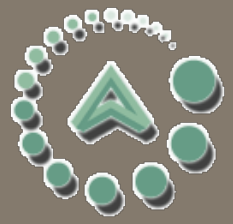

Careers in IT: Navigating Certifications and Their Value

Presentation by Kevin Manalo, PhD
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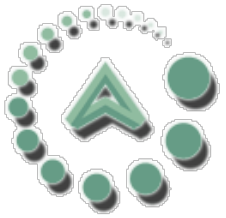
Given to Alabama A&M Senior Seminar Class

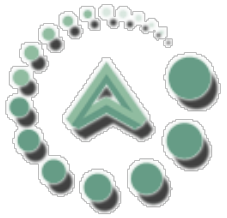
April 16, 2015

Motivations of the Alabama Supercomputer Authority



- Initially founded in 1989 to promote supercomputing facilities
  - Mission: Provide a professional portfolio of *information technology* resources and services for the advancement of education, research, and economic development in Alabama

Introduction & Audience Motivation



- Goal: to give a very **broad** outline on IT certifications
- You specifically may not have an interest in IT
- Your career is not rigidly defined by your major
- Career counselors may tell you what to consider as a five-year plan
  - IT job market can change faster than 5-year plan
- Our topic is IT certificates – there are **many**
  - If you are not going to the IT career path:
    think of other contexts:
    what skills do I bring to my job?

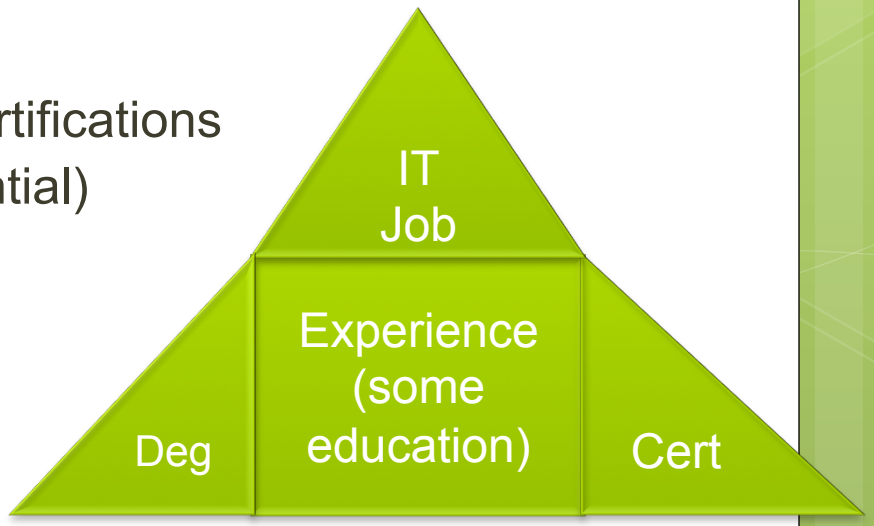
Certification Providers

What's the value in Certification?

- Certification is not "be-all and end-all"
- In some areas, certification is mandatory
- Let's make this clear: Certificates generally do not overtake degrees and do not substitute for experience
- Certification boards like to show salary surveys – as if you are going to make the salary after attaining said certificate
- Yet- certification is popular, we will explore the possibilities
  - Sometimes it can have value for the knowledge itself
  - Can be something a hiring manager would consider as part of the resume

What's in a Certificate?

- So all I need are certificates to get a job? Not likely
- Completion of Associate's/Bachelor's/Master's/Doctoral/ Professional offers the most statistical salary advantage over those without, but this is not a guarantee
- Components:
  - Experience
  - Continuing Education / Certifications
  - Degree (as it's own credential)
  - Practicum, Residency, Fellowship, in other fields

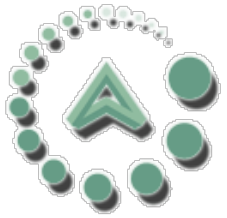


Certificates (in IT)

- An ‘accredited’ body attests to an individual having performed in some review, education, assessment, or program of study
- IT certificates are usually obtained by taking exams in a monitored setting
  - Could be multiple choice, hands-on lab, short form answer, sim-lets
  - There may be a tier of certifications as a prerequisite to your success in awarding of a certificate

A Loose Outline

- Who provides certifications? Why would I need them?
- How legit are certs? What should I consider at IT entry-level?
- When are certifications mandatory?
  - Department of Defense DoD Directive 8570
- What certifications should I consider along these paths:
  - Information Security
  - Network
  - Systems (Linux and Windows get separate treatment)
- There are management certifications, but almost inevitably has a lot to do with on-the-job training and prior experience
- Other certifications – let's just say we don't have time



Who Provides Certifications

- Vendors (OS/Hardware Vendor)
  - Microsoft, Red Hat / SuSE (Linux), Linux Foundation (non-profit), IBM, HP, Oracle, Check Point
  - Networks – Cisco, Juniper
- Certification Bodies (Not Exhaustive!)
  - **CompTIA** (non-profit) – broad IT coverage
  - **LPI** - Linux Professional Institute
  - **(ISC)²** (non-profit) – Int'l Info. Systems Security
  - SANS Institute's
    GIAC – Global Information Assurance Certification

Certify with Care

- The integrity of the certification
  - Certifications mean little if everyone passes
  - But certification and training entities stand to profit from training – use your *intuition*, as with all things
    - Do other people you know have them, and did it actually help their career
- The length of the certification (2 years, 3 years, lifetime?)
- If provided by a vendor, think about ‘vendor lock-in’
- Cost - majority of entry-level certifications are anywhere from $100-$2000, and may only last 2 years
  - Do you pay out-of-pocket; can your employer pay for it?

Do you want a career in IT?

- Why consider an IT career path:
  - How am I getting on the internet?
  - What powers that website? Is it a magic box?
  - Who provides that Wi-Fi network anyways?
  - How are my credit card transactions just able to work?
  - How secure is the network I am on?
  - E-mail, video teleconferencing, VoIP, data
  - How can I use a powerful computer for my research
    - Hint: Alabama Supercomputer Center
    - You can apply for FREE accounts at Alabama Supercomputer Center, provided you are fully enrolled at a public Alabama university, such as Alabama A&M

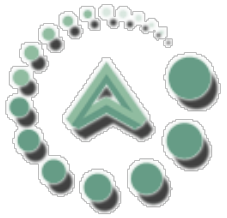
Certification Entry-Level

- Focus on certifications that do not require work experience
  - Some have a professional working requirement
- We will focus on three job areas (roles @ ASC)
  - Information Security
  - Network (Analysts, Engineers)
  - Systems (Administrators, Engineers, Analysts)
- Things you should search: “CompTIA”

WHO – where are the IT jobs?

- Federal/State Government Agency
- A Contractor (usually for DoD)
- Private IT Sector
- Some of you already have part-time and fulltime jobs that are somewhat associated with IT
- This may matter as some certifications are mandatory if you want to even apply for the job

WHO gets certificates or cares about them?



- Students/Enthusiasts
  - Some technical programs even go as far as giving credit for IT certifications as college credits
  - On the side – you just like working with computers
  - Working professionals with some relationship to IT
- Working IT professionals
  - Some career advancement, continuing education
  - Validate existing body of knowledge
- Hiring managers consider their value

Getting Started

- Examine each field
  - Information Security – hard to just enter without direct relevance
  - Network – can provide a foot in the door if entry-level certs are attained
    - Many network engineers worked the technical help desk at a 24x7 NOC and leveraged their employment for more advancement
  - Systems – some entry-level certifications can demonstrate interest
    - Many individuals in networks and systems even go as far as having a ‘home-lab’ and this enthusiasm shows on the job
- Self-study can be difficult: you are already attending college
- Having a cert. without resume relevance may hurt you
  - You may have all of the certificates and no experience
  - Tailor that interest accordingly

Dept. of Defense (DoD) Careers

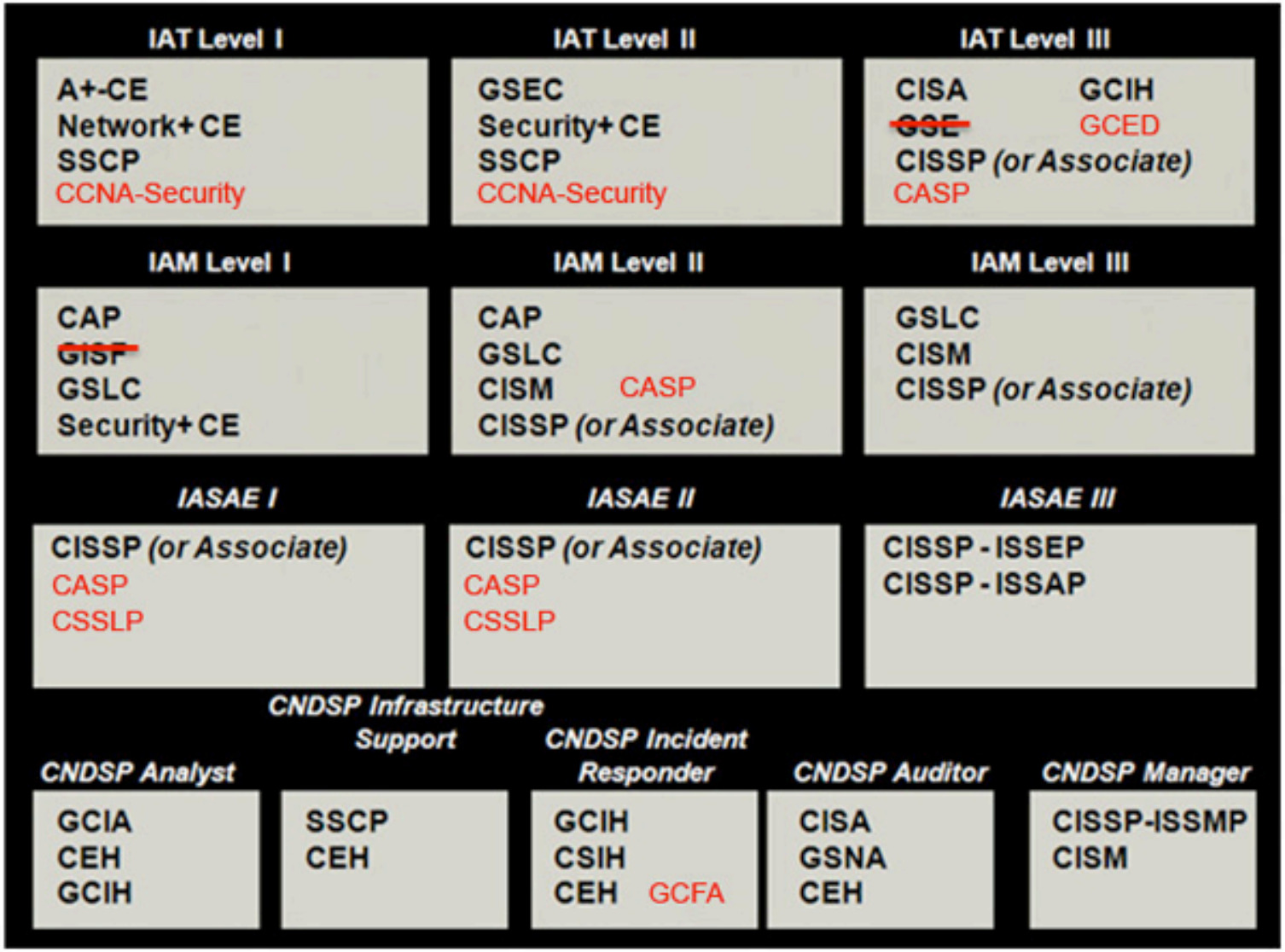
- **Privileged access to federal computer networks** requires certification
  - 1 in 5 hold Security+
  - A+ and Network+ are also very popular
  - **Mandatory** no matter how talented you are, you need them for job eligibility

DoD Directive 8570

- This is your source for 8570 baseline certifications:
  - http://iase.disa.mil/iawip/Pages/iabaseline.aspx
- You are going to see a lot of Abbreviations
  - IA = Information Assurance
  - IAT – IA Technician
  - IAM – IA Manager
  - IASAE – IA System Architect and Engineer
  - CNDSP – Computer Network Defender Service Provider

8570 Baseline Certifications
Graphic from: IASE (Information Assurance Support Environment)

Table AP3.T2 DoD Approved Baseline Certifications



Information Security

- CompTIA's Security+ CE possible entry point
  - Prior to 2011, there was a lifetime certification with Security+
- Other certifications are usually on-the-job, and are not financially feasible
- CISSP, CISM, GIAC-based certifications, are certifications that are only accessible with work experience
- Dialogue – how important is my organization's data and how do I protect it on an organizational level?

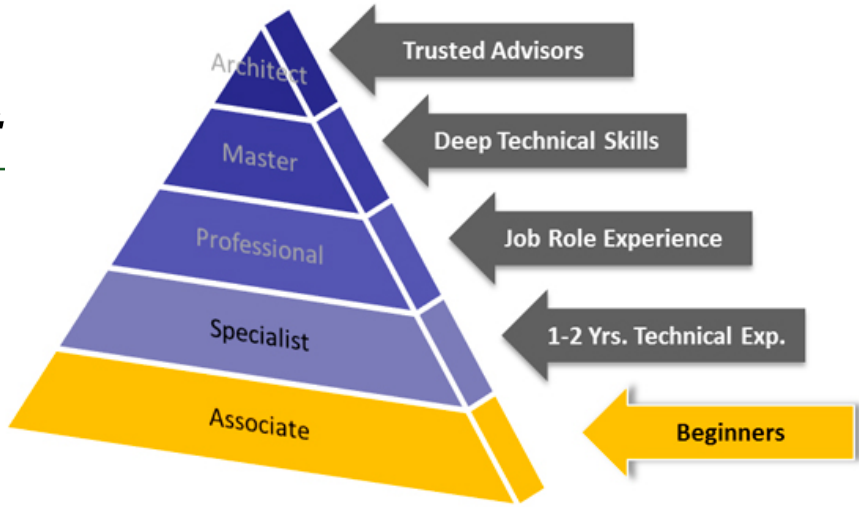
Network Certifications

- Foundational:
  - CompTIA's Network+
- Network Vendors (Supplying the routers and switches that allow you to use the Internet)
- Cisco
  - CCENT -> CCNA
- Juniper
  - JNCIA
- Dialogue – you use the internet, but have you considered how this really works?

Systems (Microsoft) Certification

- MCTS, MCITP (retiring)
- Microsoft Server
  - MTA
  - MCSA (3 Exams)
  - MCSE
- Microsoft Database

Microsoft Technology Associate



- Dialogue – beyond using Windows itself, what are some examples of services that Microsoft offers?

Systems (Linux)

- CompTIA/LPIC – **Linux+**, LPIC-2, LPIC-3
- Linux Foundation – **LFCS***, LFCE
- SuSE Linux – CLA, CLE
- Red Hat Linux – **RHCSA**, RHCE

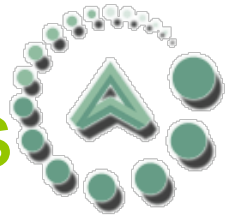
Linux Professional Institute

- Dialogue – what do people in systems administration do?

- Full Disclosure – I work in Linux systems so I can answer more questions here ☺

redhat.

Hierarchy in Certification Labels



- Entry → Associate → Professional → Expert → Architect
  - Cisco uses this model
- Administrator → Engineer → Architect
  - For example, Red Hat Linux uses this model
- There's always a progression
  - HS Diploma → Associate's → Bachelor's → Post-Bachelor Professional Degrees
- Don't use the certification labels, follow the job title are assigned, don't mislead

This is not the END

- To repeat: certifications are valid ways to promote
  - continuing education
  - discovering an interest in a new or potential job field
  - represent what you already may know if you are already in the workforce
- Just because you have a certificate does not equal automatic qualification; the process of self-evaluation is vital to your career success
- All things equal, certification may provide an edge for two similar candidates vying for a job
- Some IT sectors require them for your job (DoD)

Closing Remarks

- College education PAIRED with certification can present a greater probability for your ongoing career success in the ever-growing IT field
- The best way to approach certification is to “match it to the experience”
  - Define the entry path based on your passion and interests- be practical
- Continue to develop skills that define your technology niche – can you be that go-to person for X on the job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