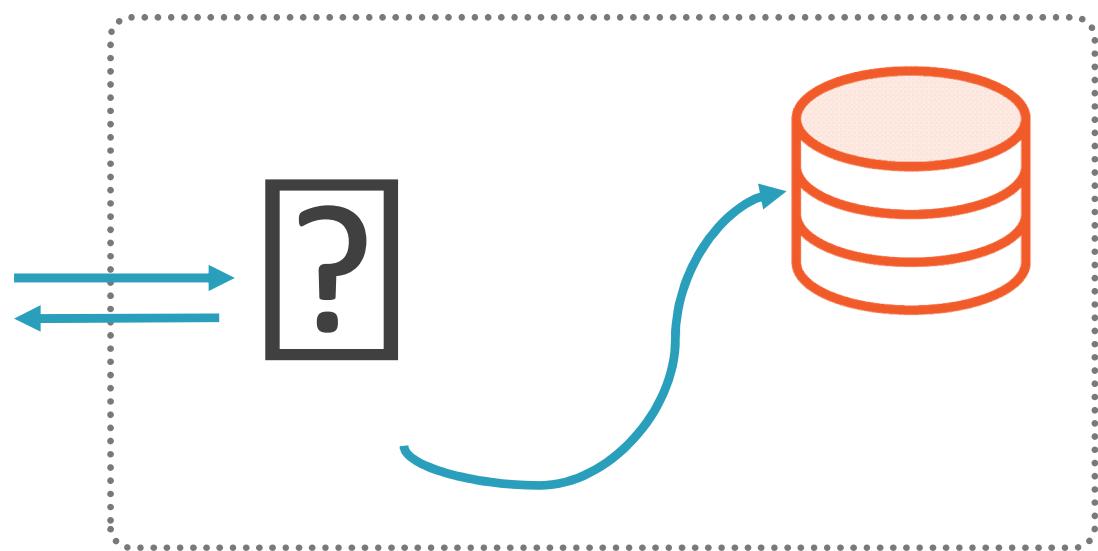


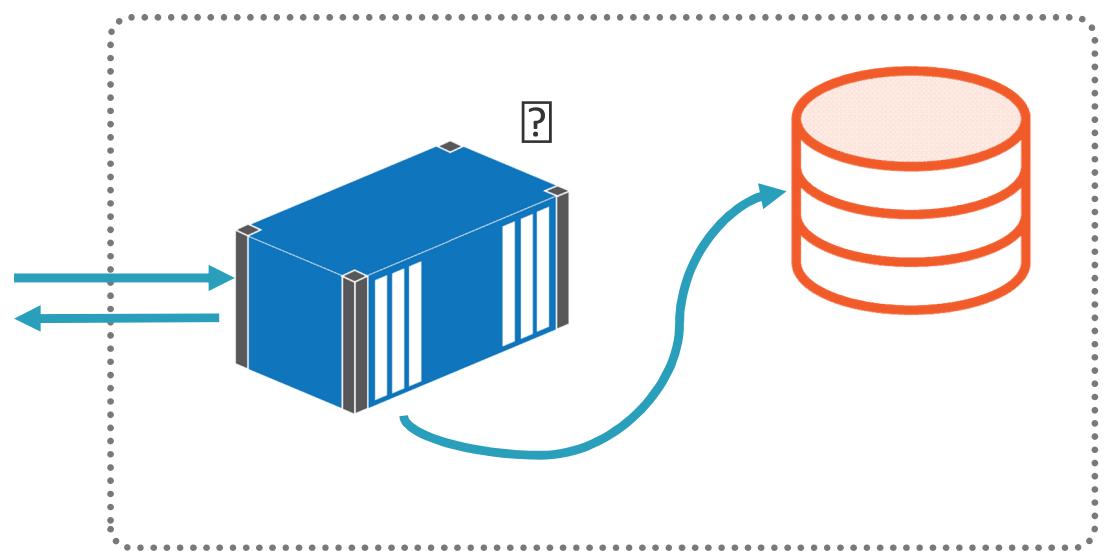
Scaling Performance with the NATS Message Queue

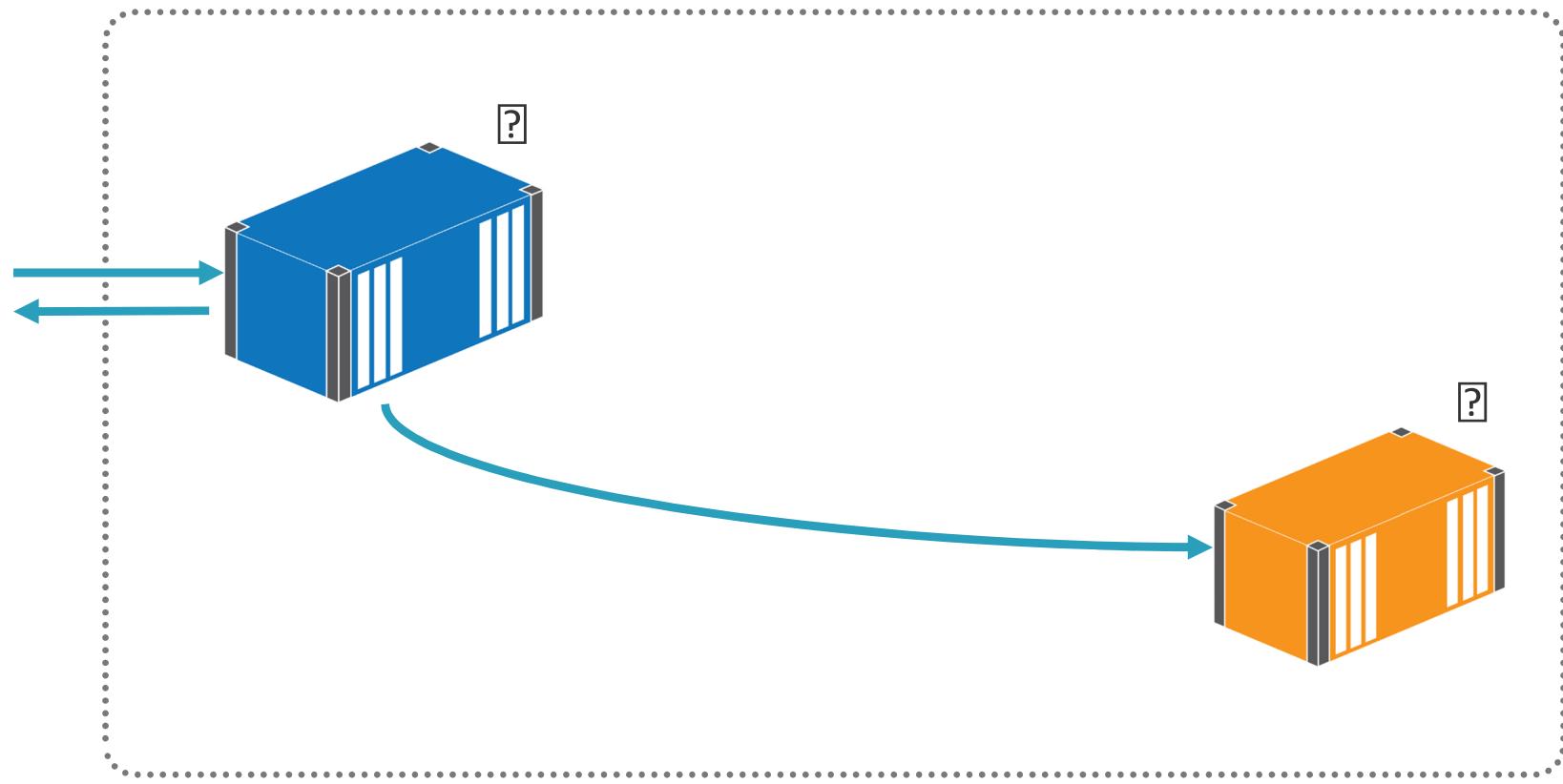


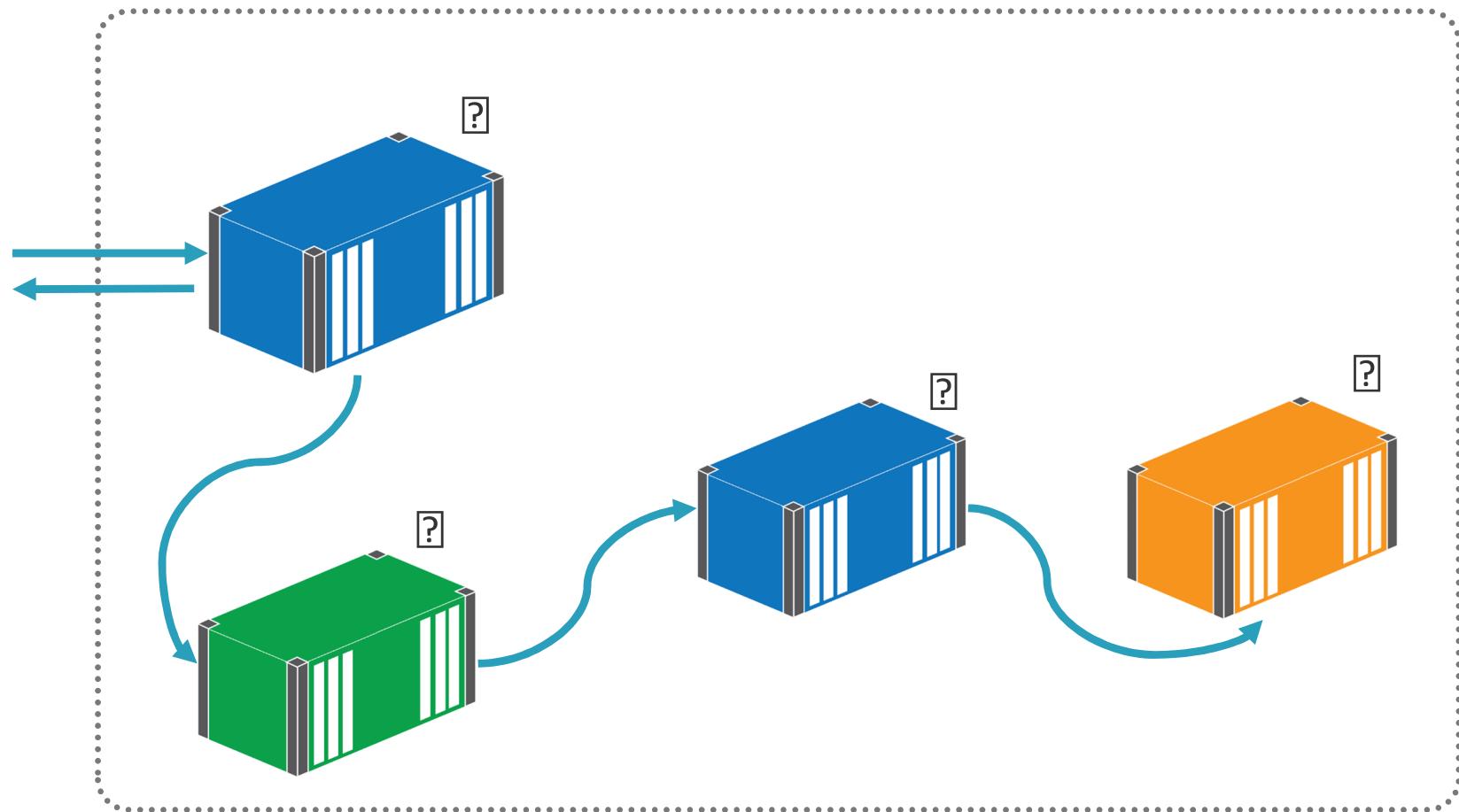
Elton Stoneman
DEVELOPER ADVOCATE

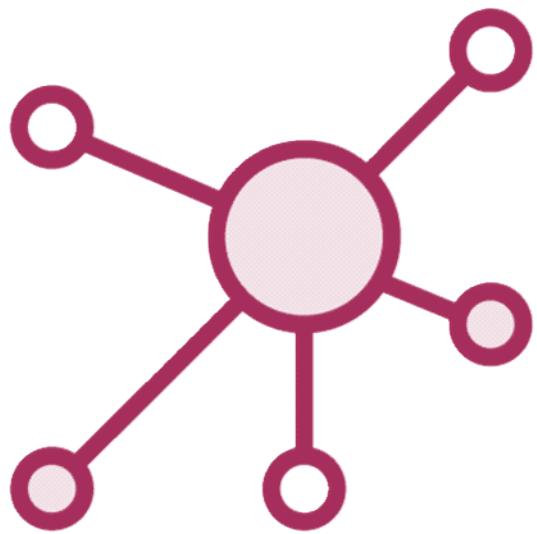
@EltonStoneman <https://blog.sixeyed.com>





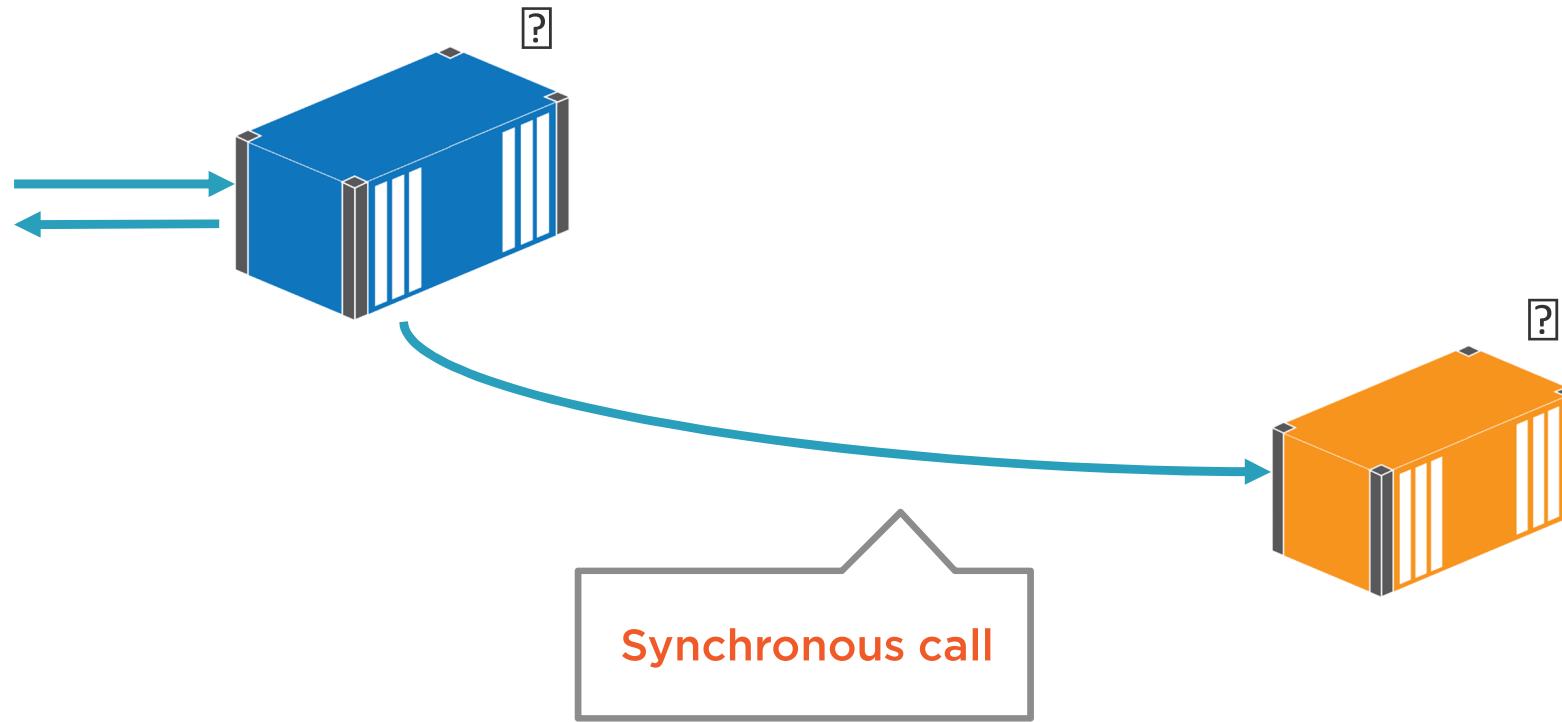


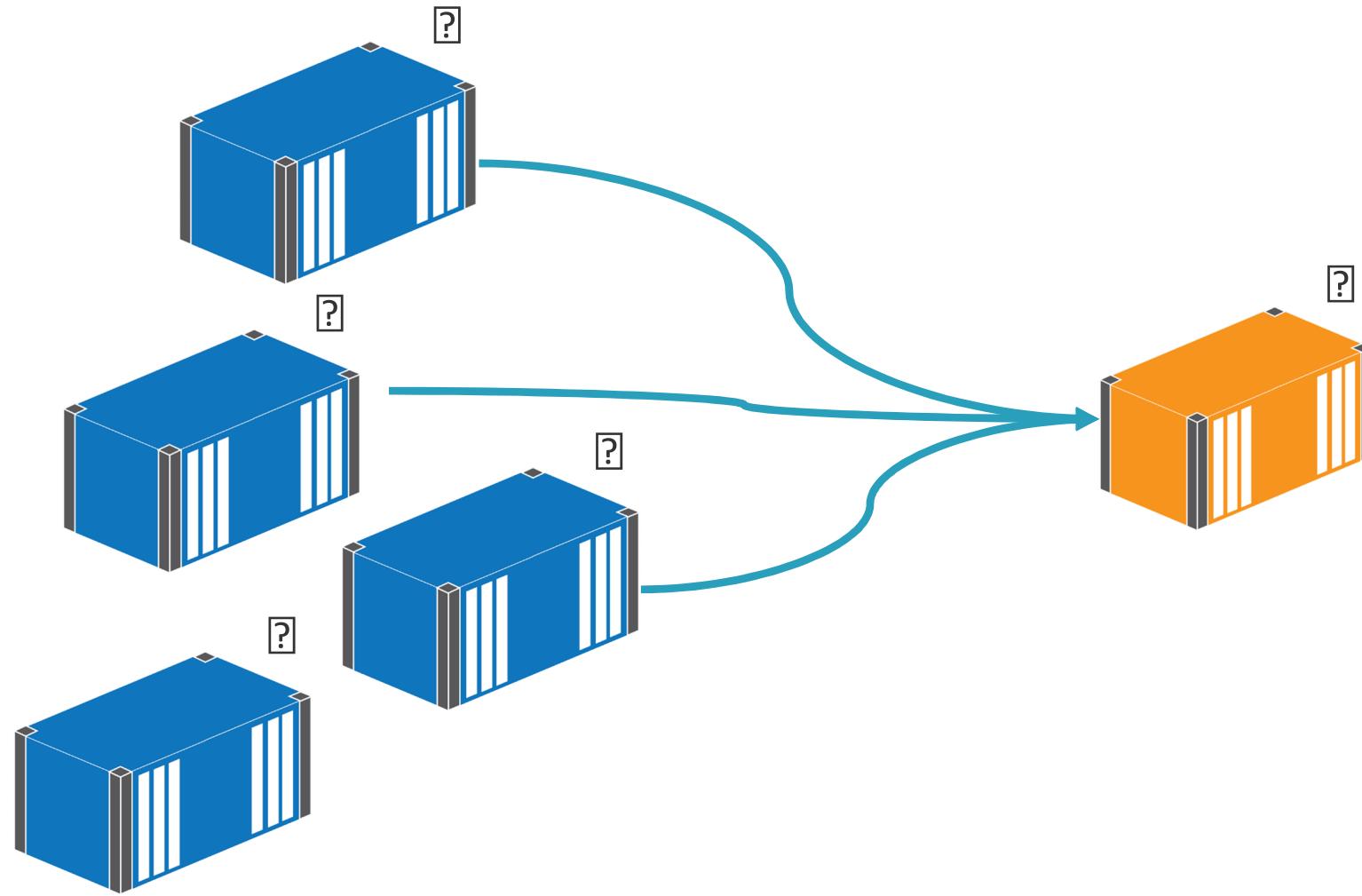


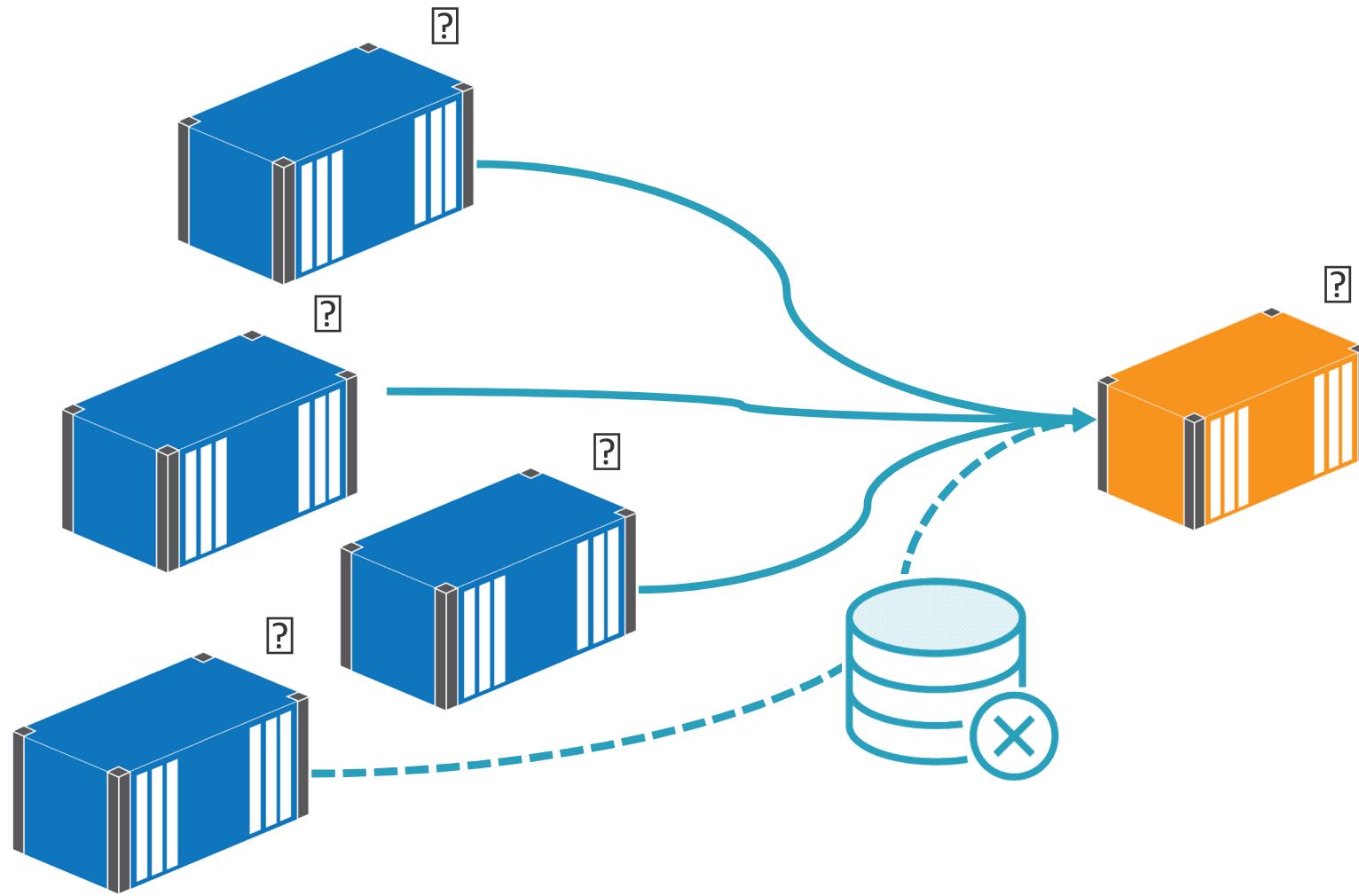


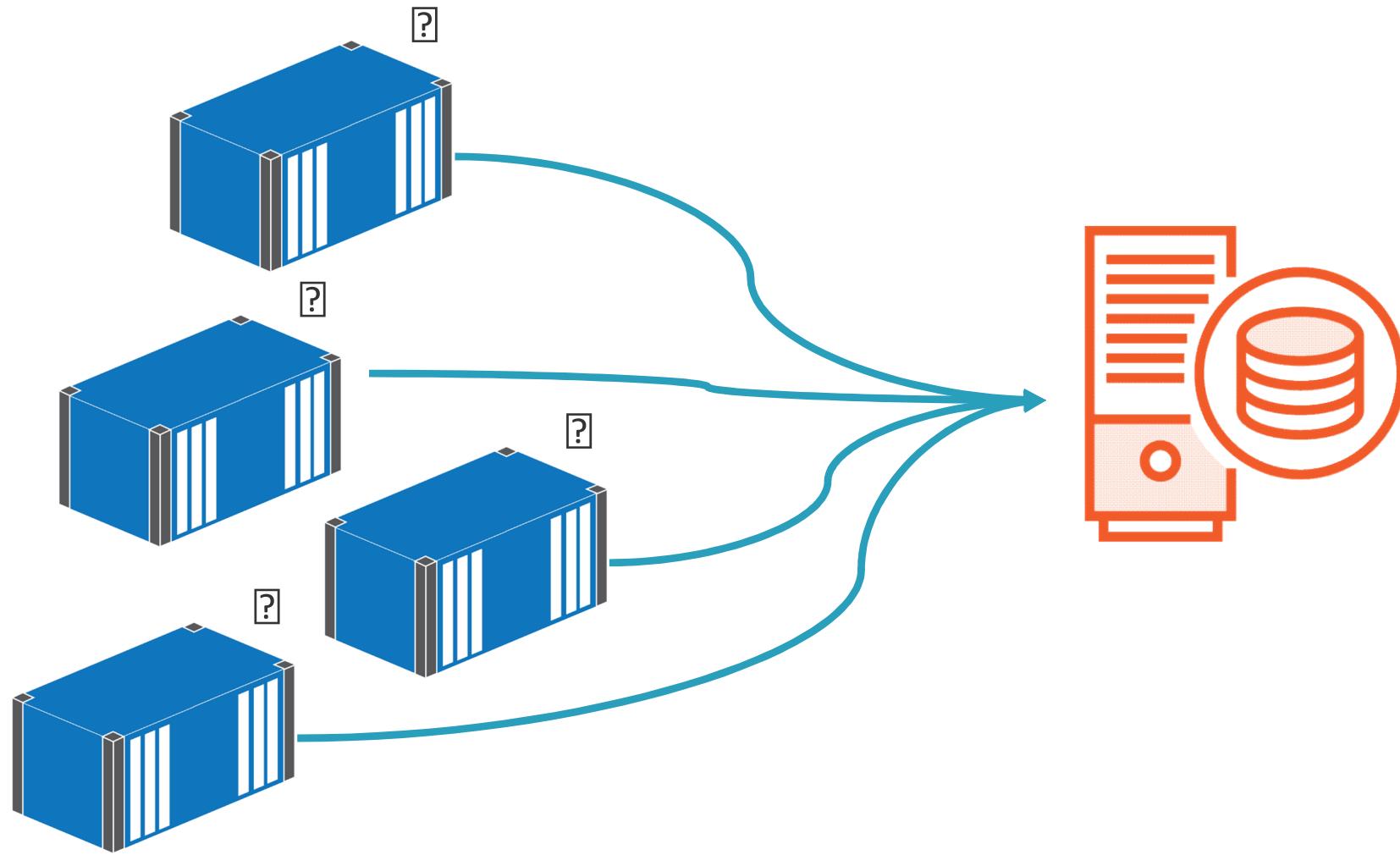
Breaking Down Monoliths

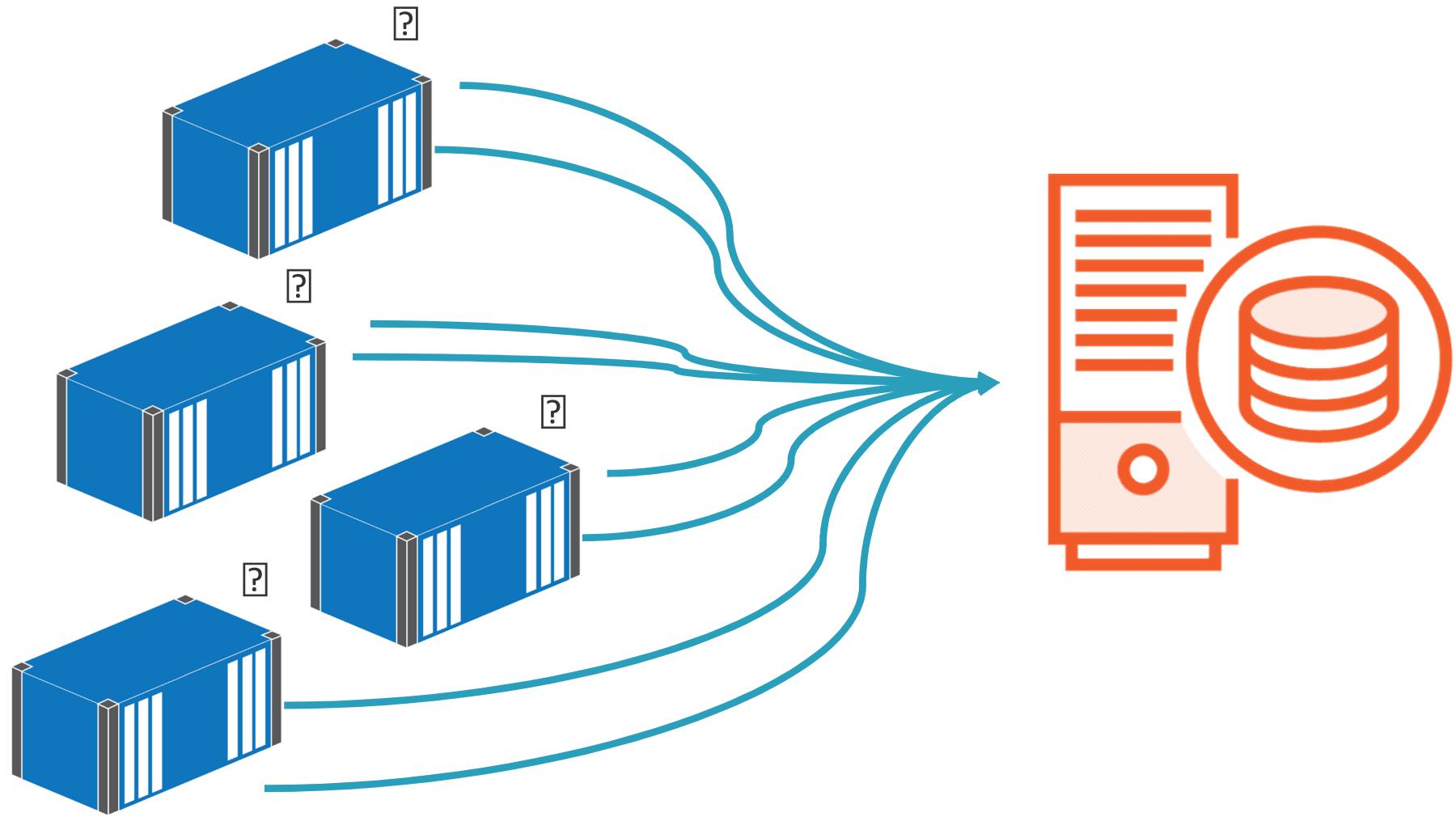
- Fix performance features
- Add new functionality
- Enable frequent releases

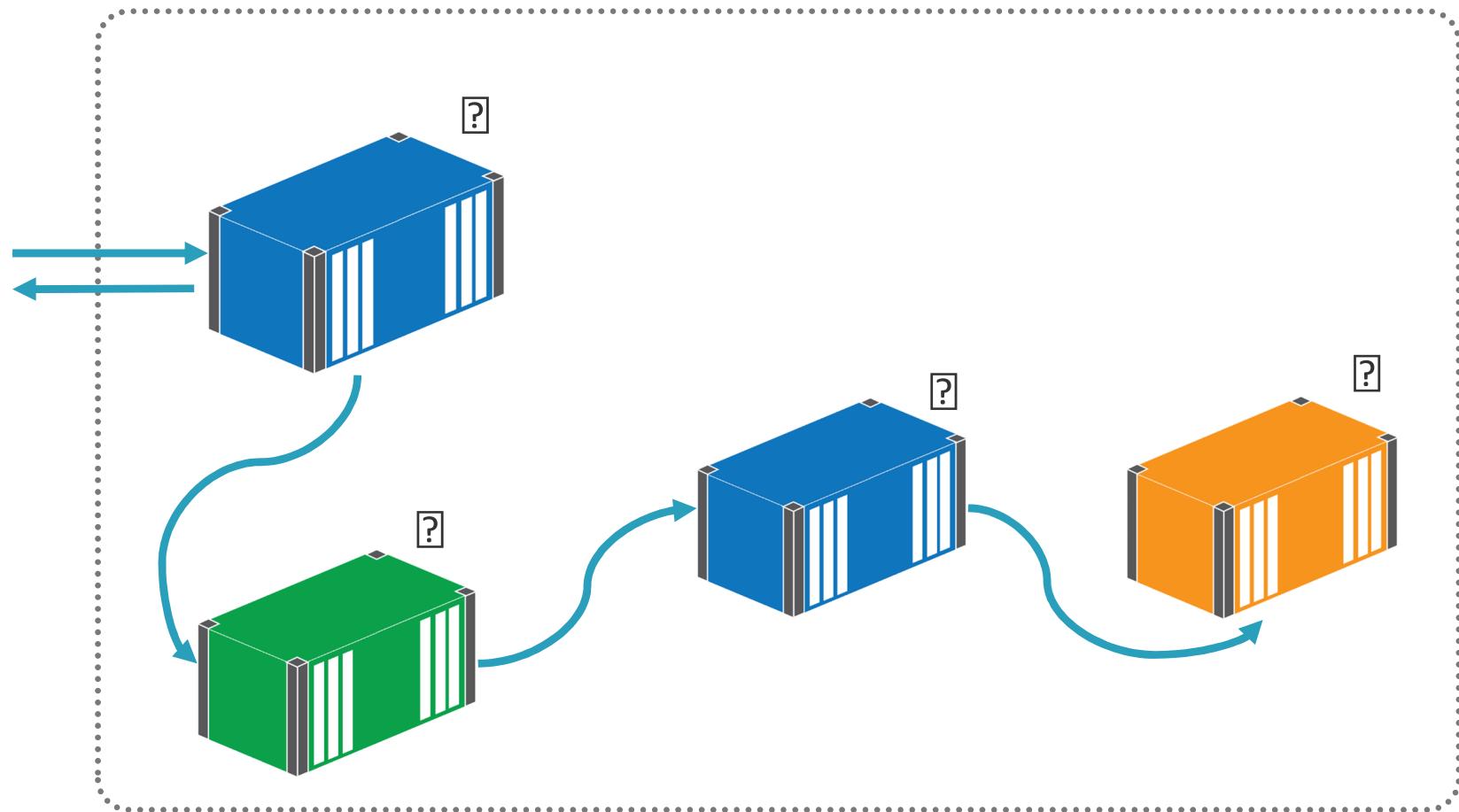


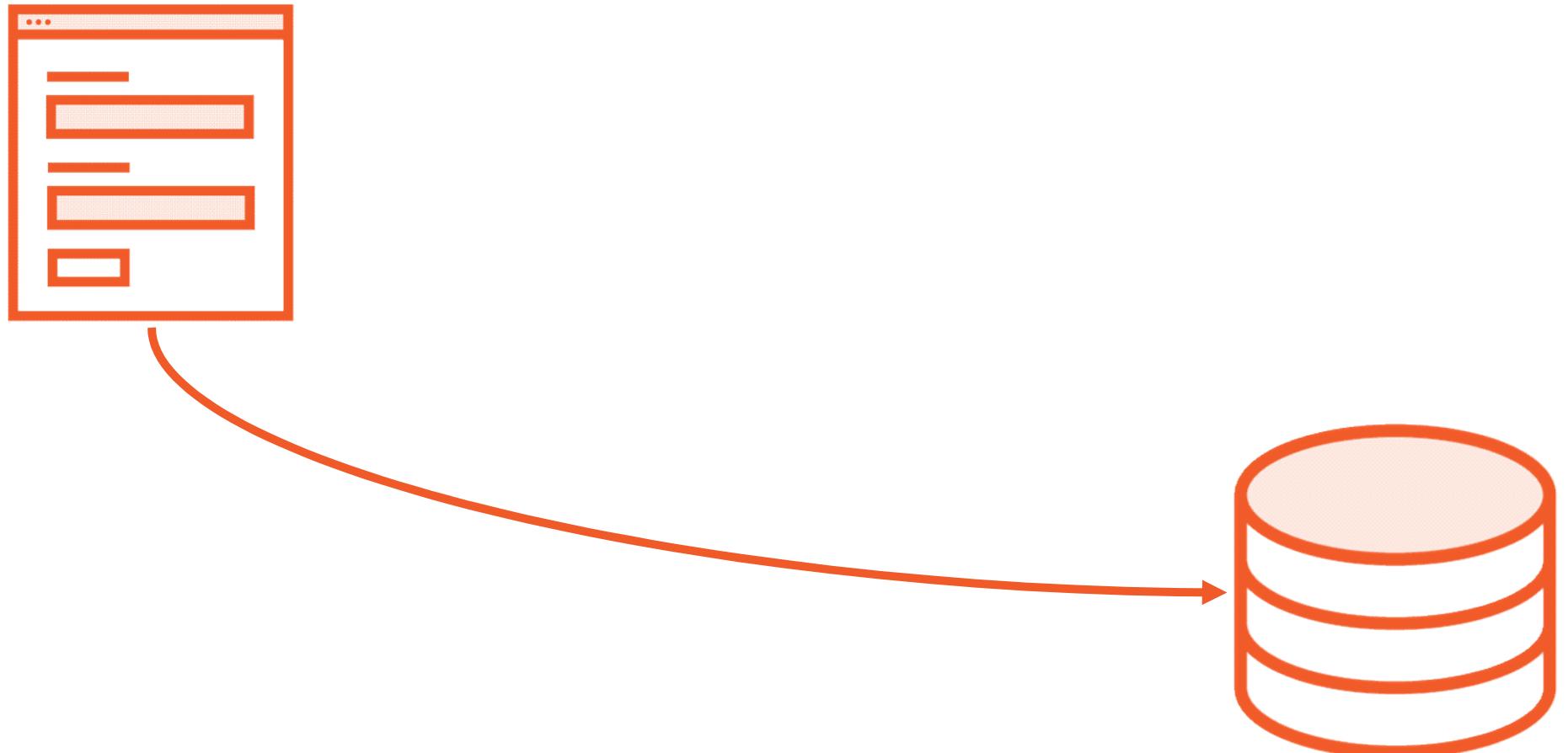


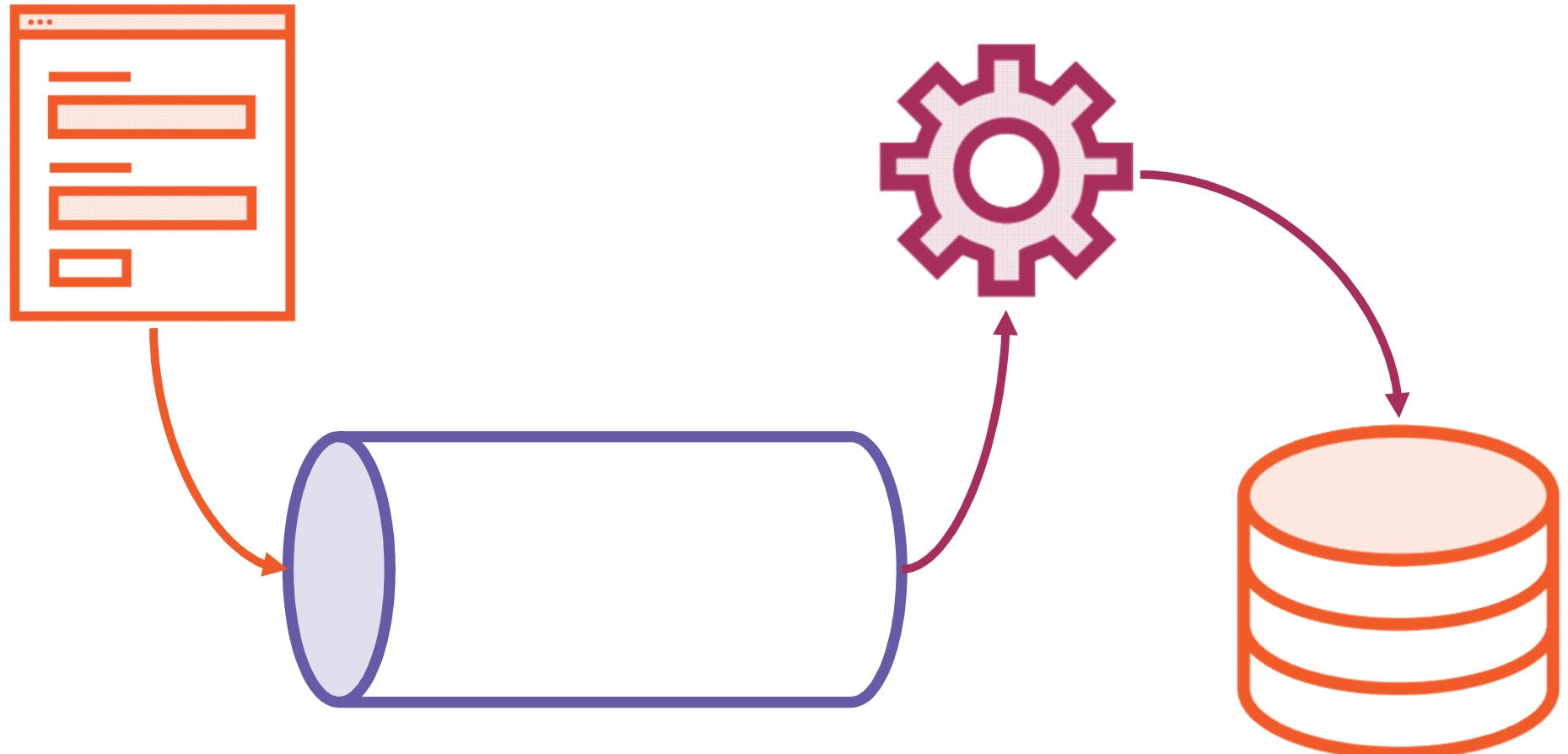


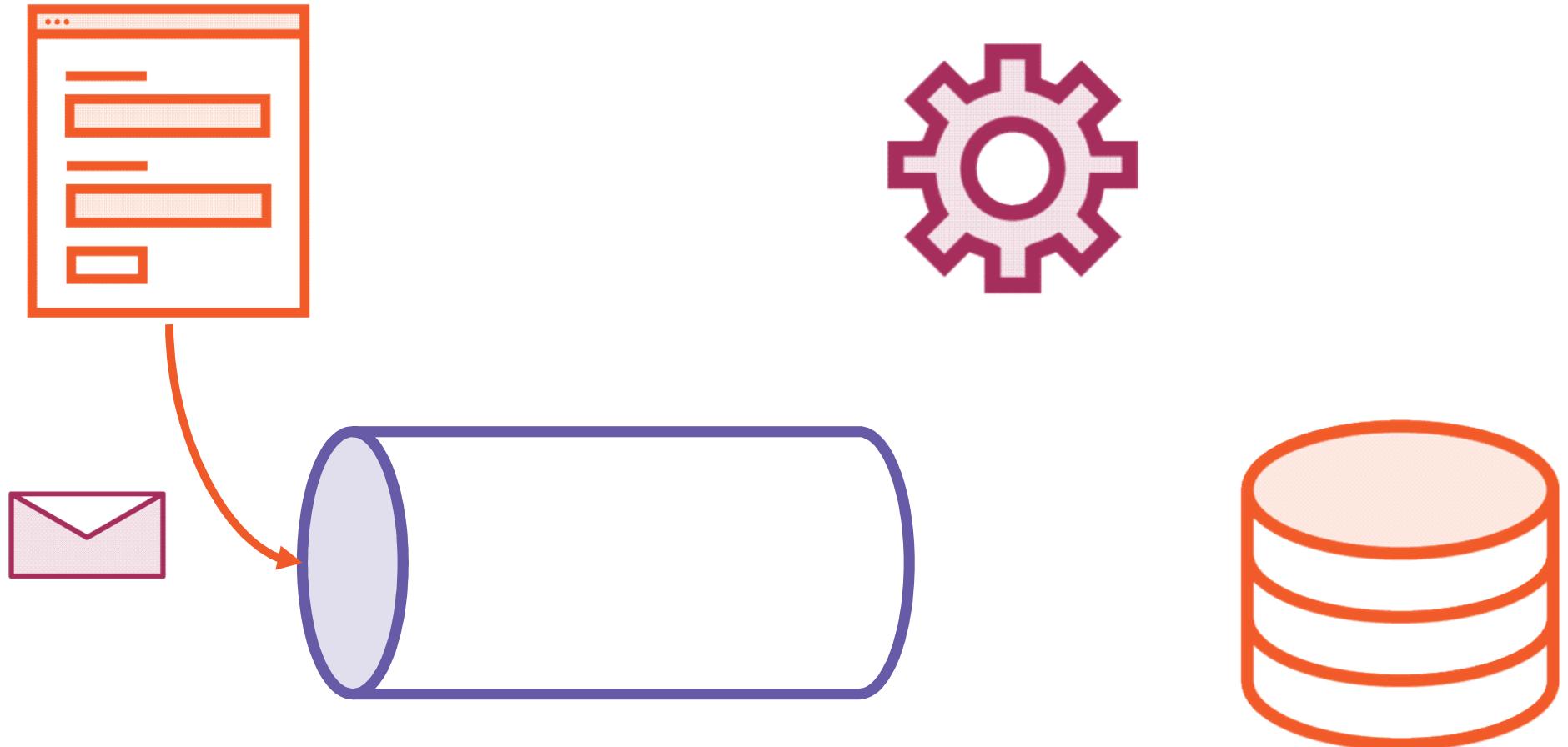


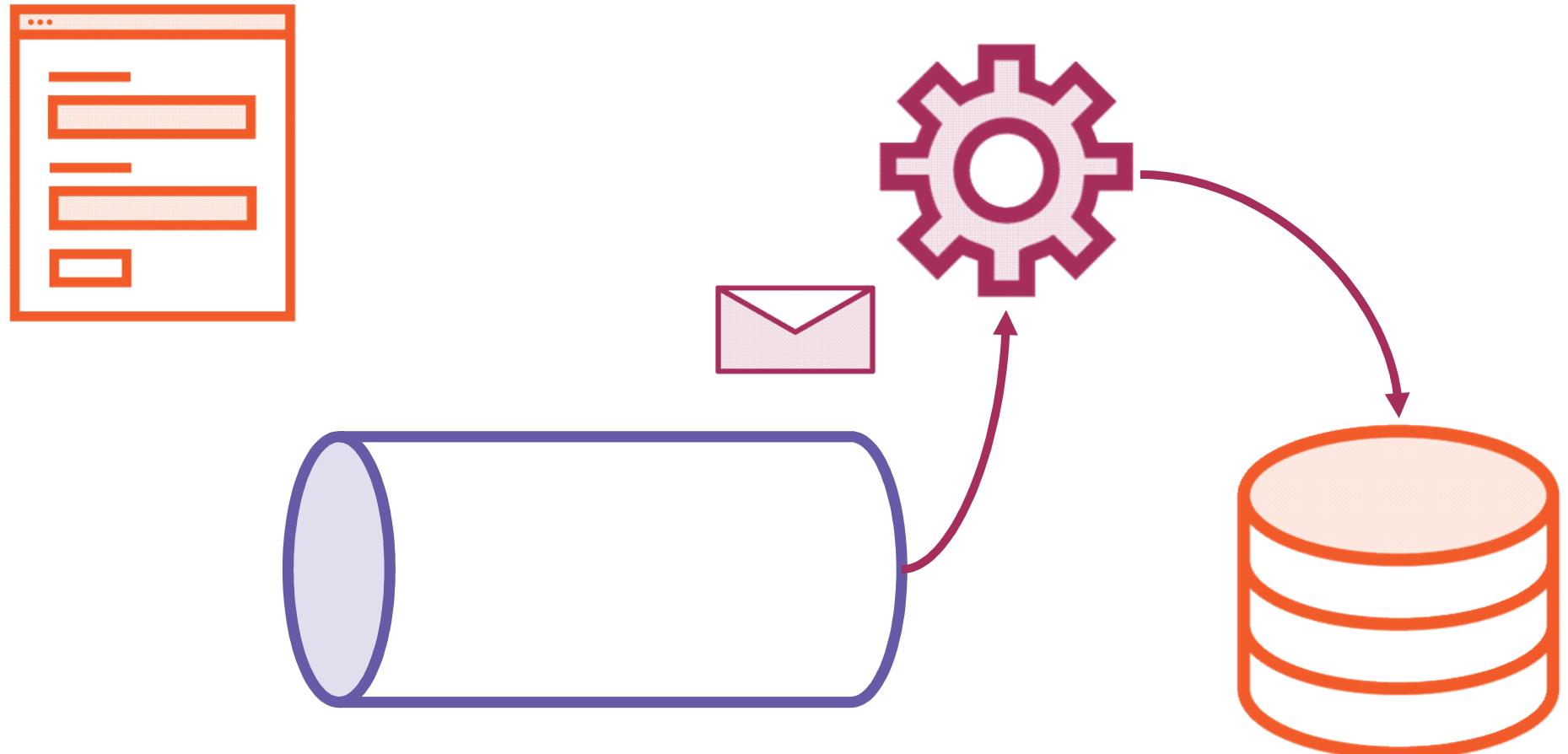


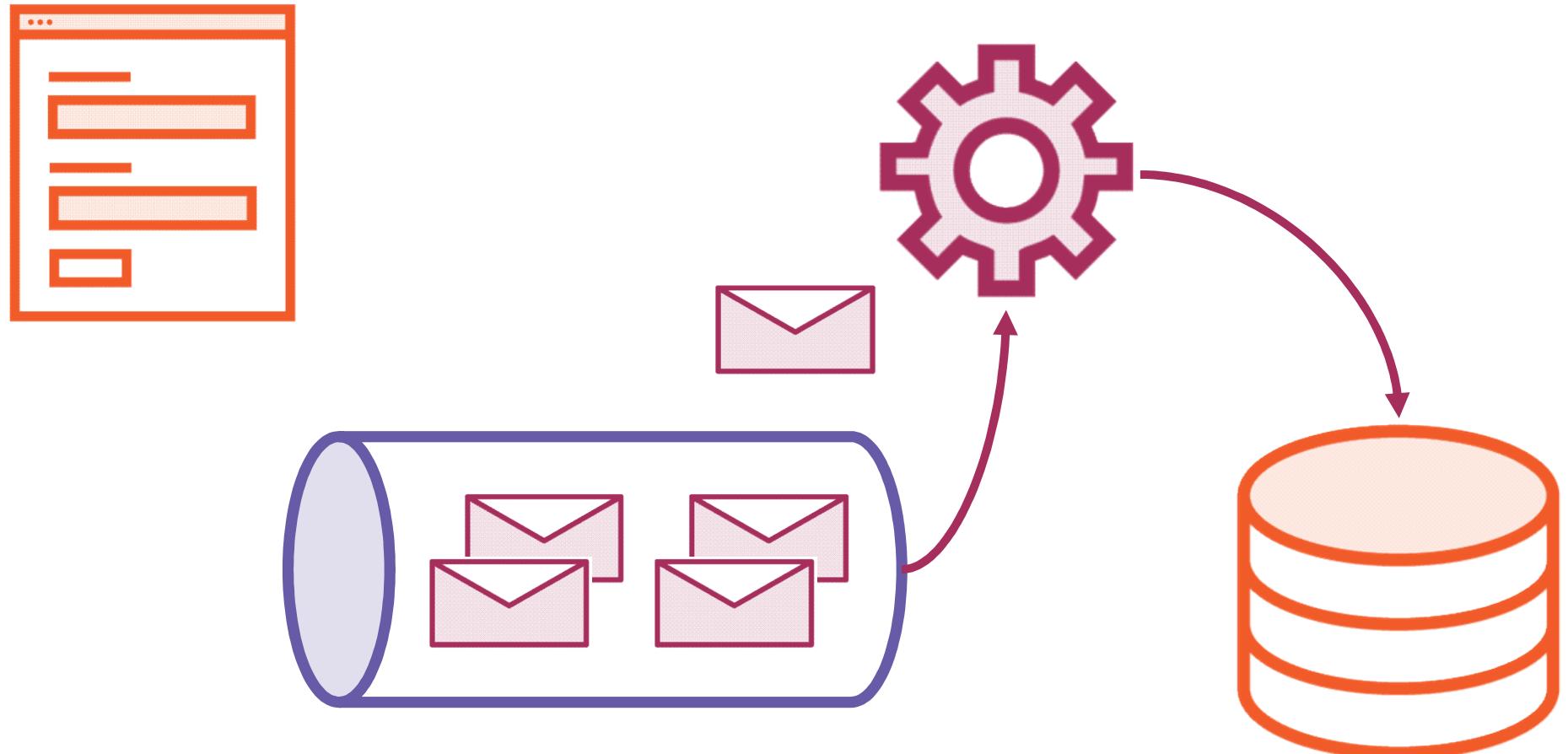


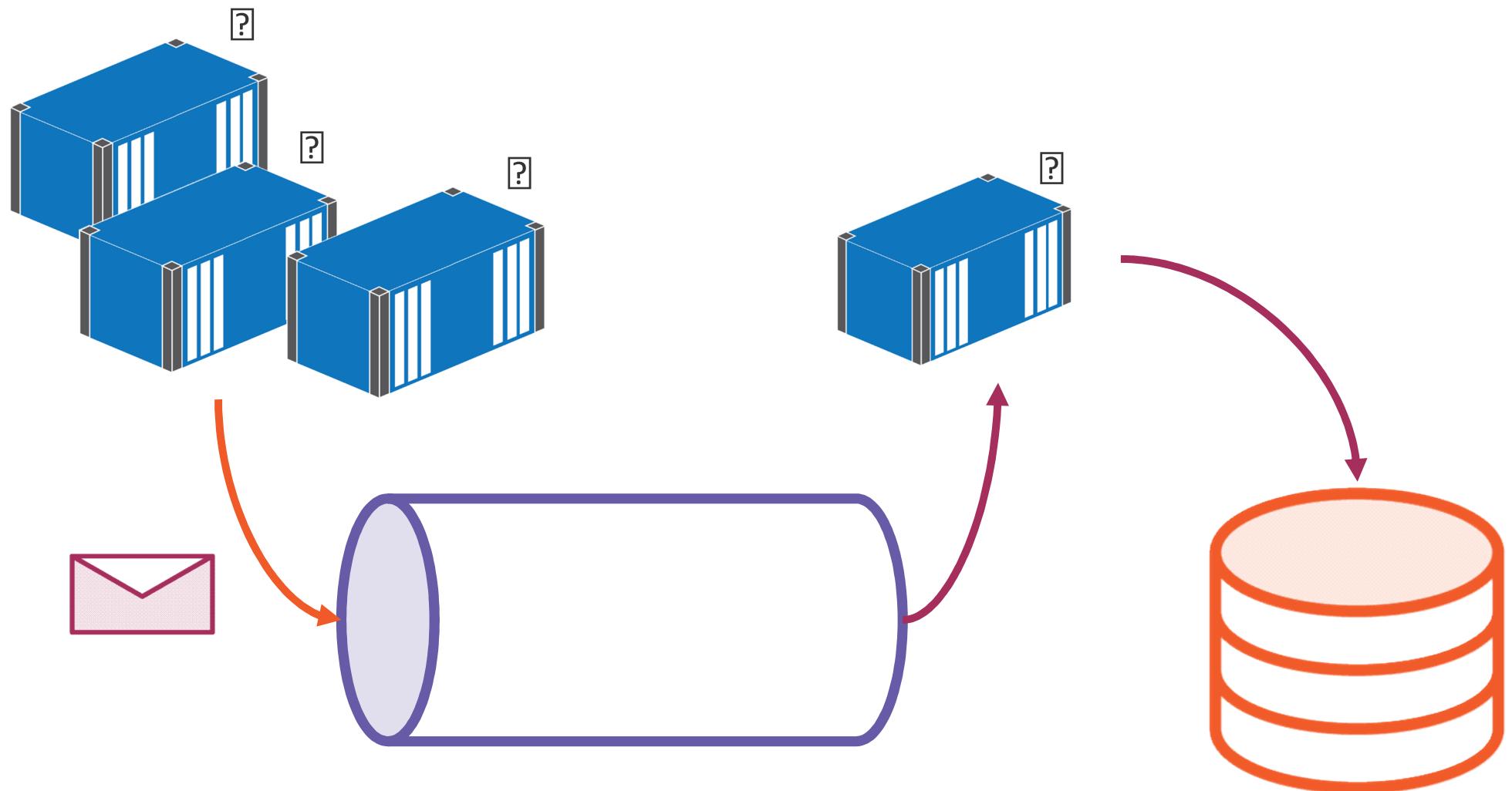


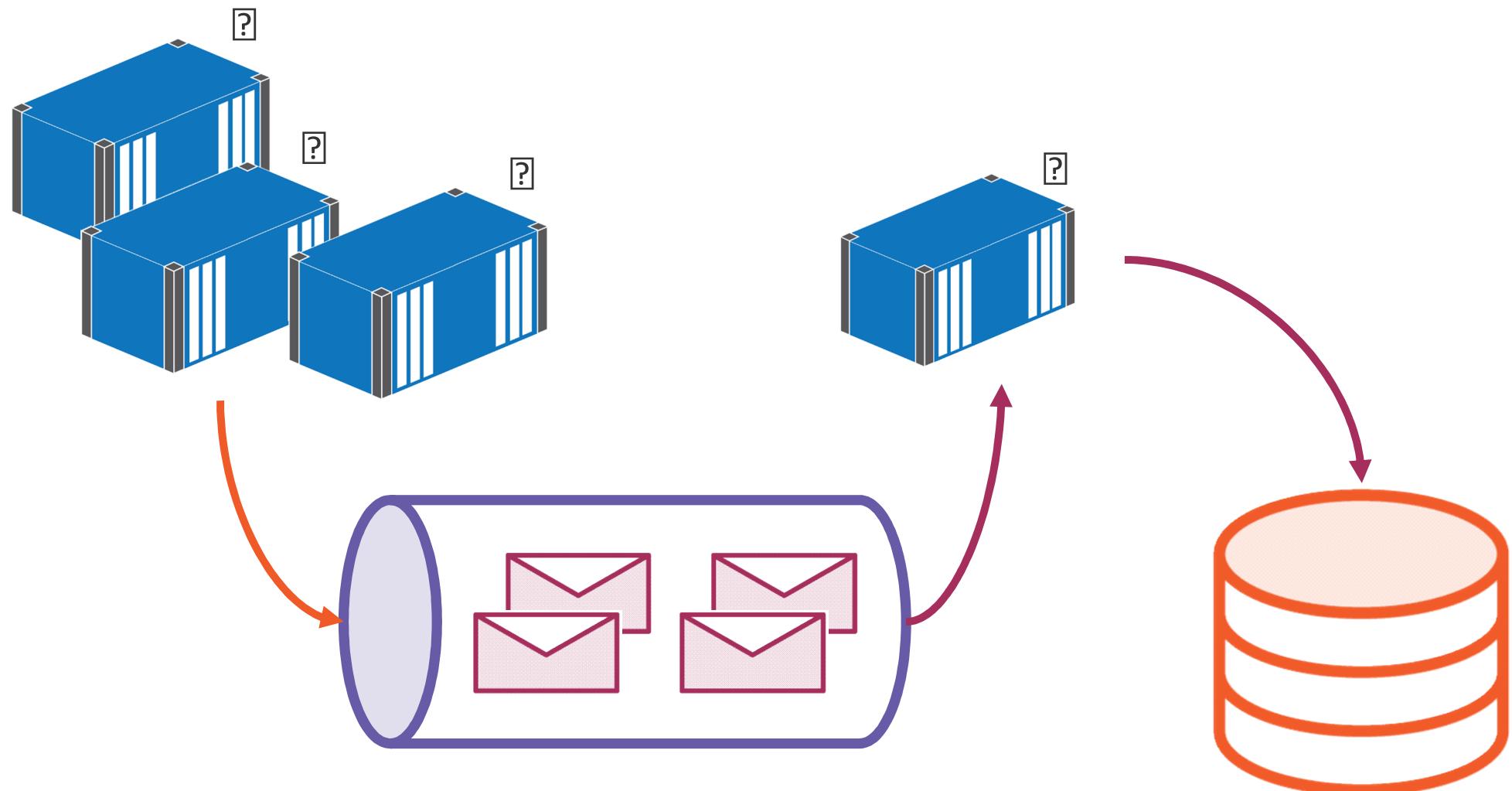


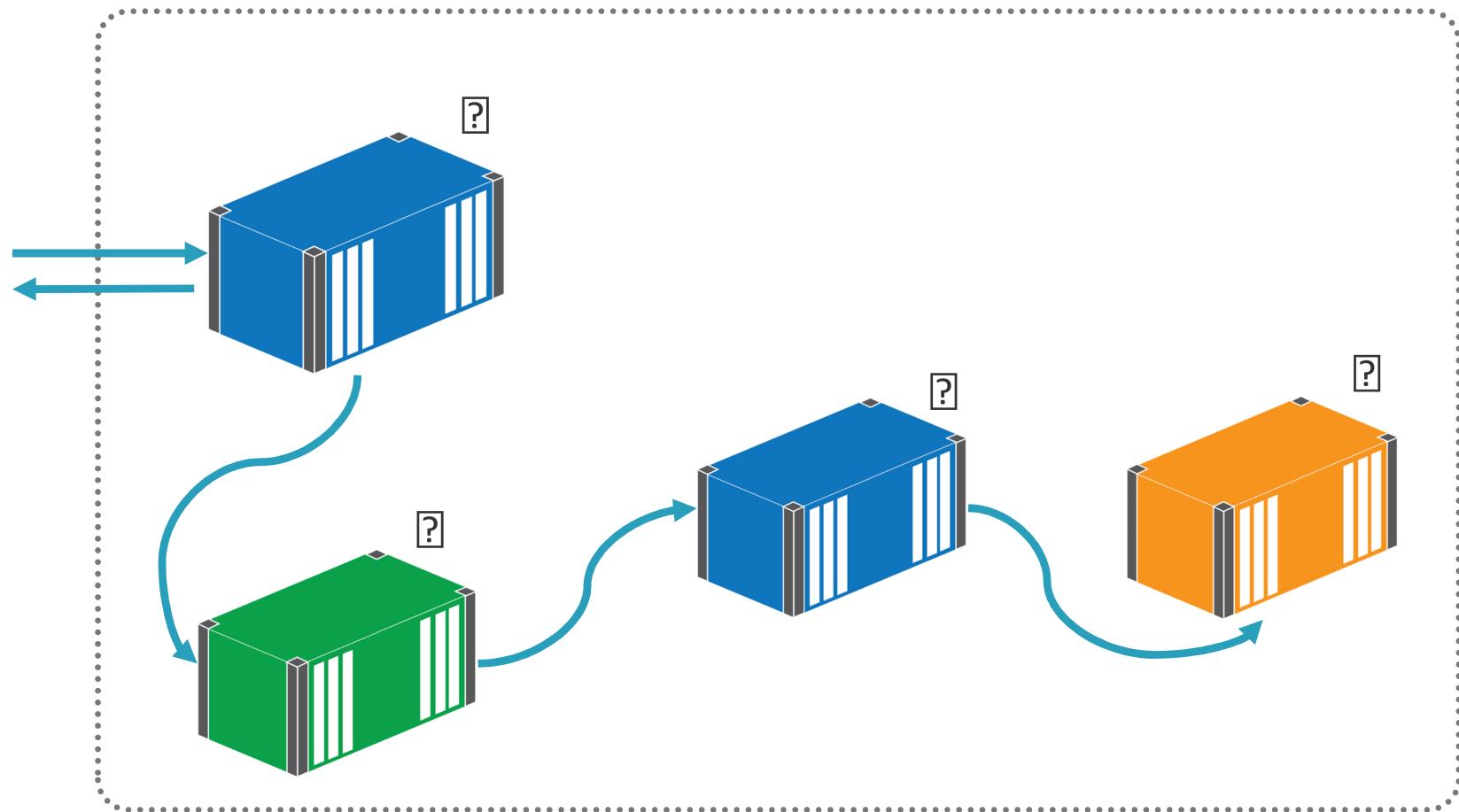


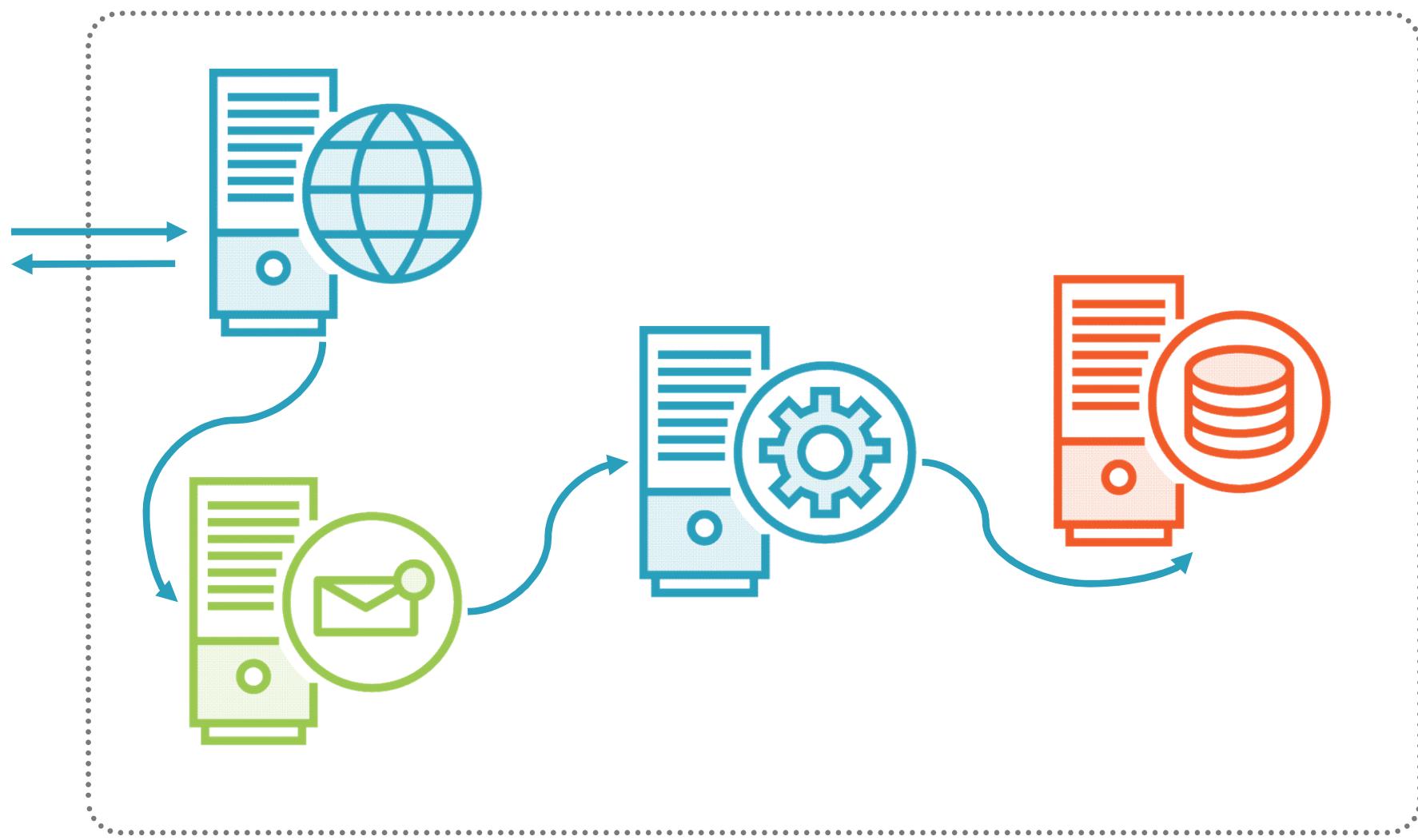


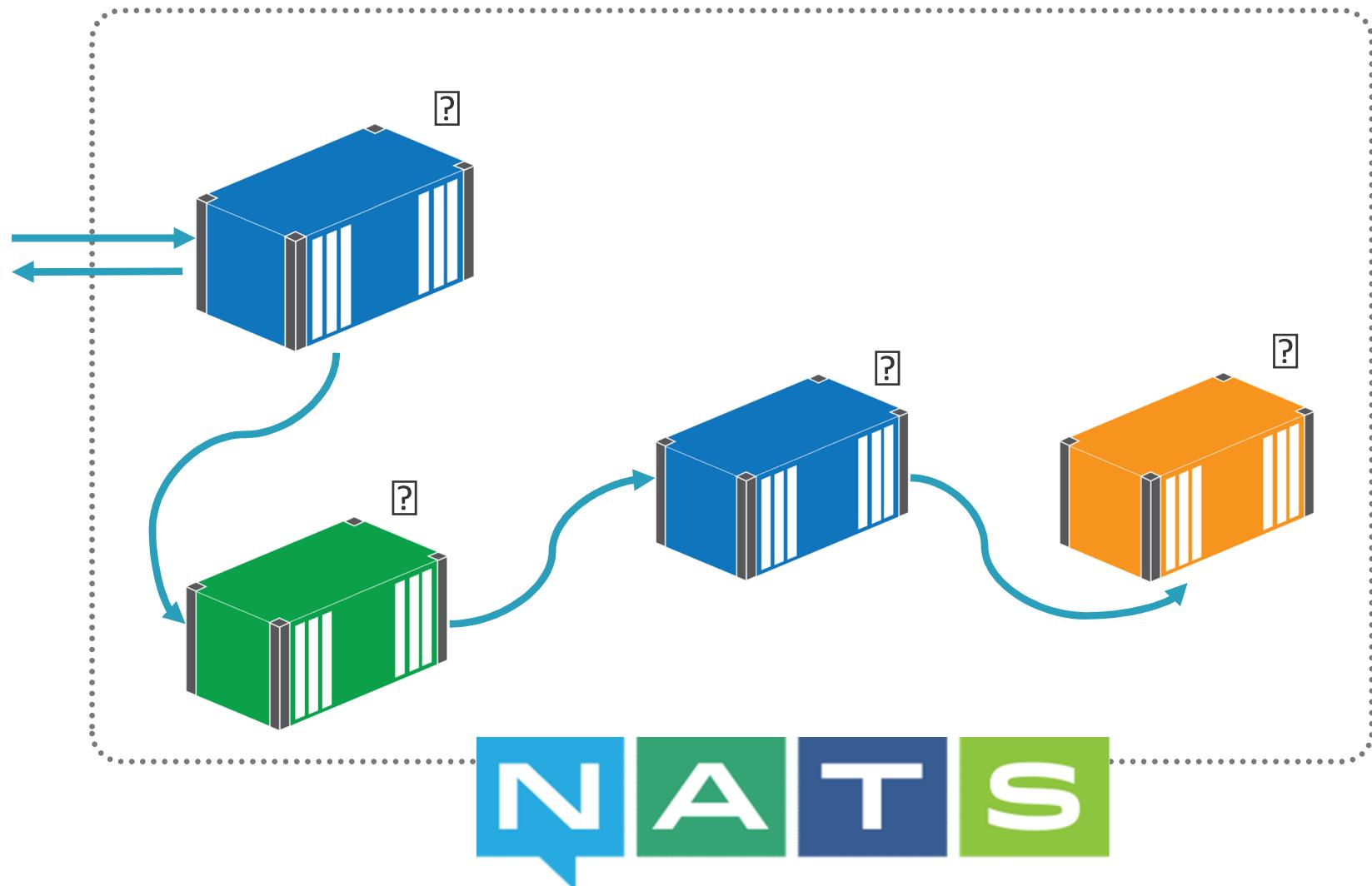




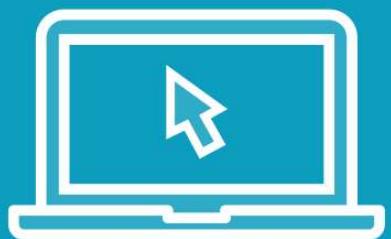






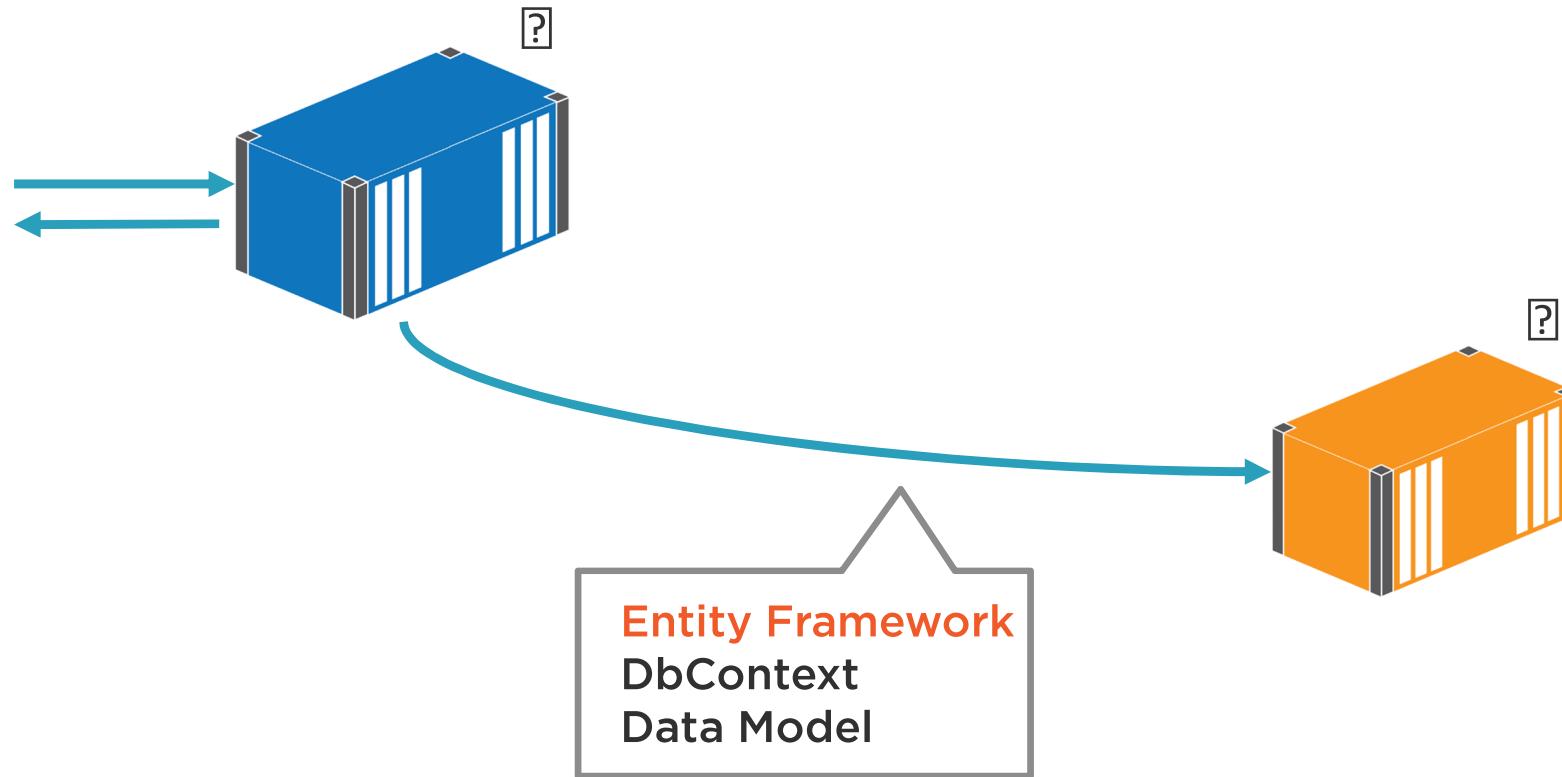


Demo



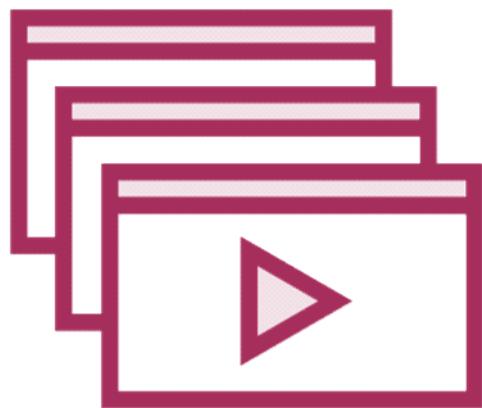
Communicating Between Containers

- App container and DB container
- Service discovery in Docker



```
using (var context = new WebinarContext()) {  
    //reload child objects...  
    context.Viewers.Add(viewer);  
    context.SaveChanges();  
}
```

Synchronous Database Save Using Entity Framework DbContext



IDisposable Best Practices for C# Developers

- Elton Stoneman

```
using (var context = new WebinarContext()) {  
    //reload child objects...  
    context.Viewers.Add(viewer);  
    context.SaveChanges();  
}
```

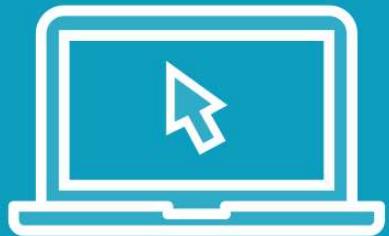
Disposable Data Context

Exclusive use of connection

```
//reload child objects  
  
viewer.Country = context.Countries.Single(...);  
  
viewer.Role = context.Roles.Single(...);  
  
var interestCodes = viewer.Interests.Select(...);  
  
viewer.Interests = context.Interests.Where(...).ToList();
```

Relationship Lookup
Multiple synchronous SELECTs

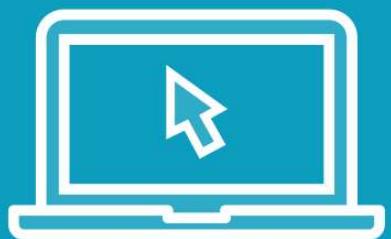
Demo



Event Publishing

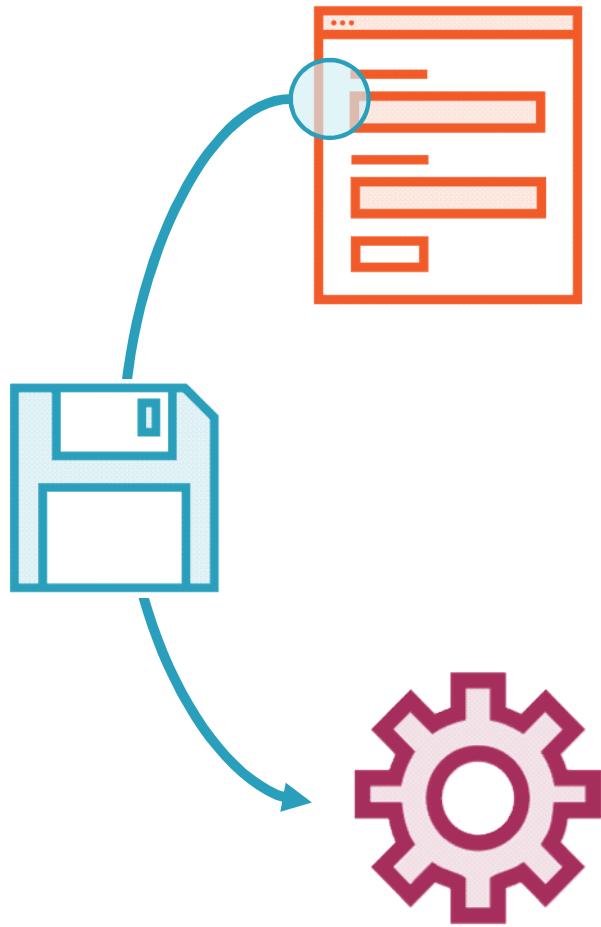
- Remove save code from web
- Replace with event publishing

Demo



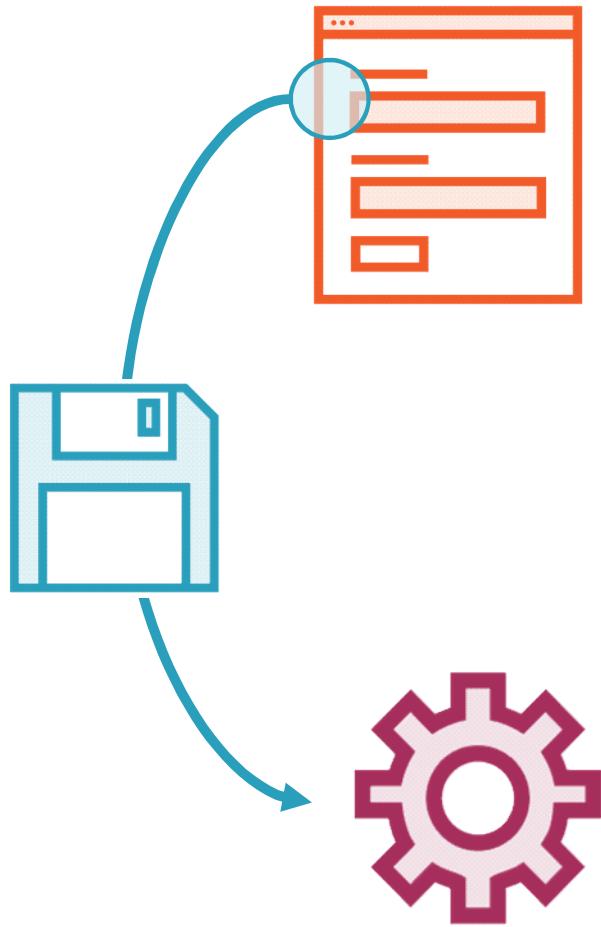
Message Handler

- Listens for event messages
- Saves to database



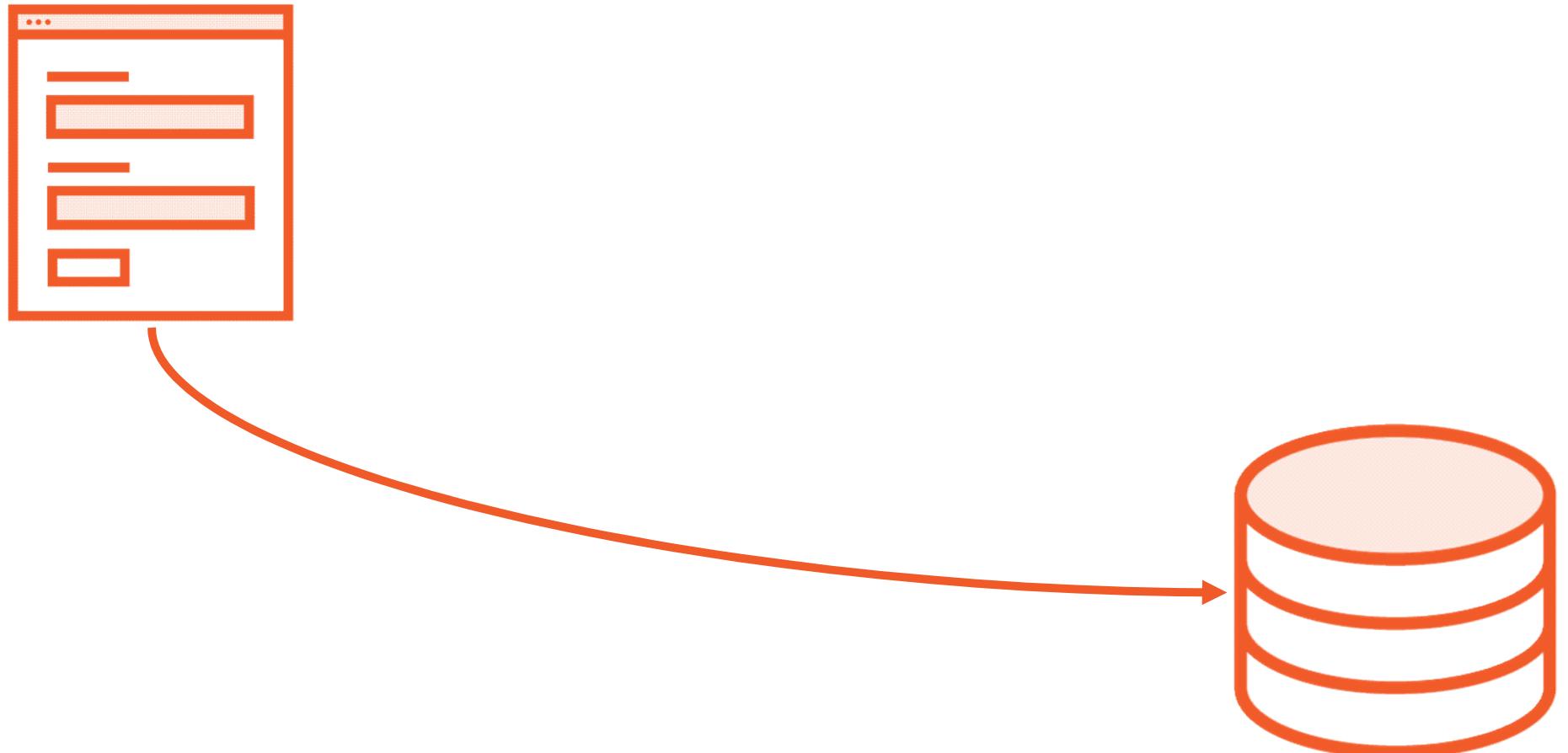
Performance Feature

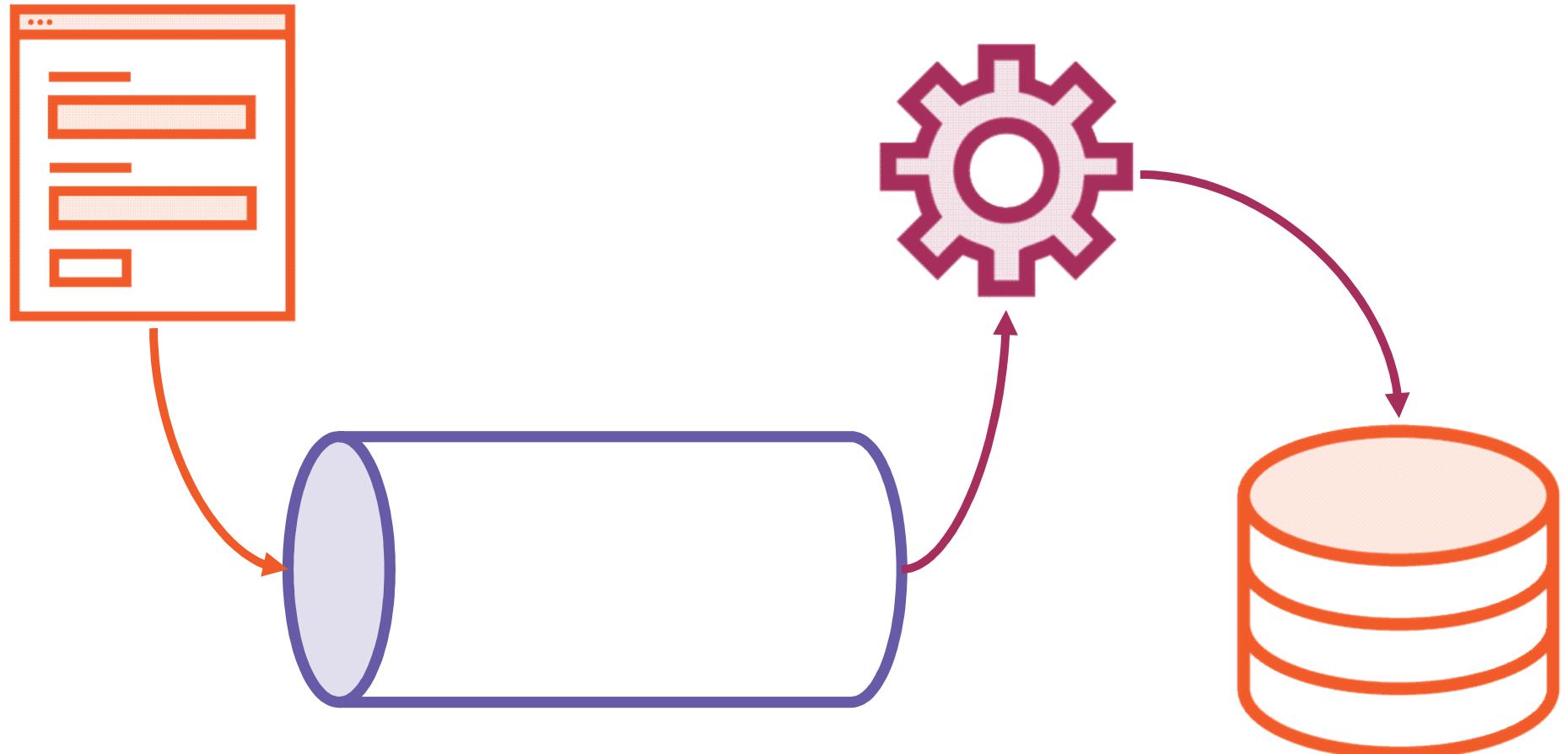
- Asynchronous save
- Restructure project
- Remove save from web app

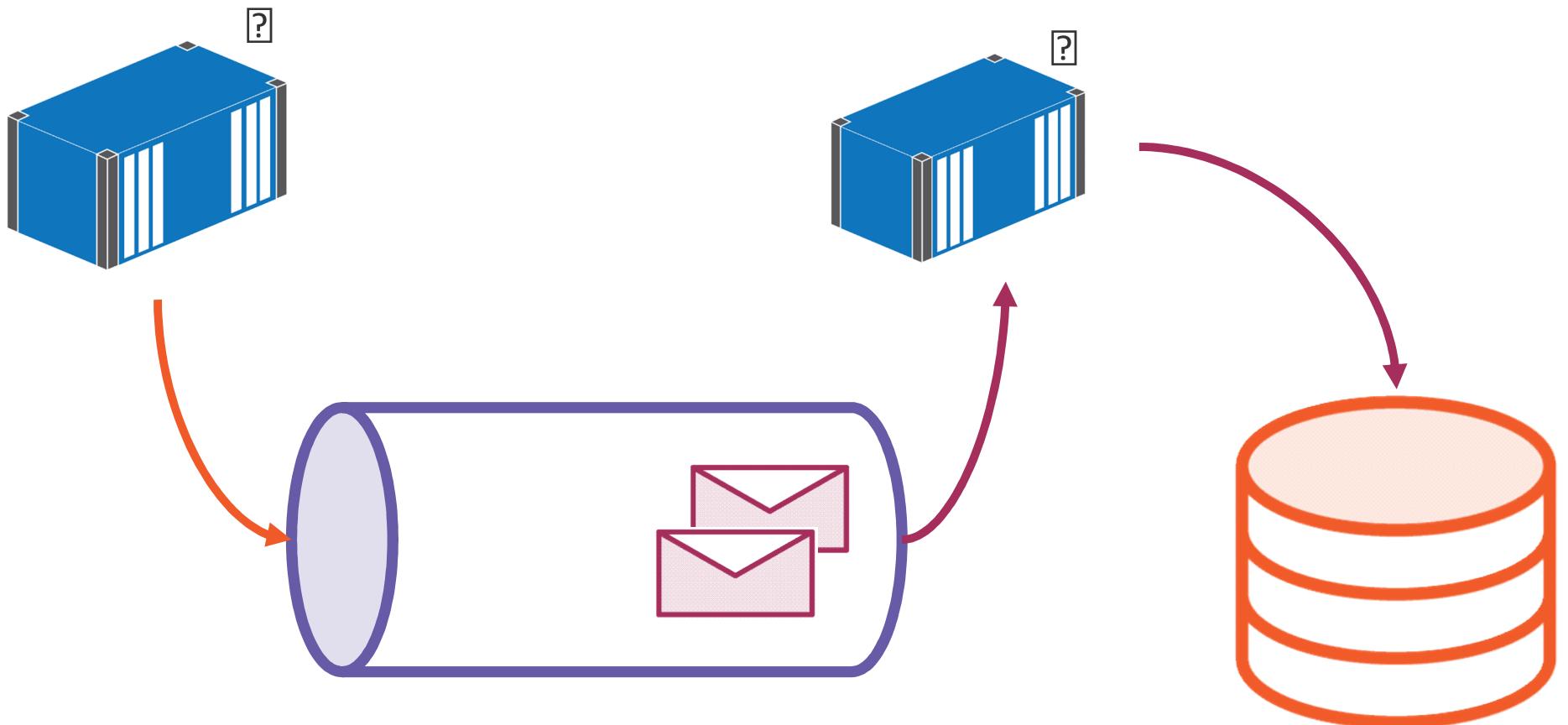


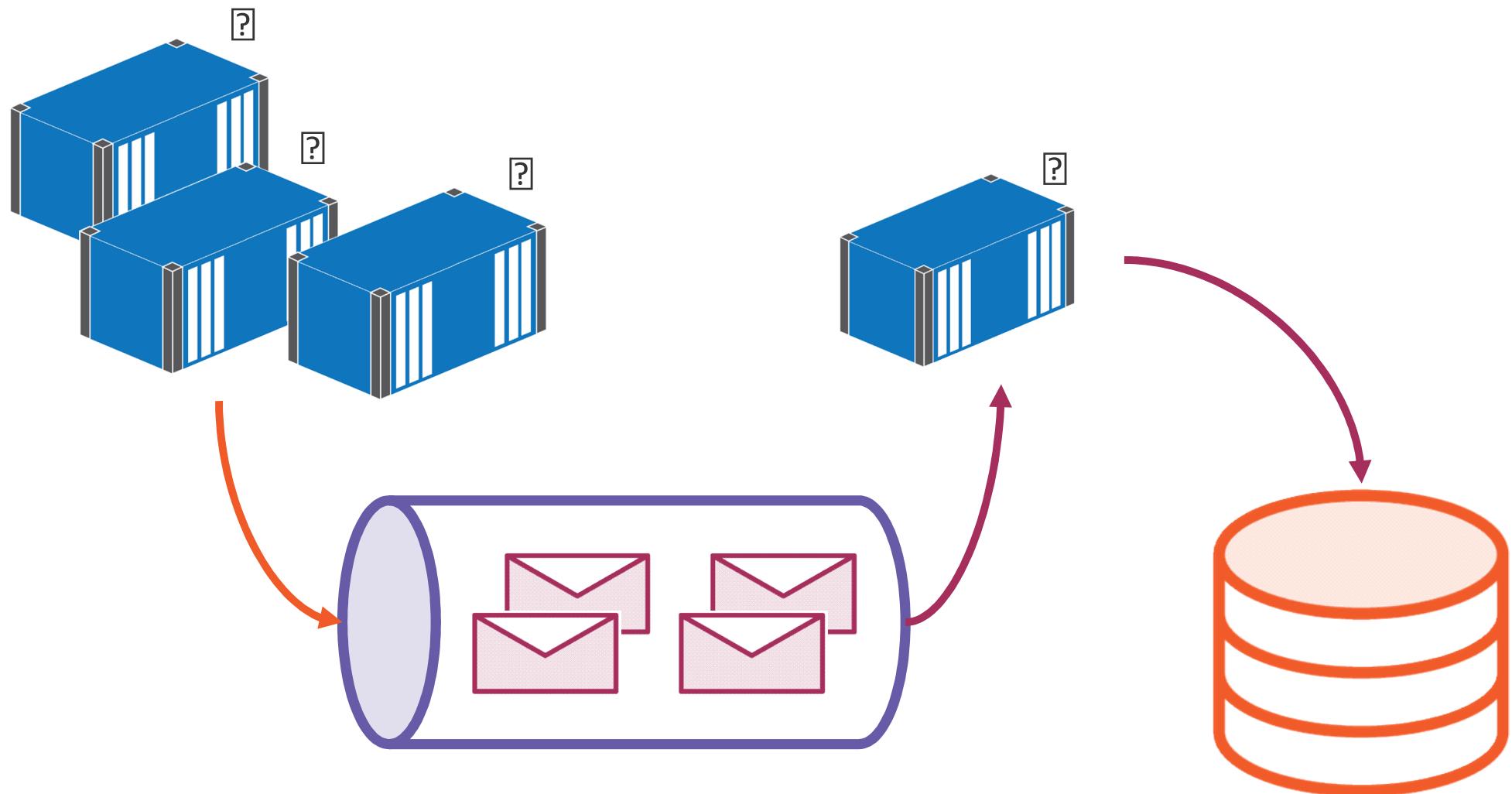
Performance Feature

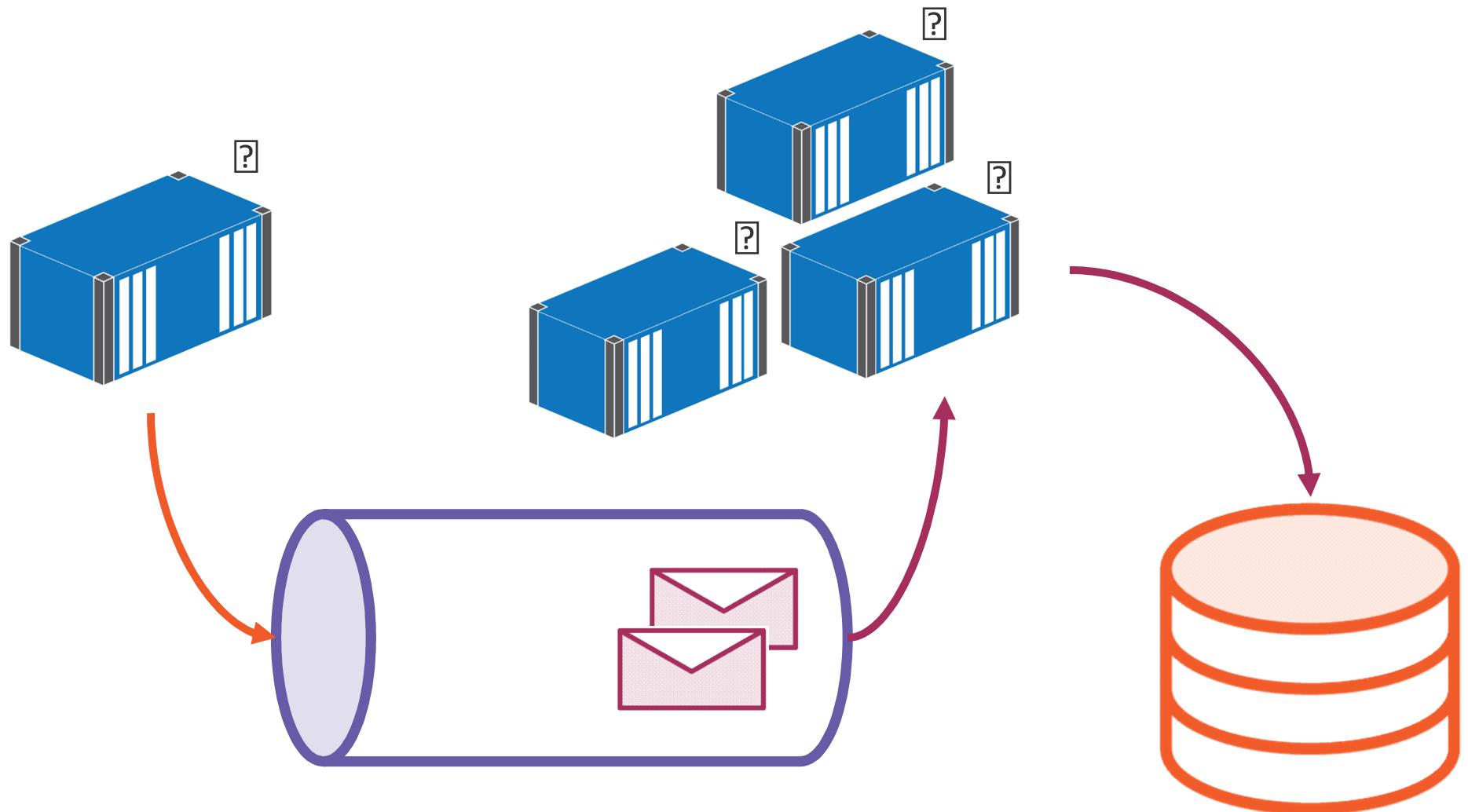
- Message handler
- Subscribes to event messages
- Saves to database

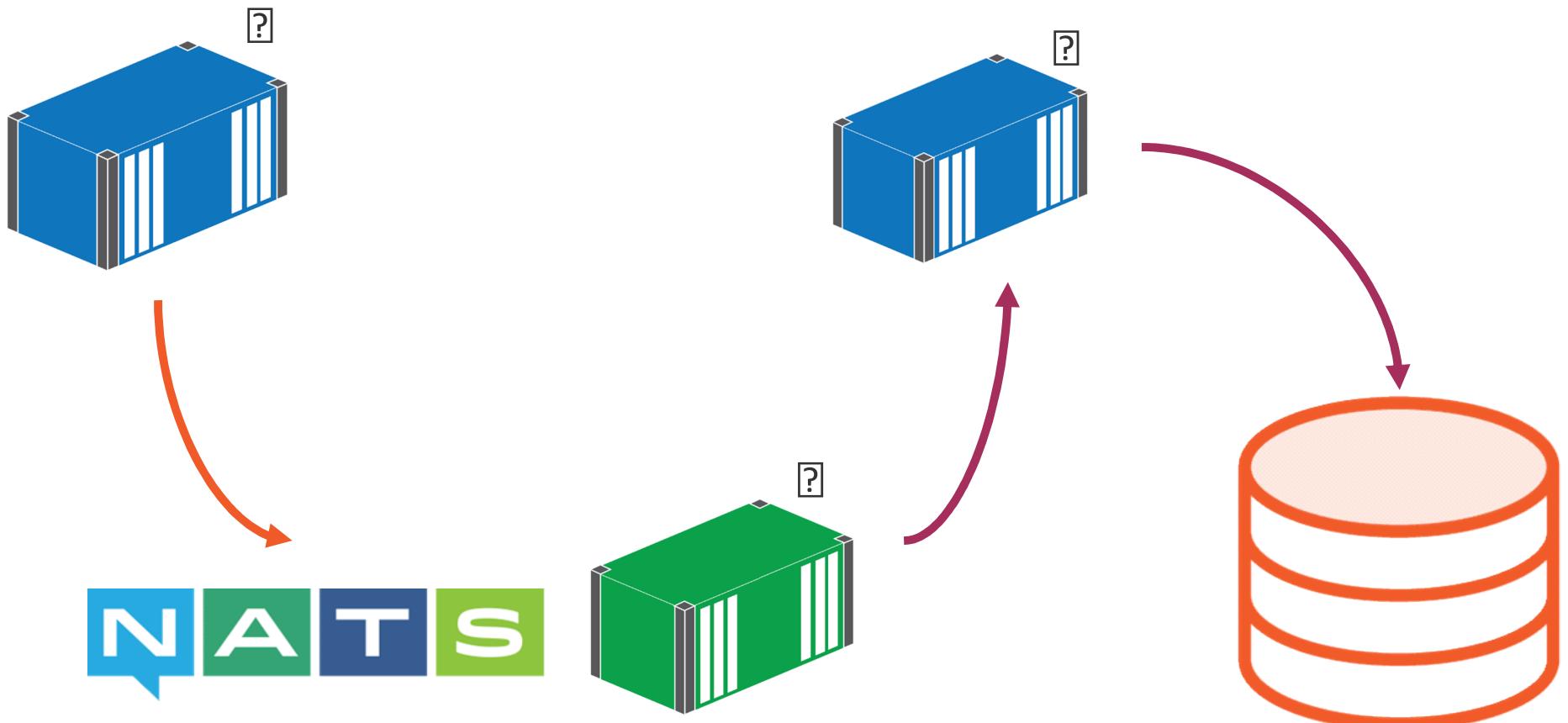


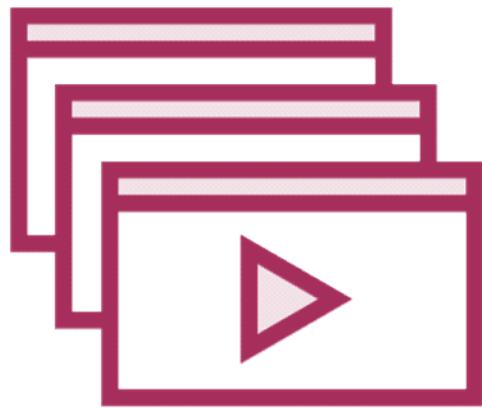






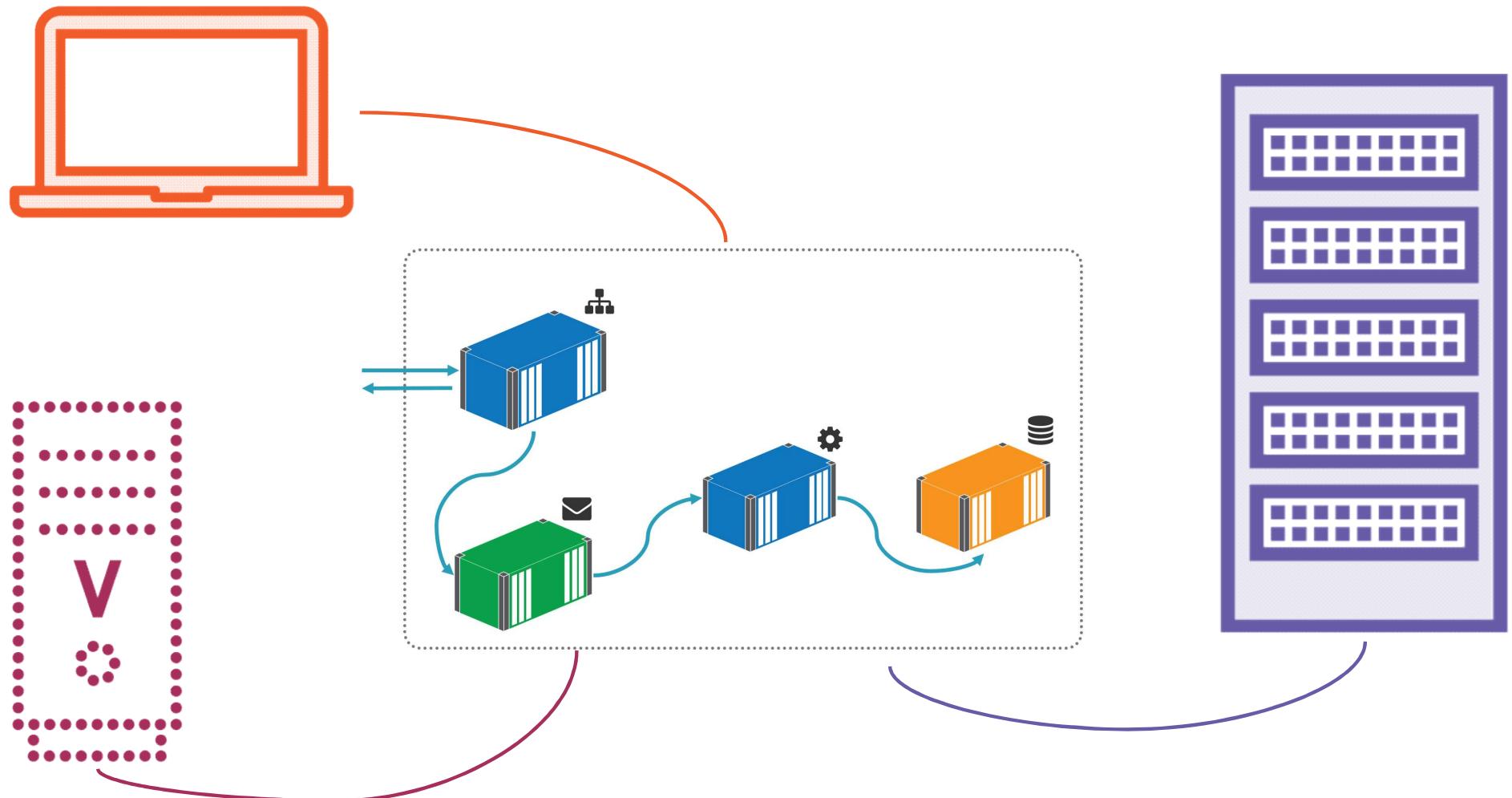


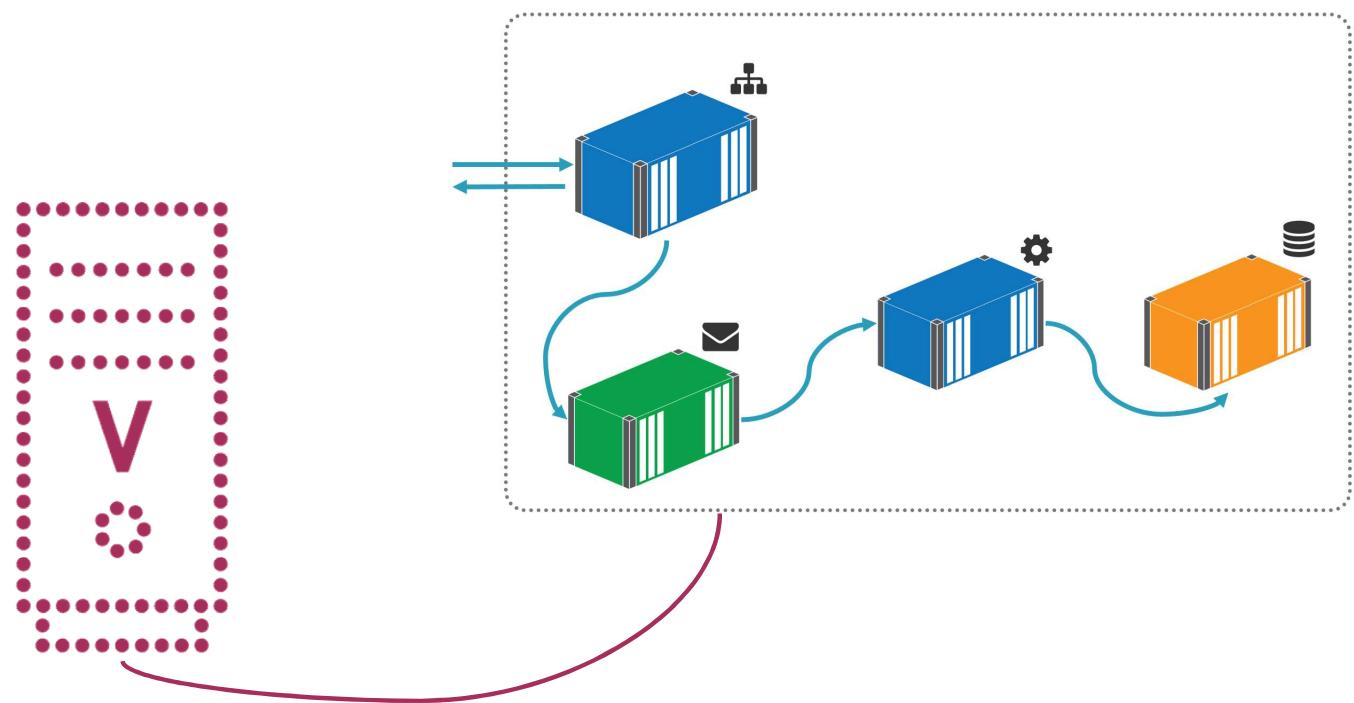


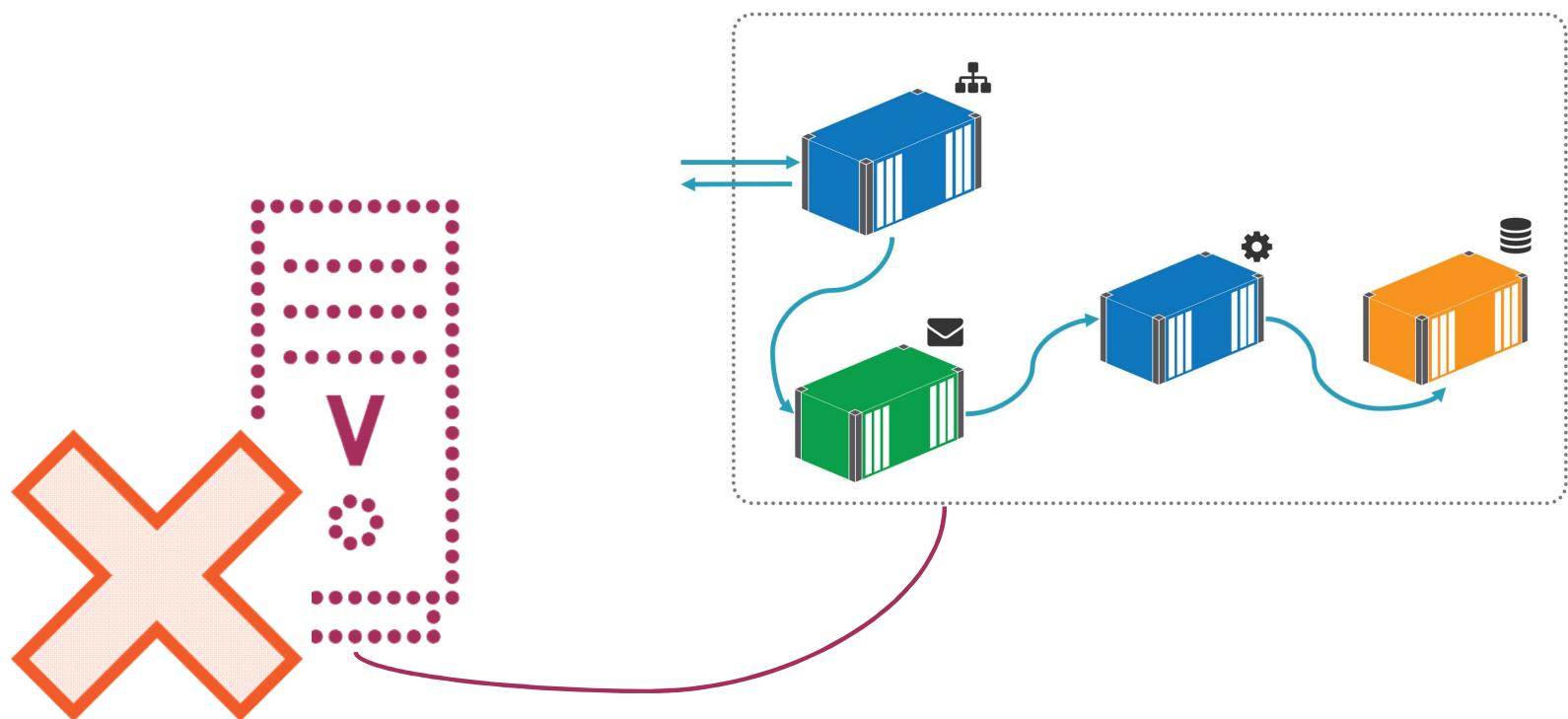


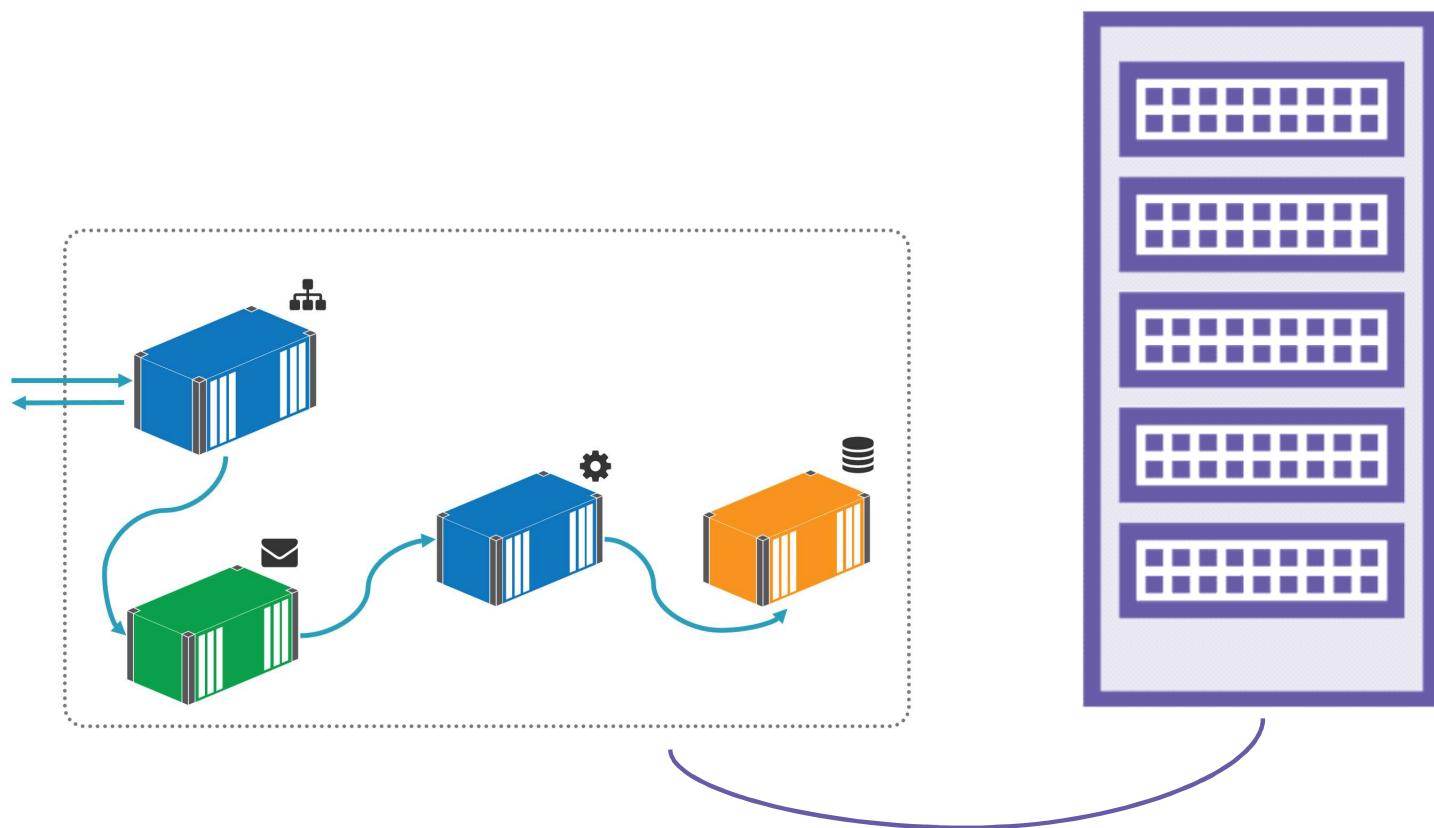
Message Queue Fundamentals in .NET

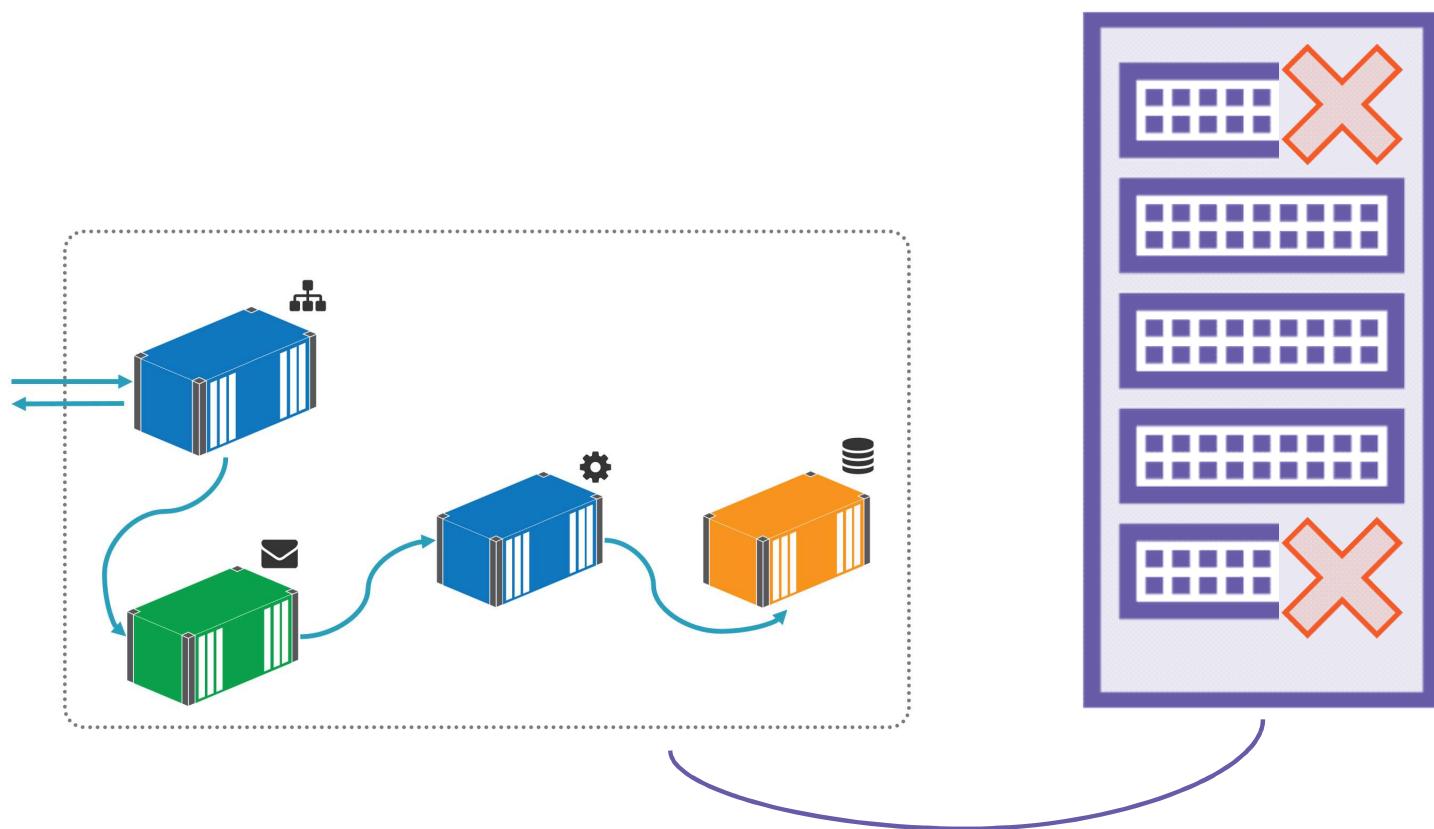
- Elton Stoneman

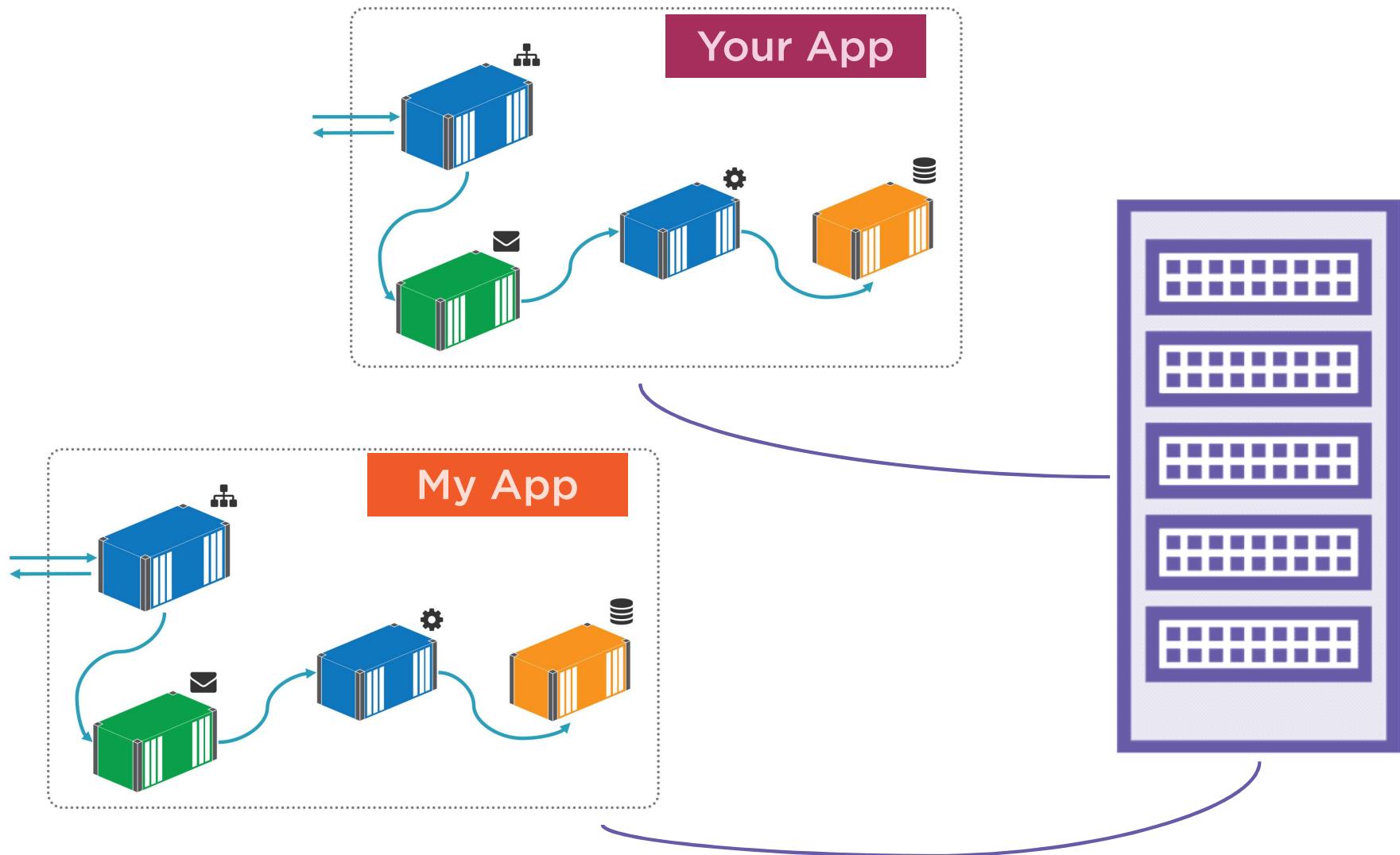




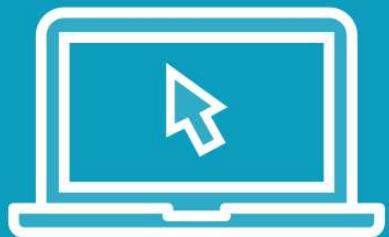






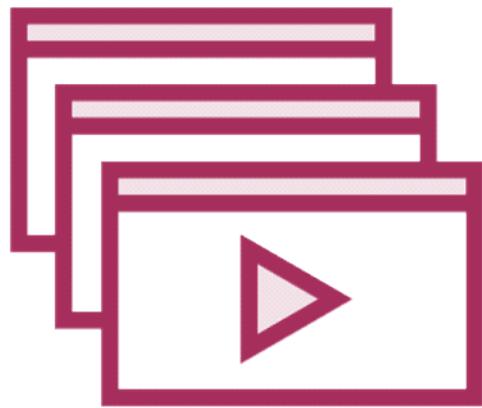


Demo



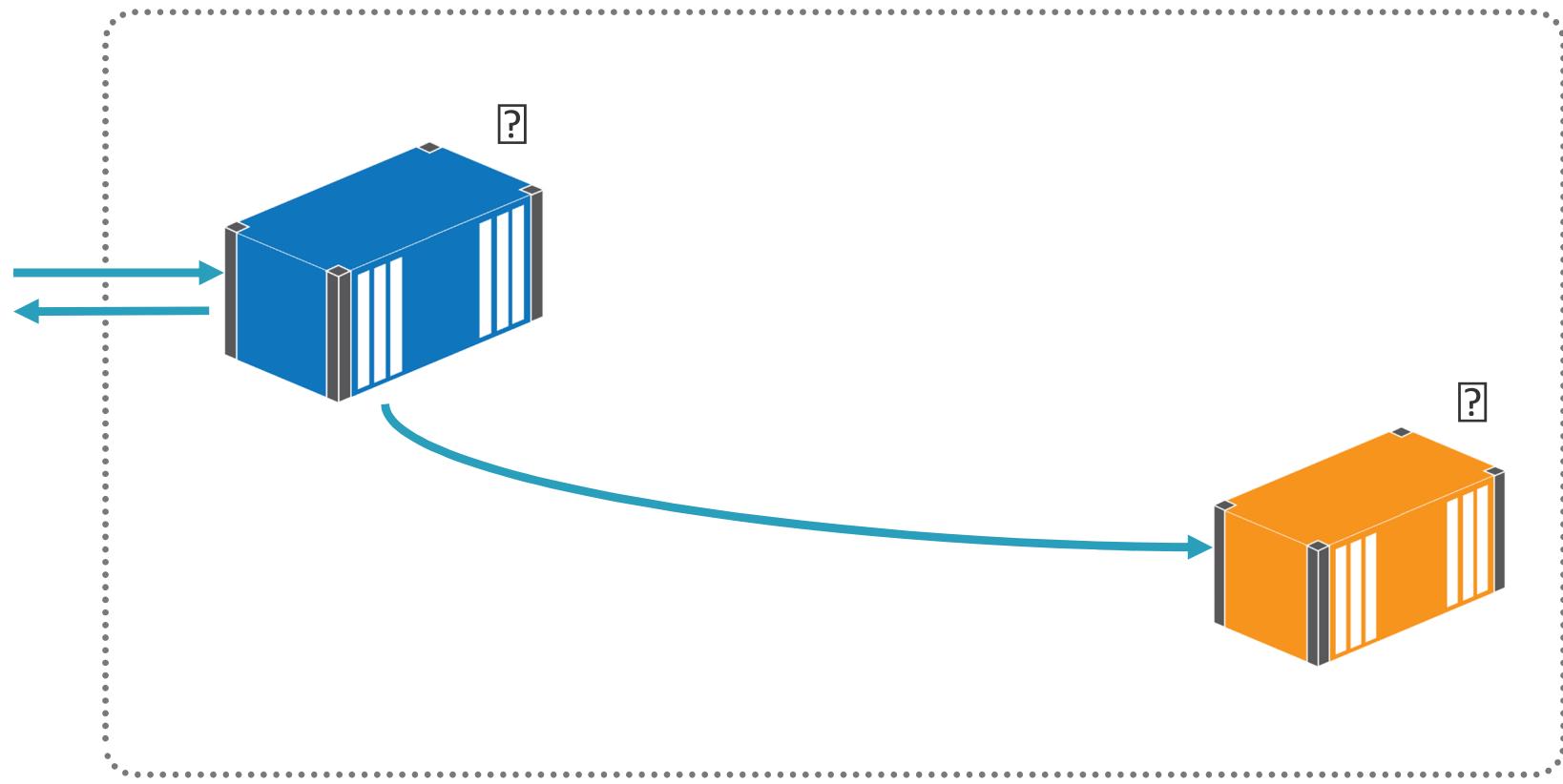
Event Publishing in Docker

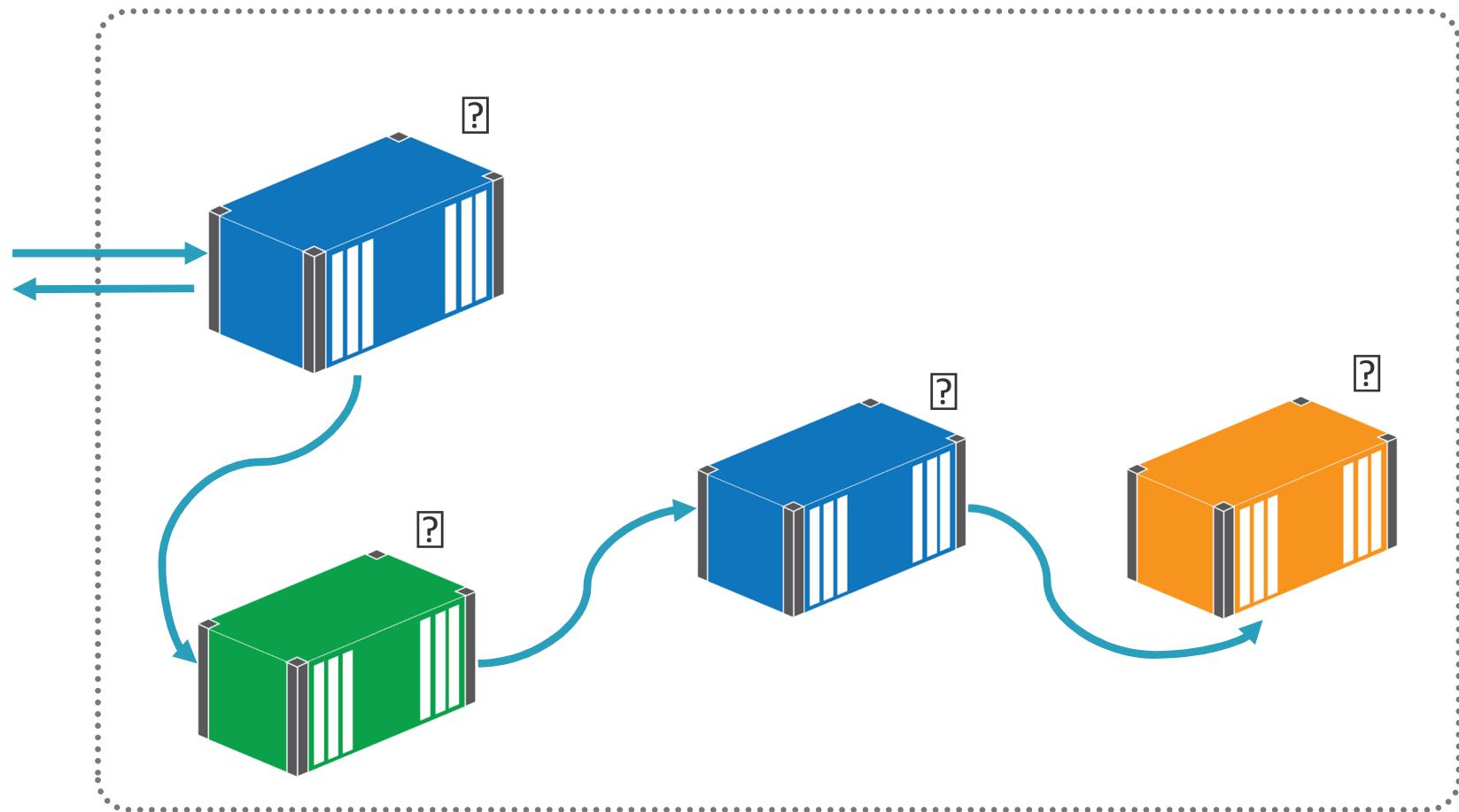
- Updated web image
- Message handler image
- Running the NATS container

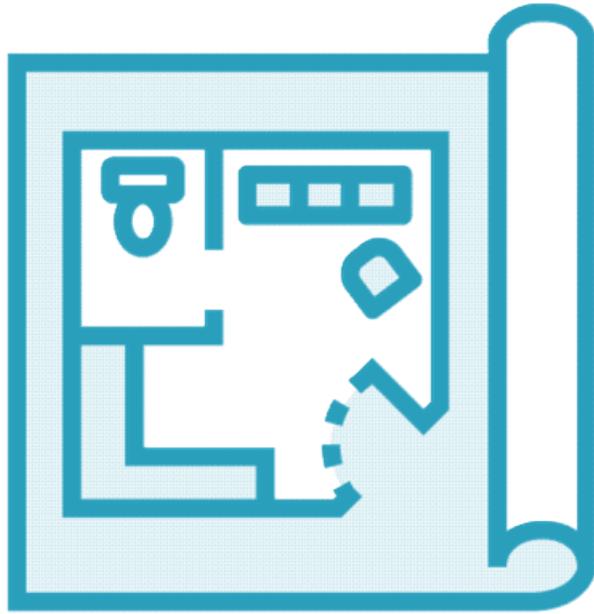


Getting Started with Docker Datacenter

- Elton Stoneman

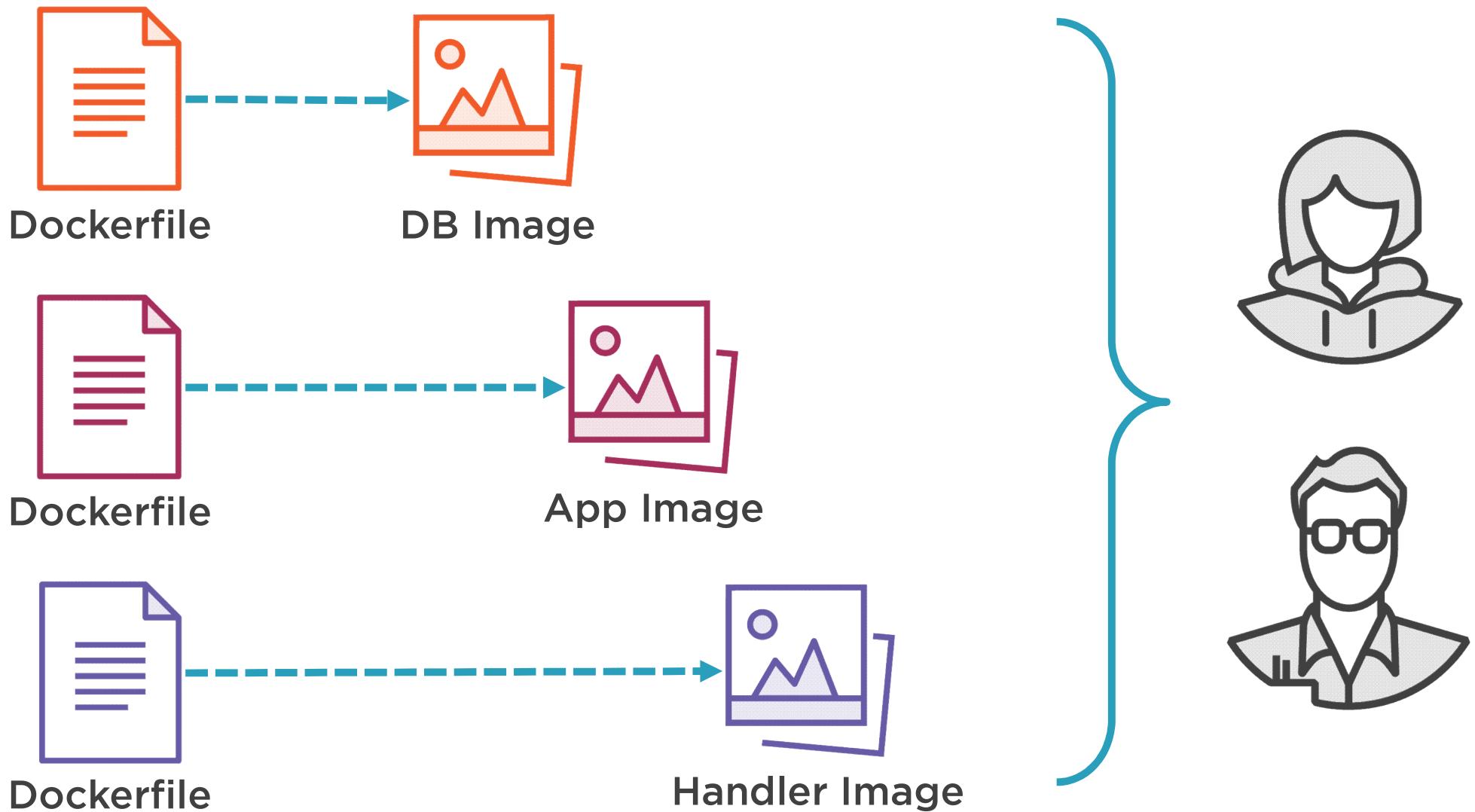


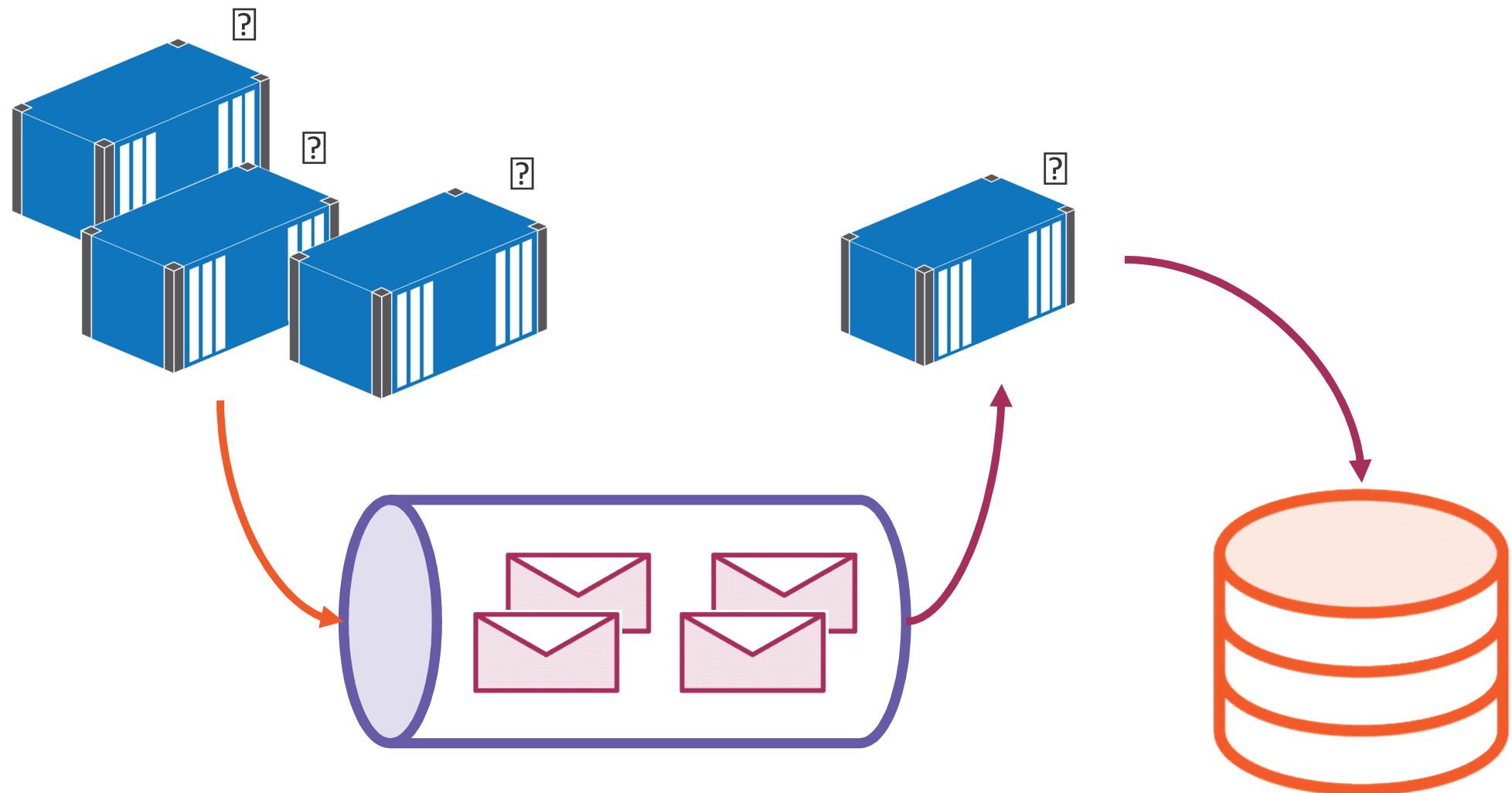


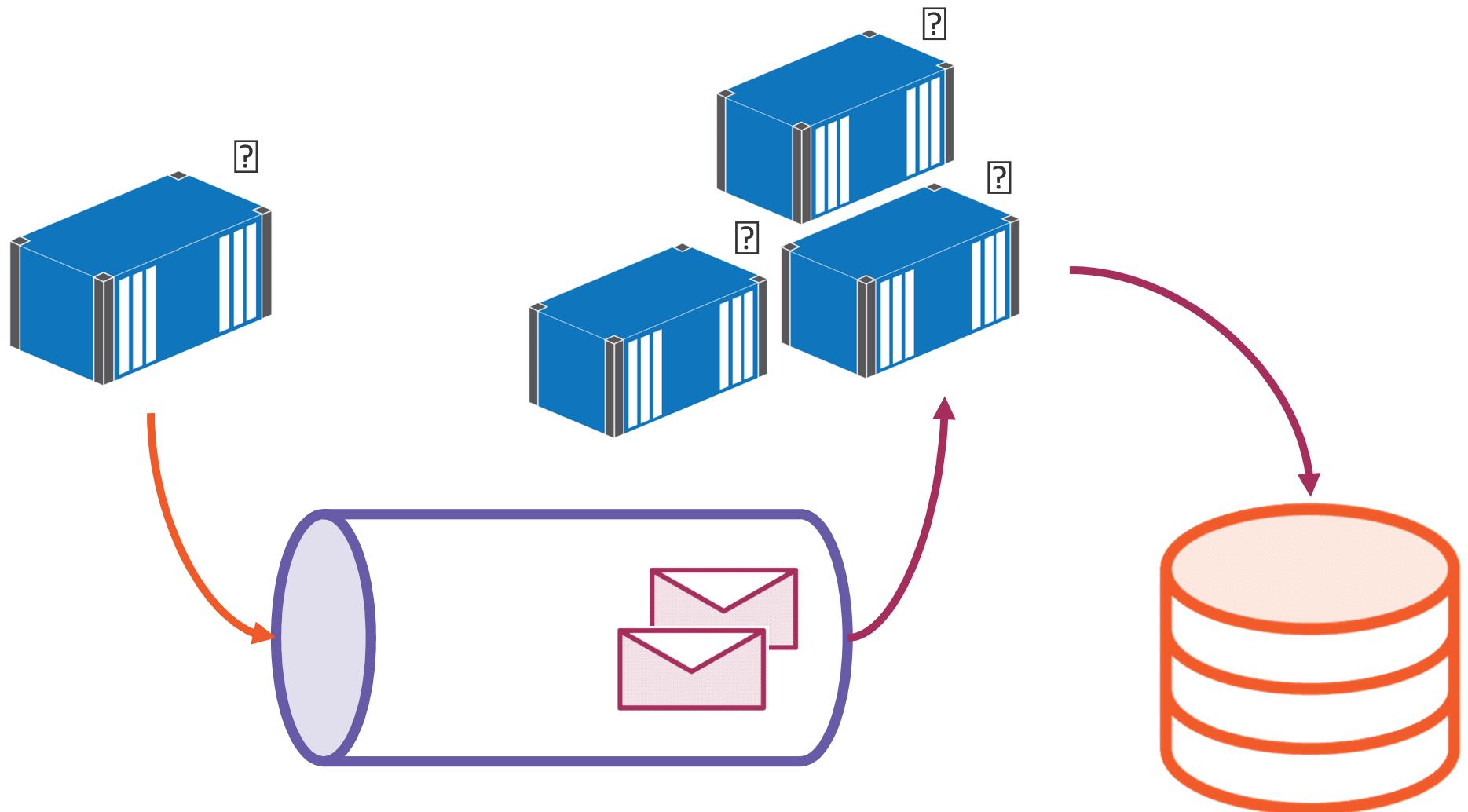


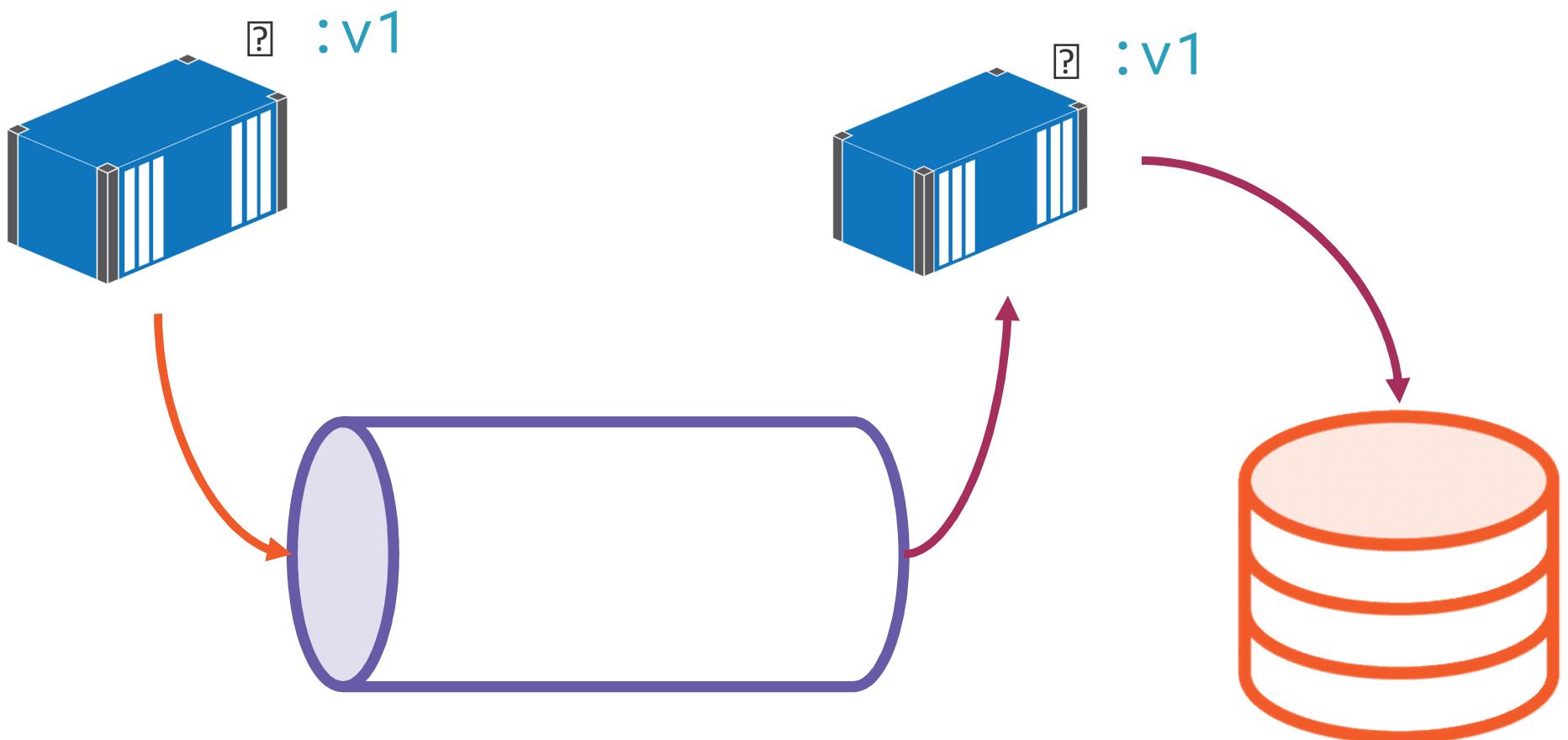
Container-first design

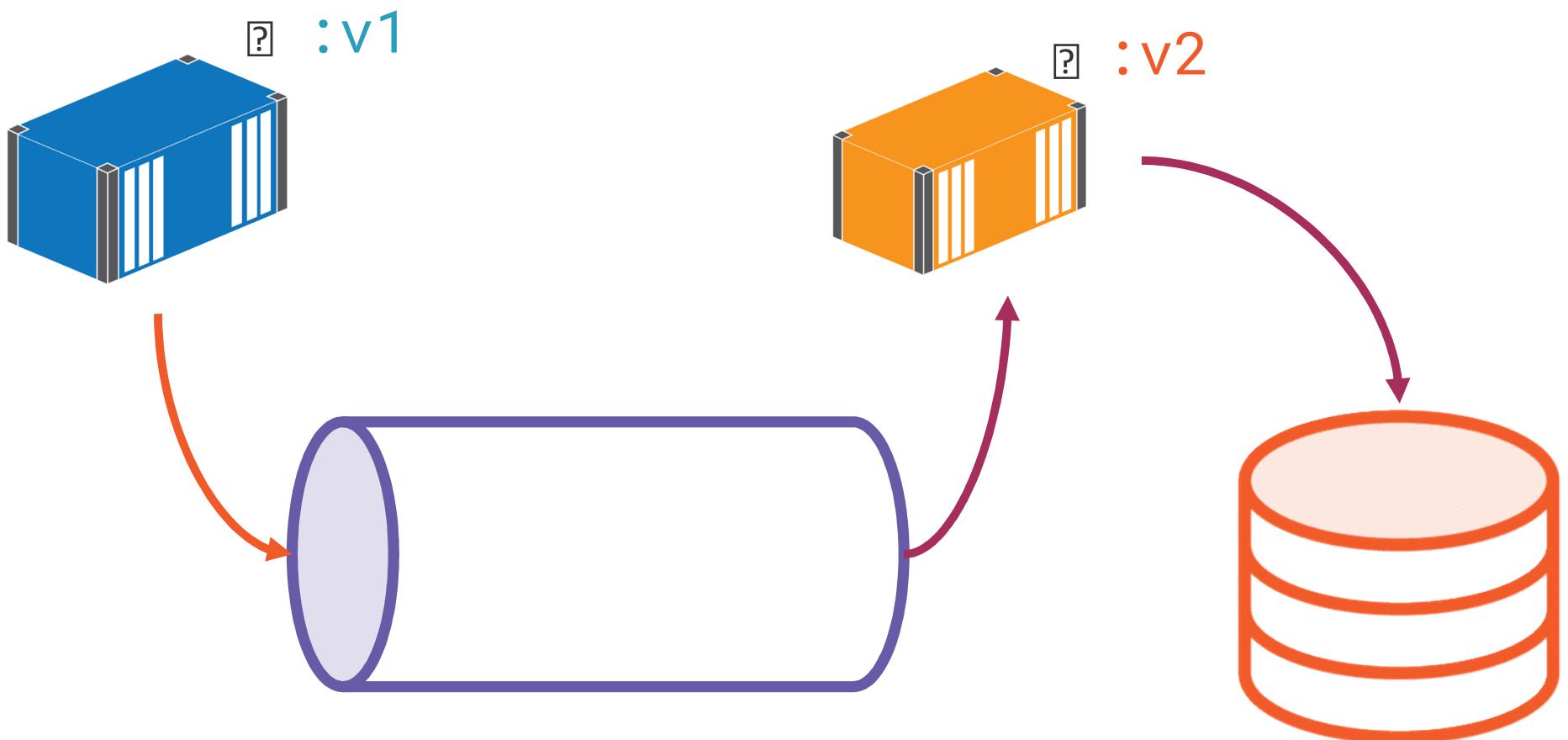
- Registries of packaged apps
- Drop-in instead of build

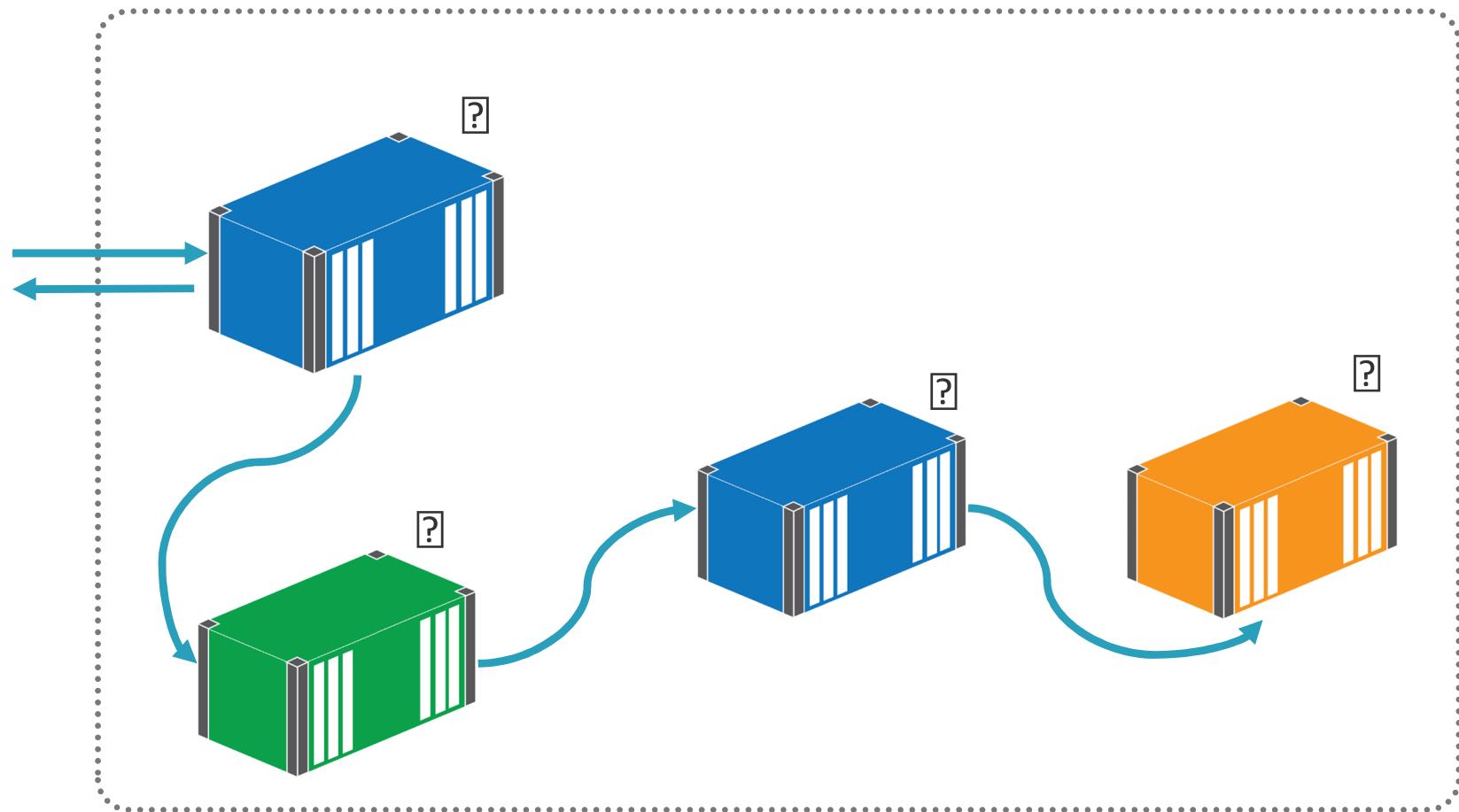


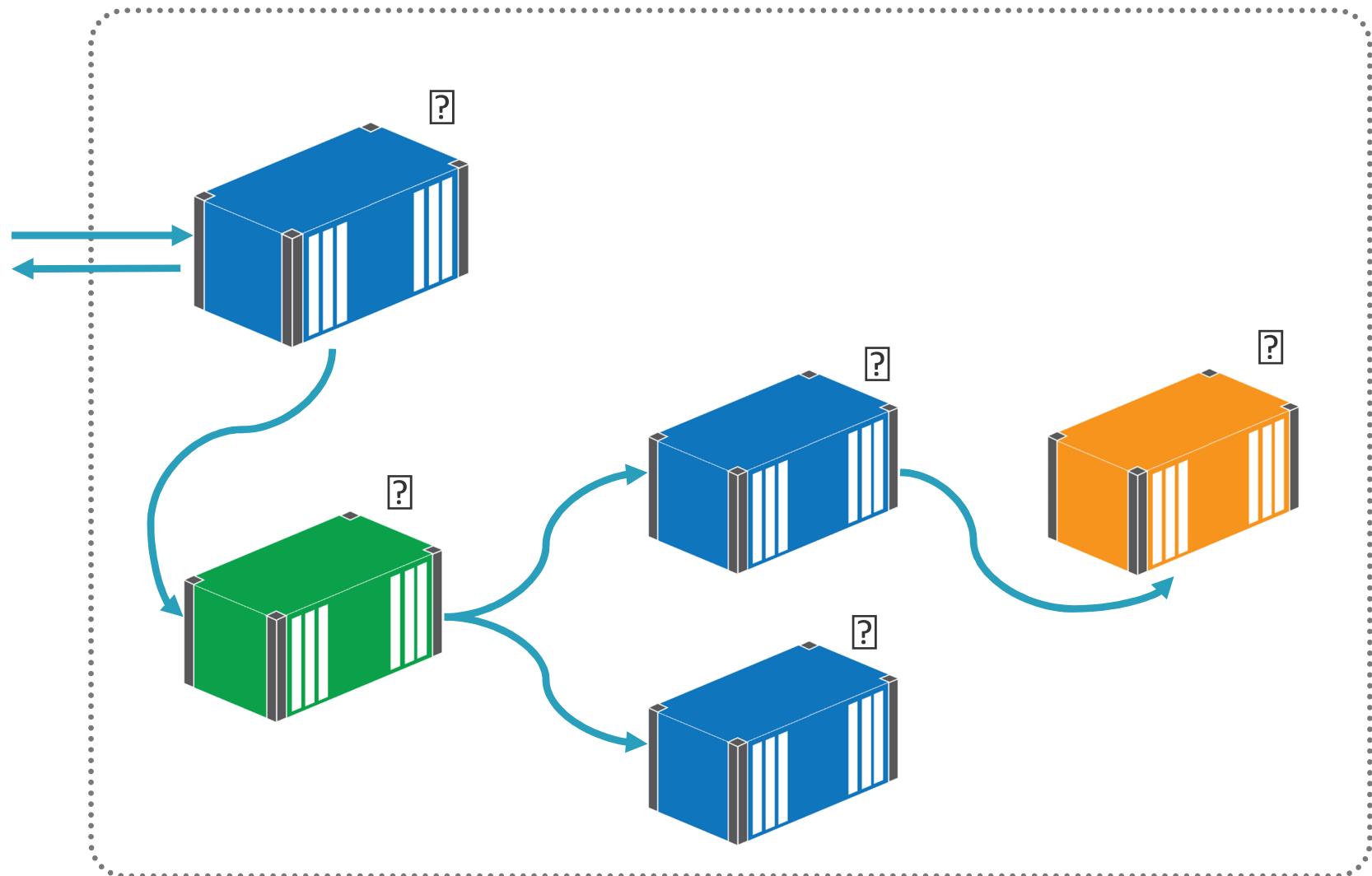


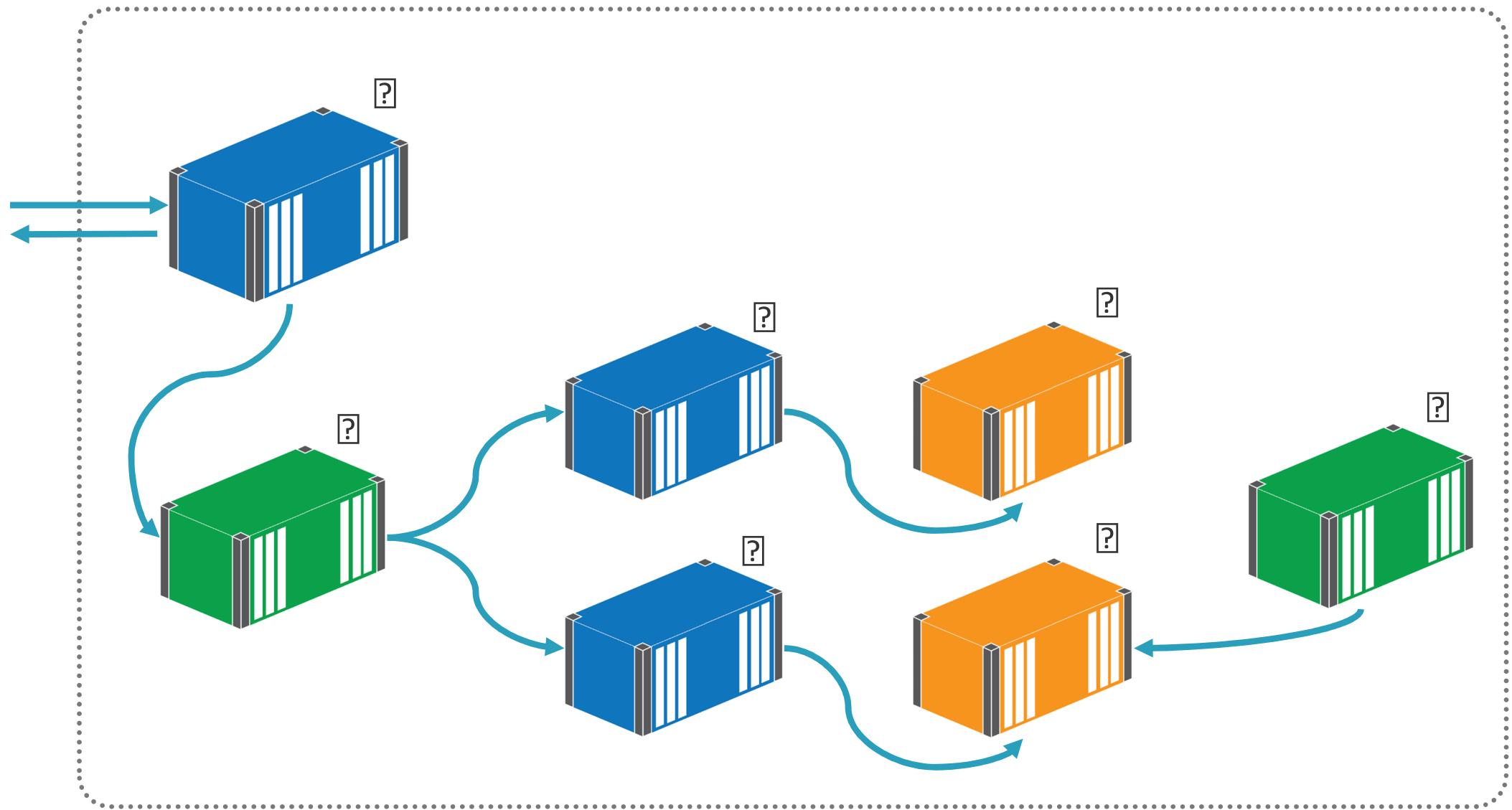












Coming Next



Self-service analytics

- Elasticsearch reporting database
- Kibana for user-friendly analytics