



# ColdFusion Summit 2016

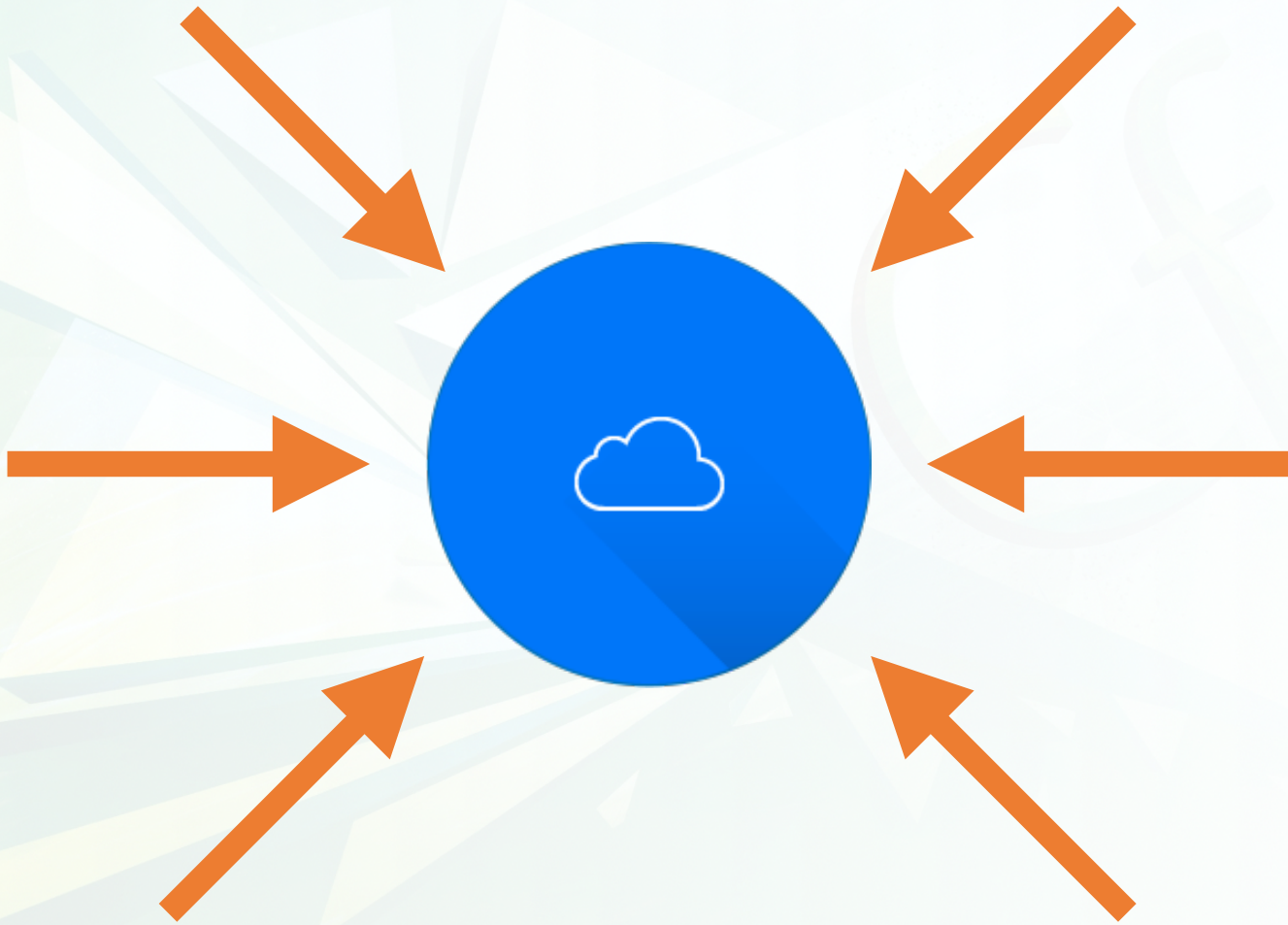


# Accessible Video Anywhere with ColdFusion and AWS

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Forces

Caveat

Overview

AWS Services

v2

v3

Problems

Wins







# Section 504

# Section 508

# Title III

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# NETFLIX

# Southwest<sup>®</sup>

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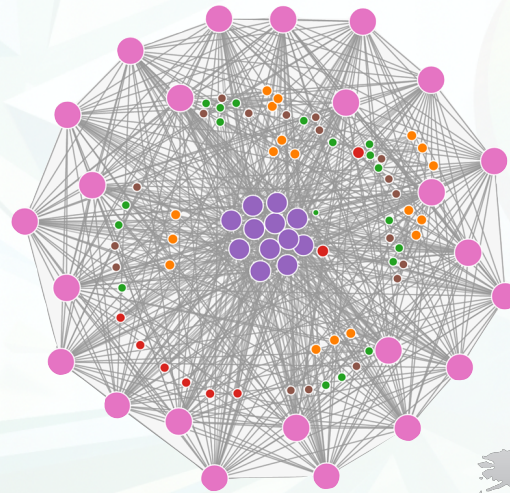
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# amazon web services™



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# Architecture

!code

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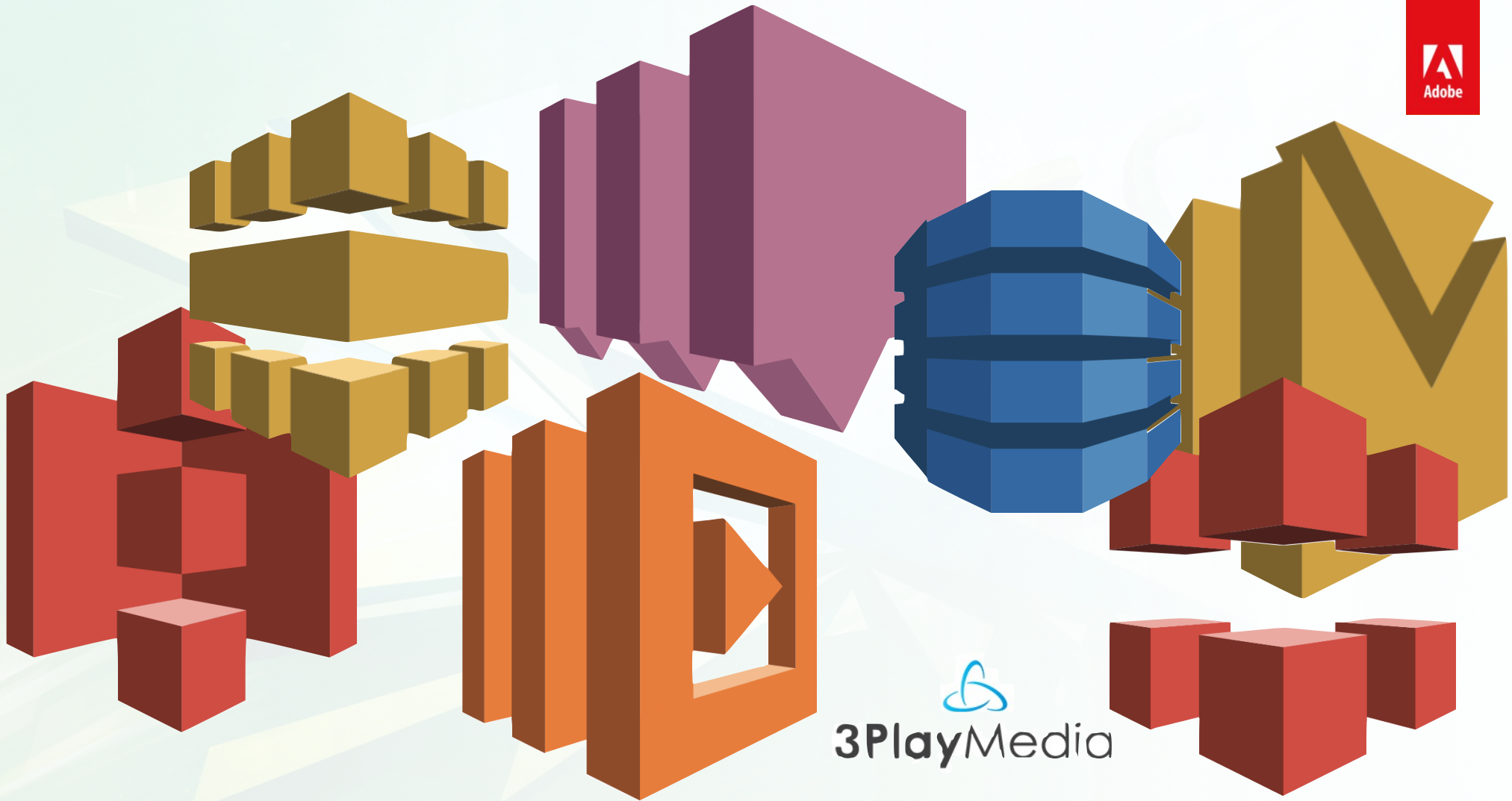
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3PlayMedia

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So...

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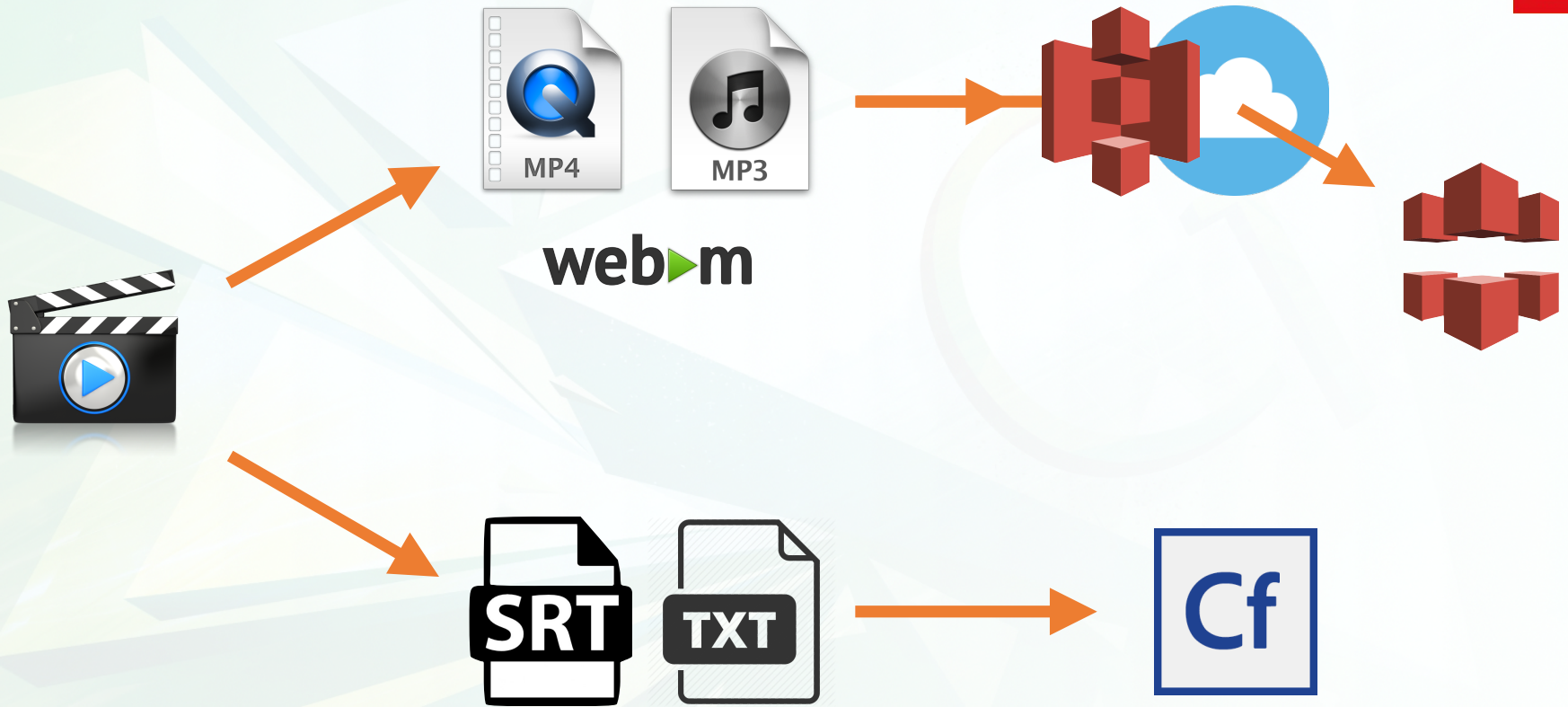
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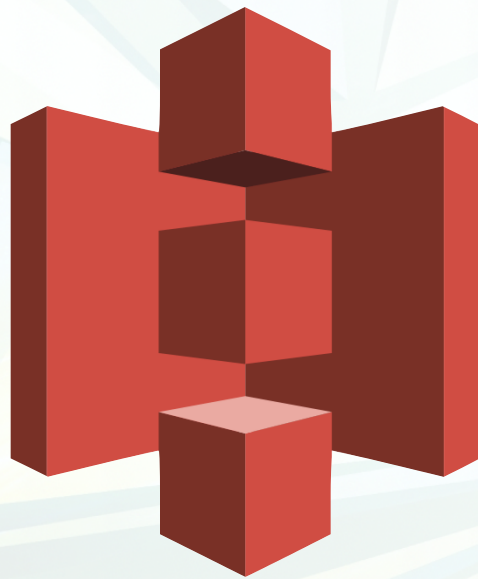
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S3

# Simple Storage Service

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```
<cffile action="read"  
file="s3://somebucket/somefile.txt"  
variable="fileData" />
```

```
<cfdirectory action="list"  
directory="s3://somebucket/someDirectory" />
```





S3

# Simple Storage Service

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## CloudFront

<http://myDistribution.cloudFront.net/myFile/inS3.mp4>

Protect files with signatures or by geographic region

\$50/month per TB of traffic

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# We built nothing.

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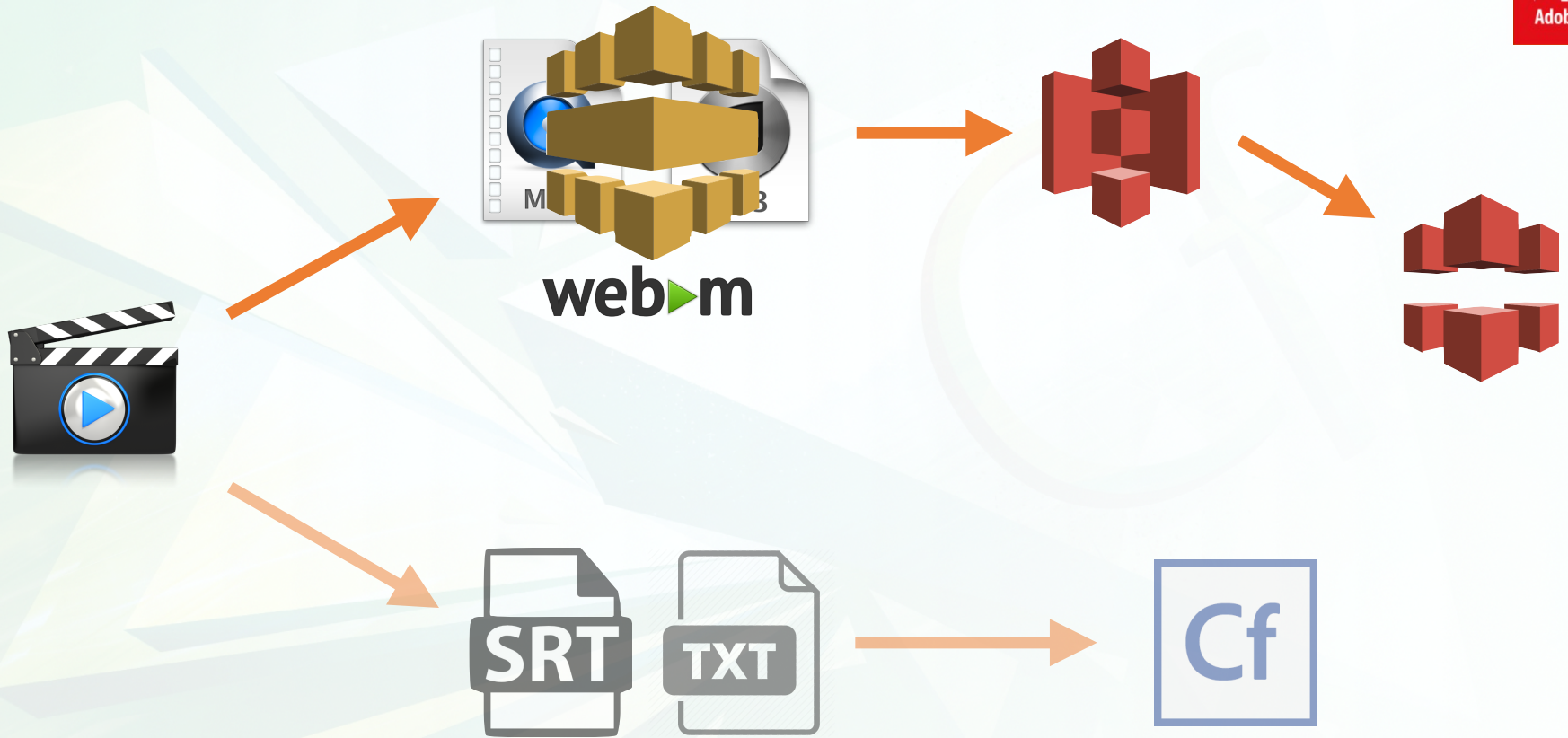
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## Elastic Transcoder

Massively parallel A/V transcoding engine

Cheaper than most desktop transcoding solutions

Repeatable jobs set up through a web form ...or...

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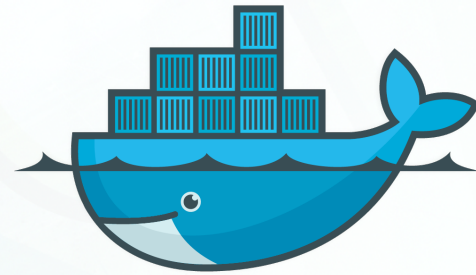
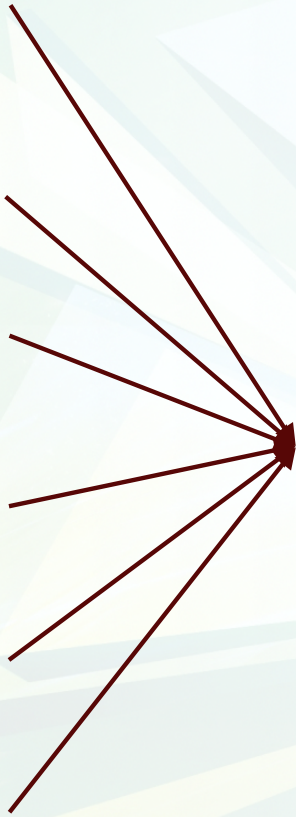
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= Serverless computing

Lambda





<1.5 GB RAM  
<5 minutes

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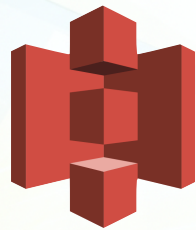
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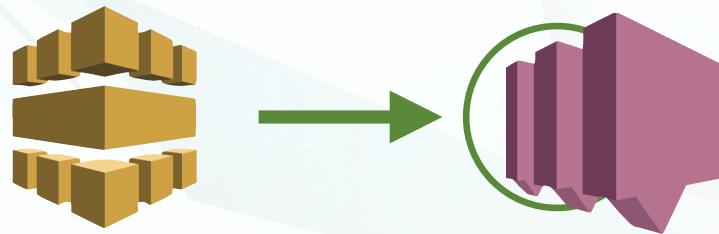
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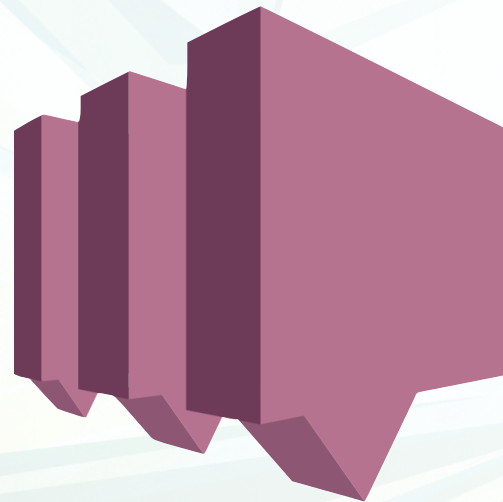
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= Pub/Sub

## Simple Notification Service

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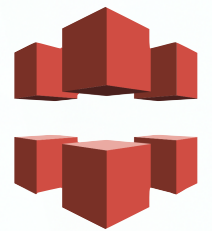
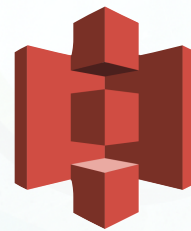
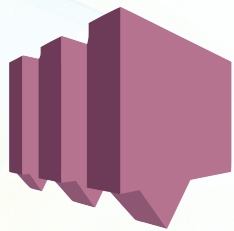
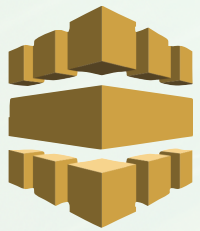
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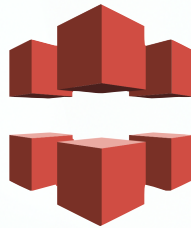
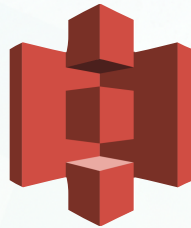
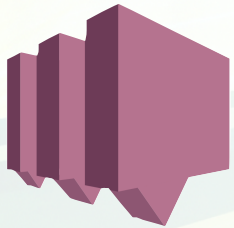
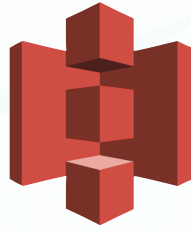
Wins



v1



Cf



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Each S3 bucket can only have one Lambda listener

Track changes across multiple functions

ET jobs run asynchronously, and each gets its own ID

**How do we know things are done?**

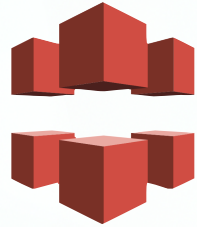
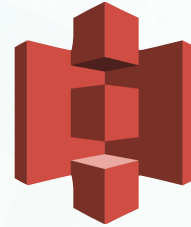
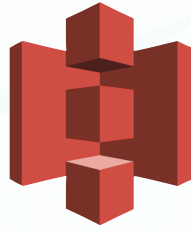




v1



Cf



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# Persistence

Forces

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**DynamoDB**

Crazy scalable NoSQL document datastore

Pay for reads/writes per second

Flexible data model as we figured what we needed

Forces

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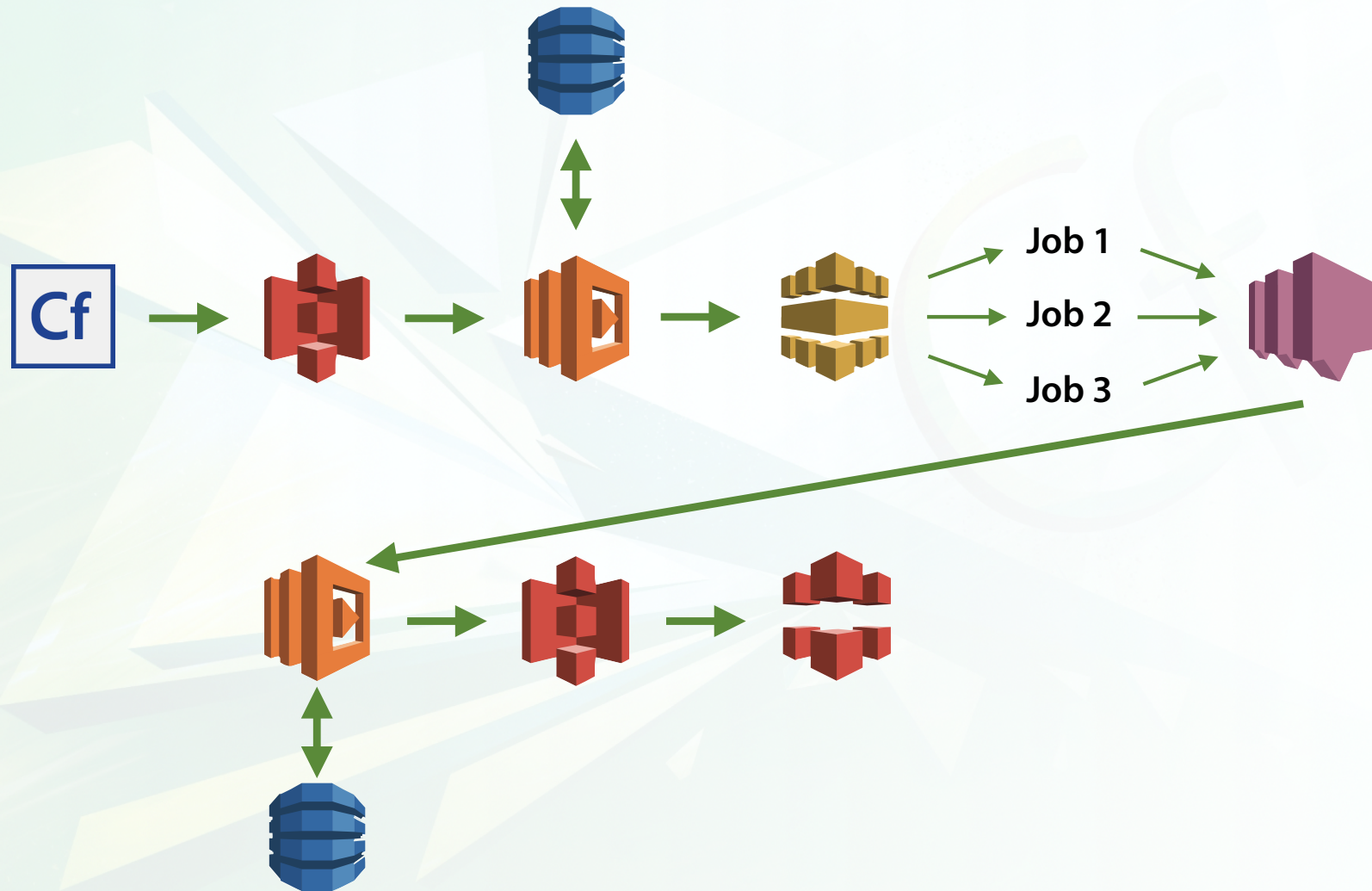
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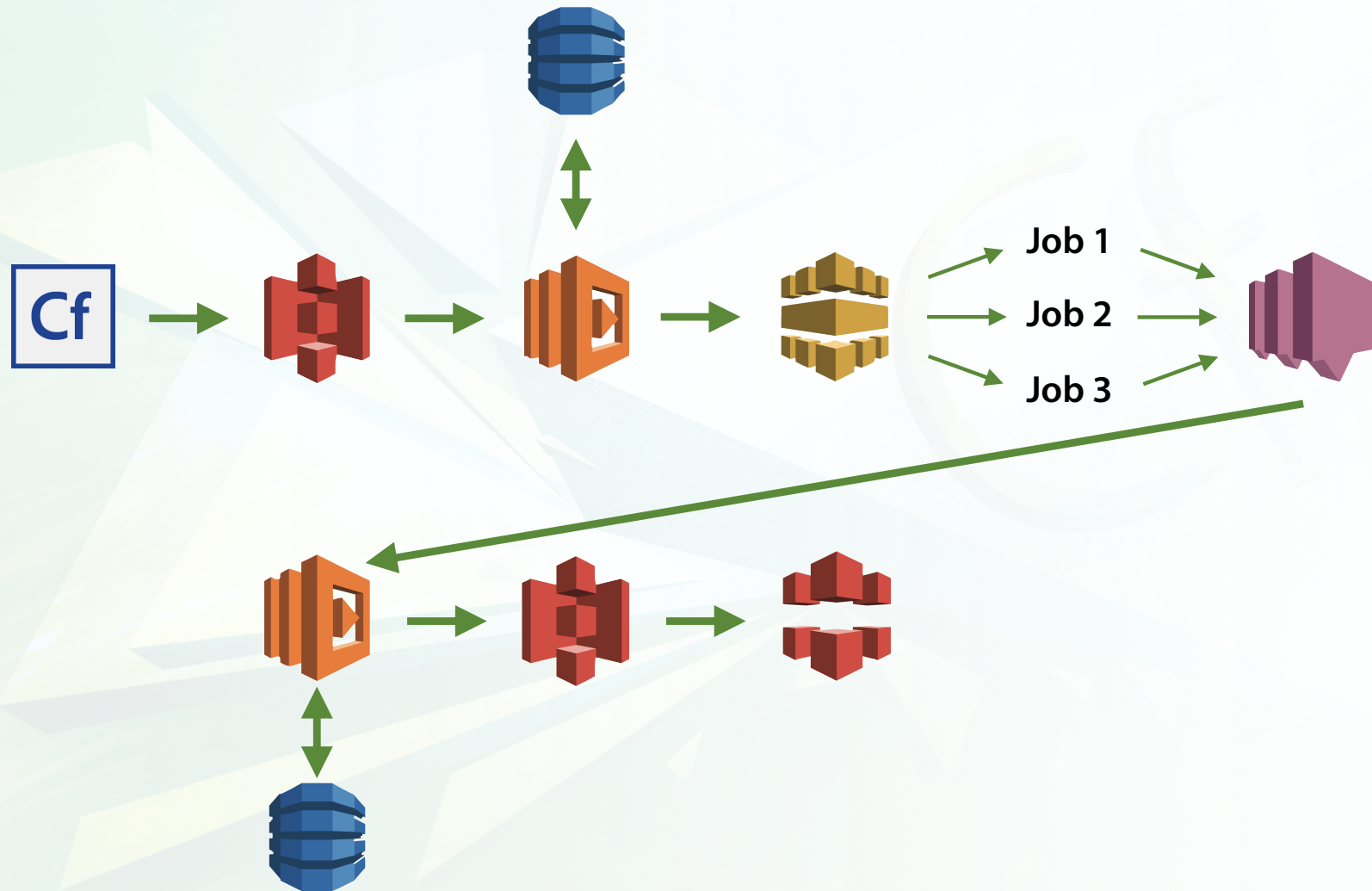
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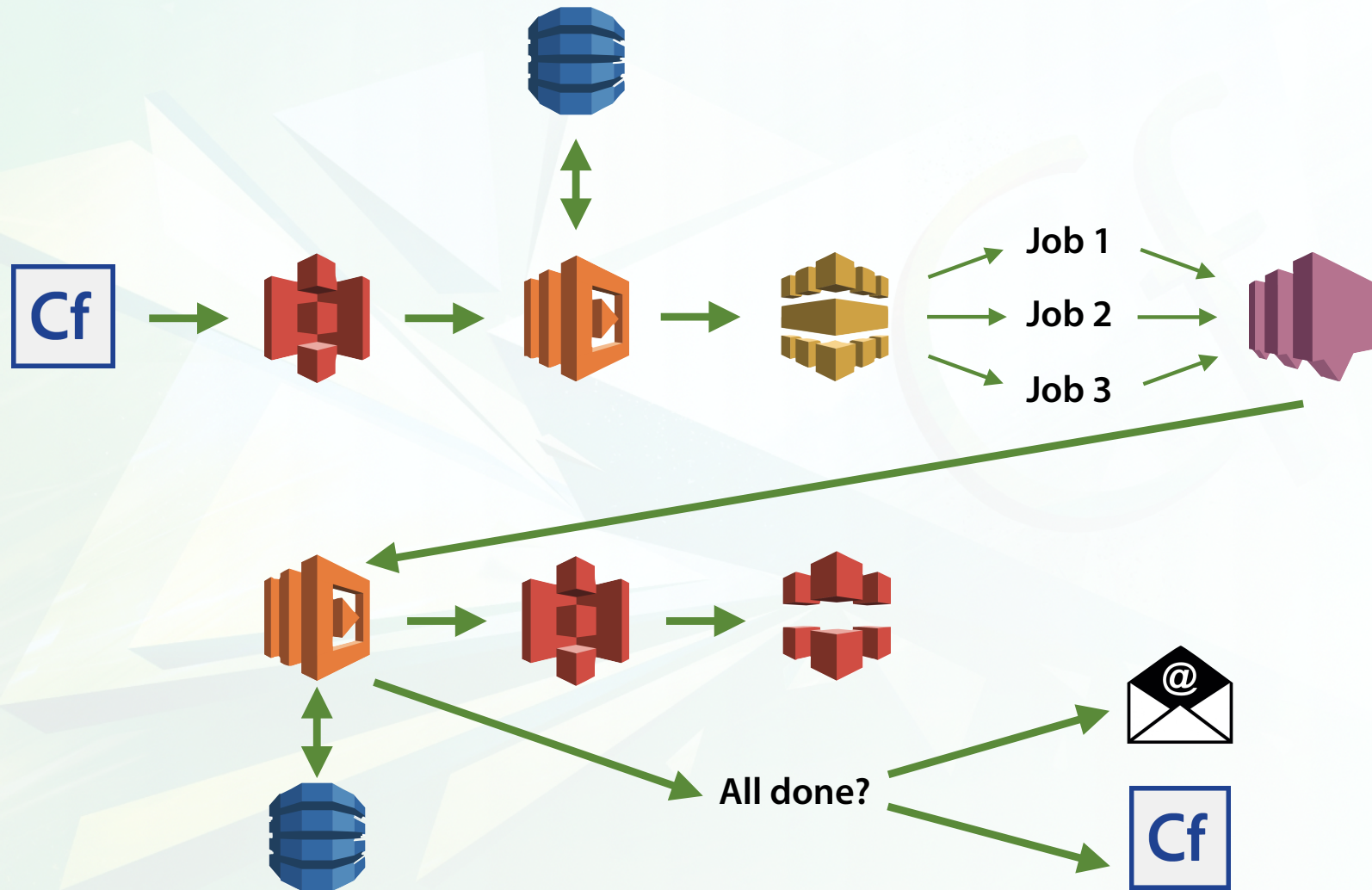
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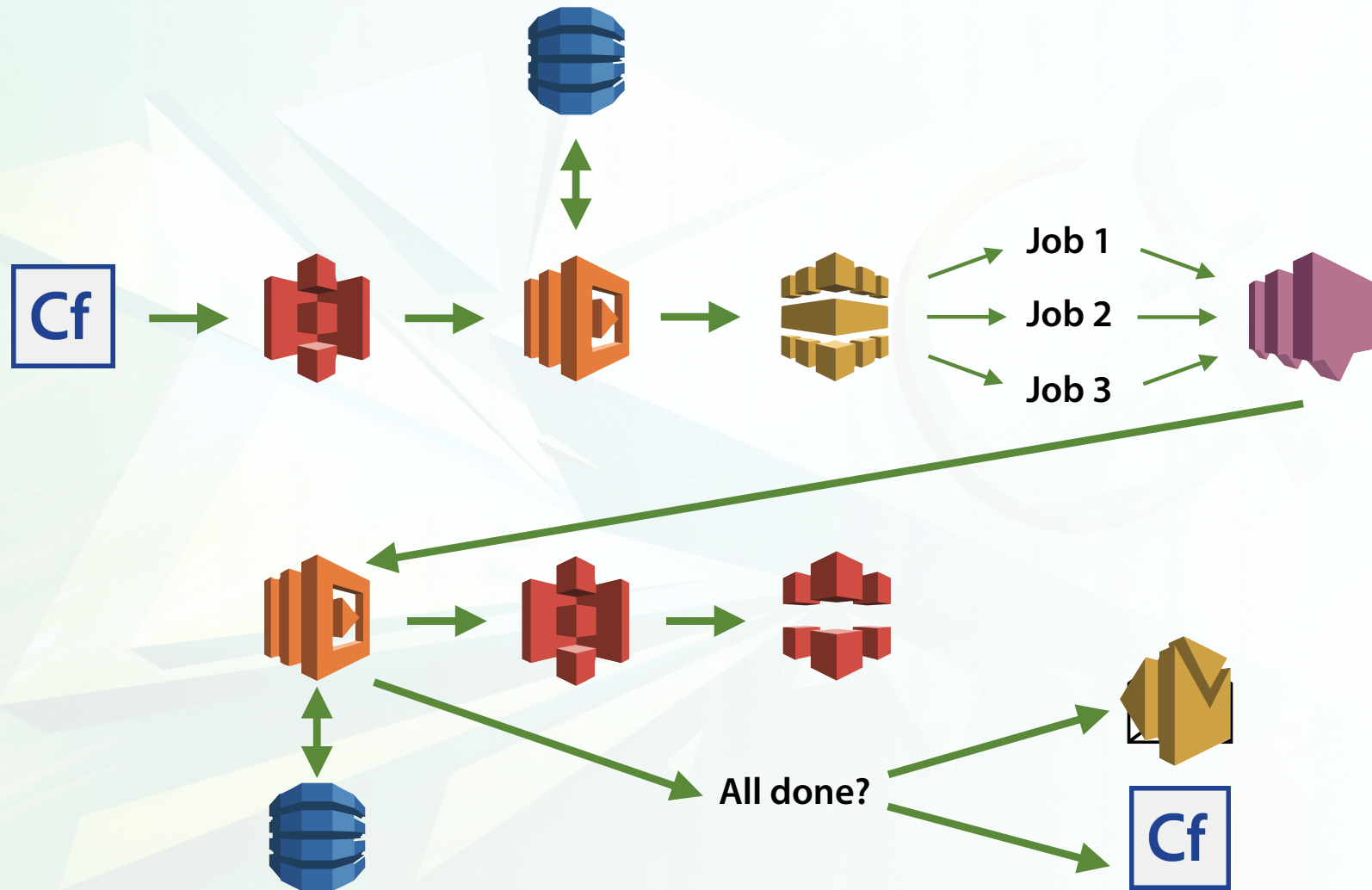
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## Simple Email Service

Massively scalable infrastructure

API for subscribe/unsub, tracks bounces

Lambda functions can handle incoming + bounce msgs

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v2



Video uploaded to **S3** input bucket



**Lambda** processes file



Info about source file is stored in **DynamoDB** by Lambda function



Lambda function fires off all needed **Elastic Transcoder** jobs



Elastic Transcoder notifies **SNS** when each job is done



**Lambda** processes incoming SNS message

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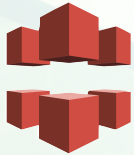
v2



Information about job is updated in **DynamoDB**



Lambda function moves transcoded file to **S3**



**CloudFront** picks up the file for global distribution



Lambda function checks to see if all related jobs are done



If yes, **SES** message is sent to appropriate team member



If yes, Lambda notifies CF-based LMS to make video available







Bulk purchase savings + variable turnaround time

Highly accurate even on technical jargon + ESL

Caption search plugins

API for job processing and tracking

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videoID^bklvies^DvleDl^AmlDmp^D6pDlsem^otherPath.mp4

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Security credential system

Users, groups, permissions, roles

Extremely fine-grained control over access

## Identity Access Management

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**CTL Utils**

ctlS3Utils:

<https://github.com/brianklaas/ctlS3Utils>

ctlCloudFrontUtils:

<https://github.com/brianklaas/ctlCloudFrontUtils>

Request signing and file property manipulation

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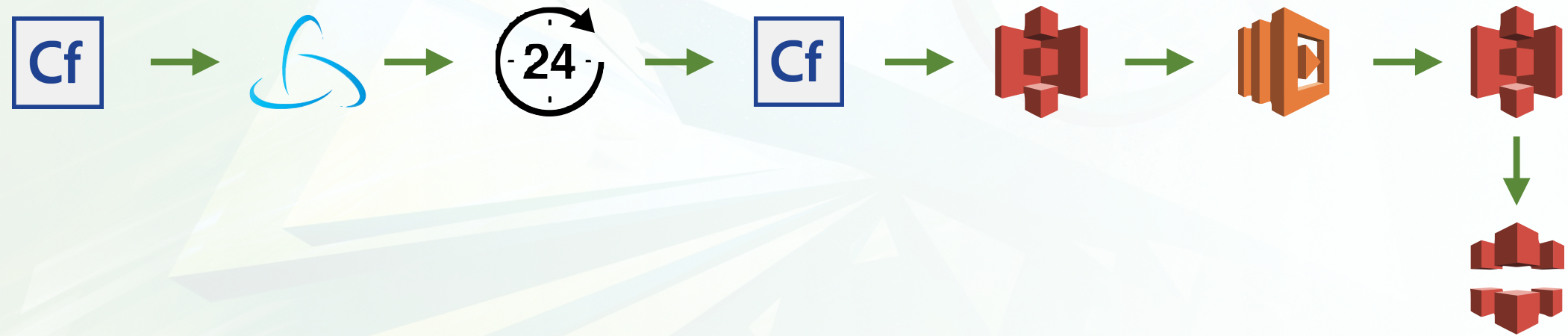
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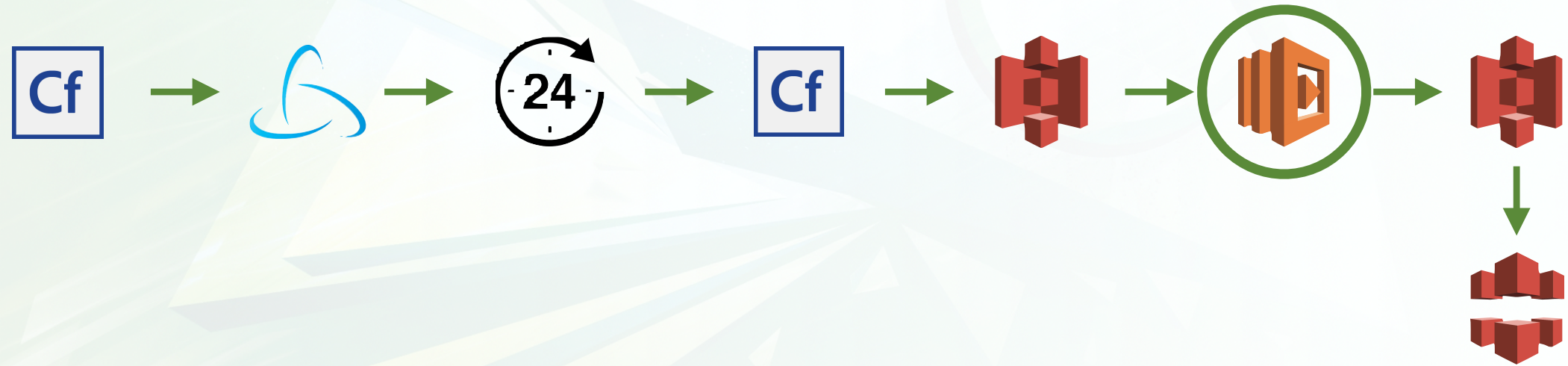


v3



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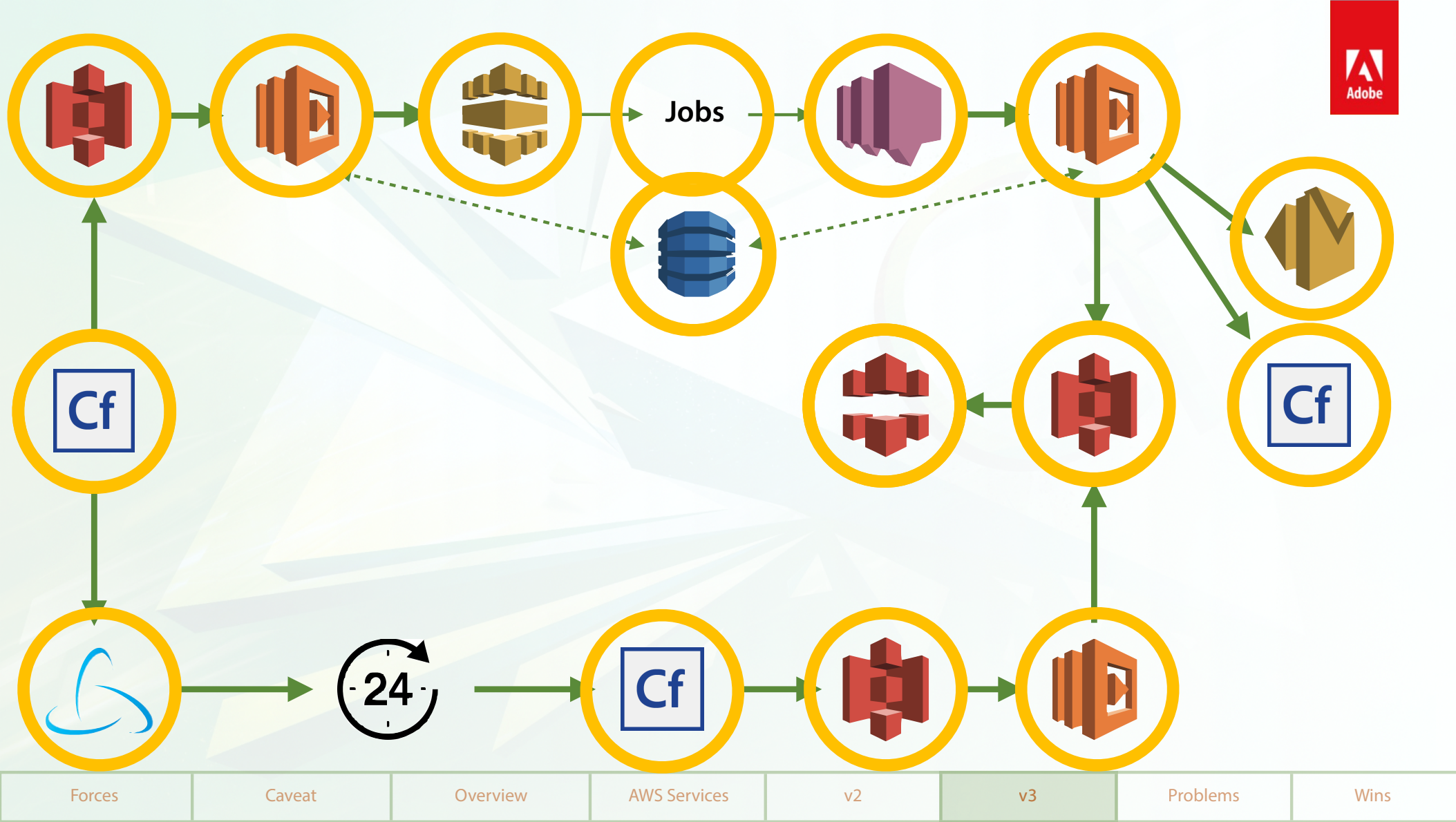
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# Problems

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# Security

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# Always https

Add the 3rd party certificate to the Java keystore



# Use custom attributes for internal validation

Forces

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# Build for idempotence

Forces

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# Network timeouts

Forces

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# Lambda function execution time limit

# Store on S3, let 3rd party API grab





# Retries

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# Backup Lambda or **Cf** functions for retries

Forces

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# Process

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# Debugging in Lambda is awful.

<https://www.concurrencylabs.com/blog/how-to-operate-aws-lambda/>





# Create request/job IDs to track across services

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# Testing Lambda functions is hard.

Good test practices are universal.





Everything fails.

# async:waterfall



# Distributed, moving pieces



# Wins!

Forces

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No servers.  
No updating.  
No admin.

Forces

Caveat

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Wins



# Fast!

Forces

Caveat

Overview

AWS Services

v2

v3

Problems

Wins





# Cheap!

Forces

Caveat

Overview

AWS Services

v2

v3

Problems

Wins



Good

Fast

Cheap



Forces

Caveat

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Wins





- + AWS Services
- + Node.js
- + Microservices

Forces

Caveat

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# Learn

Forces

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**Go Do!**



# Questions?

## Please fill out the session evaluation!

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Cf

Thank you!