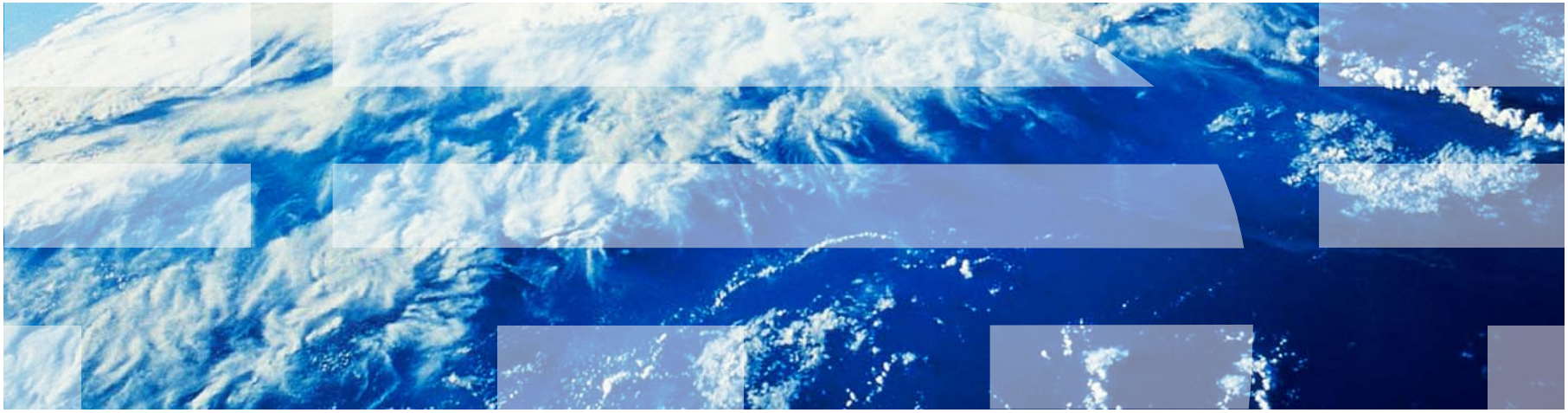
IBM Worklight V6.1.0
Getting Started

Device provisioning concepts



7 March 2014

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Agenda

- Overview
- Device ID
- Understanding device provisioning
- No provisioning
- Auto provisioning
- Custom provisioning

Overview (1 of 2)

- Device provisioning is one of the most advanced and complex security features that IBM Worklight® provides.
- Device provisioning is a process of attaching a certificate to the device identity.
- Device identity (or in short – device ID) is similar to user identity, but is used to uniquely identify a specific device.
- Device identity is essential for various features. For example:
  - Push notifications – you want to know which device you are sending the notification to.
  - Reports – you want to know how many devices are using your server.
- Knowing the device identity opens a wide array of security integration possibilities, for example you can decide which devices are allowed to communicate with the Worklight Server.
- In this training module you learn what device provisioning is, what types of device provisioning are supported by IBM Worklight and what are the artifacts that are involved in a process of device provisioning.

Overview (2 of 2)

- IBM Worklight supports three types of device provisioning:
  - No provisioning
  - Auto provisioning
  - Custom provisioning
- This training module focuses on the first two types.
- For more information about custom provisioning, see the **Custom Provisioning** module and the IBM Worklight product documentation.

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Device ID

- Device ID is automatically obtained (generated) by a client side framework, when it is requested by the Worklight Server.
- It is used to uniquely identify a specific device with the Worklight Server.
- Similar to the way the user ID is used for user authentication, the device ID is used for device authentication.
- Device provisioning is based on the device ID and supported on iOS and Android platforms.

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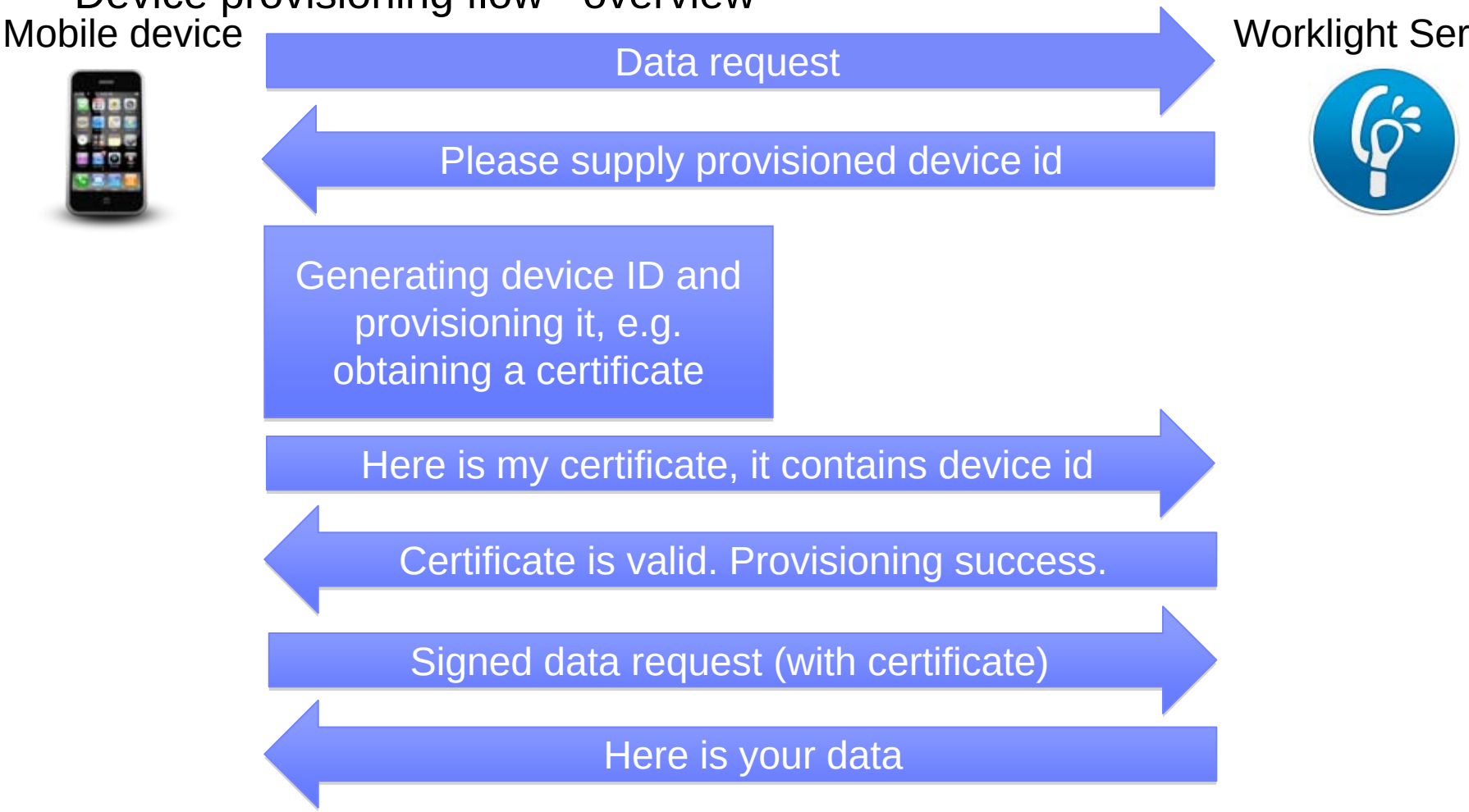
Understanding device provisioning (1 of 2)

- Device provisioning is a process where a certificate is issued by the Worklight Server for a specific device.
- The issued certificate contains device information that is obtained during the provisioning process.
- Before issuing a certificate to a specific device, the Worklight Server can perform extra validations on received device credentials.
- It is possible to configure your own CA keystore to be used for device provisioning certificate generation.

Understanding device provisioning (2 of 2)

- Device provisioning flow - overview



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No provisioning (1 of 2)

- **No provisioning** is appropriate for the development environment.
- Using **No provisioning** means that the provisioning process is not triggered (requested) by the Worklight Server.
- Application obtains the device ID and sends it to the Worklight Server as-is.
- The Worklight Server does not perform any validation, whether this device is allowed to communicate with it or not.
- The certificate is neither issued or requested on any stage.
- **No provisioning** is a default option for mobile applications.
- You are not required to manually enable **No provisioning** if you are using default security settings.

No provisioning (2 of 2)

- If you use **customSecurityTest** to protect a resource that requires device identity and want to use **No provisioning**, add the realm, as illustrated here, to your security test.

```
  <test realm="wl_anonymousUserRealm" isInternalUserID="true"/>
  <test realm="wl_deviceNoProvisioningRealm" isInternalDeviceID="true"/>
customSecurityTest>
```

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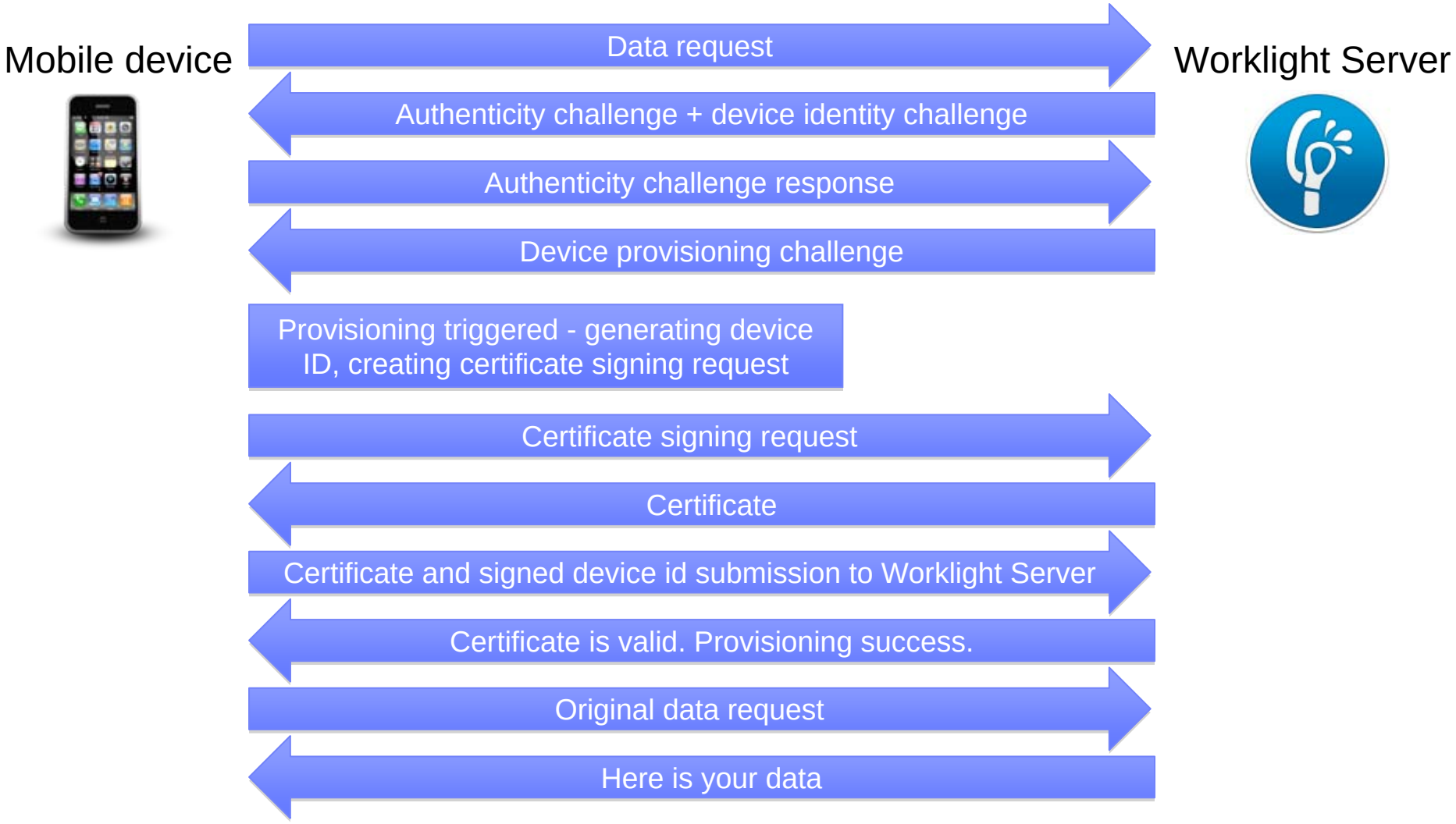
Auto provisioning (1 of 7)

- **Auto provisioning** is an automated one-time process during which a certificate is issued by Worklight Server and sent to client.
- **Auto provisioning** is triggered by a Worklight Server when it requests a provisioned device identity.
- The application obtains the device ID and starts an automated provisioning process.
- The Worklight Server collects supplied device information and issues a certificate by using the server-side CA keystore.
- The certificate will be issued to any device that requests it, therefore **Auto provisioning** makes sense only when it is used after a successful authenticity check.
- See following slides for the **Auto provisioning** flow.

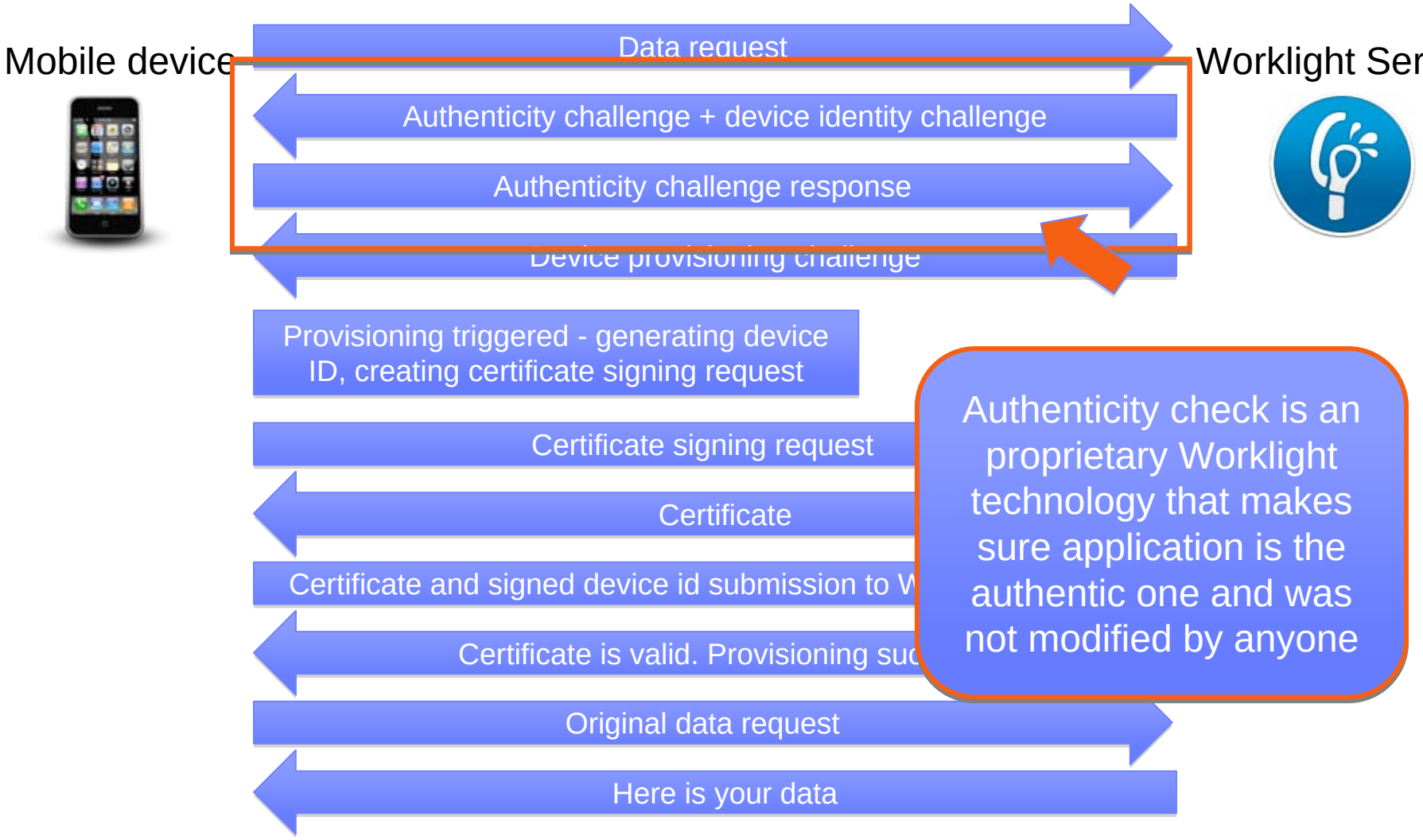
Auto provisioning (2 of 7)

- Auto provisioning during first application start:



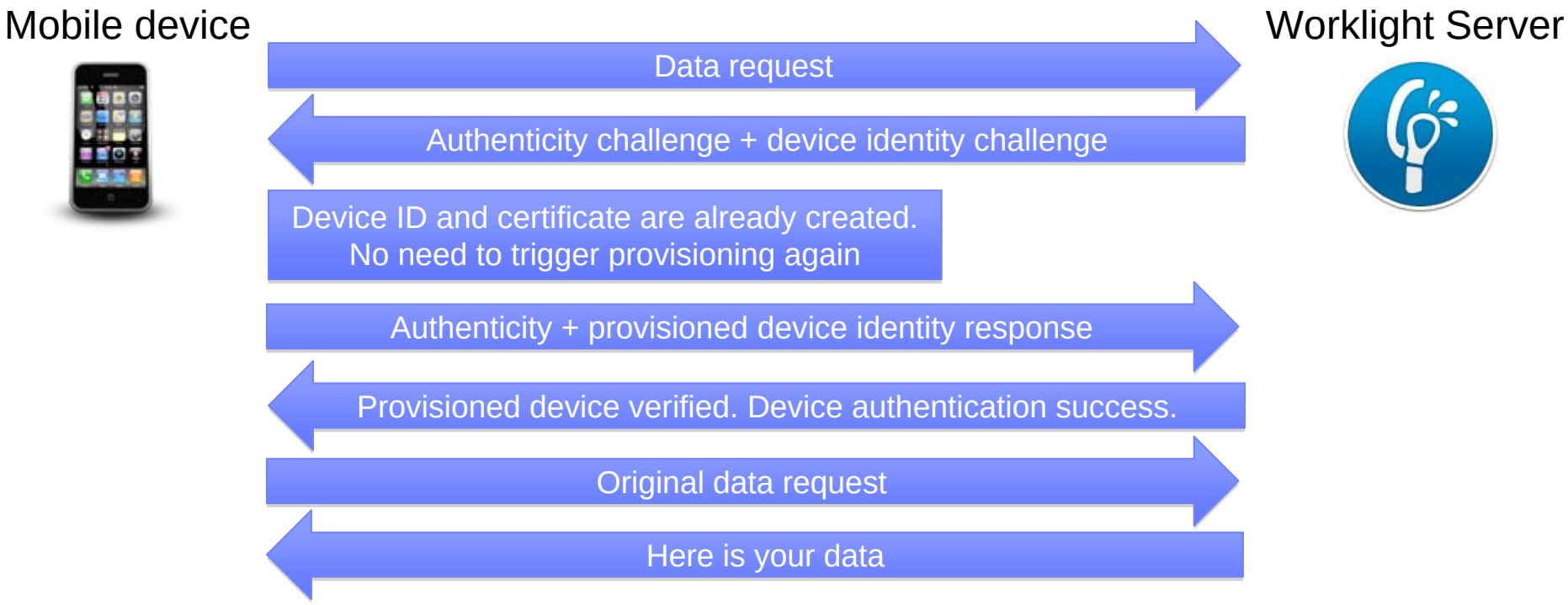
Auto provisioning (3 of 7)

- Auto provisioning during first application start:



Auto provisioning (4 of 7)

- Subsequent start up of a provisioned application:



Auto provisioning (5 of 7)

- To enable **Auto provisioning** add the following realms to your **authentication-config.xml** file.
  - If you use custom security test:

```
    <test realm="wl_authenticityRealm"/>
    <test realm="wl_deviceAutoProvisioningRealm" isInternalDeviceID="true"/>
</customSecurityTest>
```

  - If you use mobile security test:

```
<mobileSecurityTest name="mobileTests">
    <testAppAuthenticity/>
    <testDeviceId provisioningType="auto" />
</mobileSecurityTest>
```

Auto provisioning (6 of 7)

- By default the Worklight Server uses its internal keystore to issue a certificate.
- You can tell the Worklight Server to use your own keystore by adjusting the **worklight.properties** file.

```
#################################################################################################################
#    Worklight Default Certificate (For device provisioning)
#################################################################################################################
# You can change the default behavior with regard to CA certificates. You can also implement custom provisioning.
# If you want to change the auto-provisioning mechanism to use different granularity (application, device or group) or a
# different list of pre-required realms, you can create your own customized authenticator, login module and challenge handler.
# For more information, see the "Custom Authenticator and Login Module" Getting Started training module.

#The path to the keystore, relative to the server folder in the Worklight Project, for example: conf/my-cert.jks
#wl.ca.keystore.path=
#The type of the keystore file. Valid values are jks or pkcs12.
#wl.ca.keystore.type=
#The password to the keystore file.
#wl.ca.keystore.password=
#The alias of the entry where the private key and certificate are stored, in the keystore.
#wl.ca.key.alias=
#The password to the alias in the keystore.
#wl.ca.key.alias.password=

#################################################################################################################
#    Worklight SSL keystore
#################################################################################################################
#SSL certificate keystore location.
ssl.keystore.path=conf/default.keystore
#SSL certificate keystore type (jks or PKCS12)
ssl.keystore.type=jks
#SSL certificate keystore password.
ssl.keystore.password=worklight
```

- Note **wl.ca.keystore.path** property value can be both relative to the Worklight project ***/server/*** folder and absolute to the file system.

Auto provisioning (7 of 7)

- **Auto provisioning** must be used together with the application authenticity protection.
- For more information, see the **Application Authenticity Protection** module.

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Custom provisioning

- **Custom provisioning** is an extension of **Auto provisioning**.
- With **Custom provisioning,** you can add custom CSR and certificate validation functions to define custom device provisioning rules.
- For more information, see the **Custom Device Provisioning** module and the IBM Worklight product documentation.

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