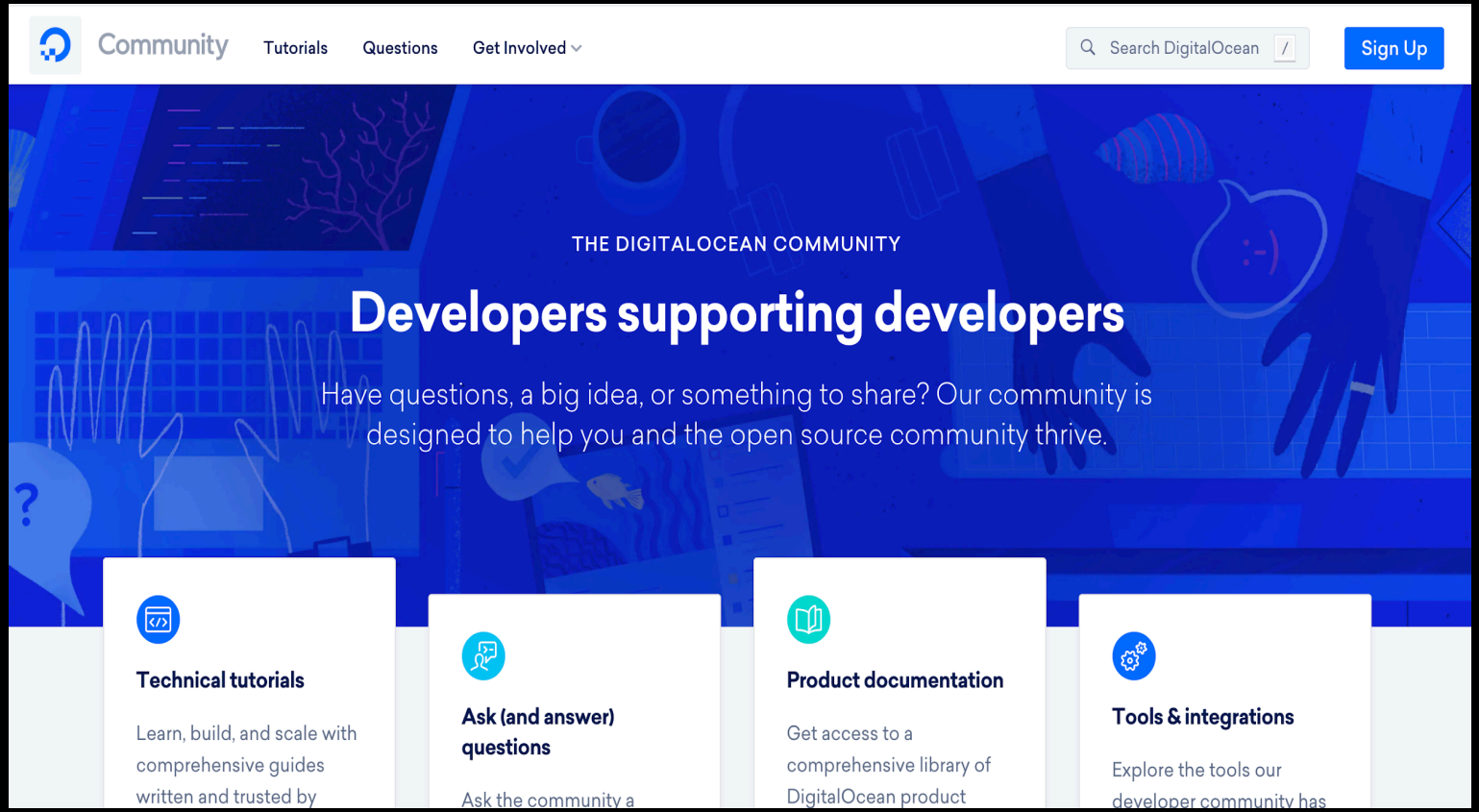
Effective Kubernetes Onboarding

- Kathleen Juell, Developer, DODOX @ DigitalOcean
@katjuell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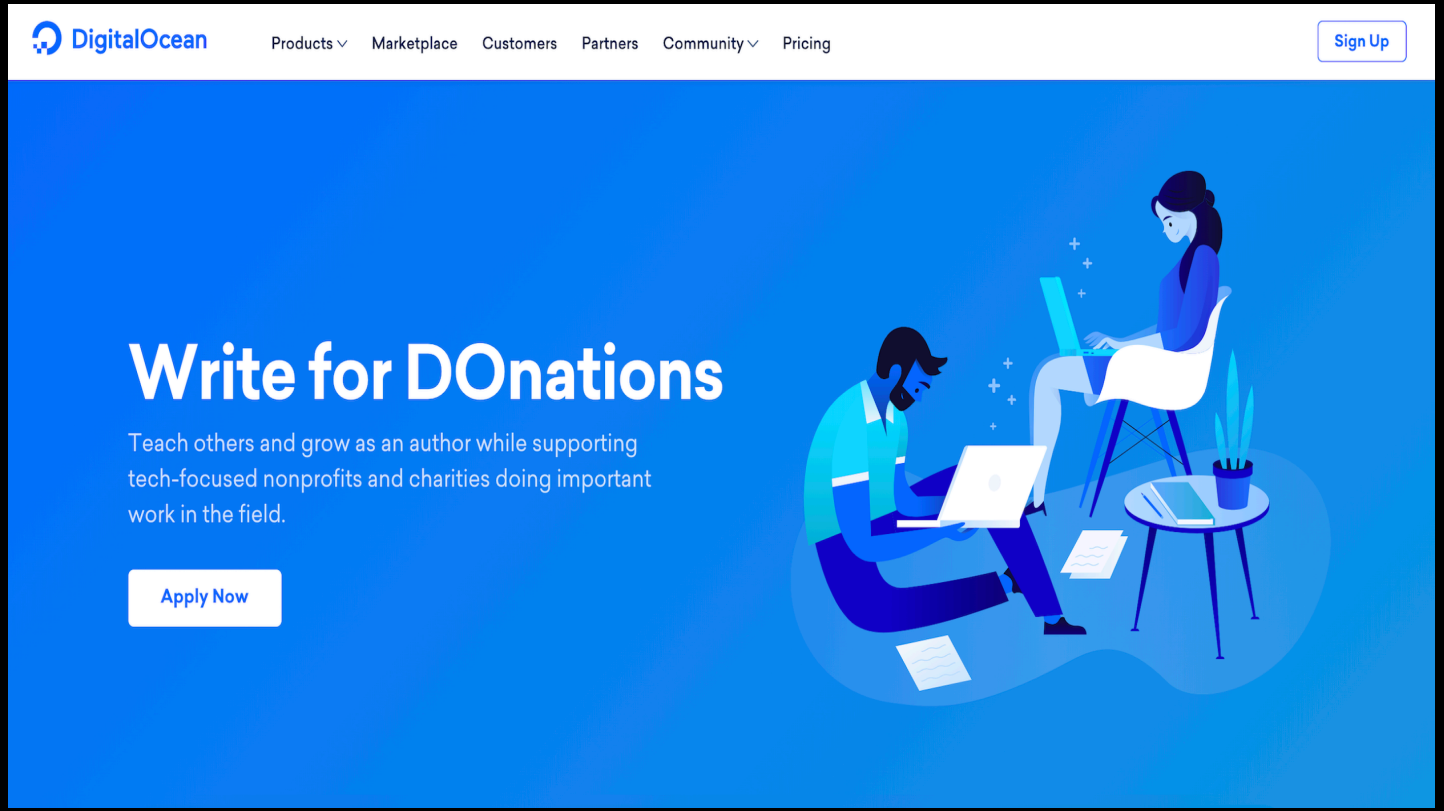
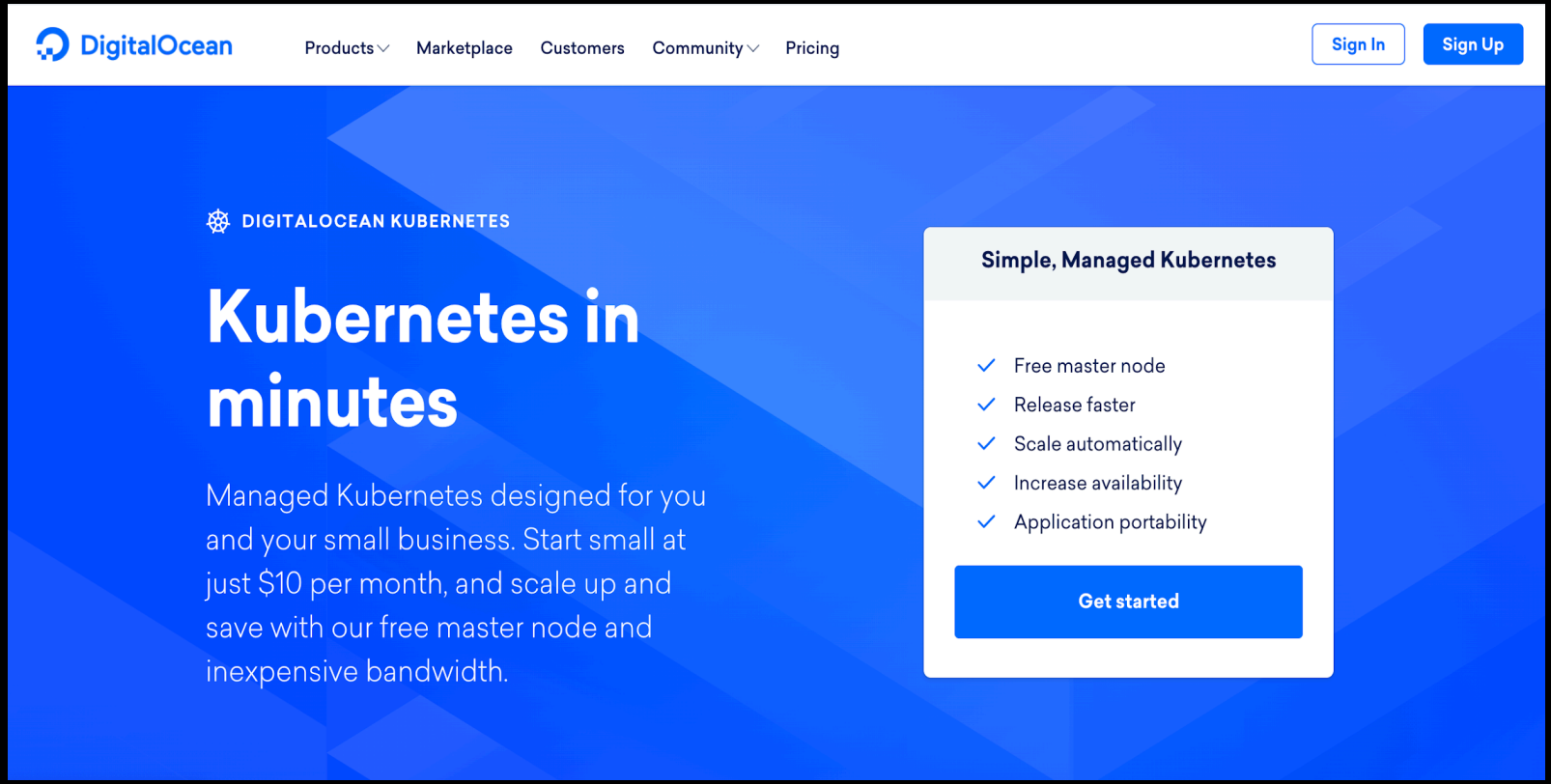


Why Am I Here Today?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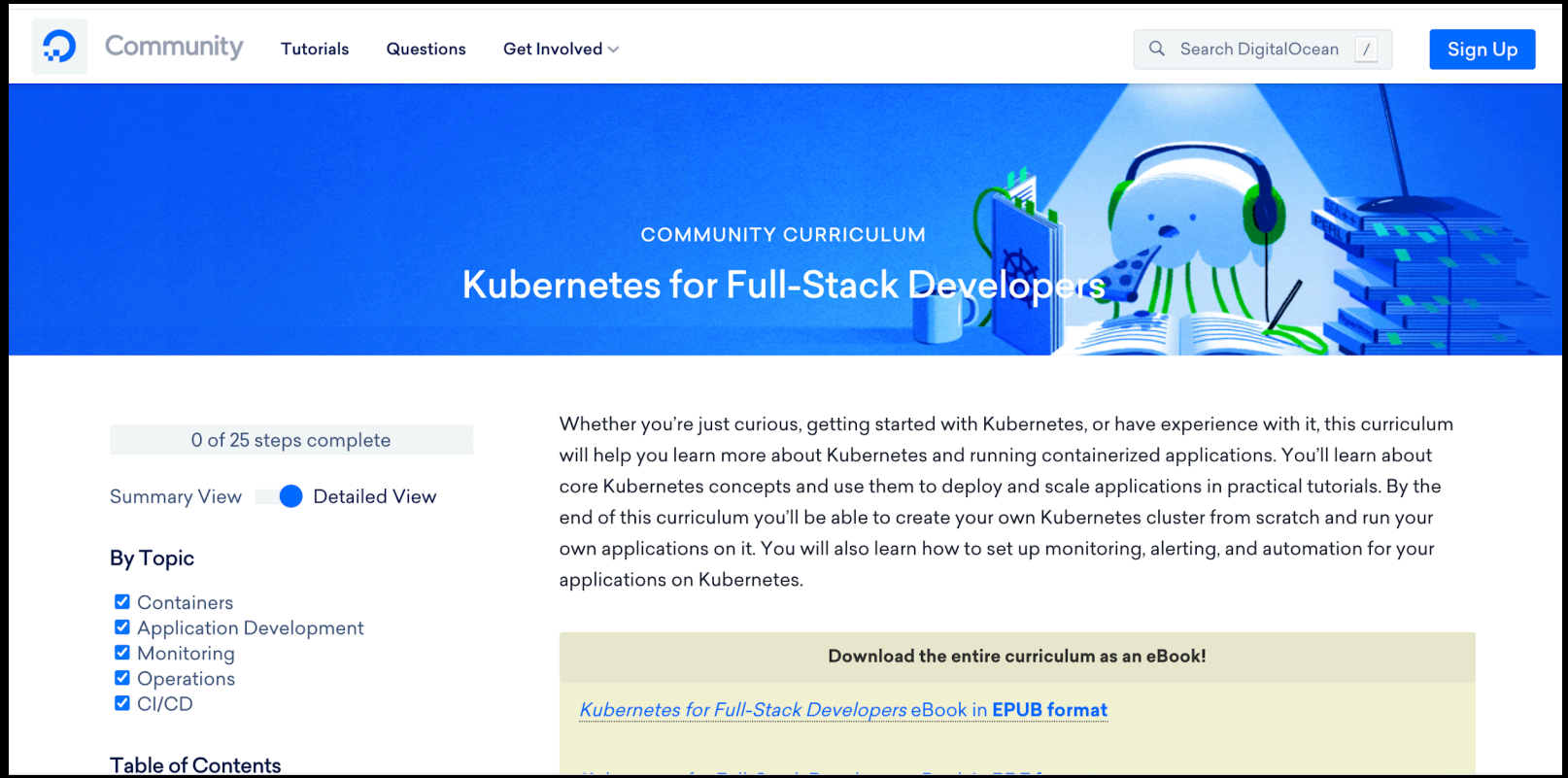
Managed Kubernetes designed for you and your small business. Start small at just $10 per month, and scale up and save with our free master node and inexpensive bandwidth.
Simple, Managed Kubernetes
Free master node
Release faster
Scale automatically
Increase availability
Application portability
Get started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Kubernetes for Full-Stack Developers
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Whether you're just curious, getting started with Kubernetes, or have experience with it, this curriculum will help you learn more about Kubernetes and running containerized applications. You'll learn about core Kubernetes concepts and use them to deploy and scale applications in practical tutorials. By the end of this curriculum you'll be able to create your own Kubernetes cluster from scratch and run your own applications on it. You will also learn how to set up monitoring, alerting, and automation for your applications on Kubernetes.
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Effective Kubernetes onboarding?

🤔 🤔 🤔

Effective Kubernetes onboarding:

- Know your audience and their objectives.

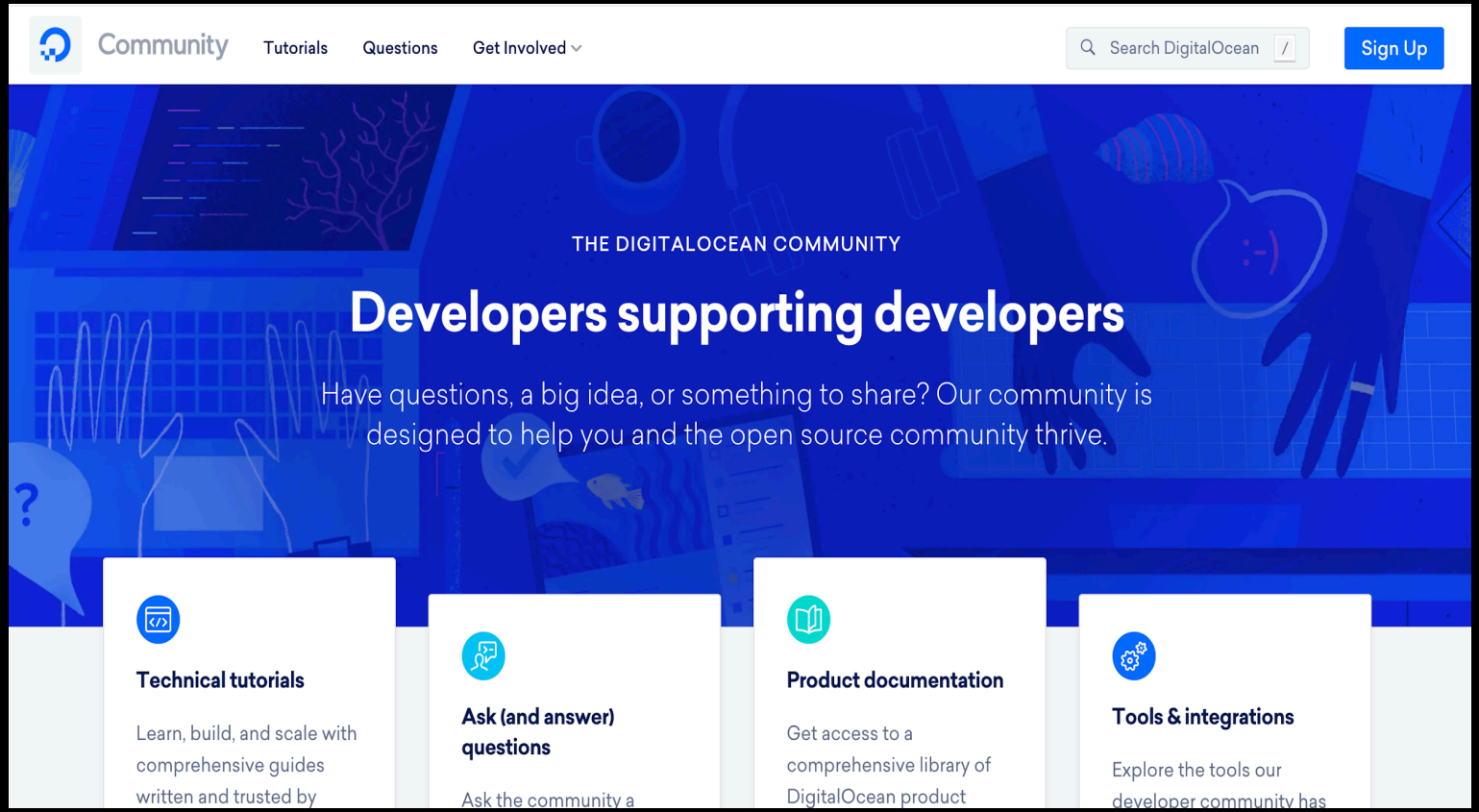
Effective Kubernetes onboarding:

- Know your audience and their objectives.
- Determine the best approach to meet those objectives.

Effective Kubernetes onboarding:

- Know your audience and their objectives.
- Determine the best approach to meet those objectives.
- Scope your approach appropriately.

MEANWHILE ... ON THE COMMUNITY PLATFORM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Effective Kubernetes onboarding:

- Know your audience and their objectives.
- Determine the best approach to meet those objectives.
- Scope your approach correctly.

Part I: Audience

Is your audience made up of

- Application Developers

Is your audience made up of

- Application Developers

  Goals:

  1. Develop with a distributed architecture in mind

Is your audience made up of

- Application Developers

  Goals:

  1. Develop with a distributed architecture in mind

  2. Deploy successfully

Is your audience made up of

- Operators

Is your audience made up of

- Operators

  Goals:

  1. Deploy successfully

Is your audience made up of

- Operators

  Goals:

  1. Deploy successfully

  2. Automate deployments, pipelines & backups

Is your audience made up of

- Operators

  Goals:

  1. Deploy successfully

  2. Automate deployments, pipelines & backups

  3. Implement logging, monitoring & alerting

Is your audience made up of

- Business Decision Makers

Is your audience made up of

- Business Decision Makers

  Goals:

  1. Make responsible financial decisions

Is your audience made up of

- Business Decision Makers

  Goals:

  1. Make responsible financial decisions

  2. Scope long-term goals for growth

0 of 25 steps complete

Summary View Detailed View

By Topic

- [x] Containers
- [x] Application Development
- [x] Monitoring
- [x] Operations
- [x] CI/CD

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1. Introductory Topics

2. Containers, Modernizing Applications and 12 Factor Development

3. Containers

4. Deployment Strategies

5. Operate a Kubernetes Cluster

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How To Set Up ReadWriteMany (RWX) Persistent Volumes with NFS on DigitalOcean Kubernetes
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DigitalOcean eBook: Kubernetes for Full-Stack

Part II: Approach

Application Developers

Goals:

1. Develop with a distributed architecture in mind.
2. Deploy successfully

Approach:

Application Developers

Goals:

1. Develop with a distributed architecture in mind.
2. Deploy successfully

Approach:

12FA Application

Application Developers

Goals:

1. Develop with a distributed architecture in mind.
2. Deploy successfully

Approach:

12FA Application

Modernize

Application Developers

Goals:

1. Develop with a distributed architecture in mind.
2. Deploy successfully

Approach:

12FA Application

Modernize

Containerize

Application Developers

Goals:

1. Develop with a distributed architecture in mind.
2. Deploy successfully

Approach:

12FA Application

Modernize

Containerize

Deploy

Application Developers

Goals:

1. Develop with a distributed architecture in mind.
2. Deploy successfully

Approach:

12FA Application
Blocker: Why is this necessary?

Modernize
Blocker: What is a distributed architecture?

Containerize
Blocker: How do containers differ from VMs?

Deploy
Blocker: What will change from the tools/systems that I'm used to?

Application Developers

Goals:

1. Develop with a distributed architecture in mind.
2. Deploy successfully

Approach:

Meta-Level Topics:

What is Kubernetes?

What are containers?

Operational Topics:

12FA Application

Modernize

Containerize

Deploy

Summary View Detailed View

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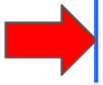
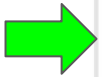


1. Introductory Topics



2. Containers, Modernizing Applications and 12 Factor Development

3. Containers

4. Deployment Strategies

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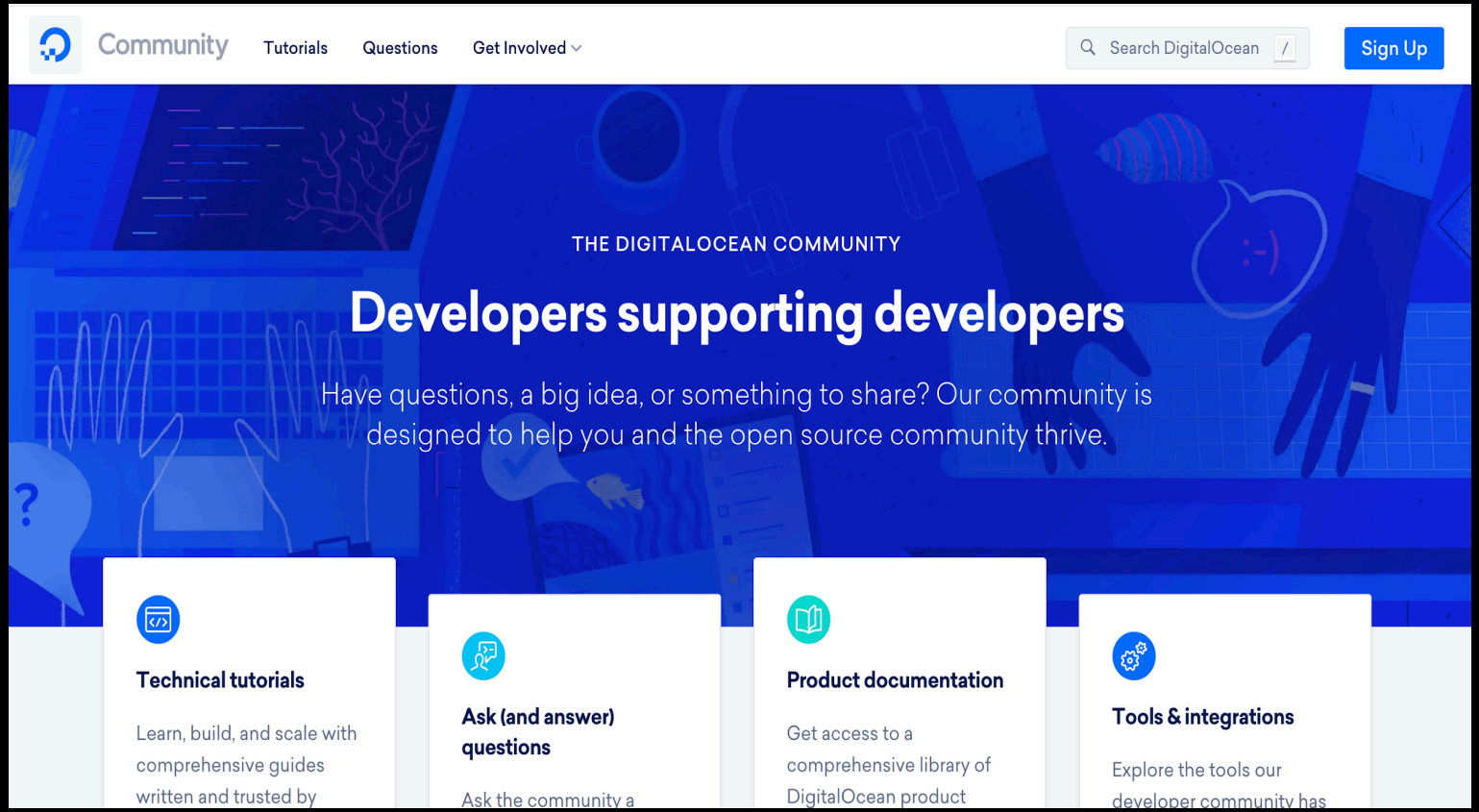
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Developers on Community

Goals:

1. Develop with a distributed architecture in mind.
2. Deploy successfully

Approach:

Ensure understanding of:

Where secrets are located

What's in the application/server base images

How to troubleshoot Concourse

How to kick off and roll back deployments

Developers on Community

Goals:

1. Develop with a distributed architecture in mind.
2. Deploy successfully

Approach:

Ensure understanding of:

Where secrets are located

What's in the application base image

How to troubleshoot Concourse

How to kick off and roll back deployments

What does it mean to deploy in a distributed environment at the application level?

Developers on Community

Goals:

1. Develop with a distributed architecture in mind.
2. Deploy successfully

Approach:

Key Takeaways:

Make time for meta-level discussions

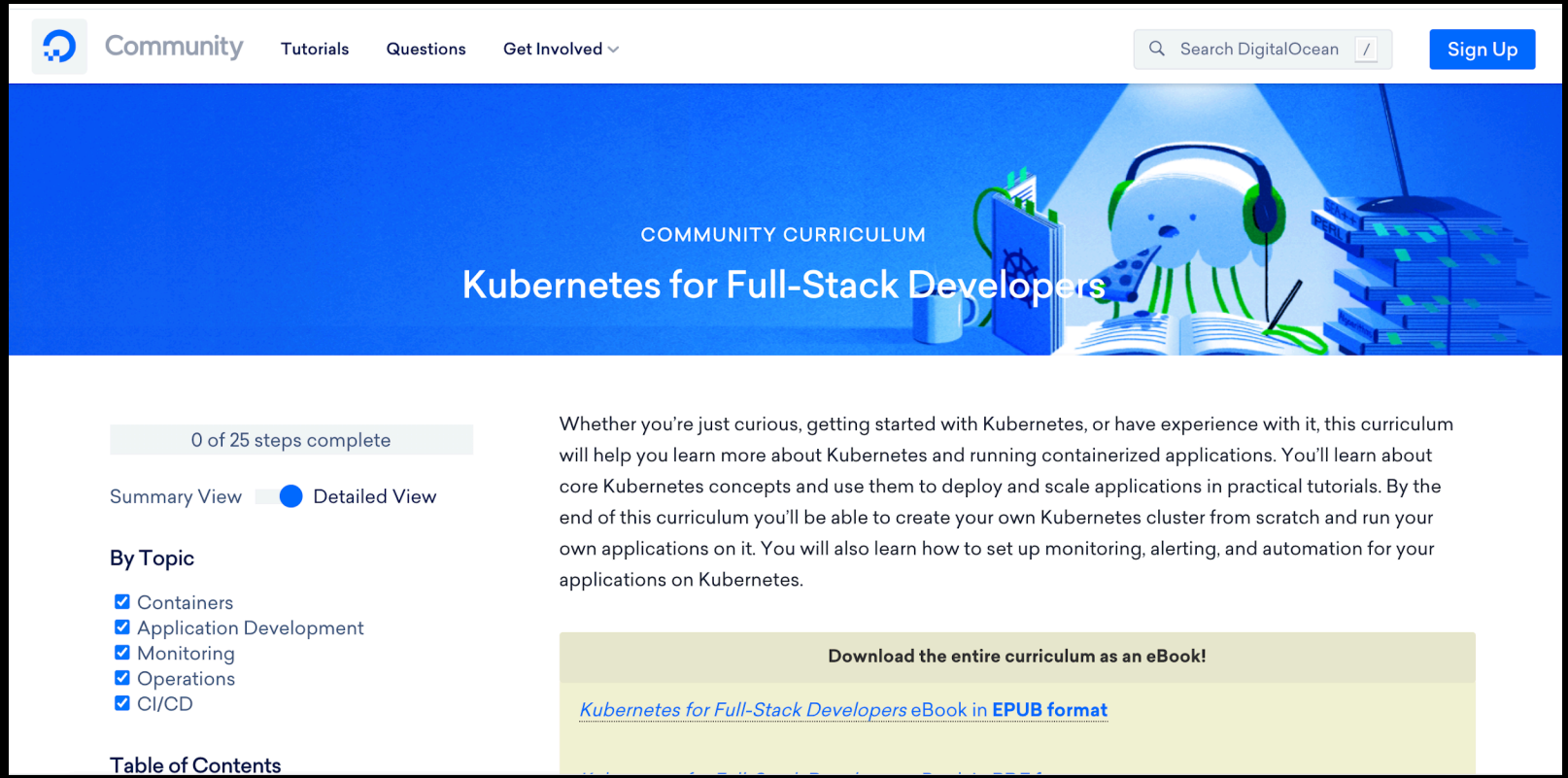
Lay theoretical foundations before operational

Effective Kubernetes onboarding:

- Know your audience and their objectives.
- Determine the best approach to meet those objectives.
- **Scope your approach correctly.**

Formats to Consider:

Documentation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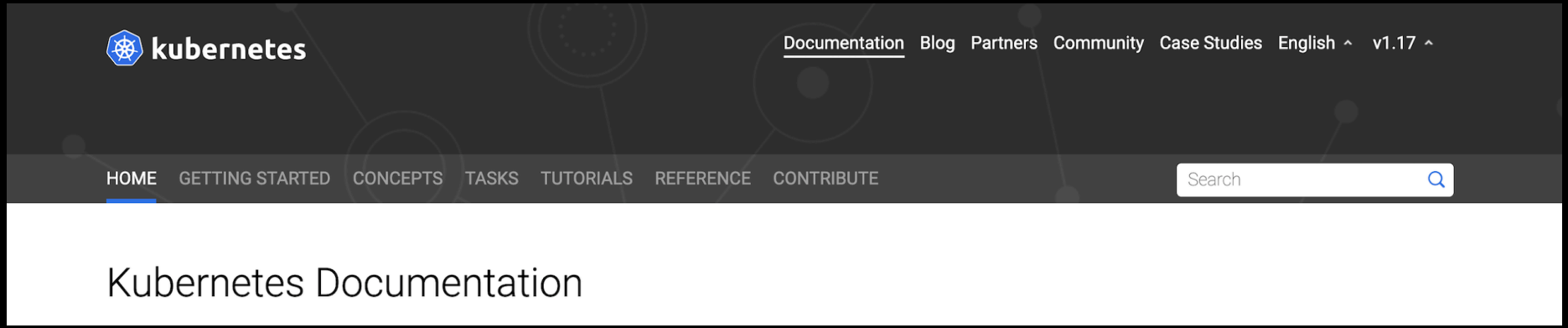
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We will use these files to create different types of objects: Services, which will ensure that the Pods running our containers remain accessible; Deployments, which will contain information about the desired state of our Pods; a PersistentVolumeClaim to provision storage for our database data; a ConfigMap for environment variables injected at runtime; and a Secret for our application's database user and password. Some of these definitions will be in the files kompose will create for us, and others we will need to create ourselves.

Formats to Consider:

Documentation

Talks or videos

"The capacity to learn is a gift, ability to learn is a skill and willingness to learn is a choice"- Brian Herbert

Formats to Consider:

Documentation

Talks or videos

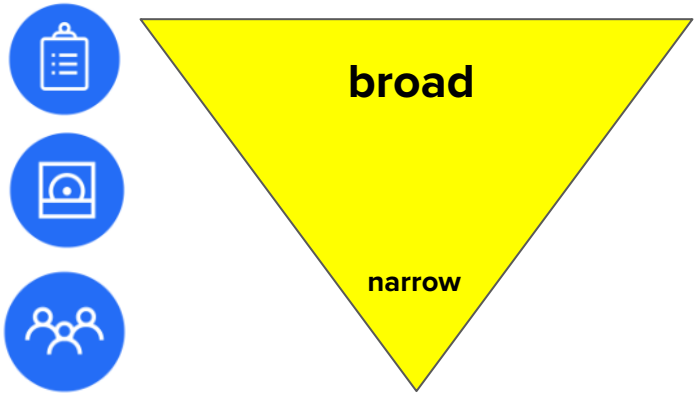
Meeting

Formats to Consider:

Documentation

Talks or videos

Meeting



Developers on Community

Scope:

1. **Focused (meetings, docs)**
2. **Some shared resources (short videos)**

Formats:

Internal Documentation

Meetings

Videos

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