

IBM Worklight V6.0.0 Getting Started

Device provisioning concepts



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Agenda

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

Overview

- One of the most advanced and complex security features that the Worklight platform provides, is a device provisioning
- 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 and that are not
- In this training module you learn what device provisioning is, what types of device provisioning are supported by Worklight and what are the artifacts that are involved in a process of device provisioning

Overview

- Worklight platform 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 relevant training module and IBM Worklight InfoCenter

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Understanding the device ID

- Device ID is automatically obtained (generated) by a client side framework, when it is requested by the Worklight server.
- It is created by using the Worklight framework and is a special feature of Worklight.
- 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

- It is important to gain a better understanding of what device provisioning is
- Device provisioning is a process where a certificate is issued by 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, 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

- Device provisioning flow in a nutshell



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No provisioning

- **No provisioning** mode 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.
- Worklight server does not perform any validation, whether this device is allowed to communicate with it or not.
- 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

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

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

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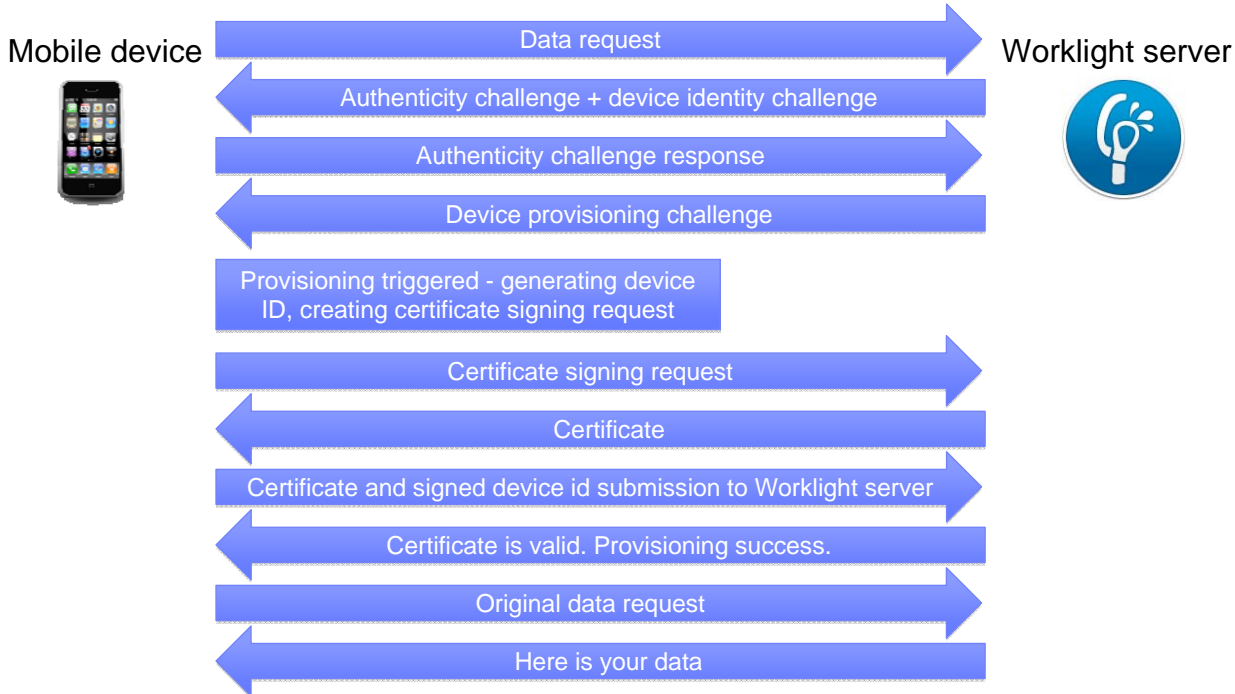
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Understanding device auto provisioning

- **Auto provisioning** mode is an automated one-time process during which a certificate is issued by Worklight server and sent to client
- Provisioning is triggered by a Worklight server when it requests a provisioned device identity
- Application obtains the device ID and starts an automated provisioning process
- 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 auto provisioning flow

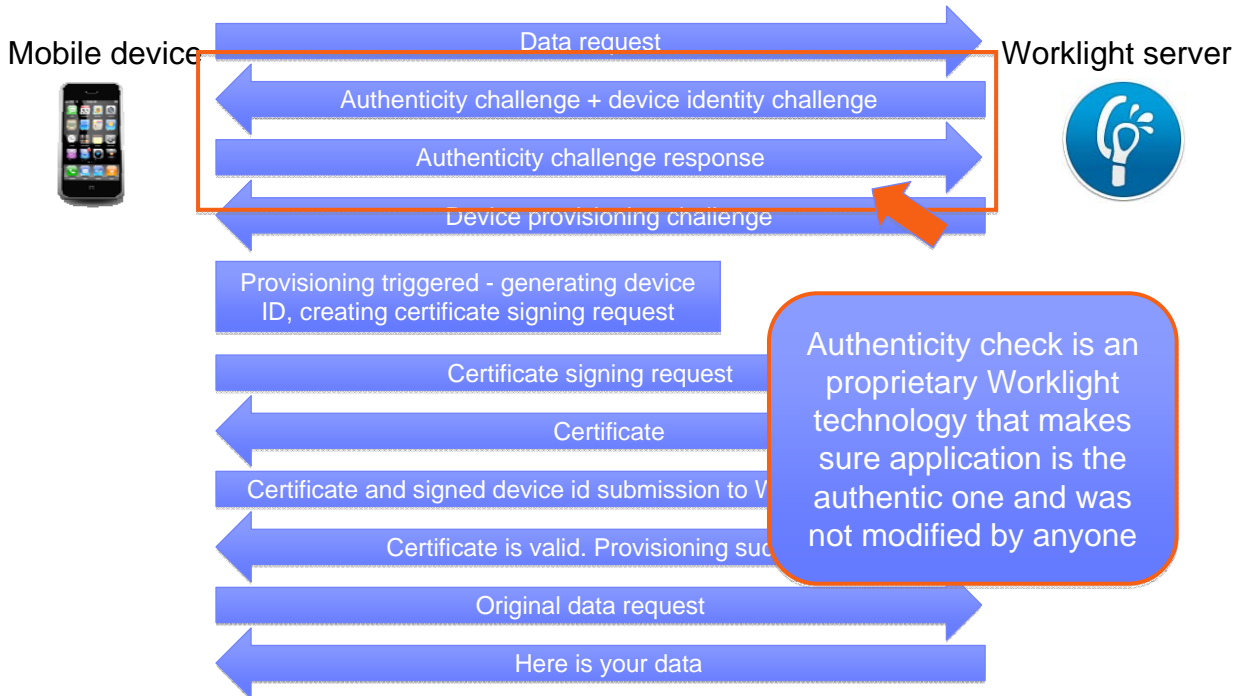
Auto provisioning (1 of 6)

- Auto-provisioning during first application start



Auto provisioning (2 of 6)

- Auto-provisioning during first application start



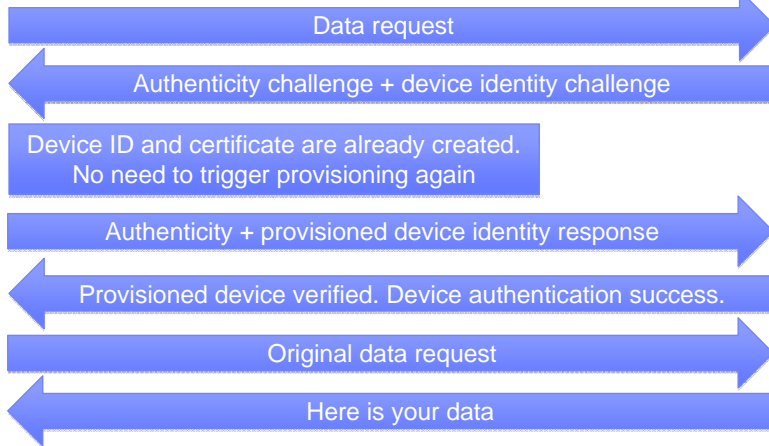
Auto provisioning (3 of 6)

- Subsequent start up of a provisioned application

Mobile device



Worklight server



Auto provisioning (4 of 6)

- 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 (5 of 6)

- 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

```
122 #####
123 #####
124 #   Worklight Default Certificate
125 #####
126 wl.ca.keystore.path=conf/default.keystore
127 wl.ca.keystore.type=jks
128 wl.ca.keystore.password=worklight
129 wl.ca.key.alias=keypair1
130 wl.ca.key.alias.password=worklight
131 #####
```

- 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 (6 of 6)

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

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Custom provisioning

- **Custom provisioning** is an extension of the auto provisioning mechanism.
- It allows you to add custom CSR and certificate validation functions to define custom device provisioning rules
- For more information, see the Custom Device Provisioning training module and IBM Worklight InfoCenter.

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