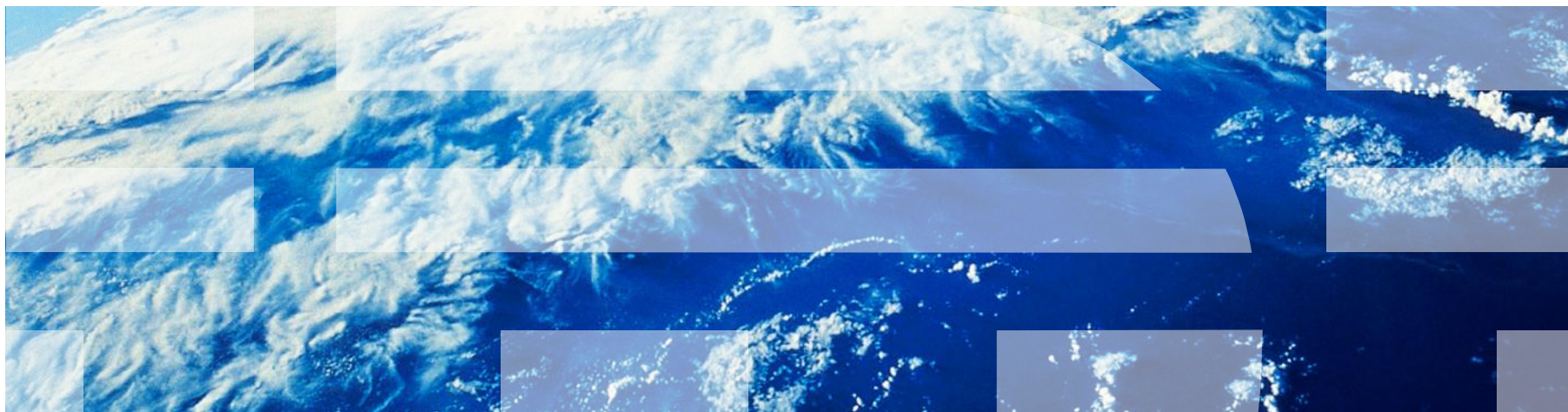# IBM Worklight Foundation V6.2.0
Getting Started

Two-way SMS communication

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- Overview

- Device support

- Architecture

- API for two-way SMS

  – Registering SMS event handlers

  – Server-side SMS API

- Setup

- Run the sample

Overview

- Two-way SMS communication enables communication between mobile phones and the IBM® Worklight® Server over an SMS channel. Mobile-originated SMS messages can be sent to the Worklight Server via the SMS gateway and the Worklight Server can send a response back.

- Short codes or keywords are configured with an SMS gateway from an independent software vendor. The gateway must be configured to forward the requests to Worklight Server or to a reverse proxy URL, depending on the topology in your environment.

- The SMS messages that are sent from mobile devices are forwarded to an adapter procedure on the Worklight Server side, as configured by the developer.

- The adapter procedure includes the logic to process the request, or the procedure can forward the request to a back end for processing. The response is sent back through the Worklight notification framework.

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Device Support

- IBM Worklight supports two-way SMS communication on any mobile devices that support SMS functions.
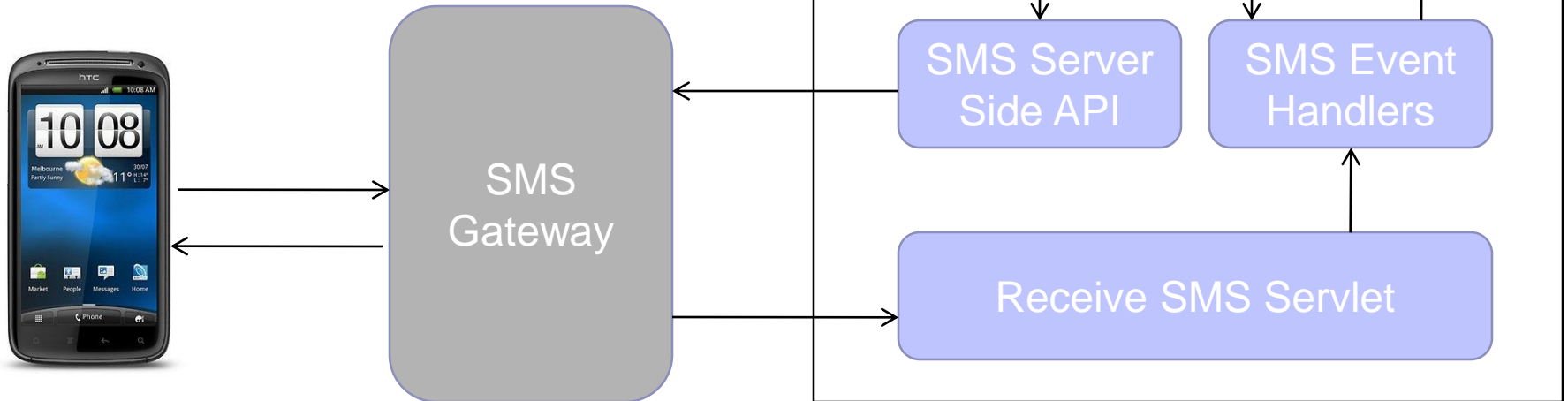
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Architecture

1. An adapter registers SMS event handlers on the Worklight Server.

The event handler registration specifies what adapter procedure callback is called.

Worklight Server

Architecture

2. SMS messages are sent from mobile devices to the SMS gateway, which is configured with a Worklight project.

The gateway details are specified in SMSConfig.xml, in the Worklight project.

Worklight Server

Adapter Code

SMS Server Side API

SMS Event Handlers

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SMS Gateway

Receive SMS Servlet
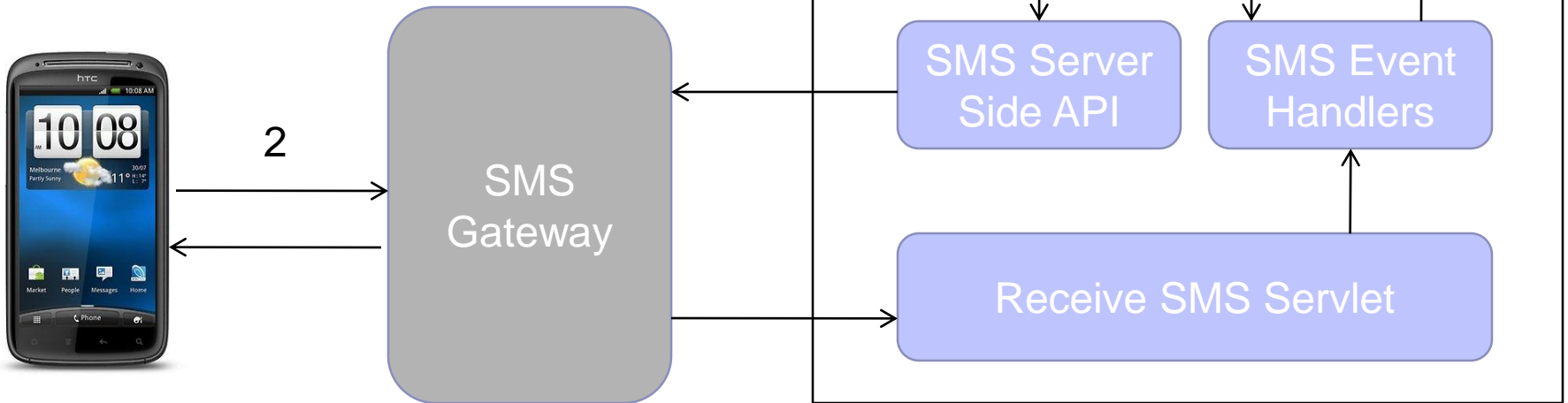
Architecture

3. The SMS gateway forwards SMS messages to the configured Worklight URL.

Configure the SMS gateway with the keyword and the
Worklight Server URL to which it must forward the
messages.
For more information, refer to the specification of your
gateway.

Worklight Server

Adapter Code

SMS Server Side API

SMS Event Handlers

SMS Gateway

3
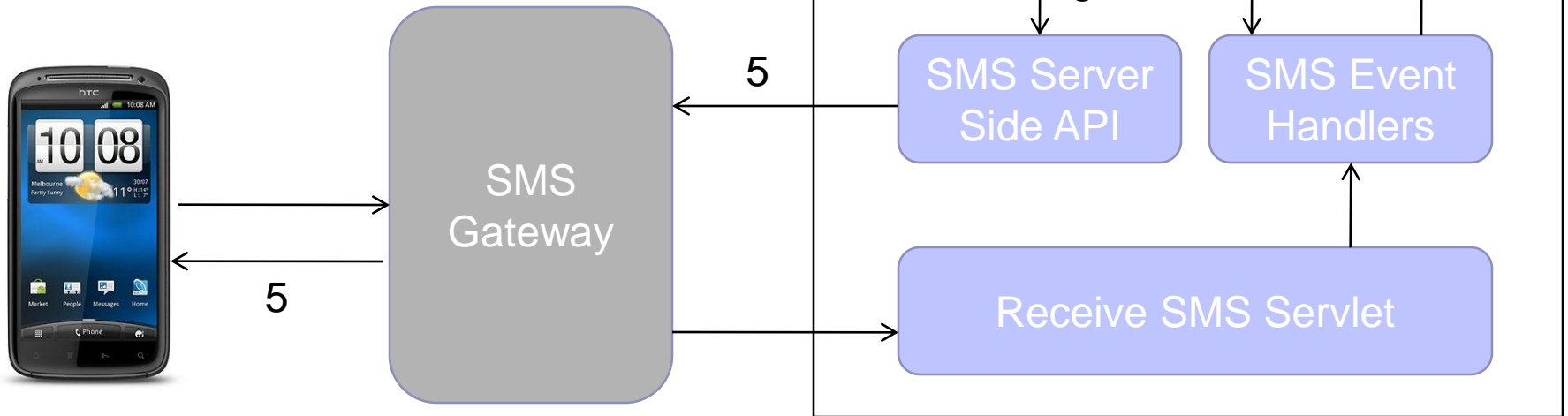
Receive SMS Servlet
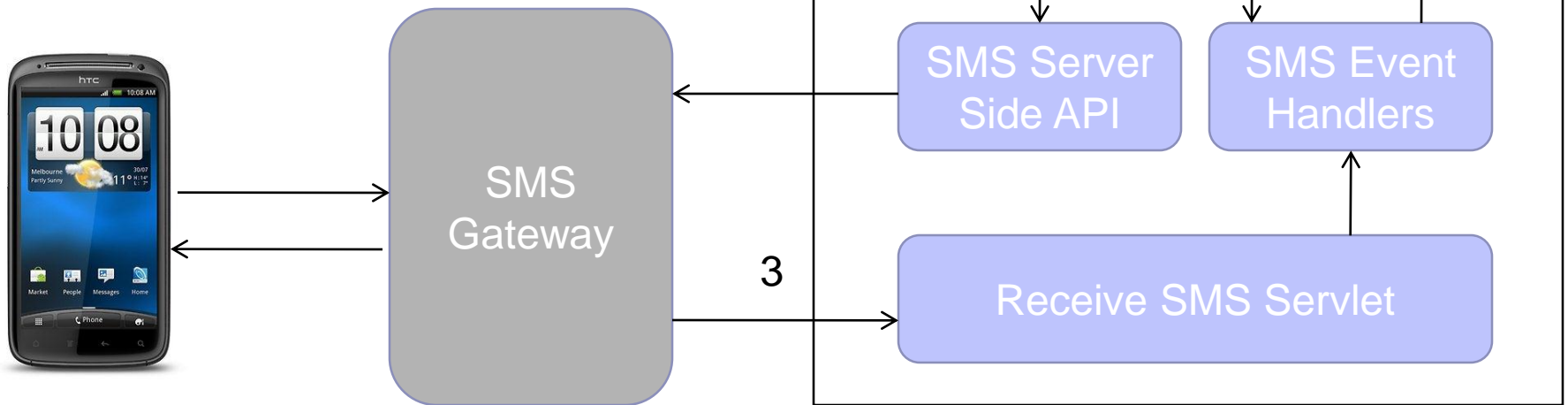
Architecture

4. An SMS servlet on the Worklight Server matches the parameters with filters as defined in SMS event handlers, and calls the adapter procedure callback.

Worklight Server

Adapter Code

SMS Server Side API

SMS Event Handlers

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SMS Gateway

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Receive SMS Servlet
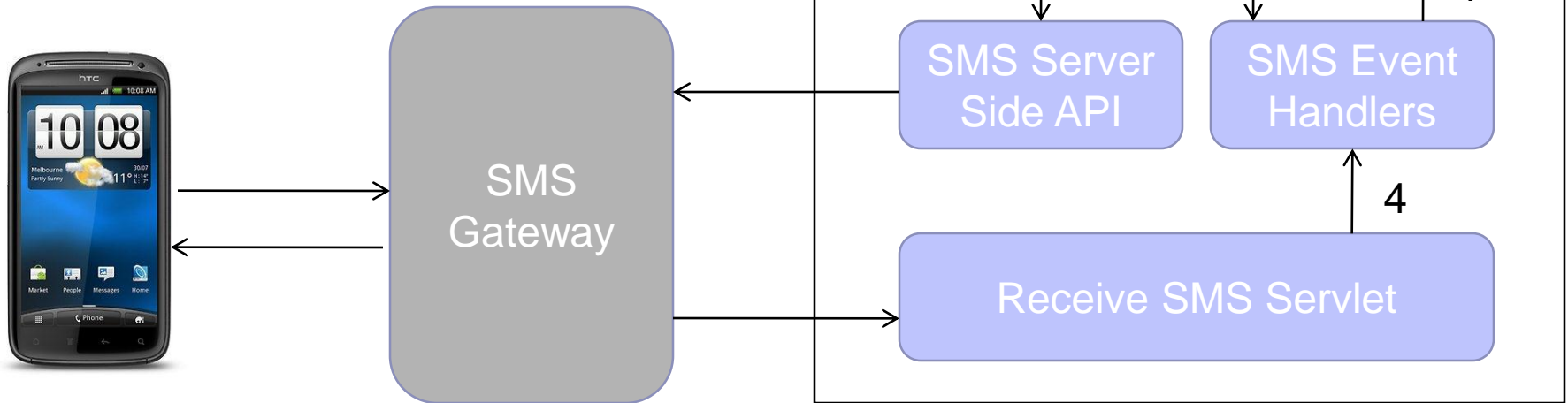
Architecture

5. The adapter can process SMS messages and send them to a mobile device by using the SMS API.

An adapter procedure can use the SMS server-side APIs for subscription and unsubscription. The procedure uses the SMS notification framework to send the response back to the mobile device.

Worklight Server

Adapter Code

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SMS Server Side API

SMS Event Handlers

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SMS Gateway

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Receive SMS Servlet

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Two-way SMS API – Registering SMS event handlers

```
WL.Server.setEventHandlers([
                            WL.Server.createSMSEventHandler(
                                filter,
                                handlerFunction,
                                gatewayID
                                )
                            ]);
```

- **The name-value parameters sent from the SMS gateway that match the filters are passed to `handlerFunction`.**

  For example, if the SMS gateway is sending the following parameters:

  - *from*: from number
  - *text*: SMS text
  - *keyword*: a keyword configured in the SMS gateway

  the `filter` parameter can be defined as `{keyword:"myKey"}`. In this case, when the Worklight Server receives a request from the SMS gateway, it looks for a keyword with `myKey` as its value, and forwards the resulting request to `handlerFunction`.

Two-way SMS API – Registering SMS event handlers

```
WL.Server.setEventHandlers([
                    WL.Server.createSMSEventHandler(
                            filter,
                            handlerFunction,
                            gatewayID
                            )
                    ]);
```

- `handlerFunction` receives an SMS event that has all parameters sent from the SMS gateway.

- `gatewayID` corresponds to the SMS gateway that is configured in SMSConfig.xml. This gateway is used to receive SMS messages.

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Two-way SMS API – Server-side SMS API

- The Worklight Server uses SMS notification to send SMS messages.

- Before SMS messages can be sent, the server must subscribe to a phone number.

```
var subscription = WL.Server.subscribeSMS(
        eventSourceId, phoneNumber, gatewayID);
```

- This method takes the following parameters:
  - **eventsourceId:** the event source to which the phone number is subscribing.
  - **phoneNumber:** the user's phone number
  - **gatewayID:** the ID that identifies the gateway through which SMS messages are sent.

- The method returns an SMS subscription object. Along with the `WL.Server.notifyDeviceSubscription` method, this object can be used to send an SMS message to the specified phone number.

Two-way SMS API – Server-side SMS APIs

- If the phone number is already subscribed, get the subscription object and send an SMS message.

```
function sendSMS(phoneNumber, smsText) {

    var subscription = WL.Server.getSMSSubscription(eventSourceId, phoneNumber);

    if (subscription == null) {
        return { result: "No subscription found for user :: " + phoneNumber };
    }

    var notification = WL.Server.createDefaultNotification(smsText, 1, {});
    WL.Server.notifyDeviceSubscription(subscription, notification);

    return { result: "Notification sent to user :: " + phoneNumber };
}
```

Two-way SMS API – Server-side SMS API

- A phone number can unsubscribe from the event source by a call to the following method:

```
WL.Server.unsubscribeSMS(eventSourceId, phoneNumber);
```

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Setup – SMSConfig.xml

- The `SMSConfig.xml` file specifies gateway details for both receiving and sending SMS messages.

```xml
<!--
    The below configuration will make a GET request to the following url:
    http://yourhostname.com:80/backendProgram?
    to={phone-number}&text={sms text}&param1name=param1value&param2name=param2value

    Please modify it with your SMS gateway settings or add a new <gateway> entry
-->
<gateway id="myGateway" hostname="yourhostname.com" port="80"
        programName="backendProgram" toParamName="to" textParamName="text"
        fromParamName="from">
    <parameter encode="false" name="param1name" value="param1value"/>
    <parameter encode="false" name="param2name" value="param2value"/>
</gateway>
```

- Configure the SMS gateway with the following URL:
    - `http://<host>:<port>/<context>/receiveSMS`

Setup – Worklight.properties

- You can externalize the keywords, gateway identifier, and other parameters that the SMS event handler uses to the `worklight.properties` configuration file.

```
sms.keyword.subscribe=sub
sms.keyword.unsubscribe=unsub
sms.gateway.id=myGateway
```

Setup – authenticationConfig.xml

- By default, the `SubscribeServlet` object that receives the request from the gateway is protected by a security test. This security test takes a `RejectingLoginModule` parameter which by default rejects any request.

- To enforce the security mechanism that is supported by your gateway, comment out or modify the default security test.

```
<!-- <resource id="receiveSMSServlet" securityTest="SubscribeServlet">
    <urlPatterns>/receiveSMS*</urlPatterns>
</resource> -->
```

Setup – Securing the servlet

- If you are using a reverse proxy in front of the Worklight Server, you can specify a mapping to the reverse proxy to allow only requests from specific hosts or IP addresses (SMS gateway).

- If the application server that is running Worklight directly receives the request from a gateway, the application server needs to be configured to allow requests from the specific hosts or IP addresses.

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Run the sample

1. A user subscribes for SMS notifications by sending the keyword `sub` from his mobile device to the predefined short code or phone number that is registered with a gateway from an independent software vendor.

2. The `BookStoreAdapter` adapter subscribes the phone number to receive notifications.

3. The `BookStoreAdapter` adapter sends a notification to the user when there is a discount offer.

4. The user can unsubscribe for SMS notifications by sending the `unsub` keyword to the predefined short code or phone number.

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