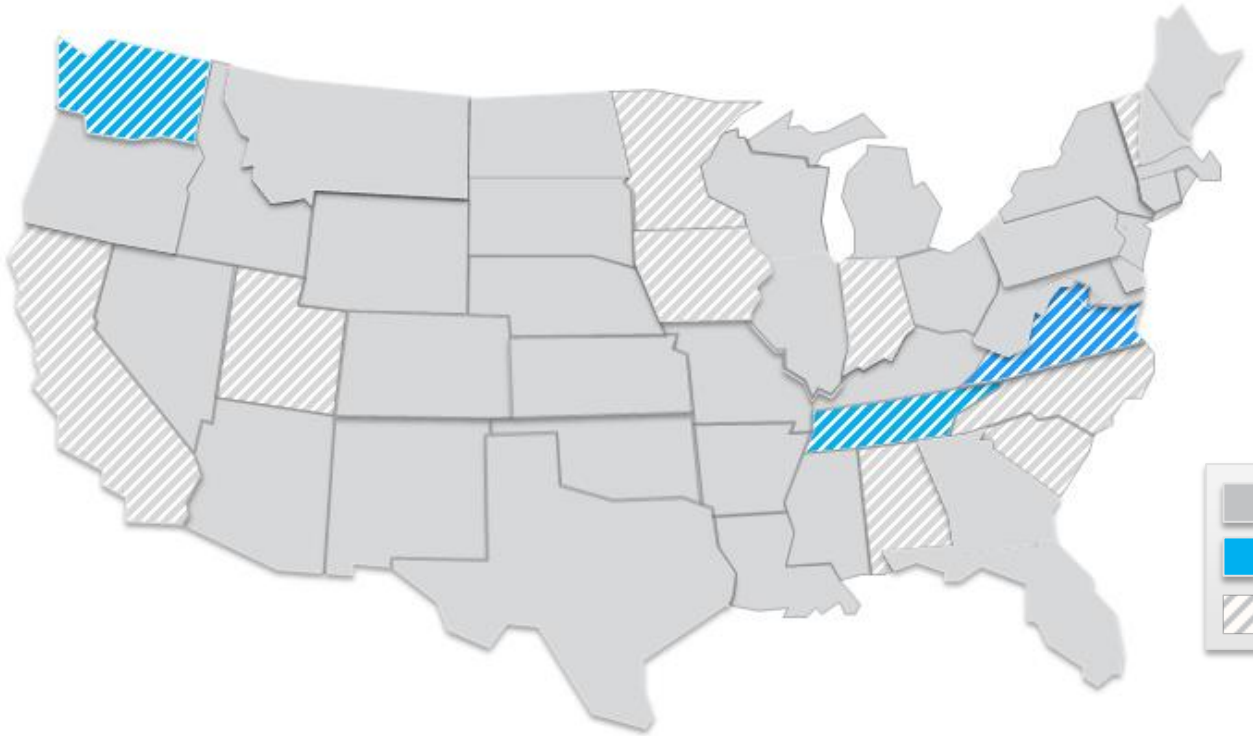
Progress Benchmarks – States That Can Process 911 Calls using NG911 Infrastructure



AS GU

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AK HI

Difference between the percentage of the planned NG911 systems that are operational for NG911 call-taking from 2011 to 2013

- Responded NO or did not respond in 2011 and 2013
- Responded YES in 2011
- Responded YES in 2013

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Next Steps

- Combining Profile Database data with NENA National Progress on IP Network, ESInet, and NG911 data
  - Harmonized definitions
  - Combining will give the most complete picture available on the status of NG911 deployment nationwide
  - Report/Map scheduled to be released June 2015
- 2015 Profile Database data collection of 2014 Data
  - Webinar trainings in Spring of 2015
  - Data collection begins in late Spring of 2015

Q&A Period

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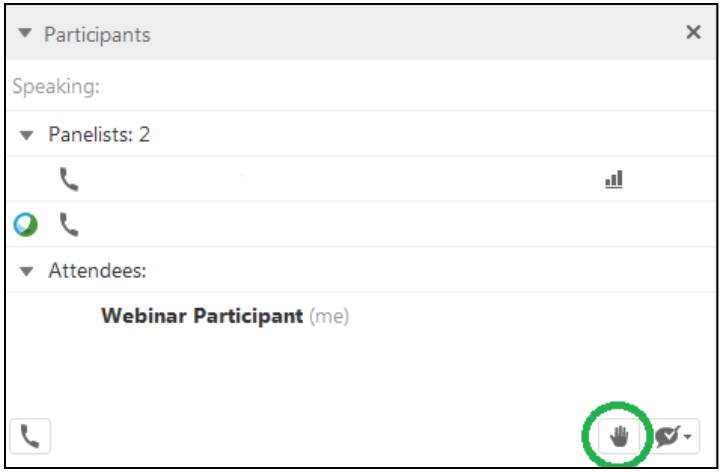


Cybersecurity and NG911

ALABAMA 9-1-1 BOARD

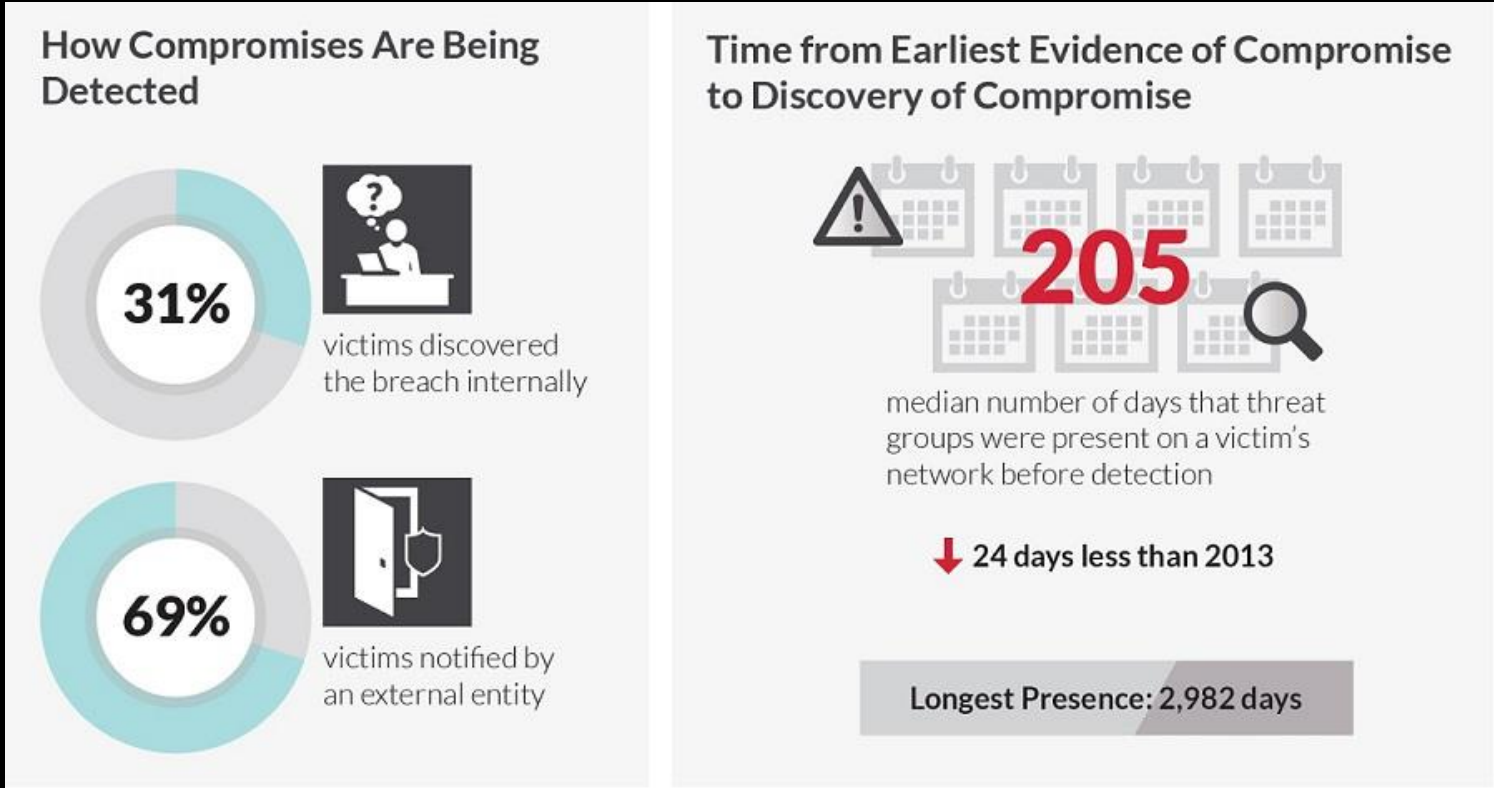
- To make money! (Ransomware and others)
- For Political Reasons (Hacktivists)
- To steal research & development (R & D)
- To conduct warfare activities
- For the challenge
- For bragging rights (greatly decreased in the last few years)

Reason
Hackers
Hack

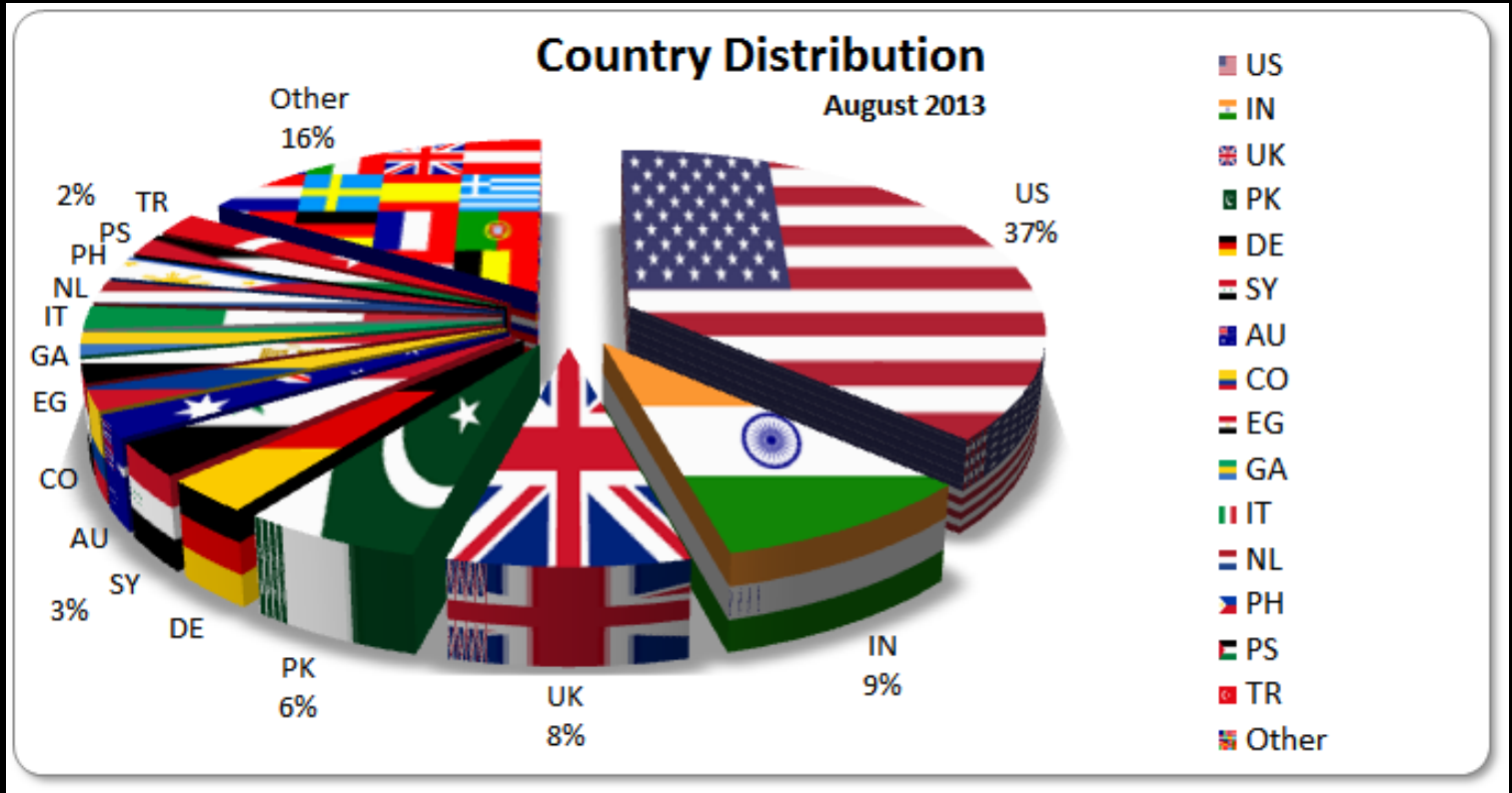
High Level View of Hacking

- Reconnaissance – Use Google, sniff or read network traffic, etc.
- Scanning – Involves using information from recon to examine networks for open ports, vulnerabilities, etc.
- Gain Access – Exploit vulnerabilities and launch and install malware
- Maintain Access – Establish backdoors and C2 (BackOrifice, Netbus, SubSeven, MS Remote Desktop and others)
- Cover Tracks – Remove tools and files used to gain access and obfuscate tools and files left behind

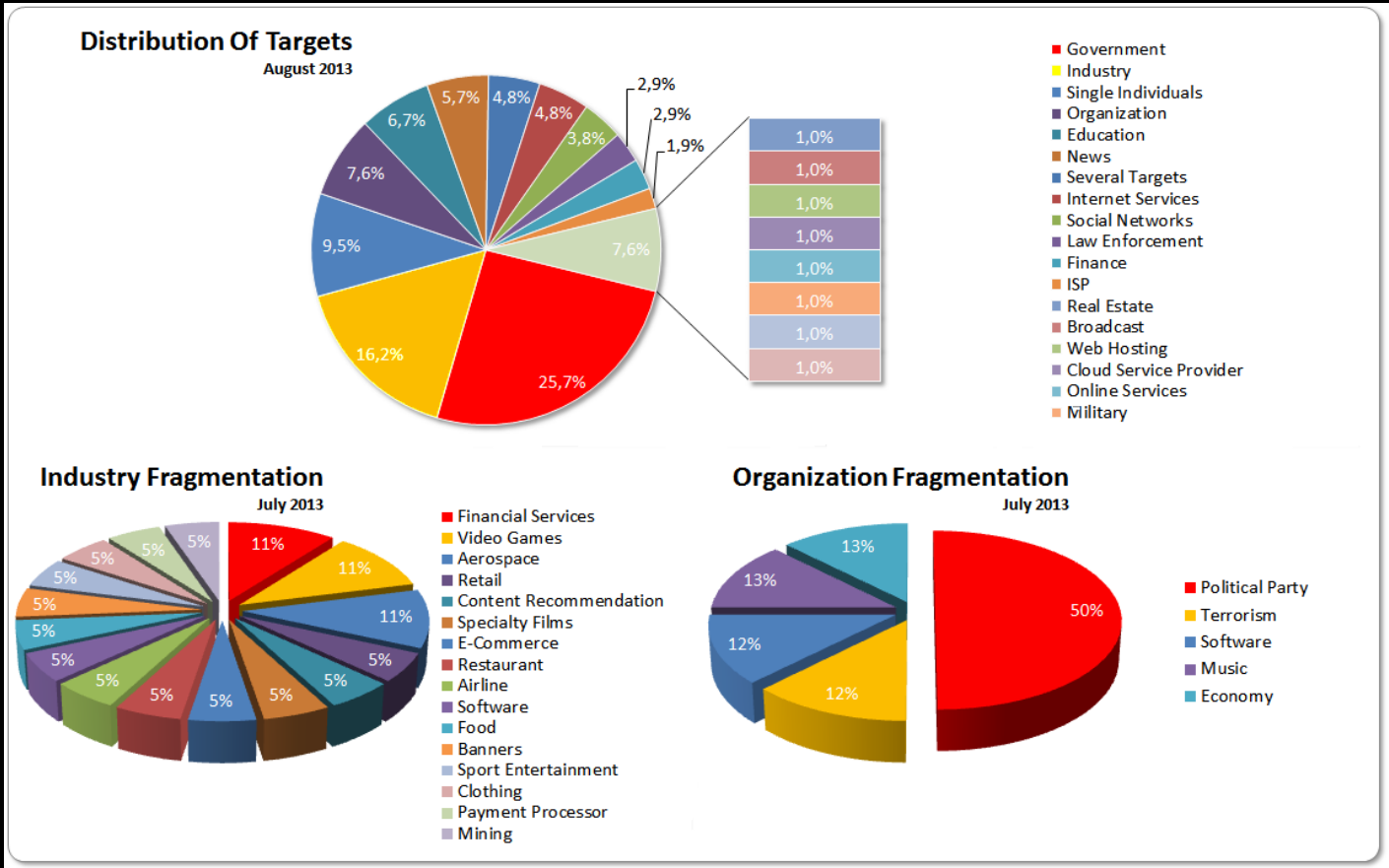
Discovery of Compromise

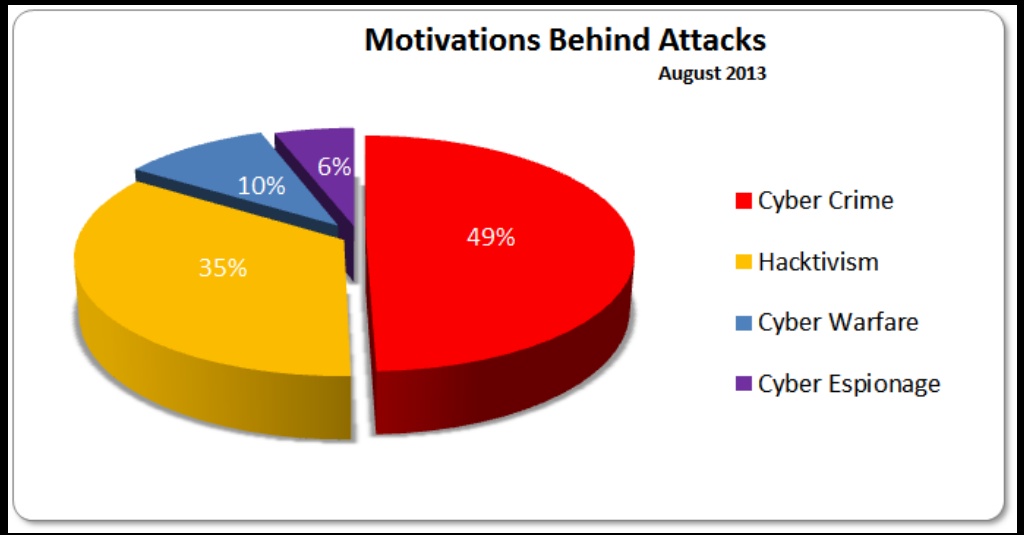


Distribution of Attacks by Country

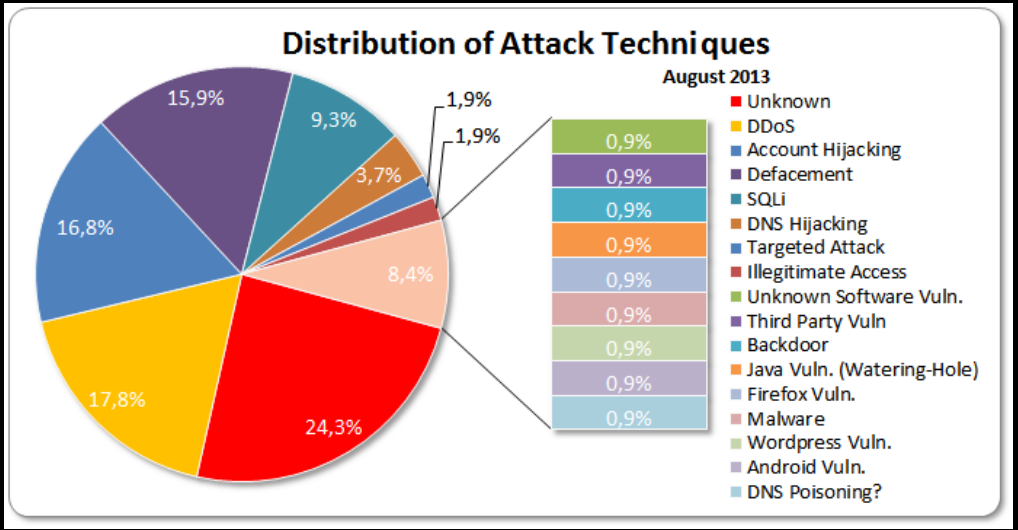


Distribution of Attacks by Target




Motivations Behind Attacks
August 2013
49%
35%
10%
6%
Cyber Crime
Hacktivism
Cyber Warfare
Cyber Espionage

Motivation



Attack Techniques

Our largest fear in 9-1-1 is a denial of service attack. This technique makes up almost 20% of all attacks.

- Denial of Service (DoS) - ESRK Exhaustion, Dialers, Swatting
- Potential discovery and abuse of a PSAP's 10-digit trunk number
- Spoof VoIP ALI records or the SIP protocol
- Record and abuse internal transfer DTMF tones
- Harvesting FBI, SWAT team & bomb squad pager/SMS numbers
- Near real-time location data for field units from AVL

Concerns for 9-1-1

Concerns for 9-1-1 Continued

- Harvesting names and phone numbers of citizens with Alzheimer's or dementia and mental and psychological problems
- Publish compromised data resulting in lawsuits – Hacktivisim
- Vendor created vulnerabilities

What can 9-1-1 expect in the future?

- As hackers realize that newer IP based 9-1-1 phone systems are no longer connected to completely closed networks, APT attacks may become more prevalent.
- Regional and statewide ESInets will create potentially bigger and more attractive targets to hackers.
- Greater concern of cyber attacks among CPE vendors will cause these vendors to increase security efforts beyond what they are already performing.

- Use robust authentication
- Patch all applications and OSs and keep antivirus up to date
- Constantly train
- Use multiple layers of security
- Proxy all port 80 traffic

Best Practices

Best Practices Continued

- Properly design network architecture (maintain diagram)
- Properly configure all computers, network devices and tools
- Perform security assessments and pen testing
- Dedicate More Resources
- Monitor and analyze

Special Thanks

My Contact Information

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- Alabama 9-1-1 Board
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- 334.440.7911

Q&A Period

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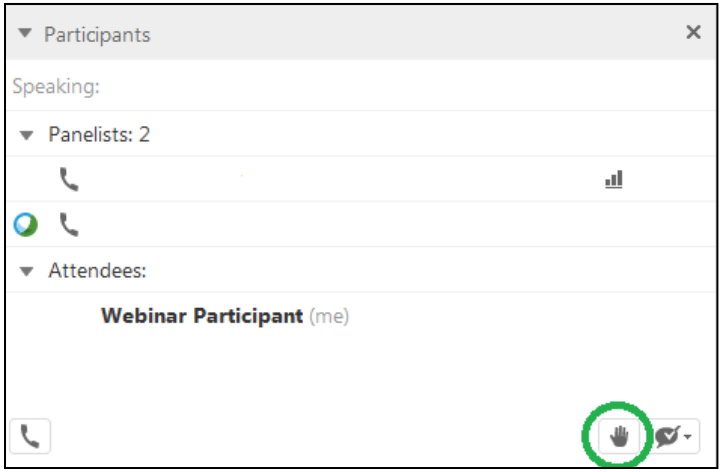

Future Webinars

Next Scheduled Webinar: Tuesday, June 9, 2015 at 12 noon ET

Presenters will be announced shortly and registration will be available early next month

Visit 911.gov to access archived webinars

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