

IBM **Watson**

IBM Cloud Overview

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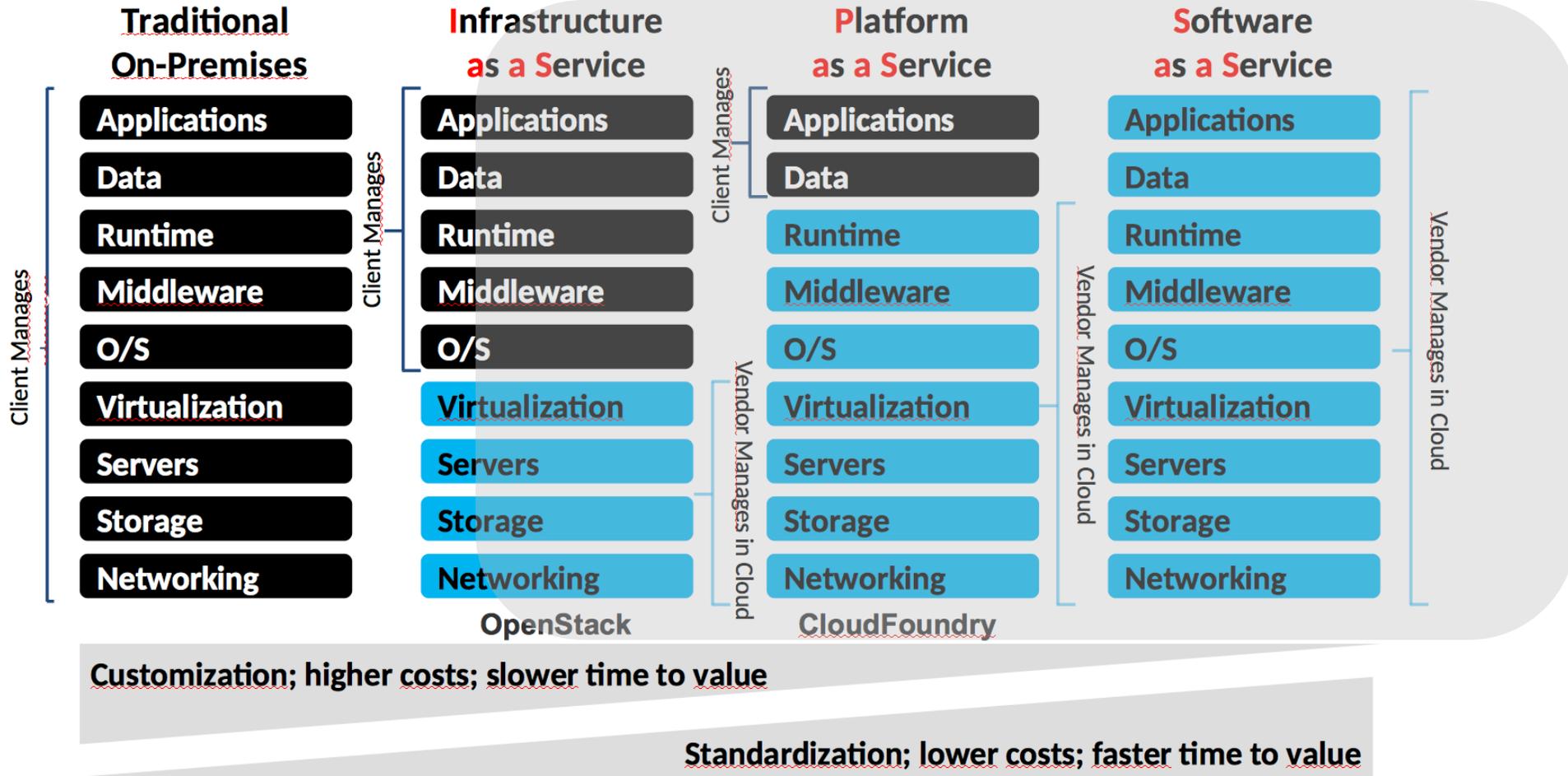


Cloud Computing

- An estimated 85% of new software is being built for cloud deployment
- Cloud Computing is a broad term that describes a range of services
- Infrastructure as a Service (IaaS)
 - Hardware / software - servers, storage, networks, operating systems
- Platform as a Service (PaaS)
 - Set of tools and services designed for application development
- Software as a Service (SaaS)
 - Designed for end users, delivered over the web



IBM Cloud



Platform as a Service

- A computing platform that allows the creation of web applications quickly and easily without the complexity of buying and maintaining the underlying infrastructure and middleware
- Characteristics
 - Services to develop, test, deploy, host and maintain applications
 - Web based user interface creation tools
 - Multi-tenant architecture
 - Built in scalability
 - *And more!*



Pricing

- Build apps and try IBM services FREE for 30 days
 - Pay-As-You-Go, or discounted subscriptions
 - Price and configure your own scenario [here](#)
-
- Charges vary depending on resources used
 - Compute resources are charged by GB-hours
 - GB-hour (num instances) (memory per instance) (running hours)
 - Charges for services
 - Many have free monthly allowances and/or tiered charges



Cloud Dashboard

- Allows you to create, view and manage your apps and services
- Manage organizations and spaces
 - Organization: grouping methodology for IBM Cloud users
 - Space: a sub-group where you can assign permissions

Dashboard [Customize](#)
Create resource

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--------------------|--|--------|--|------------------------|---|---------------|---|--|---|--|--|---------|--|---|---|------|--|---|---|-----------------|--|---|--|--|--|
| <p>Resource summary View resources</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Cloud Foundry Apps</td> <td style="text-align: right;">5</td> <td style="text-align: right;">1</td> <td style="text-align: right;">✓</td> </tr> <tr> <td>Cloud Foundry Services</td> <td></td> <td style="text-align: right;">11</td> <td></td> </tr> <tr> <td>Services</td> <td></td> <td style="text-align: right;">20</td> <td></td> </tr> <tr> <td>Storage</td> <td></td> <td style="text-align: right;">1</td> <td style="text-align: right;">✓</td> </tr> <tr> <td>Apps</td> <td></td> <td style="text-align: right;">1</td> <td style="text-align: right;">✓</td> </tr> <tr> <td>Developer Tools</td> <td></td> <td style="text-align: right;">1</td> <td></td> </tr> </table> <p style="text-align: right;">Add more resources</p> | Cloud Foundry Apps | 5 | 1 | ✓ | Cloud Foundry Services | | 11 | | Services | | 20 | | Storage | | 1 | ✓ | Apps | | 1 | ✓ | Developer Tools | | 1 | | <p>Classic infrastructure</p> <ul style="list-style-type: none"> Device list Support cases User list Subnets Network monitoring Block Storage Compliance reports Learn about classic infrastructure | <p>Planned maintenance View events</p> <p>Next event: Sat, Jul 20, 2019 4:00 PM Planned Commercial Infrastructure Management System (IMS) Mai...</p> <p>Upcoming</p> <ul style="list-style-type: none"> Deploy service improvements Update the TLS certificates (some clusters only) Deploy service improvements to some Tokyo data center clusters |
| Cloud Foundry Apps | 5 | 1 | ✓ | | | | | | | | | | | | | | | | | | | | | | | |
| Cloud Foundry Services | | 11 | | | | | | | | | | | | | | | | | | | | | | | | |
| Services | | 20 | | | | | | | | | | | | | | | | | | | | | | | | |
| Storage | | 1 | ✓ | | | | | | | | | | | | | | | | | | | | | | | |
| Apps | | 1 | ✓ | | | | | | | | | | | | | | | | | | | | | | | |
| Developer Tools | | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Location status View status</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Asia Pacific</td> <td style="text-align: right;">✓</td> </tr> <tr> <td>Europe</td> <td style="text-align: right;">✓</td> </tr> <tr> <td>North America</td> <td style="text-align: right;">✓</td> </tr> <tr> <td>South America</td> <td style="text-align: right;">✓</td> </tr> </table> | Asia Pacific | ✓ | Europe | ✓ | North America | ✓ | South America | ✓ | <p>Apps View apps</p> <p>demoApp</p> <p style="text-align: right;">Create an app</p> | <p>Support cases View support</p> <p>3 Unresolved cases 1 Resolved cases</p> <p>Recent cases</p> <ul style="list-style-type: none"> CS0371022 Function Deployment failed:Instance creation of size small and type ai-function0.1.368 failed CS0357091 Toolchain - Add github.com - prepopulated owner CS0357041 Email already taken when I try to access us-south.git.cloud.ibm.com | <p>User access Manage users</p> <div style="text-align: center;"> <p>Working alone is no fun. With the right permissions, you can see other users when they join this account. Learn more about users and access.</p> <p>Invite users</p> </div> | | | | | | | | | | | | | | | |
| Asia Pacific | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | |
| Europe | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | |
| North America | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | |
| South America | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Usage View usage</p> <div style="display: flex; align-items: center;"> <div style="margin-left: 10px;"> <p>There aren't enough resources or costs to make a chart.</p> </div> </div> | | <p>Learn View more</p> <ul style="list-style-type: none"> Extend your resources with tools Manage your account and users Check out our solution tutorials IBM Developer Architecture Center IBM Skills Gateway | | <p>Recommended offerings View Catalog</p> <ul style="list-style-type: none"> Virtual Servers Up to 64 vCPU and 512 GB RAM to fit any workload need Blockchain Simplify the developmental, governmental, and operational aspects ... Watson Assistant Build conversational interfaces into any application, device, or cha... Consult with IBM Engage with IBM Experts to build a more meaningful application for ... | | | | | | | | | | | | | | | | | | | | | | |

IBM Cloud Catalog – <https://cloud.ibm.com/catalog>

190+ Services available

The screenshot displays the IBM Cloud Catalog interface, organized into several categories:

- Featured Offerings:** Includes services like IBM Log Analytics with LogIQ, IBM Log Analytics with LogIQ, and IBM Log Analytics with LogIQ.
- VPC Infrastructure:** Services such as Block Storage for VPC, Load Balancer for VPC, Virtual Private Cloud, Virtual Server for VPC, and VPN for VPC.
- Compute:** Includes Bare Metal Server, Cloud Foundry, Cloud Pak for Business Automation, Virtual Server, and vPCaaS from Rescale.
- Where Virtual Data Centers:** Services like IBM Cloud Private, IBM Cloud Managed Services, and IBM Cloud Managed Services for Containers.
- Where Servers:** Services like IBM Cloud Private, IBM Cloud Managed Services, and IBM Cloud Managed Services for Containers.
- Where Managed Systems:** Services like IBM Cloud Private, IBM Cloud Managed Services, and IBM Cloud Managed Services for Containers.
- Containers and IaaS:** Services like Kubernetes Cluster, OpenShift Cluster, and Container Registry.
- Serverless Compute:** Services like IBM Cloud Functions and IBM Cloud Functions as a Service (FaaS).
- Cloud Storage:** Services like IBM Cloud Object Storage, IBM Cloud Object Storage for Virtual, and IBM Cloud Object Storage for Virtual.
- Cloud Foundry:** Services like Liberty for Java, ASP.NET Core, and Python for Cloud Foundry.
- Containers:** Services like Kubernetes Cluster, OpenShift Cluster, and Container Registry.
- Networking:** Services like Load Balancers, Cloud Managed Network, Direct Link Dedicated, and Direct Link Exchange.
- Storage:** Services like Block Storage, Block Storage for VPC, File Storage, IBM Cloud Backup, Object Storage, and Active GO.
- AI:** Services like Watson Assistant, Watson Studio, Cognos and Cognos, Discovery, Knowledge Catalog, Knowledge Studio, Language Translator, Machine Learning, Natural Language Classifier, Natural Language Classifier, Personality Insights, Speech to Text, Text to Speech, Tone Analyzer, Visual Recognition, and Watson OpenScale.
- Analytics:** Services like Analytics Engine, Analytics Engine for Mobile, Data Warehouse, Geospatial Analytics, IBM Cognos Analytics, Reporting Data, SQL Query, Streaming Analytics, and Analytics Engine.

Cloud Foundry/Containers/VMware

- Provides a set of resources used to run the application
- Cloud Foundry allows you to get your application up and running with no need to set up and manage hardware, operating systems, or servers

Cloud Foundry

| | | | | |
|--|--|--|--|--|
|  Liberty for Java™ IBM Develop, deploy, and scale Java web apps with ease on IBM Cloud Foundry. IBM WebSphere Liberty Profile is a highly composable, ultra-fast,... |  SDK for Node.js™ IBM Develop, deploy, and scale server-side JavaScript® apps with ease on IBM Cloud Foundry. The IBM SDK for Node.js™ provides... |  ASP.NET Core IBM Develop, deploy, and scale ASP.NET Core web apps with ease on IBM Cloud Foundry. |  Runtime for Swift IBM A Kitura based server application that you can use as a starting point to get your own Kitura application up and running quickly on IBM Clou... |  Go Community Develop, deploy, and scale Go web apps with ease on IBM Cloud Foundry. |
|  PHP Community Develop, deploy, and scale PHP web apps with ease on IBM Cloud Foundry. |  Python Community Develop, deploy, and scale Python web apps with ease on IBM Cloud Foundry. |  Ruby Community Develop, deploy, and scale Ruby web apps with ease on IBM Cloud Foundry. |  Tomcat Community Develop, deploy, and scale Tomcat web apps with ease on IBM Cloud Foundry. | |

Containers and VMs

| | |
|--|---|
|  Kubernetes Cluster IBM • IAM-enabled Deploy native Kubernetes clusters with the latest upstream versions on hardened master and worker nodes. |  OpenShift Cluster IBM • Beta Deploy and secure enterprise workloads on native OpenShift with developer focused tools to run highly available apps. |
|--|---|

VMware Virtual Data Centers

| |
|--|
|  VMware vCenter Server on IBM Cloud IBM • IAM-enabled Standardized software-defined data center (SDDC) solution that combines IBM Cloud Bare Metal Servers with VMware vSphere,... |
|--|

Services

- Cloud extension that provides ready-for-use functionality
- Can add single or multiple services to any application



Speech to Text

Lite • IBM • IAM-enabled

Low-latency, streaming transcription



Cloudant

Lite • IBM • IAM-enabled

A scalable JSON document database for web mobile, IoT, and serverless applications.



Object Storage

Lite • IBM • IAM-enabled

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



Watson Assistant

Lite • IBM • IAM-enabled

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



Db2

Lite • IBM • IAM-enabled

A next generation SQL database. Formerly dashDB For Transactions.



Analytics Engine

Lite • IBM • IAM-enabled

Flexible framework to deploy Hadoop and Spark analytics applications.



Functions

IBM • IAM-enabled

IBM Cloud Functions is a Function-as-a-Service (FaaS) platform which executes functions in response to incoming events.



API Connect

Lite • IBM

Create, manage, enforce, and run APIs.



Secure Gateway

IBM

IBM Secure Gateway for IBM Cloud enables users to integrate cloud services with enterprise systems on premises.



Continuous Delivery

Lite • IBM • IAM-enabled

Develop, build, test and deliver using DevOps best practices.



Toolchain

Lite • IBM • IAM-enabled

Build, test and deliver using DevOps best practices.



Internet of Things Platform

Lite • IBM

This service is the hub of all things IBM IoT, it is where you can set up and manage your connected devices so that your apps can access...

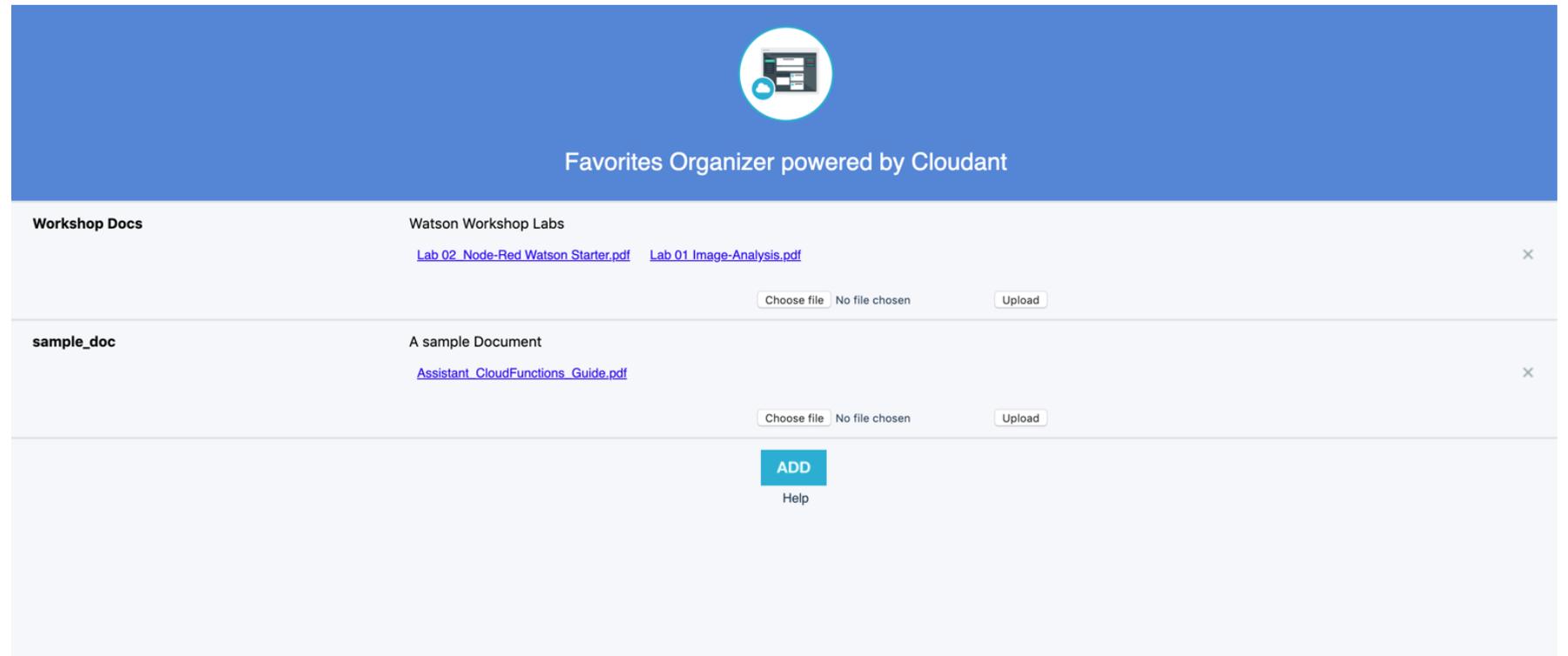
Starter Kits

- Boilerplates are used to get up and running quickly by generating application templates
 - A sample application
 - The associated runtime environment
 - Any predefined services to accomplish a specific task

| | | | | | |
|--|---|--|---|--|---|
|  Basic Web for Mendix IBM A starter that provides a basic web serving application using Mendix. |  Custom Vision Model for Core ML with Watson IBM Create Apple Core ML Models using the Watson Visual Recognition service to process and tag images locally. |  Internet of Things Platform Starter Lite • IBM Get started with IBM Watson IoT platform using the Node-RED Node.js sample application. With the Starter, you can quickly simulate an Intern... |  Java MicroProfile / Java EE Basic IBM A starter that provides a basic web serving application in Java, using the MicroProfile / Java EE framework. |  Java Microservice with MicroProfile and Java EE IBM A starter for building a microservice in Java using the MicroProfile / Java EE framework. |  Java Microservice with Spring IBM A starter building a microservice backend in Java, using the Spring framework. |
|  Java Web App with Spring IBM A starter that provides a basic web serving application in Java, using the Spring framework. |  Mobile Basic IBM A basic Hello World starter with Analytics and Push services. |  Node.js Microservice with Express.js IBM A starter for building a microservice backend in Node.js, using the Express.js framework. |  Node.js Web App with Express.js IBM A starter that provides a basic web serving application in Node.js, using the Express.js framework. |  Python Microservice with Flask IBM A starter for building a microservice backend, using the Flask framework. |  Python Web App with Django IBM A starter that provides a basic web serving application using the Django framework. |
|  Python Web App with Flask IBM A starter that provides a basic web serving application using the Flask framework. |  Watson Assistant Basic IBM Simple application that demonstrates the Watson Assistant service in a chat interface simulating banking tasks. |  Watson Natural Language Understanding Basic IBM Collection of APIs that can analyze text to help you understand its concepts, entities, keywords, sentiment, and can create a custom model for... |  Watson Visual Recognition Basic IBM Use deep learning algorithms to analyze images that can give you insights into your visual content. |  Node-RED Starter Lite • Community This application demonstrates how to run the Node-RED open-source project within IBM Cloud. | |

Demo

Node.js and Cloudant Starter Application



The screenshot displays a web interface titled "Favorites Organizer powered by Cloudant". At the top, there is a blue header with a circular icon containing a document and a magnifying glass. Below the header, the interface is divided into two main sections. The first section, labeled "Workshop Docs", contains a sub-section "Watson Workshop Labs" with two links: "[Lab 02 Node-Red Watson Starter.pdf](#)" and "[Lab 01 Image-Analysis.pdf](#)". Below these links are buttons for "Choose file", "No file chosen", and "Upload". The second section, labeled "sample_doc", contains a sub-section "A sample Document" with one link: "[Assistant CloudFunctions Guide.pdf](#)". Below this link are buttons for "Choose file", "No file chosen", and "Upload". At the bottom of the interface, there is a blue "ADD" button and a "Help" link.

IBM Watson

IBM Cloud Overview

Thank you!

<https://cloud.ibm.com>

IBM

Demo Backup 1 – Create a Cloud Foundry App

Deploy and run your applications without managing servers or clusters with IBM Cloud Foundry

Cloud Foundry automatically transforms source code into containers, scales them on demand, and manages user access and capacity.

Cloud Foundry in the IBM Cloud

**Public Applications** Create

Work with the multi-tenant Cloud Foundry environment publicly available in the IBM Cloud.

[Manage](#) your public organizations and spaces.

**Enterprise Environment** Create

Create your own isolated IBM Cloud Foundry Enterprise Environment on-demand, with one click and within an hour.

[Learn more](#) about IBM Cloud Foundry Enterprise Environment.

Application Runtimes



Why Cloud Foundry?



Access Control

Fine grain assignment/dispensing of compute



Automatic Placement

Applications are automatically placed across multiple



Automatic Health Management



Automatic Routing

Internet reachable routes are automatically created



Demo Backup 2 – Name, locate, and pricing plan



.js Create a Cloud Foundry App

Lite • IBM

SDK for Node.js™

Develop, deploy, and scale server-side JavaScript® apps with ease on IBM Cloud Foundry. The IBM SDK for Node.js™ provides enhanced performance, security, and serviceability.

[View Docs](#) [Terms](#)

VERSION 3.x
 TYPE Application
 LOCATION Sydney, Frankfurt, London, Washington DC, Dallas

App name:

kpsDemoApp

Host name:

kpsDemoApp

Domain:

mybluemix.net

Choose a region/location to deploy in:

Dallas

Choose an organization:

kp _____ juth

Choose a space:

W: _____ rm

Tags: ⓘ

Examples: env:dev, version-1

Pricing Plans

Monthly prices shown are for country or region: United States

| PLAN | FEATURES | PRICING |
|--|--|--------------------|
| ✓ Default | Run one or more apps free for 30 days (375 GB-hours free). | \$0.07 USD/GB-Hour |
| This is a service plan for the IBM Bluemix Platform runtime. | | |

Demo Backup 3 – The sample runs after creation

kpsDemoApp Running [Visit App URL](#) Routes

Org: kp path Location: Dallas Space: V irm [Add Tags](#)

Runtime

| | | | |
|--|---|-----------------------------------|---|
| BUILDPACK SDK for Node.js™ | INSTANCES All instances are running Health is 100% | MB MEMORY PER INSTANCE | TOTAL MB ALLOCATION 511.75 GB still available |
|--|---|-----------------------------------|---|

Connections

No services are connected to this app
You can bind a service:

[Create connection](#)

Runtime cost

| | |
|---|---|
| US\$0.00 Current charges for billing period | US\$0.00 Estimated total for billing period (Jul 1, 2019 - Jul 31, 2019) |
|---|---|

Current and estimated cost excludes [connected services](#).

[View full usage details](#)

Activity feed

Continuous delivery

Hello World!

Thanks for creating a [NodeJS Starter Application](#).

Demo Backup 4 – Add a Cloudbant Db to the app

Runtime

| | | | |
|--|----------------------|-----------------------------------|---|
| BUILDPACK SDK for Node.js™ | INSTANCES | MB MEMORY PER INSTANCE | TOTAL MB ALLOCATION 511.75 GB still available |
|--|----------------------|-----------------------------------|---|

Connections (1)

| | |
|--|-----------------------------------|
| | Create connection |
|--|-----------------------------------|

Runtime cost

| | |
|---|---|
| US\$0.00 Current charges for billing period | US\$0.00 Estimated total for billing period (Jul 1, 2019 - Jul 31, 2019) |
|---|---|

Current and estimated cost excludes [connected services](#).

[View full usage details](#)

- Getting started
- Overview
- Runtime**
- Connections
- Logs
- API Management
- Autoscaling
- Monitoring

The screenshot shows the IBM Cloud console interface for the application 'kpsDemoApp'. The 'Runtime' tab is selected in the left sidebar. At the top, the application status is 'Running'. Below the application name, there are tabs for 'Memory and instances', 'Environment variables', and 'SSH'. The 'Environment variables' tab is active, displaying a list of environment variables under the heading 'VCAP_SERVICES'. The visible variable is 'workshopDb', which contains a JSON object with various configuration details including API keys, hostnames, and service roles. An 'Export' button is located at the bottom right of the environment variables list.

```
VCAP_SERVICES
{
  "workshopDb": {
    "tags": [
      "data_management",
      "ibm_created",
      "lite",
      "ibm_dedicated_public",
      "ibmcloud-alias"
    ],
    "instance_name": "workshopDb",
    "binding_name": null,
    "credentials": {
      "apikey": "tvS-B [redacted]_Uxp5",
      "host": "a2:[redacted]0-bluemix.cloudantnosqldb.appdomain.cloud",
      "iam_apikey_description": "Auto-generated for binding c541099b-59e6-4acb-974d-00bffde2f0df",
      "iam_apikey_name": "workshopDb",
      "iam_role_crn": "crn:v1:bluemix:public:iam:::serviceRole:Manager",
      "iam_serviceid_crn": "crn:v1:bluemix:public:iam-identity::a/fb8a1757c-[redacted]2-87b6-e28717f77da4",
      "password": "dac-[redacted]ba91670cce",
      "port": 443,
      "url": "https://a238f1eb-34-[redacted]5764bfd960821bcba91670cce@a238f1eb-3469-4183-b655-5eb7a906d300-bluemix.cloudantnosqldb.appdomain.cloud"
    }
  }
}
```

Demo Backup 6 – Add a Delivery Pipeline

Toolchains / kpsDemoApp / kpsDemoApp

kpsDemoApp | Delivery Pipeline

The screenshot displays a delivery pipeline with two stages: **Build** and **Deploy**. Both stages are marked as **STAGE PASSED**.

- Build Stage:**
 - LAST INPUT:** Git URL [back to original](#) (Last commit by kpschlotter, 2m ago)
 - JOBS:** Build (Passed now)
 - LAST EXECUTION RESULT:** Build 4
- Deploy Stage:**
 - LAST INPUT:** Stage: Build / Job: Build
 - JOBS:** Deploy (Passed now)
 - LAST EXECUTION RESULT:** kpsDemoApp [View console](#) (Build 3)

To the right of the stages is a blue button labeled **+ Add Stage**.

The screenshot displays a code editor interface for a Node.js application named 'nodejs-cloudant'. The interface is divided into several sections:

- EXPLORER:** Shows the project structure with folders like 'public', 'images', 'scripts', 'style', 'uploads', 'routes', and 'views'. The 'views' folder is expanded, showing 'index.html'.
- OPEN EDITORS:** Lists the files currently open in the editor, including 'manifest.yml', 'index.html', 'package.json', 'app.js', and 'vcap-local.json'.
- CODE EDITOR:** Displays the code for 'app.js', showing a REST API endpoint for '/api/favorites'. The code includes logic for checking if a document exists, sanitizing input, and saving attachments to Cloudant. The code is as follows:

```
172 db.get(request.query.id, function(err, existingdoc) {
173
174   var isExistingDoc = false;
175   if (!existingdoc) {
176     id = '-1';
177   } else {
178     id = existingdoc.id;
179     isExistingDoc = true;
180   }
181
182   var name = sanitizeInput(request.query.name);
183   var value = sanitizeInput(request.query.value);
184
185   var file = request.files.file;
186   var newPath = './public/uploads/' + file.name;
187
188   var insertAttachment = function(file, id, rev, name, value, response) {
189
190     fs.readFile(file.path, function(err, data) {
191       if (!err) {
192
193         if (file) {
194
195           db.attachment.insert(id, file.name, data, file.type, {
196             rev: rev
197           }, function(err, document) {
198             if (!err) {
199               console.log('Attachment saved successfully.. ');
200
201               db.get(document.id, function(err, doc) {
202                 console.log('Attachments from server --> ' + JSON.stringify(doc._attachments));
203               }
204             }
205           }
206         }
207       }
208     }
209   }
210 }
```
- OUTLINE:** Provides a hierarchical view of the code structure, showing the current function being edited: 'app.get('/api/favorites') callback'.
- TERMINAL:** Shows the output of a series of Git commands, including cloning the repository, adding files, committing, and pushing to the origin.

The terminal output is as follows:

```
(base) kpsMBP-5:nodejs-cloudant kps$ git remote -v
origin https://github.ibm.com/klaus-peter-schlotter/nodejs-cloudant.git (fetch)
origin https://github.ibm.com/klaus-peter-schlotter/nodejs-cloudant.git (push)
(base) kpsMBP-5:nodejs-cloudant kps$ git add .
(base) kpsMBP-5:nodejs-cloudant kps$ git commit -m "a small change"
[master dfe3d64] a small change
1 file changed, 1 insertion(+), 1 deletion(-)
(base) kpsMBP-5:nodejs-cloudant kps$ git push origin master
Username for 'https://github.ibm.com:': ^C
(base) kpsMBP-5:nodejs-cloudant kps$ git add .
(base) kpsMBP-5:nodejs-cloudant kps$ git commit -m "back to original"
[master 8450e2e] back to original
1 file changed, 1 insertion(+), 1 deletion(-)
(base) kpsMBP-5:nodejs-cloudant kps$
```

Demo Backup 8 – App is uploaded and deployed.

Favorites Organizer powered by Cloudant

| | | |
|----------------------|--|-----------------------------------|
| Workshop Docs | Watson Workshop Labs Lab 02 Node-Red Watson Starter.pdf Lab 01 Image-Analysis.pdf | Choose file No file chosen Upload |
| sample_doc | A sample Document Assistant CloudFunctions Guide.pdf | Choose file No file chosen Upload |

ADD
Help

Demo Backup 9 – Cloudbant data created by app

kpsdemodb > 15a3f7662bf661be8130f3400c0048f4 { } JSON

Save Changes View Attachments ▾ Upload Attachment Clone Document Delete

```
1 {
2   "_id": "15a3f7662bf661be8130f3400c0048f4",
3   "_rev": "3-0d7f64594fe3c044be39151b250b3ddd",
4   "name": "Workshop Docs",
5   "value": "Watson Workshop Labs",
6   "_attachments": {
7     "Lab 02_Node-Red Watson Starter.pdf": {
8       "content_type": "application/pdf",
9       "revpos": 3,
10      "digest": "md5-a9w1FK2ehBu+r6He6MX8yA==",
11      "length": 1404692,
12      "stub": true
13    },
14    "Lab 01 Image-Analysis.pdf": {
15      "content_type": "application/pdf",
16      "revpos": 2,
17      "digest": "md5-Vaxknv145ffQDiz6dME1ag==",
18      "length": 2088739,
19      "stub": true
20    }
21  }
22 }
```

Lab 02_Node-Red Watson Starter.pdf - application/pdf, 1.3 MB

Lab 01 Image-Analysis.pdf - application/pdf, 2.0 MB

