

# Securing a Kafka Cluster

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## HANDLING CRYPTOGRAPHY CONTAINERS



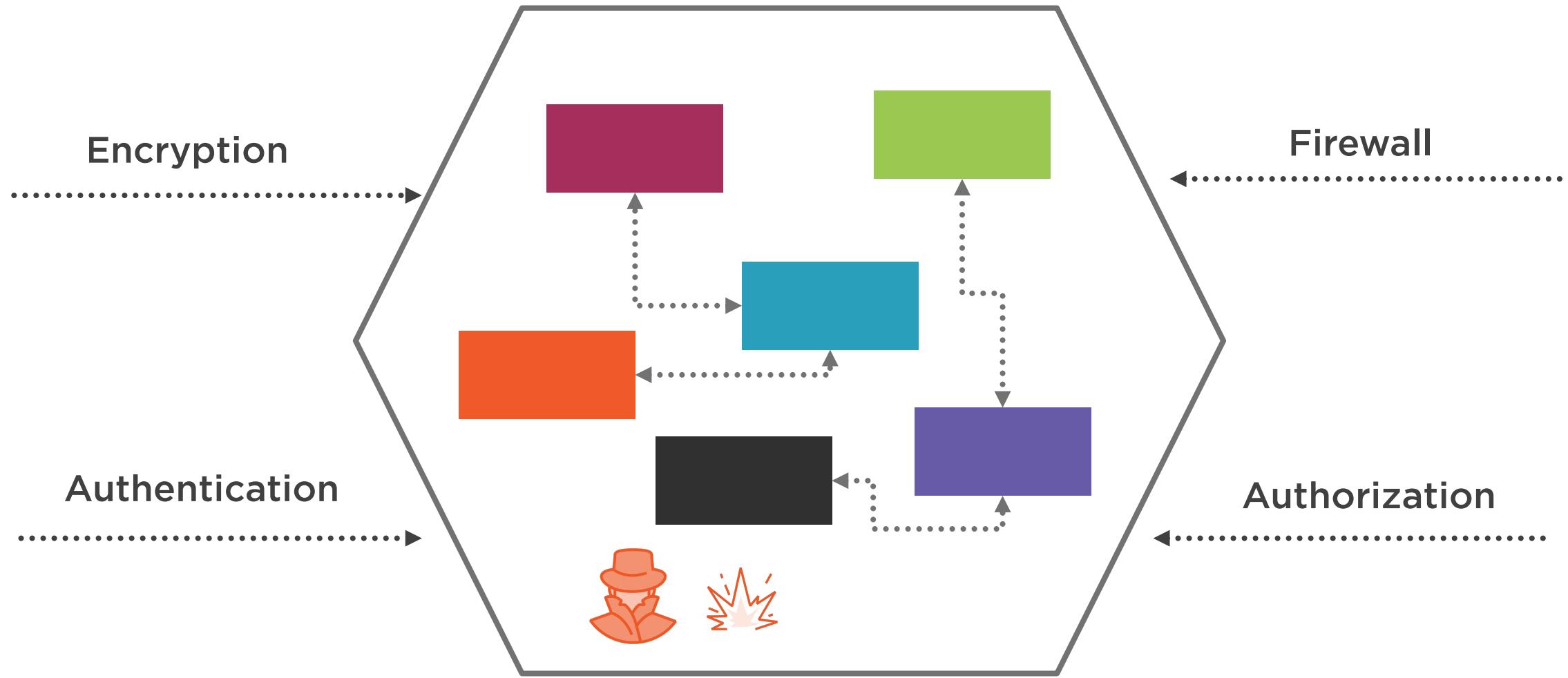
**Bogdan Sucaciu**

SOFTWARE ENGINEER

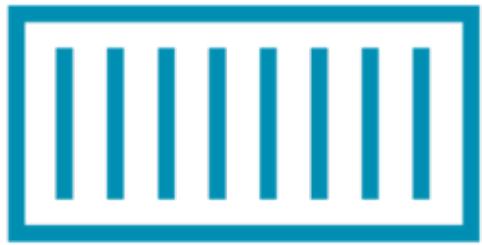
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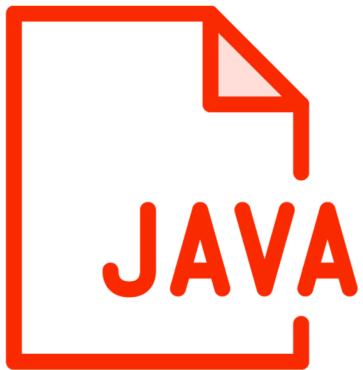
# Castle Security



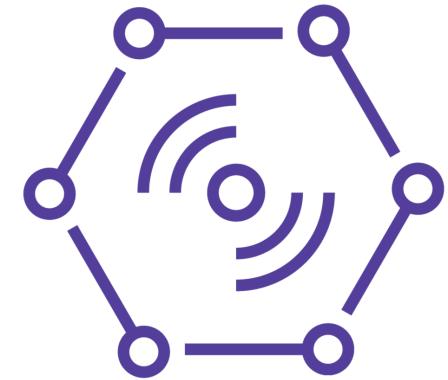
# Prerequisites



**Docker**  
Starting and stopping  
containers; Docker  
Compose



**Java 11+**  
Understand Syntax



**Apache Kafka**  
Build Producers and  
Consumers; Topics,  
Brokers, Kafka  
Connect

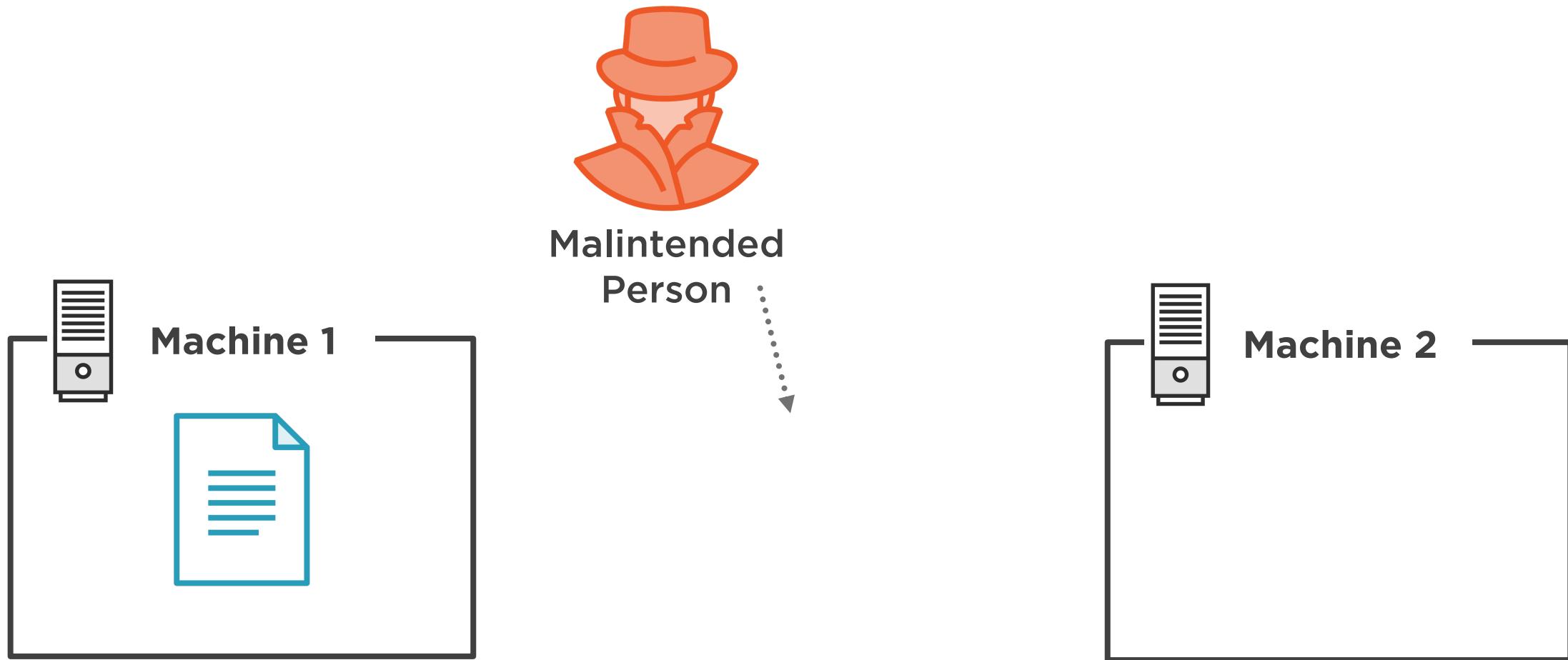


# Pluralsight Courses

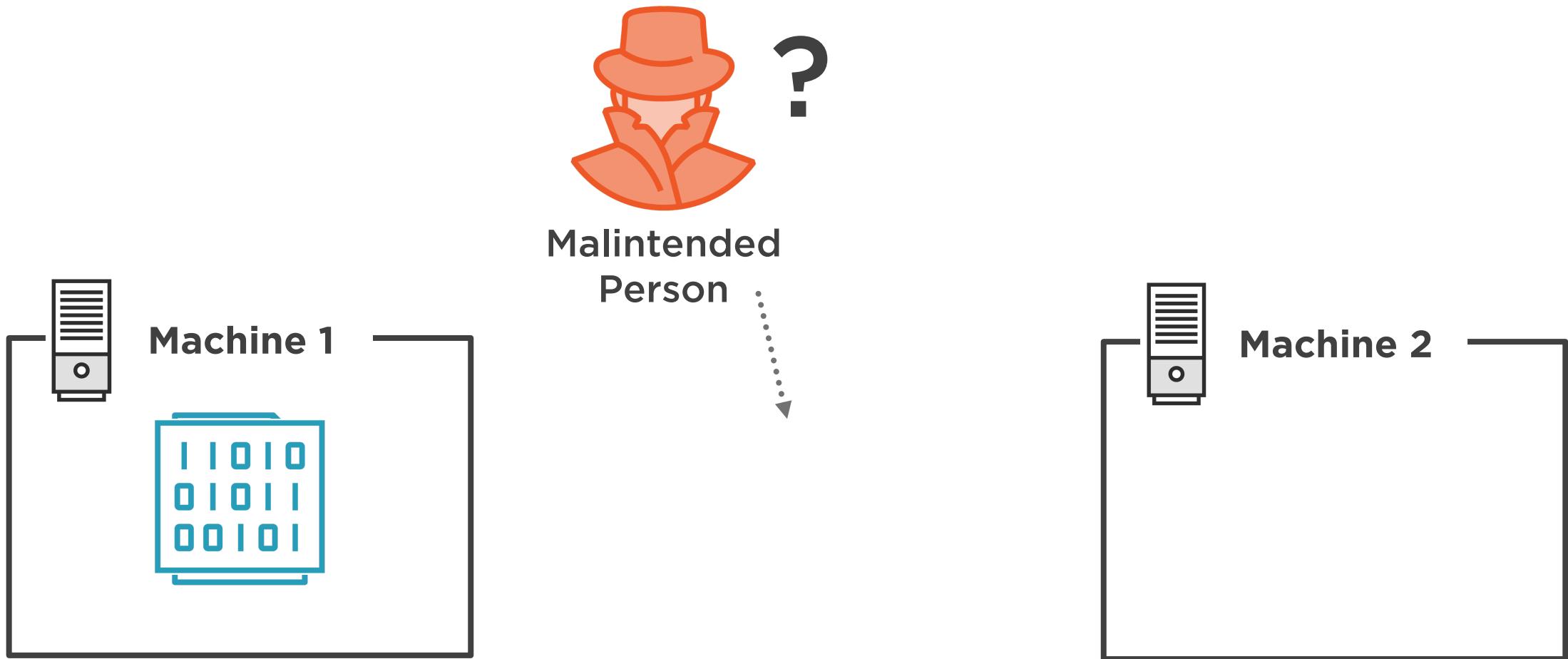
The image shows a screenshot of a Pluralsight course page. The title of the course is "Getting Started with Apache Kafka" by Ryan Plant. The course author's photo is visible, and the title includes a subtitle: "Getting to Know Apache Kafka's Architecture". Below the title, a brief description states: "This course will introduce you to Apache Kafka and provide a thorough tour of its architecture so you can start building your next enterprise system with it." At the bottom, there is a diagram illustrating the Kafka architecture, showing "Producers" connected to "Broker" nodes, which are then connected to "Consumers". A specific statistic is mentioned: "LinkedIn: 1,400 brokers => 2 petabytes per week". The background of the page features a dark, moody portrait of a man's face.



# Data Security



# Data Encryption

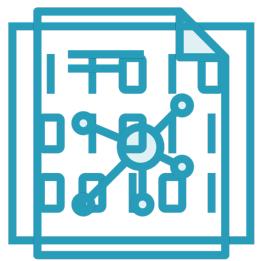


# Public Key Infrastructure

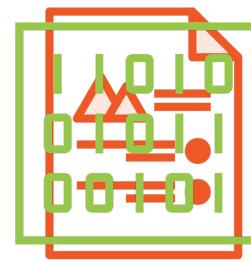
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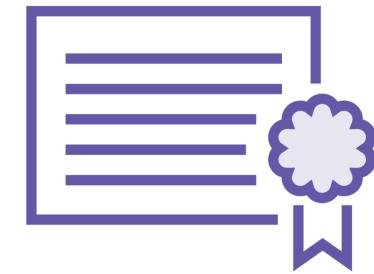
# Cryptography



Symmetric  
Encryption



Asymmetric  
Encryption



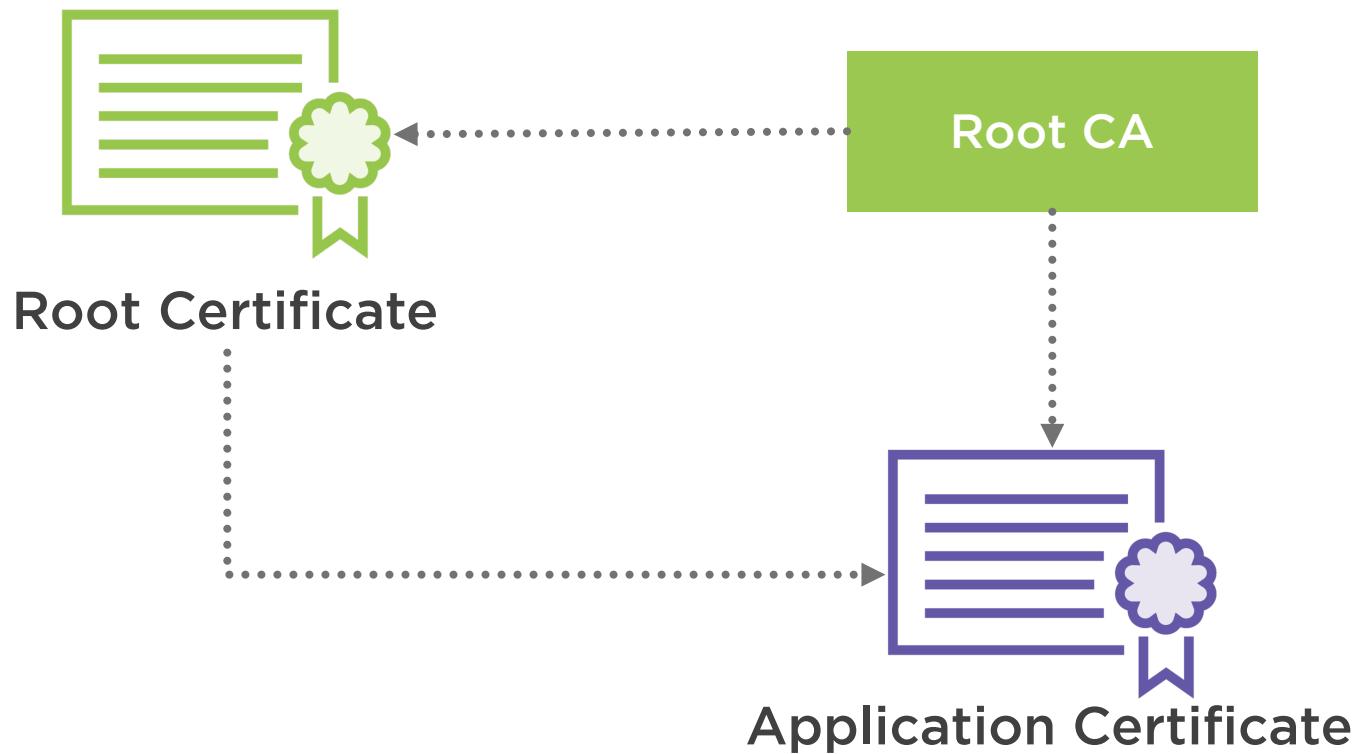
Certificates



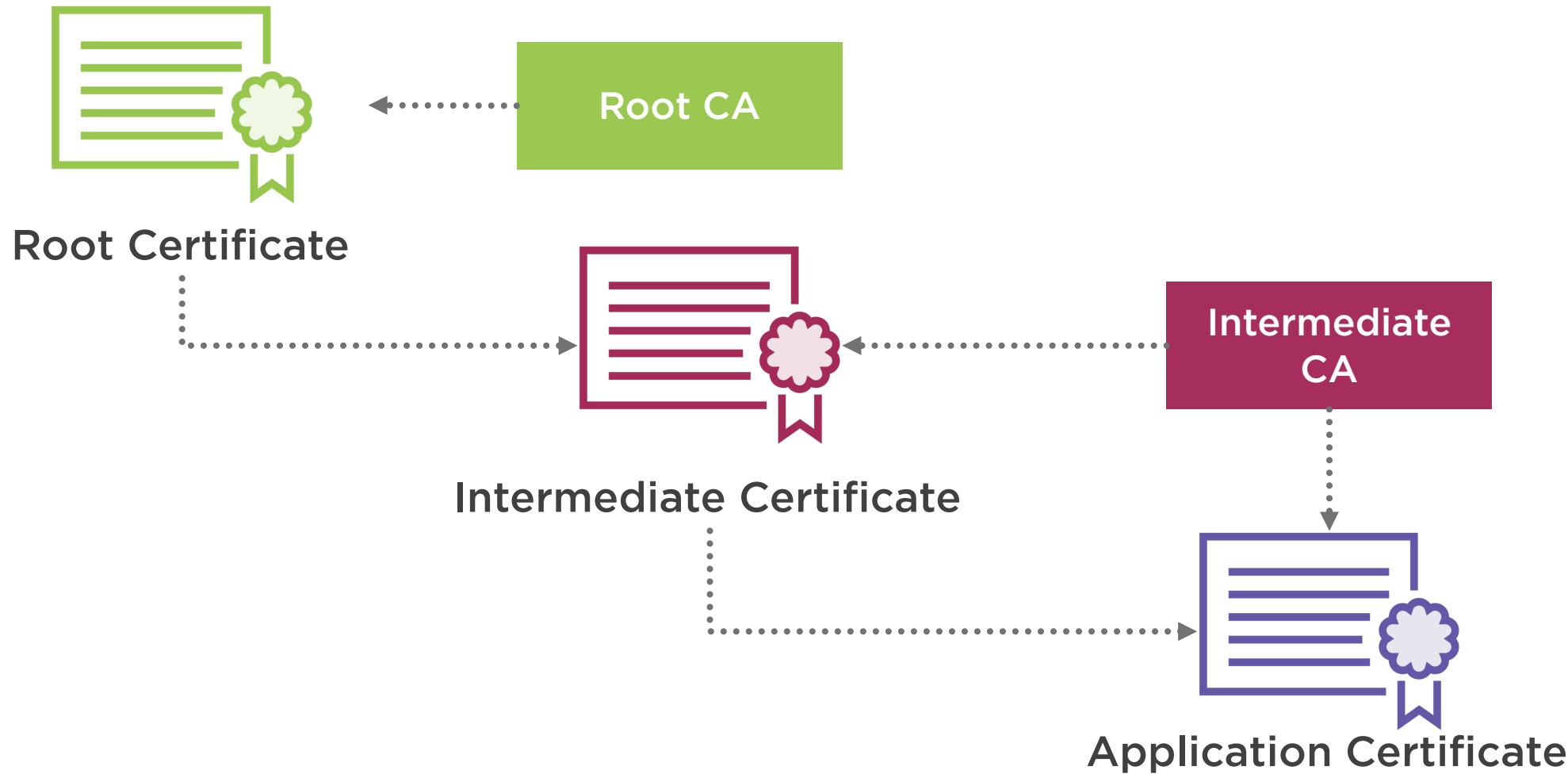
# Public Key Infrastructure ( PKI )



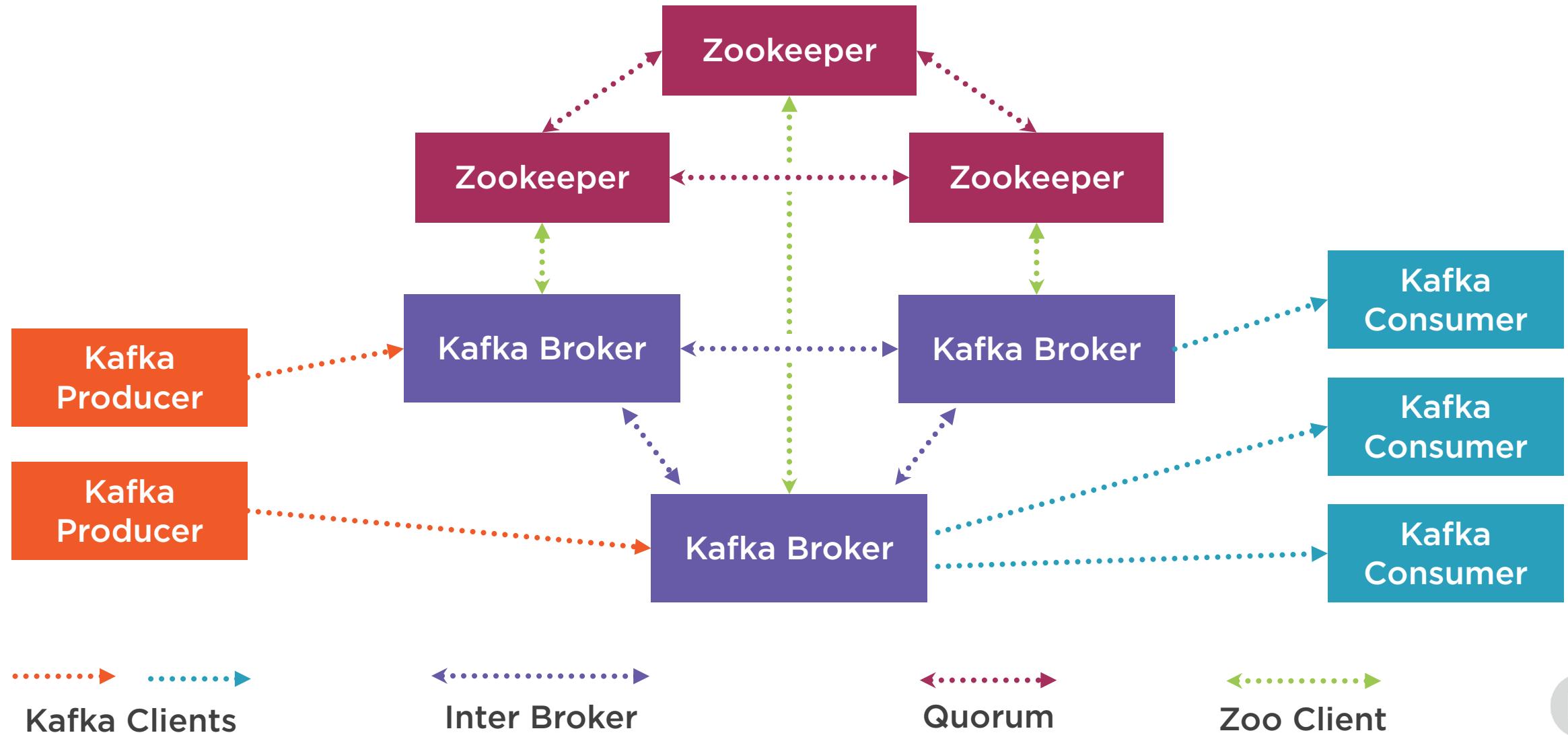
# Chain of Trust



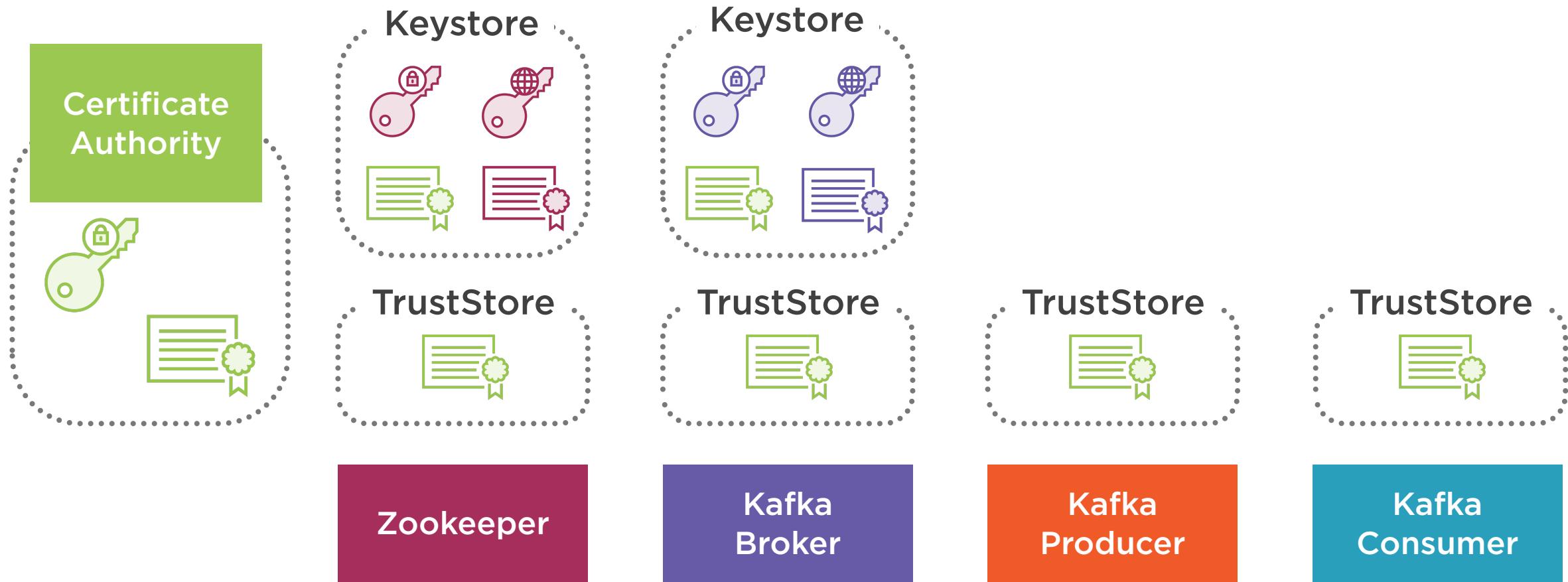
# Chain of Trust



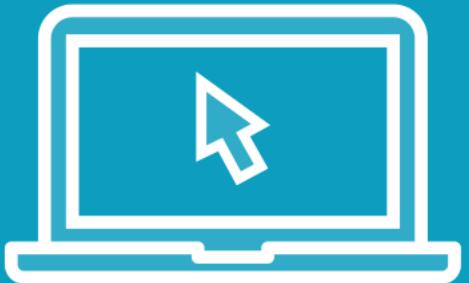
# Communication Encryption



# Kafka PKI Setup



# Demo



## Create Keystores and Truststores

### Prerequisites:

- OpenSSL
- Keytool

