

50 Most-Used Docker Commands

□ 50 Most-Used Docker Commands with Interactive Emulator

Docker helps you build, share, and run applications in containers. This WordPress-ready guide combines a practical command table, an emulator, guided challenges, a visual canvas, and Dockerfile + Docker Compose practice without connecting to a real Docker daemon.

Learning note: emulator output is simulated for training. Real output can vary by Docker Engine version, operating system, image tags, local resources, Docker Desktop settings, registry permissions, and compose.yaml content.

□ Responsive Docker Emulator

Type a command, choose a suggestion, or click “Use in Emulator” from the table. The emulator shows simulated output, guided feedback, and visual movement across images, containers, volumes, networks, Dockerfile, and Compose services.

```
Run
Show Large Output
Try Challenge
Clear
```

```
Challenge: run docker version to start your Docker session.
```



DOCKER WORKSPACE

Pack **Free** ▼

RESOURCE SCOPE 0

docker-runbook.md **0/13**

Docker CLI

FREE challenges are available now. LITE, PRO, and PRO Plus will be available soon with more guided labs and deeper scoring.

EXPECTED RUNBOOK COMMANDS **docker version**

Run the next command to receive guided feedback.

Run the next command to receive guided feedback.

DOCKERFILE USED IN THIS CHALLENGE

This challenge focuses on Docker CLI operations. Dockerfile and Compose examples appear in the last three FREE challenges.

COMPOSE.YAML USED IN THIS CHALLENGE

compose.yaml: This challenge focuses on Docker CLI operations. Dockerfile and Compose examples appear in the last three FREE challenges.

How Docker Compose uses it: This challenge focuses on Docker CLI operations. Dockerfile and Compose examples appear in the last three FREE challenges.

Docker Visual Canvas No changes yet: run a command to move simulated Docker resources.



What is happening? Run a Docker command to see the emulator explain how images, containers, volumes, networks,

Dockerfile, and Compose change.

WORKSPACE OUTPUTwaiting

\$ Waiting for a Docker command...

Run a command to see simulated Docker output here.

\$ Docker Emulator Ready

Tip: choose a command from the table and click "Use in Emulator".

Expected output (simulated)

Copy OutputClose

Copy Full Table (CSV)

On small screens, the table automatically becomes cards so content is not cut off.

#	Command / Parameter	Description	Example	Actions
1	docker version	Show Docker client and server version information.	docker version	Copy Command Copy Example Use in Emulator
2	docker info	Display system-wide Docker information.	docker info	Copy Command Copy Example Use in Emulator

#	Command / Parameter	Description	Example	Actions
3	docker login	Authenticate to a container registry.	docker login	Copy Command Copy Example Use in Emulator
4	docker logout	Log out from a container registry.	docker logout	Copy Command Copy Example Use in Emulator
5	docker search	Search Docker Hub for images.	docker search nginx	Copy Command Copy Example Use in Emulator
6	docker pull	Download an image from a registry.	docker pull nginx:latest	Copy Command Copy Example Use in Emulator
7	docker images	List local images.	docker images	Copy Command Copy Example Use in Emulator
8	docker image inspect	Inspect image metadata.	docker image inspect nginx:latest	Copy Command Copy Example Use in Emulator

#	Command / Parameter	Description	Example	Actions
9	docker image history	Show the layer history of an image.	docker image history nginx:latest	Copy Command Copy Example Use in Emulator
10	docker tag	Create a new tag for an image.	docker tag nginx:latest local-nginx:v1	Copy Command Copy Example Use in Emulator
11	docker build	Build an image from a Dockerfile.	docker build -t demo-app:1.0 .	Copy Command Copy Example Use in Emulator
12	docker build --no-cache	Build an image without using cache.	docker build --no-cache -t demo-app:clean .	Copy Command Copy Example Use in Emulator
13	docker run	Create and run a container from an image.	docker run hello-world	Copy Command Copy Example Use in Emulator
14	docker run -d	Run a container in detached mode.	docker run -d --name web -p 8080:80 nginx:latest	Copy Command Copy Example Use in Emulator

#	Command / Parameter	Description	Example	Actions
15	<code>docker ps</code>	List running containers.	<code>docker ps</code>	Copy Command Copy Example Use in Emulator
16	<code>docker ps -a</code>	List all containers, including stopped ones.	<code>docker ps -a</code>	Copy Command Copy Example Use in Emulator
17	<code>docker logs</code>	Show container logs.	<code>docker logs web</code>	Copy Command Copy Example Use in Emulator
18	<code>docker logs -f</code>	Follow container logs in real time.	<code>docker logs -f web</code>	Copy Command Copy Example Use in Emulator
19	<code>docker exec</code>	Run a command inside a running container.	<code>docker exec -it web sh</code>	Copy Command Copy Example Use in Emulator
20	<code>docker stop</code>	Stop a running container.	<code>docker stop web</code>	Copy Command Copy Example Use in Emulator

#	Command / Parameter	Description	Example	Actions
21	docker start	Start a stopped container.	docker start web	Copy Command Copy Example Use in Emulator
22	docker restart	Restart a container.	docker restart web	Copy Command Copy Example Use in Emulator
23	docker rm	Remove a stopped container.	docker rm web	Copy Command Copy Example Use in Emulator
24	docker rmi	Remove a local image.	docker rmi local-nginx:v1	Copy Command Copy Example Use in Emulator
25	docker container prune	Remove stopped containers.	docker container prune -f	Copy Command Copy Example Use in Emulator
26	docker image prune -a	Remove unused images.	docker image prune -a -f	Copy Command Copy Example Use in Emulator

#	Command / Parameter	Description	Example	Actions
27	docker volume create	Create a named volume.	docker volume create app-data	Copy Command Copy Example Use in Emulator
28	docker volume ls	List Docker volumes.	docker volume ls	Copy Command Copy Example Use in Emulator
29	docker volume inspect	Inspect a volume.	docker volume inspect app-data	Copy Command Copy Example Use in Emulator
30	docker volume rm	Remove a Docker volume.	docker volume rm app-data	Copy Command Copy Example Use in Emulator
31	docker network create	Create a Docker network.	docker network create app-net	Copy Command Copy Example Use in Emulator
32	docker network ls	List Docker networks.	docker network ls	Copy Command Copy Example Use in Emulator

#	Command / Parameter	Description	Example	Actions
33	docker network inspect	Inspect a Docker network.	docker network inspect app-net	Copy Command Copy Example Use in Emulator
34	docker network connect	Connect a container to a network.	docker network connect app-net web	Copy Command Copy Example Use in Emulator
35	docker network rm	Remove a Docker network.	docker network rm app-net	Copy Command Copy Example Use in Emulator
36	docker cp	Copy files between host and container.	docker cp index.html web:/usr/share/nginx/html/index.html	Copy Command Copy Example Use in Emulator
37	docker stats	Show live resource usage statistics.	docker stats --no-stream	Copy Command Copy Example Use in Emulator
38	docker top	Display running processes inside a container.	docker top web	Copy Command Copy Example Use in Emulator

#	Command / Parameter	Description	Example	Actions
39	<code>docker inspect</code>	Return low-level Docker object information.	<code>docker inspect web</code>	Copy Command Copy Example Use in Emulator
40	<code>docker events</code>	Monitor Docker daemon events.	<code>docker events --since 10m</code>	Copy Command Copy Example Use in Emulator
41	<code>docker compose version</code>	Show Docker Compose version.	<code>docker compose version</code>	Copy Command Copy Example Use in Emulator
42	<code>docker compose up</code>	Create and start services from <code>compose.yaml</code> .	<code>docker compose up -d</code>	Copy Command Copy Example Use in Emulator
43	<code>docker compose ps</code>	List containers managed by Compose.	<code>docker compose ps</code>	Copy Command Copy Example Use in Emulator
44	<code>docker compose logs</code>	Show service logs from Compose.	<code>docker compose logs -f</code>	Copy Command Copy Example Use in Emulator

#	Command / Parameter	Description	Example	Actions
45	docker compose exec	Run a command inside a Compose service container.	docker compose exec web sh	Copy Command Copy Example Use in Emulator
46	docker compose restart	Restart Compose services.	docker compose restart	Copy Command Copy Example Use in Emulator
47	docker compose down	Stop and remove Compose containers and networks.	docker compose down	Copy Command Copy Example Use in Emulator
48	docker compose down -v	Stop Compose services and remove named volumes too.	docker compose down -v	Copy Command Copy Example Use in Emulator
49	docker compose build	Build or rebuild Compose services.	docker compose build --no-cache	Copy Command Copy Example Use in Emulator
50	docker compose pull	Pull service images defined in compose.yaml.	docker compose pull	Copy Command Copy Example Use in Emulator

□ Conclusion

This Docker emulator is ready. The FREE pack contains the active challenges now, while LITE, PRO, and PRO Plus are visible as upcoming expansion tiers for deeper labs, scoring, downloadable runbooks, and advanced Docker Compose scenarios.

Linux: 50 Essential Commands You Should Know

LINUX CLI LAB

Linux: 50 Essential Commands You Should Know

Linux is one of the most widely used operating systems in servers, programming, cloud, DevOps, and system administration. This guide combines a practical table with an interactive emulator to practice commands, reinforce concepts, and visualize simulated changes without touching a real server.

Learning note: the emulator output is simulated for practice, training, and onboarding.

On a real system it may vary by distribution, permissions, installed packages, and configuration.

Interactive Linux CLI Emulator

Type a command, use the table, or run a guided challenge. The emulator will show simulated output, feedback and visual changes in the Linux system.

Run

View large output

Try challenge

Clear

Challenge: run pwd to check the current path.

LX

[]

::

..

LINUX WORKSPACE

Pack

Free ▼

SYSTEM STATUS 0

linux-runbook.md

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Linux CLI

Run the next command to receive guided feedback.

Expected runbook commands

pwd

Run the next command to receive guided feedback.

Run the next command to receive guided feedback.

Linux system visualizer

Environment ready: no changes yet.

WORKSPACE OUTPUT

waiting

```
$ Linux emulator ready
Choose a command from the table or type one in the console.
```

```
$ Linux emulator ready
Choose a command from the table or type one in the console.
```

Simulated expected output

Copy output

Close

Copy full table (CSV)

On small screens, the table adapts into cards to avoid content cutoffs.

#	Command	Description	Example	Actions
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Conclusion

These 50 Linux commands cover navigation, files, permissions, processes, networking, packages, and day-to-day operations. Practicing them in a simulated environment lets you learn safely before working on real infrastructure.

AWS CLI: 50 Most-Used Commands and Parameters

FREE activePremium look & feelResponsiveAWS CLI

AWS CLI: 50 essential commands with FREE cloud emulator

Practice AWS safely with guided challenges, textual output and a visual architecture canvas.

This lab does not create real resources. Commands are prepared for learning and use placeholders such as <VPC_ID>, <INSTANCE_ID> or <ACCOUNT_ID>.

IDENTITY

Account / Role

Least privilege

NETWORK

10.10.0.0/16

Public route

COMPUTE

Public + Private IP

Managed nodes

DATA

Objects

Private DB

List of 50 AWS commands to copy and execute

Use Copy to send the command to the clipboard. Use Load to try placing it in the emulator input or trigger the plugin event.

#	Area	Command	What is it for?	Canvas / output	Action
1	Basics	aws --version	Checks the installed AWS CLI v2 version.	Shows the CLI, version and local runtime.	Copy Load
2	Basics	aws configure list	Lists the active credentials, region and profile configuration.	Identifies profile, region and credential source without exposing secrets.	Copy Load
3	Basics	aws configure get region	Gets the default configured region.	Places the regional context where lab resources will be simulated.	Copy Load
4	Identity	aws sts get-caller-identity	Validates the active AWS identity: account, user or role.	Draws the active account, ARN, profile and simulated permissions.	Copy Load
5	Regions	aws ec2 describe-regions --all-regions --query "Regions[].RegionName" --output table	Lists available EC2 regions.	Shows the region selector and highlights the lab region.	Copy Load
6	VPC Network	aws ec2 create-vpc --cidr-block 10.10.0.0/16 --tag-specifications 'ResourceType=vpc,Tags=[{Key=Name,Value=ww-aws-vpc}]'	Creates the base VPC for the lab.	Adds the network layer with CIDR 10.10.0.0/16.	Copy Load
7	Tags	aws ec2 create-tags --resources <VPC_ID> --tags Key=Project,Value=Weisewelt Key=Environment,Value=FreeLab	Adds project and environment tags to the VPC.	Updates the visual inventory with governance metadata.	Copy Load
8	VPC Network	aws ec2 describe-vpcs --filters "Name=tag:Name,Values=ww-aws-vpc"	Queries the VPC created by name.	Highlights the discovered VPC and shows a simulated VPC ID.	Copy Load
9	Public subnet	aws ec2 create-subnet --vpc-id <VPC_ID> --cidr-block 10.10.1.0/24 --availability-zone us-east-1a --tag-specifications 'ResourceType=subnet,Tags=[{Key=Name,Value=ww-public-a},{Key=Visibility,Value=public}]'	Creates a public subnet in one Availability Zone.	Draws a public zone with CIDR, AZ and pending Internet route.	Copy Load
10	Private subnet	aws ec2 create-subnet --vpc-id <VPC_ID> --cidr-block 10.10.11.0/24 --availability-zone us-east-1a --tag-specifications 'ResourceType=subnet,Tags=[{Key=Name,Value=ww-private-a},{Key=Visibility,Value=private}]'	Creates a private subnet for databases or internal nodes.	Draws a private zone without public IP or direct Internet route.	Copy Load
11	Internet Gateway	aws ec2 create-internet-gateway --tag-specifications 'ResourceType=internet-gateway,Tags=[{Key=Name,Value=ww-igw}]'	Creates an Internet Gateway for public connectivity.	Adds the IGW component outside the VPC.	Copy Load
12	Internet Gateway	aws ec2 attach-internet-gateway --internet-gateway-id <IGW_ID> --vpc-id <VPC_ID>	Attaches the Internet Gateway to the VPC.	Connects the VPC visually to the Internet.	Copy Load
13	Routes	aws ec2 create-route-table --vpc-id <VPC_ID> --tag-specifications 'ResourceType=route-table,Tags=[{Key=Name,Value=ww-public-rt}]'	Creates a public route table.	Adds a route table associated with the public zone.	Copy Load
14	Routes	aws ec2 create-route --route-table-id <ROUTE_TABLE_ID> --destination-cidr-block 0.0.0.0/0 --gateway-id <IGW_ID>	Adds the default route to the Internet Gateway.	Marks the public subnet route 0.0.0.0/0 through the IGW.	Copy Load
15	Routes	aws ec2 associate-route-table --subnet-id <PUBLIC_SUBNET_ID> --route-table-id <ROUTE_TABLE_ID>	Associates the route table with the public subnet.	Activates public connectivity for that subnet.	Copy Load
16	Security	aws ec2 create-security-group --group-name ww-web-sg --description "Web access for Weisewelt lab" --vpc-id <VPC_ID>	Creates a Security Group for web instances.	Draws the logical inbound/outbound firewall.	Copy Load

#	Area	Command	What is it for?	Canvas / output	Action
17	Security	aws ec2 authorize-security-group-ingress --group-id <SG_ID> --protocol tcp --port 22 --cidr 203.0.113.10/32	Allows SSH only from a controlled example IP.	Shows a restrictive administration rule.	Copy Load
18	Security	aws ec2 authorize-security-group-ingress --group-id <SG_ID> --protocol tcp --port 80 --cidr 0.0.0.0/0	Allows public HTTP traffic.	Opens port 80 on the canvas with a public exposure warning.	Copy Load
19	Security	aws ec2 authorize-security-group-ingress --group-id <SG_ID> --protocol tcp --port 443 --cidr 0.0.0.0/0	Allows public HTTPS traffic.	Opens port 443 and marks secure web access.	Copy Load
20	Security	aws ec2 describe-security-groups --group-ids <SG_ID> --output table	Displays Security Group rules.	Displays inbound/outbound rules in the security inventory.	Copy Load
21	EC2	aws ec2 create-key-pair --key-name ww-key --query 'KeyMaterial' --output text > ww-key.pem	Creates a key pair for EC2 access.	Adds access credentials and warns about secure storage.	Copy Load
22	EC2	aws ec2 run-instances --image-id ami-0123456789abcdef0 --count 1 --instance-type t3.micro --key-name ww-key --security-group-ids <SG_ID> --subnet-id <PUBLIC_SUBNET_ID> --associate-public-ip-address --tag-specifications 'ResourceType=instance,Tags=[{Key=Name,Value=ww-web-01}]'	Launches one EC2 instance in the public subnet.	Draws a web server with simulated private and public IPs.	Copy Load
23	EC2	aws ec2 describe-instances --filters "Name=tag:Name,Values=ww-web-01" --query "Reservations[].Instances[].{Id:InstanceId,State:State.Name,PrivateIP:PrivateIpAddress,PublicIP:PublicIpAddress}" --output table	Displays instance status and IP addresses.	Updates running/stopped state and public/private IPs.	Copy Load
24	EC2	aws ec2 describe-instance-status --instance-ids <INSTANCE_ID> --include-all-instances	Checks system and instance health.	Displays health checks in the monitoring layer.	Copy Load
25	Elastic IP	aws ec2 allocate-address --domain vpc	Allocates an Elastic IP for the VPC.	Adds a fixed public IP to the inventory.	Copy Load
26	Elastic IP	aws ec2 associate-address --instance-id <INSTANCE_ID> --allocation-id <ALLOCATION_ID>	Associates the Elastic IP to the EC2 instance.	Connects the fixed public IP to the web server.	Copy Load
27	EC2	aws ec2 stop-instances --instance-ids <INSTANCE_ID>	Stops an EC2 instance.	Changes the visual state to stopped and preserves configuration.	Copy Load
28	EC2	aws ec2 start-instances --instance-ids <INSTANCE_ID>	Starts a stopped instance.	Changes the visual state to running.	Copy Load
29	EC2	aws ec2 terminate-instances --instance-ids <INSTANCE_ID>	Terminates an EC2 instance.	Removes the server and keeps the action history.	Copy Load
30	EBS	aws ec2 create-volume --availability-zone us-east-1a --size 20 --volume-type gp3 --tag-specifications 'ResourceType=volume,Tags=[{Key=Name,Value=ww-data-vol}]'	Creates a gp3 EBS volume.	Adds persistent storage in the same Availability Zone.	Copy Load
31	EBS	aws ec2 attach-volume --volume-id <VOLUME_ID> --instance-id <INSTANCE_ID> --device /dev/sdf	Attaches an EBS volume to an instance.	Connects persistent storage to the server.	Copy Load
32	EBS Snapshot	aws ec2 create-snapshot --volume-id <VOLUME_ID> --description "Snapshot Weisewelt Free Lab"	Creates a snapshot from an EBS volume.	Adds an incremental backup in the protection layer.	Copy Load
33	S3	aws s3 mb s3://ww-free-lab-<ACCOUNT_ID>-demo --region us-east-1	Creates an S3 bucket for the lab.	Draws an object bucket with region and unique name.	Copy Load

#	Area	Command	What is it for?	Canvas / output	Action
34	S3	aws s3 cp ./index.html s3://ww-free-lab-<ACCOUNT_ID>-demo/index.html	Copies a local file to the bucket.	Shows the uploaded object inside the bucket.	Copy Load
35	S3	aws s3 sync ./site s3://ww-free-lab-<ACCOUNT_ID>-demo --delete	Synchronizes a local folder with S3.	Simulates static site deployment and incremental changes.	Copy Load
36	S3	aws s3 ls s3://ww-free-lab-<ACCOUNT_ID>-demo --recursive --human-readable --summarize	Lists bucket objects with a summary.	Updates object count and total size.	Copy Load
37	S3 Versioning	aws s3api put-bucket-versioning --bucket ww-free-lab-<ACCOUNT_ID>-demo --versioning-configuration Status=Enabled	Enables S3 bucket versioning.	Marks protection against accidental overwrites.	Copy Load
38	IAM	aws iam create-role --role-name ww-lambda-exec --assume-role-policy-document file://trust-policy.json	Creates an IAM role for Lambda execution.	Adds a service identity and trust relationship.	Copy Load
39	IAM	aws iam attach-role-policy --role-name ww-lambda-exec --policy-arn arn:aws:iam::aws:policy/service-role/AWSLambdaBasicExecutionRole	Attaches the managed policy for basic Lambda logs.	Updates the role's effective permissions.	Copy Load
40	Lambda	aws lambda create-function --function-name ww-hello-free --runtime python3.12 --role arn:aws:iam::<ACCOUNT_ID>:role/ww-lambda-exec --handler app.handler --zip-file fileb://function.zip	Creates a Lambda function from a ZIP package.	Draws a serverless function connected to IAM and CloudWatch Logs.	Copy Load
41	Lambda	aws lambda invoke --function-name ww-hello-free response.json	Invokes the Lambda function and stores the response.	Shows event, execution and simulated response.	Copy Load
42	CloudWatch Logs	aws logs describe-log-groups --log-group-name-prefix /aws/lambda/ww-hello-free	Displays Lambda log groups.	Opens the observability layer and traces.	Copy Load
43	CloudWatch	aws cloudwatch put-metric-alarm --alarm-name ww-cpu-high --metric-name CPUUtilization --namespace AWS/EC2 --statistic Average --period 300 --threshold 80 --comparison-operator GreaterThanThreshold --dimensions Name=InstanceId,Value=<INSTANCE_ID> --evaluation-periods 2	Creates a high CPU alarm for EC2.	Adds a monitoring alert to the instance.	Copy Load
44	RDS	aws rds create-db-subnet-group --db-subnet-group-name ww-db-subnets --db-subnet-group-description "Weisewelt private DB subnets" --subnet-ids <PRIVATE_SUBNET_ID_A> <PRIVATE_SUBNET_ID_B>	Creates a private subnet group for RDS.	Places the database inside private networking.	Copy Load
45	RDS	aws rds create-db-instance --db-instance-identifier ww-mysql-free --db-instance-class db.t4g.micro --engine mysql --master-username admin --master-user-password <STRONG_PASSWORD> --allocated-storage 20 --db-subnet-group-name ww-db-subnets --no-publicly-accessible	Creates a private MySQL RDS instance.	Draws a database without public IP and with internal access.	Copy Load
46	EKS	aws eks create-cluster --name ww-eks-free --role-arn arn:aws:iam::<ACCOUNT_ID>:role/ww-eks-cluster-role --resources-vpc-config subnetIds=<PUBLIC_SUBNET_ID>,<PRIVATE_SUBNET_ID>,securityGroupIds=<SG_ID>	Creates the Amazon EKS control plane.	Adds a managed Kubernetes control plane with network configuration.	Copy Load
47	EKS	aws eks describe-cluster --name ww-eks-free --query "cluster.{Name:name,Status:status,Endpoint:endpoint,Version:version}" --output table	Displays EKS cluster status, endpoint and version.	Updates the control plane state.	Copy Load
48	EKS	aws eks create-nodegroup --cluster-name ww-eks-free --nodegroup-name ww-ng-free --node-role arn:aws:iam::<ACCOUNT_ID>:role/ww-eks-node-role --subnets <PRIVATE_SUBNET_ID_A> <PRIVATE_SUBNET_ID_B> --instance-types t3.medium --scaling-config minSize=1,maxSize=3,desiredSize=1	Creates a managed node group for EKS.	Draws private nodes and scalable capacity.	Copy Load
49	EKS	aws eks update-kubeconfig --region us-east-1 --name ww-eks-free	Updates local kubeconfig for cluster access.	Marks administrative access from the terminal.	Copy Load
50	CloudFormation	aws cloudformation deploy --template-file template.yaml --stack-name ww-free-stack --capabilities CAPABILITY_NAMED_IAM --parameter-overrides Environment=free	Deploys infrastructure as code with CloudFormation.	Groups resources into a stack and shows dependencies.	Copy Load

Start with identity, region and VPC before running EC2, RDS or EKS.

Replace placeholders only inside the emulator or in controlled real environments.

In real accounts, validate permissions, costs and security policies before running creation commands.