

Introduction to k6 and Configuration Guide

Introduction to k6

k6 is an open-source load testing tool designed for testing the performance of your applications.

It is developer-friendly, scriptable in JavaScript, and provides detailed metrics to help identify bottlenecks in your system.

Why Use k6?

- Developer-Friendly: Write tests in JavaScript, making it accessible for developers.
- Performance-Focused: Low resource consumption and high throughput.
- Scriptable: Easily create complex load scenarios.
- Open Source: No licensing costs and active community support.

Setting Up k6

Follow these steps to set up k6 on your system:

Installing k6 on different operating systems:

```
# On Windows
```

```
Download the installer from https://k6.io/docs/getting-started/installation/.
```

```
# On macOS
```

```
brew install k6
```

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```
# On Linux

sudo apt-get install k6
```

Verify the installation:

```
k6 version
```

Writing Your First Test

Create a file named `test.js` with the following content:

```
import http from 'k6/http';

import { check } from 'k6';

export let options = {

  vus: 10, // Number of virtual users

  duration: '30s', // Duration of the test

};

export default function () {

  let res = http.get('http://test.k6.io');

  check(res, { 'status was 200': (r) => r.status === 200 });

}
```

Running the Test

Run the test with the following command:

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```
k6 run test.js
```

Example: Testing an ASP.NET Core Web API

Here's an example test for an ASP.NET Core Web API:

```
import http from 'k6/http';

import { check, sleep } from 'k6';

export let options = {

  vus: 5, // Number of virtual users

  duration: '1m', // Duration of the test

};

export default function () {

  let res = http.get('http://localhost:5000/api/values');

  check(res, {

    'status is 200': (r) => r.status === 200,

    'response is not empty': (r) => r.body.length > 0,

  });

  sleep(1); // Wait for 1 second between iterations

}
```

Customizing k6 Configuration

You can customize the k6 configuration to suit your needs:

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```
export let options = {  
  stages: [  
    { duration: '2m', target: 50 }, // Ramp-up to 50 users over 2 minutes  
    { duration: '5m', target: 50 }, // Stay at 50 users for 5 minutes  
    { duration: '2m', target: 0 }, // Ramp-down to 0 users  
  ],  
};
```

Conclusion

k6 is a powerful tool for performance testing, offering flexibility and simplicity.

By integrating it into your development process, you can ensure that your applications meet performance expectations.

For more information, visit the official k6 documentation at <https://k6.io/docs/>.