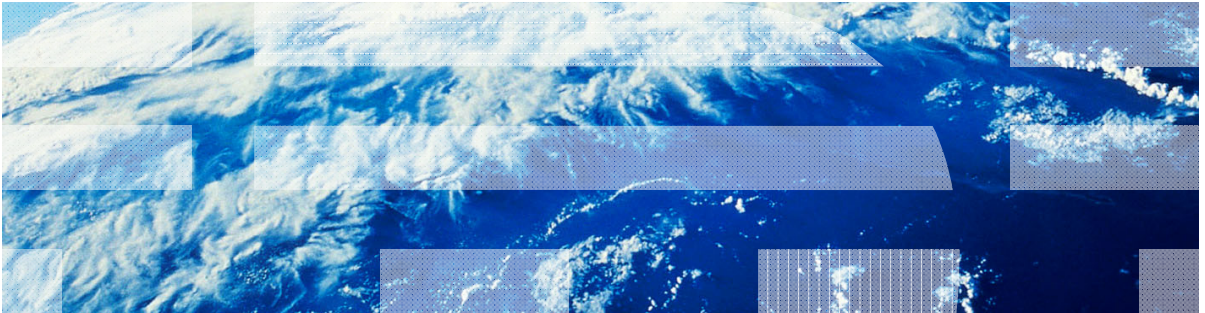


# ***IBM Worklight V5.0.5 Getting Started***

## **Module 7.9 – Overview of JSONStore**



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# Agenda

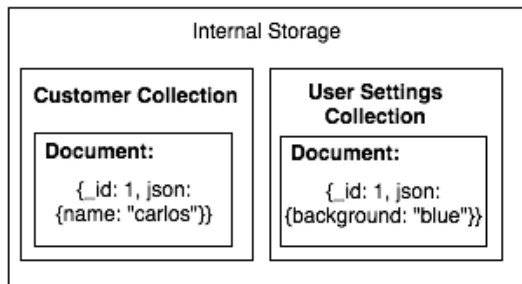
- What is JSONStore?
  - Documents and Collections
  - Search Fields and Queries
- Architecture
- JSONStore API
  - Initialization
  - Handling data access locally
  - Securing it
  - Pushing and pulling changes
- Comparing JSONStore and Worklight Encrypted Cache
- More Information

## ***What is JSONStore?***

- JSONStore is a JavaScript API for data storage and manipulation.
- It provides the following key features:
  - Storage of new and existing data that you can search, update, and delete without network connectivity
  - Ability to pull and push data to your back-end system
  - Encryption for stored data
  - Tooling for you to get started

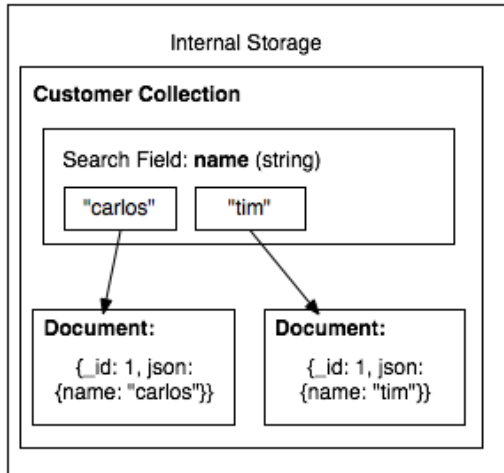
## Documents and Collections

- **Collection** – A named logical grouping of related documents.
- **Document** – JavaScript object with an auto-generated `_id` and data in JSON format.
- The figure shows an example with two collections:
  - The Customer Collection stores customers' names.
  - The User Settings Collection stores a background color.
    - In this example, you store one piece of information (*name* or *background*) per document, but you might store more.



## Search Fields and Queries

- **Search Fields** – Keys that are indexed, thus determining what you can query in a collection.
- **Query** – A JavaScript object that contains either `_id` or a Search Field as a key.
- Example: On the figure, the search field is the string **name**. When you query the collection for name equals “**carlos**”, it identifies what document to return.

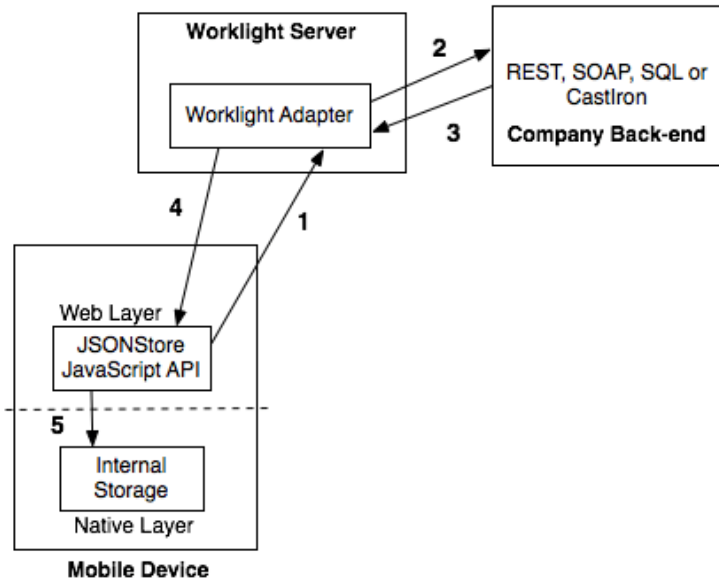


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## Architecture – Get and Store data

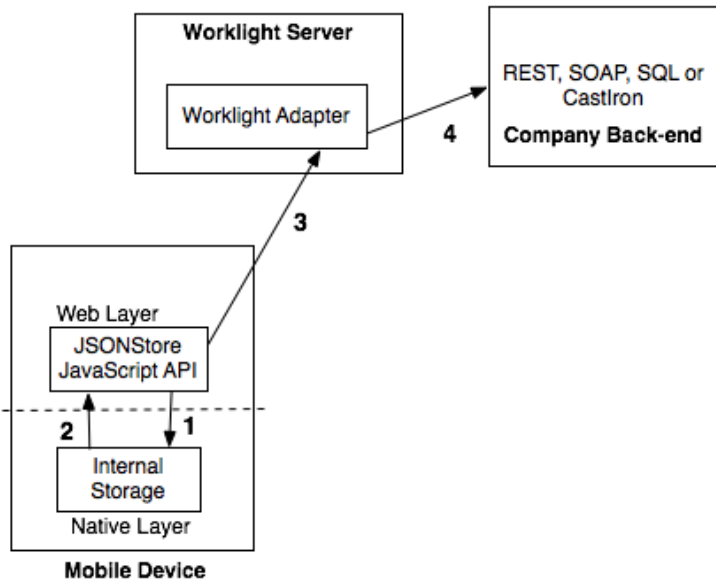
1. JSONStore requests data from a Worklight® adapter.
2. The adapter requests data from the back-end service.
3. The back-end service returns data.
4. The adapter returns data in JSON format.
5. Data is stored inside the device.
  - For more information, see Module 7.11 (JSONStore with Synchronization) and Module 5 (Integration Adapters).





## Architecture – Send data back

1. JSONStore requests data from the internal storage.
  2. The internal storage returns JSON documents.
  3. JSONStore sends those documents to an adapter.
  4. The Worklight adapter sends data to the back-end service.
- For more information, see Module 7.11 (JSONStore with Synchronization) and Module 5 (Integration Adapters).



# Agenda

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## ***JSONStore API***

- API – only in JavaScript, and mostly asynchronous.
  - You can use it only when you develop Worklight Hybrid Applications and you must wait for callbacks to get results.
- Options – An object that contains onSuccess and onFailure keys.
  - These keys might have functions as values that execute after the operation finishes.

## ***Initialization of the local store***

```
initCollection ( name , searchFields , [options] ) JSONStoreInstance static
```

- The initialization process creates an object to interact with a single collection.
- A local store is created if one does not exist.
  - The store acts as a repository for all collections that are created within an app.
- You can optionally link collections to an adapter, and then use it to push data by invoking its procedures, depending on the local modifications that are performed.

## Handling data locally

- When your local store is initialized, you can start handling the data by using the JSONStore API.
- You can perform many functions on the local data, including:

- Add
- Remove
- Count
- Replace
- Find
- Store



```
add ( data , [options] ) onSuccess
```

```
remove ( doc , [options] ) onSuccess
```

```
count ( [options] ) onSuccess
```

```
replace ( doc , [options] ) onSuccess
```

```
find ( query , [options] ) onSuccess
```

```
store ( data , [options] ) onSuccess
```

## Securing the local store

`usePassword` ( `pwd` ) Boolean `static`

- The JSONStore API also simplifies the encryption of your entire local data store.
- To encrypt your data store, specify a password by using the `usePassword` method.
  - This method sets the password that is used to generate the keys that are required to encrypt the data that is stored locally on the device.
- Notice: The store is always encrypted.

## *Pushing and pulling changes*

```
push ( [options] ) onSuccess
```

```
pushSelected ( doc , [options] )
```

```
load ( [options] ) onSuccess
```

- If your application is connected to a back-end system via an adapter, then you can use the data push function that is included in JSONStore.
- With the API, you can:
  - Push all or selected documents to the back-end system
  - Load data from the back-end system into the local store initially, or refresh the local copy from the server
- Local collection data is pushed or loaded by using a Worklight adapter.

## Comparing JSONStore and Worklight Encrypted Cache

	JSONStore	Encrypted Cache
Storage mechanism	File based storage	HTML5 Local Storage
Mobile OS supported	iOS, Android	iOS, Android, BlackBerry, and Windows Phone
Encryption support	Password or key based. AES256 and PBKDF2	Password or key based. AES256 and PBKDF2
Access/Sync	Rich JavaScript API to search, store, and update locally with synchronization with the server	JavaScript API for storing key value pairs



## ***Comparing JSONStore and Worklight Encrypted Cache***

- If you are developing Worklight hybrid apps that target iOS and Android, consider working with JSONStore instead of Encrypted Cache.
  - The key reason for this statement is Apple's position that HTML5 local storage is not guaranteed to be persistent on future iOS versions.
- JSONStore uses the same encryption form and security mechanisms (PBKDF2 for key derivation from user password and AES 256) as current Encrypted Cache.

## ***More information***

- For a complete API documentation, see the IBM Worklight Information Center at <http://pic.dhe.ibm.com/infocenter/wrklight/v5r0m5/index.jsp>
  - Search for the **Class WL.JSONStore**.
- Related Getting Started Modules:
  - Module 7.11 – JSONStore with Synchronization
  - Module 7.12 – JSONStore with Security

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