



A New Day for the Civil Service

Track 3, Cybersecurity Workforce Structure

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Overview

- Drivers and Direction
- Track 3 Objectives
- Approach
 - Phase 1, Define the Workforce
 - Phase 2, Develop Competency Models
 - Phase 3, Analyze Challenges
 - Phase 4, Develop HR Strategies
- Next Steps

Drivers and Direction

[We] will be unable to combat...threats without a more coordinated, sustained effort to increase cybersecurity expertise in the federal workforce.

Partnership for Public Service

All the Services are desperately short of people who have defensive and offensive cybersecurity war skills

Defense Secretary Robert Gates

Only about 1,000 people in the entire United States with the skills needed for...frontline cyber defense, but 20 or 30 times that many are needed.

NPR's Morning Edition 7/19/10

“Develop a strategy to expand and train the workforce, including attracting and retaining cybersecurity expertise in the Federal government” (Cyberspace Policy Review, May 2009)

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Track 3 Objectives

- Implement strategies to ensure federal agencies can attract, recruit and retain skilled employees to accomplish cybersecurity missions
- What skills do we need today and in the future?
- How can we help agencies meet their future workforce needs?

Approach

Phase 1	Phase 2	Phase 3	Phase 4
<ul style="list-style-type: none">• Define Cybersecurity Work	<ul style="list-style-type: none">• Develop Competency Models	<ul style="list-style-type: none">• Analyze issues, challenges, successful practices	<ul style="list-style-type: none">• Review and revise HR policies and strategies
<ul style="list-style-type: none">• <i>On-going</i>	<ul style="list-style-type: none">• <i>On-going</i>	<ul style="list-style-type: none">• <i>On-going</i>	<ul style="list-style-type: none">• <i>Future</i>

Collaboration and input from Federal agencies are critical

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Phase 1 – Define the Work

- Group cybersecurity work into 3 categories to ensure consistency and common taxonomy across NICE Tracks
 - Network Operations and Defense
 - Law Enforcement and Counterintelligence
 - Specialized Computer Network Operations
- Challenges remain to scoping the overall workforce




Network Operations and Defense

- Those Federal civilian employees, members of the uniformed services, and contractor personnel who are categorized as IT professionals with particular responsibility for the security of Federal IT systems, networks, and/or information.
- Examples:
 - Information Security
 - Security Operations
 - Information Assurance
 - Network Operations and Maintenance
 - Network Security
 - Systems Engineering and Architecture
 - Vulnerability Analysis
 - Contract Management and Oversight

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Law Enforcement & Counterintelligence

- Those Federal civilian employees, members of the uniformed services, and contractor personnel who are participating in law enforcement and counterintelligence activities that may involve IT systems, networks, and/or information.
- Examples:
 - Digital Forensics
 - Cyber Crime Investigations
 - Intrusion Detection
 - Penetration Testing
 - Research and Development

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Specialized Computer Network Operations

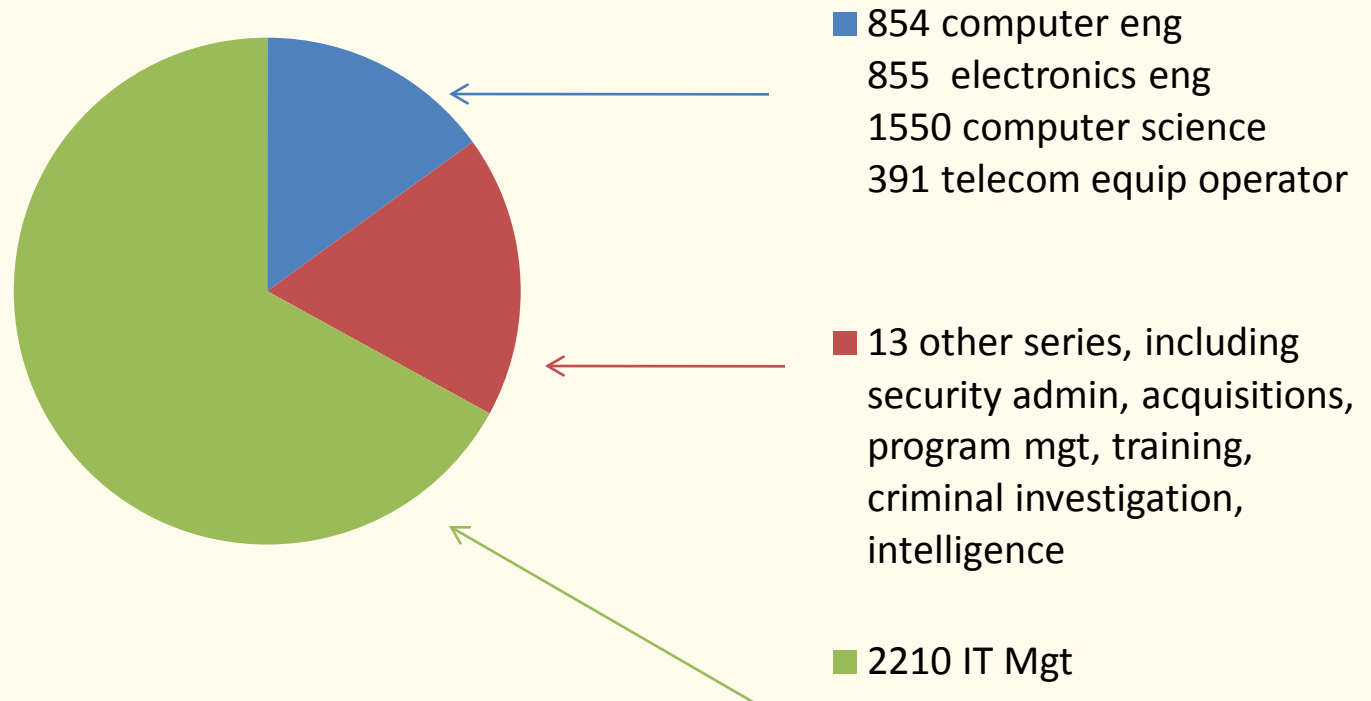
- Those Federal civilian employees, members of the uniformed services, and contractor personnel employed by departments and agencies who are engaged in highly specialized (and largely classified) cybersecurity operations.
- Examples:
 - Cryptography
 - Information Warfare
 - Intelligence Analysis

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Challenges

- Positions not easily identified in HR databases
- Federal employment data maintained by occupational series
- Cybersecurity positions currently classified in at least 18 different series, including IT management, criminal investigator, computer engineer
- Only some of the jobs in any of those series are cybersecurity

Occupational Series Included in Cybersecurity Workforce Definition



Preliminary Findings

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Phase 2 – Develop Competency Models

- Completed Actions:
 - Collected data from agencies on their cybersecurity jobs, tasks, skill requirements and competencies (Jan 2010)
 - Subject matter experts reviewed tasks and competencies (June 2010)
- On-going Actions:
 - Subject matter Workforce survey (Aug – Sep 2010)
- Competency models will guide further analysis and review of HR policies

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Phase 3 – Analyze Workforce Issues

- Began working with agencies to identify and analyze barriers, challenges and successful practices
- Expect issues in these areas:
 - Classification
 - Recruiting/Hiring
 - Pay

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Barriers/Challenges Identified So Far

- Talent shortage
- Competition for talent
 - From private sector
 - Among agencies
 - Often attributed to pay competition
- Pace of mission change and lack of occupational definition with well-understood qualifications requirements
- Resource constraints
- Disconnect between agency hiring managers and HR staff
- Hiring process that confuses candidates and dissatisfies hiring managers
- Insufficient focus on what Feds have to offer

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Cybersecurity Workforce Recruiting/Hiring

- Recruiting sources
 - Colleges, Scholarship for Service, Agency Scholarship Program
 - Contractors
 - Other agencies
 - USAJOBS
- Hiring processes
 - “Regular” Title 5
 - Student employment (STEP and SCEP)
 - Schedule A
 - Direct hire
 - Agency-specific authorities for some agencies outside of Title 5 by law, e.g. NSA

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Cybersecurity Pay

- Differing pay systems – Title 5 and others
- Special rates above usual GS rates
- Agency-specific pay schedules and systems
- Use of pay flexibilities
- Recruitment, retention and relocation incentives (3 Rs)

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Phase 4 – Develop HR Strategies

- Future work includes assessing changes that may be needed for classification, recruitment, staffing and other HR policies
- Working with agencies to support current requirements:
 - Schedule A hiring authority granted to several agencies
 - Use of hiring flexibilities to meet recruitment needs

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Solutions Suggested So Far

- Invest more in students
- New occupation definition, classification/qualification standards
- New shared register
- Establish government-wide certification requirements
- Map a government-wide cybersecurity career path
- Additional hiring flexibilities for agencies
- Boost pay / use flexibilities
- Networks for cybersecurity professionals
- Pilot cybersecurity test labs
- Leverage communities of practice
- Promote cutting edge work done in Federal agencies
- Invest in management skills

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We need your help!

- Come share your expertise at Track 3 workshops tomorrow
 - Same session morning and afternoon -- choose either one
- Give us your thoughts:
 - How can Federal agencies compete for talent?
 - How can HR policies and tools better meet the need?
 - How are we communicating opportunities?
 - How can we work together to attract the right talent?
- Let OPM know about recruitment and retention challenges and successes

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Tomorrow's Track 3 Breakout Sessions

- Interactive -- 22 networked computers using collaborative meeting technology
- You all type in comments simultaneously – no waiting for others to finish speaking or for the facilitator to catch up
- You see what everybody else said – but not who said it
- Anonymity encourages frankness and building on each others' ideas
- You contribute LOTS of ideas and comments
- Structure enables oral discussion to focus on novel ideas and opinions that differ
- Input is captured just as you expressed it

It looks like this

The screenshot displays the GroupSystems Cybersecurity Workforce Workshop interface. The main window title is "GroupSystems - Cybersecurity Workforce Workshop - [Potential Solutions (Categorizer)]". The menu bar includes File, Folders, Edit, Categorizer, Group, Options, Window, Admin, and Help. The toolbar contains icons for Agenda, People, Whiteboard, Handouts, Opinion, Reports, Briefcase, Log, Find, and Folder List. The main content area shows a list of potential solutions:

- 0 / 0 1. Partner with Universities to understand what we need and building curriculum
- 1 / 0 2. Provide scholarships to the schools we would partner with to bring in talent for SCEP appointments (DOT and the STEM program).

A dialog box titled "Provide scholarships to the schools we would partner with to bring in talent for SCEP appointments (DOT and the STEM pro..." is open, showing a list of comments:

- 1 / 0 Provide scholarships to the schools we would partner with to bring in talent for SCEP appointments (DOT and the STEM program).
- Do this by saying if you have X curriculum covering specific needs, the Federal Government will commit to hiring your students.

A "Participant Instructions" dialog box is also open, containing the following text:

Enter Instructions

Comment on potential solutions proposed so far - and add ideas about additional ones. (Participants will be given a couple of sentences further describing each of these.)

The bottom status bar shows "2 ideas", "Uncollected = 0", "4:15", and "ADMIN".

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Summary

- Together we can implement strategies to ensure Federal agencies can attract, recruit and retain skilled employees to accomplish cybersecurity missions



A New Day for the Civil Service