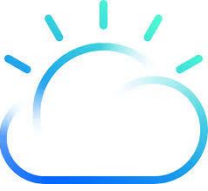


IBM Cloud Container Workshop

Cloud Overview

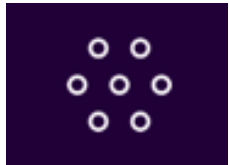


Agenda



- **Compute options**
 - Infrastructure
 - Cloud Foundry
 - IBM Cloud Function
- **IBM Cloud Services**
 - Watson Services
 - Watson Studio
- **IBM Cloud Account**
 - Promo Code
 - Prepare environment

IBM offers the complete spectrum of cloud deployment models



Choice with consistency



Hybrid integration



DevOps productivity



Powerful, accessible data and analytics



Cognitive solutions

1 | Public

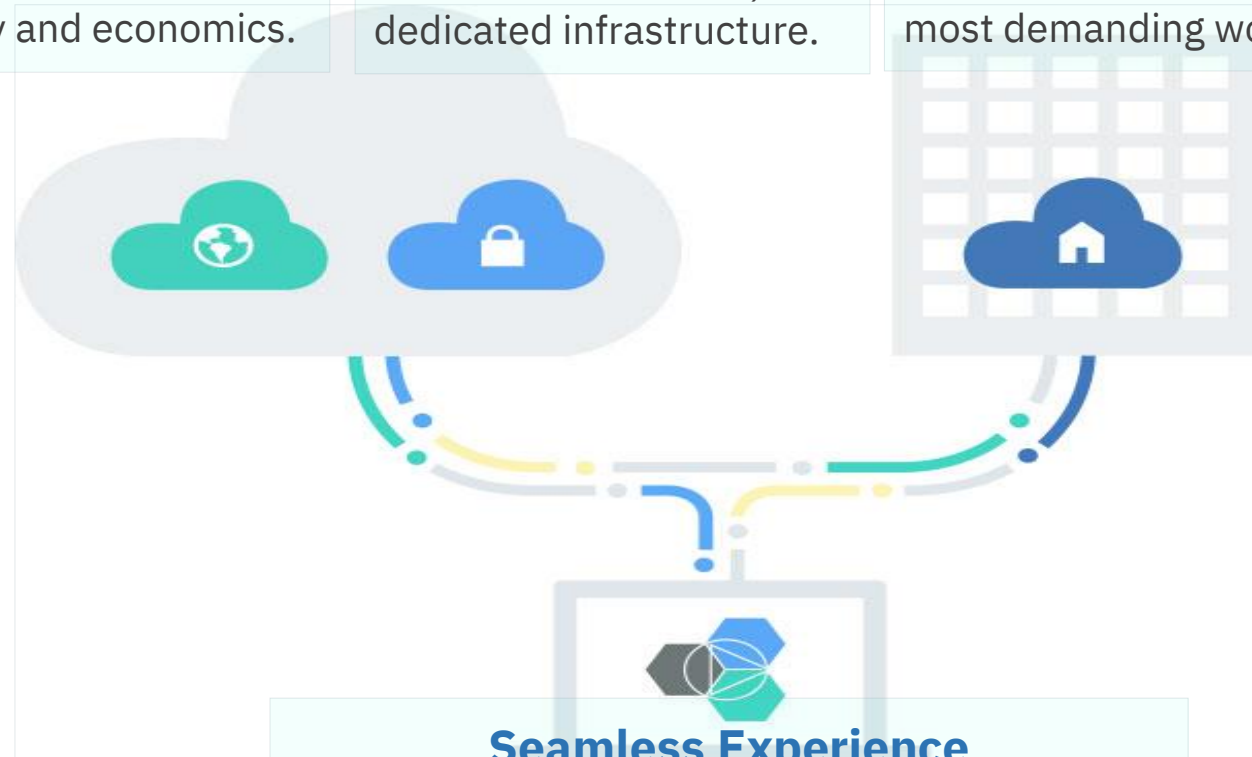
Maximize on cloud agility and economics.

2 | Dedicated

Public cloud benefits, with dedicated infrastructure.

3 | Private

Behind the firewall for the most demanding workloads.



Seamless Experience

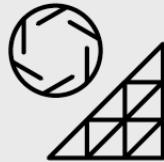
Regardless of which combination you choose, you get a single, seamless experience.

Full spectrum of compute options for any workload, across global infrastructure



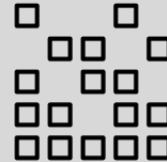
Bare Metal

Maximum performance
and control



Virtual Server

Leverage existing
languages and tools



Containers

Maximum portability



Platform as a Service

Extensive runtime options



Serverless

Maximum speed
with serverless apps

IBM

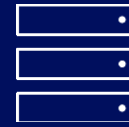
Compute Infrastructure

SAP Certified Servers



Build, deliver, and run SAP applications in the cloud

Bare Metal Servers



Raw IaaS horsepower for processor-intensive and disk I/O-intensive workloads

Virtual Servers



Fast deployment when resources are needed on the fly

GPU Computing



Handle complex, compute-intensive workloads, including analytics, graphics, and AI

POWER Servers



Develop, test, and run Linux applications

Server Software



Operating systems to control panels to simplify IaaS administration



Block and File



Object



Mass Data Migration



Backup



Mass Storage Servers

For when you need...

- File sharing
- Local archiving
- Data protection
- Data bases
- Email servers
- RAID
- Virtual machines

- Huge data storage
- API driven web applications support
- Big archived backups
- Cost effective dynamic data accessibility

- To move TBs of data to the cloud
- Sensitive data solutions
- Economical storage to cloud pricing
- Limited internet connection support
- Data center decommission strategy

- Copies and instances of data
- Full control over maintenance, management, retrieval and restoration
- Customizable choices
- Turnkey or custom-built options

- Private SAN/NAS storage
- Unlimited access
- Data-intensive, redundant power solutions
- High performance and functionality



IBM Kubernetes Service

Combining Docker and Kubernetes to deliver powerful tools, an intuitive user experience, and built-in security and isolation to enable rapid delivery of applications - all while leveraging IBM Cloud Services including cognitive capabilities from Watson.

<https://www.ibm.com/cloud/container-service>

Kubernetes Certified Service Provider
Kubernetes Technology Partner
Kubernetes Service Providers





Cloud Foundry : Instant Runtimes







Cloud Foundry is an open source PaaS that lets developers focus on their application code and let the platform handle the rest (runtime, scaling, networking, operating system).



IBM Cloud extends Cloud Foundry with a number of managed runtimes and services, enterprise-grade DevOps tooling, and a seamless overall developer experience.



Deploy your app without managing underlying infrastructure.



**Liberty for Java™**
Develop, deploy, and scale Java web apps with ease. IBM WebSphere Liberty Profile is a highly configurable, open, and standards-based Java EE runtime.




**Runtime for Swift**
A Kitura-based server application that you can use as a starting point to get your own Kitura application.




**PHP**
Develop, deploy, and scale PHP web apps with ease.




**Tomcat**
Develop, deploy, and scale Tomcat web apps with ease.




**SDK for Node.js™**
Develop, deploy, and scale server-side JavaScript® apps with ease. The IBM SDK for Node.js™ provides a fully managed, open, and standards-based Node.js runtime.




**XPages**
Develop, deploy and scale IBM XPages applications with ease. The IBM XPages runtime provides you with a fully managed, open, and standards-based XPages runtime.



**Python**
Develop, deploy, and scale Python web apps with ease.




**ASP.NET Core**
Develop, deploy, and scale ASP.NET Core web apps with ease.



**Go**
Develop, deploy, and scale Go web apps with ease.



**Ruby**
Develop, deploy, and scale Ruby web apps with ease.




- 
- Containers


Infrastructure


VMware
- Dashboard


APIs


Application Services


Apple Development 


Blockchain


Cloud Foundry Apps

Data & Analytics

DevOps

Finance

Functions

Integrate

Run your app in seconds












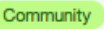

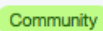

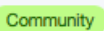

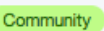

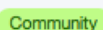


No VM or middleware setup

- Provision runtimes in seconds
- Auto and manual scaling options

Multiple language support

- Java Liberty, JavaScript, Ruby, Go, PHP, python provided
- Bring any language from the community thru **Buildpacks**
- List of Buildpack examples :

 Liberty for Java™ Develop, deploy, and scale Java web apps with ease. IBM WebSphere Liberty Profile. 	 SDK for Node.js™ Develop, deploy, and scale server-side JavaScript® apps with ease. The IBM SD 	 ASP.NET Core Develop, deploy, and scale ASP.NET Core web apps with ease. 
 Runtime for Swift A Kitura based server application that you can use as a starting point to get your on 	 XPages Develop, deploy and scale IBM XPages applications with ease. The IBM XPages 	 Go Develop, deploy, and scale Go web apps with ease. 
 PHP Develop, deploy, and scale PHP web apps with ease. 	 Python Develop, deploy, and scale Python web apps with ease. 	 Ruby Develop, deploy, and scale Ruby web apps with ease. 
 Tomcat Develop, deploy, and scale Tomcat web apps with ease. 		

github.com/cloudfoundry-community/cf-docs-contrib/wiki/Buildpacks



A Serverless Platform for Event-Driven Compute

Runs code **only** on-demand
on a per-request basis

No management and
operation of **infrastructures**

Focus on developing **value-adding code** and on driving
innovations

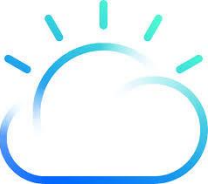


No servers

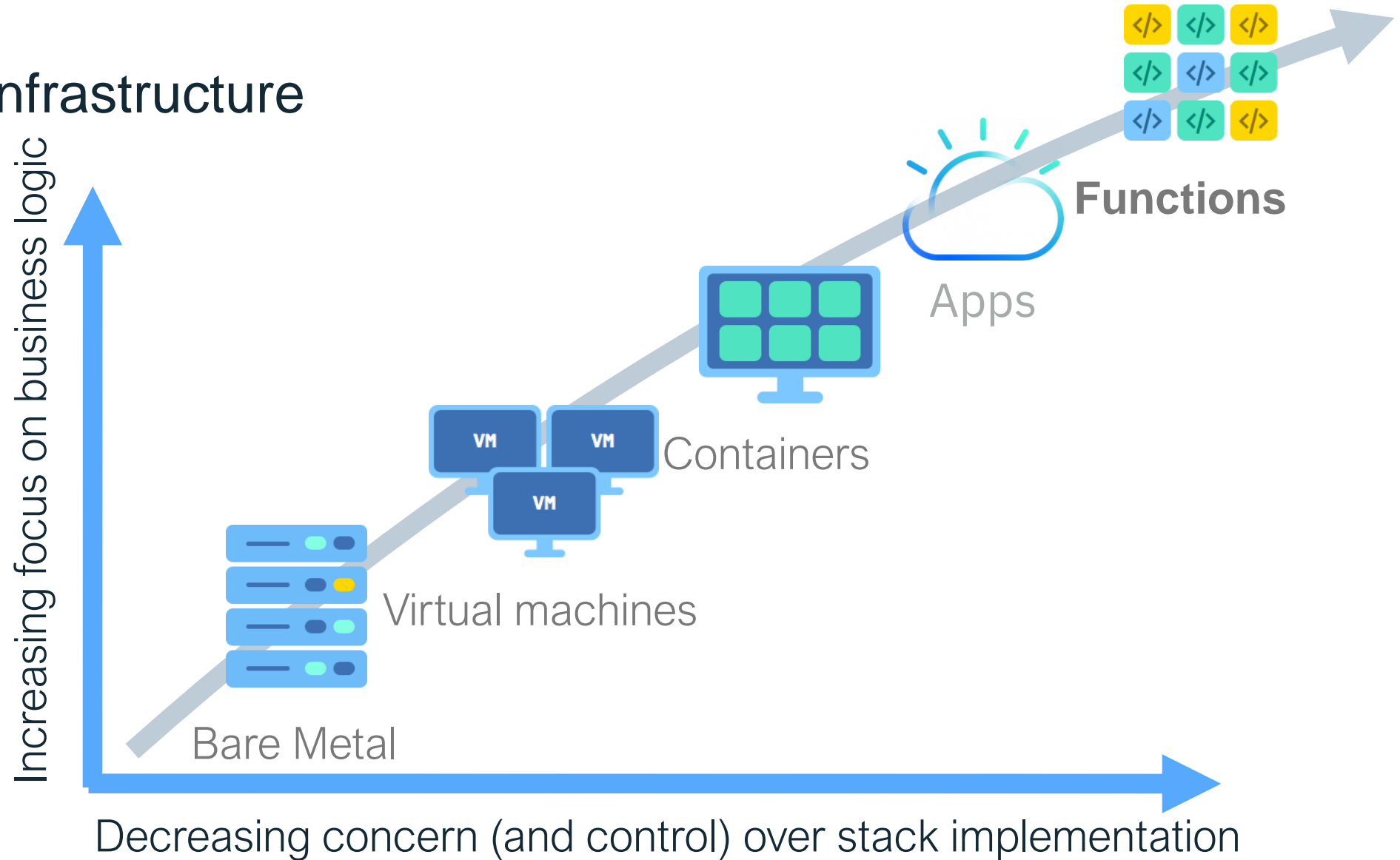


Just code

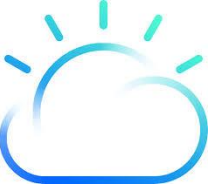
Focus more on code...



... less on infrastructure




Agenda



- Compute options
 - Infrastructure
 - Cloud Foundry
 - IBM Cloud Function
- **IBM Cloud Services**
 - Watson Services
 - Watson Studio
- IBM Cloud Account
 - Promo Code
 - Prepare environment

IBM Cloud managed services

- Building blocks of applications running in IBM Cloud runtimes available as infrastructure or platform.
- Add ready to use features and functionality to application code
- Covers AI, Internet of Things, Analytics, DevOps, Blockchain, Storage and many more...
- Are provided by IBM, Open-source communities and third-party partners



Cloud Foundry

Containers

Infrastructure

VMware

Dashboard

APIs

Apple Development New

Blockchain

DevOps

Finance

Functions

Integrate

Mobile

Security

Watson

Web Apps

AI : Watson Services



IBM Cloud

Catalog

Docs

Cookie Preferences

Log in

Sign up

Catalog

Search

Filter

All Categories

Compute

Containers

Networking

Storage

AI

Analytics

Databases

Developer Tools

Integration

Internet of Things

Security and Identity

Starter Kits

Web and Mobile

Web and Application

AI



Watson Assistant (formerly Conversation)

Lite • IBM

Add a natural language interface to your application to automate interactions with your end users. Common applications include...



Discovery

Lite • IBM

Add a cognitive search and content analytics engine to applications.



Knowledge Catalog

Lite • IBM

Discover, catalog, and securely share enterprise data.



Knowledge Studio

Lite • IBM

Teach Watson the language of your domain.



Language Translator

Lite • IBM

Translate text, documents, and websites from one language to another. Create industry or region-specific translations via the service's...



Machine Learning

Lite • IBM

IBM Watson Machine Learning - make smarter decisions, solve tough problems, and improve user outcomes.



Natural Language Classifier

IBM

Natural Language Classifier performs natural language classification on question texts. A user would be able to train their data and th...



Natural Language Understanding

Lite • IBM

Analyze text to extract meta-data from content such as concepts, entities, emotion, relations, sentiment and more.



Personality Insights

Lite • IBM

The Watson Personality Insights derives insights from transactional and social media data to identify psychological traits



Speech to Text

Lite • IBM

Low-latency, streaming transcription



Text to Speech

Lite • IBM

Synthesizes natural-sounding speech from text.



Tone Analyzer

Lite • IBM

Tone Analyzer uses linguistic analysis to detect three types of tones from communications: emotion, social, and...



Visual Recognition

Lite • IBM

Find meaning in visual content! Analyze images for scenes, objects, faces, and other content. Choose a default model off the shel...



Watson Studio

Lite • IBM

Embed AI and machine learning into your business. Create custom models using your own data.

FEEDBACK

Watson Studio

Supporting the end-to-end AI workflow

Connect &
Access Data

Connect and discover content from multiple data sources in the cloud or on premises. Bring **structured** and **unstructured** data to one toolkit.

Search and Find
Relevant Data

Find data (structured, unstructured) and AI assets (e.g., ML/DL models, notebooks, Watson Data Kits) in the **Knowledge Catalog** with intelligent search and giving the right access to the right users.

Prepare Data
for Analysis

Clean and prepare your data with **Data Refinery**, a tool to create data preparation pipelines visually. Use popular open source libraries to prepare unstructured data.

Build and Train
ML/DL Models

Democratize the creation of ML and DL models. Design your AI models **programmatically** or **visually** with the most popular **open source** and IBM ML/DL frameworks or leverage transfer learning on **pre-trained** models using **Watson tools** to adapt to your business domain. Train at scale on **GPUs** and **distributed** compute

Deploy Models

Deploy your models easily and have them **scale automatically** for online, batch or streaming use cases

Monitor, Analyze
and Manage

Monitor the performance of the models in production and trigger automatic retraining and redeployment of models. Build **Enterprise Trust** with Bias Detection, Mitigation Model **Robustness** and Testing Service Model **Security**.

Watson Studio



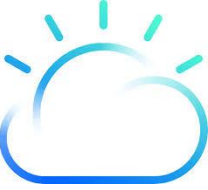
IBM Watson Studio interface showing a Jupyter notebook environment. The notebook displays a bar chart titled "Tweets Country Distribution based on the User Profile". The chart shows the distribution of tweets across various countries, with Germany having the highest count. The interface includes a menu bar (File, Edit, View, Insert, Cell, Kernel, Help) and a toolbar with icons for file operations, code execution, and formatting. A text box at the bottom of the screenshot reads: "Open Source tools – Jupyter and RStudio".

IBM Watson Studio interface showing the "Environments" section. This section allows users to define hardware size and software configuration for the runtime associated with DSX tools such as notebooks. It includes a table for "Active environment runtimes" and a table for "Environment definitions". A text box at the bottom of the screenshot reads: "Elastic and customizable compute environments".

IBM Watson Studio interface showing the "Car recognition" project. The project displays a list of car classes and their corresponding images. The interface includes a "Train Model" button and a "Search classes" input field. A text box at the bottom of the screenshot reads: "Watson APIs – train and test Watson".

IBM Watson Studio interface showing a visual ML flow diagram. The diagram illustrates a neural network architecture for image classification, starting with "Image Data" input, followed by "Conv 2d", "ReLU", "Pooling 2d", "Flatten", "Dense", "Softmax", and "Accuracy" output. A text box at the bottom of the screenshot reads: "Create ML flows and design Neural Networks visually".

DevOps Toolchain: Add tools to your toolchain



IBM Cloud

Catalog Docs Support Manage

Overview
Connections
Manage

Toolchains / testtrial

testtrial

View app

Add a Tool +

THINK

Issues
testtrial

✓ Configured

CODE

Git
testtrial

✓ Configured

DELIVER

Delivery Pipeline
testtrial

✓ Configured

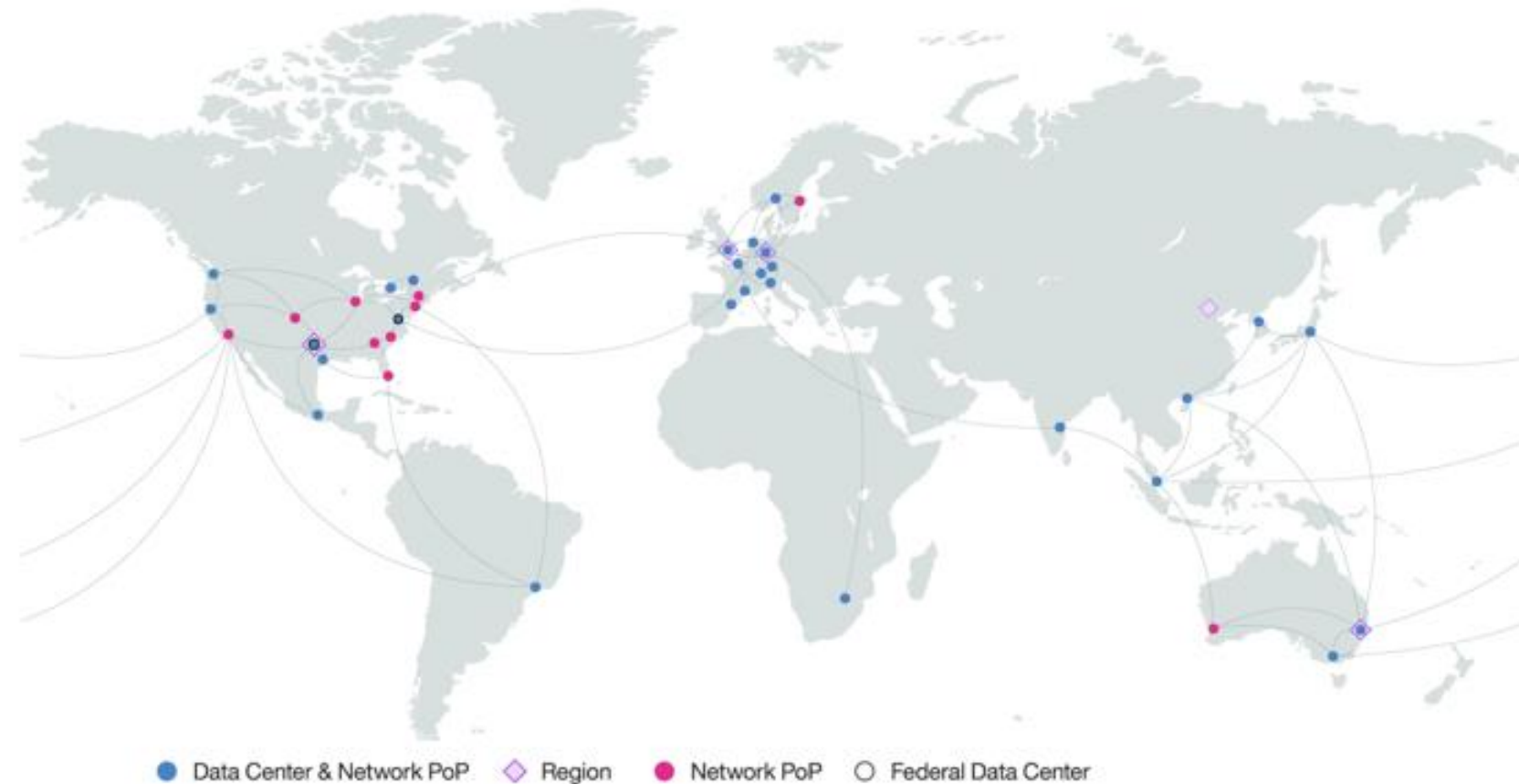
Eclipse Orion Web IDE

✓ Configured

IBM Cloud Regions



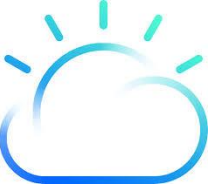
Nearly 60 IBM Cloud data centers around the world:



IBM Cloud Public Regions:

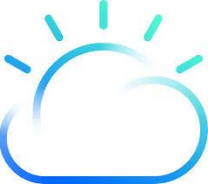
- US South
API endpoint: `api.ng.bluemix.net`
- US East
API endpoint: `api.us-east.bluemix.net`
- United Kingdom
API endpoint: `api.eu-gb.bluemix.net`
- Frankfurt
API endpoint: `api.eu-de.bluemix.net`
- Sydney
API endpoint: `api.au-syd.bluemix.net`

Agenda



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IBM Cloud lite account



- **Free** account
- **No time limit**
- Learn, explore and build POCs
- **One** Cloud Foundry **Organization** in one Region
- **One Resource Group**
- Auto sleep, garbage collection, alerts before approaching data thresholds
- 256 MB of Cloud Foundry runtime memory
- Kubernetes Cluster Lite Plan: 2 CPUs, 4 GB RAM
- Access to usage capped plans for **services with *Lite* label**

Pay-As-You-Go and Subscription Accounts



- Access to the **full catalog**, including the **free plans**
- **Production use cases**
- **Multiple resource groups**
- **Pay-as-you-go:**
 - Monthly IBM Cloud invoice
 - charges are based on your use of IBM Cloud compute and services
- **Subscription:**
 - get a monthly discount based on a minimum monthly spending
 - commitment, negotiated pricing




- An IBM Cloud account is organized into
 - Resource groups
 - Cloud Foundry organizations and spaces
 - Regions
- Cloud foundry
 - services and applications are assigned to a space
 - a cloud foundry space is assigned to one organization and one region
 - a cloud foundry organization can have multiple spaces in multiple regions
- Resource groups
 - Independent of cloud foundry spaces
 - Organize your account resources in customizable groups

Create your IBM Cloud Account (US South Region)



← → ↻ 🏠 <https://console.bluemix.net/registration/?target=%2Fdashboard%2Fapps> ... 📧 ☆



Sign up for an IBMid and create your IBM Cloud account

Build on IBM Cloud for free with no time restrictions

Guaranteed free development with Lite plans
Develop worry-free and at no cost with cap based Lite plan services for as long as you like.

Start on your projects right away
Skip entering your credit card info and get working in just a few short steps.

Get \$200 to do more on our platform.
Use the credit to try new services or scale your projects. Offer is available for 1 month after upgrade, for platform services only.

Ready to get started? Sign up today!

Already have an IBM Cloud account? [Log in](#)

Email* ✓
team4.ibm@mail.com

First Name* ✓
Team4

Last Name* ✓
IBM

Company ✓
IBM

Country or Region* ✓
United States

Password*
••••••••

Keep me informed of products, services, and offerings from IBM companies worldwide.

☒ Please keep me informed by email of products, services and offerings from IBM companies worldwide.

By clicking Create Account, I accept the [IBM Cloud privacy policy](#) and [IBM Cloud terms](#).

[Create Account](#)

<https://console.cloud.ibm.com/>

Add promo code



Screenshot of the IBM Cloud console dashboard showing the 'Manage' menu with 'Billing and usage' selected, and the 'Billing' option highlighted. The dashboard also displays a 'Fast-track your app development' section with three cards: 'Build with Watson', 'Create enterprise-level web apps', and 'Learn to build, deploy, and scale'.

The screenshot shows the IBM Cloud console interface. The top navigation bar includes 'IBM Cloud', 'Catalog', 'Docs', 'Support', and 'Manage'. The 'Manage' menu is open, showing options like 'Account', 'Billing and usage', 'Security', and 'Privacy'. The 'Billing and usage' option is selected, and the 'Billing' sub-option is highlighted. The main content area features a 'Dashboard' section with filters for 'RESOURCE GROUP', 'CLOUD FOUNDRY ORG', and 'CLOUD FOUNDRY SPACE'. Below this is a 'Fast-track your app development' section with three cards: 'Build with Watson', 'Create enterprise-level web apps', and 'Learn to build, deploy, and scale'. Each card includes a description and a 'View' button. A 'Create resource' button is visible in the top right corner of the main content area.

Add promo code



IBM Cloud

Catalog

Docs

Support

Manage

Search for resource...

Team5 IBM's Account

Profile

Platform Notifications

Usage Dashboard

Billing

Cloud Foundry Orgs

Resource Groups

Billing

Account

Team5 IBM's Account

ID: 7bdba05aff8d427fad0220f639682b24

Account Type

Lite (Free)

256 MB of free memory each month, free Lite plan services to choose from, and easy to upgrade when you're ready for more.

Account upgrade

Pay-As-You-Go

Access the full capabilities of IBM Cloud only for what you use when you upgrade!

Add Credit Card

Feature (Promo)

Formerly known as IBM Cloud Credits, only per each feature code.

Apply code

Subscription

Need help?

ng calculator

act sales

Feature Code

Enter a feature code to apply an IBM Cloud capability to this account including subscriptions, credit, and account extensions.

You can apply a feature code to only one IBM Cloud account, and the code cannot be removed after it's applied.

Feature Code

676B82-A1DC-2444-944C-4FFDF154801E

The feature code will be applied to the account: Team5 IBM's Account

Cancel

Apply

Add promo code



Feature Code

Applied: 35676B82-
A1DC-2444-944C-
4FFDF154801E

The following changes have been
applied to the account, Team5 IBM's
Account.

- Converted Lite account to trial account.
- This trial account is valid for 185 days.
- Updated Cloud Foundry org quota to 16GB.

Enter another code

Close