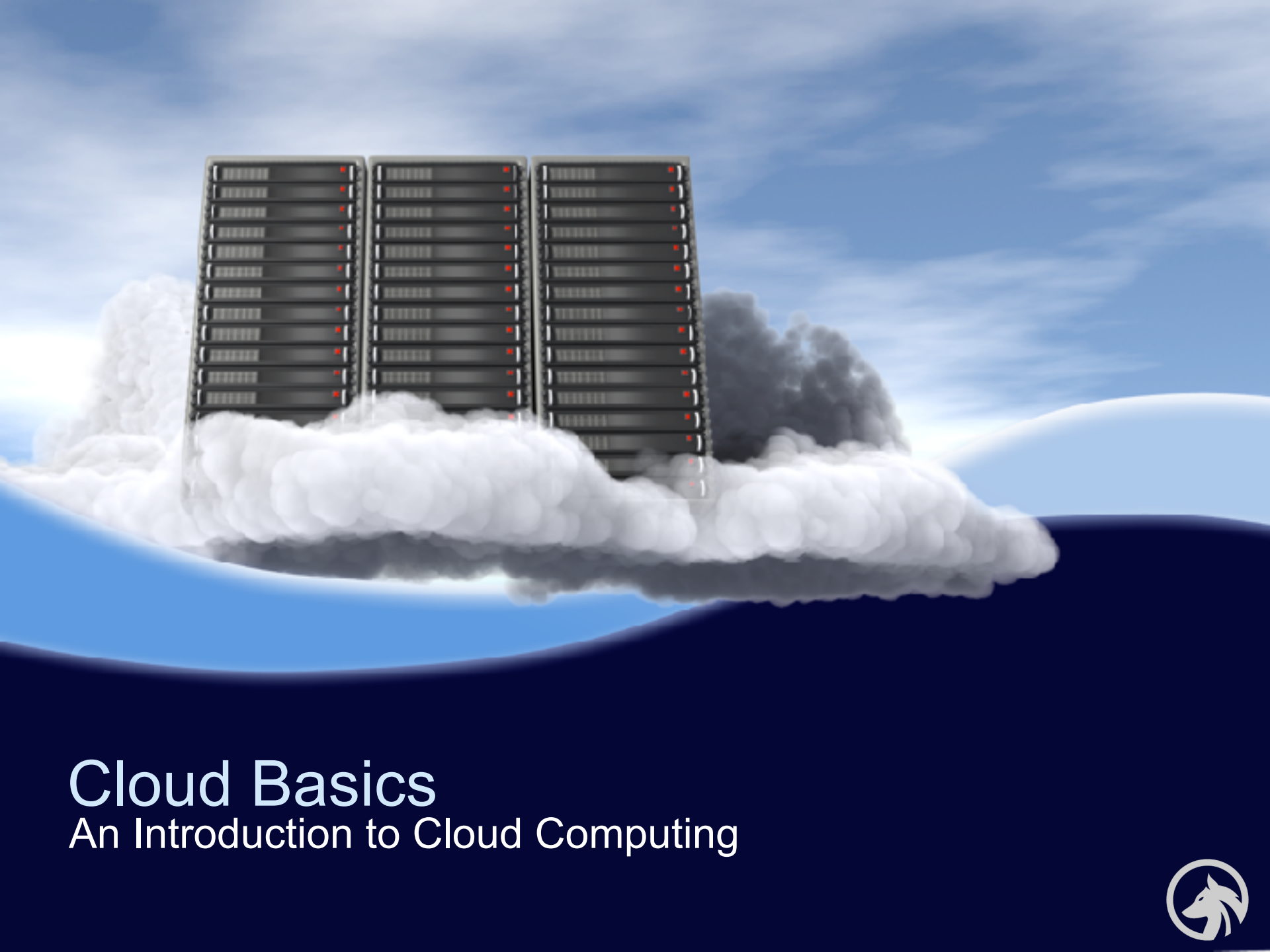


Cloud Basics

An Introduction to Cloud Computing

Agenda

1. Introductions
2. Cloud Overview
3. Cloud Architecture
4. Microservices
5. IBM Cloud

Introductions

Carlos Bowser

#1 IBM Intern for the Summer of 2018

Stephen Ho

Technical Evangelist, Cognitive Analytics

Erika Bratschun

Technical Evangelist, Watson Cloud Platform

What is the Cloud?

Cloud Models

PUBLIC

Public and open-by-design

Fast and on Demand

Easily configure, deploy and scale applications, services, and infrastructure

Shared environments with community-driven features, and shared platforms and infrastructure

HYBRID

Multi-cloud model options

A Mix of Many Options

Instant scalability of public cloud with support for critical enterprise integration

Features and flexibility of the public cloud with local control and management

Cloud to cloud and multi-cloud platform for resiliency and access to unique services

PRIVATE

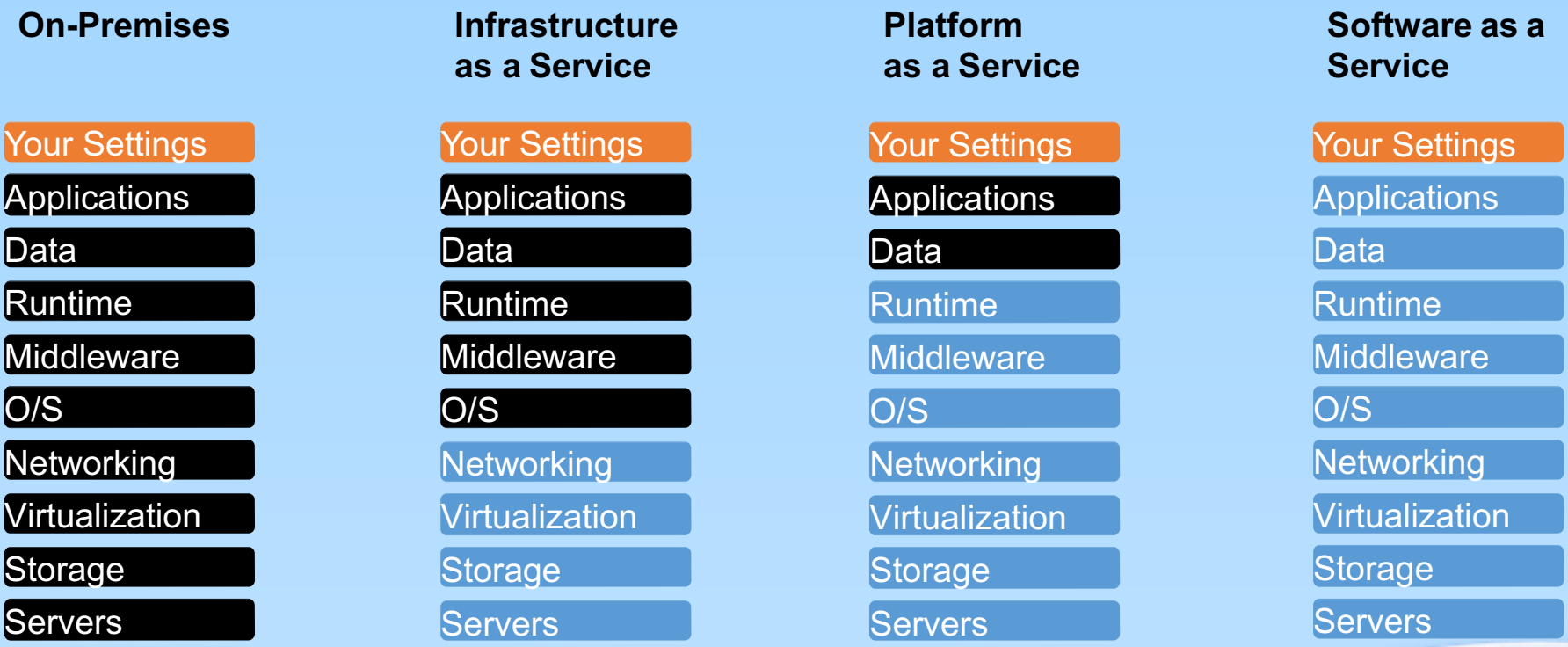
Management and deployment options

Dedicated Flexibility

On Prem: Some features of public cloud, running on prem

Hosted: Dedicated “slices” of a public cloud running in a provider’s environment

Cloud Architecture Model



~~Cloud~~ Pizza Architecture Model

Homemade On-Premises	Take and Bake Infrastructure as a Service	Delivery Platform as a Service	Dine-In Software as a Service
Type of Pizza	Type of Pizza	Type of Pizza	Type of Pizza
Dining Table	Di		Dining Table
Soda			Soda
Electric/Gas			Electric
Oven			ven
Gas/Electrici			Electricity
Pizza Doug			Dough
Tomato Sau			to Sauce
Toppings			pings
Cheese			Cheese

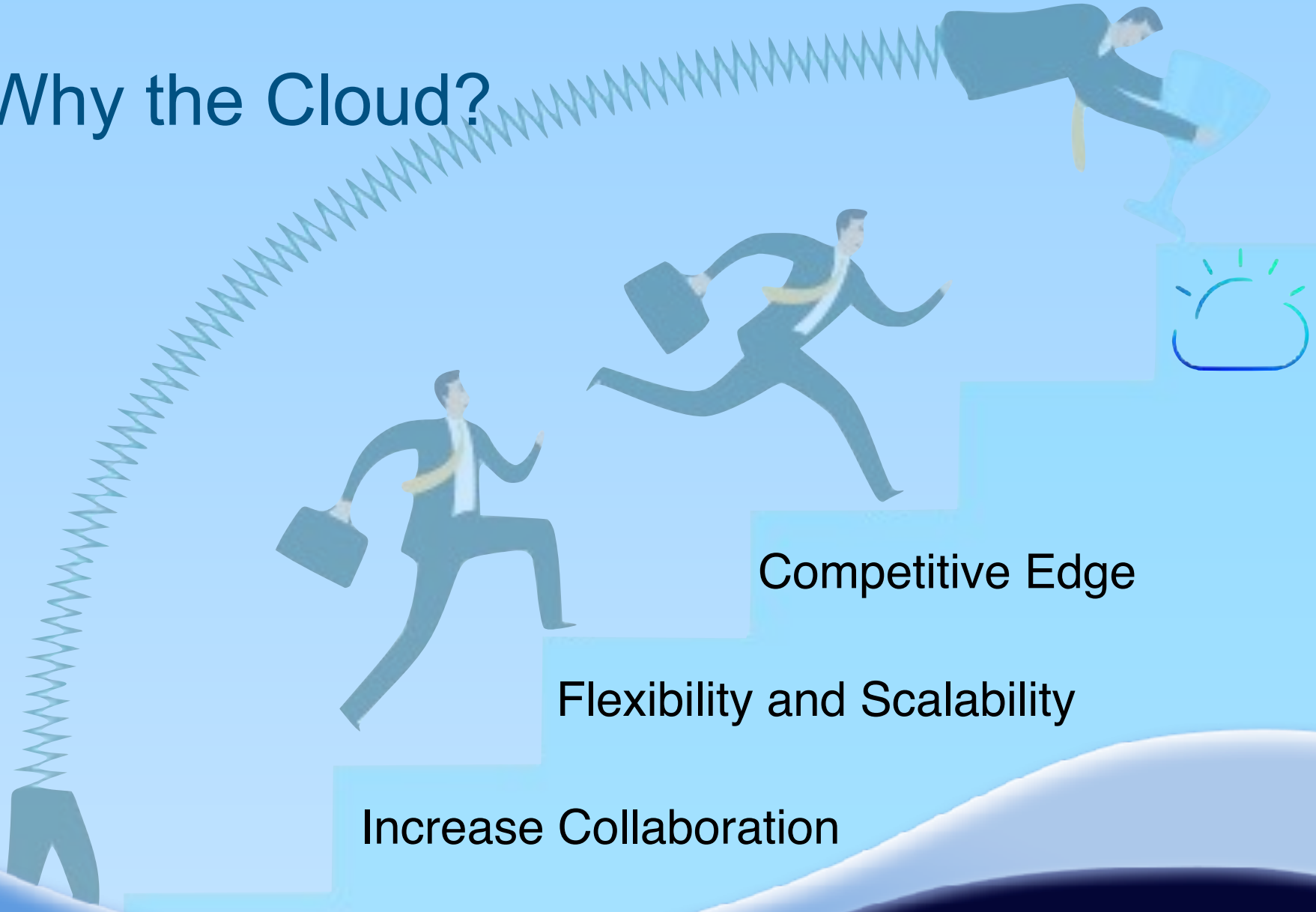
~~Cloud~~ Pizza Architecture Model

Homemade	Take and Bake	Delivery	Dine-In
Type of Pizza	Type of Pizza	Type of Pizza	Type of Pizza
Dining Table	Dining Table	Dining Table	Dining Table
Soda	Soda	Soda	Soda
Electric/Gas	Electric	Electric	Electric
Oven	Oven	Oven	Oven
Gas/Electricity	Gas/Electricity	Gas/Electricity	Gas/Electricity
Pizza Dough	Pizza Dough	Pizza Dough	Pizza Dough
Tomato Sauce	Tomato Sauce	Tomato Sauce	Tomato Sauce
Toppings	Toppings	Toppings	Toppings
Cheese	Cheese	Cheese	Cheese

Cloud Architecture Model

On-Premises	Infrastructure as a Service	Platform as a Service	Software as a Service
Your Settings	Your Settings	Your Settings	Your Settings
Applications	Applications	Applications	Applications
Data	Data	Data	Data
Runtime	Runtime	Runtime	Runtime
Middleware	Middleware	Middleware	Middleware
O/S	O/S	O/S	O/S
Networking	Networking	Networking	Networking
Virtualization	Virtualization	Virtualization	Virtualization
Storage	Storage	Storage	Storage
Servers	Servers	Servers	Servers

Why the Cloud?



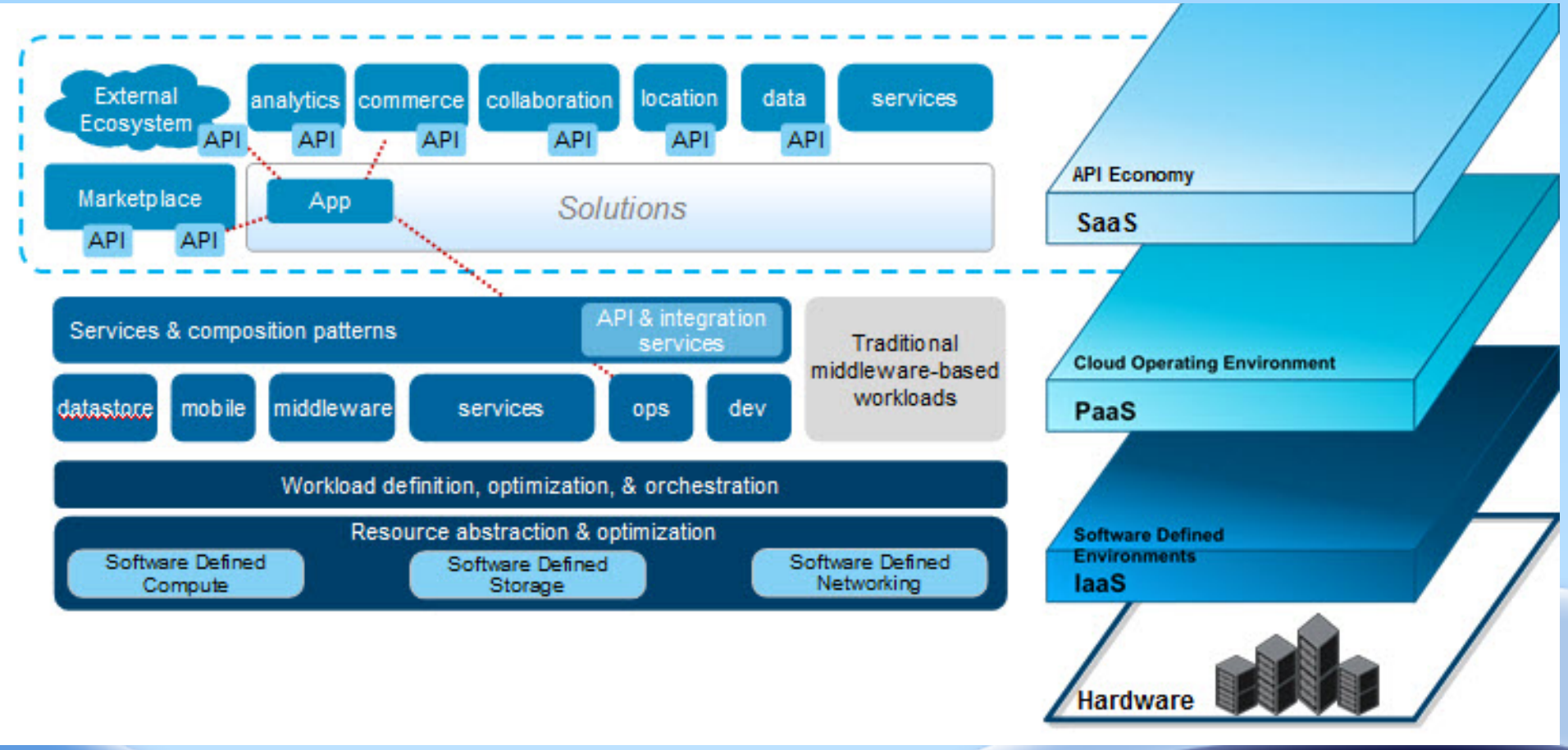
Competitive Edge

Flexibility and Scalability

Increase Collaboration

Cloud Architecture

Cloud “Layer Cake” Architecture

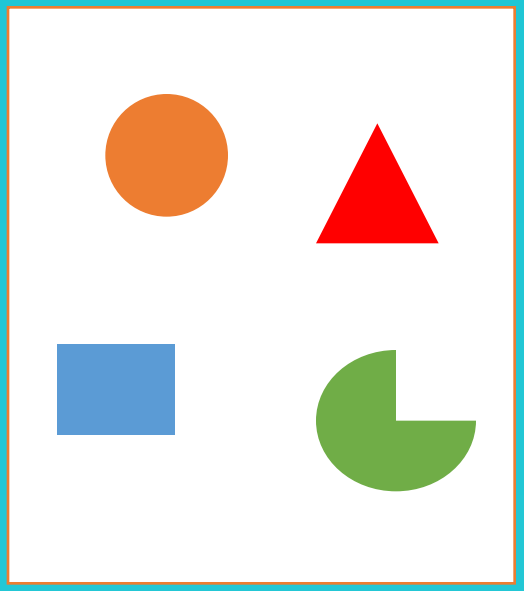


#1 Cloud Mistake

Microservices

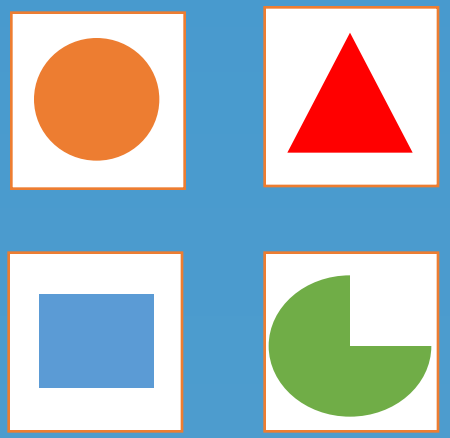
Cloud Requires Rethinking Architectures

Monolith

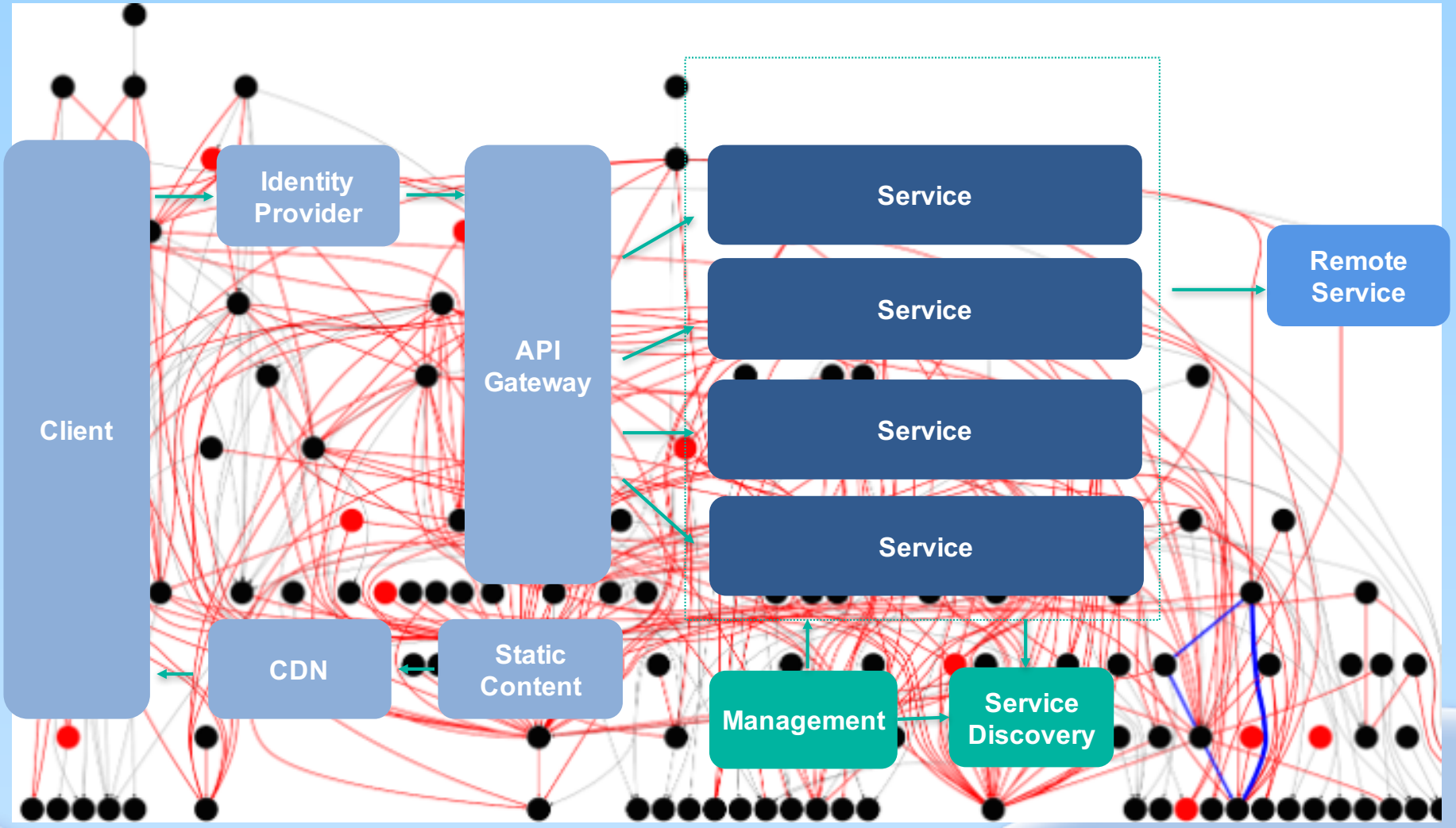


All functionality in a single process

Microservices



Functionality broken down into separate services


Client
Identity Provider
API Gateway
Service
Service
Service
Service
Remote Service
CDN
Static Content
Management
Service Discovery

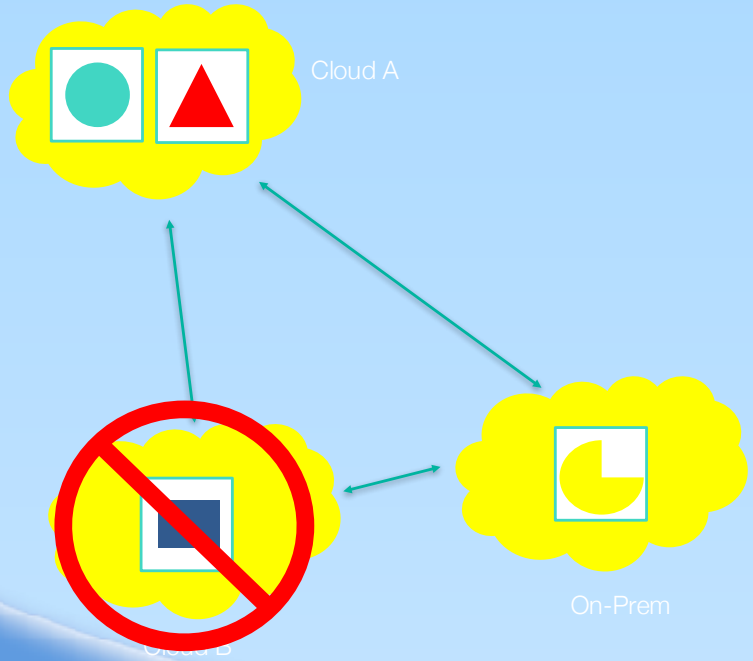
Netflix Microservices

HOW DID THEY DO IT?

NETFLIX

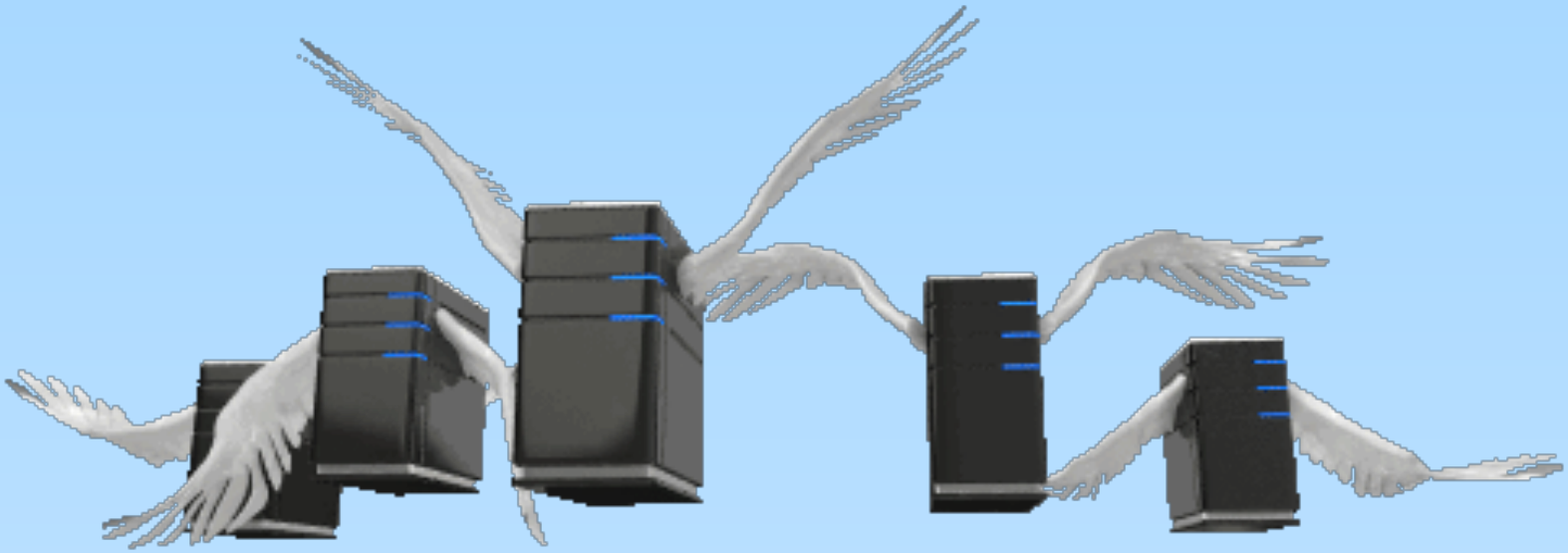
Considerations

Functionality that is:
Broken down into separate services
Managed by smaller teams
Has Physical separation
Has separate service providers



Requires consistent development and testing process, and architecture awareness to maintain integrity and service levels

Serverless Architecture



Serverless

You provision services and configure them

They run and are 100% managed by the provider

You control only the configurations

An application is made up of multiple serverless services

Serverless is a terrible name, but here we are…


IBM Cloud

IBM Cloud Architecture

Platform and Services for Business

Applications, solutions and services

Targeted solutions for enterprise businesses

IBM Services & Ind. Solutions	Weather	Watson Cyber Security	Cloud Video	Watson Explore and Discover	IBM Risk and Compliance	Watson Virtual Agent	…more

AI

Cognitive building blocks for developers

API Conversation	API Discovery	API Compare and Comply	API DLaaS	API Tone Analyzer	API Personal Insight
API Visual Recognition	API Speech	API Document Conversion	API Nat Language Understanding	API Nat Language Classifier	…more

Data

Tools to prepare data for cognitive

Ingestion → Storage → Analytics → Deployment → Governance

Cloud Infrastructure

A highly scalable, security enabled infrastructure

Cloud Integration		Cognitive Micro-services			DevOps Tooling	
Networking	Compute	Security	Cognitive Systems	Virtual Servers	Object Storage	…more
Public		Hybrid			Private	

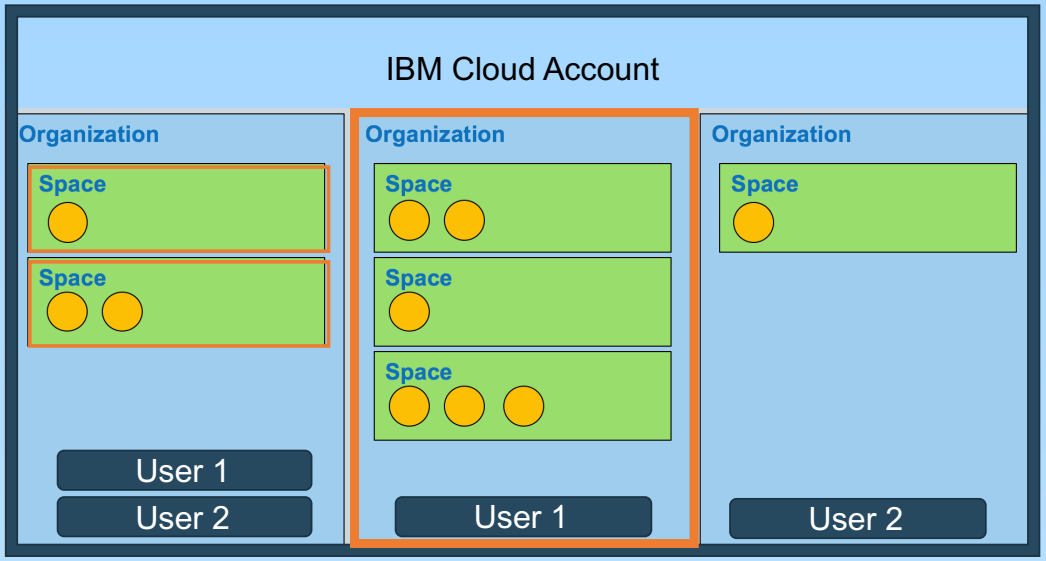
IBM Cloud Accounts

Organization: groups all spaces together. Organization has administrative task.

Space: contains application and services.

User account: consists of username and password: username are usually email.

Quotas: are size constraints for organization and spaces. used to control cost.



LAB TIME!!!!

Questions?

Erika Bratschun
erika.bratschun@ibm.com
@erikabratschun

Erica Reuter
ereuter@us.ibm.com
@ericareuter

Please take a few minutes to fill out the survey: