

Call for Code

HackRPI 2020

developer.ibm.com/callforcode

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Software Developer, IBM

Lucas Sahn
Program Manager, IBM

Agenda and speakers

- Call for Code
- Prometeo
- IBM Cloud overview
 - Databases
 - Deployments
 - AI/ML
 - Low code
- Starter kits and other resources
- Open questions



Upkar Lidder
Software Developer, IBM



Lucas Sahn
Program Manager, IBM

*What is
Call for Code?*

CALL FOR CODE®

A five-year program created by **David Clark Cause** with Founding Partner **IBM**, and in partnership with **United Nations Human Rights** and **The Linux Foundation**, Call for Code features an annual competition and is the largest tech-for-good challenge of its kind.



CALL FOR CODE®

Call for Code inspires developers to create **practical, effective, and high-quality applications** that can have an immediate and lasting impact on humanitarian issues **as sustainable open source projects.**



Winners receive cash and deployment support to bring their solutions to life



Global Challenge

All winners will receive an invitation to the Call for Code Global Award Announcement and support from the Linux Foundation.

Join a **movement** of:

- **210,000+** problem solvers
- **165+** nations
- **8,000+** applications built

Grand prize winner – \$200,000 USD

- Solution implementation through Code and Response™
- Opportunity for mentorship and investment in the solution

Runner up

First and second – \$25,000 USD

Runner up

Third and fourth – \$10,000 USD

callforcode.org

Call for Code® for Racial Justice

Call for Code® for Racial Justice

Now is the time to turn a critical moment in our history into a sustained movement. We must come together to create technological solutions to combat racism, wherever it occurs.

Black lives matter. Period.



Share your support ▾

Get started →

Why now

In response to the murders of George Floyd, Ahmaud Arbery, Breonna Taylor, and too many others, Black IBMers, in their pain, frustration, and exhaustion, had a moment of clarity. They had a vision of an America without social unrest – a vision of using technology to help combat systemic racism.

Focus areas

With a focus on Police & Judicial Reform and Accountability, Diverse Representation, and Policy & Legislation Reform, we are forming open source projects to help combat racism and promote racial justice. We are inviting people across the globe to channel their frustrations about systemic racism in a tangible and authentic way by getting involved with these projects and making an impact in communities.

The open source projects are now available with solution starters, which contain resources to help you learn about the projects and how you can start building, evolving, and leveraging the technology.

Call for Code® for Racial Justice

Police & Judicial Reform and Accountability, Diverse Representation, and Policy & Legislation Reform open source solution starters

🔗 <https://ibm.biz/racialjustice> 🐦 @CallforCode 📩 info@callforcode.org

Repositories 26 Packages People 118 Teams 8 Projects Settings

Pinned repositories

Customize pinned repositories

Open-Sentencing To help public defenders better serve their clients, Open Sentencing shows racial bias in data such as demographics providing insights for each case

Vue ⭐ 30

Five-Fifths-Voter Five Fifths Voter is a web application tool designed to enable and empower Black people and others to exercise their right to vote by ensuring their voice is heard

Vue ⭐ 29

Incident-Accuracy-Reporting-System Incident Accuracy Reporting System (IARS) is a Content Management application that addresses the issue of transparency surrounding police incident reporting by allowing witnesses and/or victims to ...

JavaScript ⭐ 29 ⚡ 1

Legit-Info "Legit Info" app helps residents understand the impact of legislation and policies based on their country, state, county, city, district location

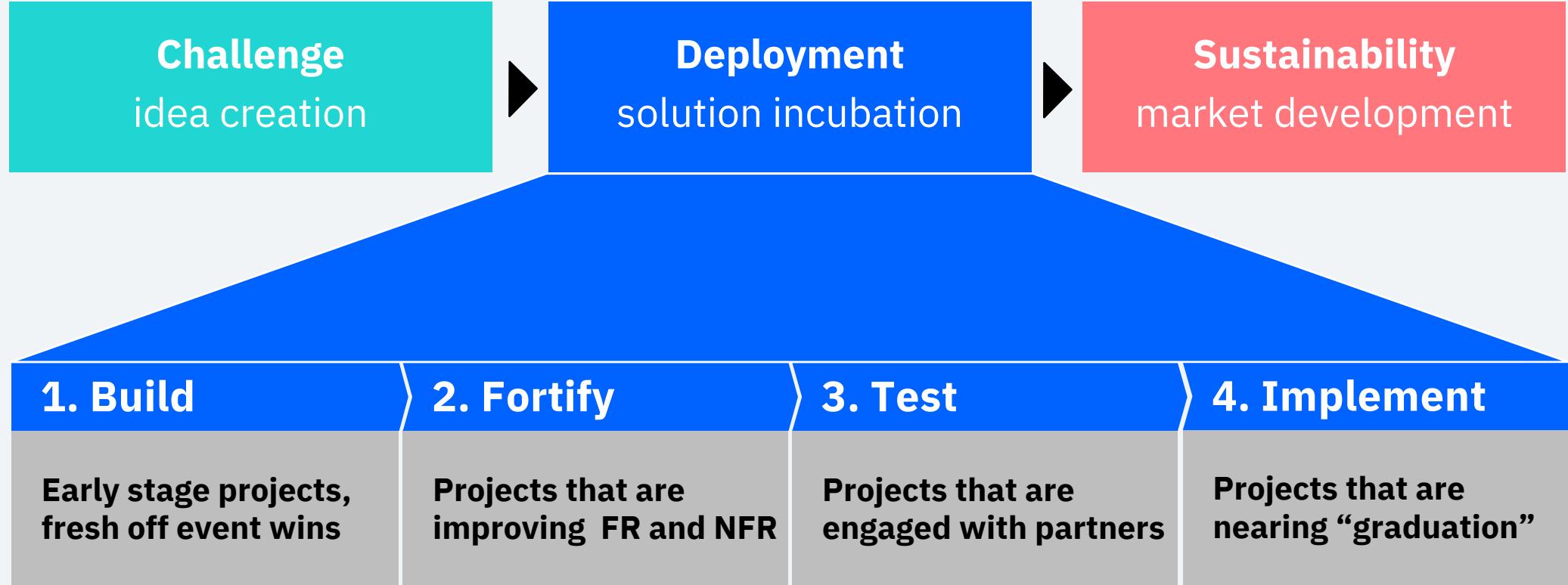
Python ⭐ 28

Truth-Loop The Truth-Loop solution helps communities simply understand the policies, regulations and legislation that will impact them the most and allows them to share their experiences around how policies h...

JavaScript ⭐ 21 ⚡ 1

*Each
Call for Code
winner has a
future*

A Deployment Framework incubates Call for Code projects



The 2019 winner

Call for Code 2019 winner



PROMETEO

Real-time and predictive analysis of what firefighters are exposed to in order to improve health outcomes

Technology: The IoT solution integrates IBM Watson Studio, Kubernetes, Node-RED, and Cloudant on the IBM Cloud

Ten devices tested with real-time info sent to IBM Cloud and analyzed at base camp



Prometeo Controlled Burn

The 2019 winner in action

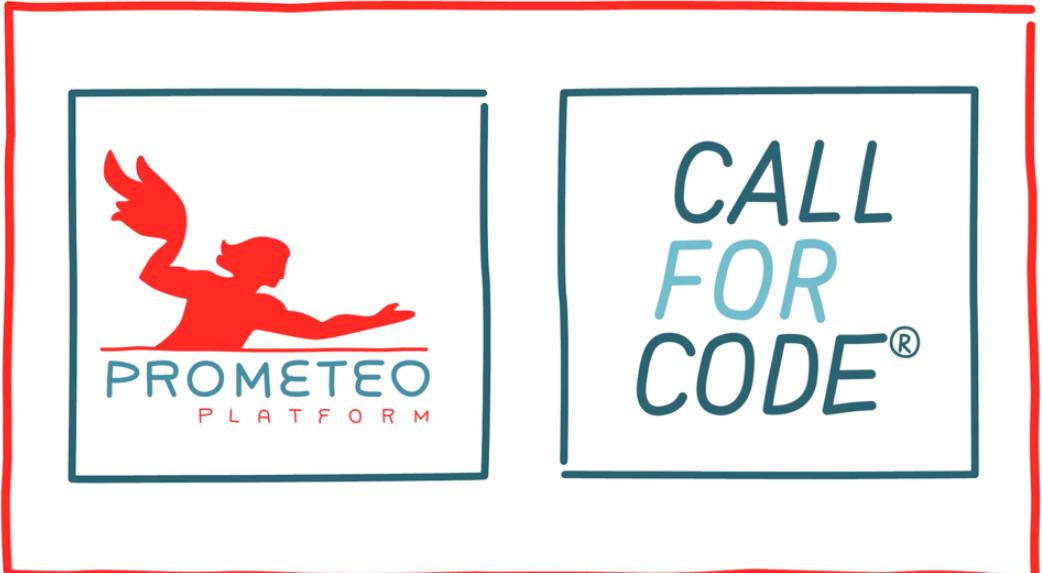


Barcelona, Spain – February 2020

This first field test with wildfire firefighters tested the capabilities of Prometeo's devices as well as their dashboard. Prometeo deeply tested device and sensor functionality as well as the durability of the devices on 10 volunteer firefighters. The team received key feedback on how they could improve their solution and are moving on to the next of 3 additional milestones with the IBM Service Corps



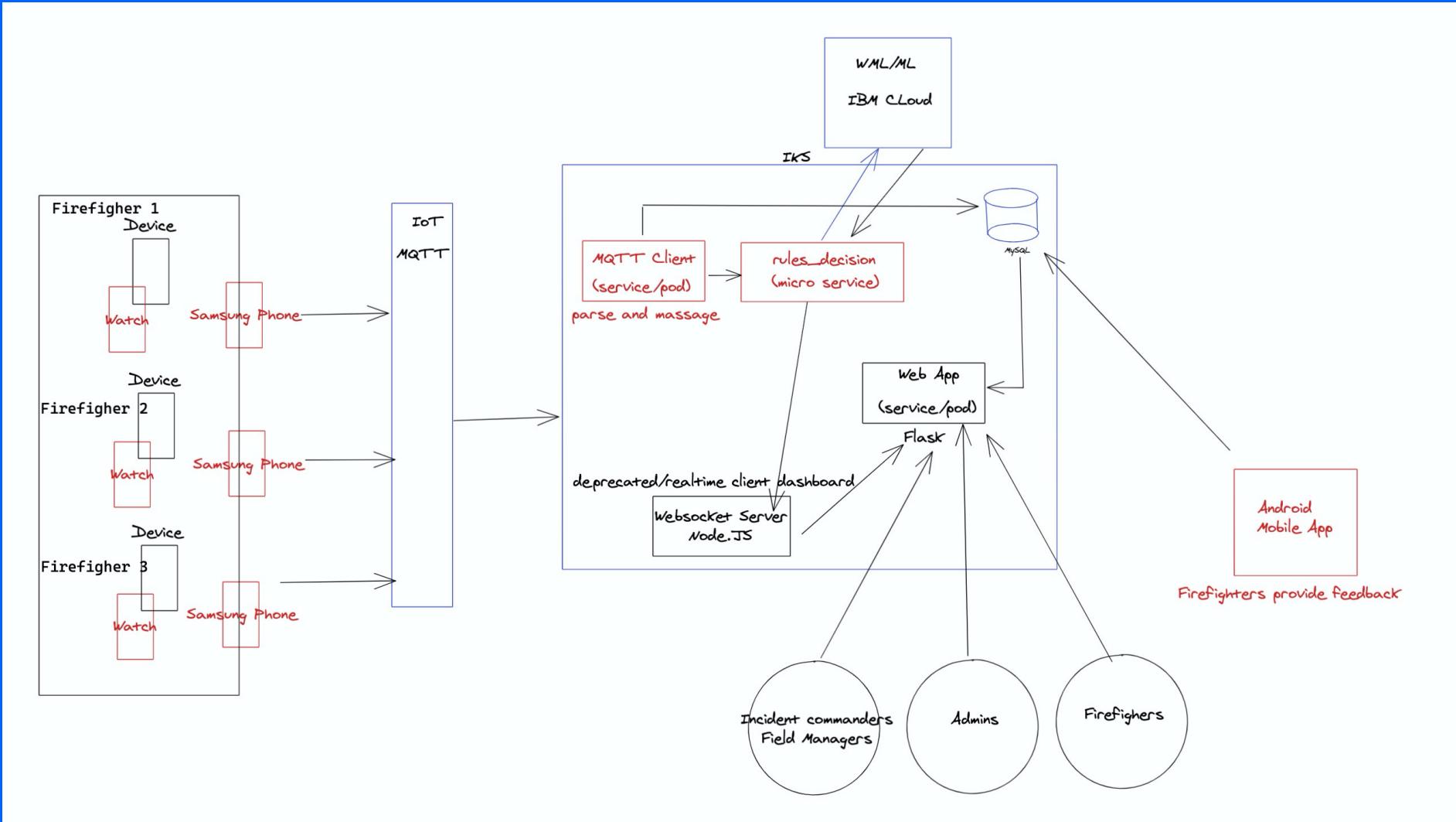
The IBM Service Corps team is completing its virtual deployment



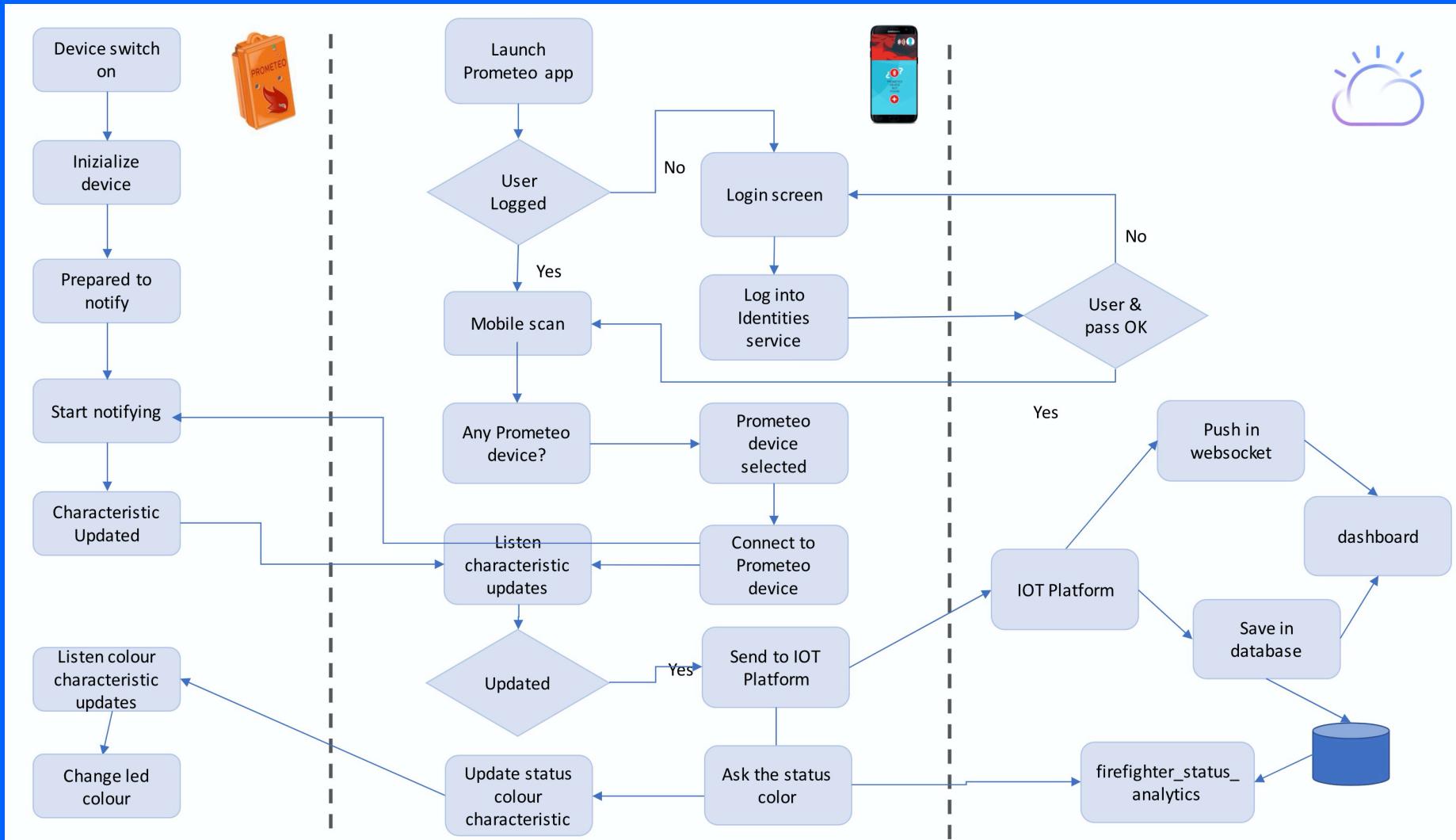
+ Brandi Boatner
& Sam Davis



Prometeo architecture



Prometeo architecture



Contribute to the Prometeo community starting in November



A screenshot of the GitHub repository for 'Call-for-Code / Prometeo'. The repository has 58 issues, 2 branches, and 0 tags. The README.md file is open, showing the project's purpose: to protect firefighters from野火 exposure. The repository includes files like 'case', 'content', 'dashboard', 'deprecated_server', 'model', 'node-red', 'rules', 'screenshots', 'sensor/esp32_bombers_mq7', '.gitignore', 'CONTRIBUTING.md', 'DEPRECATED_README.md', 'EDGE.md', 'LICENSE', 'README.md', 'ROADMAP.md', 'SETUP.md', and 'ShoppingList.md'. The repository is licensed under Apache 2.0. The sidebar shows the project's status: Placeholder for the next version of Prometeo, winner of the Call for Code 2019 Global Challenge. It also lists tags: call-for-code, code-and-response, data-science, iot, firefighting, python, node-red, kubernetes, Readme, Apache-2.0 License, Releases, Packages, Contributors, and Languages (JavaScript 74.3%, CSS 21.3%, HTML 2.8%, Python 0.8%, Jupyter Notebook 0.7%, C++ 0.1%).

Let's Hack!

What can you use on IBM Cloud?

The screenshot shows the IBM Cloud Catalog interface. On the left, there is a sidebar with filters for Category (Compute, Containers, Networking, Storage, AI / Machine Learning, Analytics, Blockchain, Databases, Developer Tools, Logging and Monitoring, Migration Tools, Integration, Internet of Things, Security, Mobile), Provider (IBM, Third party), and Pricing plan (Lite, Free). The main area has a search bar at the top with the placeholder "Search the catalog...". Below it, a heading says "Services" and a sub-heading says "Explore our broad portfolio of managed services for infrastructure, developer tools, and more to build your apps on the public cloud." A button labeled "All Categories 177 items" is present. The main content area displays a grid of service cards:

- Accern-API** (Third party • Developer Tools) - Get the most advanced breaking news technology for your investment strategies. Free.
- AccountScore** (Third party • Analytics) - AccountScore Open Banking & transaction analytics. Free.
- Actifio GO** (Third party • Storage • Developer Tools • Integration) - SaaS platform for backup/DR/cloning/migration of Enterprise workloads in IBM Cloud. IAM-enabled.
- Alloy** (Third party • Developer Tools) - API for identity (KYC, AML & fraud). Free.
- Analytics Engine** (IBM • Analytics) - Flexible framework to deploy Hadoop and Spark analytics applications.
- Annotator for Clinical Data** (IBM • AI / Machine Learning) - Analyze text to extract medical codes and concepts such as diseases, lab values, medications, procedures and more. (Feedback icon)

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

What can you use on IBM Cloud?

Databases

 **Cloudant**
IBM • Databases • Mobile

A scalable JSON document database for modern apps. Independently scale throughput & storage. Built on Apache CouchDB.

Lite • Free • IAM-enabled

 **Db2**
IBM • Databases

A fully managed, highly-performant relational data store running the enterprise-class Db2 database engine.

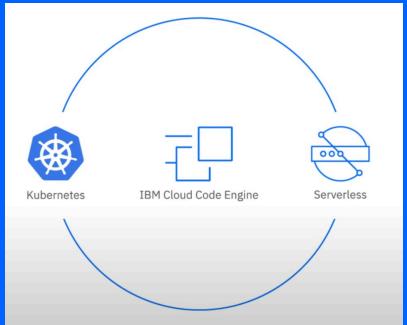
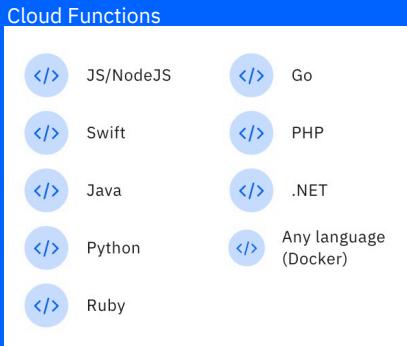
Lite • Free • IAM-enabled

 **Object Storage**
IBM • Storage

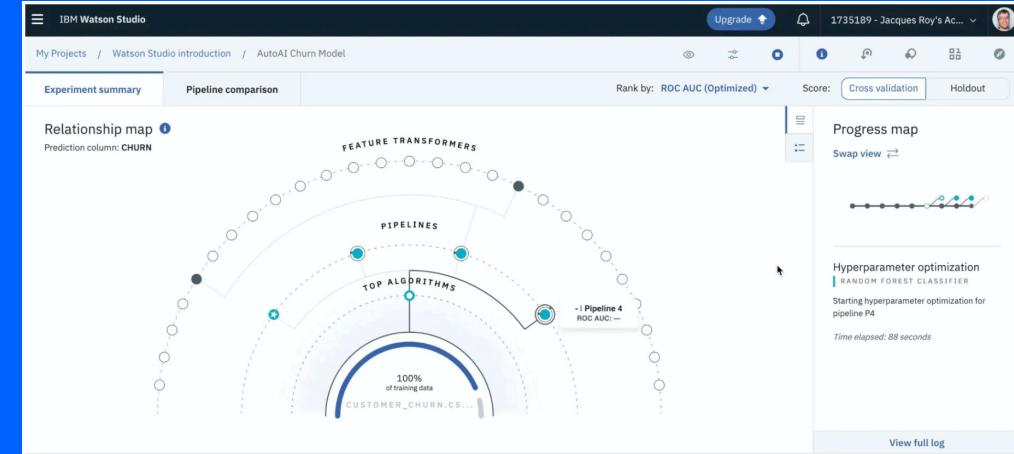
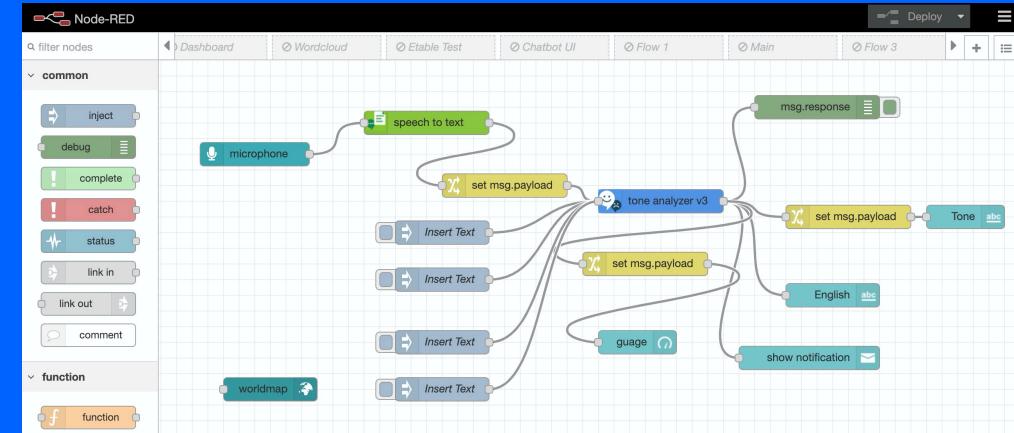
Provides flexible, cost-effective, and scalable cloud storage for unstructured data.

Lite • Free • IAM-enabled

Deployment



Low Code



What can you use on IBM Cloud?

AI/ML



Watson Assistant

IBM • AI / Machine Learning

Watson Assistant lets you build conversational interfaces into any application, device, or channel.

Lite • Free • IAM-enabled



Machine Learning

IBM • AI / Machine Learning

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

Lite • Free • IAM-enabled • Service Endpoint Supported



Natural Language Understanding

IBM • AI / Machine Learning

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

Lite • Free • IAM-enabled



Tone Analyzer

IBM • AI / Machine Learning

Tone Analyzer uses linguistic analysis to detect three types of tones from communications: emotion, social, and language. This insight can then be used to drive...

Lite • Free • IAM-enabled



Discovery

IBM • AI / Machine Learning

Add a cognitive search and content analytics engine to applications.

Lite • Free • IAM-enabled



Watson Studio

IBM • AI / Machine Learning

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

Lite • Free • IAM-enabled



Speech to Text

IBM • AI / Machine Learning

Low-latency, streaming transcription

Lite • Free • IAM-enabled



Personality Insights

IBM • AI / Machine Learning

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

Lite • Free • IAM-enabled



Language Translator

IBM • AI / Machine Learning

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

Lite • Free • IAM-enabled



Visual Recognition

IBM • AI / Machine Learning

Find meaning in visual content! Analyze images for scenes, objects, and other content. Choose a default model off the shelf, or create your own custom...

Lite • Free • IAM-enabled



Text to Speech

IBM • AI / Machine Learning

Synthesizes natural-sounding speech from text.

Lite • Free • IAM-enabled

MAX - Open Source Deep Learning Models

Showing 1 - 12 of 29 results

Sort: Date Newest to Olde

Model Asset Technologies	Architectures & Deployment models
<input checked="" type="radio"/> All Models	<input type="checkbox"/> Cloud
<input type="radio"/> Trainable	<input type="checkbox"/> Edge computing
<input type="radio"/> Deployable	<input type="checkbox"/> Microservices
<input type="checkbox"/> Audio Classification	<input type="checkbox"/> On premises
<input type="checkbox"/> Audio Feature Extraction	<input type="checkbox"/> Quantum computing
<input type="checkbox"/> Audio Modeling	
<input type="checkbox"/> Image Classification	
<input type="checkbox"/> Image Feature Extraction	
<input type="checkbox"/> Image-to-Image Translation or Transformation	
<input type="checkbox"/> Image-to-Text Translation	
<input type="checkbox"/> Language Modeling	
Show more	

Weather Forecaster Model | Deployable Predict hourly weather features given historical data for a specific location May 26, 2020 →

Recommender System Model Generate personalized recommendations May 4, 2020 →

Optical Character Recognition Model | Deployable Identify text in an image. November 4, 2019 →

Question Answering Model Answer questions on a given corpus of text September 17, 2019 →

Text Summarizer Model | Deployable Generate a summarized description of a body of text July 9, 2019 →

Toxic Comment Classifier Model | Deployable Detect 6 types of toxicity in user comments June 4, 2019 →



Code Patterns

Architectures & Deployment models

- Cloud
- Edge computing
- Microservices
- On premises
- Quantum computing
- Reactive Systems
- Serverless

Cities

- Amsterdam
- Bangalore
- Berlin
- Bucharest
- Chicago
- Dubai
- London
- New York

[Show more](#)

Data Asset Technologies

- Audio

Showing 1 - 12 of 391 results

Sort: Date Newest to Olde ▾



Code Pattern

Build a machine learning regression model using Findability Platform Predict Plus

November 5, 2020



Code Pattern

Extract insights from videos

November 4, 2020



Code Pattern

Build an assistant to evaluate various health insurance policies

November 2, 2020



Code Pattern

Build a movie ticket reservation system

November 1, 2020



Code Pattern

Use the Hyper Protect SDK to deploy Apple CareKit with a HIPAA-ready back end

October 30, 2020



Code Pattern

Build a service desk database, server, and web app

October 29, 2020

Get started

Register for an IBM Cloud account

IBM | Call for Code Get Started Open Source Projects 2020 Awards Explore More ▾

Get started

Whether you are looking to take on climate change, natural disasters, COVID-19, or other pressing social issues, your code has a vital role to play. Brush up on your cloud skills while making a real difference and get involved with these open source projects supported by the Linux Foundation. Through your contributions, you could be recognized as a Community Champion.



Site feedback

↓ Join the community ↓ Pick a project ↓ Find resources ↓ Make your contribution

Next steps

Step 1: Join the community

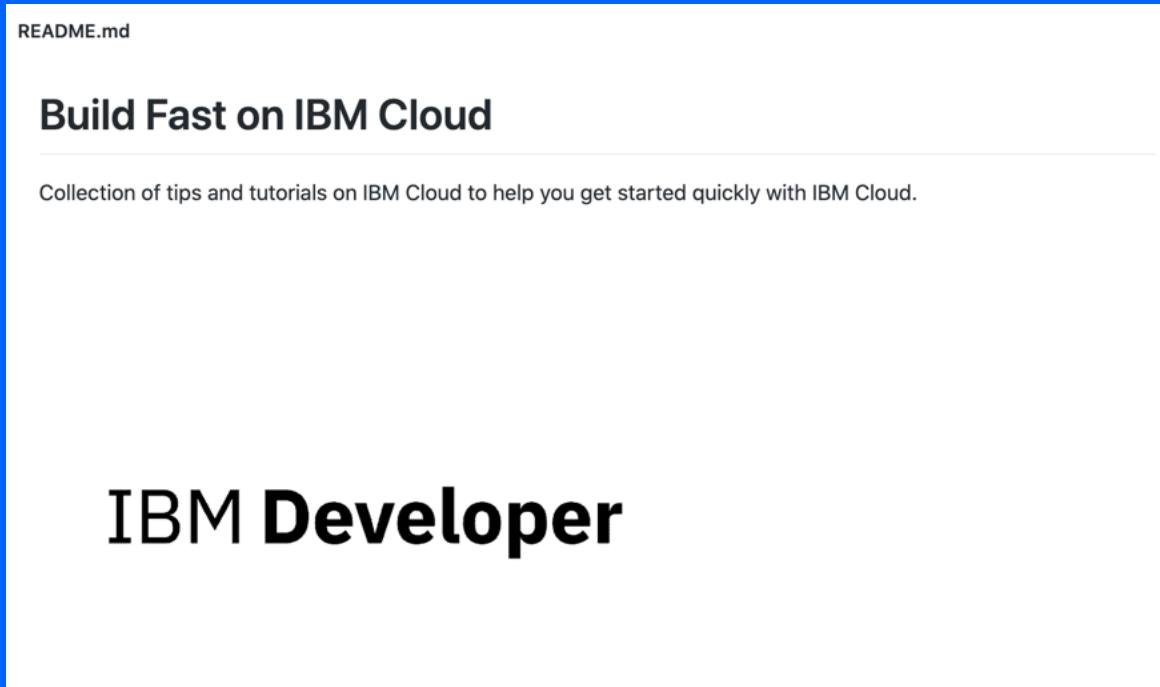
Join our community of over 300,000 developers to build new cloud skills, meet like-minded devs, and contribute to Tech for Good open source projects. Get a free IBM Cloud account and receive latest updates on project deployments and new resources to boost your development.

<http://ibm.biz/hackrpi>

Find general IBM Cloud technology resources

The screenshot shows the homepage of the IBM Developer website. At the top, there is a blue header bar with the text "Digital Developer Conference on Data and AI: Essential data science, machine learning, and AI skills and certification" and a "Register for free" button. Below the header, the IBM logo and "IBM Developer" are visible, along with navigation links for "Topics", "Products & Services", "Community", and "Open source at IBM". On the right side of the header are a search icon, a user profile icon, and a close button. The main content area has a dark background with the text "Build Smart. Build Secure." in large white letters. Below this, a subtext reads: "More than 100 open source projects, a library of knowledge resources, developer advocates ready to help, and a global community of developers. What will you create?". A search bar with the placeholder "Search IBM Developer" is located below the subtext. On the right side of the main content area, there is a vertical "Site feedback" button. At the bottom left, there is a section titled "Technology Topics" with a "View all →" link. To the right of this section are six icons representing different technologies: AI (circuit board), Analytics (magnifying glass over a chart), Node.js (chemical structure diagram), Blockchain (blockchain nodes), Containers (server icon), and Java (monitor icon). The entire screenshot is set against a blue background.

More quick labs on machine learning, data, runtimes, prototyping



Explore the starter kits, code patterns, tutorials, and samples

Resources

Dig into our best technical content across four key technology areas and build your IBM Cloud and open source skills.

- Artificial intelligence**
Use AI to create apps that accelerate, enhance and scale the human experience.
- Data science**
Analyze structured and unstructured data to extract knowledge and insights related to urgent issues.
- Internet of Things**
Collect and analyze device sensor data to take corrective or preventative action automatically.
- Platform development**
Identify the right environment, software, and runtime to power and scale your solution.

Starter kits

Some developers know what they want to build for Call for Code, but for those who don't, there are starter kits. These quick-start guides help developers understand the scope of the problems and start building applications tied to easy-to-understand use cases in a matter of minutes.

[Get started with COVID-19](#) → [Get started with climate change](#) →

Call for Code® for Racial Justice

Police & Judicial Reform and Accountability, Diverse Representation, and Policy & Legislation Reform open source solution starters

🔗 <https://ibm.biz/racialjustice> 🐦 @CallforCode 📧 info@callforcode.org

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Open-Sentencing To help public defenders better serve their clients, Open Sentencing shows racial bias in data such as demographics providing insights for each case 41 stars, 1 review	Five-Fifths-Voter Five Fifths Voter is a web application tool designed to enable and empower Black people and others to exercise their right to vote by ensuring their voice is heard 32 stars, 2 reviews	Incident-Accuracy-Reporting-System Incident Accuracy Reporting System (IARS) is a Content Management application that addresses the issue of transparency surrounding police incident reporting by allowing witnesses and/or victims to ... 34 stars, 3 reviews
Legit-Info "Legit Info" app helps residents understand the impact of legislation and policies based on their country, state, county, city, district location 28 stars	Truth-Loop The Truth-Loop solution helps communities simply understand the policies, regulations and legislation that will impact them the most and allows them to share their experiences around how policies h... 25 stars, 1 review	Call-for-Code A link back to the main Call for Code GitHub organization and projects

About the Challenge

CALL
FOR
CODE®

IBM
Call for Code
Founding Partner

1) Public Health and Pandemic Response

Create an innovative project that can improve the lives, health or convenience of others. What do you think would make social distancing easier? How can we prevent pandemics or enable others to stay safe?

2) Climate Change and Environmental Sustainability

Implement your great ideas with this environmental, Earth friendly track! How can we help maintain our ability to do great things while keeping the place we live on healthy?

What will YOU build?



Upkar Lidder

Data Science and AI
Developer Advocate



Thank you!