

# readme.md for @apiclient.xyz/docker

A fully typed TypeScript client for the Docker Engine API. Talk to Docker from Node.js or Deno with a clean, object-oriented interface — containers, images, networks, services, secrets, and image storage all in one package. ☐

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## Install

```
pnpm install @apiclient.xyz/docker  
# or  
npm install @apiclient.xyz/docker
```

## Usage

`DockerHost` is the single entry point. Every Docker resource — containers, images, networks, services, secrets — is managed through it.

```
import { DockerHost } from '@apiclient.xyz/docker';
```

## ☐☐ Setting Up the Docker Host

```

// Default: auto-detects Docker socket from common locations
const docker = new DockerHost({});

// Custom socket path
const docker = new DockerHost({
  socketPath: 'http://unix:/var/run/docker.sock:',
});

// Custom image store directory for local image caching
const docker = new DockerHost({
  imageStoreDir: '/tmp/my-image-store',
});

// Start the host (initializes the image store)
await docker.start();

// When done, stop the host
await docker.stop();

```

Socket path resolution order:

1. Explicit `socketPath` constructor option (highest priority)
2. `DOCKER_HOST` environment variable
3. `http://docker:2375/` when running in CI (the `CI` env var is set)
4. `http://unix:/var/run/docker.sock:` as the default

## ☐☐ Health Check and Version

```

// Ping the Docker daemon to verify it is accessible
await docker.ping();

// Get Docker daemon version information
const version = await docker.getVersion();
console.log(`Docker ${version.Version} (API ${version.ApiVersion})`);
console.log(`Platform: ${version.Os}/${version.Arch}`);
console.log(`Kernel: ${version.KernelVersion}`);

```

Field	Type	Description
<code>Version</code>	string	Docker engine version

Field	Type	Description
ApiVersion	string	API version
MinAPIVersion	string	Minimum supported API version
GitCommit	string	Git commit of the build
GoVersion	string	Go compiler version
Os	string	Operating system (e.g., <code>linux</code> )
Arch	string	Architecture (e.g., <code>amd64</code> )
KernelVersion	string	Host kernel version
BuildTime	string	Build timestamp

## ☐ Authentication

```
// Authenticate with explicit credentials
await docker.auth({
  serveraddress: 'https://index.docker.io/v1/',
  username: 'myuser',
  password: 'mypassword',
});

// Authenticate using credentials stored in ~/.docker/config.json
await docker.getAuthTokenFromDockerConfig('https://registry.gitlab.com');
```

## ☐ Docker Swarm

```
// Activate swarm with automatic IP detection
await docker.activateSwarm();

// Activate swarm with a specific advertisement address
await docker.activateSwarm('192.168.1.100');
```

## ☐ Docker Events

Subscribe to real-time Docker daemon events using an RxJS Observable.

```
const eventObservable = await docker.getEventObservable();

const subscription = eventObservable.subscribe((event) => {
  console.log(`Event: ${event.Type} ${event.Action}`);
  console.log(`Actor: ${event.Actor?.ID}`);
});

// Later: unsubscribe to stop listening
subscription.unsubscribe();
```

# ☐ Containers

## Listing Containers

```
const containers = await docker.listContainers();

for (const container of containers) {
  console.log(`${container.Names[0]} - ${container.State} (${container.Status})`);
  console.log(`  Image: ${container.Image}`);
  console.log(`  ID: ${container.Id}`);
}
```

## Getting a Container by ID

Returns `undefined` if the container does not exist.

```
const container = await docker.getContainerById('abc123def456');

if (container) {
  console.log(`Found container: ${container.Names[0]}`);
} else {
  console.log('Container not found');
}
```

# Creating a Container

```
const container = await docker.createContainer({
  Hostname: 'my-container',
  Domainname: 'example.com',
  networks: ['my-network'],
});
```

# Container Lifecycle

```
// Start a container
await container.start();

// Stop a container (with optional timeout in seconds)
await container.stop();
await container.stop({ t: 30 });

// Remove a container
await container.remove();
await container.remove({ force: true, v: true }); // Force removal and delete volumes
```

# Inspecting a Container

```
const details = await container.inspect();
console.log(`State: ${details.State.Status}`);
console.log(`PID: ${details.State.Pid}`);
```

# Refreshing Container State

Reload the container's properties from the Docker daemon.

```
await container.refresh();
console.log(`Current state: ${container.State}`);
```

# Container Logs

```
// Get logs as a string (one-shot)
const logs = await container.logs({
  stdout: true,
  stderr: true,
  timestamps: true,
  tail: 100,          // Last 100 lines
  since: 1609459200, // Unix timestamp
});
console.log(logs);

// Stream logs continuously (follow mode)
const logStream = await container.streamLogs({
  stdout: true,
  stderr: true,
  timestamps: true,
  tail: 50,
});

logStream.on('data', (chunk) => {
  process.stdout.write(chunk.toString());
});

logStream.on('end', () => {
  console.log('Log stream ended');
});
```

## Container Stats

```
// Get a single stats snapshot
const stats = await container.stats({ stream: false });
console.log(`CPU usage: ${stats.cpu_stats.cpu_usage.total_usage}`);
console.log(`Memory usage: ${stats.memory_stats.usage}`);
```

## Attaching to a Container

Attach to the container's main process (PID 1) for bidirectional communication.

```
const { stream, close } = await container.attach({
  stdin: true,
  stdout: true,
  stderr: true,
  stream: true,
  logs: true, // Include previous logs
});

// Read output from the container
stream.on('data', (chunk) => {
  process.stdout.write(chunk.toString());
});

// Send input to the container
stream.write('echo hello\n');

// Detach when done
await close();
```

## Executing Commands in a Container

Run a command inside a running container with full streaming support. The command argument can be a string (wrapped in `/bin/sh -c`) or an array of strings.

```
// Simple command execution
const { stream, close, inspect } = await container.exec('ls -la /app', {
  tty: true,
});

let output = '';
stream.on('data', (chunk) => {
  output += chunk.toString();
});

stream.on('end', async () => {
  // Check the exit code after the command finishes
  const info = await inspect();
  console.log(`Exit code: ${info.ExitCode}`);
  console.log(`Output:\n${output}`);
});
```

```
await close();
});
```

```
// Execute with advanced options
const { stream, close, inspect } = await container.exec(
  ['python', '-c', 'print("hello from python)'],
  {
    tty: false,
    env: ['MY_VAR=hello', 'DEBUG=1'],
    workingDir: '/app',
    user: 'appuser',
    attachStdin: true,
    attachStdout: true,
    attachStderr: true,
  }
);

stream.on('data', (chunk) => {
  console.log(chunk.toString());
});

stream.on('end', async () => {
  const info = await inspect();
  if (info.ExitCode === 0) {
    console.log('Command succeeded');
  } else {
    console.log(`Command failed with exit code ${info.ExitCode}`);
  }
  await close();
});
```

The `inspect()` method on the exec result returns an `IExecInspectInfo` object:

Field	Type	Description
<code>ExitCode</code>	number	Exit code of the process (0 = success)
<code>Running</code>	boolean	Whether the exec process is still running
<code>Pid</code>	number	Process ID
<code>ContainerID</code>	string	Container where the exec ran

Field	Type	Description
ID	string	Exec instance ID
OpenStderr	boolean	Whether stderr is open
OpenStdin	boolean	Whether stdin is open
OpenStdout	boolean	Whether stdout is open
CanRemove	boolean	Whether the exec instance can be removed
DetachKeys	string	Detach keys
ProcessConfig	object	Process config (tty, entrypoint, arguments, privileged)

## Container Properties

Each `DockerContainer` instance exposes these properties:

Property	Type	Description
Id	string	Container ID
Names	string[]	Container names
Image	string	Image name
ImageID	string	Image ID
Command	string	Command used to start the container
Created	number	Creation timestamp
Ports	array	Port mappings
Labels	object	Key-value label pairs
State	string	Container state (running, exited, etc.)
Status	string	Human-readable status string
HostConfig	object	Host configuration
NetworkSettings	object	Network configuration and IP addresses
Mounts	any	Volume mounts

## Images

# Listing Images

```
const images = await docker.listImages();

for (const image of images) {
  console.log(`Tags: ${image.RepoTags?.join(', ')}`);
  console.log(`  Size: ${((image.Size / 1024 / 1024).toFixed(2))} MB`);
  console.log(`  ID: ${image.Id}`);
}
```

# Getting an Image by Name

```
const image = await docker.getImageByName('nginx:latest');

if (image) {
  console.log(`Found image: ${image.RepoTags[0]}`);
  console.log(`Size: ${image.Size} bytes`);
}
```

# Pulling an Image from a Registry

```
// Pull with explicit tag
const image = await docker.createImageFromRegistry({
  imageUrl: 'nginx',
  imageTag: 'latest',
});

// Pull with tag embedded in the URL
const image = await docker.createImageFromRegistry({
  imageUrl: 'node:20-alpine',
});

// Pull from a private registry (authenticate first)
await docker.auth({
  serveraddress: 'https://registry.gitlab.com',
  username: 'deploy-token',
```

```
password: 'my-token',
});

const image = await docker.createImageFromRegistry({
  imageUrl: 'registry.gitlab.com/myorg/myapp:v1.2.3',
});
```

## Importing an Image from a Tar Stream

```
import * as fs from 'node:fs';

const tarStream = fs.createReadStream('/path/to/image.tar');
const image = await docker.createImageFromTarStream(tarStream, {
  imageUrl: 'myapp:imported',
});
console.log(`Imported: ${image.RepoTags[0]}`);
```

## Exporting an Image to a Tar Stream

```
import * as fs from 'node:fs';

const image = await docker.getImageByName('myapp:latest');
const tarStream = await image.exportToTarStream();

const writeStream = fs.createWriteStream('/path/to/output.tar');
tarStream.pipe(writeStream);

writeStream.on('finish', () => {
  console.log('Image exported successfully');
});
```

## Pulling the Latest Version of an Image

```
const image = await docker.getImageByName('nginx:latest');
await image.pullLatestImageFromRegistry();
```

# Removing an Image

```
const image = await docker.getImageByName('old-image:v1');
await image.remove();

// Force remove (even if referenced by containers)
await image.remove({ force: true });

// Remove without deleting untagged parent images
await image.remove({ noprune: true });
```

# Pruning Unused Images

```
// Prune dangling (untagged) images
const result = await docker.pruneImages({ dangling: true });
console.log(`Deleted: ${result.ImagesDeleted?.length || 0} image layers`);
console.log(`Reclaimed: ${((result.SpaceReclaimed / 1024 / 1024).toFixed(2))} MB`);

// Prune images older than 7 days
const result = await docker.pruneImages({
  filters: {
    until: ['168h'],
  },
});

// Prune images matching specific labels
const result = await docker.pruneImages({
  filters: {
    label: ['environment=staging'],
  },
});
```

# Getting the Image Version Label

```
const version = await image.getVersion();
console.log(`Image version: ${version}`); // Returns the "version" label value, or "0.0.0"
```

# Image Properties

Each `DockerImage` instance exposes these properties:

Property	Type	Description
<code>Id</code>	string	Image ID
<code>RepoTags</code>	string[]	Repository tags
<code>RepoDigests</code>	string[]	Repository digests
<code>Created</code>	number	Creation timestamp
<code>Size</code>	number	Image size in bytes
<code>VirtualSize</code>	number	Virtual size in bytes
<code>SharedSize</code>	number	Shared size in bytes
<code>Labels</code>	object	Key-value label pairs
<code>ParentId</code>	string	Parent image ID
<code>Containers</code>	number	Number of containers using the image

## 📁 Networks

### Listing Networks

```
const networks = await docker.listNetworks();

for (const network of networks) {
  console.log(`${network.Name} (${network.Driver}) - ${network.Scope}`);
  console.log(`  ID: ${network.Id}`);
  console.log(`  Attachable: ${network.Attachable}`);
}
```

### Getting a Network by Name

```
const network = await docker.getNetworkByName('my-overlay-network');
```

```
if (network) {
  console.log(`Network: ${network.Name}`);
  console.log(`Driver: ${network.Driver}`);
  console.log(`Scope: ${network.Scope}`);
}
```

## Creating a Network

```
// Simple overlay network (default driver)
const network = await docker.createNetwork({
  Name: 'my-overlay',
});

// Bridge network with custom IPAM configuration
const network = await docker.createNetwork({
  Name: 'custom-bridge',
  Driver: 'bridge',
  IPAM: {
    Config: [{
      Subnet: '172.20.0.0/16',
      Gateway: '172.20.0.1',
      IPRange: '172.20.10.0/24',
    }],
  },
  Labels: { environment: 'production' },
});

// Internal network (no external access)
const network = await docker.createNetwork({
  Name: 'internal-net',
  Driver: 'overlay',
  Internal: true,
  Attachable: true,
  EnableIPv6: false,
});
```

Network creation options:

Field	Type	Default	Description
-------	------	---------	-------------

Name	string	(required)	Network name
Driver	string	'overlay'	Network driver: bridge, overlay, host, none, macvlan
Attachable	boolean	true	Whether non-service containers can attach
Labels	object	--	Key-value label pairs
IPAM	object	--	IP Address Management configuration
Internal	boolean	false	Restrict external access to the network
EnableIPv6	boolean	false	Enable IPv6

IPAM Config entries support: Subnet (CIDR), Gateway, IPRange, AuxiliaryAddresses.

## Listing Containers on a Network

```
const network = await docker.getNetworkByName('my-overlay');
const containers = await network.listContainersOnNetwork();

for (const container of containers) {
  console.log(`${container.Name}: ${container.Ipv4Address}`);
}
```

## Getting Containers for a Specific Service on a Network

```
const network = await docker.getNetworkByName('my-overlay');
const service = await docker.getServiceByName('web');
const serviceContainers = await network.getContainersOnNetworkForService(service);

for (const container of serviceContainers) {
  console.log(`${container.Name}: ${container.Ipv4Address}`);
}
```

## Removing a Network

```
const network = await docker.getNetworkByName('old-network');
await network.remove();
```

## Network Properties

Property	Type	Description
Id	string	Network ID
Name	string	Network name
Created	string	Creation timestamp
Scope	string	Network scope (local, swarm, global)
Driver	string	Network driver
EnableIPv6	boolean	Whether IPv6 is enabled
Internal	boolean	Whether the network is internal-only
Attachable	boolean	Whether non-service containers can attach
Ingress	boolean	Whether the network is an ingress network
IPAM	object	IP Address Management configuration

## Services (Swarm Mode)

Services are only available when the Docker daemon is running in Swarm mode.

## Listing Services

```
const services = await docker.listServices();

for (const service of services) {
  console.log(`${service.Spec.Name} - ${service.Spec.TaskTemplate.ContainerSpec.Image}`);
  console.log(`  ID: ${service.ID}`);
}
```

## Getting a Service by Name

```
const service = await docker.getServiceByName('my-web-service');
console.log(`Service: ${service.Spec.Name}`);
console.log(`Image: ${service.Spec.TaskTemplate.ContainerSpec.Image}`);
```

# Creating a Service

Services support both string references and resource instances for images, networks, and secrets.

```
// Using string references
const service = await docker.createService({
  name: 'web-app',
  image: 'nginx:latest',
  labels: { environment: 'production', team: 'platform' },
  networks: ['frontend-network'],
  networkAlias: 'web',
  secrets: ['tls-certificate'],
  ports: ['80:80', '443:443'],
  resources: {
    memorySizeMB: 512,
  },
});

// Using resource instances directly
const image = await docker.getImageByName('nginx:latest');
const network = await docker.getNetworkByName('frontend-network');
const secret = await docker.getSecretByName('tls-certificate');

const service = await docker.createService({
  name: 'web-app',
  image: image,
  labels: { environment: 'production' },
  networks: [network],
  networkAlias: 'web',
  secrets: [secret],
  ports: ['80:80'],
  accessHostDockerSock: false,
  resources: {
    memorySizeMB: 1024,
    volumeMounts: [
```

```

    {
      containerFsPath: '/data',
      hostFsPath: '/mnt/storage/data',
    },
  ],
},
});

```

Service creation descriptor fields:

Field	Type	Description
<code>name</code>	string	Service name
<code>image</code>	string   DockerImage	Image tag string or DockerImage instance
<code>labels</code>	object	Key-value label pairs
<code>networks</code>	(string   DockerNetwork)[]	Network names or DockerNetwork instances
<code>networkAlias</code>	string	DNS alias for the service on the network
<code>secrets</code>	(string   DockerSecret)[]	Secret names or DockerSecret instances
<code>ports</code>	string[]	Port mappings in <code>"hostPort:containerPort"</code> format
<code>accessHostDockerSock</code>	boolean	Mount the Docker socket inside the service container
<code>resources.memorySizeMB</code>	number	Memory limit in megabytes (default: 1000)
<code>resources.volumeMounts</code>	array	Array of <code>{ containerFsPath, hostFsPath }</code> mounts

## Checking if a Service Needs an Update

```

const service = await docker.getServiceByName('web-app');
const needsUpdate = await service.needsUpdate();

if (needsUpdate) {
  console.log('A newer image version is available');
}

```

# Removing a Service

```
const service = await docker.getServiceByName('old-service');
await service.remove();
```

## Service Properties

Property	Type	Description
ID	string	Service ID
Version	object	Version info with <code>Index</code> number
CreatedAt	string	Creation timestamp
UpdatedAt	string	Last update timestamp
Spec	object	Full service specification
Endpoint	object	Endpoint specification and VirtualIPs

## 🔑 Secrets (Swarm Mode)

Secrets are only available when the Docker daemon is running in Swarm mode.

## Listing Secrets

```
const secrets = await docker.listSecrets();

for (const secret of secrets) {
  console.log(`${secret.Spec.Name} (ID: ${secret.ID})`);
}
```

## Getting a Secret

```
// By name
const secret = await docker.getSecretByName('my-api-key');
```

```
// By ID
const secret = await docker.getSecretById('abc123secretid');
```

## Creating a Secret

```
const secret = await docker.createSecret({
  name: 'database-credentials',
  version: '1.0.0',
  contentArg: JSON.stringify({
    host: 'db.example.com',
    username: 'admin',
    password: 'secret-password',
  }),
  labels: { environment: 'production', team: 'backend' },
});

console.log(`Secret created: ${secret.Spec.Name} (ID: ${secret.ID})`);
```

Field	Type	Description
<code>name</code>	string	Secret name
<code>version</code>	string	Version label for the secret
<code>contentArg</code>	any	Secret content (will be base64-encoded)
<code>labels</code>	object	Key-value label pairs

## Updating a Secret

```
const secret = await docker.getSecretByName('database-credentials');
await secret.update(JSON.stringify({
  host: 'new-db.example.com',
  username: 'admin',
  password: 'new-secret-password',
}));
```

## Removing a Secret

```
const secret = await docker.getSecretByName('old-secret');
await secret.remove();
```

## Secret Properties

Property	Type	Description
ID	string	Secret ID
Spec	object	Contains <code>Name</code> and <code>Labels</code>
Version	object	Version info with <code>Index</code> string

## Image Store

Built-in image storage for caching Docker images locally or in S3-compatible object storage. Useful for backup, environment transfer, or air-gapped deployments.

## Storing an Image

```
const image = await docker.getImageByName('myapp:latest');
const tarStream = await image.exportToTarStream();
await docker.storeImage('myapp:latest', tarStream);
```

## Retrieving an Image

```
const tarStream = await docker.retrieveImage('myapp:latest');

// Import the retrieved image back into Docker
const image = await docker.createImageFromTarStream(tarStream, {
  imageUrl: 'myapp:latest',
});
```

## S3 Storage Backend

Add S3-compatible object storage for longer-term image persistence.

```

await docker.addS3Storage({
  endpoint: 's3.amazonaws.com',
  accessKey: 'YOUR_ACCESS_KEY',
  accessSecret: 'YOUR_SECRET_KEY',
  bucketName: 'docker-image-backups',
  directoryPath: 'images',
});

// Now storeImage() persists images to S3
const image = await docker.getImageByName('myapp:v2.0.0');
const tarStream = await image.exportToTarStream();
await docker.storeImage('myapp:v2.0.0', tarStream);

```

# ☐ Complete DockerHost API Reference

## Lifecycle and Daemon

Method	Signature	Description
<code>start</code>	<code>() =&gt; Promise&lt;void&gt;</code>	Initialize the host and image store
<code>stop</code>	<code>() =&gt; Promise&lt;void&gt;</code>	Shut down the host and image store
<code>ping</code>	<code>() =&gt; Promise&lt;void&gt;</code>	Ping the Docker daemon; throws if unavailable
<code>getVersion</code>	<code>() =&gt; Promise&lt;VersionInfo&gt;</code>	Get Docker daemon version information
<code>auth</code>	<code>(authData) =&gt; Promise&lt;void&gt;</code>	Authenticate against a Docker registry
<code>getAuthTokenFromDockerConfig</code>	<code>(registryUrl: string) =&gt; Promise&lt;void&gt;</code>	Authenticate using <code>~/.docker/config.json</code>
<code>activateSwarm</code>	<code>(advertiseIp?: string) =&gt; Promise&lt;void&gt;</code>	Initialize Docker Swarm mode
<code>getEventObservable</code>	<code>() =&gt; Promise&lt;Observable&lt;any&gt;&gt;</code>	Subscribe to real-time Docker events

## Containers

Method	Signature	Description
<code>listContainers</code>	<code>() =&gt; Promise&lt;DockerContainer[]&gt;</code>	List all containers
<code>getContainerById</code>	<code>(id: string) =&gt; Promise&lt;DockerContainer   undefined&gt;</code>	Get a container by ID
<code>createContainer</code>	<code>(descriptor) =&gt; Promise&lt;DockerContainer&gt;</code>	Create a new container

## Images

Method	Signature	Description
<code>listImages</code>	<code>() =&gt; Promise&lt;DockerImage[]&gt;</code>	List all images
<code>getImageByName</code>	<code>(name: string) =&gt; Promise&lt;DockerImage   undefined&gt;</code>	Get an image by tag name
<code>createImageFromRegistry</code>	<code>(descriptor) =&gt; Promise&lt;DockerImage&gt;</code>	Pull an image from a registry
<code>createImageFromTarStream</code>	<code>(stream, descriptor) =&gt; Promise&lt;DockerImage&gt;</code>	Import an image from a tar stream
<code>pruneImages</code>	<code>(options?) =&gt; Promise&lt;PruneResult&gt;</code>	Remove unused images

## Networks

Method	Signature	Description
<code>listNetworks</code>	<code>() =&gt; Promise&lt;DockerNetwork[]&gt;</code>	List all networks
<code>getNetworkByName</code>	<code>(name: string) =&gt; Promise&lt;DockerNetwork   undefined&gt;</code>	Get a network by name
<code>createNetwork</code>	<code>(descriptor) =&gt; Promise&lt;DockerNetwork&gt;</code>	Create a new network

## Services (Swarm)

Method	Signature	Description
<code>listServices</code>	<code>() =&gt; Promise&lt;DockerService[]&gt;</code>	List all services
<code>getServiceByName</code>	<code>(name: string) =&gt; Promise&lt;DockerService&gt;</code>	Get a service by name
<code>createService</code>	<code>(descriptor) =&gt; Promise&lt;DockerService&gt;</code>	Create a new service

## Secrets (Swarm)

Method	Signature	Description
<code>listSecrets</code>	<code>() =&gt; Promise&lt;DockerSecret[]&gt;</code>	List all secrets
<code>getSecretByName</code>	<code>(name: string) =&gt; Promise&lt;DockerSecret   undefined&gt;</code>	Get a secret by name
<code>getSecretById</code>	<code>(id: string) =&gt; Promise&lt;DockerSecret   undefined&gt;</code>	Get a secret by ID
<code>createSecret</code>	<code>(descriptor) =&gt; Promise&lt;DockerSecret&gt;</code>	Create a new secret

## Image Store

Method	Signature	Description
<code>storeImage</code>	<code>(name: string, tarStream: Readable) =&gt; Promise&lt;void&gt;</code>	Store an image tar stream
<code>retrieveImage</code>	<code>(name: string) =&gt; Promise&lt;Readable&gt;</code>	Retrieve a stored image as a tar stream
<code>addS3Storage</code>	<code>(options) =&gt; Promise&lt;void&gt;</code>	Configure S3 backend for image storage

## 📦 Complete Example

A full workflow: connect to Docker, pull an image, create a network and service, then clean up.

```
import { DockerHost } from '@apiclient.xyz/docker';

async function main() {
  // Connect to Docker
  const docker = new DockerHost({});
  await docker.start();

  // Check Docker availability
  await docker.ping();
  const version = await docker.getVersion();
  console.log(`Connected to Docker ${version.Version}`);

  // Initialize Swarm (if not already active)
  await docker.activateSwarm();
}
```

```
// Pull an image
const image = await docker.createImageFromRegistry({
  imageUrl: 'nginx',
  imageTag: 'latest',
});
console.log(`Pulled image: ${image.RepoTags[0]}`);

// Create a network
const network = await docker.createNetwork({
  Name: 'web-network',
  Driver: 'overlay',
  Attachable: true,
});
console.log(`Created network: ${network.Name}`);

// Create a secret
const secret = await docker.createSecret({
  name: 'web-config',
  version: '1.0.0',
  contentArg: JSON.stringify({ port: 8080 }),
  labels: {},
});
console.log(`Created secret: ${secret.Spec.Name}`);

// Create a service
const service = await docker.createService({
  name: 'web-server',
  image: image,
  labels: { app: 'web' },
  networks: [network],
  networkAlias: 'web',
  secrets: [secret],
  ports: ['8080:80'],
  resources: {
    memorySizeMB: 256,
  },
});
console.log(`Created service: ${service.Spec.Name}`);
```

```
// List running containers
const containers = await docker.listContainers();
for (const container of containers) {
  console.log(`Container: ${container.Names[0]} - ${container.State}`);
}

// Clean up
await service.remove();
await secret.remove();
await network.remove();

// Prune unused images
const pruneResult = await docker.pruneImages({ dangling: true });
console.log(`Reclaimed ${((pruneResult.SpaceReclaimed / 1024 / 1024).toFixed(2))} MB`);

await docker.stop();
}

main().catch(console.error);
```

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# Company Information

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