

# Zero To Cloud Native on IBM Cloud

Microservices Architecture and Design

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I NEED TO KNOW WHY MOVING  
OUR APP TO THE CLOUD DIDN'T  
AUTOMATICALLY SOLVE ALL OUR  
PROBLEMS.



YOU WOULDN'T  
LET ME RE-  
ARCHITECT THE  
APP TO BE  
CLOUD-NATIVE.

JUST PUT IT  
IN  
CONTAINERS.



YOU CAN'T  
SOLVE A  
PROBLEM JUST  
BY SAYING  
TECHY THINGS.

KUBERNETES.



Dilbert.com @ScottAdamsSays

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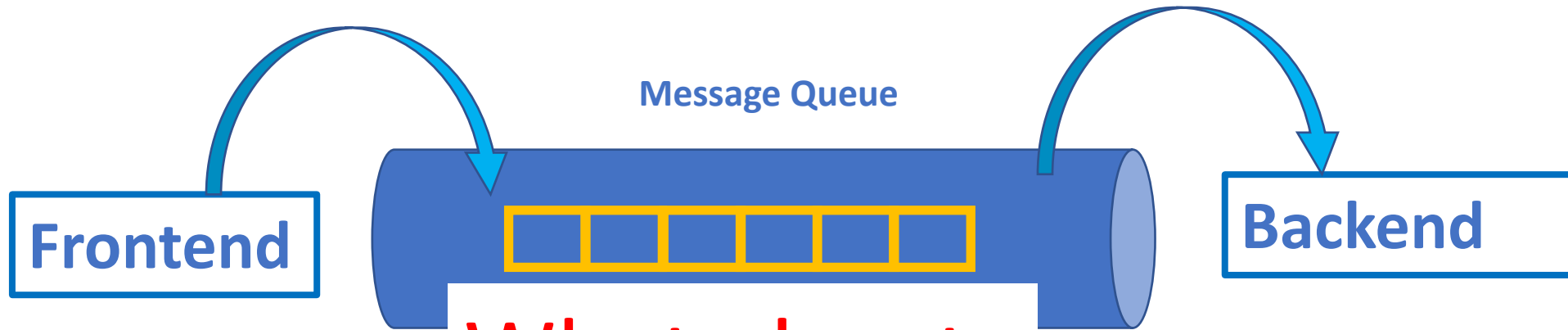
# Microservices Resources

Design Patterns for Microservices by Rajesh Bhojwani:

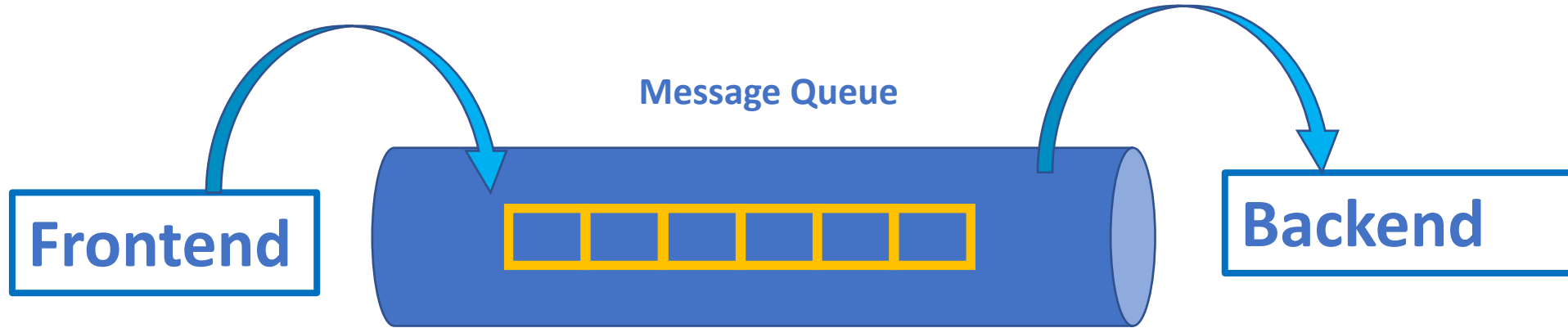
<https://dzone.com/articles/design-patterns-for-microservices>

Microservices by Martin Fowler.

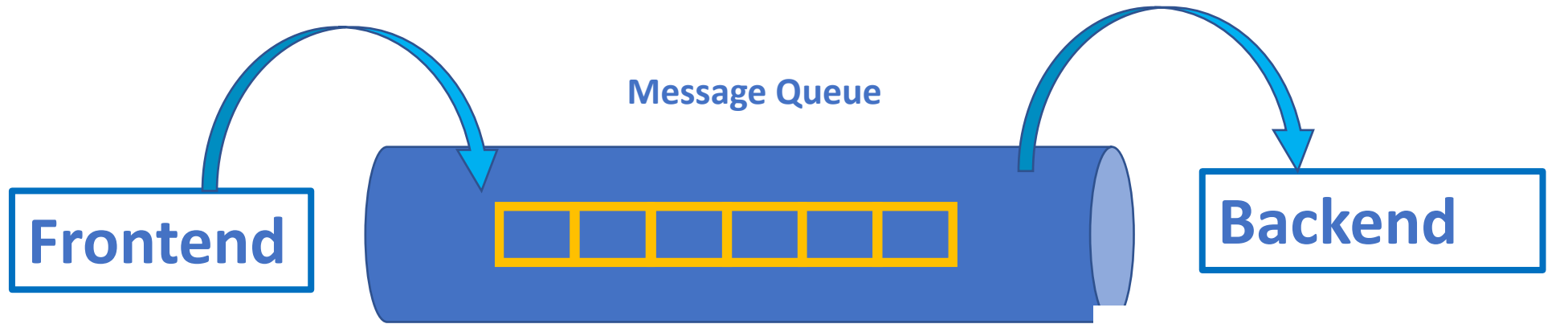
<https://martinfowler.com/articles/microservices.html>



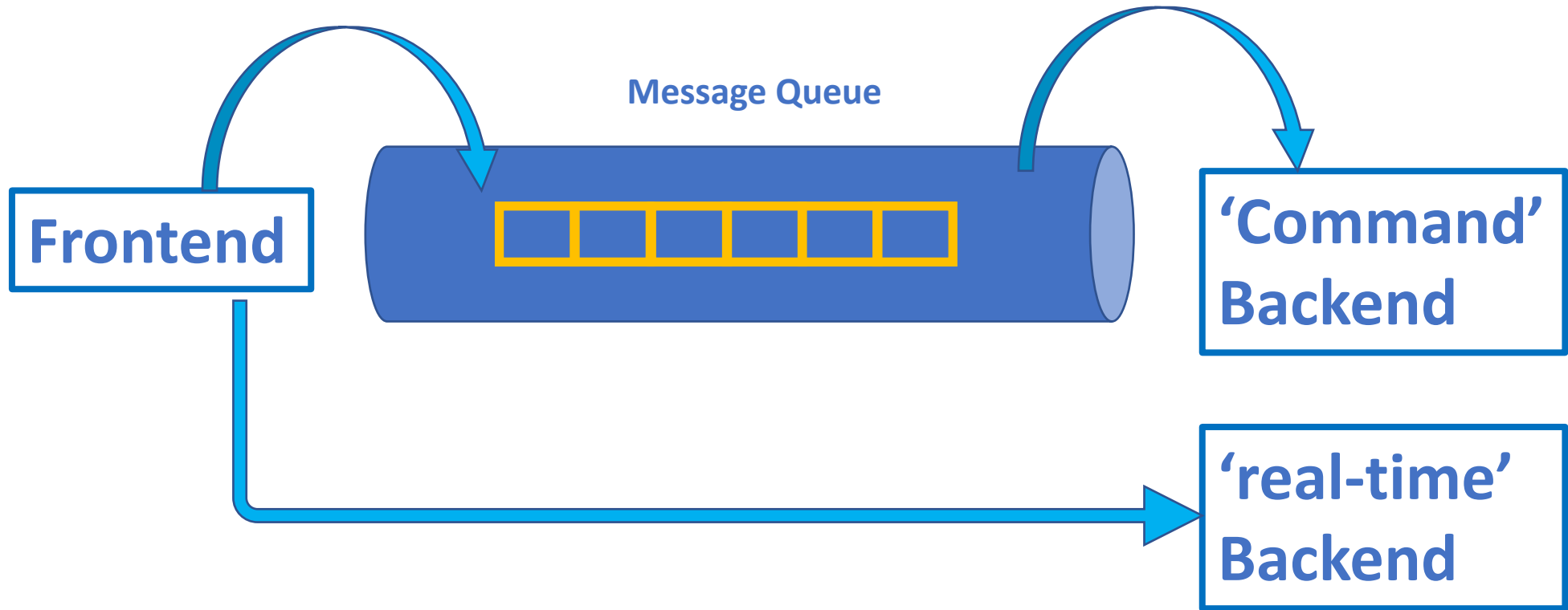
What about  
**real-time**  
API calls?



X  
no backend  
logic!



X  
Single  
bottleneck



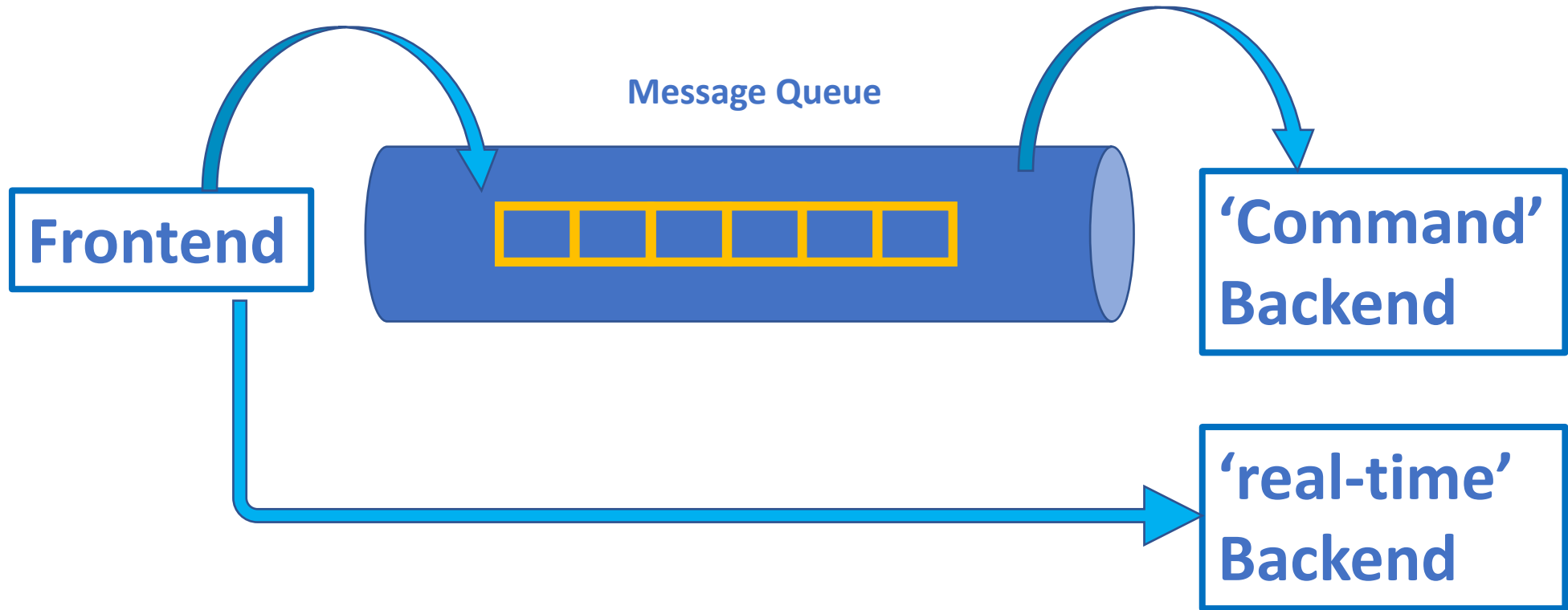
# Environment Variables Exposed by Kubernetes

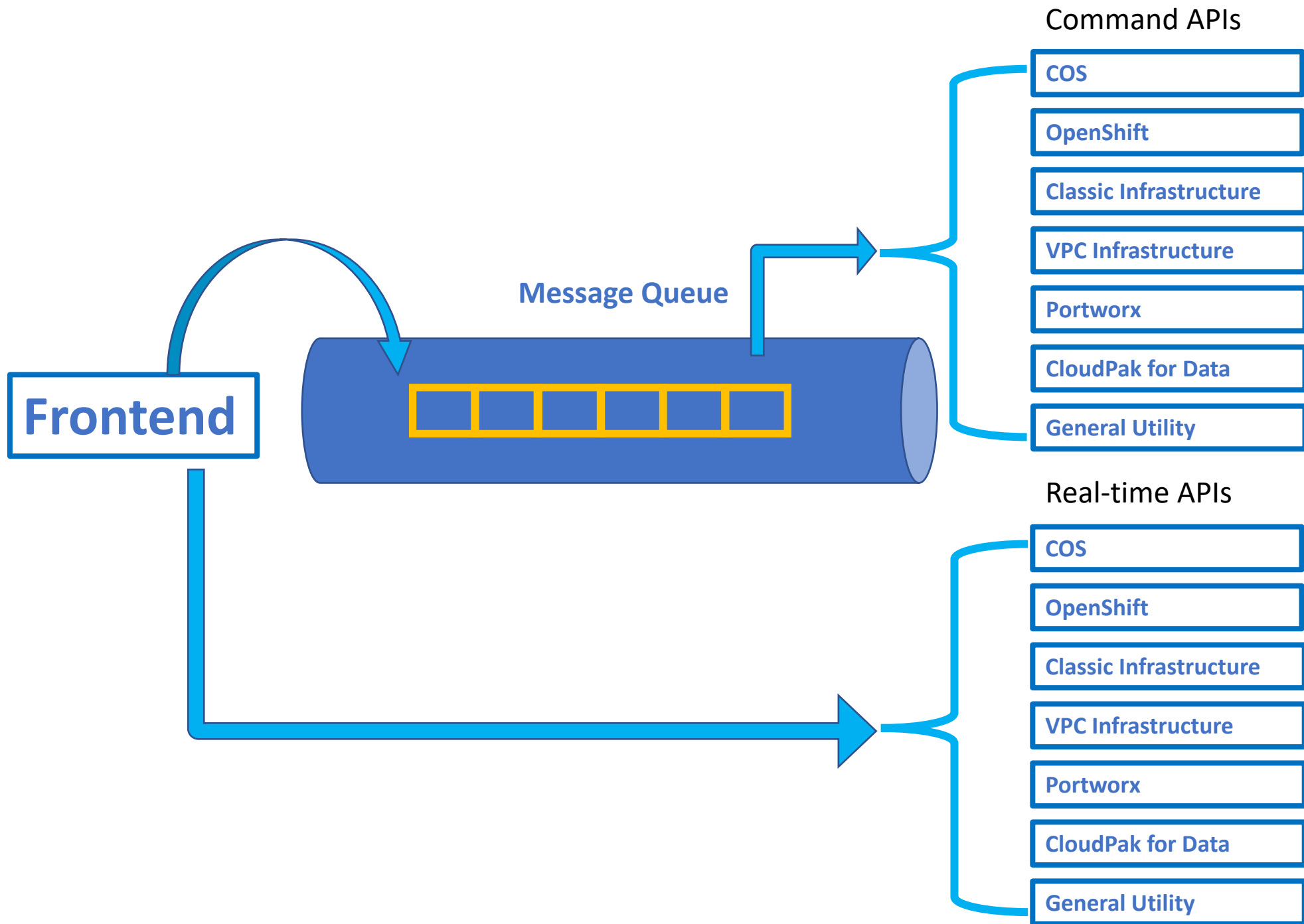
```
# env | grep OPENSHIFT_REALTIME_SERVICE
CLOUDPAK_PROVISIONER_OPENSHIFT_REALTIME_SERVICE_PORT_8220_TCP_ADDR=172.21.131.40
CLOUDPAK_PROVISIONER_OPENSHIFT_REALTIME_SERVICE_PORT_8220_TCP_PORT=8220
CLOUDPAK_PROVISIONER_OPENSHIFT_REALTIME_SERVICE_PORT_8220_TCP_PROTO=tcp
CLOUDPAK_PROVISIONER_OPENSHIFT_REALTIME_SERVICE_SERVICE_HOST=172.21.131.40
CLOUDPAK_PROVISIONER_OPENSHIFT_REALTIME_SERVICE_PORT=tcp://172.21.131.40:8220
CLOUDPAK_PROVISIONER_OPENSHIFT_REALTIME_SERVICE_SERVICE_PORT=8220
CLOUDPAK_PROVISIONER_OPENSHIFT_REALTIME_SERVICE_PORT_8220_TCP=tcp://172.21.131.40:8220
#
```

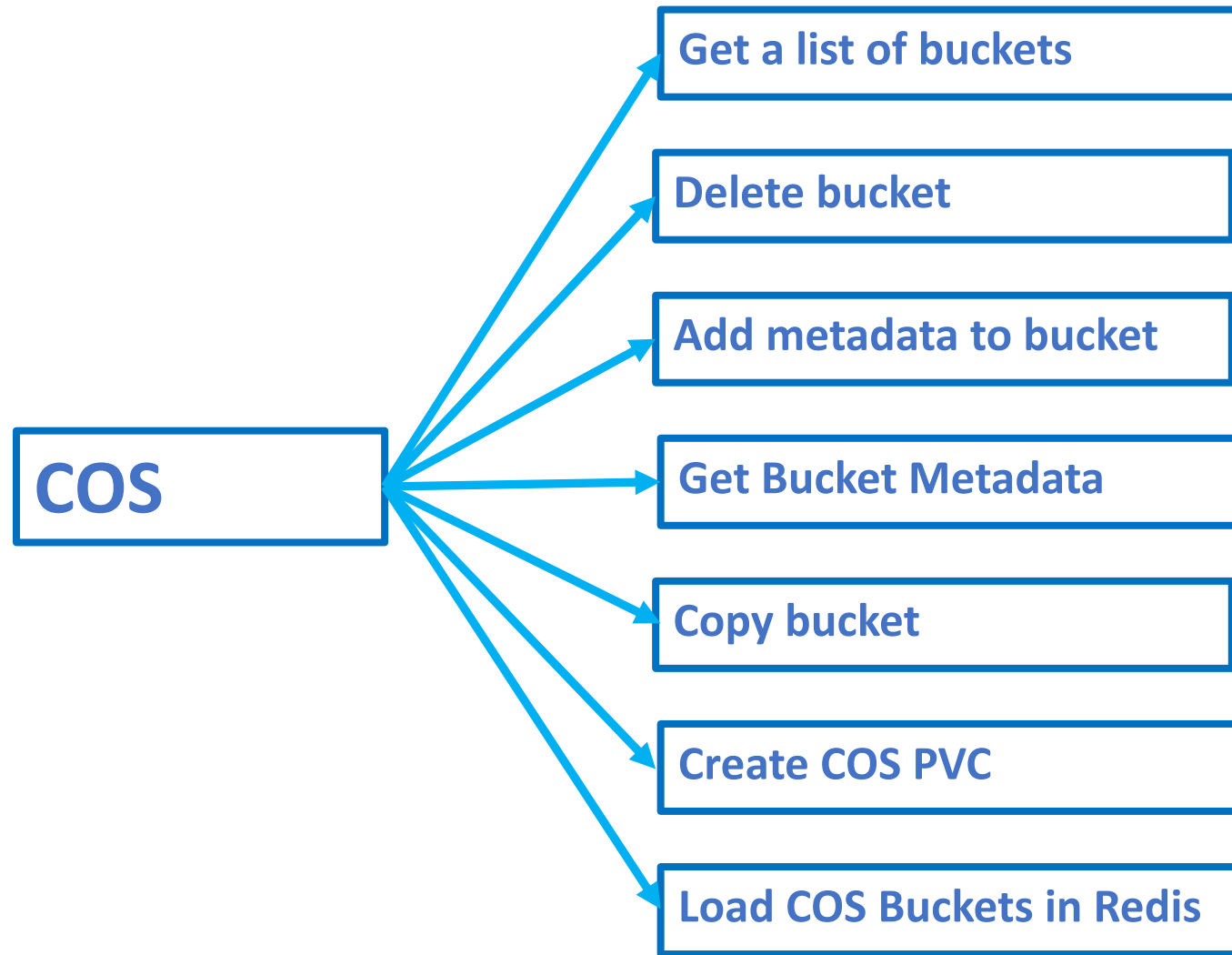
## Example Python Code to Call a Kubernetes Service

```
port = os.environ.get("CLOUDPAK_PROVISIONER_OPENSHIFT_REALTIME_SERVICE_SERVICE_PORT")
url = "http://" + os.environ.get("CLOUDPAK_PROVISIONER_OPENSHIFT_REALTIME_SERVICE_SERVICE_HOST")
openshift_realtime_url = url + ":" + port + "/api/v1/getRoksToken/"
```









real-time

GET OPENSIFT VERSION

Cluster Name

Name of the ROKS cluster

IBM Cloud API KEY

IBM Cloud API KEY

real-time

GET OPENSIFT TOKEN

Cluster Name

Name of the ROKS cluster

IBM Cloud API KEY

IBM Cloud API KEY

long  
running

ENABLE SSH ON YOUR OPENSIFT WORKER NODES

