

# Master The Art Of Hyperledger Fabric On Docker, Docker Swarm, And Kubernetes

Hyperledger Fabric has emerged as one of the most popular and widely adopted frameworks for developing blockchain solutions. With its modular architecture, scalability, and enterprise-grade security features, Hyperledger Fabric has become the go-to choice for many organizations looking to implement distributed ledger technology. In this article, we will dive deep into mastering Hyperledger Fabric on three powerful containerization platforms: Docker, Docker Swarm, and Kubernetes.

## Why Containerization?

Containerization has revolutionized the way software is developed, deployed, and managed. It allows for packaging software and its dependencies into a standardized unit called a container. This enables easy portability, scalability, and efficient resource utilization. Docker is the most popular containerization platform, with a vast ecosystem of tools and libraries. Docker Swarm and Kubernetes, on the other hand, are powerful container orchestration platforms that provide advanced features for managing and scaling containerized applications.

## Setting up Hyperledger Fabric on Docker

First, let's explore how to set up Hyperledger Fabric on Docker. Docker provides a simple and straightforward way to deploy and manage Fabric networks. We will guide you through the installation process and show you how to create a Fabric network using Docker Compose. We will also cover important aspects such as peer organizations, ordering service nodes, and how to interact with the network using the Fabric SDKs.



## Mastering Hyperledger Fabric: Master The Art of Hyperledger Fabric on docker, docker swarm and Kubernetes, 1st Edition

by Narendranath Reddy Thota(Kindle Edition)

★★★★☆ 4 out of 5

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### Taking it to the Next Level with Docker Swarm

Docker Swarm is Docker's native orchestration solution. It allows you to create and manage a cluster of Docker nodes, forming a Swarm. We will show you how to deploy a Fabric network across multiple Docker Swarm nodes, enabling high availability and fault tolerance. Additionally, we will explore advanced topics such as load balancing, service discovery, and scaling the network using Docker Swarm.

### Scaling to New Heights with Kubernetes

Kubernetes, often referred to as K8s, is a powerful container orchestration platform that provides advanced scheduling, scaling, and management capabilities. We will guide you through deploying a Hyperledger Fabric network on Kubernetes using the official Helm charts. You will learn how to take advantage of Kubernetes features such as Pods, Deployments, and Services to ensure optimal performance and scalability of your Fabric network.

## Becoming a Hyperledger Fabric Master

By following the instructions and concepts presented in this article, you will become a true master of Hyperledger Fabric on Docker, Docker Swarm, and Kubernetes. You will have a deep understanding of each platform's capabilities, their unique features, and how to leverage them to deploy and manage enterprise-grade blockchain networks. Whether you are a blockchain enthusiast or an enterprise developer, mastering Hyperledger Fabric and containerization platforms is a valuable skill in today's rapidly evolving technology landscape.

Hyperledger Fabric, combined with Docker, Docker Swarm, and Kubernetes, provides a robust and scalable solution for building distributed ledger applications. With this article, you have taken the first step towards becoming a Hyperledger Fabric master. Now it's time to dive deep, experiment, and embrace the limitless possibilities that blockchain technology offers.



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## Key Features

- Detailed Explanation of One way and mutual TLS
- Detailed Explanation of docker sockets (docker.sock)
- Exposed functionalities of Fabric CLI's and SDK's
- Advanced chaincode development
- A glimpse of Hyperledger Fabric 2.0
- Advanced examples of Node and golang Fabric SDK
- Onboard new organization using Node.js SDK (No more CLI)
- CI/CD for chaincode (Install chaincode directly onto peers from GitHub using Node.js)
- Fabric setup explanation with Different real-time use cases
- Deployment of Hyperledger Fabric using docker swarm and Kubernetes
- Setup and configure caliper to check benchmarks
- Monitor consortium with Prometheus and grafana
- Monitor docker and docker swarm using swarmpit and logspout
- Logging consortium with ELK/EFK stack
- Some interesting open-source tools and Bonus concepts

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Who this Book is For

This book will benefit software engineers who are ready to shift their focus to distributed technologies like Blockchain. This book provides architects with a comprehensive understanding of Solution Architecture, allowing them to architect their own solutions with ease. Hyperledger fabric is a technology stack that CTOs from all around the world desire to use. Managers must change with the times. Professors in order to learn about the industry. This book may be useful to engineering students who want to stay up to date on the latest technology.

## Book Description

All Hyperledger Fabric developers throughout the world are eager to learn how to master Hyperledger Fabric. Hyperledger Fabric is an open-source technology that aids in the creation and maintenance of permissioned distributed Blockchain consortiums. This book is for Hyperledger users who want to create end-to-end projects that are becoming more complicated and feature-rich. This book will serve as a one-stop shop for any developers interested in creating blockchain consortiums with Hyperledger Fabric. TLS, Unix sockets, caliper (Benchmark tool),raft consensus, advanced chaincode development, key collision and MVCC, chaincode access controls, chaincode encryption, node.js SDK, Golang SDK, docker daemon API, private data concepts, onboarding organizations using node.js SDK, deploying Hyperledger fabric using Kubernetes and docker swarm, monitoring Hyperledger fabric, Kubernetes, and docker. The reader will be able to design a production-grade Hyperledger fabric consortium using raft consensus processes after reading this book. This book, written by someone who has worked on Hyperledger fabric for four years, covers many key components of the project, including version 2.0.



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