

Kong Gateway Operations for Kubernetes

Introduction

Welcome to 'Kong Gateway Operations for Kubernetes'

Introductions



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Previously at Sysdig, Chef, RightScale



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Introductions



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APIs, Microservices, reading, cycling
and everything else.

Introductions



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Introductions



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Wherever the campervan takes me!

Introductions



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Introductions



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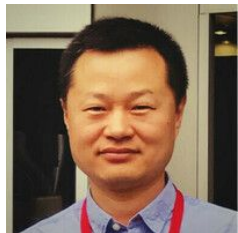


Reading, United Kingdom



Previously worked in NHS, Finastra, BP, HSBC, Barclays ...

Introductions



Gang Guo
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Kong



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London, United Kingdom

Introductions



{{Paddy O'Furniture}}

Senior Customer Reliability Engineer
Kong

<<Brief bio here>>

About You

- Hands up if you are familiar with APIs
- Keep it up if you have any Kong experience
- Keep it up if you have at least 1 years experience
- Keep it up if you have at least 2 years experience
- Keep it up if you have at least 3 years experience

Well, you'll all have at least some experience by the end of this course!

Objectives & Expectations

Course Overview

This course is targeted at operators or site reliability engineers tasked with managing a Kong Gateway deployment on Kubernetes.

To help learners understand the context in which the Kong Gateway is used, and the operations side of managing a Kong Gateway deployment including installation, securing the control plane, securing the dataplane, troubleshooting as well as some advanced plugins. Beyond the standard instructions, the course teaches the students to use the Kubernetes Custom Resource Definitions (CRDs) to configure the Gateway instead of using the Manager interface.

This course balances lecture, hands-on exercise and quizzes to keep learners engaged and to ensure that the learning objectives are achieved.

Course Agenda

1. Kong Gateway Installation on K8s
2. Intro to Kong Ingress Controller
3. Securing Kong Gateway
4. Securing Services on Kong
5. OIDC Plugin
6. Kong Vitals
7. Advanced Plugins Review
8. Troubleshooting
9. Test your Knowledge

Expectations

You will leave this class with the ability to

- Install, configure and upgrade Kong Gateway on Kubernetes
- Understand KIC and how to use Kong's CRDs to configure the Gateway
- Secure Kong and related services
- Configure the OIDC plugin to authenticate requests using OpenID Connect protocol
- Use Kong Vitals (Vitals) to monitor Kong Gateway's health and performance
- Understand the use cases of the advanced plugins
- Troubleshoot common problems

Prerequisites

Prerequisites

It is expected that the student

- Has taken the Kong Gateway Foundations course
- Is familiar with microservices architectures
- Experience using kubectl and helm to configure a k8s deployment
- Can explain the purpose and function of the Kong Gateway
- Understands the following basic Kong concepts
 - Services
 - Routes
 - Consumers
 - Plugins

Legend

Task: Perform this task lock-step with the instructor

```
$ {{command to execute}}
```

```
{{expected results}}
```


Lab Time: 15 minutes

This slide introduces a lab you should complete on your own in the time shown.

The scenario may be different, but you would have covered the steps in this or previous lessons.

HTTPie vs curl

Throughout this course, command line API requests use the HTTP client httpie <https://httpie.io/>

An alternative command using curl is given in the slide notes, and commands file in the repo.

In either case the response is identical:

```
$ http google.com
HTTP/1.1 301 Moved Permanently
Cache-Control: public, max-age=2592000
Content-Length: 219
Content-Type: text/html; charset=UTF-8
Date: Wed, 09 Jun 2021 08:13:26 GMT
Expires: Fri, 09 Jul 2021 08:13:26 GMT
Location: http://www.google.com/
Server: gws
X-Frame-Options: SAMEORIGIN
X-XSS-Protection: 0

<HTML><HEAD><meta http-equiv="content-type"
content="text/html; charset=utf-8">
<TITLE>301 Moved</TITLE></HEAD><BODY>
<H1>301 Moved</H1>
The document has moved
<A HREF="http://www.google.com/">here</A>.
</BODY></HTML>
```

```
$ curl -i google.com
HTTP/1.1 301 Moved Permanently
Location: http://www.google.com/
Content-Type: text/html; charset=UTF-8
Date: Wed, 09 Jun 2021 08:12:25 GMT
Expires: Fri, 09 Jul 2021 08:12:25 GMT
Cache-Control: public, max-age=2592000
Server: gws
Content-Length: 219
X-XSS-Protection: 0
X-Frame-Options: SAMEORIGIN

<HTML><HEAD><meta http-equiv="content-type"
content="text/html; charset=utf-8">
<TITLE>301 Moved</TITLE></HEAD><BODY>
<H1>301 Moved</H1>
The document has moved
<A HREF="http://www.google.com/">here</A>.
</BODY></HTML>
```

Accessing Your Lab Environment

Task: First Make Sure you're in the right environment

If you accessed your environment from a spreadsheet, then please ensure you're in the correct environment.

```
$ touch <YourName>  
$ ls
```

YourName

If you also see someone else's name, then please ensure you or they are in the correct environment and raise thoughts with the instructor.

YourName AnotherName

Task: Accessing Your Lab Environment

To access the lab environment

1. Log into the Education Portal using Okta
<https://education.konghq.com/login>
2. Enroll in course **Kong Gateway Operations for K8s**
3. Click **Start Course**
4. Then click **Click to launch your Kong Lab**

Your Kong Gateway lab environment for K8s has been launched.
It will run for the next 7 hours 59 minutes.

Access the Lab Terminal: 18080-0-7626b001.labs.konghq.com/

Kong Admin URL: 30001-1-7626b001.labs.konghq.com/

Kong Manager URL: 30002-1-7626b001.labs.konghq.com/

Kong Developer Portal URL: 30003-1-7626b001.labs.konghq.com/

```
labuser@17bae75baa66:~$
```


Task: Accessing Student Material

Slides and course commands are also available in the portal

The screenshot displays the Kong Gateway Operations course page. The top navigation bar includes the Kong logo, course title 'KGIL-201 Kong Gateway Operations (Instructor Led)', and links for 'Discover New Courses' and 'FAQ'. A 'View this course as:' dropdown is set to 'Staff'. The main content area has tabs for 'Course', 'Discussion', 'Progress', and 'Instructor', with 'Course' selected. On the left, a sidebar shows a 'Bookmarks' section with a search bar and a list of course items: 'Kong Gateway Operations' (expanded), 'Lab Environment', 'Student Material' (linked), 'Knowledge Check', and 'Claim your Certificate'. The main content area shows the breadcrumb 'Course > Kong Gateway Operations > Student Material > Student Material' and a 'VIEW UNIT IN STUDIO' button. The 'Student Material' section lists three units: '00_-_Introduction_to_Kong_Gateway_Operations' (with 'Lesson Slides'), '01_-_Kong_Gateway_Installation' (with 'Lesson Slides' and 'Lesson Commands'), and '02_-_Securing_Kong_Gateway' (with 'Lesson Slides' and 'Lesson Commands').

education.konghq.com/courses/course-v1:kong+KGIL-201+Perpetual/courseware/74cbaf47a1fa46a185718a1499fd4ab2/d87b0aa8363b43f1905739b163716dad/activate_block_1...

KGIL-201 Kong Gateway Operations (Instructor Led) Discover New Courses FAQ My Courses

View this course as: Staff

Course Discussion Progress Instructor

Bookmarks

Search

Kong Gateway Operations

- Lab Environment
- [Student Material](#)
- Knowledge Check
- Claim your Certificate

Course > Kong Gateway Operations > Student Material > Student Material

< Previous Next >

VIEW UNIT IN STUDIO

[Bookmark this page](#)

Student Material

00_-_Introduction_to_Kong_Gateway_Operations

- Lesson Slides

01_-_Kong_Gateway_Installation

- Lesson Slides
- Lesson Commands

02_-_Securing_Kong_Gateway

- Lesson Slides
- Lesson Commands

What's next?

Next we're going to go over how to install and upgrade the Kong Gateway on k8s.

Let's get started...