AWS DATA PROCESSING INFRASTRUCTURE 2B

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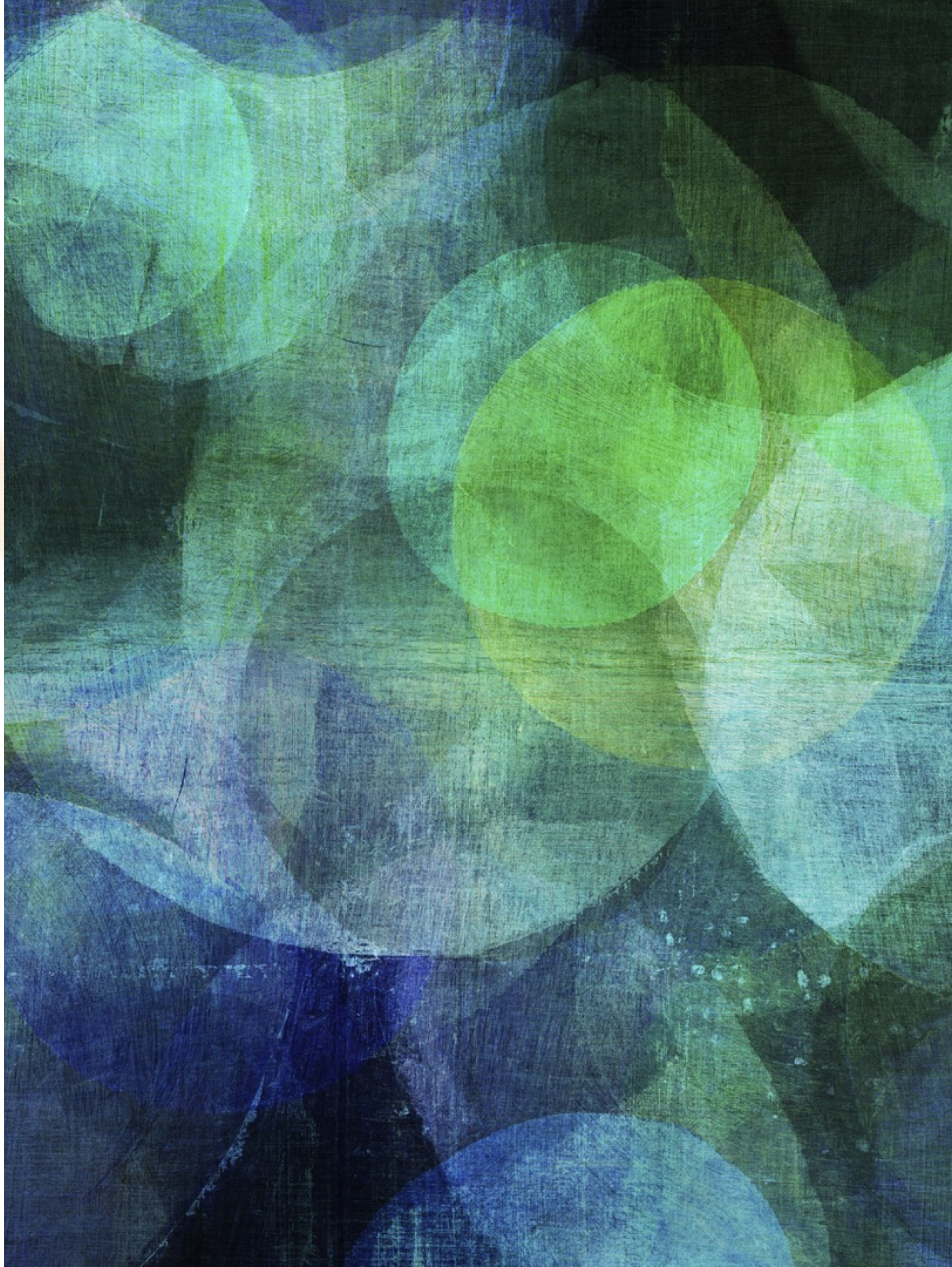

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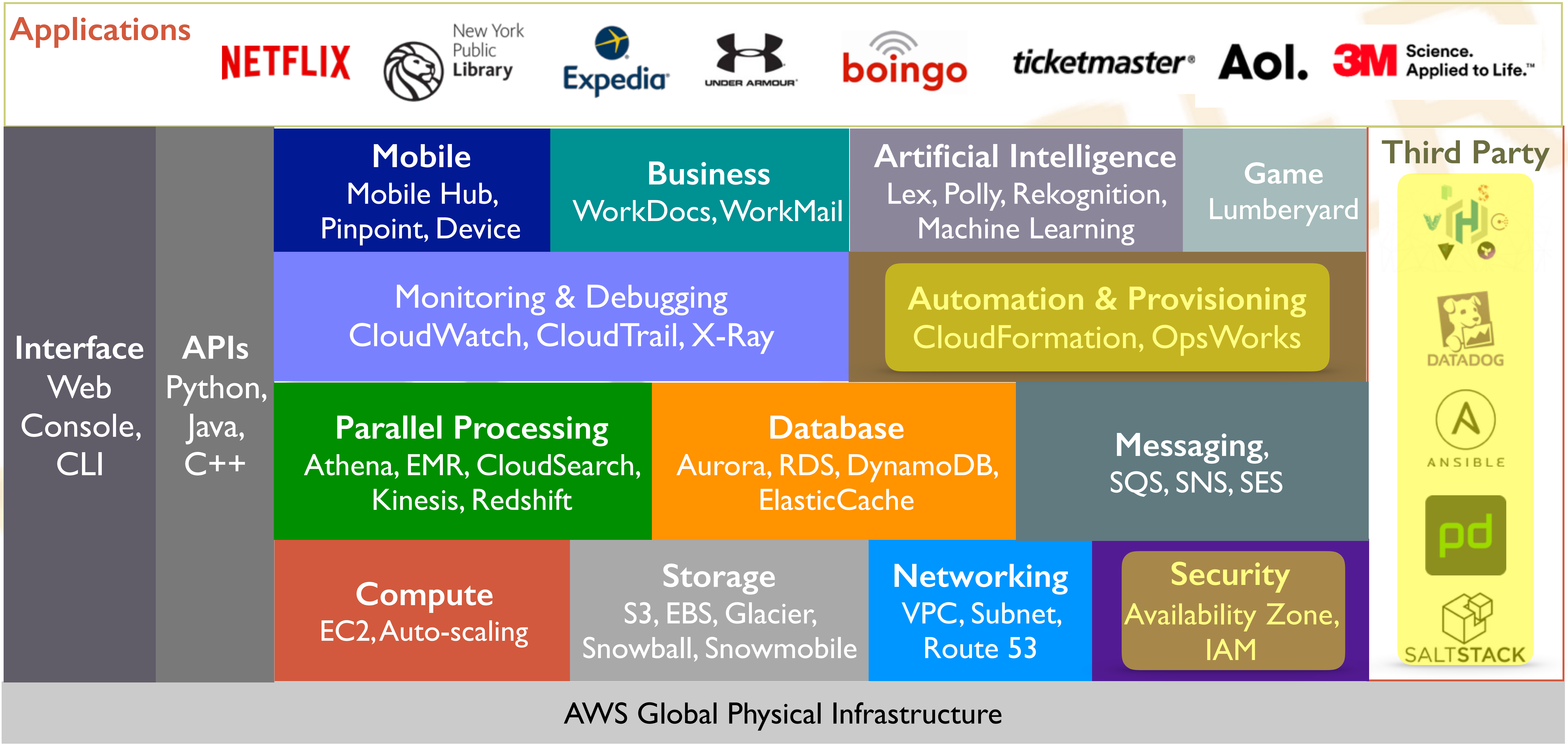
TODAY'S TOPIC



Applications

NETFLIX

New York Public Library

Expedia

UNDER ARMOUR

boingo

ticketmaster

Aol.

3M Science. Applied to Life.™

Interface
Web Console, CLI

APIs
Python, Java, C++

Mobile
Mobile Hub, Pinpoint, Device

Business
WorkDocs, WorkMail

Artificial Intelligence
Lex, Polly, Rekognition, Machine Learning

Game
Lumberyard

Monitoring & Debugging
CloudWatch, CloudTrail, X-Ray

Automation & Provisioning
CloudFormation, OpsWorks

Parallel Processing
Athena, EMR, CloudSearch, Kinesis, Redshift

Database
Aurora, RDS, DynamoDB, ElasticCache

Messaging,
SQS, SNS, SES

Compute
EC2, Auto-scaling

Storage
S3, EBS, Glacier, Snowball, Snowmobile

Networking
VPC, Subnet, Route 53

Security
Availability Zone, IAM

Third Party

DATADOG

ANSIBLE

pd

SALTSTACK

AWS Global Physical Infrastructure

IAM

EXAMPLES

- Limit Users to Launch Certain Types of EC2 Instances
- Decode the EC2 authorization message
- Allow User to Start, Stop, and Terminate his/her own instances
- Allow Users to Access a Personal "Home Directory" in Amazon S3 (Homework)
    - https://aws.amazon.com/blogs/security/writing-iam-policies-grant-access-to-user-specific-folders-in-an-amazon-s3-bucket/

DEMO

- Create a user
  - Login console: https://${accound_id}.signin.aws.amazon.com/console
- Limit a User to Launch Certain Types (t2 and m3) of EC2 Instances

1. Create a managed policy to limit instance type using policy generator
    1. Allow all EC2 access
    2. Deny access based on conditions
2. Attach policy to a user

DEMO

- Decode authorization failure message
  - Administrator must log IAM events in CloudTrail (next lesson)
  - $ aws sts decode-authorization-message --encoded-message

DEMO

- Limit a User to Terminate his/her own EC2 Instances
  1. Create "User" tag for EC2 instance
  2. Grant user to access all EC2 instances
  3. Limit users by matching "User" tag

POLICY SIMULATOR

- https://policysim.aws.amazon.com
  - Test S3 bucket access

TERRAFORM

PREPARE

- Route53
  - Register a domain
  - Find the Hosted Zone ID
    - https://console.aws.amazon.com/route53/home?region=us-west-2#hosted-zones:
    - $ aws route53 list-hosted-zones
- EC2 Instance Profile
  - Allow access S3, and other resources
- Double check
  - VPC ID, Subnet ID

TERRAFORM CONFIGURATION

- Provider
- Resources
    - EC2
    - Route53
    - Security Group (multiple)
- Input variables
- Command line usage

ANSIBLE

ANSIBLE CONFIGURATION

- Load order
  - ANSIBLE_CONFIG (an environment variable)
  - ansible.cfg (in the current directory)
  - ansible.cfg (in the home directory)
  - /etc/ansible/ansible.cfg
- Use template
  - Only change values required

INVENTORY GENERATION

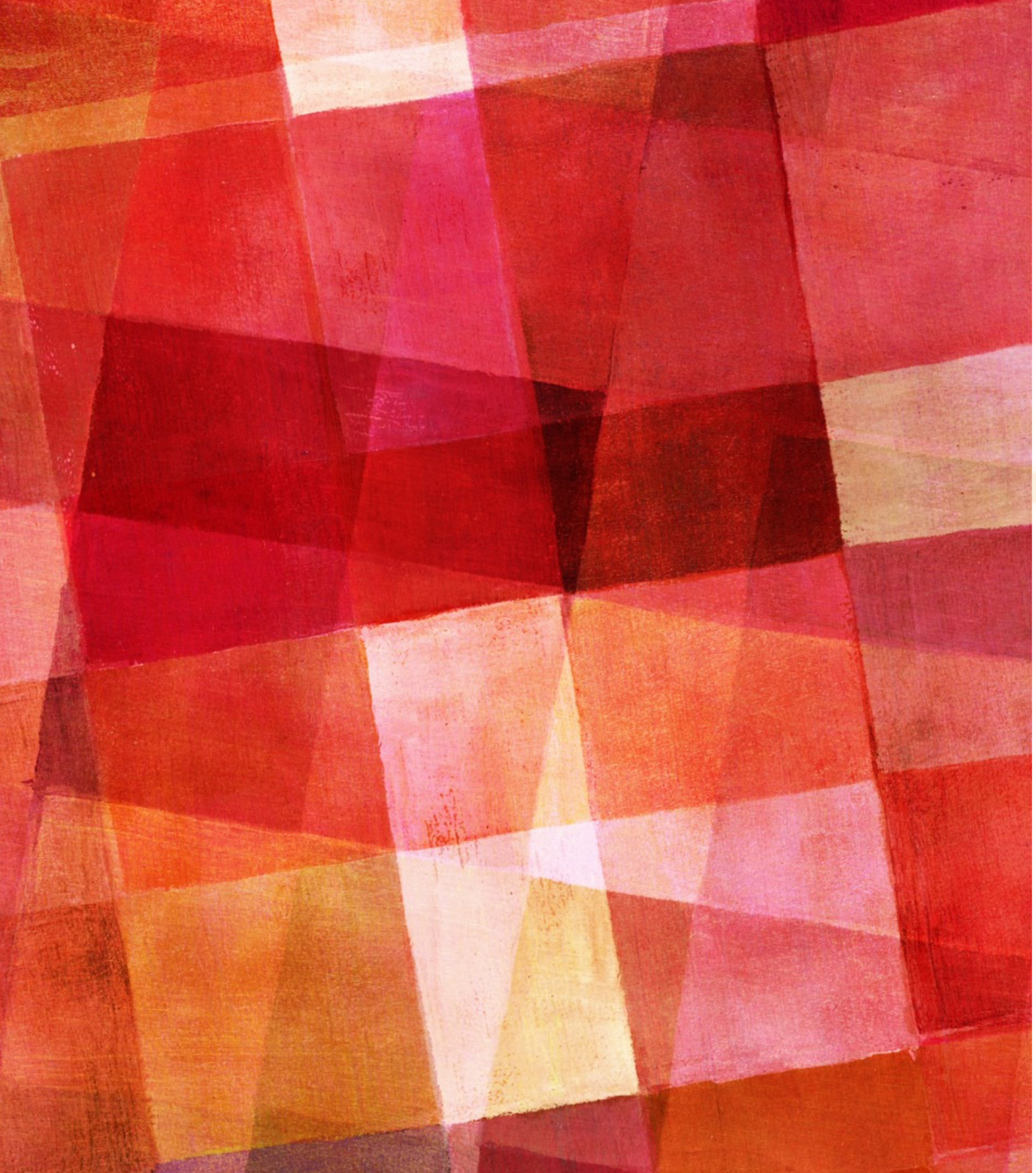
- Python JSON parser
  - cluster/json2ini.py

ANSIBLE PLAYBOOK

- Change configuration variables
- Commands
  - $ ansible-playbook playbook.yaml --list-hosts
  - $ ansible-playbook playbook.yaml --list-tasks
  - $ ansible-playbook playbook.yaml
  - $ ansible-playbook playbook.yaml - -step
  - $ ansible-playbook --start-at-task

HOMEWORK

- Try all examples in demo and scripts/
- Check scripts/ec2_limited_instance_types.json, find out how it is different from the example we used in “Limit a User to Launch Certain Types (t2 and m3) of EC2 Instances” (p. 7)
- Create an AMI with Packer
- Setup your Terraform configuration and ansible.cfg
  - Use your own: AMI, VPC, Subnet, Hosted Zone, SSH Key
- Start a cluster and validate web server is running
- Run command using Ansible on all servers
- Destroy cluster



QUESTIONS

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