

# Université IBM i 2018

16 et 17 mai

IBM Client Center Paris



## S03 - Modernisez vos applications IBM i avec Watson

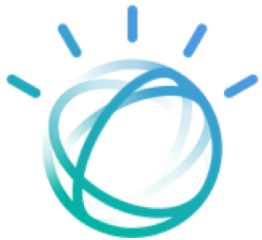
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# Agenda

- Watson overview
- Watson Analytics in nutshell
- Watson Product & Services
- Prototyping in IBM **Client Center** Montpellier
- Q&A

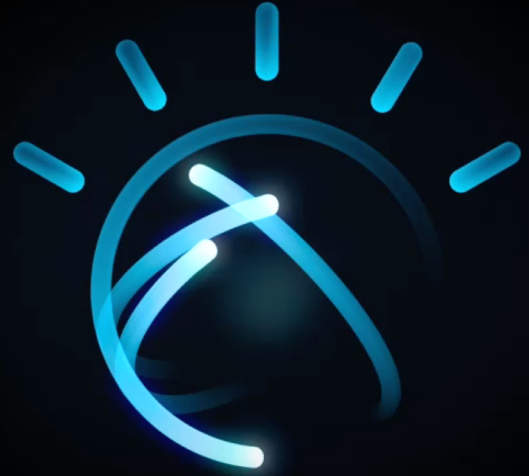


# IBM Watson?

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”

Watson is the  
AI platform  
for professionals



Enhance  
problem solving  
exponentially  
with built-in AI  
and machine  
learning  
capabilities.



## 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.



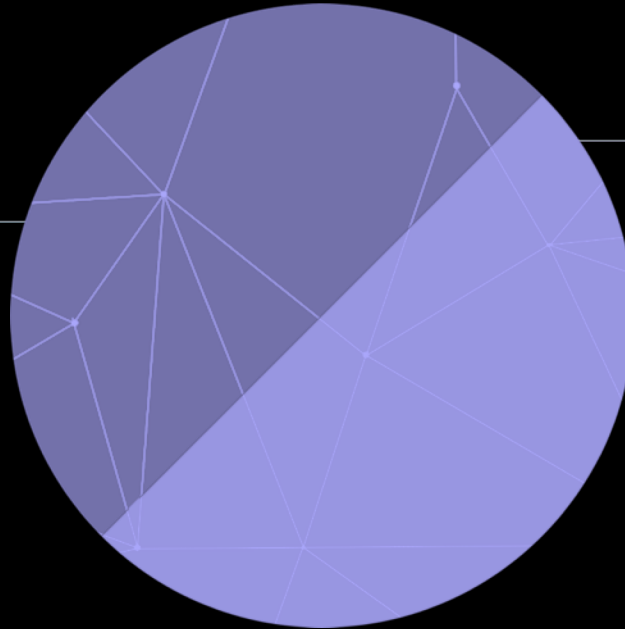
## Interact

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

# Cognitive systems forge a new partnership between man and machine

Humans excel at:

- Common Sense
- Morals
- Imagination
- Compassion
- Abstraction
- Dilemmas
- Dreaming
- Generalization



Cognitive Systems excel at:

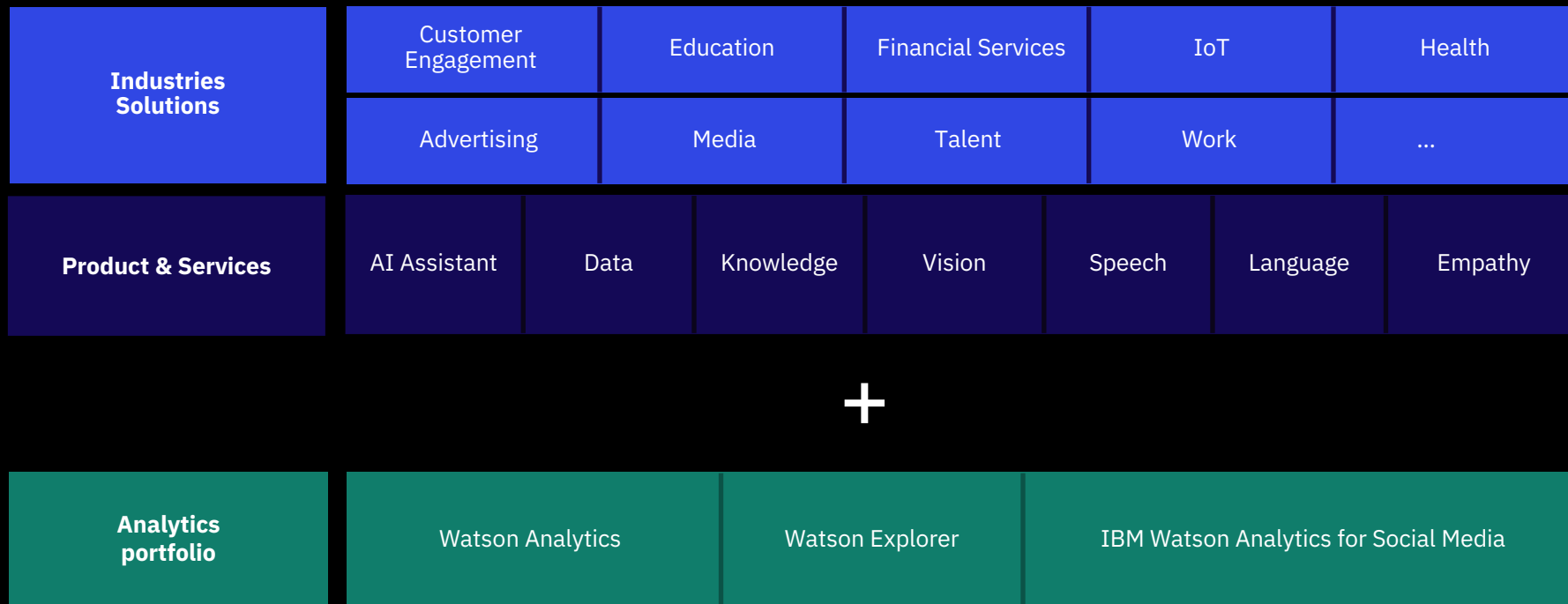
- Locating Knowledge
- Pattern Identification
- Natural Language
- Machine Learning
- Eliminate Bias
- Endless Capacity

## Strong AI or Weak AI?

*“A human who can read Chinese characters would likely understand Chinese speech, know something about Chinese culture and even make good recommendations at Chinese restaurants.*

*In contrast, very different AI systems would be needed for each of these tasks.”*

# IBM Watson





# Watson Analytics

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## Watson Analytics: One-click data discovery and predictive analysis

- Without knowing SQL, you explore your data and the likely evolution in natural language:
  - Refine your data and see it reflected wherever you're working.
  - Use your own words to explore and visualize your data.
  - See what influences outcomes so you can act confidently.
  - Create dashboard so you can share your insights.
  - Access data connectors & social networks data

5245.17

8518.17

Lead Source

Campaign

Cold Call

Conference

Direct Mail

Email

Employee

Existing Customer

Other

Partner

Public Relations

Cold Call

Web Site

# Explore Watson Analytics



## Start with data

Load a spreadsheet or connect to relational data, report data or data in a cloud storage service.



## Discover insights

Choose a recommended starting point—or type a question—and instantly get visualizations.



## Find business drivers

Ask what drives a business outcome to create a target and quickly see its top influencers.

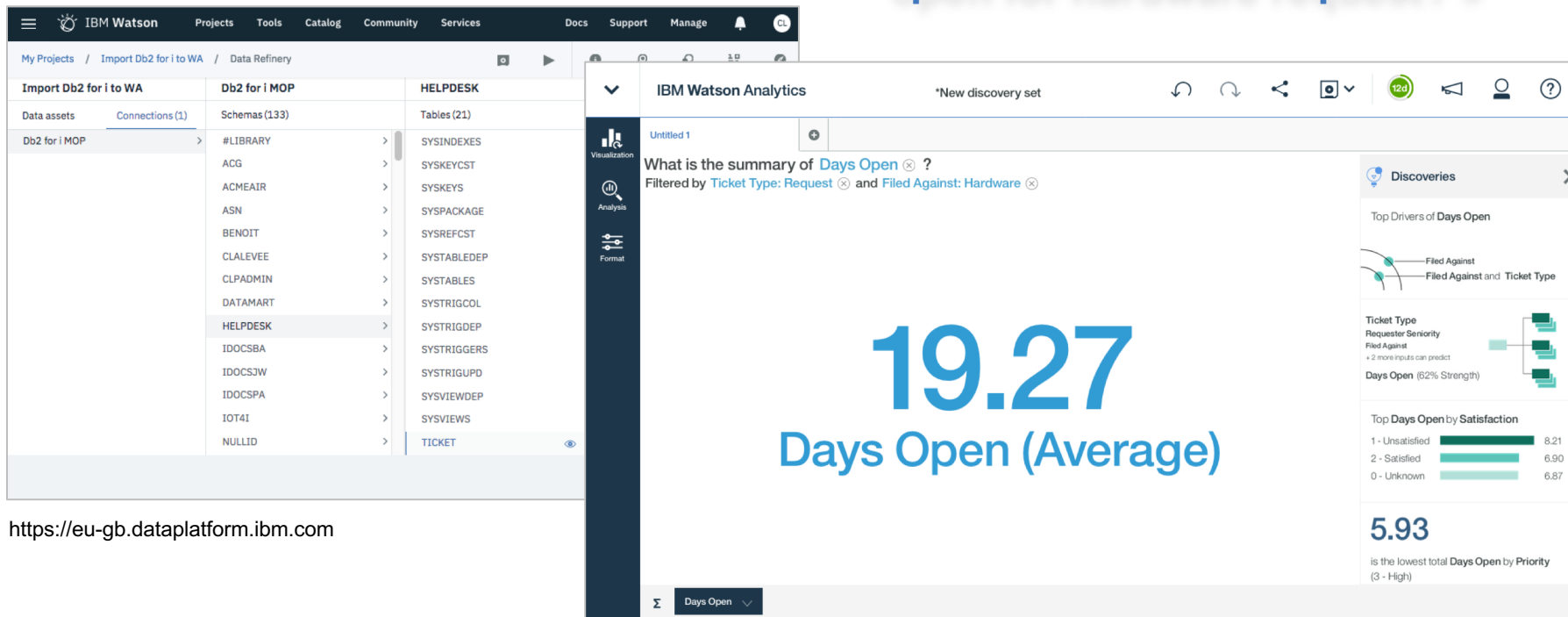


## Display your findings

Select a template you can drag and drop data into and create a dashboard to tell your story.

# Example: Watson Analytics

« What is average of days open for hardware request? »



The screenshot shows the IBM Watson Analytics interface. On the left, a table lists data assets and schemas. The main area displays a query result for 'Days Open' with a large blue number '19.27' and the text 'Days Open (Average)'. The query is filtered by 'Ticket Type: Request' and 'Filed Against: Hardware'. The interface also shows a sidebar with 'Discoveries' and 'Top Drivers of Days Open'.

| Import Db2 for i to WA | Db2 for i MOP   | HELPDESK      |
|------------------------|-----------------|---------------|
| Data assets            | Connections (1) | Schemas (133) |
| Db2 for i MOP          | #LIBRARY        | Tables (21)   |
|                        | ACG             | SYSINDEXES    |
|                        | ACMEAIR         | SYSKEYCST     |
|                        | ASN             | SYSKEYS       |
|                        | BENOIT          | SYSPACKAGE    |
|                        | CLALEVEE        | SYSREFCST     |
|                        | CLPADMIN        | SYSTABLEDEP   |
|                        | DATAMART        | SYSTABLES     |
|                        | HELPDESK        | SYSTRIGCOL    |
|                        | IDOCSBA         | SYSTRIGDEP    |
|                        | IDOCSJW         | SYSTRIGGERS   |
|                        | IDOCSPA         | SYSTRIGUPD    |
|                        | IOT4I           | SYSVIEWDEP    |
|                        | NULLID          | SYSVIEWS      |
|                        |                 | TICKET        |

IBM Watson Analytics

Untitled 1

What is the summary of Days Open ?  
Filtered by Ticket Type: Request and Filed Against: Hardware

# 19.27

Days Open (Average)

Discoveries

Top Drivers of Days Open

Ticket Type  
Requester Seniority  
Filed Against  
+ 2 more inputs can predict  
Days Open (62% Strength)

Top Days Open by Satisfaction

|                 |      |
|-----------------|------|
| 1 - Unsatisfied | 8.21 |
| 2 - Satisfied   | 6.90 |
| 0 - Unknown     | 6.87 |

5.93  
is the lowest total Days Open by Priority  
(3 - High)

<https://eu-gb.dataplatform.ibm.com>

<https://watson.analytics.ibmcloud.com>

# Watson Analytics Editions

(Mai 2018)



| Freemium   | Plus   | Professional   |
|--|--|--|
| Utilisez Watson Analytics gratuitement et accédez à l'analyse cognitive, prédictive et visuelle. | Toutes les fonctions d'analyse de la version gratuite et la capacité de télécharger des jeux de données plus volumineux. | Conçu pour les entreprises, inclut un environnement multi-utilisateur pour collaborer et plus de connecteurs de données. |
| 0,00 €   | À partir de<br><b>28,95 €*<br/>par utilisateur par mois</b>  | À partir de<br><b>77,20 €*<br/>par utilisateur par mois</b>  |
| <a href="#">Essai gratuit</a>  | <a href="#">Acheter</a>  | <a href="#">Acheter</a>  |
| 1 utilisateur  | 1 utilisateur  | 1 ou plusieurs utilisateurs  |
| 100 Go de stockage inclus  | 1 Mo de stockage inclus  | 2 Go de stockage inclus  |
|  | Accédez à des données sociales depuis Twitter  | Accédez à des données sociales depuis Twitter  |
| Essai de la version Professional, pour utilisateur unique, les premiers 30 jours.                | Ajouter davantage de stockage par incréments de 10 Go pour un prix modique   | Ajouter plus de stockage par incréments de 50 Go à un prix modique.  |
|  | Accéder à des bases de données relationnelles, sur site ou sur le cloud  | Accéder à des bases de données relationnelles, sur site ou sur le cloud  |
|  | Accéder à 18 connecteurs de données  | Accéder à 19 connecteurs de données, notamment des rapports IBM Cognos   |
| Accès limité aux offres IBM Analytics Exchange   | Accès complet aux données et offres IBM Analytics Exchange   | Accès complet aux données et offres IBM Analytics Exchange   |

\* Le prix indiqué est hors taxes applicables

# Watson Analytics with IBM i



Jeudi 17 mai, 11h00 - 12h00

## S28 - IA sur vos données DB2 avec Watson Analytics (Lab)



# Watson Platform

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Watson Products & Services

# Watson on the IBM Cloud: “Build with Watson”



Watson on the IBM Cloud allows you to **integrate powerful AI into your application** and **store, train and manage your data** in the cloud.

- Make your apps Read, Hear, Talk, See & Learn
- Self-Serve environment:
  - Cloud access to API's
  - Developer environment
    - API's, SDK's, Demos, Code, App Gallery, Forum





# Resources to help you build with Watson



## WATSON SDKS

## DOCUMENTATION

## STARTER KITS

Getting started guide / Watson documentation / Watson GitHub projects

## Developer Tools

Resources to help you build with Watson.

## COMMUNITY AND SUPPORT

Stack Overflow / DeveloperWorks Answers / WDC Slack channel

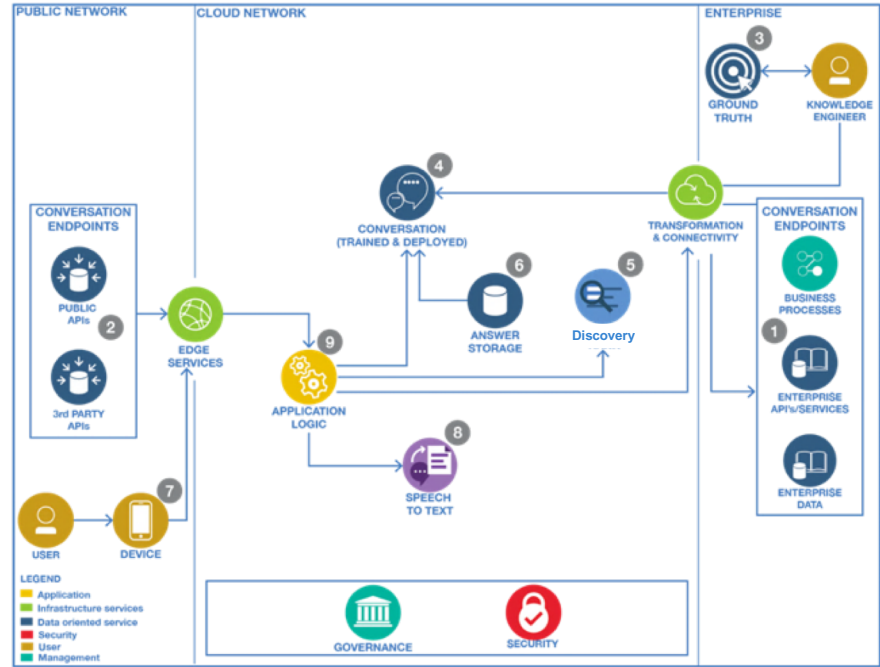
## ADDITIONAL RESOURCES

Blog / Webinars / Educational videos / ...

# IBM Cloud Architecture Center Cognitive Reference Architecture



This is the runtime architecture which showcases the components that are involved in the usage of a trained and deployed Cognitive Engagement System.



# Watson Products and services



## Knowledge

Get insights through accelerated data optimization capabilities.

### **Discovery**

Unlock hidden value in data to find answers, monitor trends and surface patterns.

### **Discovery News**

Access pre-enriched news content in real-time.

### **Natural Language Understanding**

Natural language processing for advanced text analysis.

### **Knowledge Studio**

Teach Watson to discover meaningful insights in unstructured text.

# Natural Language Understanding

3rd

- Strategist and executor of corporate communications across all disciplines; PR & media, social media, internal communication, external relations, crisis management, web, analyst relations, governmental relations, corporate social responsibility (CSR).
- Executive and leadership team advisor.
- Extensive experience in Corporate marketing strategy planning and execution
- Leadership, project management and change management expert. Founder of the Health sector.
- Extensive insight in utilizing digital platforms for communication, knowledge
- Philanthropist and Reforestation activist in Nicaragua Central-America
- Part of the innovation consortium Center for Connected Care's (C3) [See less](#)

| Entities                  | Keywords                        | Concepts           |
|---------------------------|---------------------------------|--------------------|
| Center for Connected Care | corporate social responsibility | Management         |
| Organization              | leadership team advisor         | Public relations   |
| Nicaragua                 | Corporate marketing strategy    | Project management |
| Location                  | change management expert        | Sociology          |
| analyst                   | innovation consortium Center    | Planning           |
| JobTitle                  | analyst relations               | Marketing          |
| Health sector             | governmental relations          | Leadership         |
| Organization              | crisis management               | Communication      |
| advisor                   | external relations              |                    |
| JobTitle                  | corporate communications        |                    |
| Executive                 | Reforestation activist          |                    |
| JobTitle                  | social media                    |                    |
| Founder                   | internal communication          |                    |
| JobTitle                  | Nicaragua Central-America       |                    |
|                           | Extensive experience            |                    |
|                           | project management              |                    |
|                           | Connected Care                  |                    |

Find people, places, events, and other types of entities mentioned in your content.



Search your content for relevant keywords



Identify high-level concepts that aren't necessarily directly referenced in the text



## Articles JSON

Search articles over

12/08/2016 - 12/15/2016

and the Sentiment is

Any

Where

Barack Obama

where the Taxonomy is

Education

is mentioned

as a Person

Search articles over

Title

## Query

```
/discovery-experimental/api/v1/environments/bb6ffe96-53d5-44b3-8838-92dd1664df8d/collections/0288e2a0-a1c1-4a38-a376-3c3bd89e927b/query?version=2016-11-09&count=10&filter=taxonomy:(label:education),entities:(text:Barack%20Obama,type:person),publicationDate.date%3E%3D20161208&return=enrichedTitle.text,url,author,entities,concepts,taxonomy
```

## Results

**6 Ways the Next President Can Improve Education**

<http://time.com/4545088/next-president-education/>

# Watson Products and services



## Vision

Identify and tag content then analyze and extract detailed information found in an image



## Speech

Convert text and speech with the ability to customize models

## Visual Recognition

Tag and classify visual content using machine learning.

## Speech to Text

Easily convert audio and voice into written text.


## Text to Speech

Convert written text into natural-sounding audio.

# Vision: Visual Recognition



<https://www.ibm.com/watson/services/visual-recognition/demo/index.html#watson-demo>



|                  |      |
|------------------|------|
| red carpet       | 0.97 |
| rug              | 0.97 |
| floor cover      | 0.97 |
| claret red color | 0.89 |
| clothing         | 0.88 |
| person           | 0.79 |
| maroon color     |      |

**Face Model**

Locate faces within an image.

**Face 1**

age 46-49

MALE



## General Model

Quickly understand objects, actions, scenes, and colors within an image.

|                  |      |
|------------------|------|
| Restaurant Patio | 0.94 |
| marketplace      | 0.79 |
| beer garden      | 0.66 |
| tavern           | 0.66 |
| building         | 0.66 |

# Example: Visual Recognition + SQL

```
SELECT imageid, name, x.*, url
FROM storebot.images as A,
  JSON_TABLE(
    SYSTOOLS.HTTPGETCLOB('https://gateway-a.watsonplatform.net/visual-recognition/api/v3/detect_faces?api_key=' ||
      'VISUAL-RECOGNITION-API-KEY' ||
      '&url=' || a.url || '&version=2018-03-19',''),
    '$'
    COLUMNS ( NESTED '$.images[*]'
      COLUMNS ( NESTED '$.faces[*]'
        COLUMNS ( AGEMIN INTEGER PATH '$.age.min' ,
          AGEMAX INTEGER PATH '$.age.max' ,
          AGE_SCORE DECIMAL(5,2) PATH '$.age.score' ,
          GENDER VARCHAR(10) PATH '$.gender.gender' ,
          GENDER_SCORE DECIMAL(5,2) PATH '$.gender.score'
        )
      )
    )
) AS X
```

| IMAGEID | NAME       | URL   |
|---------|------------|---|
| 1       | Join IBM   | <a href="http://img.icbdr.com/images/cc/vertical/ibm-main.jpg">http://img.icbdr.com/images/cc/vertical/ibm-main.jpg</a>   |
| 2       | Philippe   | <a href="https://pbs.twimg.com/profile_images/560371796751298560/p5OFb9FP_400x400.jpeg">https://pbs.twimg.com/profile_images/560371796751298560/p5OFb9FP_400x400.jpeg</a>   |
| 3       | Rochester  | <a href="http://ibmi30.mybluemix.net/assets/images/home/rochester-img.png">http://ibmi30.mybluemix.net/assets/images/home/rochester-img.png</a>   |
| 4       | Christophe | <a href="https://pbs.twimg.com/profile_images/912697237330898944/7EPI3H3V_400x400.jpg">https://pbs.twimg.com/profile_images/912697237330898944/7EPI3H3V_400x400.jpg</a>   |
| 5       | Helene     | <a href="https://pbs.twimg.com/profile_images/955825957759324160/Ur_kPSWH_400x400.jpg">https://pbs.twimg.com/profile_images/955825957759324160/Ur_kPSWH_400x400.jpg</a>   |
| 6       | lbmer      | <a href="https://i0.wp.com/blog.ibm.jobs/wp-content/uploads/2018/04/Screen-Shot-2018-04-19-at-7.14.54-PM-1.png?w=1596...">https://i0.wp.com/blog.ibm.jobs/wp-content/uploads/2018/04/Screen-Shot-2018-04-19-at-7.14.54-PM-1.png?w=1596...</a> |



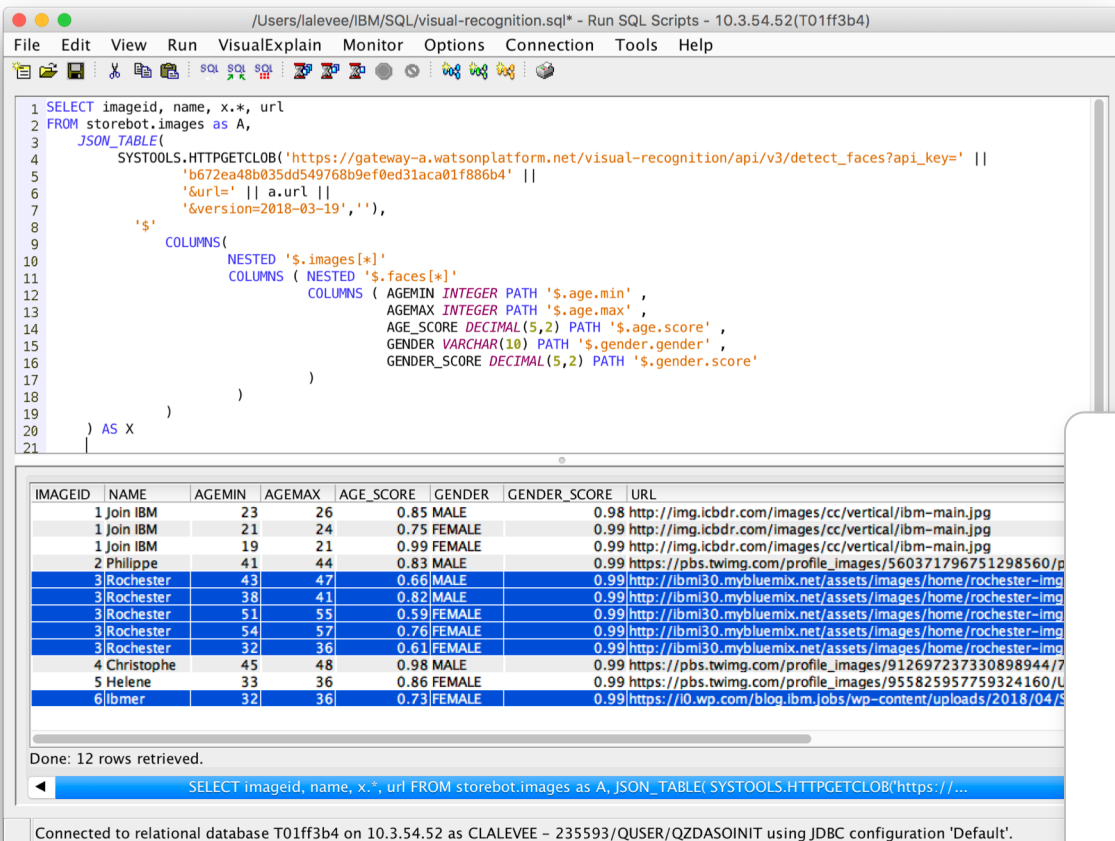
# Example: Visual Recognition + SQL

```
SELECT {
FROM :   "images": [
        {
FROM J:   "faces": [
          {
            "age": {
              "min": 48,
              "max": 51,
              "score": 0.8029685
            },
            "face_location": {
              "height": 678,
              "width": 588,
              "left": 473,
              "top": 416
            },
            "gender": {
              "gender": "FEMALE",
              "score": 0.9999964
            }
          }
        ],
        "source_url": "https://watson-developer-cloud.github.io/Ginni_Rometty_at_the_Fortune_MPW_Summit_in_2011.jpg",
        "resolved_url": "https://watson-developer-cloud.github.io/Ginni_Rometty_at_the_Fortune_MPW_Summit_in_2011.jpg"
      }
    ],
    "images_processed": 1
  }
}
```

5 Helene [https://pbs.twimg.com/profile\\_images/955825957759324160/Ur\\_KPSWH\\_400x400.jpg](https://pbs.twimg.com/profile_images/955825957759324160/Ur_KPSWH_400x400.jpg)

6 Ibmer <https://i0.wp.com/blog.ibm.jobs/wp-content/uploads/2018/04/Screen-Shot-2018-04-19-at-7.14.54-PM-1.png?w=1596...>

# Example: Visual Recognition + SQL



```
1 SELECT imageid, name, x.*, url
2 FROM storebot.images as A,
3     JSON_TABLE(
4     SYSTOOLS.HTTPGETCLOB('https://gateway-a.watsonplatform.net/visual-recognition/api/v3/detect_faces?api_key=' ||
5     'b672ea48b035dd549768b9ef0ed31aca01f886b4' ||
6     '&url=' || a.url ||
7     '&version=2018-03-19', ''),
8     '$'
9     COLUMNS(
10      NESTED '$.images[*]'
11      COLUMNS ( NESTED '$.faces[*]'
12      COLUMNS ( AGEMIN INTEGER PATH '$.age.min' ,
13      AGEMAX INTEGER PATH '$.age.max' ,
14      AGE_SCORE DECIMAL(5,2) PATH '$.age.score' ,
15      GENDER VARCHAR(10) PATH '$.gender.gender' ,
16      GENDER_SCORE DECIMAL(5,2) PATH '$.gender.score'
17      )
18      )
19      ) AS X
20
21
```

| IMAGEID | NAME       | AGEMIN | AGEMAX | AGE_SCORE | GENDER | GENDER_SCORE | URL  |
|---------|------------|--------|--------|-----------|--------|--------------|--|
| 1       | Join IBM   | 23     | 26     | 0.85      | MALE   | 0.98         | http://img.icbdr.com/images/cc/vertical/ibm-main.jpg         |
| 1       | Join IBM   | 21     | 24     | 0.75      | FEMALE | 0.99         | http://img.icbdr.com/images/cc/vertical/ibm-main.jpg         |
| 1       | Join IBM   | 19     | 21     | 0.99      | FEMALE | 0.99         | http://img.icbdr.com/images/cc/vertical/ibm-main.jpg         |
| 2       | Philippe   | 41     | 44     | 0.83      | MALE   | 0.99         | https://pbs.twimg.com/profile_images/560371796751298560/p    |
| 3       | Rochester  | 43     | 47     | 0.66      | MALE   | 0.99         | http://lbmi30.mybluemix.net/assets/images/home/rochester-img |
| 3       | Rochester  | 38     | 41     | 0.82      | MALE   | 0.99         | http://lbmi30.mybluemix.net/assets/images/home/rochester-img |
| 3       | Rochester  | 51     | 55     | 0.59      | FEMALE | 0.99         | http://lbmi30.mybluemix.net/assets/images/home/rochester-img |
| 3       | Rochester  | 54     | 57     | 0.76      | FEMALE | 0.99         | http://lbmi30.mybluemix.net/assets/images/home/rochester-img |
| 3       | Rochester  | 32     | 36     | 0.61      | FEMALE | 0.99         | http://lbmi30.mybluemix.net/assets/images/home/rochester-img |
| 4       | Christophe | 45     | 48     | 0.98      | MALE   | 0.99         | https://pbs.twimg.com/profile_images/912697237330898944/7    |
| 5       | Helene     | 33     | 36     | 0.86      | FEMALE | 0.99         | https://pbs.twimg.com/profile_images/955825957759324160/L    |
| 6       | lbmer      | 32     | 36     | 0.73      | FEMALE | 0.99         | https://i0.wp.com/blog.ibm.jobs/wp-content/uploads/2018/04/S |

Done: 12 rows retrieved.

SELECT imageid, name, x.\*, url FROM storebot.images as A, JSON\_TABLE(SYSTOOLS.HTTPGETCLOB("https://...

Connected to relational database T01ff3b4 on 10.3.54.52 as CLALEVEE - 235593/QUSER/QZDASOINIT using JDBC configuration 'Default'.



## Grab a coffee with Brandi

Working at IBM, Brandi takes the best of her military experience and applies it to a successful career at IBM.



# Watson Products and services



## Language

Analyze text and extract meta-data from unstructured content



## Empathy

Understand tone, personality, and emotional state.

### **Language Translator**

Translate text from one language to another.

### **Natural Language Classifier**

Interpret and classify natural language with confidence.

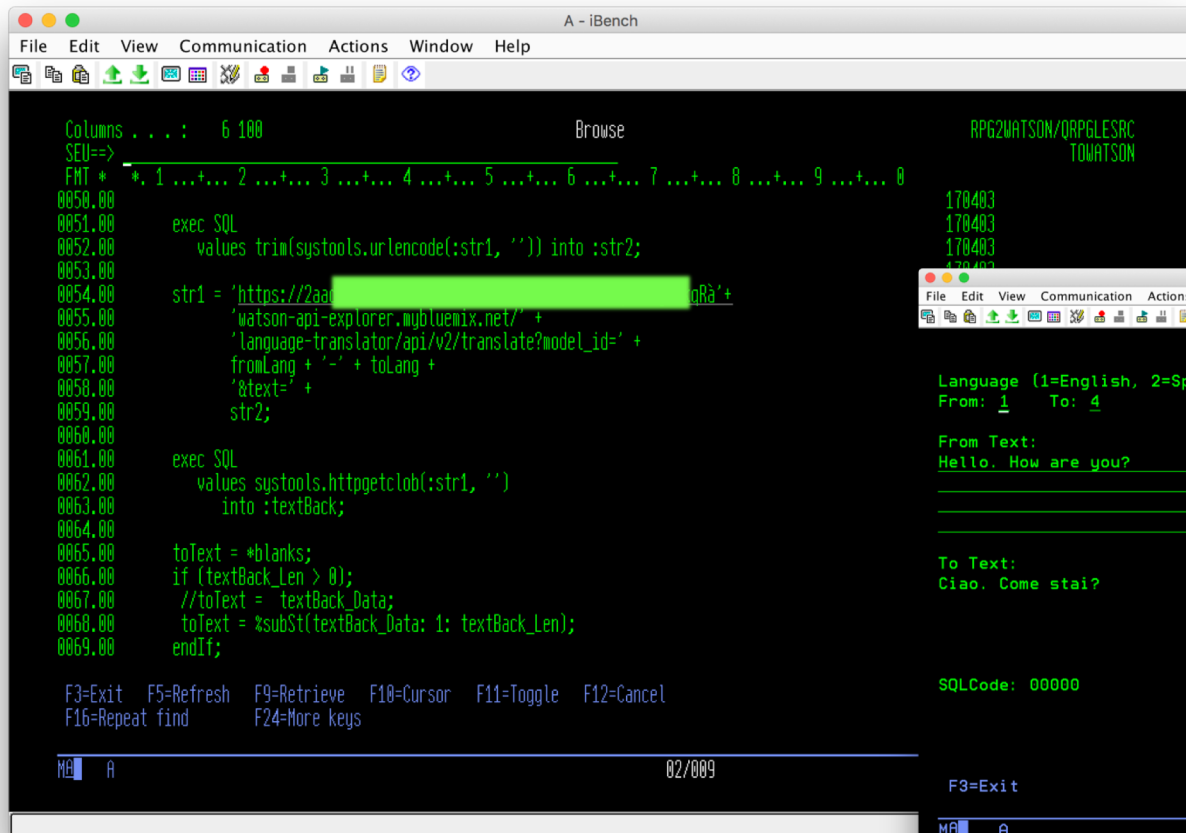
### **Personality Insights**

Predict personality characteristics through text.

### **Tone Analyzer**

Understand emotions and communication style in text.

# Example: Language Translator + RPG + SQL



```
A - iBench
File Edit View Communication Actions Window Help
Columns . . . : 6 100
SEU=>
FMT * * 1 ... 2 ... 3 ... 4 ... 5 ... 6 ... 7 ... 8 ... 9 ... 0
0050.00
0051.00      exec SQL
0052.00          values trim(systools.urlencode(:str1, '')) into :str2;
0053.00
0054.00      str1 = 'https://2aaf[REDACTED]R3'+
0055.00          'watson-api-explorer.mybluemix.net/' +
0056.00          'language-translator/api/v2/translate?model_id=' +
0057.00          fromLang + '-' + toLang +
0058.00          '&text=' +
0059.00          str2;
0060.00
0061.00      exec SQL
0062.00          values systools.httpgetclob(:str1, '')
0063.00          into :textBack;
0064.00
0065.00      toText = *blanks;
0066.00      if (:textBack_Len > 0);
0067.00          //toText = textBack_Data;
0068.00          toText = %subSt(textBack_Data: 1: textBack_Len);
0069.00      endIf;

F3=Exit  F5=Refresh  F9=Retrieve  F10=Cursor  F11=Toggle  F12=Cancel
F16=Repeat find  F24=More keys

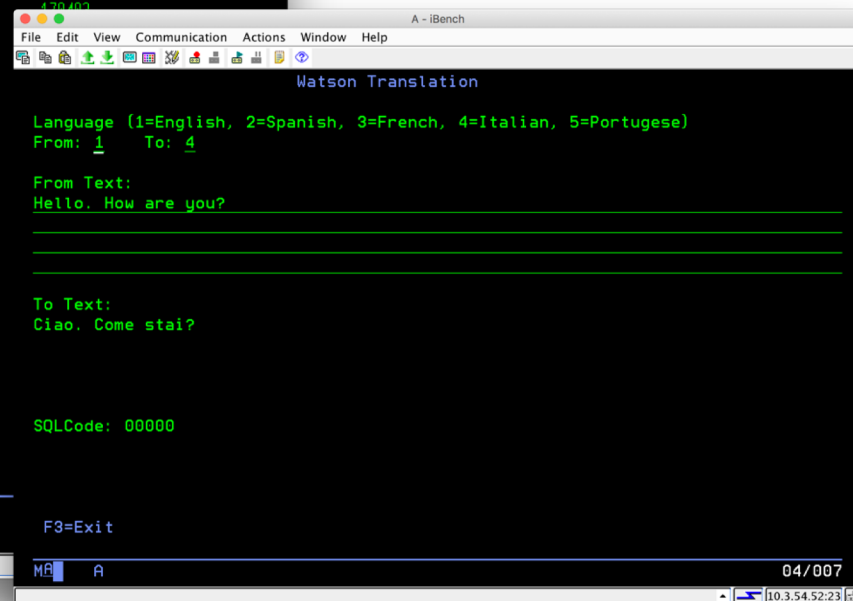
MB A 02/009
```



« RPG Talks To Watson »

September 27, 2016 - Paul Tuohy

<https://www.itjungle.com/2016/09/27/fhg092716-story01/>



```
A - iBench
File Edit View Communication Actions Window Help
Watson Translation

Language (1=English, 2=Spanish, 3=French, 4=Italian, 5=Portugese)
From: 1 To: 4

From Text:
Hello. How are you?

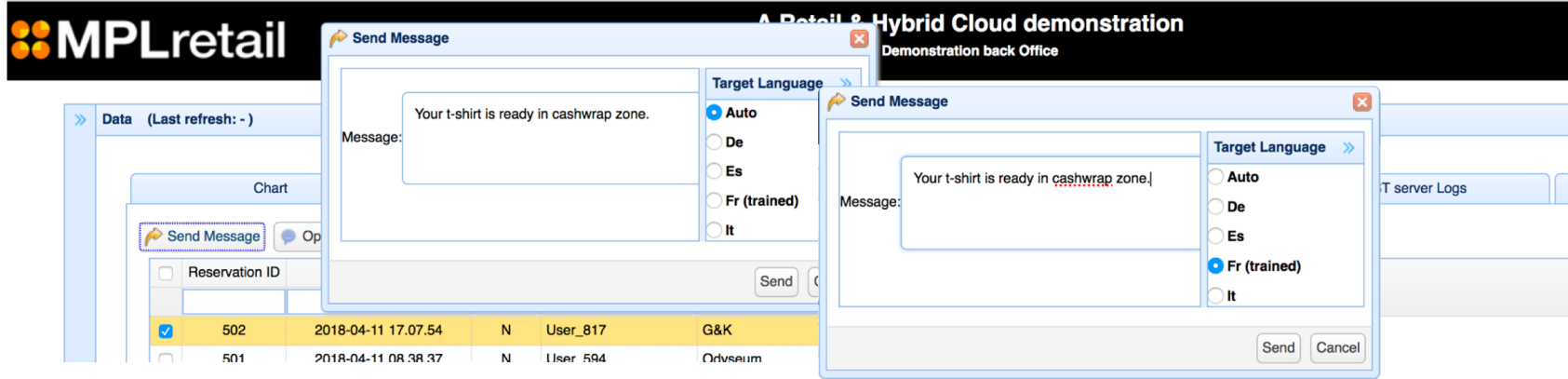
To Text:
Ciao. Come stai?

SQLCode: 00000

F3=Exit

MB A 04/007
10.3.54.52:23
```

# Example: Language Translator + Node.js



**MPLretail** A Retail Hybrid Cloud demonstration  
Demonstration back Office

Send Message

Message: Your t-shirt is ready in cashwrap zone.

Target Language

- Auto
- De
- Es
- Fr (trained)
- It

Send

| Reservation ID                      |     |                     |   |          |         |  |
|-------------------------------------|-----|---------------------|---|----------|---------|--|
| <input checked="" type="checkbox"/> | 502 | 2018-04-11 17.07.54 | N | User_817 | G&K     |  |
| <input type="checkbox"/>            | 501 | 2018-04-11 08.38.37 | N | User_594 | Ordvaum |  |

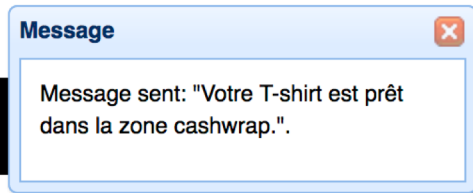
Send Message

Message: Your t-shirt is ready in cashwrap zone.

Target Language

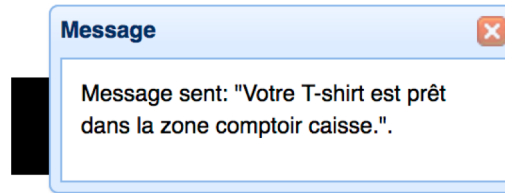
- Auto
- De
- Es
- Fr (trained)
- It

Send Cancel



**Message**

Message sent: "Votre T-shirt est prêt dans la zone cashwrap."



**Message**

Message sent: "Votre T-shirt est prêt dans la zone comptoir caisse."

# Example: Language Translator + Node.js



```
sftp://calevee:@10.3.54.52//home/storebot/controllers/stores.js [anonymous]
1525   if (SourceLanguage != TargetLanguage) {
1526     try {
1527       var TranslateData = new Object();
1528
1529       if (vTarget == "trained") {
1530         TranslateData.model_id = "dc4151fc-918e-435d-8d64-c9cf0a1f83e3";
1531         TranslateData.text = obj.MESSAGE;
1532         TranslateData.source = SourceLanguage;
1533         TranslateData.target = TargetLanguage;
1534       } else {
1535         TranslateData.text = obj.MESSAGE;
1536         TranslateData.source = SourceLanguage;
1537         TranslateData.target = TargetLanguage;
1538       };
1539
1540       language_translator.translate(TranslateData, function(err, translation) {
1541         if (err) {
1542           console.log(err);
1543           ErrorText= "Error: couldn't translate message";
1544         } else {
1545           MessageTranslated = translation.translations[0].translation;
1546         }
1547         callback(null, null);
1548       });
1549
1550     } catch (e) {
1551       console.log("Error occured:");
1552       console.error(e);
1553       callback(null, null);
1554     }
1555   }
1556   else {
1557     console.log("No translation needed");
1558     MessageTranslated = obj.MESSAGE;
1559     callback(null, null);
1560   }
1561 }, // fin step 2, translation
```

# Watson Products and services



## Data

Embed AI, machine learning and deep learning to drive insights from data, wherever it resides

### **Watson Studio**

Build and train AI models, and prepare and analyze data, all in one integrated environment.

### **Watson Machine Learning**

Use your data to create, train, and deploy self-learning models. Leverage an automated, collaborative workflow to build intelligent applications.

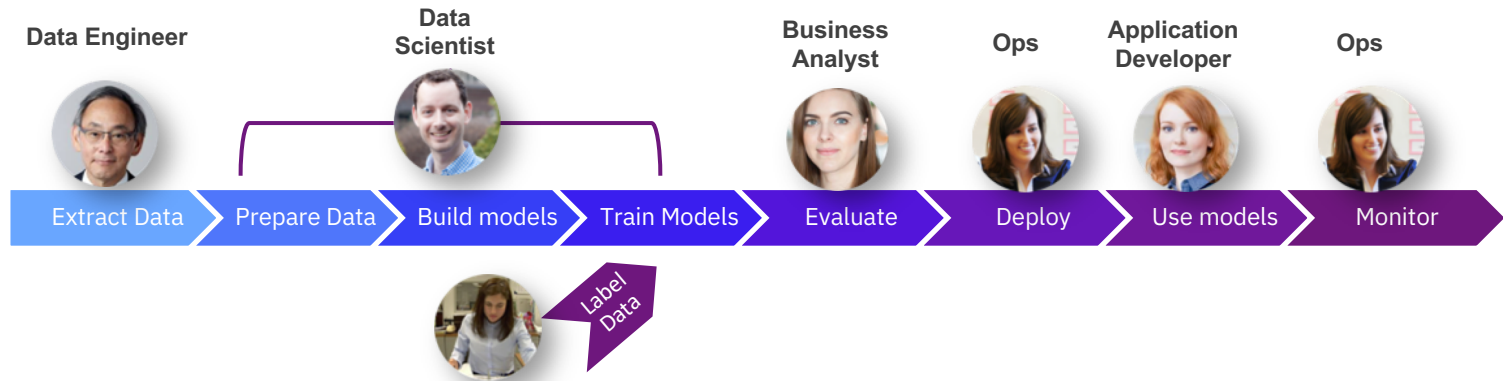
### **Watson Knowledge Catalog**

Intelligent data and analytic asset discovery, cataloging and governance to fuel AI apps.

# Watson Studio: Data Science is a “Team Sport”



- Building ML-infused apps requires multiple skillsets:
  - Define an ML model
  - Store, manage, update training data
  - Manage lifecycle of the trained model
  - Ability to do inferencing on the trained model(s)





# IBM Watson® Studio



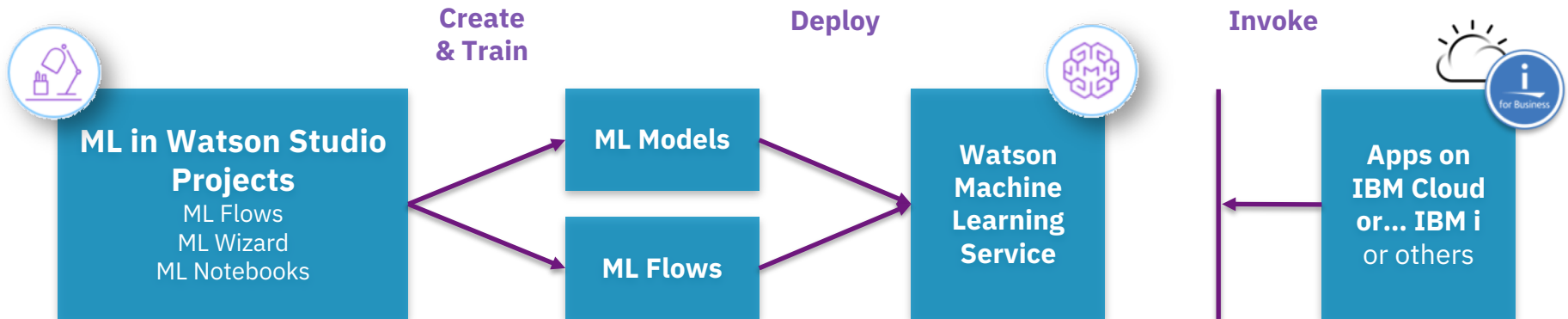
- IBM Watson Studio accelerates the machine and deep learning workflows required to infuse AI into your business to drive innovation.
- It provides a suite of tools for data scientists, application developers and subject matter experts to collaboratively and easily work with data and use that data to build, train and deploy models at scale.
- Best of breed open source and IBM Tools
  - TensorFlow, Jupyter, Keras, Caffe, R, Python, and more...



# IBM Watson® Studio - Machine Learning in Projects, deploying to WML



- Data Scientists can train ML models in Watson Studio using data in Projects to create and train models
- Use ML Wizard for assisted creation and training of models using common patterns and algorithms
- Use Notebooks or Flows to train models for more advanced use cases and more flexibility
- Deploy models to Watson Machine Learning (WML) service in IBM Cloud to run them in production
- Use WML REST API to invoke your models for online scoring / predictions



# IBM Watson® Studio



- Watson® Studio is available
  - As a cloud offering (IBM Cloud)
  - As an on-premises solution
    - **DSX Local\*** on x86 and System Power with PowerAI + GPU / Nvlink acceleration
  - As a **DSX desktop** application
    - Free, disconnected mode



Watson® Studio



DSX Local



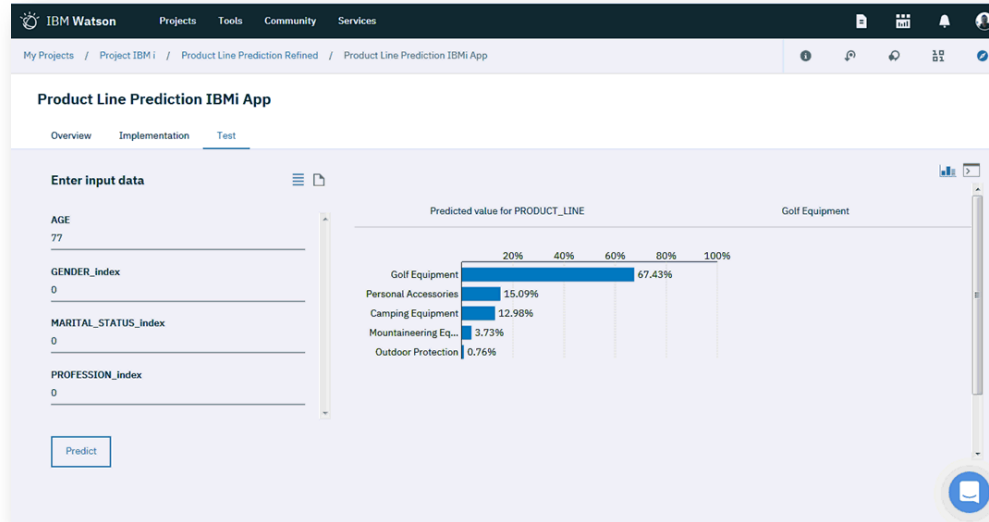
DSX Desktop

# Watson Studio with IBM i



Mercredi 16 mai, 14h45 - 15h45

## S12 – DSX\* (Data Science Experience) et IBM i



# Watson Products and services



## AI Assistant

Integrate diverse conversation technology into your application.

## Watson Assistant

Build an AI assistant for a variety of channels, including mobile devices, messaging platforms, and even robots.

# Cognitive App. concepts

- Each of the 7 Cognitive areas may require
  - **Training data set & Live Data streams**
  - Integration and orchestration of trained services to bring business value
    - **Hybrid integration**
      - IBM Cloud Watson services
      - On-premise data sources
      - Continuously capturing unstructured data
    - Integration of Signal services:
      - Image recognition, speech to text and text to speech

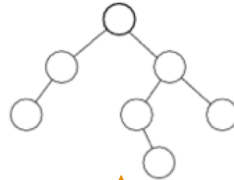
# Combine Watson APIs for higher value apps



Speech to Text,  
Text to Speech



Phone, Text,  
Chat



**“What is the current CPU level of my IBM i?”**

Convert Speech to Text

### Identify Intent & Entity

- Intent = “Check\_System\_Resource”  
Confidence: 0.876655900
- Entity = “CPU”

### Dialog tree walks user to desired outcome

- Intent=“Check\_System\_Resource”
- Context = “user, IT infrastructure”

**Action:** Query IBM i to retrieve CPU usage value

AI Assistant

+ Natural Language  
Understanding?

+ ...



# Demo

## Chatbot for IT Helpdesk





# The context

## Internal helpdesk digital transformation

### Organizations are under pressure from their constituents...

- To provide a high grade consumer-support experience to their employees across a variety of channels and for a growing range of devices
- To resolve service issues more quickly and optimize the end-user experience.

A woman and a man are shown in profile, working at their desks in an office. They are looking at computer monitors. The woman is in the foreground, and the man is slightly behind her. The background shows other desks and monitors, suggesting a busy office environment. The overall tone is professional and focused.

# The context

## Internal helpdesk digital transformation

### Key Business drivers

- Automatically process tickets that do not require high expertise
- “An average of 20%-50% of all help desk calls are password resets.” (Gartner 2016)
- Respond quicker to business demands with time liberated from mundane tasks
- Enhance Employee experience



# The context

## Internal helpdesk digital transformation

### Current IT Environment

- Employee use Slack (collaboration tools and embedded services)
- Core business solution runs on Power IBM i systems (latest technologies)

# Demo

AcslaunchPad

ibm-i-ressource | CCML-... x +

https://ccmpl-lab.slack.com/messages/C5B7CALTD/

CCMPL-LAB

- lalevee

All Threads

CHANNELS (4)

- channel-1
- discovery
- general
- ibm-i-ressource**
- random

DIRECT MESSAGES (2)

- slackbot
- lalevee (you)
- chatbot2
- discoverybot
- helenequillard
- syssts

+ Invite people

## #ibm-i-ressource

☆ | 👤 2 | 🔖 0 | Add a topic

#ibm-i-ressource

You created this channel on May 10th. This is the very beginning of the #ibm-i-ressource channel. Purpose: to questions about IBM i ressource usage (edit)

+ Add an app or custom integration | Invite others to this channel

+ Message #ibm-i-ressource

```
bash-4.3$ npm start
> Nodejs4iStarterApp@0.0.1 start /home/orion/teacher
> node app.js

body-parser deprecated bodyParser: use individual json/urlencoded middlewares app.js:17:9
body-parser deprecated undefined extended: provide extended option node_modules/body-parser/index.js:105:29
DB2 init done
DB2 connect done
Server starting on 19880
[]
```

File View Communication Bench Sign On

```
System . . . . . : IDEW01
Subsystem . . . . : QINTER
Display . . . . . : QPRDEY0005

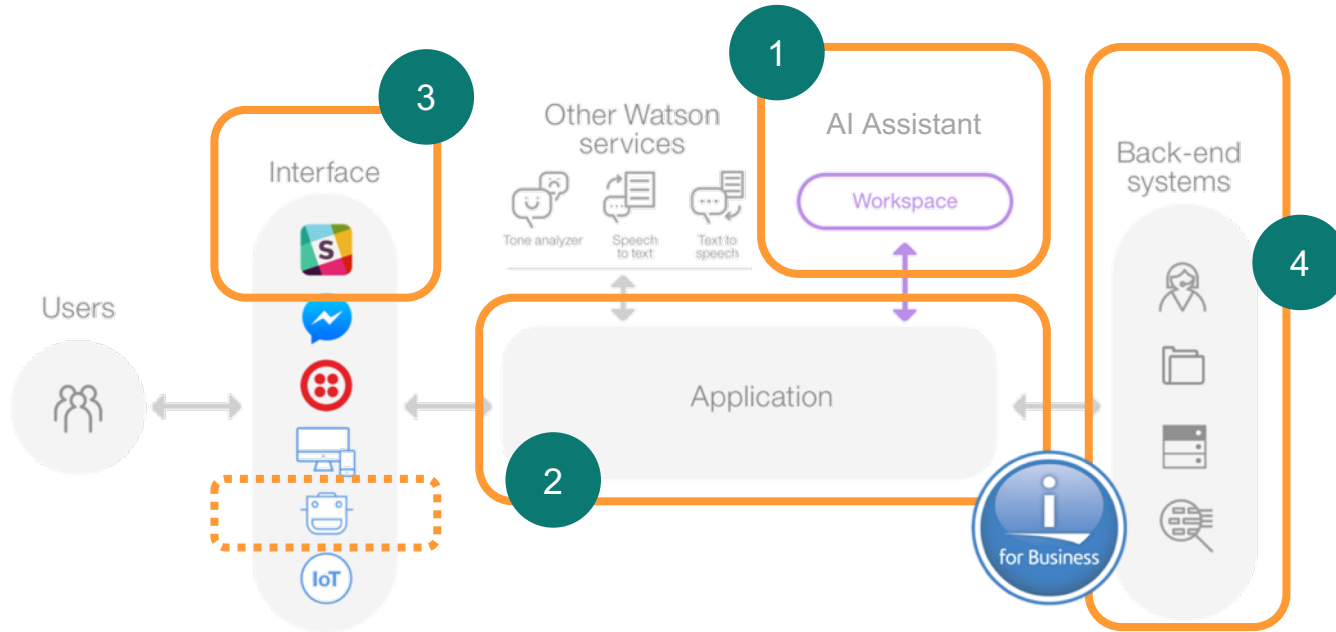
User . . . . . : _____
Password . . . . : _____
Program/procedure . . : _____
Menu . . . . . : _____
Current library . . . : _____
```

(C) COPYRIGHT IBM CORP. 1980, 2015.

07/053

1902 - Session successfully started | 10.3.54.52:23 | 5

# Chatbot for internal services: helpdesk prototype



# Demo Components



- IBM i
  - Open Source !!
    - Integrated by IBM (5733-OPS)
    - Very popular solutions (Node.js & Node-RED + GIT + community support)
    - Easy integration with existing solution (data, programs, objects)
      - IBM DB2® for i access library + Node.js toolkit for IBM i
  - DB2 for i
    - IBM i Services: Easily get system infos with SQL SELECT



```
app.js
69
70 app.get('/userprofile/status/:userprofile', function(req, res, next) {
71   var result = {};
72   var sql = "SELECT STATUS, SIGN_ON_ATTEMPTS_NOT_VALID, PREVIOUS_SIGNON, NO_PASSWORD_INDICATOR, SET_PASSWORD_TO_EXPIRE " +
73     "FROM QSYS2.USER_INFO " +
74     "WHERE AUTHORIZATION_NAME = UCASE('" + req.params.userprofile + "')";
75
76   try {
77     console.log("SQL: " + sql);
78     db.exec(sql, function(rs) {
79       console.log(JSON.stringify(rs));
80       if(rs.length != 0) {
81         res.json(rs[0]);
82       } else {
```




# Also available: Pepper integration video



# Meet IBM CCMPL authors on IBM DeveloperWorks



<https://www.ibm.com/developerworks/learn/ibmi/index.html>




IBM i

### Join IBM DB2 for i table with IBM Bluemix Weather web service record set

This article explains how to create a join between REST API (web service) and an IBM DB2 for i table.

Christophe Lalevée




IBM i

### Build your first social media dashboard in minutes with Node-RED and IBM Db2 for i

This article explains how to use IBM Db2 for i within a Node-RED flow to rapidly build a solution or prototype on IBM i.

Benoit Marolleau




IBM i

### Running Node-RED on IBM i: Installation and first flow

Node-RED is flow-based programming environment, providing a browser-based editor that makes it easy to wire together devices, APIs, and ...

Christophe Lalevée



IBM i

### Build an enhanced IT help desk chatbot on IBM i with Watson Conversation

This article guides you to implement a prototype of such a chatbot running on IBM i that links the IBM Watson Conversation service and IBM ...

Christophe Lalevée



# Prototyping

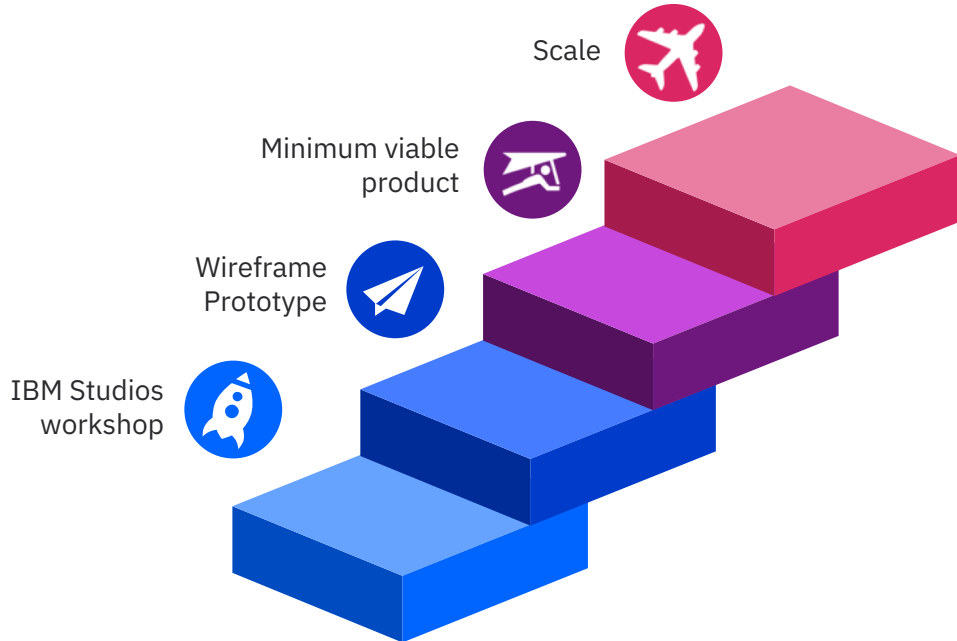
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IBM Client Center Montpellier  
“Rapid Prototyping Team”

# IBM CCMPL Offerings



Our objective is to deliver the best “prototyping” experience for our customers. Usually we are engaging from A to Z but we can deliver each ”building block” of our offering separately if required (“à la carte”)...



Our A to Z approach gives you the opportunity to use the same team from genesis to “production”, bringing your idea to life with our methodology.



Our 4 main building blocks could be easily used independently in order to satisfy some project’s needs. However, some of them are required depending result you need.



Our model is a fee based offering. Since each project is unique we create a custom pricing. This pricing is based on the amount of resources needed and duration of the project.

Q & A





# Thank you!



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