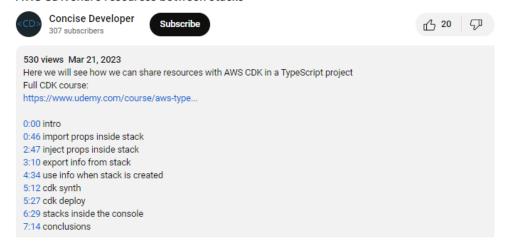
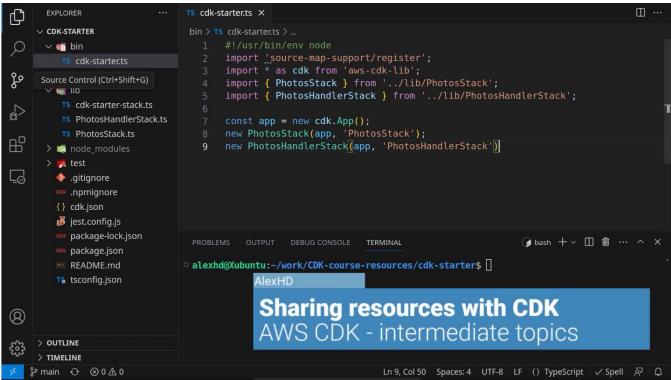
AWS CDK share resources between stacks





Let us see how we can share data between different CFN stacks using CDK

```
bin > TS cdk-starter.ts ×

bin > TS cdk-starter.ts > ...

1 #!/usr/bin/env node
2 import !.source-map-support/register';
3 import * as cdk from 'aws-cdk-lib';
4 import { PhotosStack } from '../lib/PhotosStack';
5 import { PhotosHandlerStack } from '../lib/PhotosHandlerStack';

6
7 const app = new cdk.App();
8 new Photosbtack(app, 'PhotosStack');
9 new Photosbtack(app, 'PhotosHandlerStack')
```

We have 2 stacks, **PhotosStack** that creates an S3 bucket and a **PhotosHandlerStack** that needs that S3 bucket to put data into it. How can we share data between these 2 stacks using only TypeScript features?

```
TS PhotosHandlerStack.ts X
       EXPLORER
                                   lib > TS PhotosHandlerStack.ts > ♦ PhotosHandlerStack > ♦ constructor
      CDK-STARTER
       v 📻 bin
          TS cdk-starter.ts
                                               constructor(scope: Construct, id: string, props?: cdk.StackProps) {
                                                   super(scope, id, props);
       > cdk.out
       ∨ 📹 lib
                                                   const targetBucket = Fn.importValue('photos-bucket')
       TS cdk-starter-stack.ts
                                     12
          TS PhotosHandlerStack.ts
          TS PhotosStack.ts
                                                       runtime: Runtime.NODEJS_16_X,
8
                                                       handler: 'index.handler',
       > node_modules
                                                       code: Code.fromInline(
       > 📂 test
.gitignore
                                                          console.log("hello!zxzxc: " + process.env.TARGET BUCKET)
           .npmignore
         {} cdk.json
         jest.config.js
                                                        environment: {
                                                                                                                            Ⅲ …
      TS cdk-starter.ts
                        TS PhotosHandlerStack.ts X
       lib > TS PhotosHandlerStack.ts > 😭 PhotosHandlerStack 🔭 constructor
```

```
| Ts cdk-startents | Ts PhotosHandlerStack.ts × | Image: PhotosHandlerStack.ts | PhotosHandlerStack.ts | PhotosHandlerStack.ts | PhotosHandlerStack | Photos
```

To use shared data, we no longer need line 11 above

```
TS PhotosHandlerStack.ts 1 •
Q
            import { Code, Function as LambdaFunction, Runtime} from 'aws-cdk-lib/aws-lambda';
       6
7
            export class PhotosHandlerStack extends cdk.Stack {
品
                                                                     interface StackProps
               constructor(scope: Construct, id: string, props?: cdk.StaekProps) {
                   super(scope, id, props);
<u>_</u>
                       runtime: Runtime.NODEJS 16 X,
                       handler: 'index.handler',
                    TS PhotosHandlerStack.ts 1 •
     lib > TS PhotosHandlerStack.ts > ♥ PhotosHandlerStackProps
Q
           import { Construct } from "constructs";
            import * as cdk from 'aws-cdk-lib';
go
            import { Code, Function as LambdaFunction, Runtime} from 'aws-cdk-lib/aws-lambda';
            interface PhotosHandlerStackProps extends cdk.StackProps {
8
constructor(scope: Construct, id: string, props?: cdk.StackProps) {
                   super(scope, id, props);
       14
                   new LambdaFunction(this, 'PhotosHandler', {
     TS cdk-starter.ts 1
                      TS PhotosHandlerStack.ts 1
                                                                                                            III ...
     Q
            interface PhotosHandlerStackProps extends cdk.StackProps {
             targetBucketArn: string
       9
C<sub>ff</sub>
            export class PhotosHandlerStack extends cdk.Stack {
               constructor(scope: Construct, id: string, props: PhotosHandlerStackProps) {
R
                   super(scope, id, props);
runtime: Runtime.NODEJS 16 X,
                       handler: 'index.handler',
                       code: Code.fromInline()
```

```
ზე Ш ...
      TS cdk-starter.ts 1
                           TS PhotosHandlerStack.ts M X
       lib > TS PhotosHandlerStack.ts > ♣ PhotosHandlerStack > ♦ constructor > 戶 environment > 戶 TARGET_BUCKET 6 | Intertace PhotosHandlerStackProps extends cdk.StackProps {
                targetBucketArn: string
              export class PhotosHandlerStack extends cdk.Stack {
                   constructor(scope: Construct, id: string, prpps: PhotosHandlerStackProps) {
        12
                       super(scope, id, props);
8
                           runtime: Runtime.NODEJS 16 X,
handler: 'index.handler',
                            code: Code.fromInline(
                            exports.handler = async (event) => {
                              console.log("hello!zxzxc: " + process.env.TARGET_BUCKET)
                            environment: {
                                 TARGET_BUCKET: props.targetBucketArn,
```

This is how we can retrieve the information from the stack properties as shared data instead

We now need to change the stack being initialized

We now need to export the targetBucketArn value from the PhotoStack object that will create it

```
TS cdk-starter.ts 1 • TS PhotosHandlerStack.ts M
                                                                                                                   □ ...
            import '.source-map-support/register';
import * as cdk from 'aws-cdk-lib';
            import { PhotosStack } from '../lib/PhotosStack';
            import { PhotosHandlerStack } from '../lib/PhotosHandlerStack';
            new PhotosStack(app, 'PhotosStack');
            new (alias) new PhotosStack(scope: Construct, id: string, props?:
                 cdk.StackProps | undefined): PhotosStack
import PhotosStack
                  constructor(scope: Construct, id: string, props?: cdk.StackProps) {
                          super(scope, id, props);
                          this.initializeSuffix();
                          const photosBucket = new Bucket(this, 'PhotosBucket2', {
                              bucketName: `photos-bucket-${this.stackSuffix}
```

```
Ⅲ …
      TS cdk-starter.ts 1 • TS PhotosStack.ts X TS PhotosHandlerStack.ts M
      lib > TS PhotosStack.ts > ♦ PhotosStack > ♦ constructor
                 constructor(scope: Construct, id: string, props?: cdk.StackProps) {
                     super(scope, id, props);
                     this.initializeSuffix();
                         bucketName: `photos-bucket-${this.stackSuffix}
8
       18
                     new CfnOutput(this, 'photos-bucket', {
                         value:photosBucket.bucketArn,
exportName: 'photos-bucket'
                 private initializeSuffix(){
                     const shortStackId = Fn.select(2, Fn.split('/', this.stackId))
                     this.stackSuffix = Fn.select(4, Fn.split('-', shortStackId))
```

```
TS cdk-starter.ts 1 ● TS PhotosStack.ts X TS PhotosHandlerStack.ts M
       |ib > TS | PhotosStack.ts > ℃ PhotosStack > ۞ constructor

| import { | bucket | tinbucket | from "aws-cak-lip/aws-so";

| import { | CfnOutput | Fn | from "aws-cdk-lib";
Q
B
                     private stackSuffix: string;
₽
                     constructor(scope: Construct, id: string, props?: cdk.StackProps) {
8
                          super(scope, id, props);
                          this.initializeSuffix();
<u>_</u>@
                               bucketName: `photos-bucket-${this.stackSuffix}`
         18
19
                          new CfnOutput(this, 'photos-bucket', {
    value:photosBucket.bucketArn,
                               exportName: 'photos-bucket'
(2)
                     private initializeSuffix(){
                          const shortStackId = Fn.select(2, Fn.split('/', this.stackId))
                          this.stackSuffix = Fn.select(4, Fn.split('-', shortStackId))
£
```

```
TS cdk-starter.ts 1 ● TS PhotosStack.ts ● TS PhotosHandlerStack.ts M
                                                                                                                            Ⅲ …
      lib > TS PhotosStack.ts > 😂 PhotosStack > 🔑 stackSuffix
             import { bucket, crnsucket } rrom "aws-cak-lib/aws-ss";
import { CfnOutput, Fn } from "aws-cdk-lib";
Q
             export class PhotosStack extends cdk.Stack {
                  private stackSuffix: string; I
        10
8
                  constructor(scope: Construct, id: string, props?: cdk.StackProps) {
                      super(scope, id, props);
this.initializeSuffix();
                           bucketName: `photos-bucket-${this.stackSuffix}
                  private initializeSuffix(){
                      const shortStackId = Fn.select(2, Fn.split('/', this.stackId))
                      this.stackSuffix = Fn.select(4, Fn.split('-', shortStackId))
(8)
```

```
TS cdk-starter.ts 1 ● TS PhotosStack.ts ● TS PhotosHandlerStack.ts M
     Q
ç,
           export class PhotosStack extends cdk.Stack {
               private stackSuffix: string;
$
       9
              public readonly photosBucketArn string;
              constructor(scope: Construct, id: string, props?: cdk.StackProps) {
8
                  super(scope, id, props);
this.initializeSuffix();
                     bucketName: `photos-bucket-${this.stackSuffix}
              private initializeSuffix(){
                  const shortStackId = Fn.select(2, Fn.split('/', this.stackId))
                  this.stackSuffix = Fn.select(4, Fn.split('-', shortStackId))
(8)
```

```
TS cdk-starter.ts 1 • TS PhotosStack.ts M X TS PhotosHandlerStack.ts M
                                                                                                                         th II ...
      lib > TS PhotosStack.ts > ♦ PhotosStack > ♦ constructor
             import { bucket, ctnbucket } trom "aws-cok-lib/aws-ss";
import { CfnOutput, Fn } from "aws-cdk-lib";
0
             export class PhotosStack extends cdk.Stack {
                  private stackSuffix: Istring;
         9
                  public readonly photosBucketArn: string;
                  constructor(scope: Construct, id: string, props?: cdk.StackProps) {
                      super(scope, id, props);
this.initializeSuffix();
                          bucketName: `photos-bucket-${this.stackSuffix}
              0
                      this.photosBucketArn = photosBucket.bucketArn;
                  private initializeSuffix(){
                      const shortStackId = Fn.select(2, Fn.split('/', this.stackId))
                      this.stackSuffix = Fn.select(4, Fn.split('-', shortStackId))
(2)
```

We now have the information available; we need to pass it to the other stack next.

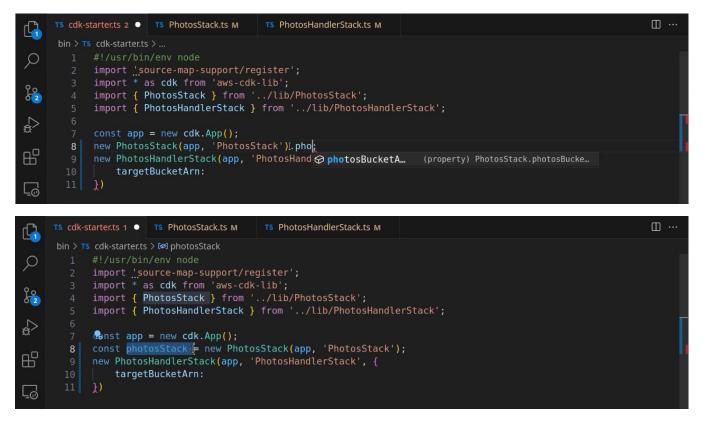
```
Ts cdk-starter.ts 1 ● Ts PhotosStack.ts M

bin > Ts cdk-starter.ts > ...

1 #!/usr/bin/env node
2 import '.source-map-support/register';
3 import * as cdk from 'aws-cdk-lib';
4 import { PhotosStack } from '../lib/PhotosStack';
5 import { PhotosHandlerStack } from '../lib/PhotosHandlerStack';

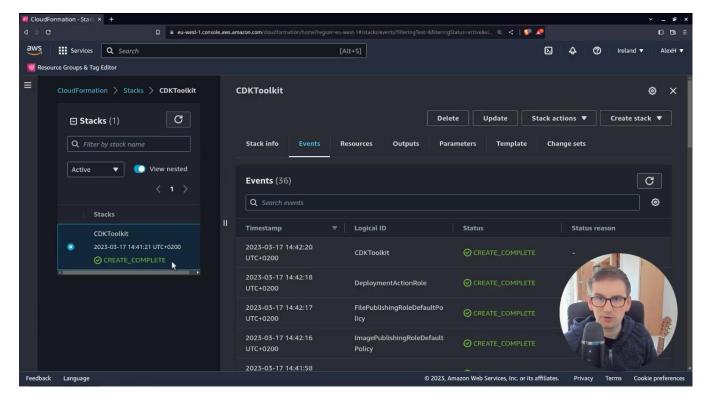
6
7 const app = new cdk.App();
8 new PhotosStack(app, 'PhotosStack');
10 | targetBucketArn:
11 })

11 })
```

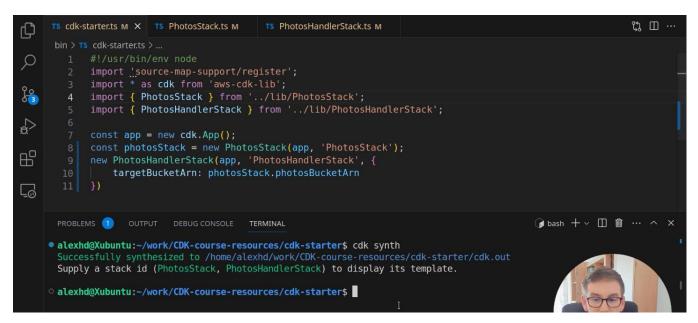


We are creating this reference so that we use it in the other stack

This is what we need to do. Let's test to see if it worked.



We need to delete the other stacks so that we can test our new code.



We can call the **cdk synth** command to check that our code is okay and will work.

```
th 🗆 ...
     TS cdk-starter.ts M X TS PhotosStack.ts M
                                              TS PhotosHandlerStack.ts M
Q
            import '.source-map-support/register';
import * as cdk from 'aws-cdk-lib';
            import { PhotosStack } from '../lib/PhotosStack';
             import { PhotosHandlerStack } from '../lib/PhotosHandlerStack';
             const app = new cdk.App();
             const photosStack = new PhotosStack(app, 'PhotosStack');
             new PhotosHandlerStack(app, 'PhotosHandlerStack', {
                 targetBucketArn: photosStack.photosBucketArn
🍞 bash 🕂 🗸 🖽 🛍 … 🔨 🗙
       PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL
     • alexhd@Xubuntu:~/work/CDK-course-resources/cdk-starter$ cdk synth
       Supply a stack id (PhotosStack, PhotosHandlerStack) to display its template.
     alexhd@Xubuntu:~/work/CDK-course-resources/cdk-starter$ cdk deploy --all
```

We then use cdk deploy - -all command

