

Docker Containers (DCA-aligned)

Build, ship and run containers with confidence, from your first Dockerfile to a secured multi-node cluster.

DURATION

3 days · 24 hours

LEVEL

Intermediate

CURRICULUM

11 modules · 8 labs

DELIVERY

Live online, Onsite,
Corporate

Course overview

Containers are now the default way to package and ship software, and almost every DevOps, cloud and platform role expects you to use them fluently. This three-day course takes you from container basics to running secure, orchestrated services across several nodes.

Day one covers the container model and the Docker engine: installation and configuration, the image and container lifecycle, writing efficient Dockerfiles with multi-stage builds, and working with registries. You will build and tag images for a sample application and push them to a private registry.

Day two goes deeper into networking and storage. You will compare bridge, host and overlay networks, publish ports, use bind mounts and volumes, and troubleshoot connectivity between containers. Security runs alongside: least-privilege containers, secrets, image scanning, content trust and engine configuration.

Day three introduces orchestration with Docker Swarm — services, stacks, rolling updates, placement and health checks — and Docker Compose for local multi-container development. It closes with logging, troubleshooting and an exam readiness session.

This course is aligned to the Docker Certified Associate (DCA) exam domains. Exam availability and delivery have changed over time, so please confirm the current status with the exam provider before booking; the skills taught apply whether or not you sit the exam.

Highlights

- 24 hours of live, trainer-led sessions
- Every learner gets a multi-node lab environment
- Dockerfile best practices and image hardening
- Networking, volumes and Swarm orchestration
- Practice questions with review

What's included

- Multi-node lab environment for every learner
- Multi-stage builds and image size optimisation
- Private registry, tagging and image scanning
- Overlay networking and persistent storage labs
- Swarm services, stacks and rolling updates
- Course completion certificate from Ace Skills Consulting
- Post-training doubt support

Who this course is for

Who should attend

- Developers packaging applications in containers
- System administrators supporting container platforms
- DevOps and build engineers
- Engineers preparing for Kubernetes training

Prerequisites

- Comfort with the Linux command line
- Basic networking knowledge (IP, ports, DNS)
- Some experience deploying or supporting applications

Detailed curriculum — 3 days, 24 hours, 11 modules, 8 hands-on labs

Day 1 Docker Engine, Images and Registries

8 hours

1.1 Container fundamentals

- Containers vs virtual machines
- Engine architecture
- Namespaces and cgroups
- Installing and configuring the engine

LAB Install Docker and configure the daemon · 35 min

1.2 Container lifecycle

- Run, stop, inspect and remove
- Resource limits
- Restart policies
- Logs and exec

1.3 Building images

- Dockerfile instructions
- Multi-stage builds
- Reducing image size
- Layer caching
- Image tagging and labels

LAB Build a multi-stage image for a web app · 55 min

1.4 Registries

- Docker Hub and private registries
- Image digests
- Pushing and pulling

LAB Run a private registry and push images · 35 min

Day 2 Networking, Storage and Security

8 hours

2.1 Networking

- Bridge, host and none networks
- Port publishing
- User-defined networks and DNS
- Overlay networks

LAB Connect a three-tier app across networks · 50 min

2.2 Storage

- Bind mounts vs volumes
- tmpfs
- Volume drivers
- Backing up volume data

LAB Persist database data with volumes · 35 min

2.3 Security

- Running as non-root
- Secrets
- Content trust and signing
- Capabilities and read-only filesystems
- Image scanning

LAB Harden and scan an image · 45 min

3.1 Docker Compose

- Compose file structure
- Environment configuration
- Multi-container development

LAB Describe an app stack in Compose · 35 min

3.2 Swarm orchestration

- Managers and workers
- Stacks
- Placement constraints
- Services and replicas
- Rolling updates and rollback
- Swarm secrets and configs

LAB Deploy and update a stack on a three-node Swarm · 60 min

3.3 Operations

- Logging drivers
- Troubleshooting failed containers
- Health checks

3.4 Exam readiness

- Domain review
- Practice questions with review
- Question styles

Skills and tools

Skills you will build

Docker Engine

Dockerfiles

Multi-stage builds

Container registries

Container networking

Volumes

Container security

Docker Compose

Docker Swarm

Troubleshooting

Tools used in class

Docker Engine

Docker CLI

Docker Compose

Docker Swarm

Container registry

Image scanner

Linux

Certification exam

This course is aligned to the exam below and prepares you for it. The exam itself is booked and taken with the vendor.

Exam Docker Certified Associate (DCA)

Exam code DCA

Exam skill areas covered

Exam details are pending verification. Confirm the current exam code, format and fee on the official vendor page before booking.

Frequently asked questions

Is the DCA exam still available?

Availability has changed over the years, so we confirm the current status with you before enrolment. The course is valuable on its own as a foundation for Kubernetes and DevOps work.

Do I need to install anything?

No. Lab machines are provided in the cloud and you connect through a browser or SSH.

Does this course cover Kubernetes?

It focuses on Docker and Swarm. Kubernetes is covered in our CKA and CKAD courses, which this course prepares you for.

Is it suitable for developers?

Yes. Developers get the most from the image-building and Compose sections, and operators from networking, security and Swarm.

Book a batch or talk to an advisor

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