

aws@localhost: LocalStack

Deniz Ozgen

Associate Director of
Engineering



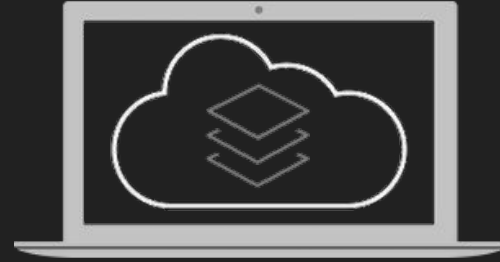
| @_denolk

| in/denizozgen



LocalStack

- Nedir?
- Desteklenen servisler
- Nasıl çalışır?
- IaC ve CLI etkileşimi
- Kullanım senaryoları
- Demo deployment




Nedir?

LocalStack

- 2016 | atlassian-labs
- 2017 | community

“LocalStack provides an easy-to-use test/mock framework for developing Cloud applications.”

 [localstack / localstack](#)

 [localstack.cloud](#)

☆ 28.9k stars  2.3k forks

Desteklenen servisler

LocalStack

community version

ACM • API Gateway • CloudFormation • CloudWatch
DynamoDB • EC2 • ES • Firehose • IAM • STS
Kinesis • KMS • Lambda • CloudWatch • Redshift
Route53 • S3 • Secrets Manager • SES • SNS • SQS
SSM • StepFunctions • SWF

Nasıl çalışır?

LocalStack

dockerfile

- localstack-full

```
FROM localstack/java-maven-node-python
```

- localstack

```
FROM localstack/localstack
```

```
RUN rm -rf localstack/infra/elasticsearch localstack/dashboard/web
```

Nasıl çalışır?

LocalStack

plain docker run

```
$ docker run --rm -p 4566:4566 localstack/localstack
```

```
SERVICES    # dynamodb,s3,lambda,...  
DATA_DIR    # local volume mount  
LAMBDA_EXECUTOR # local, docker, docker-reuse  
DOCKER_HOST # docker.sock mount
```

github.com/localstack/localstack#configurations

```
deno1k@D0PC:/d/Dev/denolk-hive/localstack-aws$  
λ docker run --rm -p 4566:4566 localstack/localstack  
Waiting for all LocalStack services to be ready  
INFO supervisord started with pid 14  
INFO spawned: 'infra' with pid 21
```

LocalStack version: 0.12.7

```
Starting edge router (https port 4566)...  
Starting mock ACM service on http port 4566 ...  
Starting mock API Gateway service on http port 4566 ...  
Starting mock CloudFormation service on http port 4566 ...  
Starting mock CloudWatch service on http port 4566 ...  
Starting mock DynamoDB service on http port 4566 ...  
Starting mock DynamoDB Streams service on http port 4566 ...  
Starting mock EC2 service on http port 4566 ...  
Starting mock ES service on http port 4566 ...  
Starting mock Firehose service on http port 4566 ...  
Starting mock IAM service on http port 4566 ...  
Starting mock STS service on http port 4566 ...  
Starting mock Kinesis service on http port 4566 ...  
Starting mock KMS service on http port 4566 ...  
Starting mock Lambda service on http port 4566 ...  
Starting mock CloudWatch Logs service on http port 4566 ...  
Starting mock Redshift service on http port 4566 ...  
Starting mock Route53 service on http port 4566 ...  
Starting mock S3 service on http port 4566 ...  
Starting mock Secrets Manager service on http port 4566 ...  
Starting mock SES service on http port 4566 ...  
Starting mock SNS service on http port 4566 ...  
Starting mock SQS service on http port 4566 ...  
Starting mock SSM service on http port 4566 ...  
Starting mock Cloudwatch Events service on http port 4566 ...  
Starting mock StepFunctions service on http port 4566 ...  
Starting mock SWF service on http port 4566 ...
```

Nasıl çalışır?

LocalStack

docker-compose

\$ docker-compose up

```
version: '3.1'

services:
  localstack:
    container_name: "localstack-awscd"
    image: localstack/localstack:latest
    network_mode: bridge
    ports:
      - "4566:4566"
    environment:
      - SERVICES=
      - DATA_DIR=/tmp/localstack
      - LAMBDA_EXECUTOR=docker-reuse
      - DOCKER_HOST=unix:///var/run/docker.sock
    volumes:
      - "./volume/tmp/localstack:/tmp/localstack"
      - "/var/run/docker.sock:/var/run/docker.sock"
```

Nasıl çalışır?

LocalStack

Testcontainers

testcontainers.org/modules/localstack/

```
var localstack = new TestcontainersBuilder<TestcontainersContainer>()
    .WithImage("localstack/localstack")
    .WithEnvironment("DEFAULT_REGION", "us-east-1")
    .WithEnvironment("SERVICES", "...")
    .WithEnvironment("DOCKER_HOST", "unix:///var/run/docker.sock")
    .WithPortBinding(4566, 4566)
    .Build();

await localstack.StartAsync();
```

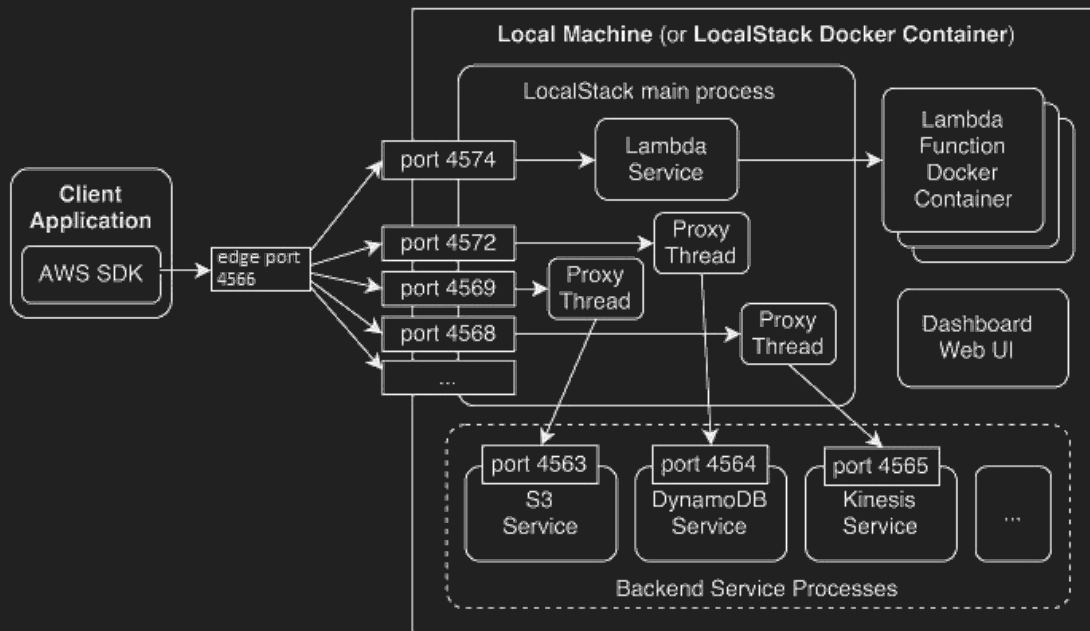

Nasıl çalışır?

LocalStack

- moto
 - boto3 mock wrapper
- elasticmq
 - in-memory async mq
- dynamodb-local
 - official local DynamoDB server
- kinesalite
 - lightweight streams with LevelDB
- lambci
 - AWS Lambda in container

Nasıl çalışır?

LocalStack



IaC

LocalStack

- Reusable components
 - Repeatable & testable infrastructure
 - Versioning & state management
-
- AWS Cloudformation (json,yaml / declarative)
 - Ansible (yaml / mutable, procedural)
 - Terraform (hcl / immutable, declarative)
 - AWS CDK (ts,js,cs,java,py / dev kit)

laC

LocalStack

AWS CDK

```
$ npm i -g aws-cdk aws-cdk-local
```

```
$ cdklocal deploy
```

```
// stack.ts
```

```
new Bucket(this, 'denolkHiveCdk',  
{  
    bucketName: 'denolk-hive-cdk'  
});
```

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LocalStack

Terraform

```
$ terraform apply
```

```
# vars.tf

provider "aws" {
  access_key           = "mock_access_key"
  secret_key           = "mock_secret_key"
  skip_credentials_validation = true # optional
  skip_metadata_api_check  = true # optional

  endpoints {
    s3 = "http://localhost:4566"
  }
}

# s3.tf

resource "aws_s3_bucket" "bucket" {
  bucket = "denolk-hive-tf"
  acl    = "private"
}
```

CLI

LocalStack

AWS CLI

```
$ aws --endpoint-url=http://localhost:4566 s3 mb s3://denolk-hive-cli  
make_bucket: denolk-hive-cli
```

```
$ aws --endpoint-url=http://localhost:4566 s3 ls  
denolk-hive-cli
```

Localstack.NET AWS CLI

github.com/localstack-dotnet/localstack-awscli-local

```
$ awslocal s3 mb s3://denolk-hive-cli  
make_bucket: denolk-hive-cli
```

```
$ awslocal s3 ls  
denolk-hive-cli
```

IaC

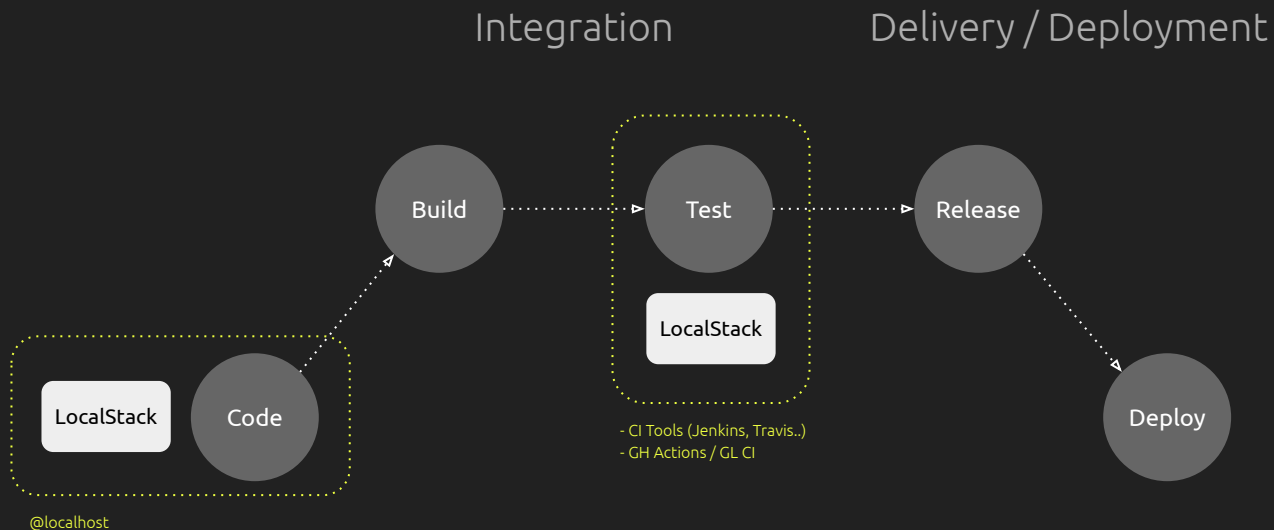
LocalStack

CLI != IaC

.sh != IaC

Kullanım senaryoları

LocalStack



Kullanım senaryoları

LocalStack

- IaC / Product @ CI Pipeline
 - > Functional test
 - > Integration test
- PoC / R&D @ local
 - > Plan & Estimate
 - > Cost efficient

Demo

LocalStack

