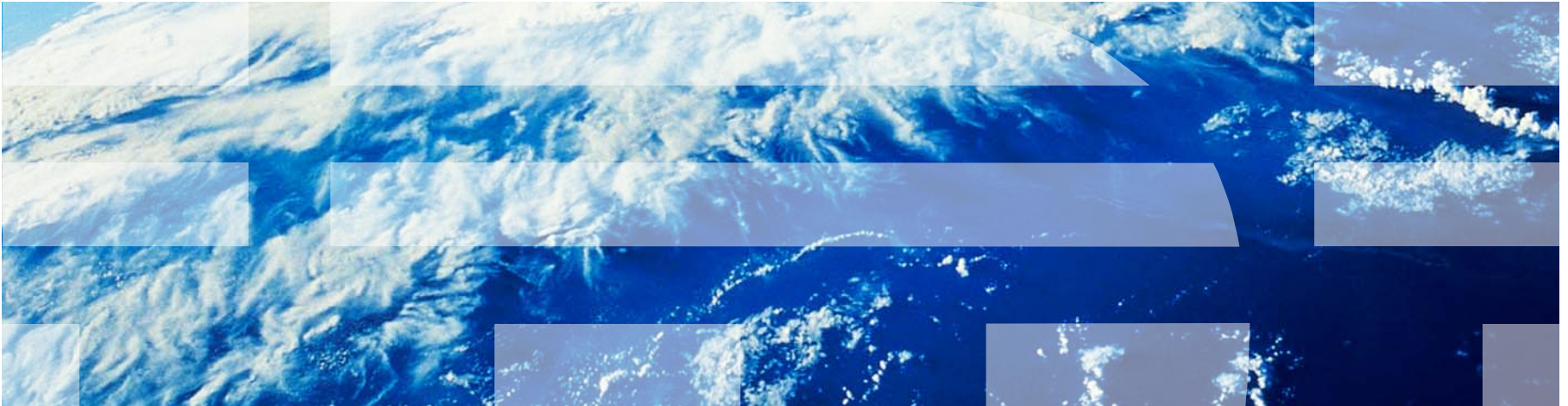


IBM Worklight V6.1.0 Getting Started

Two-way SMS communication



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 - Registering SMS event handlers
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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 should be configured with a third party SMS gateway. The gateway should be configured to forward the requests to Worklight Server or a reverse proxy URL based 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 using 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.

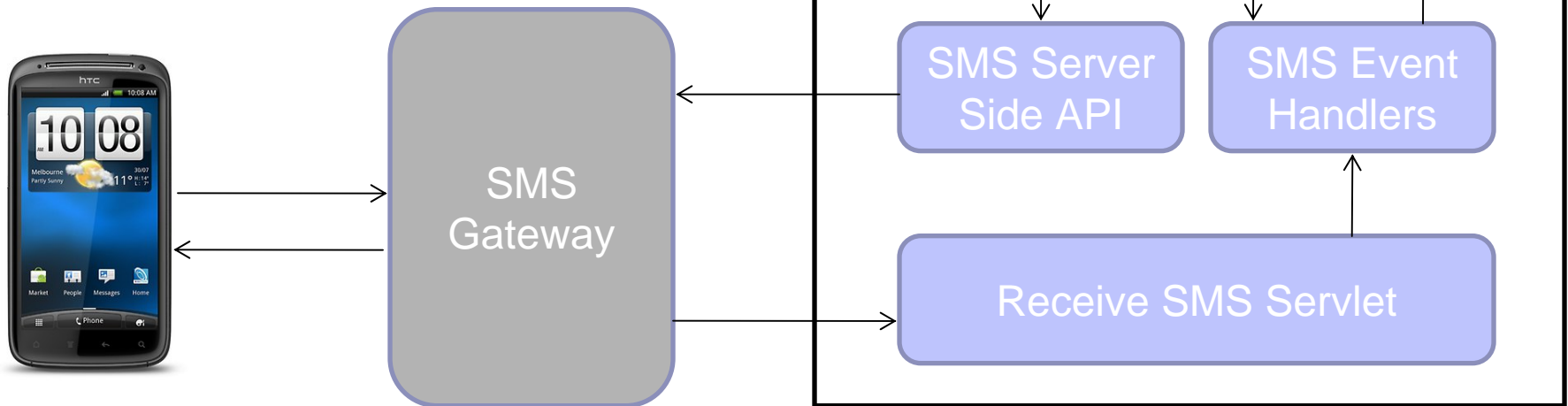
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Architecture

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

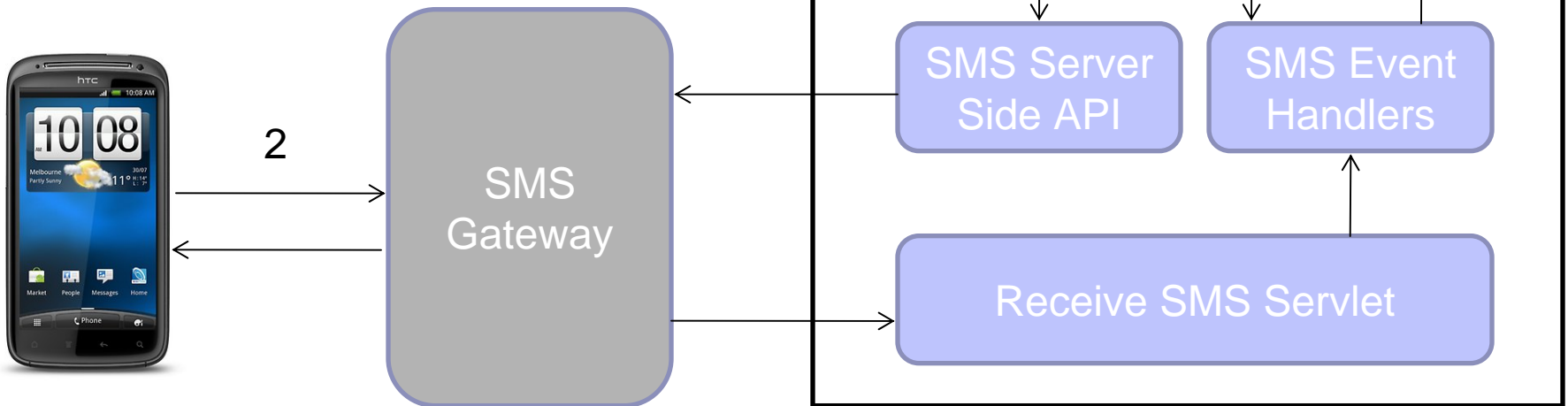
The event handler registration specifies the adapter procedure callback that is invoked.



Architecture

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

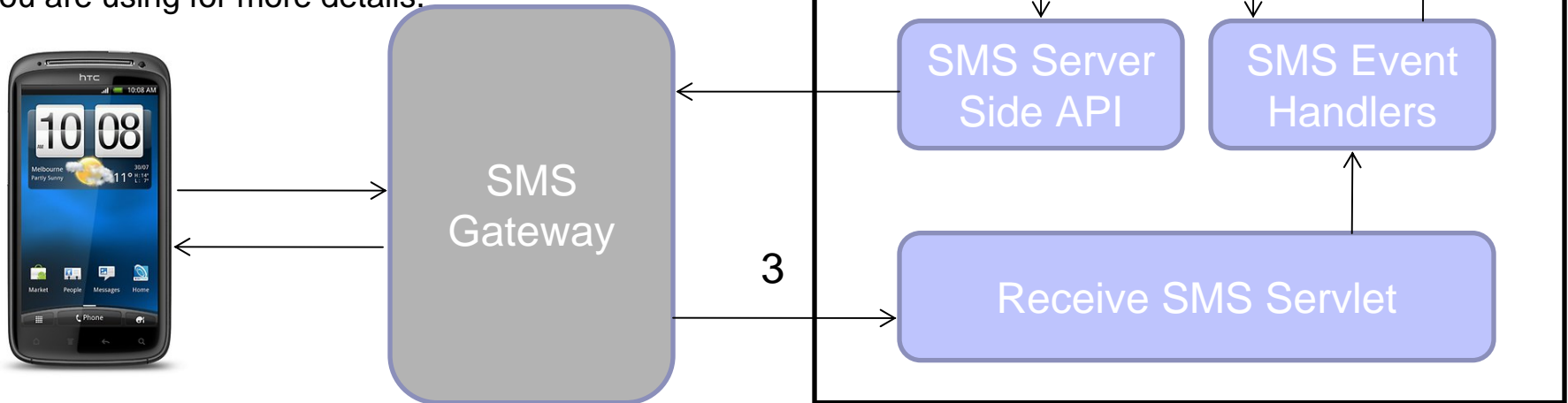
The gateway details are specified in SMSConfig.xml, in the Worklight project.



Architecture

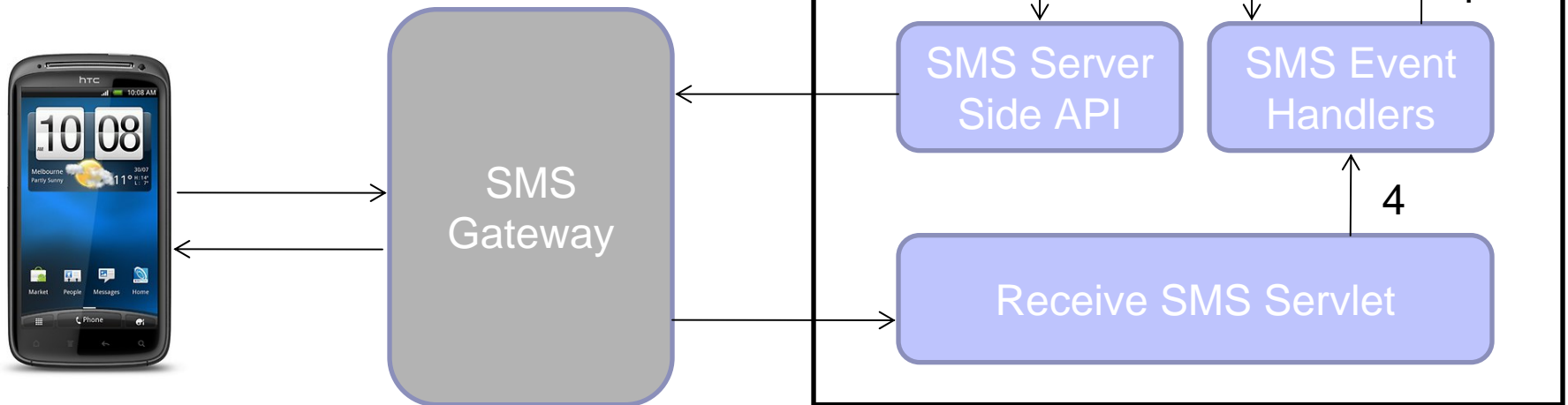
3. The SMS gateway forwards SMS messages to the configured Worklight URL.

The SMS gateway must be configured with the keyword and the Worklight Server URL to which it must forward the messages. Refer to the specification of the gateway that you are using for more details.



Architecture

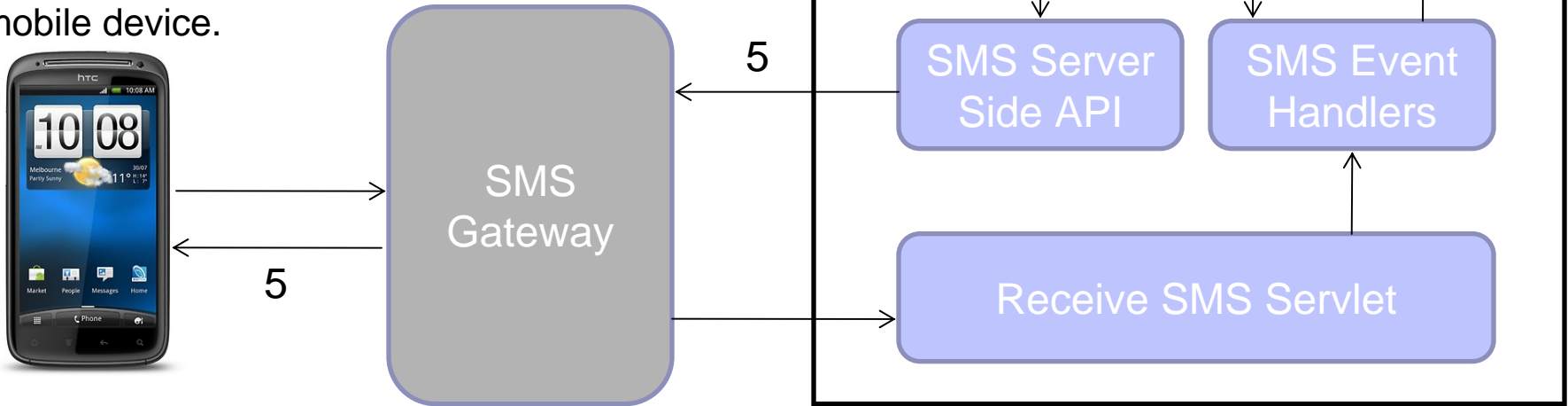
4. An SMS servlet on the Worklight Server matches the parameters with filters defined in SMS event handlers, and calls the adapter procedure callback.



Architecture

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

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.



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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

`filter` 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 `SMSSConfig.xml`. This gateway is used to receive SMS messages.

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Two-way SMS API – Server-side SMS APIs

- The Worklight Server uses SMS notification to send SMS messages.
- A phone number should be subscribed before SMS messages can be sent.

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

- This API has three parameters:
 - **eventSourceId**: the event source to which the phone number is subscribing.
 - **phoneNumber**: the phone number of the user
 - **gatewayID**: the ID that identifies the gateway through which SMS messages are sent.
- The API returns an SMS subscription object, which can be used, along with `WL.Server.notifyDeviceSubscription()`, 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 APIs

- A phone number can be unsubscribed from the event source by using the following API:

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

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Setup – SMSConfig.xml

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

```
<!--  
    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>
```

- The SMS gateway should be configured with the following URL:
 - http://<host>:<port>/<context>/receiveSMS

Setup – *Worklight.properties*

- The keywords, gatewayId, and other parameters used in the SMS event handler can be externalized in the worklight.properties configuration file.

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

Setup – *authenticationConfig.xml*

- The SubscribeServlet that receives the request from the gateway is by default protected by a security test. This security test has a RejectingLoginModule which rejects any request by default.
- This security test must be commented out or changed based on the security mechanism supported by your gateway.

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

Setup – Securing the Servlet

- If you are using a reverse proxy fronting the Worklight Server, then at the reverse proxy a mapping can be done 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, then 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 a keyword “sub” from his mobile device to the predefined short code or phone number that is registered with a third party gateway.
2. The adapter “BookStoreAdapter” subscribes the phone number to receive notifications.
3. The adapter “BookStoreAdapter” sends a notification to the user when there is a discount offer.
4. The user can unsubscribe for SMS notifications by sending the keyword “unsub” to the predefined short code or phone number.

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