# Module 6: Services

Using and adding services in IBM Bluemix

Using services in Bluemix

- Bluemix provides services that can be used by applications without requiring you to manage the setup and operation of those services.

- Available services are listed in the catalog in the web UI and can also be obtained by using the command `cf marketplace`.

- To use the service, you must bind the service to your application by using web UI or the command `cf bs`.
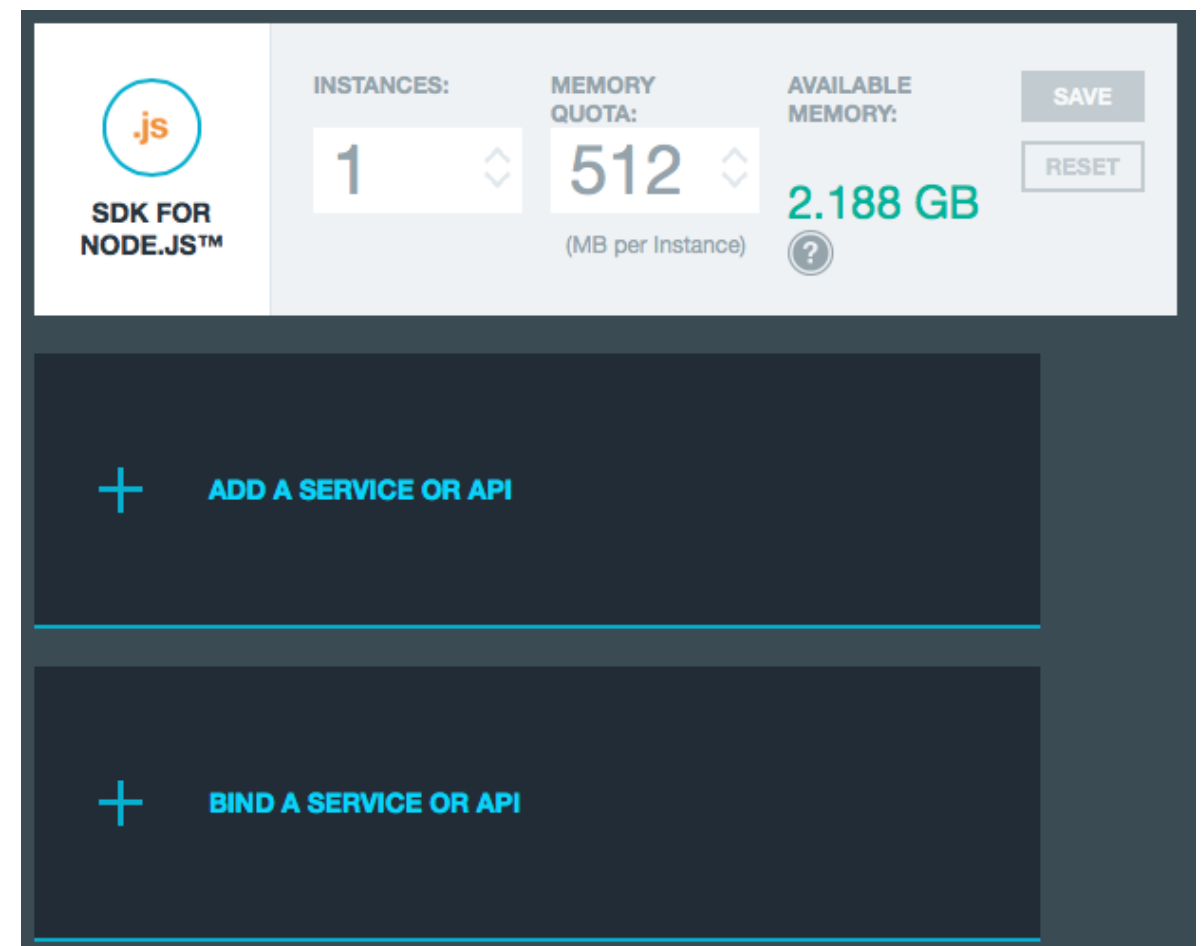
Accessing a service

- When you bind a service to your application, Bluemix adds details about the service to an environment variable VCAP_SERVICES.
- You can view the VCAP_SERVICES variable in the web UI.
- Applications should be able to parse the VCAP_SERVICES variable.

Parsing VCAP_SERVICES

- Node

```
if (process.env.VCAP_SERVICES) {
    var env = JSON.parse(process.env.VCAP_SERVICES);
    var credentials = env['mysql-5.5'][0].credentials;
    …
}
```

- Ruby

```
mysql_dbs = JSON.parse(ENV['VCAP_SERVICES'])["mysql-5.5"]
credentials = mysql_dbs.first["credentials"]
```

- Java

```
String vcap_services = System.getenv("VCAP_SERVICES");
 if (vcap_services != null && vcap_services.length() > 0) {
    JsonRootNode root = new JdomParser().parse(vcap_services);
    JsonNode mysqlNode = root.getNode("mysql-5.5");
    JsonNode credentials = mysqlNode.getNode(0).getNode("credentials");
    …
}
```

The Java buildpack parses the VCAP_SERVICES variable and can auto-configure bound services. See the Bluemix Liberty for Java documentation.

Unit testing when services are used

- Do not include calls to remote systems in unit tests.
- Service APIs provide a *contract* between the service consumer and service provider.
- Unit tests can ensure the code being tested is using the API correctly according to the contract.
  - We should assume that the service provider has also tested the service and ensures it implements the contract that is defined by the API.
- Test frameworks provide capabilities to *stub* and *mock* external calls, but ensure that the API is being called correctly when you run unit tests.
  - These facilities are often called *test doubles*.

Become a service provider

- In additional to consuming services, you can create new services on Bluemix
  - Private services are available only to your organization
    - `cf cups biTestService -p "host, port, username, password"`
    - Specify the 'properties' you want to make available to applications binding to the service
    - You can update the properties if requires
  - Public services, that can become an additional revenue stream, can only be added through the IBM Cloud Marketplace

Extend your reach through the IBM Cloud marketplace

Cloud customer buying behaviors are evolving, and we're evolving the way we sell as a result

ibm.com/marketplace

Paving New Avenues of Growth
New Markets + New Buyers = Growth
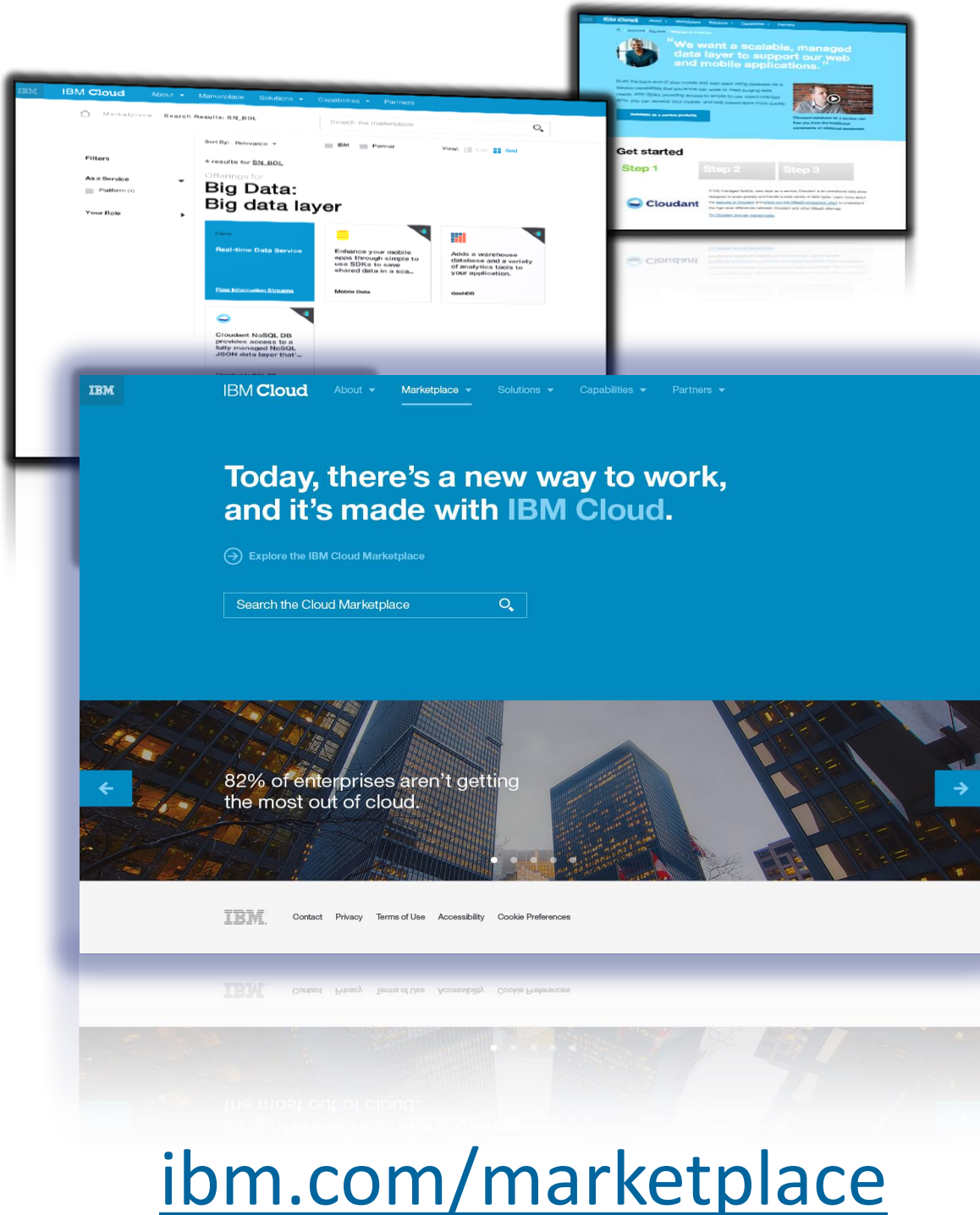
- **Marketplace** is IBM's digital channel for all things cloud
  - **400+** IBM and business partners and Services
  - Delivers a **self-service** experience
  - Guides users to **discover, learn, try and buy**

- **Strategic access** is IBM's competitive advantage
  - **IBM and partner** services in a **single user experience**
  - **Trusted, Enterprise-grade** SaaS, PaaS, IaaS
  - IBM **expertise** focusing on **solutions** so customers can innovate quickly and easily

  - **Multiple integration and capabilities** – SoftLayer, patterns, Bluemix.
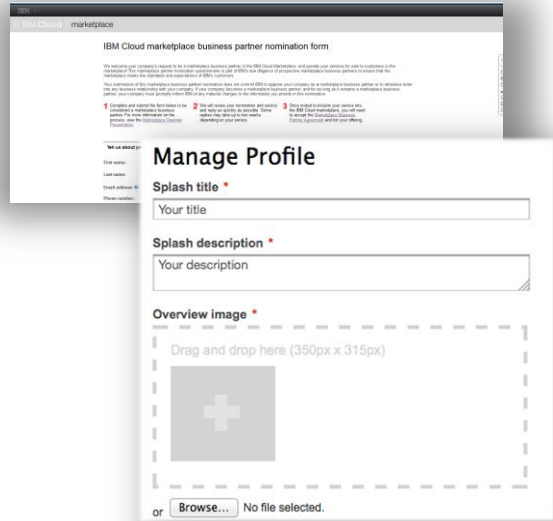
Business Partners and IBM Cloud marketplace

Qualified business partners can provide services that:

- Run on or be deployable to SoftLayer, or integrate with an IBM premium platform service, or integrate with or extend our SaaS offerings
  - Such services require additional IBM review, as services for IBM premium platform services must meet specific criteria which could include additional technical integration and/or certification.

- Are enterprise class, in production and supporting paying customers

- Are single or multi-tenant, as-a-service cloud applications; or virtual machine images; or add-on, plug-in or extension to a virtual machine environment; or virtual configured IT environment that includes application code and is deployed on the cloud (e.g. Patterns, or private cloud deployment)

- Align to IBM strategic imperatives

http://ibm.biz/newway4partners

How do Business Partners participate in IBM Cloud marketplace?
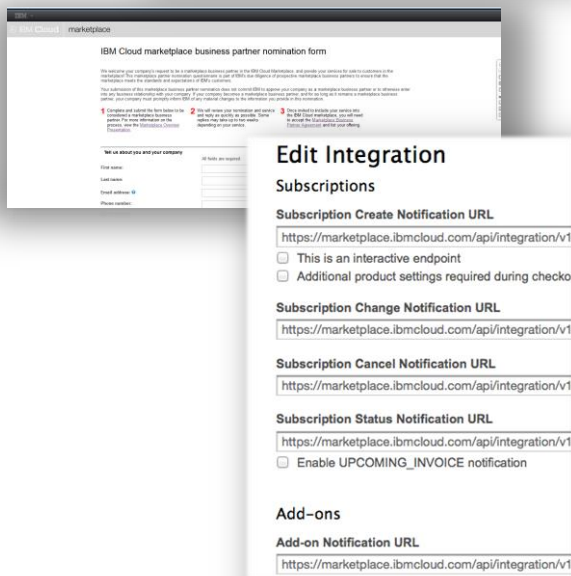
1. Apply to Become a Business Partner
Complete and submit the nomination form https://www.marketplace.ibmcloud.com/joinnow/ to be considered for partnership in the IBM Cloud marketplace.

2. Qualify for the IBM Cloud marketplace
We will review your form and reply as quickly as possible to discuss your service and next steps. Some replies take up to two weeks, depending on your service. To qualify for premium programs (e.g. Bluemix), services must meet additional criteria.

3. Accept the terms and conditions
Once you are invited to include your service, you will need to a) register for marketplace and b) accept the IBM Cloud Marketplace Business Partner terms >
https://developer.ibm.com/marketplace/docs/vendor-guide/business-partner-agreements/

4. Integrate and price your service to marketplace (3 weeks)
Within 90 days of signing the IBM Cloud Marketplace Business Partner agreement, you must integrate your service to the IBM Cloud marketplace APIs. Services designed for Bluemix must support an additional call, and integration and quality review for Bluemix may take several additional weeks. Details in the Business Partner Guide here >
https://developer.ibm.com/marketplace/docs/vendor-guide/

5. Qualify for integration to premium options (e.g. Bluemix) - Can be in parallel with above
Prospective Bluemix, PureApplication Service on SoftLayer, or HPC Analytics services must meet certain additional criteria.

6. Promote and merchandise your offering
Once published, reference the IBM Cloud marketplace marketing kit to see how you can promote your offering with IBM > https://developer.ibm.com/marketplace/docs/marketing-kit/

Summary

- The VCAP_SERVICES environment variable allows your application to discover bound services and provides the information required to access the service.

- Bluemix allows new services to be added through the IBM Cloud Market Place.

- SoftLayer can be used to host services.

- User-provided services (private to an organization) can be created or accessed the same way as a Bluemix provided service.