

The background features a vibrant, multi-colored gradient with diagonal stripes in shades of blue, purple, orange, and yellow. A large, white, sans-serif font displays the text "AWS re:Invent". The word "AWS" is on the first line, and "re:Invent" is on the second line, with a small colon separating "re:" from "Invent".

AWS
re:Invent

D O P 2 0 4 - S

Transforming IT pros to DevOps gurus: How to secure your new tech stacks

Jason Cradit

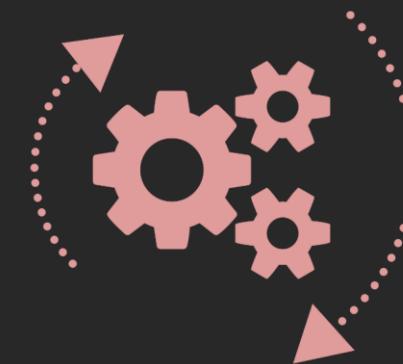
Sr. Director of Technology
Pivott

Mark Nunnikhoven

VP, Cloud Research
Trend Micro

Key takeaways

Learn how to:



Transform

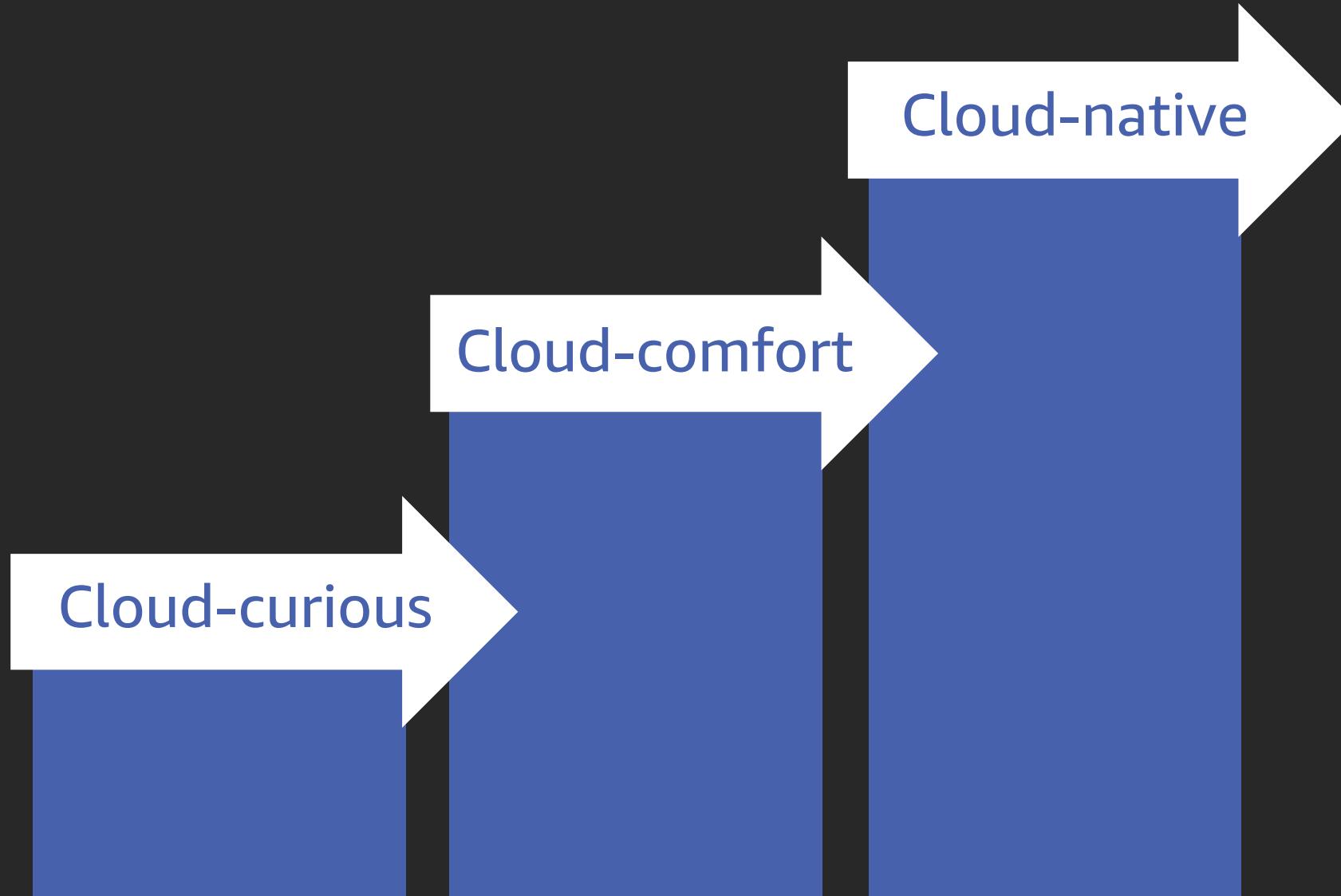


Overcome



Be prepared

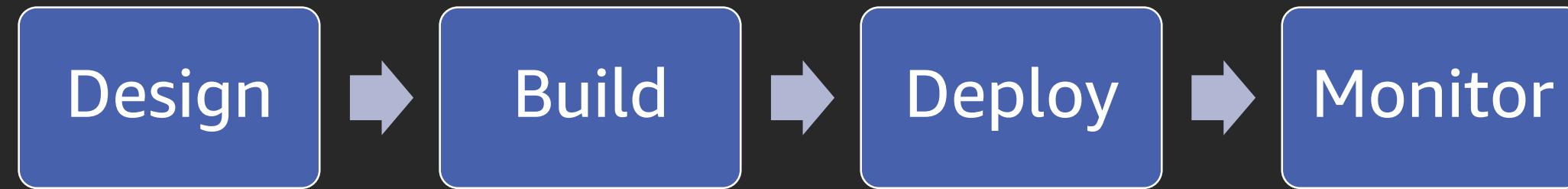
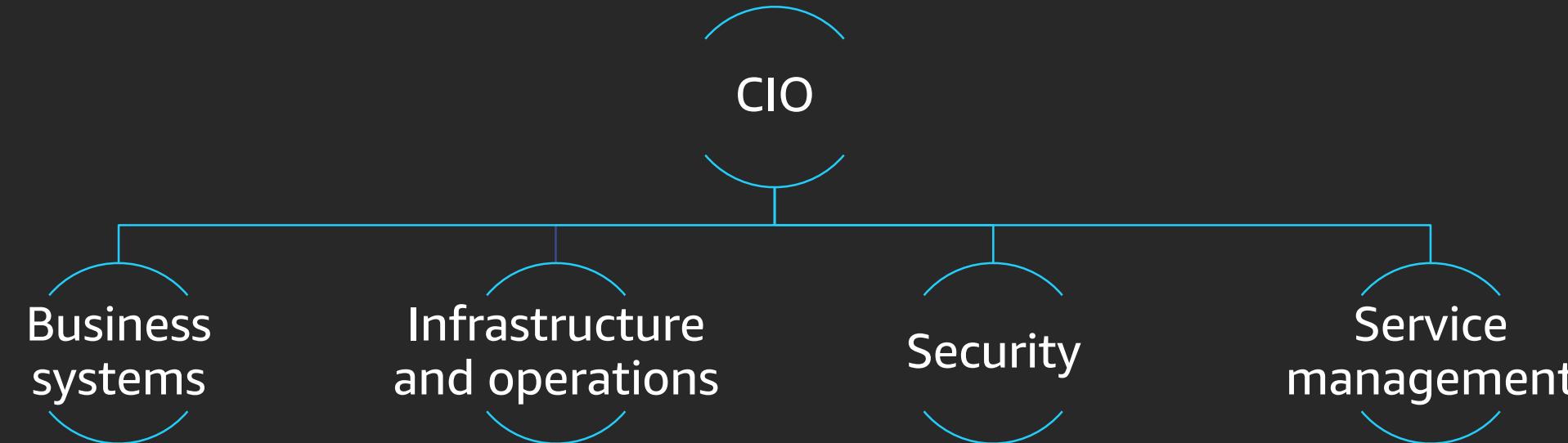
Agenda



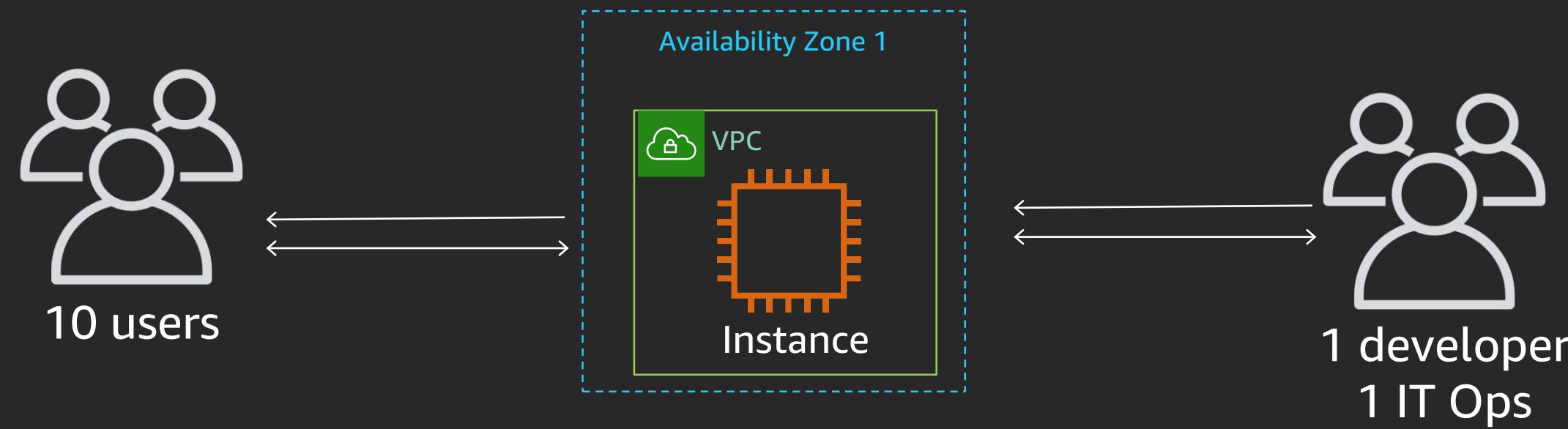
Cloud adoption lifecycle



IT engagement model



Initial architecture

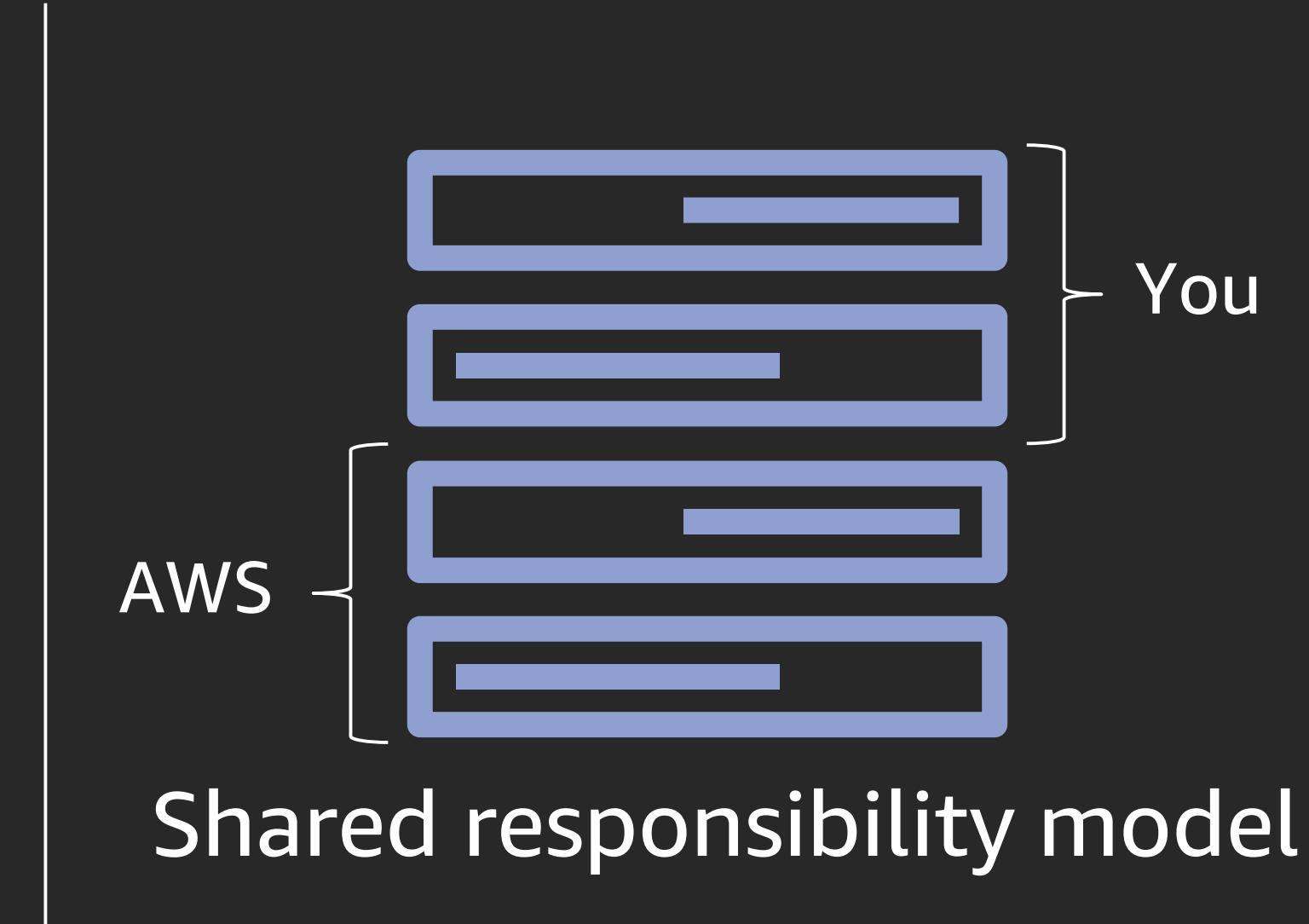


\$500

Challenge 1: Trust

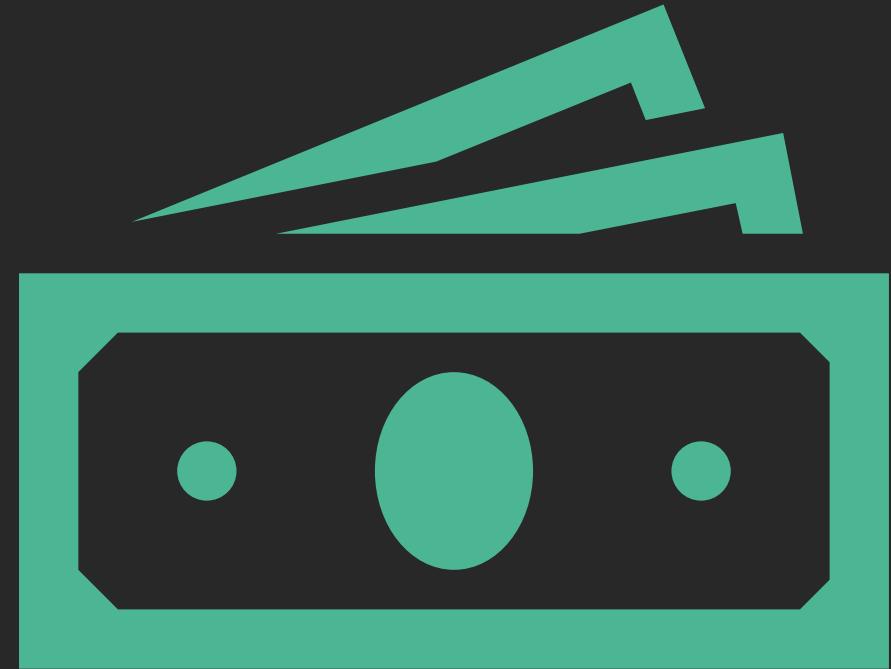


Trust



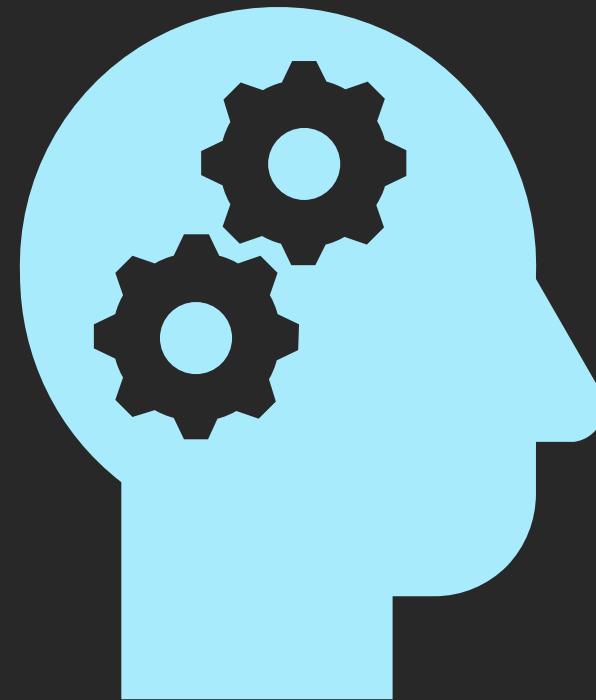
Challenge 2: Funding

Funding/allocation



Capex to opex

Challenge 3: Purpose



IT purpose

Focus on the business

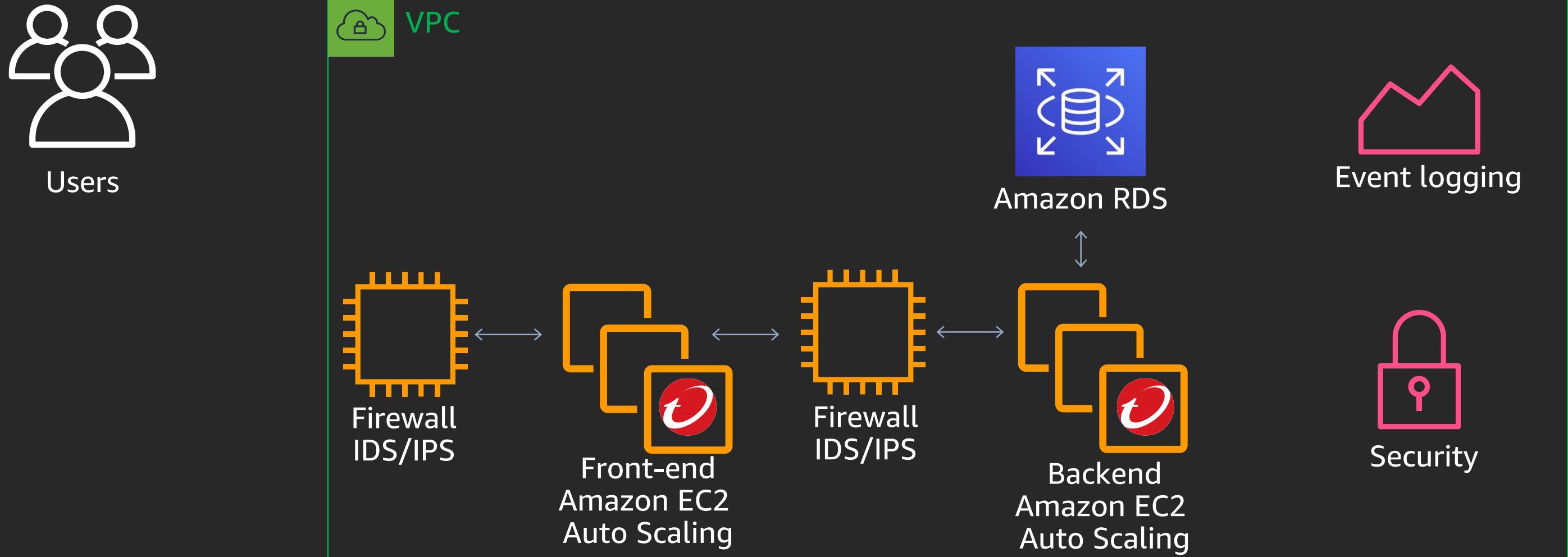


Opportunity



Speed

Cloud-comfortable architecture



Elasticity



A new home

A pioneer in groundbreaking scientific and engineering developments since 1969, TRC is a national engineering, environmental consulting, and construction management firm that provides integrated services to four primary markets

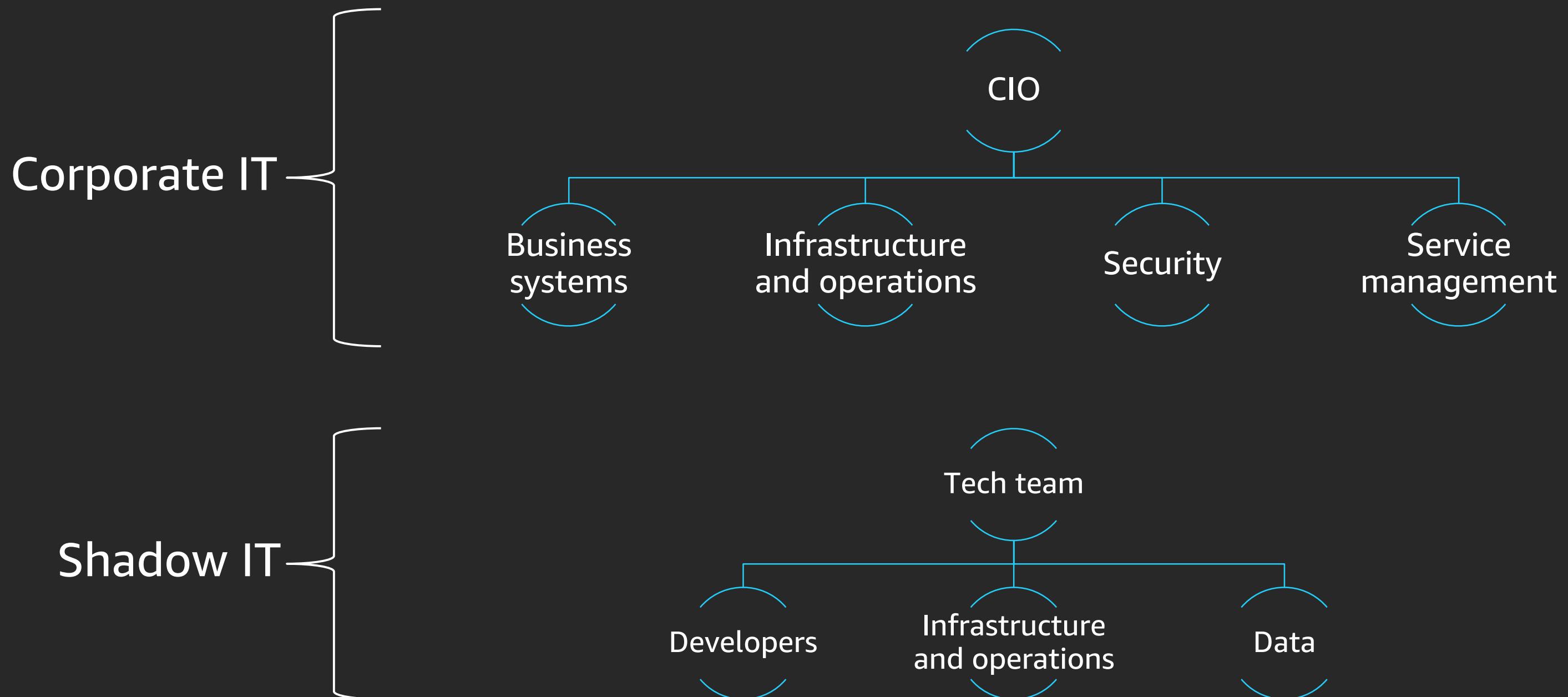
Energy | Environmental | Infrastructure | Oil and Gas



TRC
Results you can rely on

- Expert problem solvers
- 120+ US offices; London office
- 4,100+ employees
- NYSE: TRR
- www.trcsolutions.com

IT engagement model



Challenge 1: Trust



Trust



Shadow IT

Challenge 2: Code

Console



Code

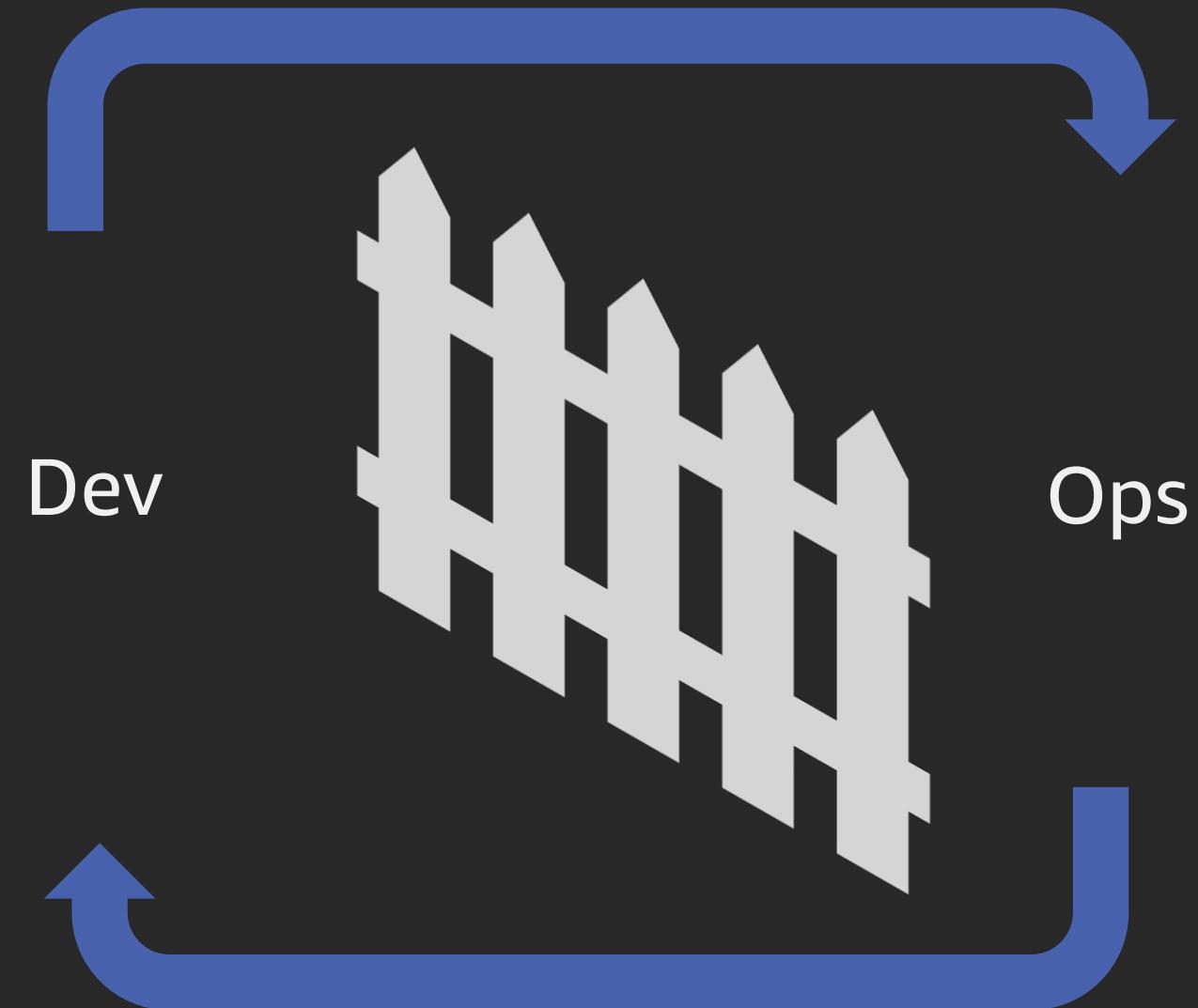


Opportunity

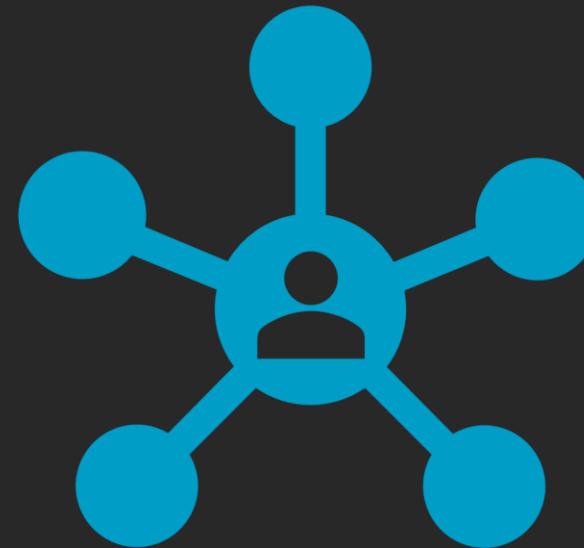


Learning new tools

Challenge 3: Fence throwing

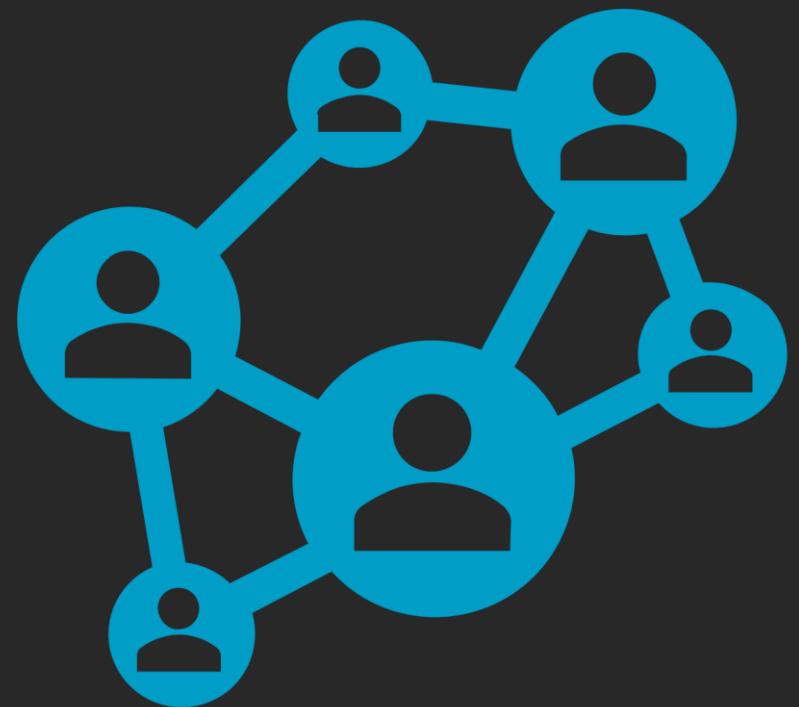


Challenge 4: Sprawl

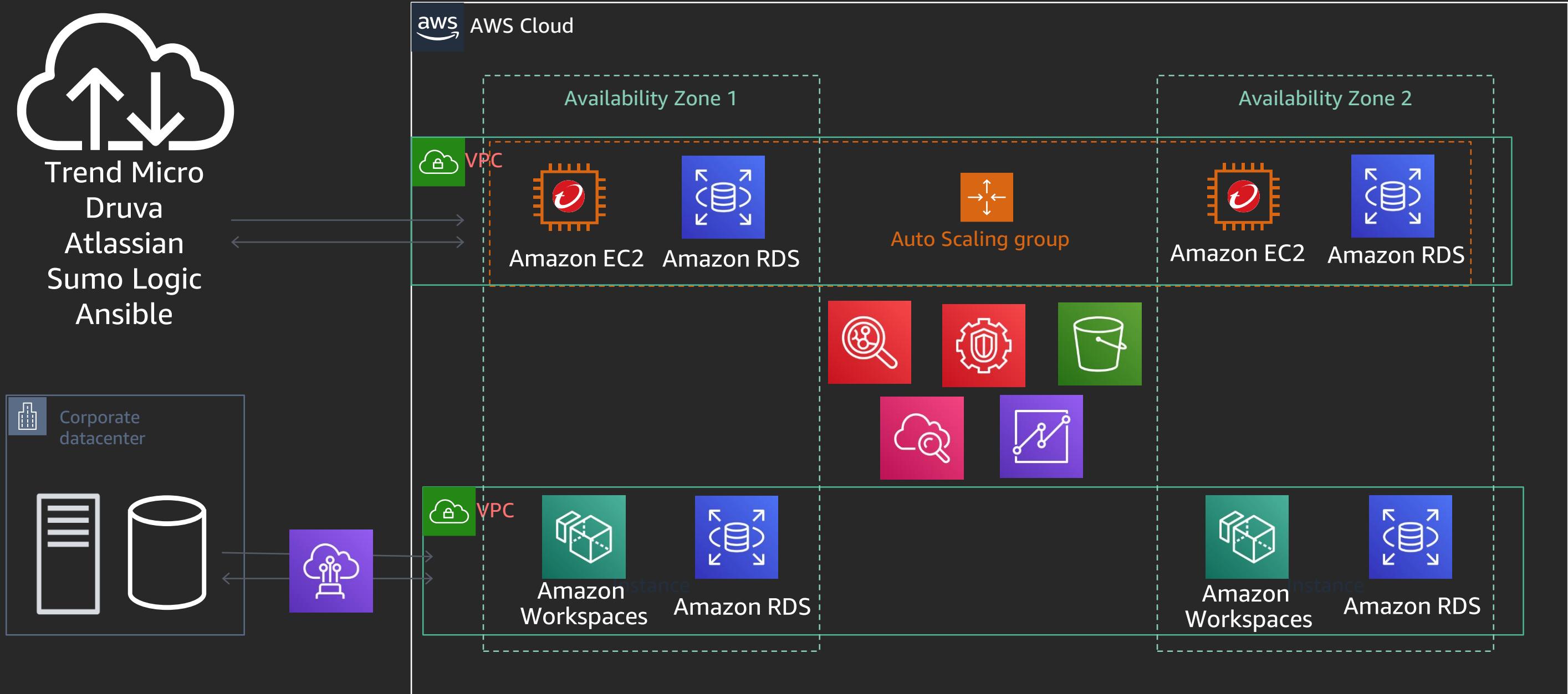


Sprawl

Visibility



Architecture



Growth – driven by technology and innovation



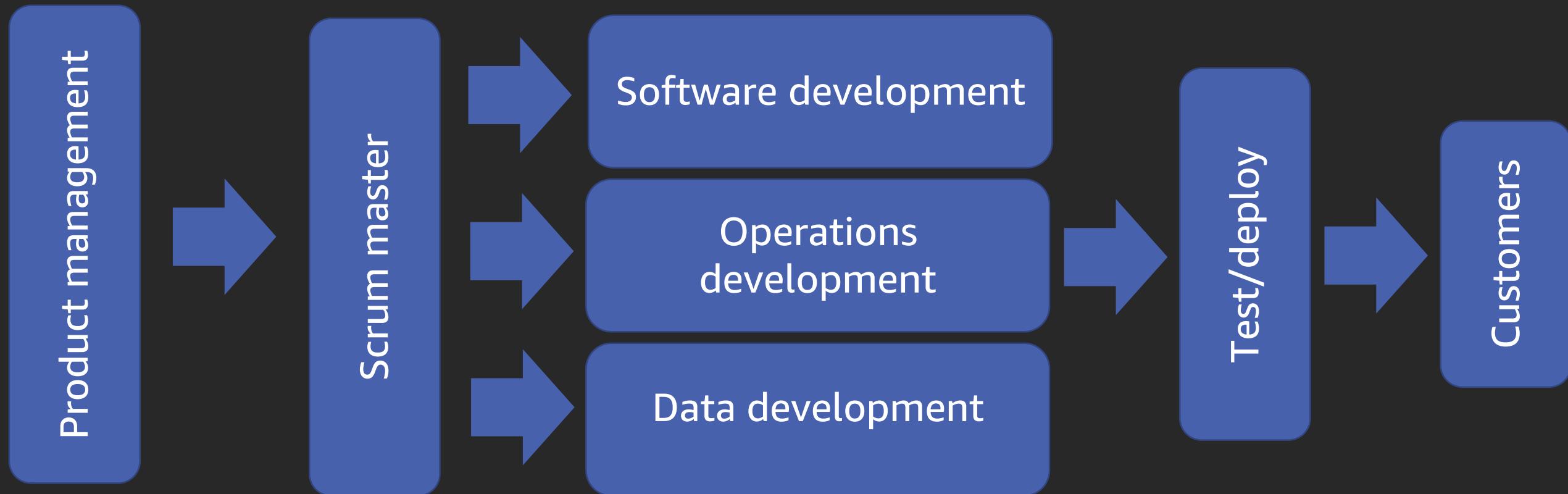
A new life



Pivvot provides location data and analytic SaaS solutions. We add situational context to asset information—empowering organizations in energy and transportation to navigate regulatory compliance and reduce operational risk.



Pivot engagement model



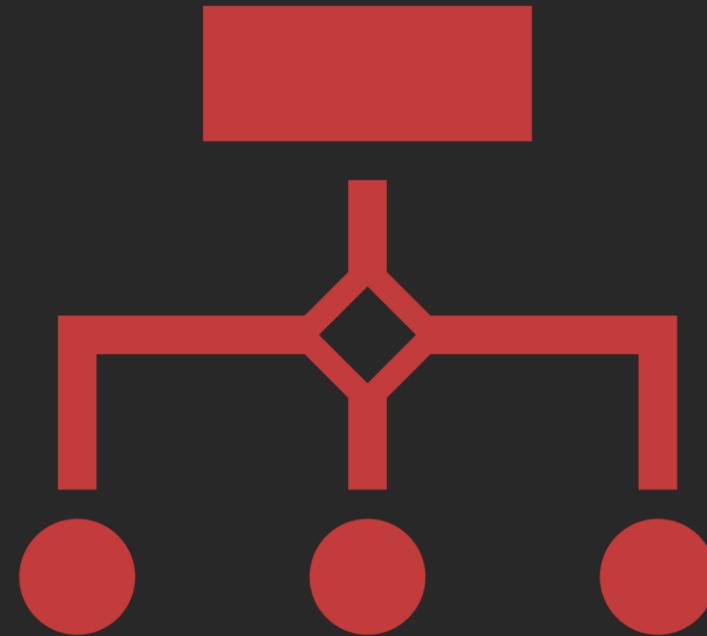
Challenge 1: Ego

Organization



VS.

Structure



Opportunity 2: Everything as code

```
FROM tomcat:9-jre8
MAINTAINER GeoNode Development Team

RUN cd /usr/local/tomcat/webapps \
    && wget --no-check-certificate --progress=bar:force:noscroll \
    https://bu any eo-solutions.it/geonode/geoserver/latest/geoserver-${GEOSERVER_VERSION}.war \
    && unzip -q geoserver-${GEOSERVER_VERSION}.war -d geoserver \
    && rm geoserver-${GEOSERVER_VERSION}.war \
    && mkdir -p ${GEOSERVER_DATA_DIR}

VOLUME ${GEOSERVER_DATA_DIR}

# set nginx base url for geoserver
RUN echo export NGINX_BASE_URL=http://${NGINX_HOST}:${NGINX_PORT}/ | \
    sed 's/tcp:\/\//([^\:]*\.\*/1/' >> /root/.bashrc

# copy the script and perform the run of scripts from entrypoint.sh
RUN mkdir -p /usr/local/tomcat/tmp
WORKDIR /usr/local/tomcat/tmp
COPY set_geoserver_auth.sh /usr/local/tomcat/tmp
COPY setup_auth.sh /usr/local/tomcat/tmp
COPY requirements.txt /usr/local/tomcat/tmp
COPY get_dockerhost_ip.py /usr/local/tomcat/tmp
COPY get_nginxhost_ip.py /usr/local/tomcat/tmp
COPY entrypoint.sh /usr/local/tomcat/tmp

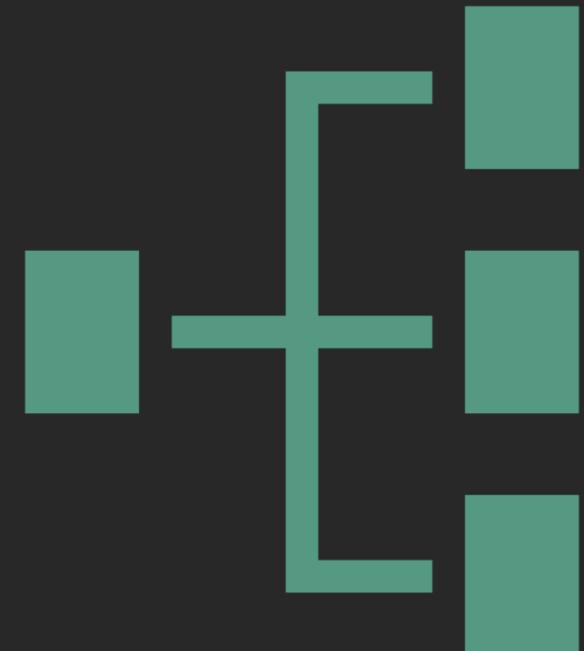
RUN apt-get update \
    && apt-get -y upgrade \
    && apt-get install -y python python-pip python-dev \
    && chmod +x /usr/local/tomcat/tmp/set_geoserver_auth.sh \
    && chmod +x /usr/local/tomcat/tmp/setup_auth.sh \
    && chmod +x /usr/local/tomcat/tmp/entrypoint.sh \
    && pip install pip==9.0.3 \
    && pip install -r requirements.txt \
    && chmod +x /usr/local/tomcat/tmp/get_dockerhost_ip.py \
    && chmod +x /usr/local/tomcat/tmp/get_nginxhost_ip.py

CMD ["/usr/local/tomcat/tmp/entrypoint.sh"]
```

```
Resources:
ControlPortAddress:
Type: AWS::EC2::EIP
Properties:
| Domain: vpc
AssociateControlPort:
Type: AWS::EC2::EIPAssociation
Properties:
| AllocationId: !GetAtt ControlPortAddress.AllocationId
| NetworkInterfaceId: !Ref controlXface
WebPortAddress:
Type: AWS::EC2::EIP
Properties:
| Domain: vpc
AssociateWebPort:
Type: AWS::EC2::EIPAssociation
Properties:
| AllocationId: !GetAtt WebPortAddress.AllocationId
| NetworkInterfaceId: !Ref webXface
SSHSecurityGroup:
Type: AWS::EC2::SecurityGroup
Properties:
| VpcId: !Ref VpcId
| GroupDescription: Enable SSH access via port 22
| SecurityGroupIngress:
- CidrIp: 0.0.0.0/0
  FromPort: 22
  IpProtocol: tcp
  ToPort: 22
WebSecurityGroup:
Type: AWS::EC2::SecurityGroup
Properties:
| VpcId: !Ref VpcId
| GroupDescription: Enable HTTP access via user defined port
| SecurityGroupIngress:
- CidrIp: 0.0.0.0/0
  FromPort: 80
  IpProtocol: tcp
  ToPort: 80
```

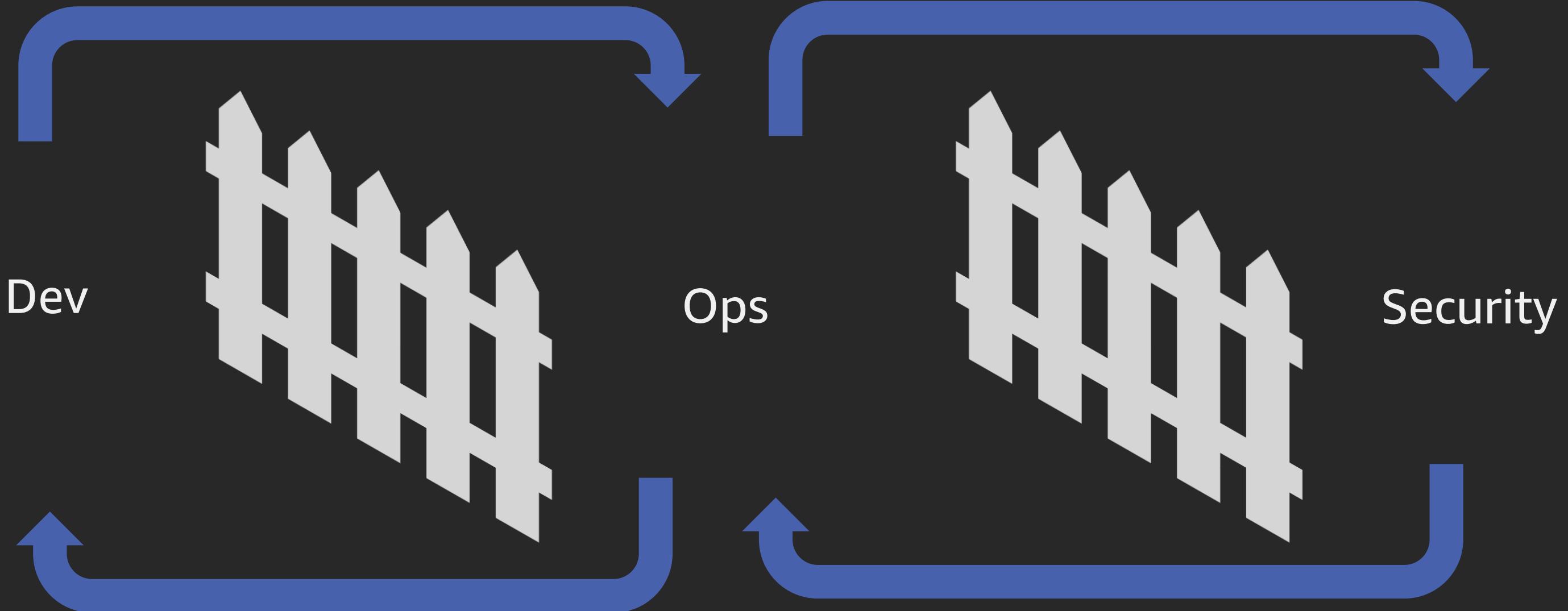
Challenge 3: Superhero support

Fixing things
RTO > 2:00

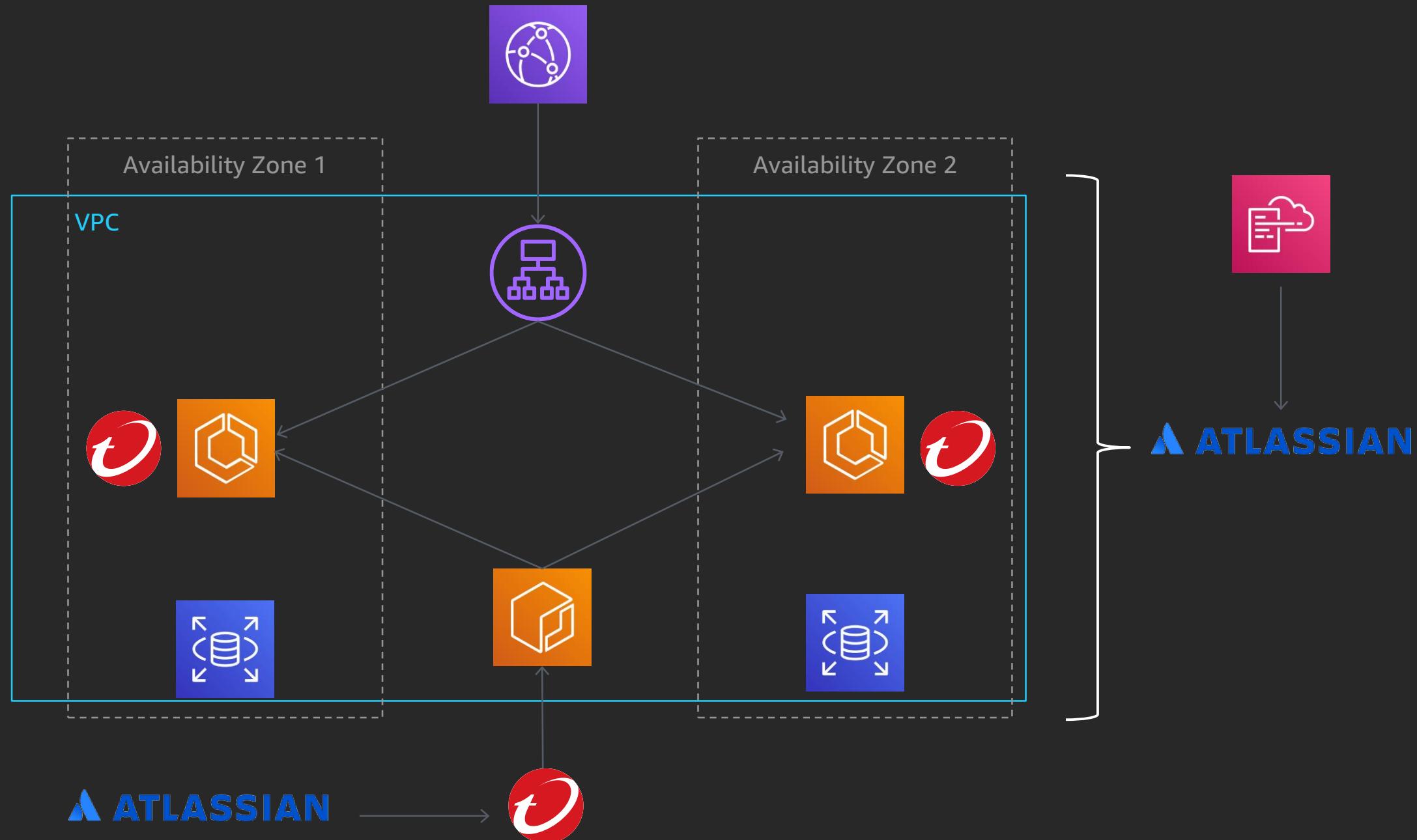


Self-healing
RTO < 20 seconds

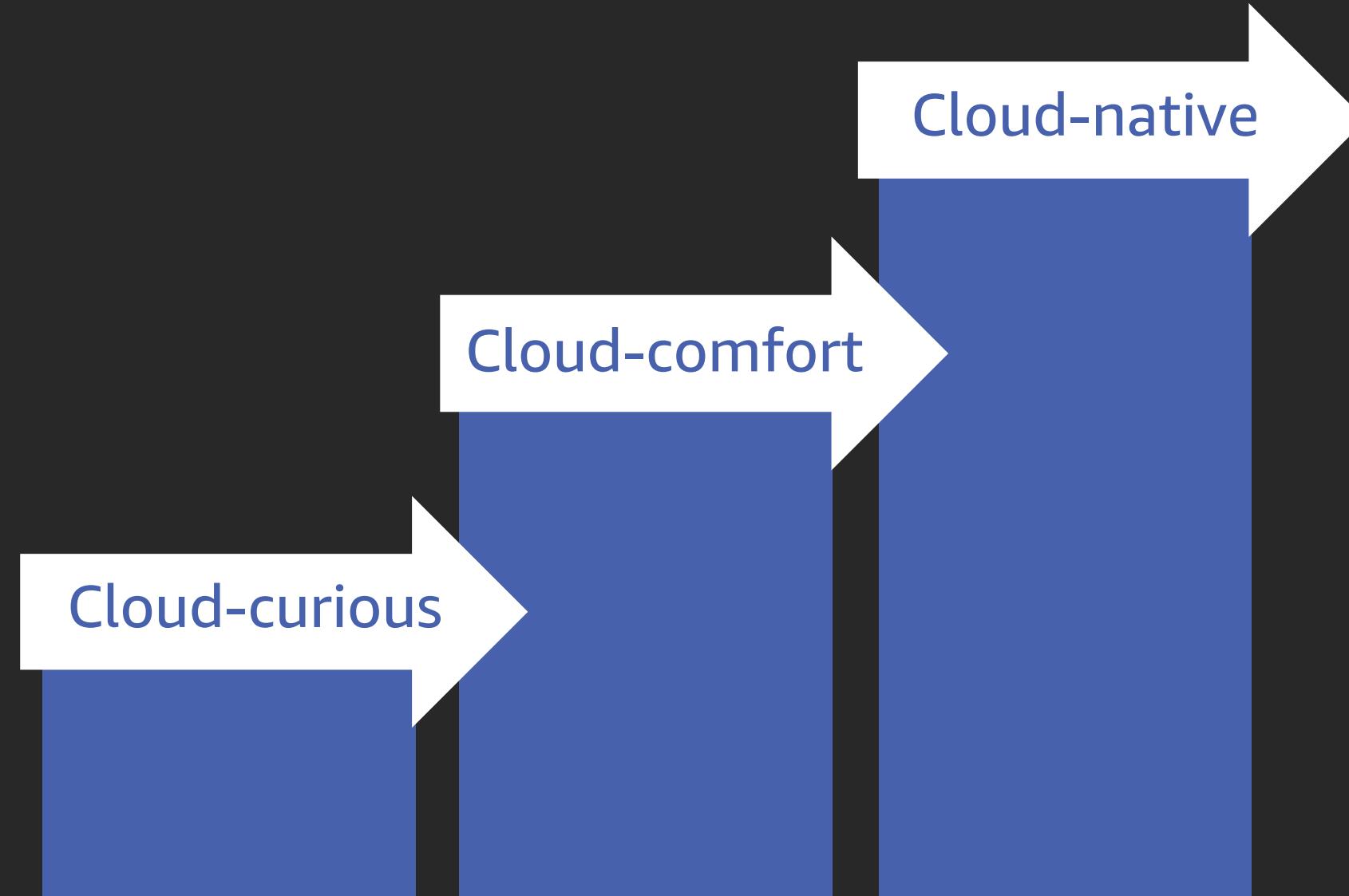
Challenge 4: More fence throwing



Cloud-native architecture



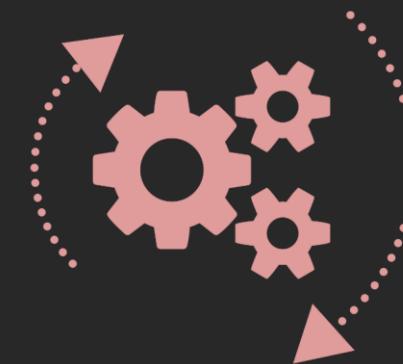
3 stages of adoption



Cloud adoption lifecycle

Key takeaways

Learn how to:



Transform



Overcome



Be prepared

Closing



Stop firefighting and start innovating



Do it yourself

The AWS Cloud Adoption Framework

Accelerating your organization's path to successful cloud adoption

Want to learn more? Contact AWS Sales to discuss how AWS CAF workshops can help you realize the benefits of cloud adoption faster and with less risk.

[Contact AWS Sales](#)

AWS Professional Services created the AWS Cloud Adoption Framework (AWS CAF) to help organizations design and travel an accelerated path to successful cloud adoption. The guidance and best practices provided by the framework help you build a comprehensive approach to cloud computing across your organization, and business benefits from cloud adoption faster and with less risk.

<https://aws.amazon.com/professional-services/CAF/>

Moving to the AWS Cloud: An Overview of the AWS Cloud Adoption Framework

Landon Williams, AWS Professional Services
May 17, 2017

Cloud Adoption Framework

Cloud Adoption Framework



Business



People



Governance

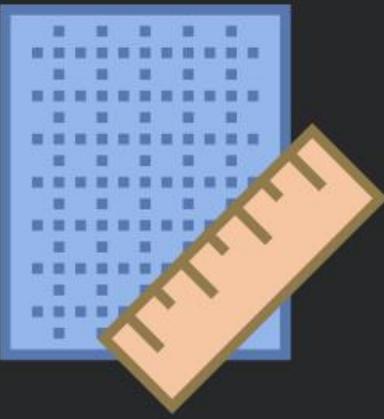
Cloud Adoption Framework



Business



People



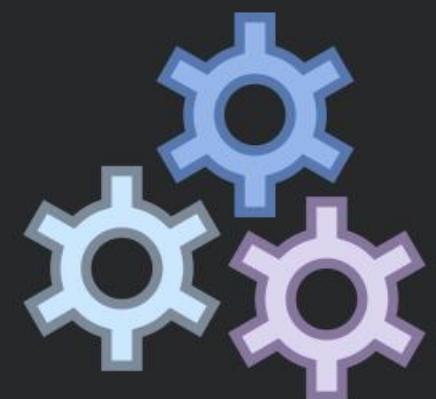
Platform



Security



Governance



Operations

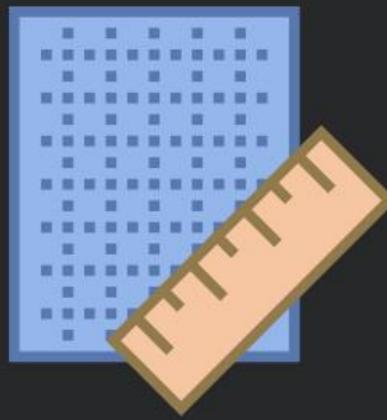
Cloud Adoption Framework



Business



People



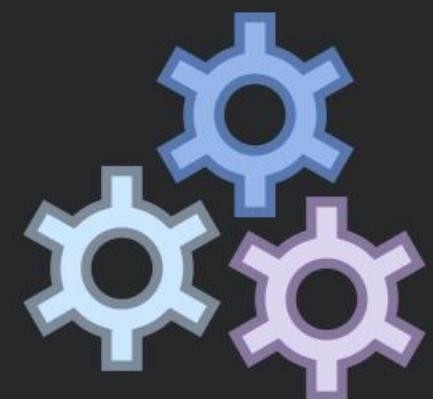
Platform



Security



Governance



Operations

Builds an action plan

Modern Application Development

Reinventing how your business delivers value



Rapid Innovation

Companies are looking to become more agile so they can innovate and respond to change faster. This requires a different kind of application than what was common years ago. Applications now need to scale quickly to potentially millions of users, have global availability, manage petabytes if not exabytes of data, and respond in real time. We call these modern applications. They can be used for mobile backends, IoT applications, AI/ML workloads, batch processing, PaaS solutions, microservice backends, and more. Modern applications are built with a combination of these new architecture patterns, operational models, and software

<https://aws.amazon.com/modern-apps/>

Modern Application Design

Modern Application Design

Secure

Resilient

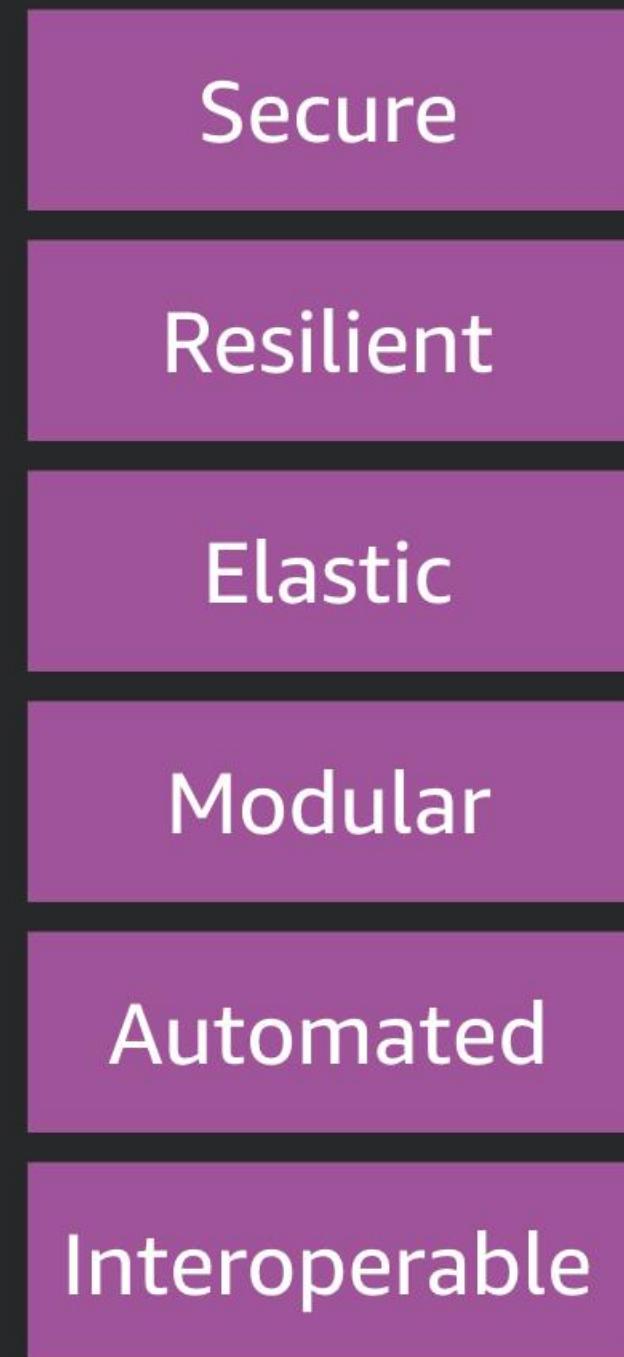
Elastic

Modular

Automated

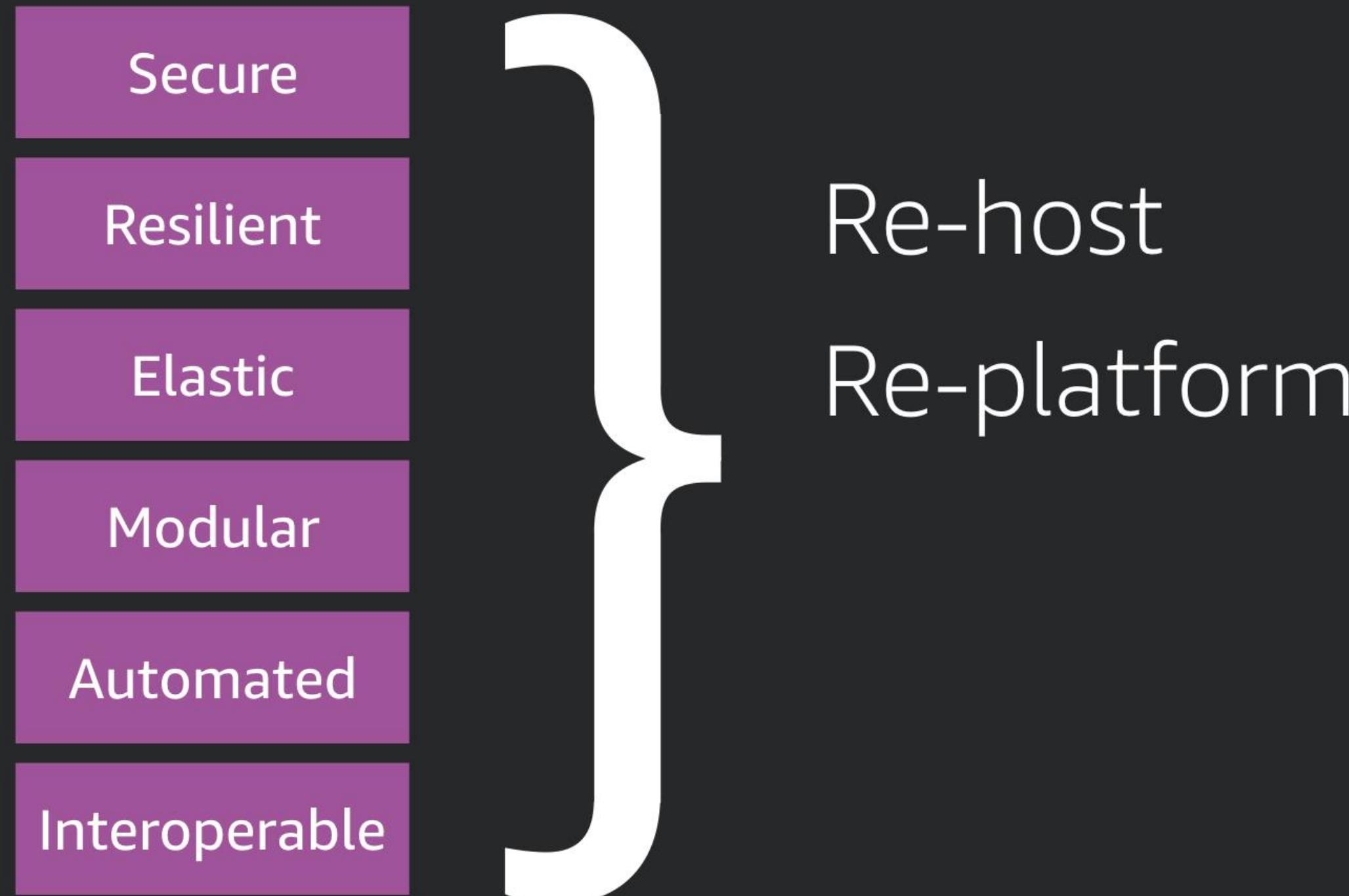
Interoperable

Modern Application Design

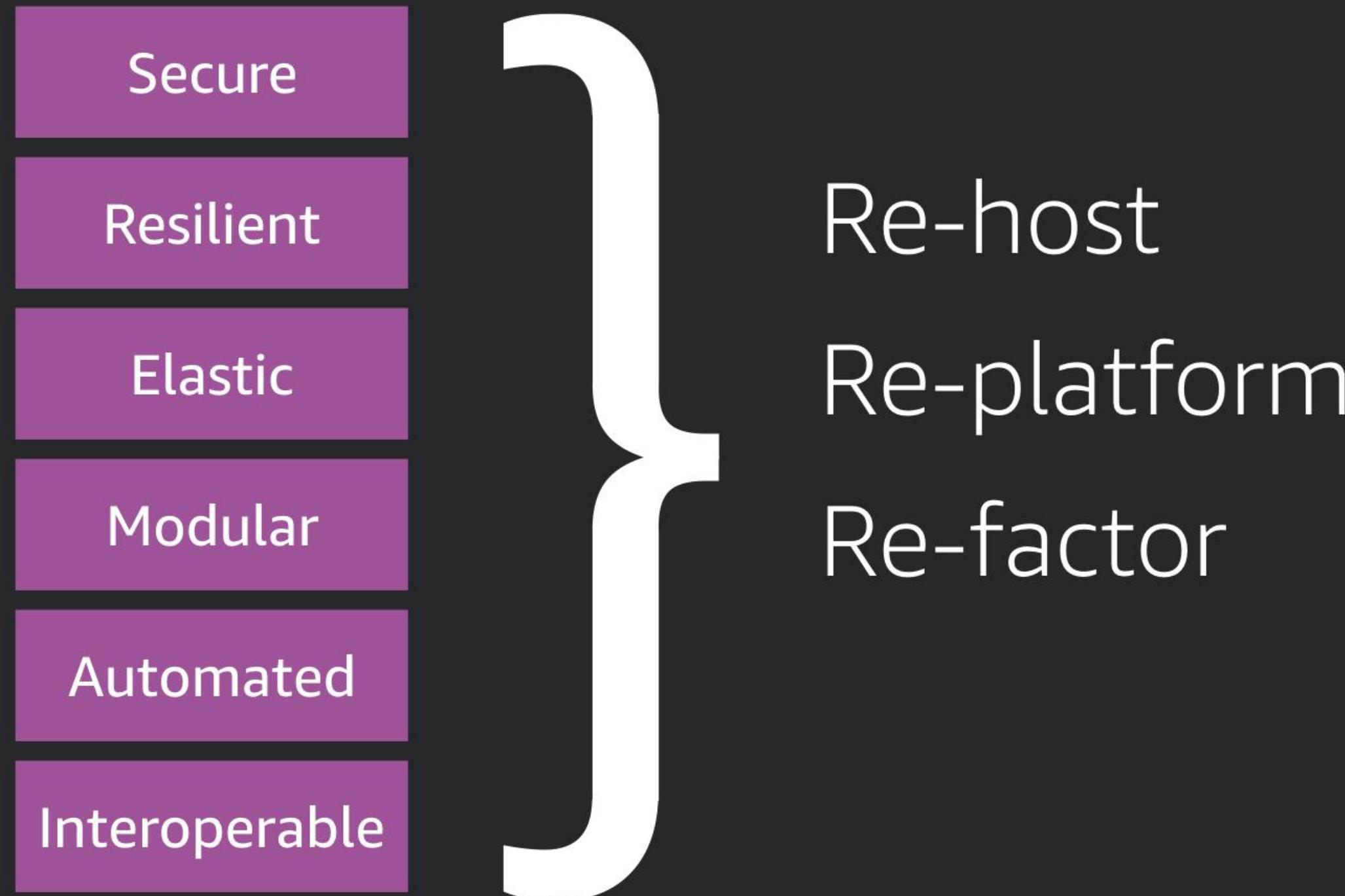


Re-host

Modern Application Design



Modern Application Design



Modern Application Design



Re-host

Re-platform

Re-factor

Re-invent

Projects on AWS:

Set Up a CI/CD Pipeline on AWS

Automate your software delivery process using continuous integration and delivery (CI/CD) pipelines

**Main****Services Used and Costs****FAQs**

In this project, you will learn how to set up a continuous integration and continuous delivery (CI/CD) pipeline on AWS. A pipeline helps you automate steps in your software delivery process, such as initiating automatic builds and then deploying to Amazon EC2 instances. You will use AWS CodePipeline, a service that builds, tests, and deploys your code every time there is a code change, based on the release process models you define. Use CodePipeline to orchestrate each step in your release process. As part of your setup, you will plug other AWS services into CodePipeline to complete your software delivery pipeline. This guide will show you how to create a very simple pipeline that pulls code from a source repository and automatically deploys it to an Amazon EC2 instance.

<https://aws.amazon.com/getting-started/projects/set-up-ci-cd-pipeline/>

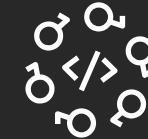
The AWS CI/CD pipeline



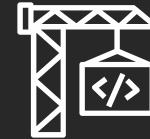
AWS Cloud9



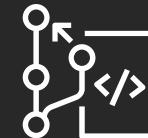
AWS CodePipeline



AWS CodeStar



AWS CodeBuild



AWS CodeCommit



AWS CodeDeploy



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M I C R O™

Cloud security simplified
Visit Trend Micro in booth #2820

Thank you!



Mark Nunnikoven
Vice President, Cloud Research at Trend Micro
[@marknca](https://twitter.com/marknca)



Please complete the session
survey in the mobile app.