

A network diagram background consisting of numerous yellow circular nodes connected by thin blue lines, set against a dark blue gradient background. The nodes are scattered across the right side of the image, with a higher density towards the top right.

# Linux Foundation Training & Certification

April 2020

 THE **LINUX** FOUNDATION

# Agenda

1. The Linux Foundation (TLF or The LF)
2. Demand for Talent
3. Training and Certification
4. Why Certify with LFCS?

Close with Q&A

# Intro to the Linux Foundation





# Linux Foundation History

- > The Linux Foundation was started in 2000 under the Open Source Development Labs (OSDL) and became the organization it is today when OSDL merged with the Free Standards Group (FSG) in 2007.
- > The Linux Foundation is home to the largest open source projects in the world and sponsors the work of Linux creator Linus Torvalds.
- > The Linux Foundation is supported by leading technology firms and developers from around the world.
- > The Linux Foundation provides infrastructure, legal management, events, training and certification, for open source projects in order to grow and sustain them.

The Linux Foundation is creating the greatest shared technology investment in history by enabling open source collaboration across companies, developers, and users.

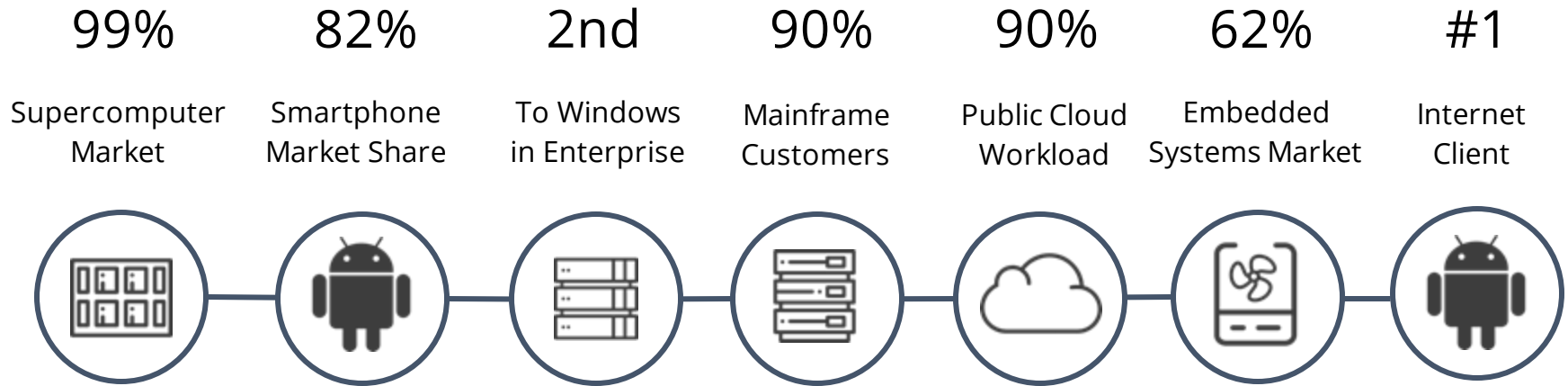
We are the organization of choice to build ecosystems that accelerate open technology development and commercial adoption.

# Neutral home for the world's most important projects

We host over 200 of the most critical open source projects accelerating open technology and commercial adoption. Our projects harness the power of open source development to fuel innovation at unmatched speed and scale.



# Linux has become the most important software in the world



Every market Linux has entered it eventually dominates

# The Linux Foundation is a critical part of the tech ecosystem

1600+

Members From  
41 Countries



100%

of Fortune 100  
Tech & Telecom



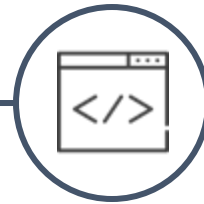
40,000+

Developers  
Contributing Code



200+

Open Source  
Projects



\$15.7B

Shared  
Value



We have seen unprecedented growth in our projects



# Today the Linux Foundation is Much More than Linux...



## Security

We are securing the internet as home to world's largest certificate authority securing 100M web sites.



## Networking

We are home to 8 of the top 10 open source networking projects in the world backed by the majority of global network providers.



## Cloud

We are creating a portability layer for the cloud, driving standards and developing reference tools for cloud native development.



kubernetes



## Automotive

Our Automotive Grade Linux platform is backed by 12 automakers and is either in or slated for production in millions of vehicles worldwide.



## Blockchain

We are creating a permanent, secure distributed ledger that makes it easier to create cost-efficient, decentralized business networks.



## Edge/Embedded

We are creating projects used in building the majority of embedded Linux distributions and rationalizing edge computing.



## Web

We are providing the application development framework for next generation web, mobile, serverless, and IoT applications.





ACADEMY  
OF MOTION PICTURE  
ARTS AND SCIENCES



# Our Role Has Been Recognized Alongside Tech Titans

- › “This category looks at those companies, associations and projects that have inspired development and IT shops to build upon the work they have created, and recognizes them for their leadership as we begin to create a digital world we only could have dreamed about a generation ago.
- › SD Times Influencers: Apple, Facebook, Google, IBM, Intel, Microsoft, GitHub, Netflix, Red Hat, Slack, *The Linux Foundation*

In 2019, The Linux Foundation is the Only Non-Profit Recognized For Three Consecutive Years For Its Critical Role in the Industry





Demand for Open Source talent is strong



80%

of hiring managers are **recruiting Linux talent**

Knowledge of **cloud technologies** impacts hiring decisions more than any area of open source.



Only

An infographic element consisting of a thick white arc that starts at the top and curves down to the left, framing the number 3%.

3%

of opens source pros say money is the best part of their job, **find out what really inspires them.**

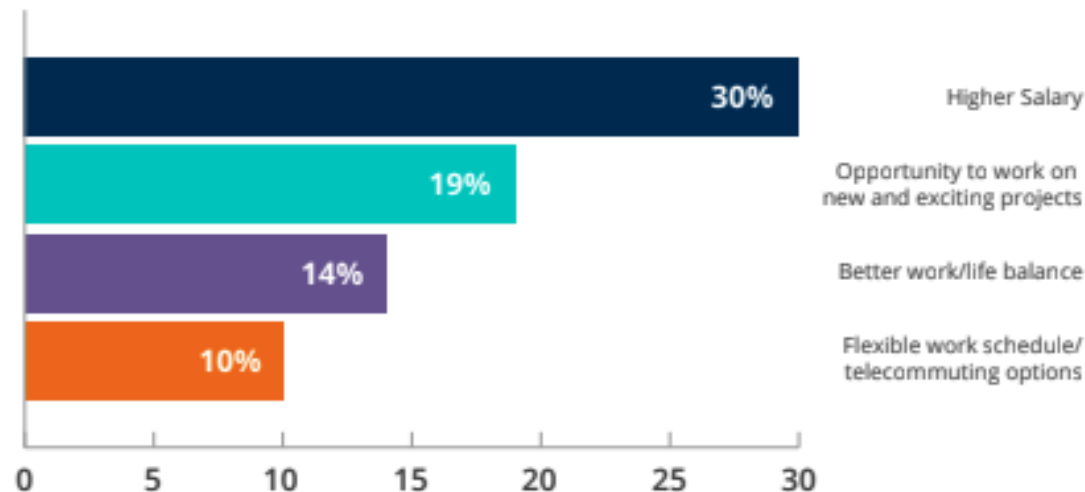
An infographic element consisting of a thick blue arc that starts at the top and curves down to the left, framing the number 87%.

87%

of hiring managers are **having a hard time recruiting** enough open source talent.

# Earnings and perks

What **keeps open source professionals** from moving jobs:

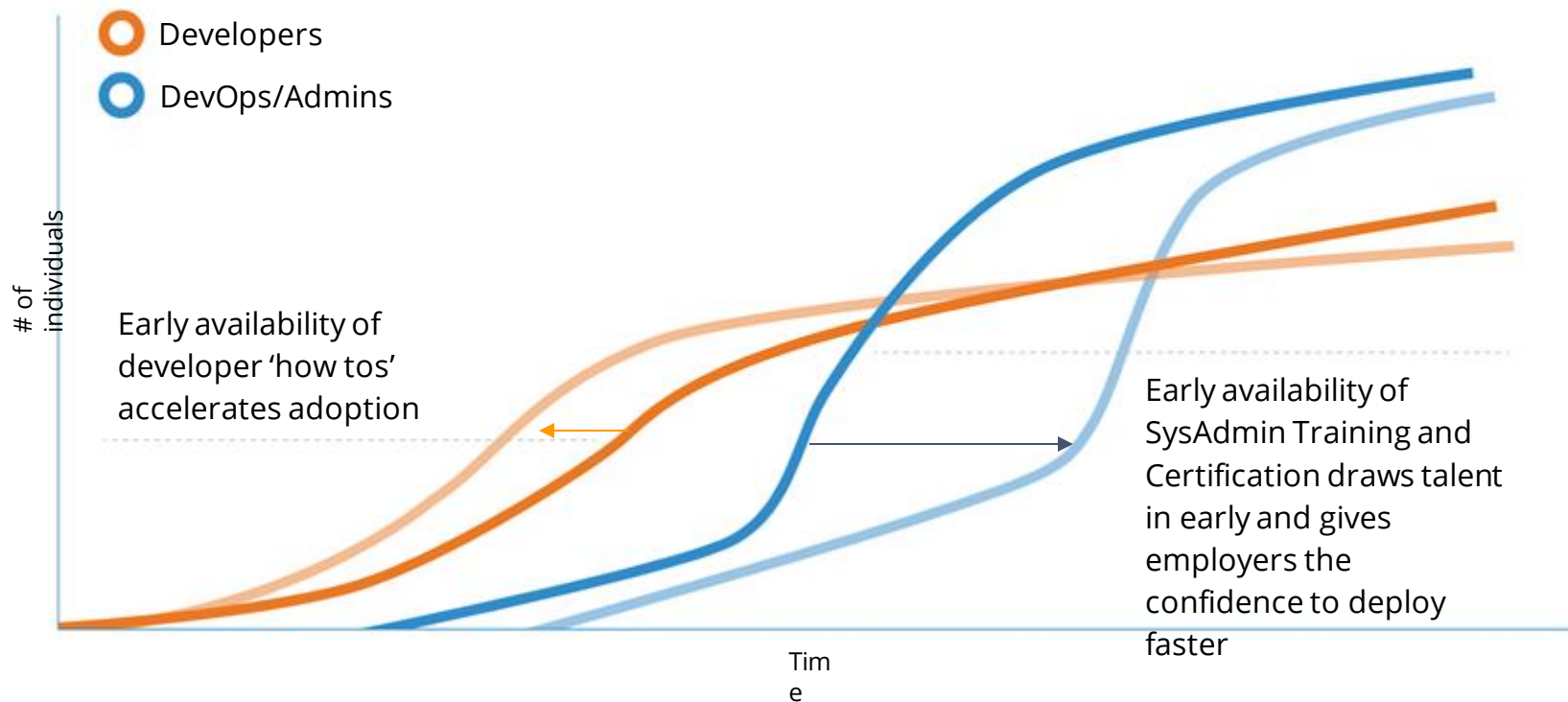




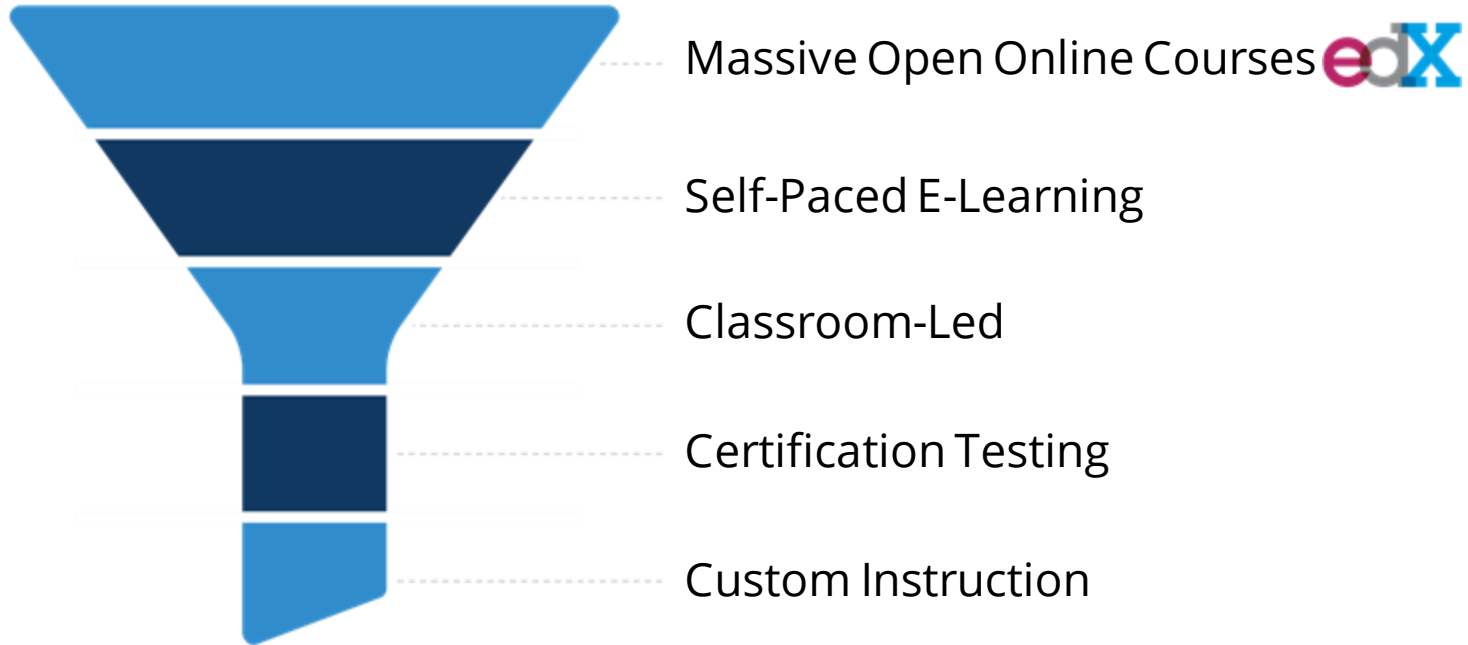
# The Linux Foundation Training and Certification



# Early Training/Certification Accelerates Path



# The Linux Foundation has a platform to build a talent funnel



# Our training platform accelerates our communities

1,500,000+

Educated  
Through Free  
Courses



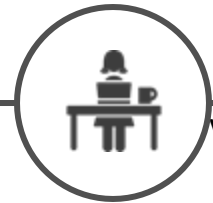
500

Annual  
Scholarships for  
Students



40,000+

Professionals  
Certified



65+

Training  
Courses Offered



Open source leaders from 4,000 companies and 85 countries

## LF Training Capabilities

Experienced staff in place to quickly develop and deploy high quality online, self-paced content (with Instructor led as an option): both Free and Paid

Working with LF (and non-LF) hosted projects to accelerate talent development:



kubernetes



HYPERLEDGER



CLOUDFOUNDRY



## Example User Training Courses

- > Introduction to Linux (free through EdX)
- > Introduction to Cloud Infrastructure Technologies (free through EdX)
- > Essentials of System Administration
- > Linux Networking and Administration
- > Linux Security Fundamentals
- > OpenStack Administration Fundamentals
- > Open Source Virtualization

## Example Developer Training

- > Compliance Basics for Developers
- > Introduction to Linux, Open Source Development, and GIT
- > Developing Applications For Linux
- > Inside Android: An Intro to Android Internals
- > Linux Kernel Internals and Development
- > Developing Linux Device Drivers
- > Linux Kernel Debugging and Security
- > Embedded Linux Development

## We have a cutting edge user and developer catalog

Training from the developers of open source technology



Linux Internals



Open Source Developer Compliance



Systems Administration



Security



Networking



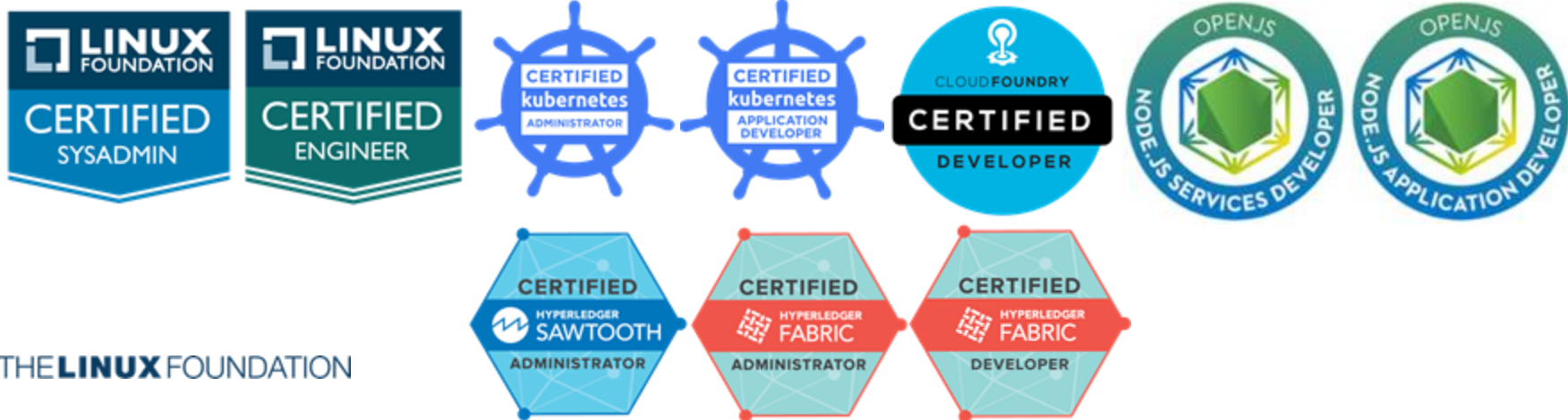
Cloud

We are growing fast for the most up-to-date courses visit – [tftraining.org](https://tftraining.org)



# LF Certification Capabilities

- > 100% online, performance-based exam platform
- > Deep track record - exams for multiple projects
- > Experienced staff can work with experts to build and deploy exams
- > Focus is on entry level Certification, allows specialized providers to thrive
- > Option to bundle Certification exams with training to ensure adequate preparation



# The Linux Foundation Certified System Administrator LFCS



# LFCS



- Early/Beginning of your career in IT
- `C:¥ sudo :- DANGER!`  
become superuser!
- Validation for Employers
- No Pre-requisites
- Training is available to help prepare

# At a Glance:

## Exam Delivery

Online

## Duration of Exam

2 Hours

## Certification Valid

2 Years

## Includes

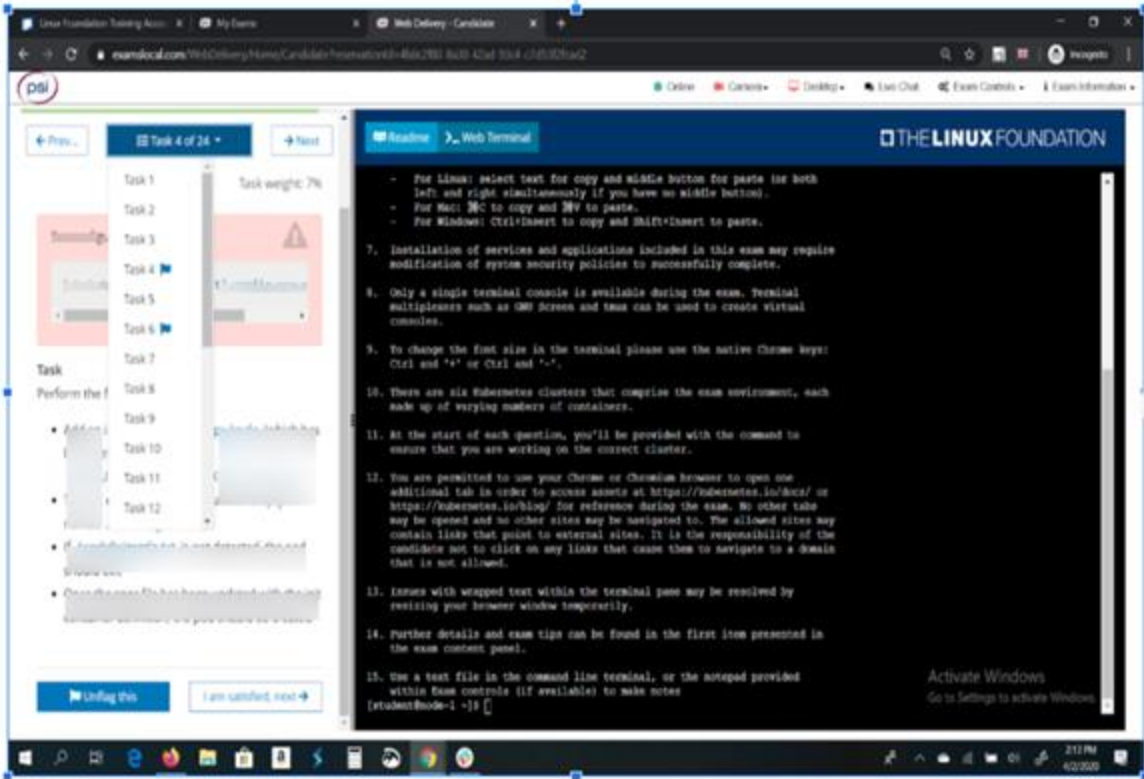
- 12 Month Exam Eligibility
- Free Exam Retake
- PDF Certificate



## Other resources provided:

- [Linux Foundation Certification FAQ](#)
- [Linux Foundation Certification Policies & Candidate Handbook](#)

# The exam environment



The screenshot displays the exam interface for the Linux Foundation. On the left, a task list shows 12 tasks, with Task 4 selected. The main area is a 'Web Terminal' window with a dark background and white text. The terminal contains the following instructions:

- For Linux: select text for copy and middle button for paste for both left and right simultaneously if you have an middle button.
- For Mac: **⌘C** to copy and **⌘V** to paste.
- For Windows: **Ctrl+Insert** to copy and **Shift+Insert** to paste.

7. Installation of services and applications included in this exam may require modification of system security policies to successfully complete.
8. Only a single terminal console is available during the exam. Terminal multiplexers such as GNU Screen and Tmux can be used to create virtual consoles.
9. To change the font size in the terminal please use the native Chrome keys: **Ctrl and '+'** or **Ctrl and '-'**.
10. There are six Subnetzer clusters that comprise the exam environment, each made up of varying numbers of containers.
11. At the start of each question, you'll be provided with the command to ensure that you are writing on the correct cluster.
12. You are permitted to use your Chrome or Chromium browser to open one additional tab in order to access assets at <https://subnetzer.io/docs/> or <https://subnetzer.io/blog/> for reference during the exam. No other tabs may be opened and no other sites may be navigated to. The allowed sites may contain links that point to external sites; it is the responsibility of the candidate not to click on any links that cause them to navigate to a domain that is not allowed.
13. Issues with wrapped text within the terminal pane may be resolved by resizing your browser window temporarily.
14. Further details and exam tips can be found in the first item presented in the exam content panel.
15. Use a text file in the `osmash` line terminal, or the notepad provided within Exam controls (if available) to make notes

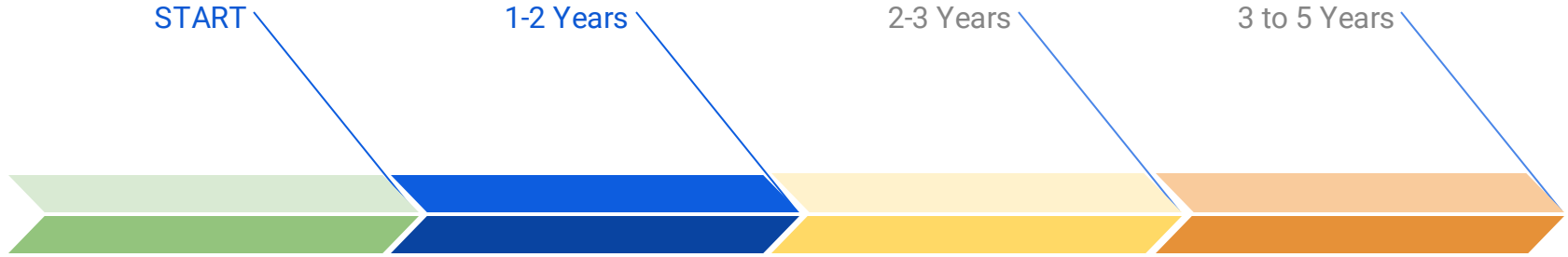
At the bottom of the terminal, the prompt is `[student@node-1 ~]$`. The Linux Foundation logo is visible in the top right corner of the terminal window.

# Importance of certification

- certifications vs. on-the- job experience
- Statistically shown to be useful to your career
- Go with the Trend
- Employers increasingly seek vendor neutrality in their training providers (enterprise rely on several flavors of Linux, not just one)



# Why Choose LFCS Certification?



**Junior System Admin**

LFCS

Median Salary \$45,000

Tech Support, System Administrator

**Senior System Admin**

LFCE

Median Salary \$70,000

Network/Systems Engineer/Architect

**Security Engineer/Manager**

CEH, GSEC

Median Salary \$70,000

Cyber Security Analyst

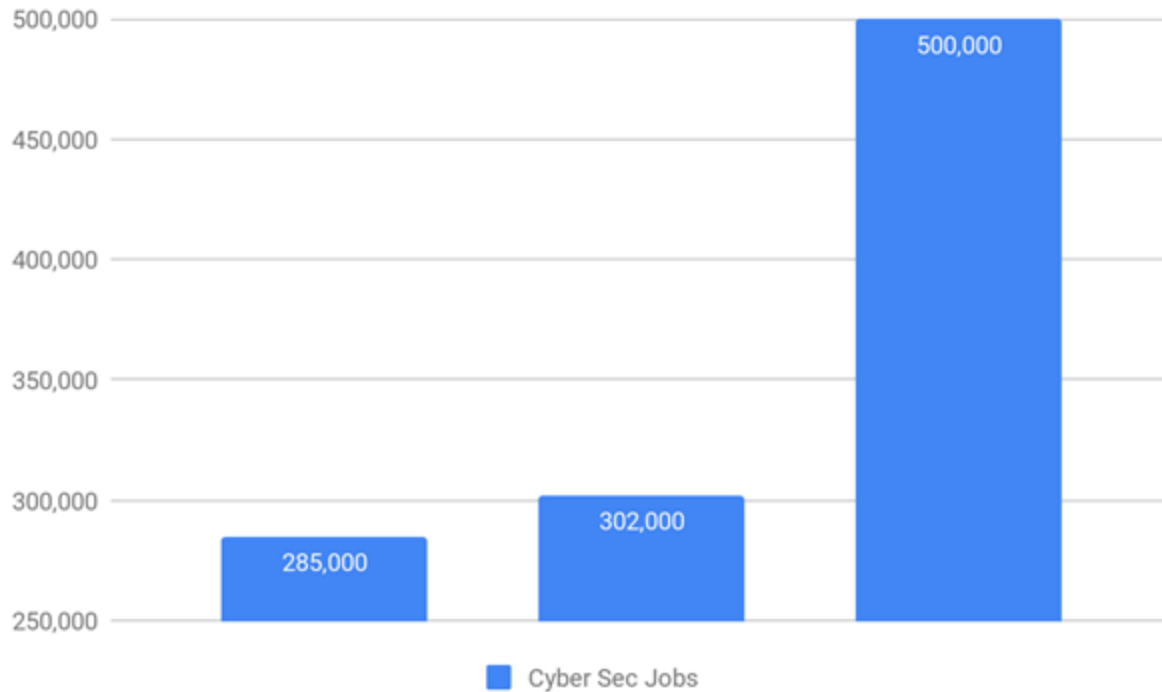
**Cyber Security Engineer/Architect**

CISM, CISSP

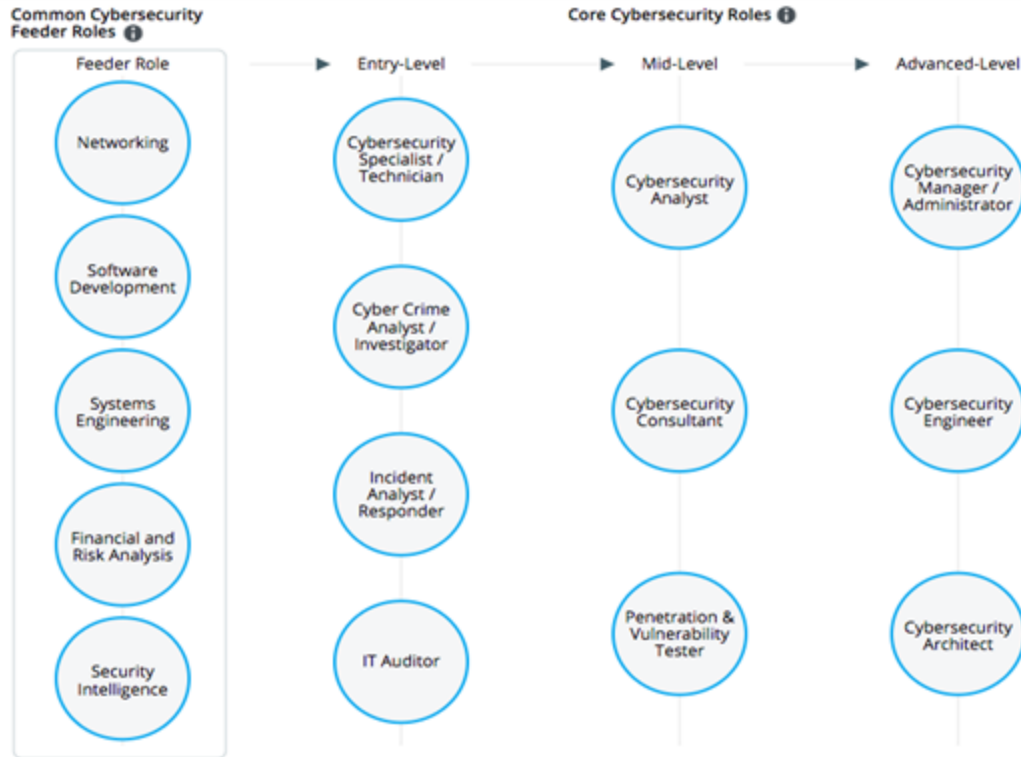
Median Salary \$120,000

Security Engineer/Manager/Architect

# Demand for trained security experts increasing



# Cyber Seek Career Pathway



# Top 5 Information Security Certifications

1. [CEH: Certified Ethical Hacker](#)
2. [CISM: Certified Information Security Manager](#)
3. [CompTIA Security+](#)
4. [CISSP: Certified Information Systems Security Professional](#)
5. [GSEC: SANS GIAC Security Essentials](#)

SOURCE: Business News Daily April 2018 <https://www.businessnewsdaily.com/10708-information-security-certifications.html>

# Blockchain is the Hottest Career of 2020

A recent study from LinkedIn found that Blockchain is the most in demand skill of 2020.



# Blockchain Career Path

Level	Skills	Courses
Beginner	<ul style="list-style-type: none"><li>• Basic understanding of blockchain terminology</li></ul>	<ul style="list-style-type: none"><li>• LFS 170 Blockchain: Understanding Its Uses and Implications</li></ul>
Enthusiast	<ul style="list-style-type: none"><li>• An idea of business use cases for blockchain</li></ul>	<ul style="list-style-type: none"><li>• LFS171 Introduction to Hyperledger Blockchain Technologies</li></ul>
Junior	<ul style="list-style-type: none"><li>• Understanding of digital identity concepts</li><li>• Familiarity with GitHub</li><li>• Knowledge of Linux command line</li><li>• Familiarity with Python</li></ul>	<ul style="list-style-type: none"><li>• LFS172 Introduction to Hyperledger Sovereign Identity Blockchain Solutions: Indy, Aries &amp; Ursa</li><li>• LFS173 Becoming a Hyperledger Aries Developer</li></ul>
Intermediate	<ul style="list-style-type: none"><li>• Programming experience with Python, JavaScript, and Golang</li><li>• General familiarity with protocol buffers (protobufs)</li><li>• Understand of the basics of the ZeroMQ (ZMQ) messaging library</li></ul>	<ul style="list-style-type: none"><li>• LFS174 Hyperledger Sawtooth for Application Developers</li><li>• LFD271 Hyperledger Fabric Fundamentals</li></ul>
Senior	<ul style="list-style-type: none"><li>• Knowledge of bash basics</li><li>• Strong knowledge of containerization and Docker</li><li>• Familiarity with NoSQL databases and general understanding of CouchDB</li><li>• Strong understanding of Hyperledger Fabric and Sawtooth architecture and components</li><li>• Familiarity with YAML/TOML markup languages</li><li>• Comprehension of traditional HTTP protocols and RESTful API design</li></ul>	<ul style="list-style-type: none"><li>• LFS272 Hyperledger Fabric Administration</li><li>• LFS273 Hyperledger Sawtooth Administration</li></ul>



# Your Career Path Training Gateway



# System Administration



## **Recommended Online, Self-Paced Courses:**

- › LFS101 Introduction to Linux
- › LFS201 Essentials of Linux System Administration
- › LFS211 Linux Networking and Administration
- › LFS216 Linux Security Fundamentals

## **Recommended Instructor-Led Training Classes:**

- › LFS300 Fundamentals of Linux
- › LFS301 Linux for System Administrators
- › LFS311 Linux for System Engineers
- › LFS416 Linux Security
- › LFS422 High Availability Linux Architecture
- › LFS426 Linux Performance Tuning
- › LFS430 Linux Enterprise Automation
- › LFS462 Open Source Virtualization

# DevOps/ Site Reliability



## **Recommended Online, Self-Paced Courses:**

- › LFS201 Essentials of Linux System Administration
- › LFS216 Linux Security Fundamentals
- › LFS261 DevOps and SRE Fundamentals: Implementing Continuous Delivery
- › LFS266 DevOps for Network Engineers

# Kernel Development



## **Recommended Online, Self-paced Courses:**

- › LFD102 A Beginner's Guide to Open Source Software Development
- › LFD103 A Beginner's Guide to Linux Kernel Development
- › LFD201 Introduction to Open Source Development, GiT and Linux

## **Recommended Instructor-Led Classes:**

- › LFD301 Introduction to Linux, Open Source Development and GiT
- › LFD401 Developing Applications For Linux
- › LFD420 Linux Kernel Internals and Development
- › LFD430 Developing Linux Device Drivers
- › LFD440 Linux Kernel Debugging and Security

# Embedded Development



## **Recommended Instructor-Led:**

- › LFD301 Introduction to Linux, Open Source Development and GiT
- › LFD420 Linux Kernel Internals and Development
- › LFD435 Developing Embedded Linux Device Drivers
- › LFD440 Linux Kernel Debugging and Security
- › LFD450 Embedded Linux Development
- › LFD460 Embedded Linux Development with Yocto Project

# Application Development



## **Recommended Online, Self-Paced Courses:**

- › LFS174 Hyperledger Sawtooth for Application Developers
- › LFD232 Cloud Foundry for Developers

## **Recommended Instructor-Led Classes:**

- › LFD301 Introduction to Linux, Open Source Development, and Git
- › LFD401 Developing Applications For Linux

# Cloud & Containers



## **Recommended Online, Self-Paced Courses:**

- › LFS132 Introduction to Cloud Foundry and Cloud Native Software Architecture
- › LFS141 Exploring GraphQL: A Query Language for APIs
- › LFS151 Introduction to Cloud Infrastructure Technologies
- › LFS158 Introduction to Kubernetes
- › LFS201 Essentials of Linux System Administration
- › LFS216 Linux Security Fundamentals
- › LFD232 Cloud Foundry for Developers
- › LFS241 Monitoring Systems and Services with Prometheus
- › LFS242 Cloud Native Logging with Fluentd
- › LFS253 Containers Fundamentals
- › LFD254 Containers for Developers and Quality Assurance
- › LFD258 Kubernetes Fundamentals

## **Recommended Instructor-Led Classes:**

- › LFS301 Linux for System Administrators
- › LFS416 Linux Security

# Networking



## **Recommended Online, Self-Paced Courses:**

- › LFS201 Essentials of Linux System Administration
- › LFS211 Linux Networking and Administration
- › LFS263 ONAP Fundamentals
- › LFS264 OPNFV Fundamentals
- › LFS265 Software Defined Networking Fundamentals

## **Recommended Instructor-Led Classes:**

- › LFS465 Software Defined Networking Essentials



# Blockchain



## **Recommended Online, Self-Paced Courses:**

- › LFS 170 Blockchain: Understanding Its Uses and Implications
- › LFS171 Introduction to Hyperledger Blockchain Technologies
- › LFS172 Introduction to Hyperledger Sovereign Identity Blockchain Solutions: Indy, Aries and Ursa
- › LFS174 Hyperledger Sawtooth for Application Developers
- › LFD271 Hyperledger Fabric Fundamentals
- › LFS272 Hyperledger Fabric Administration
- › LFS273 Hyperledger Sawtooth Administration

# Systems Engineering/ Architecture



## **Recommended Online, Self-Paced Courses:**

- › LFS201 Essentials of Linux System Administration
- › LFS211 Linux Networking and Administration
- › LFS216 Linux Security Fundamentals

## **Recommended Instructor-Led Classes:**

- › LFS311 Linux for System Engineers
- › LFS422 High Availability Linux Architecture
- › LFS430 Linux Enterprise Automation
- › LFS462 Open Source Virtualization

## Contact Us

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THE **LINUX** FOUNDATION  
TRAINING

12月31日まで使える

OSC参加者向けスペシャルクーポン

すべてのトレーニングと認定試験を20%  
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