

LPI Exam 701

DevOps Tools Engineer

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\$ id

- Born in Neuss (Germany) 1957.
- Located in Berlin (Germany) since 1984.
- Works with Unix since 1988.
- Works with Linux since 1998.
- Linux on mobile devices until 2015.
- Freelance trainer for different Linux topics, e.g. preparations for LPI exams since 2015.

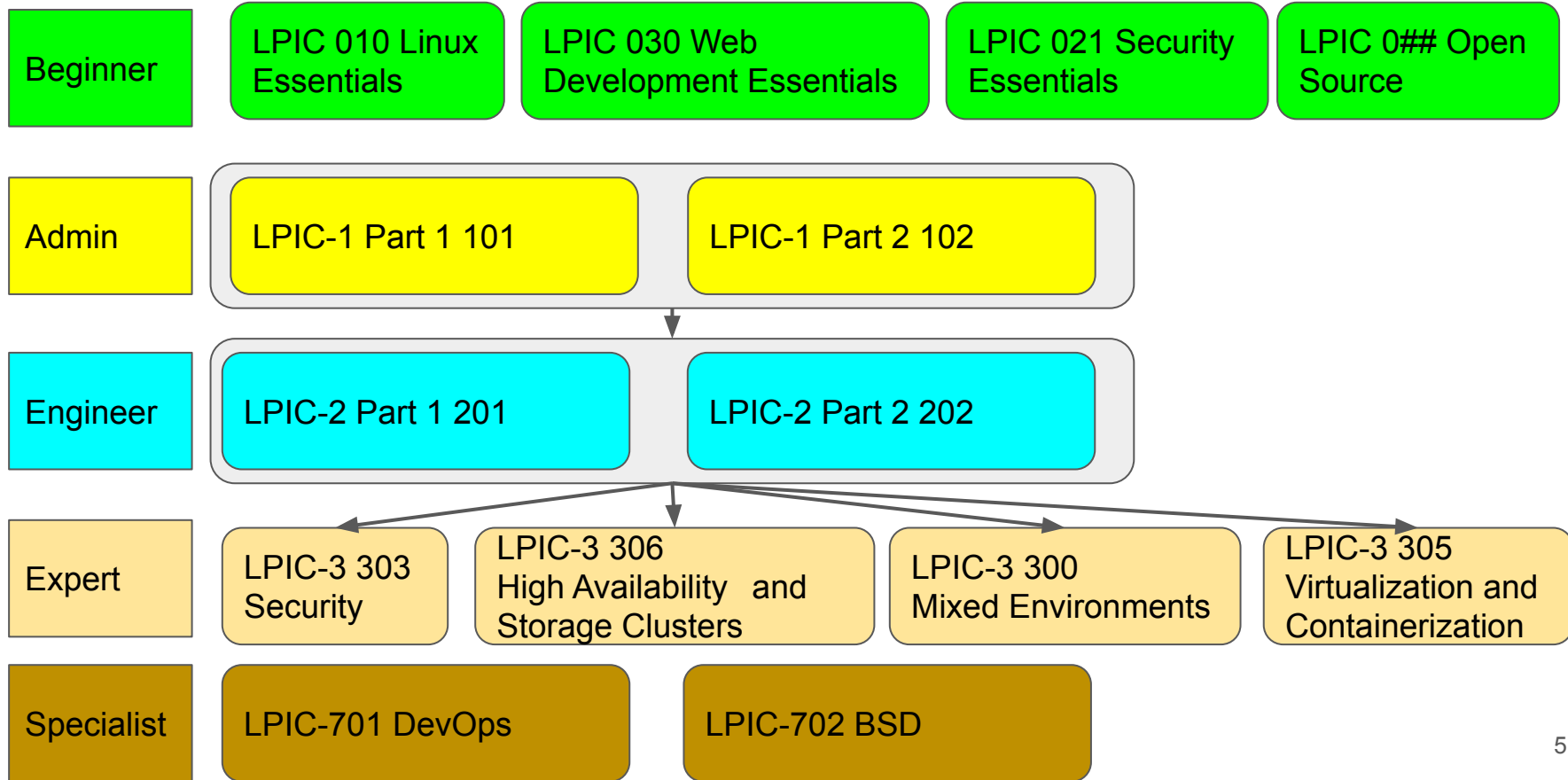
```
$ cat /etc/motd
```

1. Welche Linux Professional Institute - LPI Zertifizierungen gibt es?
2. Was ist DevOps?
3. Was sind die Lernziele der Prüfung LPIC 701 DevOps Tools Engineer?
4. Wie sieht die Prüfung aus?
5. Wie sehen die Prüfungsfragen aus (Fiktive Fragenbeispiele)?
6. Wie kann man sich auf die Prüfung vorbereiten?
7. Question & Answer

Hinweis: diese Präsentation ist keine Veranstaltung des LPI.

```
$ echo \?\?\?\?\?
```

Linux Professional Institute Certifications



What is DevOps? – Wikipedia

*"DevOps is a set of practices that **combines** software development (**Dev**) and IT operations (**Ops**). It aims to shorten the systems development life cycle and provide continuous delivery with high software quality.^[1]*

DevOps is complementary to agile software development; several DevOps aspects came from the agile way of working."

source: <https://en.wikipedia.org/wiki/DevOps> gelbe Hervorhebungen durch WH.

What is DevOps? – AWS

*"DevOps ist eine **Kombination von Denkweisen, Praktiken und Tools**, mit denen Unternehmen schneller und einfacher Anwendungen und Services bereitstellen können. Die Weiterentwicklung und Verbesserung von Produkten gelingt damit in kürzerer Zeit als bei Unternehmen, die auf herkömmliche Prozesse für die Softwareentwicklung und Infrastrukturverwaltung bauen. Dank dieses Geschwindigkeitsvorteils können Unternehmen ihre Kunden besser bedienen und sich effektiver auf dem Markt durchsetzen."*

source: <https://aws.amazon.com/de/devops/what-is-devops/> gelbe Hervorhebungen durch WH.

Why to Learn DevOps?

"Personalverantwortliche suchen mit 59 Prozent vor allem Talente im Bereich der Webentwicklung. Mit 37 Prozent stehen DevOps- und mit 28 Prozent zudem Datenbanksoftware-Kenntnisse an zweiter und dritter Stelle."

<https://t3n.de/news/it-karriere-programmiersprachen-skills-2023-1528222/>

LPI 701 DevOps Tools Engineer - Exam Objectives

Topic 701: Software Engineering	(weight: 18)
Topic 702: Container Management	(weight: 16)
Topic 703: Machine Deployment	(weight: 8)
Topic 704: Configuration Management	(weight: 10)
Topic 705: Service Operations	(weight: 8)
	total weight 60

source: <https://www.lpi.org/our-certifications/exam-701-objectives>

Topic 701: Software Engineering (weight: 18)

701.1 Modern Software Development (weight: 6)

701.2 Standard Components and Platforms for Software (weight: 2)

701.3 Source Code Management (weight: 5)

701.4 Continuous Integration and Continuous Delivery (weight: 5)

-> microservices, REST - OpenStack, OpenShift - git - Jenkins

Topic 702: Container Management (weight: 16)

702.1 Container Usage (weight: 7)

702.2 Container Deployment and Orchestration (weight: 5)

702.3 Container Infrastructure (weight: 4)

-> docker - kubernetes - docker-machine, rkt

Topic 703: Machine Deployment (weight: 8)

703.1 Virtual Machine Deployment (weight: 4)

703.2 Cloud Deployment (weight: 2)

703.3 System Image Creation (weight: 2)

-> vagrant - cloud-init - packer

Topic 704: Configuration Management (weight: 10)

704.1 Ansible (weight: 8)

704.2 Other Configuration Management Tools (weight: 2)

-> ansible - puppet, chef

Topic 705: Service Operations (weight: 8)

705.1 IT Operations and Monitoring

(weight: 4)

705.2 Log Management and Analysis

(weight: 4)

-> prometheus - logstash

Exam Details

- **duration:** 90 minutes
- **costs:** online approximately 190 Euro
- **languages:** English, Japanese
- **locations:** online | Pearson VUE test center | Linux events
- **valid:** 5 years
- how many **points** are necessary to get the certificate?
800 points maximum – 500 points are necessary to get the certificate (62,5%)

Career Opportunities with DevOps Certifications

- <https://www.stepstone.de/jobs/devops-engineer-linux>
- <https://www.lpi.org/advance-your-career-open-source>
different statistics provided by LPI 2020/2021
- certifications provide kind of a ticket to get a job interview
- certification objectives provide a means to focus on relevant stuff to study
- <https://www.heise.de/news/IT-Weiterbildung-Der-permanente-Fortbildungsdruck-6130906.html> 2021
- [Weiterbildung in der IT: Der Anfang vom Aufstieg](#) 2019

Who Offers Trainings?

- [CMT](#) 16 Tage
- [IT-Schulungen](#) 8 Tage
- [Linuxhotel](#) 2x 4 Tage
- This list in alphabetical order is probably incomplete, and covers Germany only, yet.
- alternatively: self study 3 months

Requirements for Successful Exams

- Some years of experience with Linux and DevOps.
- [LPIC-1](#) is recommend but not mandatory.
- Intensive study of the topics mentioned in the learning objectives.
- At least three months preparation time.

How to Prepare for the Exams?

Official LPI Blog: DevOps Series by Fabian Thorns	: incomplete
self-paced learning:	books [*]), videos, articles
study groups:	recommended
"Schulungsanbieter" trainings center, LPI-Partners :	expensive
"Fragenkataloge" aka brain dumps:	not recommended

^{*}) see bibliography at the end

Example Exam Question I (fictitious)

Which command updates changes from inside a local git repository to a remote git repository?

- A. `git remote`
- B. `git push`
- C. `git send`
- D. `git clone`

Example Exam Question I (answer)

answer: B

multiple-choice-question (around 50 questions of 60)

[man git-push](#)

Example Exam Question II (fictitious)

Wie können sie die Syntax eines Packer Templates `my-template.json` überprüfen? Nennen sie den vollständigen Programmnamen, inklusive aller Subkommandos, Optionen und Argumente.

Example Exam Question II (answer)

answer:

```
packer validate my-template.json
```

fill-in-the-blank-question (around 10 questions of 60)

<https://www.packer.io/docs/commands/validate.html>

\$ md5sum

Zusammenfassung: Die LPIC-701 Zertifizierung verlangt einige Vorbereitungszeit, aber das lohnt sich.

Where are the Slides?

<https://bit.ly/3NdswgC>



```
$ echo "??????"
```

Wer möchte als Linux Trainer arbeiten?

Thank You

- [Tuebix](#) – 2023-07-01 – Tübingen (Germany)

Bibliography (German, incomplete) I

<https://dpunkt.de/produkt/das-devops-handbuch-2/>

<https://dpunkt.de/produkt/kubernetes-3/>

<https://www.heise.de/news/c-t-Sonderheft-Kubernetes-Leitfaden-fuer-Umsteiger-von-Docker-und-Podman-9189361.html>

<https://www.rheinwerk-verlag.de/cloud-infrastrukturen-das-handbuch-fuer-devops-teams-und-administratoren/>

<https://www.rheinwerk-verlag.de/ansible-das-praxisbuch-fuer-administratoren-und-devops-teams/> my personal favorite, highly recommended

Bibliography (German, incomplete) II

<https://www.rheinwerk-verlag.de/docker-das-praxisbuch-fuer-entwickler-und-devops-teams/>

<https://www.rheinwerk-verlag.de/git-projektverwaltung-fuer-entwickler-und-devops-teams/>

<https://www.rheinwerk-verlag.de/terraform/>

<https://www.rheinwerk-verlag.de/continuous-integration-mit-jenkins/>

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