

```
```json
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{
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```
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 "sections": [
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```
 "heading": "What is Docker?",
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 "content": "A platform for developing, shipping, and running applications in containers.
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Containers package software and its dependencies into a standardized unit for software development."
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```
 "heading": "Key Benefits",
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```
 {"point": "Consistency: Ensures applications run the same across different environments (development, testing, production)."},
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 {"point": "Isolation: Isolates applications from each other and the underlying infrastructure."},
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```
 {"point": "Efficiency: Lightweight and uses fewer resources than virtual machines."},
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```
 {"point": "Portability: Easy to move applications between different systems."},
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```
 {"point": "Scalability: Simple to scale applications up or down."},
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```
 {"point": "Version Control: Tracks changes to application code and dependencies."}
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```
 {"term": "Images", "definition": "Read-only templates used to create containers."},
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{
 "term": "Containers", "definition": "Running instances of Docker images."},
 {"term": "Docker Hub", "definition": "A registry for storing and sharing Docker images."},
 {"term": "Dockerfile", "definition": "A text file containing instructions for building a Docker image."},
 {"term": "Docker Compose", "definition": "A tool for defining and running multi-container Docker applications. Uses YAML files to configure services, networks, and volumes."}
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 "Microservices architecture",
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 "Continuous integration and continuous delivery (CI/CD)",
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 "Web application deployment",
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 "Data science and machine learning",
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 "Cloud-native applications"
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```
 "heading": "Basic Commands",
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```
 {"command": "docker run", "description": "Creates and runs a container from an image."},
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 {"command": "docker build", "description": "Builds an image from a Dockerfile."},
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 {"command": "docker ps", "description": "Lists running containers."},
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 {"command": "docker images", "description": "Lists available images."},
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 {"command": "docker stop", "description": "Stops a running container."},
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{"command": "docker pull", "description": "Downloads an image from a registry."},
{"command": "docker push", "description": "Uploads an image to a registry."},
{"command": "docker compose up", "description": "Starts and runs a multi-container application
defined in a `docker-compose.yml` file."}

],
{
 "heading": "Key Technologies",
 "content": [
 "OS-level virtualization (namespaces and cgroups)",
 "Union file systems"
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 "heading": "Related Terms",
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 "Kubernetes",
 "Container orchestration",
 "Microservices",
 "Cloud computing"
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