IBM Introduction

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Internet of Things Developer Advocacy

The right architecture enables cloud and cognitive transformation.

Four dimensions designed as an integrated whole to support innovation today and in the future

Applications, solutions and services	Deploy new, industry-specific, differentiating capabilities fast
AI/Cognitive	Allow your accumulated expertise to shine through in everything you do
Data	The ability to derive insights and knowledge from your data while managing and governing regardless of location, respecting compliance and sovereignty
Cloud Infrastructure	Integrate mission critical applications alongside new, cognitive and data loads and accelerate AI data ingestion and training

Employ the right type of cloud to accelerate innovation

PUBLIC

Public and open-by-design

Infrastructure on Demand:

Easily configure, deploy and scale your infrastructure

Leverage community advantages and high quality releases that only Open Source can provide

HYBRID

Multi-cloud model options

Choice and Control:

Instant scalability of public with support for critical enterprise integration

Predictable performance of dedicated with local control

PRIVATE

Management and deployment options

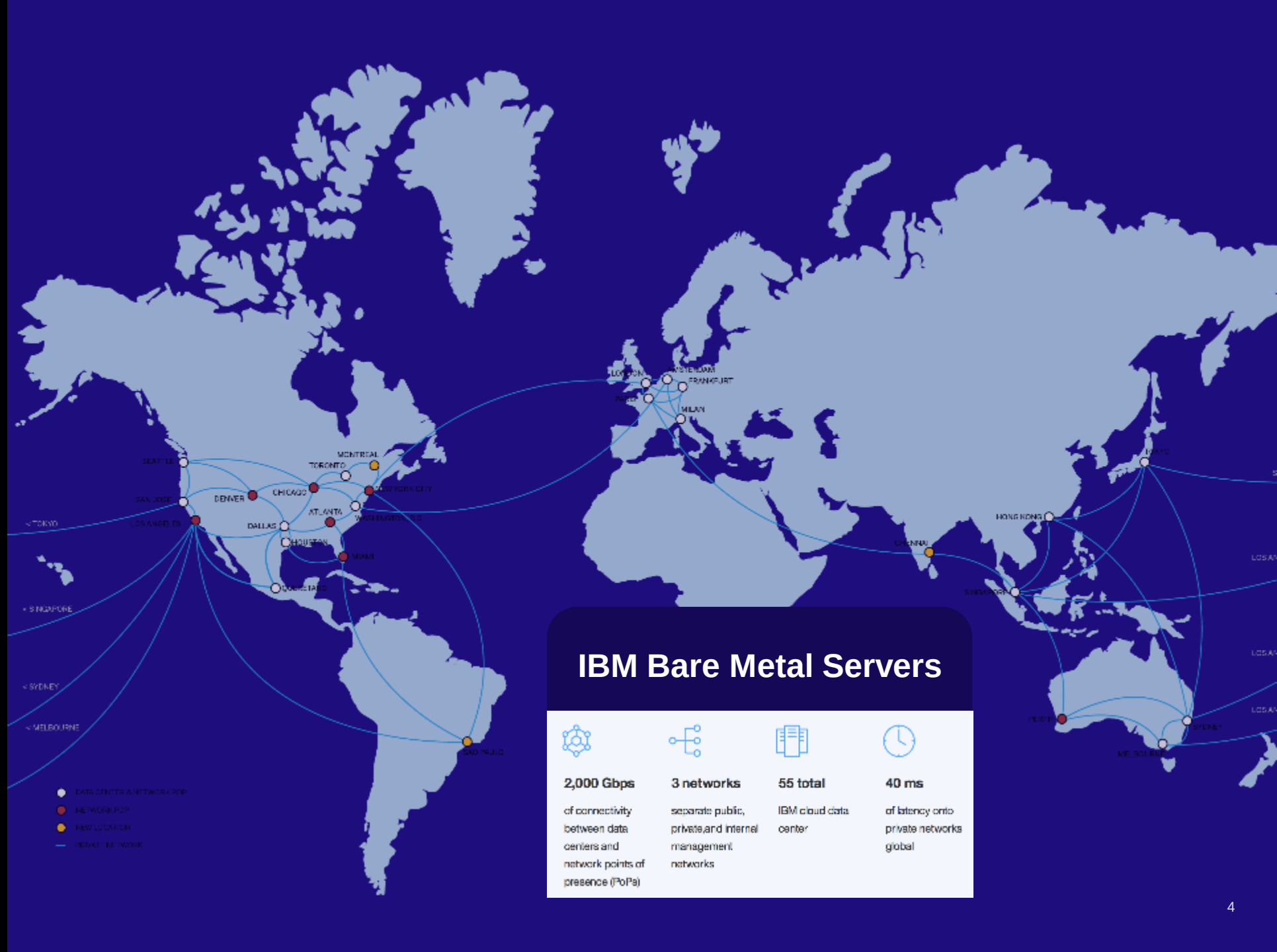
On Premise and Hosted :

Private: Deploy on premise securely

Hosted: Spare capital expense with a hosted private cloud

SOURCES: Forbes and Gartner

Scale your innovative applications on the right type of cloud with global infrastructure



IBM Bare Metal Servers

2,000 Gbps
of connectivity between data centers and network points of presence (PoPs)

3 networks
separate public, private,and internal management networks

55 total
IBM cloud data center

40 ms
of latency onto private networks global

Compute options for any workload, across global infrastructure

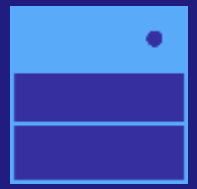
PERFORMANCE & CONTROL

PORTABILITY

DEVELOPMENT SPEED

Bare Metal

Maximum performance and control



Virtual Server or VMware

Leverage existing languages and tools

Containers

Maximum portability

Cloud Foundry

Open PaaS environment

OpenWhisk

Maximum speed with serviceless apps

Apply cognitive / AI services to your structured and unstructured data

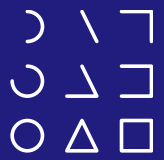
UNDERSTAND

Cognitive systems understand imagery, language and other unstructured data like humans do.

REASON

They can reason, grasp underlying concepts, form hypotheses, and infer and extract ideas.

LEARN



With each data point, interaction and outcome, they develop and sharpen their expertise, so they never stop learning.

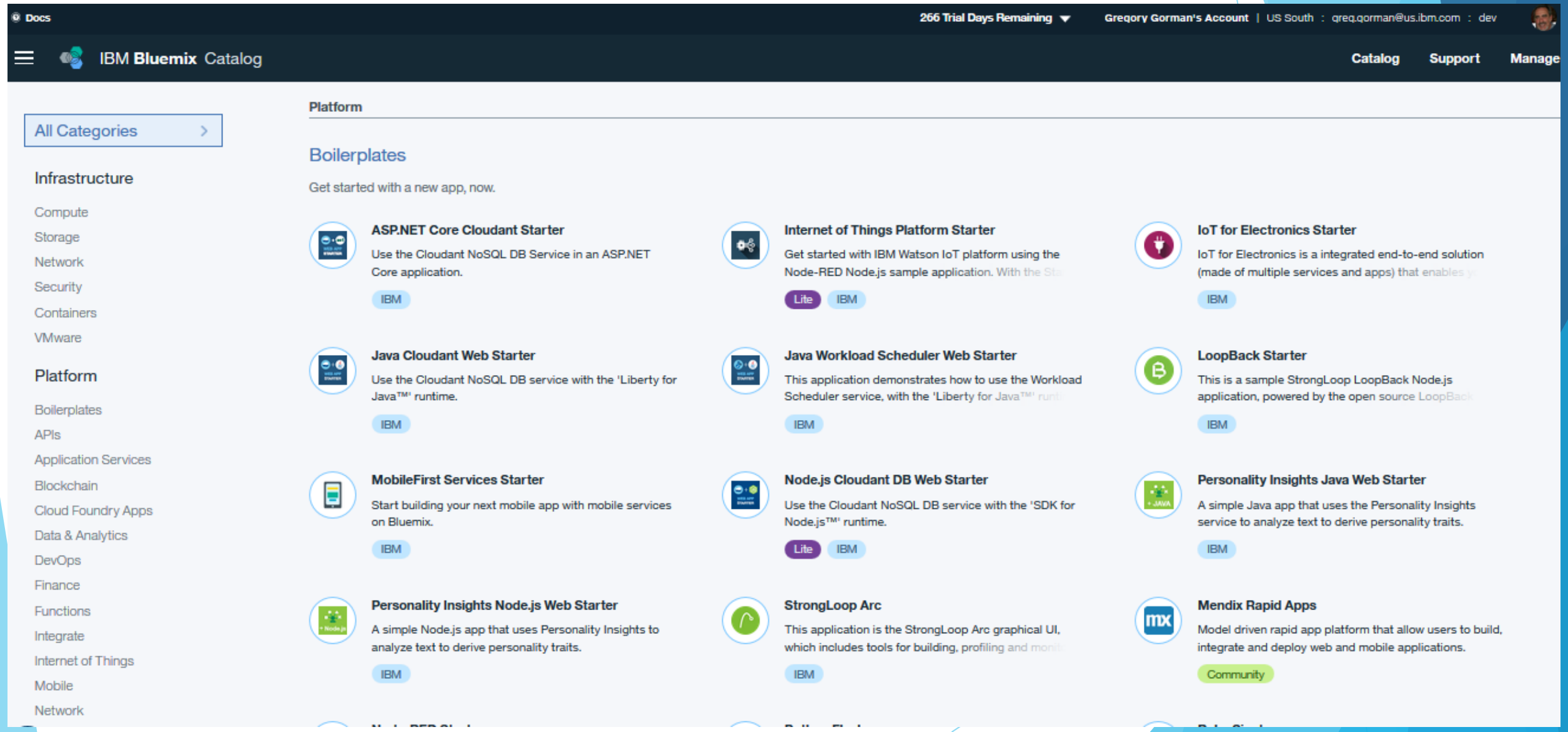
INTERACT

With abilities to see, talk and hear, cognitive systems interact with humans in a natural way.

IBM Cloud Development – Platform as a Service

- Development Environment
- “Freemium” model – most services below a clip level are free to use
- Limits on memory and # of services
- Can upgrade to a Pay as you Go
- www.Bluemix.net to sign up

Catalog of Services Speed Results



IBM Watson IoT Platform

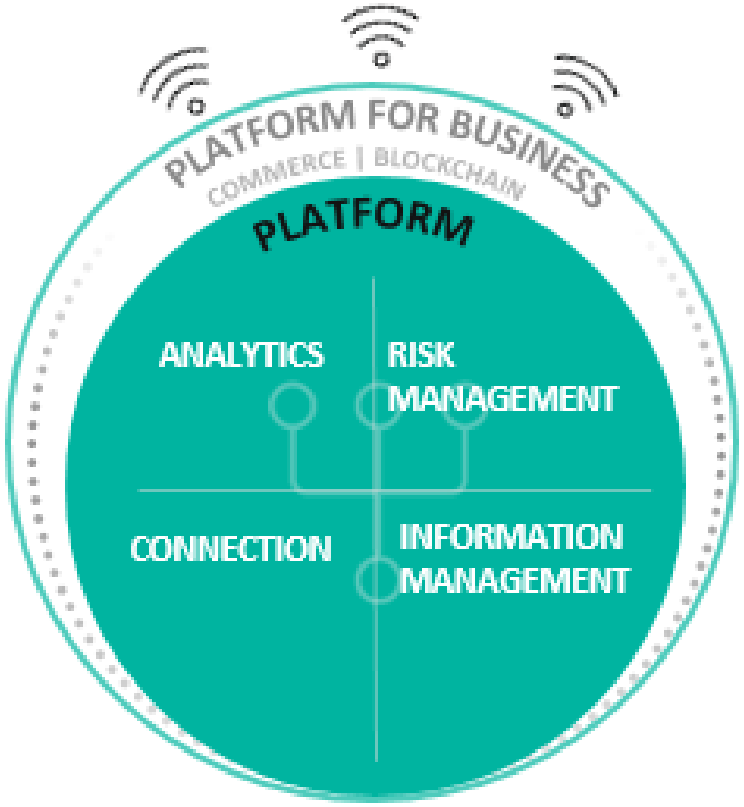
Make sense of data to optimize operations, manage assets, rethink products and services, and transform customer experience.

Connect
Connect and manage devices, networks and gateways.

Analytics
Gain insights from information using real-time streaming as well as machine learning and cognitive analytics in the cloud and at the edge.

Risk Management
Visualize the IoT landscape, manage risk, and build trusted sources of IoT data with innovative technology such as blockchain.

Information Management
Integrate information, structured and unstructured, from devices, people, the weather and the world around us.



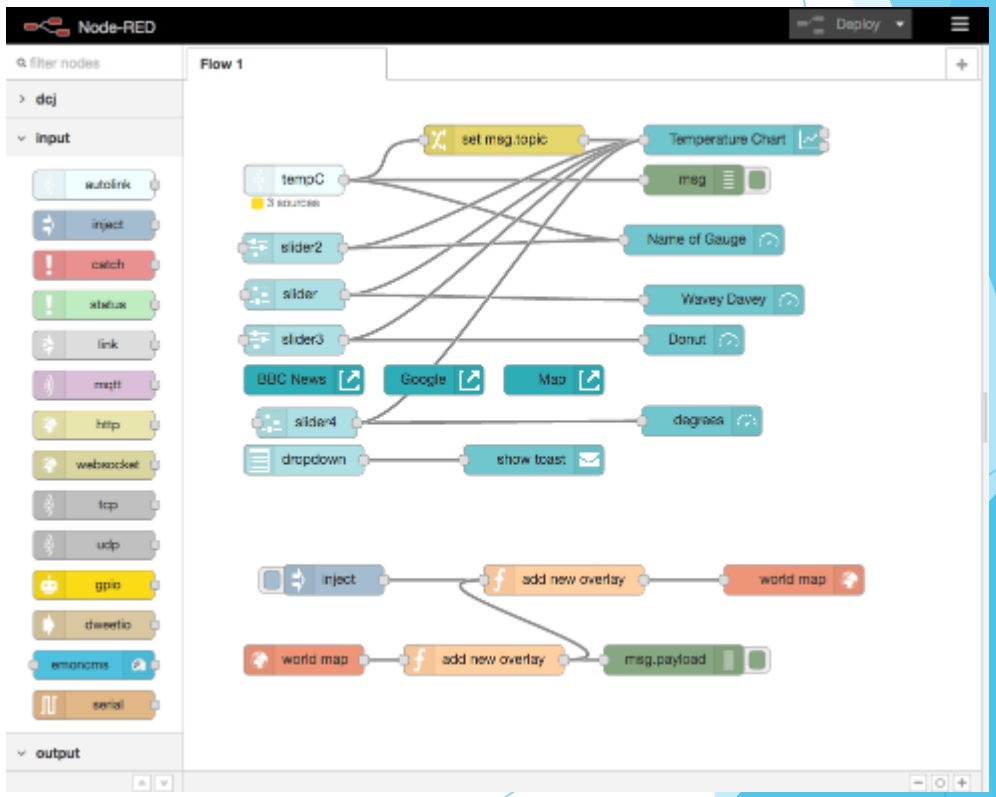
Introducing Node-RED

Node-RED makes it easy to wire together the Internet of Things.

It provides a browser-based drag-drop UI for creating flows of events and deploying them to the runtime.

The light-weight runtime, built in **node.js**, is ideal for edge-of-network environments or running in the cloud.

It can be easily expanded to take add new nodes to the palette – taking full advantage of the node package manager (npm) ecosystem



Popular Watson APIs

Speech to Text

- Transcribes spoken word into text.
- Used for:
  - Understanding voice commands
  - Capturing speech for analysis
  - Automatic transcription of speeches
- Input: Speech - FLAC, MP3, WAV, OGG, and more
  - Can be streamed in real time or sent as a one-shot delivery
- Output: JSON Object
  - Transcript
  - Keyword search, Speaker tagging, profanity filtering, and additional info.

Conversation

- Allows you to build the framework of conversation for responding to inquiries or handling voice commands.
- Uses:
  - Customer service chat bot
  - Implementing a voice interface to hardware
  - Virtual assistant
- Input: Conversation dialog – String
- Output: JSON Object
  - Context object
    - Conversation context
    - Context variables
  - Output

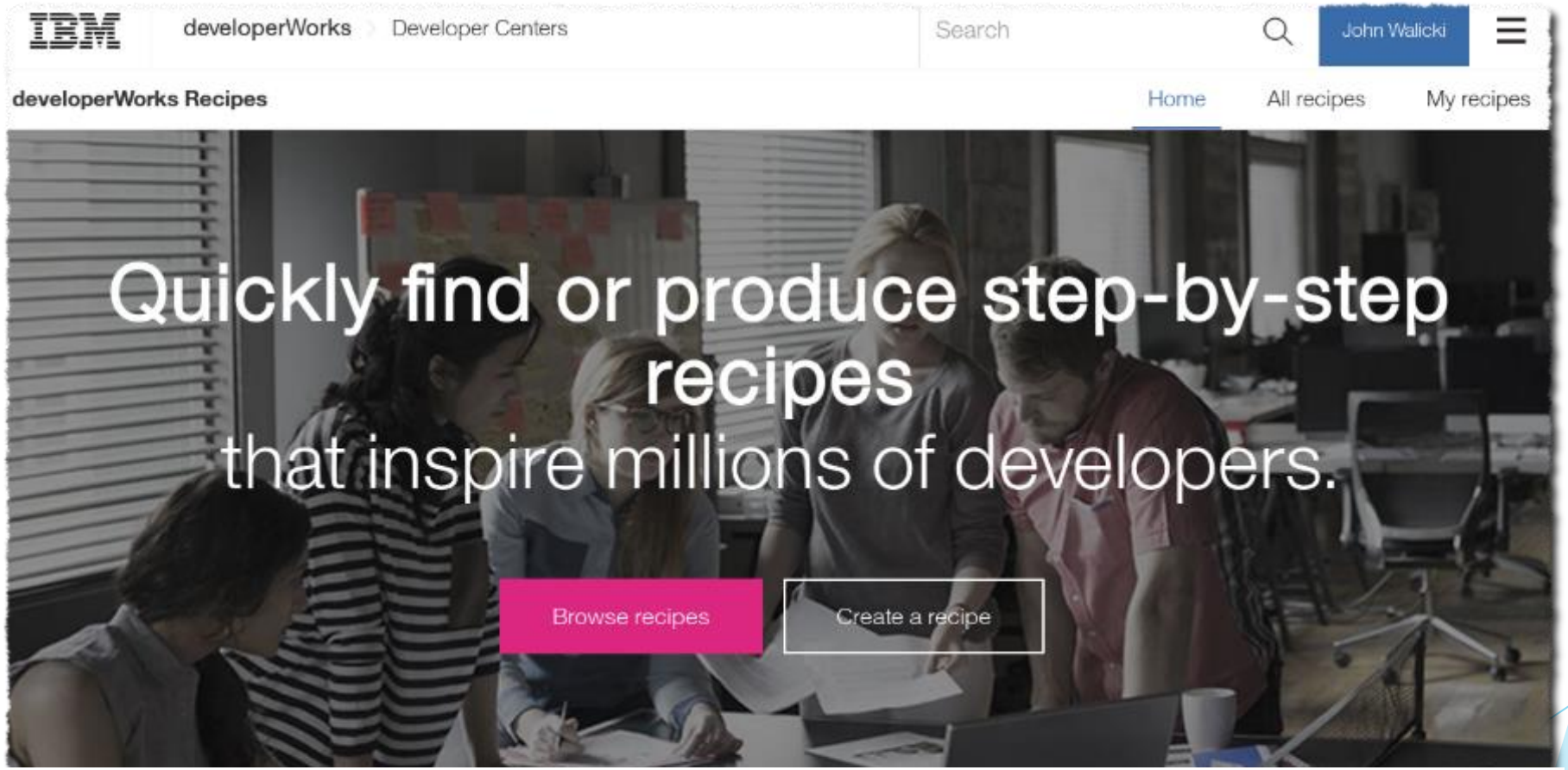
Text to Speech

- Allows you to turn text into spoken words
- Customizable voice for synthesis
- Used for:
  - Vocalizing responses from chat bots
  - Reading weather or other announcements aloud
- Input:
  - Text to be spoken aloud – String
  - Voice synthesis options
- Output:
  - FLAC, WAV, OGG, WebM

Data Content and Storage Services

- Weather Company Data
  - Detailed weather forecasts as well as decades of weather history from The IBM Weather Company
- Twitter
  - Bi-directional interfaces to real time streams
- Databases
  - Store any information from your application using many different database options including NoSQL and relational.

How to Get Started – Recipes and Journeys!

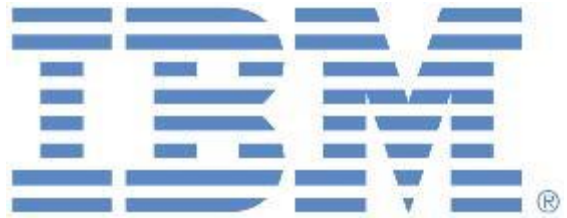


https://developer.ibm.com/Code/

https://developer.ibm.com/recipes/

Quick Demo: Node-RED and Watson

Tweet a picture with the hashtag #IBMandIGG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