# HOW TO STAND OUT IN DEVOPS

**Exam Guide for Linux Professional Institute
DevOps Tools Engineer Certification**

www.lpi.org

# Contents

# 1. Why you need DevOps Tools certification

DevOps is one of the most in-demand skills in the IT industry today. To help you meet this demand with verified skills, LPI has developed the **DevOps Tools Engineer** certification.

As more and more companies introduce DevOps methodologies to their workflows, skills in using tools which support the collaboration model of DevOps become increasingly important. As an LPI-certified DevOps Tools Engineer, you will be able to efficiently implement a workflow, and optimize daily administration and development tasks.

The certification covers skills with the tools commonly used to implement DevOps. It represents a strong foundation in applying the methodology, so you can prove to employers/supervisors that you have the skills required to work successfully in DevOps – and advance further in your career.

**84%**
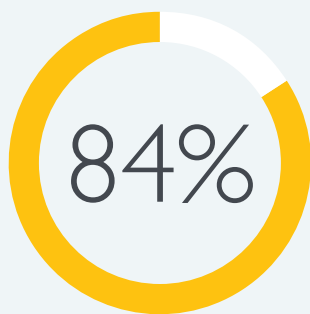
of enterprises are adopting DevOps

*Source: RightScale 2017 State of the Cloud Report*

# 2. The type of experience you should have

To successfully earn the DevOps Tools Engineering certification, you should have experience in developing software and/or administering systems.



For example, you should have some combination of the following:

- One year (or more) of hands-on experience using DevOps tools; or

- One year (or more) of hands-on experience in introducing automation tools and/or processes somewhere in the software development lifecycle.

In gathering this experience, you should also have the following:

- A working knowledge of DevOps-related domains such as Software Engineering and Architecture, Container and Machine Deployment, Configuration Management and Monitoring; and

- Proficiency using prominent free and open source utilities such as Docker, Vagrant, Ansible, Git, and Jenkins.

It is also recommended that you possess another technical certification in software development or system administration.

## What your certification will demonstrate

**The certification demonstrates that you have a working understanding of:**

- Modern software applications and cloud services

- How tools support DevOps collaboration

**The certification also demonstrates that you can apply your knowledge to conduct the following activities:**

- Set up Continuous Integration and Continuous Delivery pipelines

- Build, deploy and orchestrate application containers

- Automate system configuration

- Build system images and run them locally and in the cloud

- Monitor applications and computing instances

- Manage, collect and analyze log data

- Use Source Code Management and Version Control

# 3. The creators of the exam and certification

Linux Professional Institute (LPI), the creator of this exam and certification, is committed to providing the IT community with skills accreditation of the highest quality, relevance, and accuracy.

This commitment requires that the exam development process is highly detailed, participatory and consultative. LPI has employed the same proven techniques used to other industry-recognized IT certification programs.

As a part of LPI's ongoing certification development process, LPI continually monitors the needs of the IT market to ensure exams effectively evaluate candidates on the most relevant skills.

## How LPI does it:

### Pre-survey

LPI works with a large pool of subject-matter experts to compile an exhaustive list of all the tasks that are typically required of experts in the certification subject area.

### Job Analysis Survey

The tasks collected during the pre-survey go into a job analysis survey. This survey asks practicing IT professionals to rate each task in several ways:

- **Frequency:** How often they perform the task

- **Importance:** How important it is for a professional to be able to perform the task

### Data analysis

LPI conducts statistical analysis of the survey responses, and compute statistics indicating, on average, how critical respondents rated each task. This analysis guides the determination of the final list of skills to be certified.

# 4. Sample questions

These questions are illustrative of those found in the
**DevOps Tools Engineer** certification exam.

## Sample Question 1

**A multiple-choice question
with one correct answer:**

In the case where the file app.yml contains the following content:

```
version: "3"
services:
  lb:
    image: haproxy
    ports:
      - "443:443"
  web:
    image: nginx
    deploy:
      replicas: 2
```

Which of the following commands makes Docker process this file?

```
A. docker exec --compose-file app.yml
B. docker service create --compose-file app.yml
C. docker swarm compose up --compose-file app.yml
D. docker stack deploy myapp --compose-file app.yml
E. docker-compose up --swarm --compose-file app.yml
```

## Sample Question 2

**A multiple-choice question
with multiple correct answers:**

Which of the following Git subcommands can be used to put a new file existing in a Git repository under version
control? *(Choose **TWO** correct answers.)*

```
A. git add
B. git status
C. git version
D. git commit
E. git tag
```

## Sample Question 3

**A 'fill in the blank' question asking for a filename:**

By default, which file in a build context is read by `docker build` to gather information about the steps required to create a new container image? *(Specify the filename only **without any path**.)*

## Sample Question 4

**A 'fill in the blank' question asking for a command:**

Which command included in Kubernetes is the main tool that is used to deploy and manage applications on a Kubernetes cluster? *(Specify **ONLY** the command without any path or parameters.)*

*Answers to the above sample questions can be found on page 8 of this guide.*

# 5. Exam checklist

See if you are ready to take the exam with the checklist below.

I am comfortable using the following tools:

| | Yes | Working towards it |
|---|---|---|
| Git | ○ | ○ |
| Jenkins | ○ | ○ |
| Docker | ○ | ○ |
| Docker Swarm | ○ | ○ |
| Kubernetes | ○ | ○ |
| Vagrant | ○ | ○ |
| Cloud-init | ○ | ○ |
| Packer | ○ | ○ |
| Ansible | ○ | ○ |
| Prometheus | ○ | ○ |
| ELK Stack | ○ | ○ |

I am confident in my knowledge of the following areas:

| | Yes | Working towards it |
|---|---|---|
| Software Engineering | ○ | ○ |
| Container Management | ○ | ○ |
| Machine Deployment | ○ | ○ |
| Configuration Management | ○ | ○ |
| Service Operations | ○ | ○ |

I can do the following:

| | Yes | Working towards it |
|---|---|---|
| Set up Continuous Integration and Continuous Delivery pipelines | ○ | ○ |
| Build, deploy and orchestrate application containers | ○ | ○ |
| Automate system configuration | ○ | ○ |
| Build system images and run them locally and in the cloud | ○ | ○ |
| Monitor applications and computing instances | ○ | ○ |
| Manage, collect and analyze log data | ○ | ○ |
| Use Source Code Management and Version Control | ○ | ○ |

It is also recommended that you possess another technical certification in software development or system administration.

**ANSWERS TO SAMPLE QUESTIONS**

**Sample question 1:**
D

**Sample question 2:**
A
D

**Sample question 3:**
Dockerfile

**Sample question 4:**
kubectl

# Your next steps in DevOps Tools certification



## Get More Information

Contact LPI and learn more online about the
DevOps Tools Engineer certification.

## Get Started

Register online to take the exam, and become
a certified DevOps professional.
Start now at **lpi.org/DevOpsCert**

info@lpi.org

@LPIConnect

facebook.com/LPIConnect

## About LPI

LPI is a non-profit organisation with a mission to enable economic and creative opportunities for everybody by making open source knowledge and skills certification universally accessible. We are the global certification standard for Linux and a career support organisation for open source professionals all over the world.

With more than 600,000 exams delivered, LPI is the world's first and largest vendor-neutral Linux and open source skills certification body. We have certified IT professionals in over 180 countries, deliver exams in 9 languages, and have hundreds of training partners.