IBM Campaign and Engage Integration Guide for IBM Marketing Cloud

IBM

Contents

Chapter 1. Overview of the Campaign and Engage integration

The integration of IBM Campaign and IBM Engage combines the marketing segmentation tools of IBM Campaign with the messaging capabilities of IBM Marketing Cloud.

What does the integration provide?

The integration provides digital marketers with the ability to communicate over multiple channels, personalize and track customer interactions, and protect sensitive personal data. Marketers can target specific audiences to reach customers through email, SMS text messaging, and mobile push campaigns.

Important: The integration does not provide digital marketers with access to IBM Marketing Cloud features such as programs, scoring and send time optimization. All business logic for decisioning and scoring contacts must be used in Campaign flowcharts or in other systems that work directly with the contact sources tied to IBM Campaign.

Integration components

The integration involves the following components:

- **IBM Campaign**, an on-premise marketing application that is typically installed behind a corporate firewall
- **IBM Engage**, a cloud-based service that provides digital marketing and lead management
- **IBM UBX**, a cloud-based service that exchanges data between applications
- **IBM UBX Toolkit**, which provides a way for on-premise applications (like Campaign) to interact with UBX.

The following diagram shows how the components interoperate.
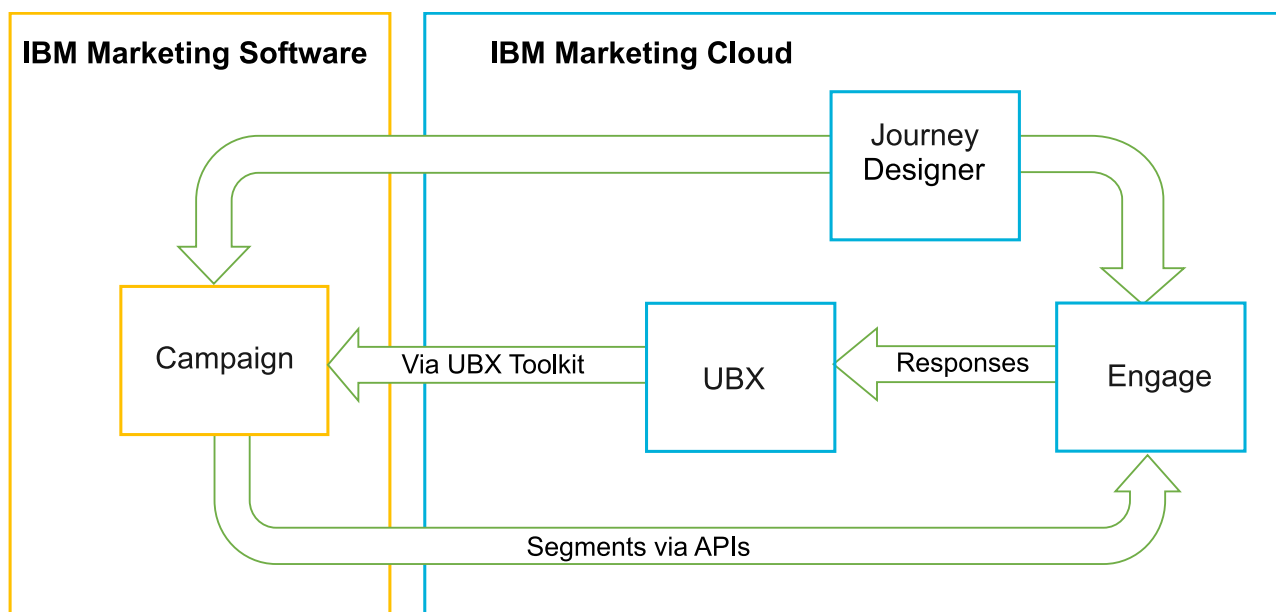
What is IBM Campaign?

IBM Campaign is an on-premise solution for organizations who prefer to keep their marketing data behind a firewall. Marketers use Campaign flowcharts to create target segments for marketing campaigns. A *flowchart* provides a visual way to create, combine, and manipulate data from multiple databases and flat files. For example, a single flowchart can pull names and addresses from a DB2 database, buying history from a SQL database, and customer preferences from big data sources such as Hive or Amazon Redshift. After a campaign runs, response data is brought back into Campaign for subsequent retargeting.

What is IBM Marketing Cloud?

IBM Marketing Cloud provides digital marketing and lead management solutions incorporating email, SMS, and mobile push, along with embedded analytics. It is a cloud-based digital marketing platform that consists of Engage, UBX, and Journey Designer.

What is IBM UBX?

IBM Universal Behavior Exchange (UBX) is a cloud-based service that provides a way to exchange data that identifies individuals and their behavior in commercial interactions between IBM Commerce and IBM Business Partner applications.

UBX recognizes various events that occur in different channels. For example, for email communications, an event is generated when the recipient clicks a link in the email message. Each type of event is registered with UBX so that subscribing applications can readily interpret the event data.

What is the IBM Campaign built-in ability to connect to UBX?

IBM Campaign has the built-in ability to connect to IBM Universal Behavior exchange (IBM UBX) which improves the flow of data into Campaign.. You can register an IBM Campaign endpoint in the UBX user interface.

The Campaign installer also installs the UBX endpoint registration utility in the `UBXTools` folder at `<campaign_home>` / `tools`. The installed `UBXTools` folder has all of the files necessary to register the Campaign endpoint in UBX.

Note: If you syndicate audiences, the UBX Toolkit is still required for the audience publisher and audience subscription pieces.

What is the UBX Toolkit?

The UBX Toolkit is a component that must be installed and configured to support the Campaign and Engage integration. The UBX Toolkit provides a way for IBM Campaign to interact with UBX. In the context of this integration, IBM Campaign is an event destination (an "event consumer endpoint"). As such, Campaign connects to UBX with the help of the UBX Toolkit.

The integration makes use of the UBX Toolkit to track responders to email, SMS, and push at the campaign level. The UBX Toolkit routes response data such as opens, clicks, and bounces, from Engage to UBX back into Campaign.

What is IBM Journey Designer?

IBM Journey Designer is part of IBM Marketing Cloud. Although it is not part of the integration itself, it can be used in conjunction with Campaign and Engage. Marketing teams use Journey Designer to create visually compelling, easy-to-use storyboards of their programs or customer journeys. Teams can collaborate on online interactions (such as emails and mobile pushes) and offline interactions (such as direct mail and in-store events) that together make up the overall customer journey. Journey Designer

documentation is provided separately and is not covered as part of the Campaign and Engage integration.

How do marketers use the integration?

Marketers use IBM Campaign to create a flowchart that selects the desired audience segment and configure a process box for the desired channel (email, SMS, or Push). When the flowchart runs, segmentation and contact data are uploaded from IBM Campaign to IBM Engage databases, contact lists, and relational tables. Engage then sends out the message to the specified market segment. After the marketing campaign runs, response data is tracked by Engage and routed back to Campaign through UBX and UBX Toolkit.

Marketing professionals use the integrated products in the following ways:
- Use Engage to create the email, SMS text, or mobile push message template.
- Use Campaign to select and segment individuals for the marketing campaign by pulling data from on-premise databases and flat files. For example, find all individuals aged 30-34 who own their own homes.
- Use Campaign to upload the selected data to Engage for use in email, SMS text messaging, or mobile push channels.
- Use Campaign to personalize the email, SMS, or mobile push message. For example, change an email Subject line or replace a variable in the message body with specific text.
- Use Campaign or Engage to initiate the "Send."
- For "lights out" messaging, you can automate the process so messages are sent as soon as Campaign uploads the selected audience data to Engage (when the flowchart runs).
- After the campaign runs, use Campaign to retarget responders and non-responders based on the response data that you download to Campaign with the UBX Toolkit.

Important: The integration does not provide digital marketers with access to IBM Marketing Cloud features such as programs, scoring and send time optimization. All business logic for decisioning and scoring contacts must be used in Campaign flowcharts or in other systems that work directly with the contact sources tied to IBM Campaign.

Overview of UBX and UBX Toolkit

The UBX Toolkit provides a way for locally installed applications, such as IBM Campaign, to interact with IBM Universal Behavior Exchange (UBX). If you syndicate audiences, the UBX Toolkit is required for the audience publisher and audience subscription pieces.

The integration uses the UBX Toolkit to support response tracking by downloading event data from UBX to Campaign.

The UBX Toolkit installs behind your corporate firewall to securely connect IBM Campaign and databases to UBX APIs and the IBM Commerce ecosystem. Campaign relies on the UBX Toolkit to connect to UBX.

UBX supports dynamic relationships between independent software applications that register with UBX. Each UBX participating application can provide different types of marketing data and different ways to identify customers. In the context of this integration:
- IBM Engage is an event source (for Email and SMS events).
- IBM Mobile Customer Engagement (Xtify) is an event source (for mobile push events).
- IBM Campaign is an event destination. It appears in UBX as an event subscriber ("event consumer").

Typical events are opens, clicks, and bounces.

IBM Campaign accepts event data as an event subscriber. You use the UBX Toolkit to download event data and import it into a local database. The UBX Toolkit provides a sample mapping file that you can use to specify how the event data is stored in the database.

To obtain the UBX Toolkit and documentation, see "Installing and configuring UBX Toolkit for the integration" on page 21.

Important: Remember that Campaign is an event consumer. When you use the UBX Toolkit, follow the instructions for event consumers. Instructions for audience endpoints do not apply.

Upgrading to Version 11.0

If you are upgrading from a previous version of IBM Campaign and are using the UBX toolkit, you can now use the IBM Campaign native UBX feature to integrate with IBM Engage.

IBM Campaign has the built in ability to connect to IBM Universal Behavior exchange (IBM UBX). IBM Campaign provides all necessary configurations and utilities to connect to IBM UBX and fetch the events data for contact and response history tracking. IBM Campaign can now track IBM Marketing Cloud events such as email send, email open, email link click, email bounce, sms sent and Interacted sms. IBM Campaign can also download and use all IBM Marketing Cloud and IBM Mobile Push Notification (formerly known as Xtify Mobile Push Notification) events for email, Push and SMS channels.

Consider the following scenarios if you have upgraded to version 11.0:

Table 1. Upgrade Scenarios for IBM Campaign version 11.0.

Upgrading from 10.0.0.x or 10.1.x.x	Description
IBM Campaign with Accelerator	If you are using IBM Campaign with Accelerator to send emails, SMS, and push notifications to IBM Engage, after you upgrade to version 11.0, you can use the Email, SMS, and Push process boxes in IBM Campaign to send messages to IBM Engage.
BM Campaign with UBX Toolkit	If you are using the UBX toolkit to download the Events that are generated by IBM Engage, after you upgrade to version 11.0, you can use IBM Campaign to download the Events. To use IBM Campaign to download Events, complete the following steps: 1. Unsubscribe all the events that are subscribed in the endpoint of type Custom Endpoint. Optionally, you can delete the endpoint. 2. Create a new endpoint of type IBM Campaign and subscribe to events that are supported by IBM Campaign. For more information, see "Registering IBM Campaign Endpoint as a Subscriber in UBX" on page 20. 3. Configure UBX in IBM Campaign and add the authorization key of the endpoint in IBM Campaign. 4. After IBM Campaign configuration is completed, subscribe to the events again. The events are now downloaded in separate tables in the IBM Campaign schema based on the event download schedule configuration. You can query the data in the tables and use in the IBM Campaign flowcharts. For more information, see IBM Campaign system tables Guide. **Note:** Data in tables that are created by the UBX toolkit is not migrated by IBM Campaign. However, you can continue to use the data from these table.

Where to get documentation

For information about the IBM Campaign and IBM Engage integration, see the resources listed in the following table.

Table 2. Documentation for IBM Campaign and IBM Engage integration

Focus	Documentation
Campaign and Engage integration	The *IBM Campaign and Engage Integration Guide for IBM Marketing Cloud* (this document) explains how to configure and use the integration. To obtain the PDF or search for topics, use this link: http://www.ibm.com/support/knowledgecenter/SSCVKV/product_welcome_kc_campaign.dita
IBM Campaign	To access the Campaign guides listed below, use this link: http://www.ibm.com/support/knowledgecenter/SSCVKV_10.0.0/Campaign/kc_welcome_campaign.dita • *IBM Campaign Administrator's Guide* • *IBM Campaign User's Guide*
IBM Engage	https://www.ibm.com/support/knowledgecenter/SSWU4L/imc/product_welcome_kc_imc.html.
IBM UBX Toolkit	http://www.ibm.com/support/knowledgecenter/SS9JVY/UBX/UBX_KC_map-gentopic4.dita
IBM UBX	http://www.ibm.com/support/knowledgecenter/SS9JVY/UBX/kc_welcome_UBX.dita
IBM Journey Designer	http://www.ibm.com/support/knowledgecenter/SSER4E/JourneyDesigner/kc_welcome_journeydesigner.dita?lang=en

Integration limitations and dependencies

The IBM Campaign and Engage integration for IBM Marketing Cloud has the following limitations and dependencies.
- The integration requires the following products.
  - IBM Campaign version 10.0 or later (installed locally)
  - IBM Marketing Cloud
  - IBM Universal Behavior Exchange (UBX)
  - IBM UBX Toolkit version 1.2 or later (installed locally)
- Apply any available hot fixes prior to deploying this integration.
- A single flexible database is used for each channel (Email, SMS, and Push).

  Note: If you are using Email, SMS, and Push channels in the integration, use a separate database for each channel.

  Note: IBM Campaign and WCA (Engage) integration supports WCA flexible (non-keyed) and restricted (keyed) databases.
- Offer integration with IBM Engage is not supported in the initial release of IBM Campaign v10.
- The integration is limited to the following languages: English, French, German, Japanese, Portuguese, Simplified Chinese, Spanish.
- Campaign does not support Engage Send Time Optimization (STO).
- Campaign users can see all of the Engage process boxes (Email, SMS, Push) in the flowchart palette. However, they cannot use the process boxes unless they have a subscription to IBM Marketing Cloud.
- There is a 1:1 relationship between an Engage Org and an IBM Campaign partition. Each partition has one and only one Engage Org (defined at provisioning time).

- To send SMS messages, you must purchase SMS messaging for IBM Marketing Cloud, and IBM must provision your Engage account to support SMS messaging.
- To send mobile app messages (Push), your IBM Marketing Cloud account must be enabled for mobile push and the mobile app must be implemented in IBM Marketing Cloud.

Chapter 2. Configuring the Campaign and Engage integration

To ensure a successful integration of Campaign and Engage, the following products must be configured: IBM Campaign, IBM Engage, IBM UBX, and IBM UBX Toolkit.

Before you can enable and configure the integration, you must complete the following prerequisites:
- The IBM Provisioning team must provision the components. See "IBM Provisioning requirements for Campaign, Engage, and UBX" on page 8.
- You must provide the required information to your Engage Provisioning Team. See "IBM Engage configuration requirements for Campaign offer integration" on page 9.

Complete the following steps to configure the integration between Campaign and Engage.

You can also view the following video to understand more about the integration of IBM Campaign and IBM Engage:

Configuration of IBM Campaign with IBM Watson Campaign Automation

Table 3. Integration configuration tasks

Step	Task	Details
1	Configure the IBM Campaign web application server to communicate with IBM Engage and with UBX:	"Configuring WebSphere for use with Engage" on page 10 "Configuring WebLogic for use with Engage" on page 11 "Configuring WebSphere for use with UBX" on page 11
2	Configure an IBM® Marketing Platform user account with data sources that can access Engage integration services.	See "Configuring a user account and data sources for Engage" on page 12.
3	Adjust Campaign partition configuration settings to control authentication and data exchange.	See "Setting configuration properties" on page 13.
4	Register IBM Campaign Endpoint as a subscriber in UBX to download events from UBX.	See "Registering IBM Campaign Endpoint as a Subscriber in UBX" on page 20.
6	Use the UBX Toolkit to create response tracking tables so Campaign can access response data. **Note:** If you are using IBM Campaign version 10.0.0.1 and above, this step is not applicable for your setup.	See "Creating response tracking tables for the integration" on page 22.
5	Install and configure the UBX Toolkit to support response tracking from Engage to Campaign.	See "Installing and configuring UBX Toolkit for the integration" on page 21.
7	Configure event producer endpoints and subscribe Campaign to events, to support response tracking from Engage to Campaign.	See "Configuring UBX for the integration" on page 22.
8	Enable Email messaging in Engage for IBM Marketing Cloud.	See "Creating and sending emails" on page 27.
9 (Optional)	Enable SMS messaging in Engage for IBM Marketing Cloud.	See "Enabling SMS mobile messaging" on page 39.
10 (Optional)	Enable mobile notifications in Engage for IBM Marketing Cloud.	See "Enabling mobile app messages (push notifications)" on page 49.

After these steps are complete, the integration is ready to use. A Campaign user can begin creating flowcharts to select target segments for a campaign. For each channel, the user configures an Email, SMS, or Push process in a flowchart.

IBM Provisioning requirements for Campaign, Engage, and UBX

Before administrators can configure the integration, IBM Provisioning must prepare Engage, and UBX for integration. IBM Campaign also requires some configurations for integration.

Information that IBM Provisioning provides to administrators

Administrators who are configuring the integration need the following information, which IBM Provisioning can provide:

- The host name, SSL port number, and alias of the server that customers use to access IBM Engage. For example: `https://engage1.silverpop.com:443`. Campaign administrators need this information to configure WebSphere for use with Engage.
- The Client Refresh Token: This was sent to the Engage Org Admin (the integration user) by email when Engage was provisioned. Campaign administrators need this information to configure data sources.
- Credentials (login and password) associated with the Engage Client ID, Engage Client Secret, Engage FTP, and Engage Client Refresh Token. Campaign administrators need this information to configure data sources.
- The UBX API URL that was established for the UBX account. UBX Toolkit administrators need this value to configure the `config.properties` file (`ubx.api.service.url=http://<server-name>:<port>`).

The following sections provide details about how each component is provisioned.

IBM Campaign

The following actions are performed by either the IBM Certified Systems Integrator or the IBM Marketing Software administrator:

- A partition is defined in IBM Marketing Platform for use by an IBM Engage Organization. Example: `partition1`
- An integration user (System Administrator account) is defined in IBM Marketing Platform. Example: `asm_admin`

IBM Engage provisioning

IBM Provisioning team ensures that the following actions are completed for IBM Engage:

- A primary user (Org Admin) is designated as the integration user. This may or may not be the same integration user that is defined in IBM Campaign.
- **IBM Campaign Integration** is enabled for the Campaign partition. During provisioning, an email is sent to the Engage integration user. The email contains the Client Refresh Token, which the Campaign administrator needs to configure a user account and data sources.
- **UBX Integration** is enabled for IBM Engage, based on the **Marketing Database ID** of the IBM Engage Organization.

  Note: If you are using more than one channel, you can provide the database ID for any of the channels. Engage will publish events from all databases to UBX for use in Campaign.
- **Add Account Access** is enabled for the **Campaign** application.

IBM UBX provisioning

IBM Provisioning creates and provisions a UBX account on your behalf.

If you do not have an account, contact the UBX Account Provisioning team by email at ubxprovisioning@wwpdl.vnet.ibm.com or request access to UBX at https://www.ibm.com/marketing/iwm/iwm/web/signup.do?source=ibm-ubxprovision.

IBM Provisioning ensures that the following actions are completed for IBM UBX:
- IBM Campaign is registered as an endpoint.
- Event types are registered for email.
- Event types are registered for SMS and Push, if your organization purchased those capabilities.
- One of the flexible databases for Engage is registered as an endpoint.

   Note: You can register any of the databases that are used for each channel. Engage will publish events from all the available databases that are used in the setup.

Your fully provisioned account includes the following elements:
- UBX user account, including credentials to log in to the UBX user interface.
- A URL to call external UBX APIs.
- An endpoint-level UBX authentication key for IBM Campaign. (**Note**: An account-level UBX authentication key is not required.)

IBM Engage configuration requirements for Campaign offer integration

IBM Campaign offers are available in IBM Engage. To enable integration you must provide the required information to your Engage Provisioning Team.

Note: Only Tracked HyperLink , ClickStream, and FileDownload are supported for IBM Campaign offer integration.

Information exchange

When IBM Campaign and IBM Engage are integrated, the offer information from IBM Campaign is used by IBM Engage in emails. When a user configures an email template in IBM Engage and attaches an offer from IBM Campaign to dynamic content links in this email template, the API call for the offer information is made from the browser to the IBM Campaign server. EasyXDM is used to handle this communication.

Important: No API calls are made from the on-cloud IBM Engage server to the on-premise IBM Campaign server and hence no firewall changes are required.

Enabling integration

To enable this feature, you need to provide the following information to your Engage Provisioning Team. An Engage Provisioning user can enable Engage from **Settings** > **Organization Settings** > **Integrations** > **IBM Campaign Integration**.

IBM Campaign Integration Enabled
>   Yes

IBM Campaign API URL

>   Example: https://camel09.in.ibm.com:9080/Campaign/jsp/engage/engageHome.jsp

>   <CAMPAIGN_URL>/jsp/engage/engageHome.jsp

IBM Campaign Partition Name
> PartitionName

> Example: partition1

> **Note:** Only one partition is supported per Engage ORG.

IBM Campaign user name
> IBM Campaign Admin user.

> Example: asm_admin

Note: If you configured IBM Campaign or IBM Platform by using your Tivoli or SiteMinder login information, the API URL is http://<Tivoli_Host>/<Campaign_JUNCTION>/Campaign/jsp/engage/engageHome.jsp. Example:

https://eagle81.in.ibm.com/tam10/Campaign/jsp/engage/engageHome.jsp or http://<SITEMINDER_HOST>/Campaign/jsp/engage/engageHome.jsp. Example:

http://pnqsm01.in.ibm.com/Campaign/jsp/engage/engageHome.jsp

Configuring WebSphere for use with Engage

Part of configuring the integration between IBM Campaign and IBM Engage involves configuring the Campaign web application server to communicate with Engage. Follow these instructions if Campaign uses WebSphere Application Server (WAS) as the web application server.

Before you perform this task:
- IBM Campaign must be configured to use SSL for all communications. For instructions, see the *IBM Marketing Platform Administrator's Guide*.
- You must know the host name, SSL port number, and alias of the server that customers use to access IBM Engage.

Follow these steps to import an IBM Marketing Cloud certificate into WebSphere Application Server.

If IBM Campaign is deployed in a WebSphere Application Server cluster, you must import the Engage certificate on each node of the cluster (repeat these steps).

Note that this procedure requires a restart of WebSphere Application Server.
1. Log into the WebSphere Application Server administrative console.
2. Expand **Security** and click **SSL certificate and key management**.
3. Under **Configuration settings**, click **Manage endpoint security configurations**.
4. Select the appropriate outbound configuration to get to the **(cell):<campaign-web-app-server>Node02Cell:(node):<campaign-web-app-server>Node02 management** scope.
5. Under **Related Items**, click **Key stores and certificates** and click the **NodeDefaultTrustStore** key store.
6. Under **Additional Properties**, click **Signer certificates** and **Retrieve From Port**.
7. In the **Host** field, specify the Host name, SSL port number, and Alias for the IBM Engage host that customers are using.

   For example, if Engage customers use https://engage1.silverpop.com:443, enter engage1.silverpop.com for **Host name** and 443 for **Port**.
8. Click **Retrieve Signer Information**.
9. Verify that the certificate information is for a certificate that you can trust.
10. Click **Apply** and **Save**.

11. Restart WebSphere Application Server.

See Chapter 2, "Configuring the Campaign and Engage integration," on page 7.

Configuring WebSphere for use with UBX

Part of configuring the integration between IBM Campaign and IBM UBX involves configuring the Campaign web application server to communicate with UBX. Follow these instructions if Campaign uses WebSphere Application Server (WAS) as the web application server.

You must know the host name, SSL port number, and alias of the server that customers use to access IBM UBX.

Follow these steps to import an IBM Marketing Cloud certificate into WebSphere Application Server.

If IBM Campaign is deployed in a WebSphere Application Server cluster, you must import the Engage certificate on each node of the cluster (repeat these steps).

Note that this procedure requires a restart of WebSphere Application Server.

1. Log into the WebSphere Application Server administrative console.
2. Expand **Security** and click **SSL certificate and key management**.
3. Under **Configuration settings**, click **Manage endpoint security configurations**.
4. Select the appropriate outbound configuration to get to the **(cell):<campaign-web-app-server>Node02Cell:(node):<campaign-web-app-server>Node02 management** scope.
5. Under **Related Items**, click **Key stores and certificates** and click the **NodeDefaultTrustStore** key store.
6. Under **Additional Properties**, click **Signer certificates** and **Retrieve From Port**.
7. In the **Host** field, specify the Host name, SSL port number, and Alias for the IBM Engage host that customers are using.
8. Click **Retrieve Signer Information**.
9. Verify that the certificate information is for a certificate that you can trust.
10. Click **Apply** and **Save**.
11. Restart WebSphere Application Server.

Configuring WebLogic for use with Engage

Part of configuring the integration between IBM Campaign and IBM Engage involves configuring the Campaign web application server to communicate with Engage. Follow these instructions if Campaign uses WebLogic as the web application server.

Before you perform this task, IBM Campaign must be configured to use SSL for all communications. For instructions, see the *IBM Marketing Platform Administrator's Guide*.

This task explains how to turn off host name verification in WebLogic, to enable communication between IBM Campaign and Engage. If you need additional guidance, see your WebLogic documentation.

1. If you are using a standalone SSL client, host name verification must be set on the command line or via the API. On the command line of an SSL client, enter the following argument to turn off host name verification:

   `-Dweblogic.security.SSL.ignoreHostnameVerification=true`

2. In all other cases, you can use the WebLogic Server Administration Console to turn off host name verification:

a. If you have not already done so, click **Lock & Edit** in the Change Center of the Administration Console (see *Use the Change Center* in the WebLogic documentation).

b. In the left pane of the Console, expand **Environment** and select **Servers**.

c. Click the name of the server for which you want to disable host name verification.

d. Select **Configuration** > **SSL**, and click **Advanced** at the bottom of the page.

e. Set the **Hostname Verification** field to **None**.

f. Click **Save**.

g. To activate these changes, click **Activate Changes** in the Change Center of the Administration Console.

h. Not all changes take effect immediately—some require a restart (see *Use the Change Center* in the WebLogic documentation).

See Chapter 2, "Configuring the Campaign and Engage integration," on page 7.

Configuring a user account and data sources for Engage

To allow IBM Campaign to access IBM Engage, a Campaign administrator must configure a user account with credentials to access the Engage integration services, then define data sources under that account.

To complete this task, you need the Engage credentials (login and password) for each data source. The Engage Org Admin or IBM Provisioning can provide this information.

A Campaign administrator performs this one-time task. The procedure is summarized below. If you need detailed instructions, see the *IBM Marketing Platform Administrator's Guide*.

1. Log in to IBM Marketing Software and choose **Settings** > **Users**.

2. Click the name of the user account that is allowed to connect to the IBM Engage server. For example, **asm_admin**.

3. Click the **Edit data sources** link at the bottom of the page.

4. Click **Add new** and complete the form to create the following data sources. If the data sources already exist, click each data source and edit it to provide any missing information.

Data source details	Notes
Data source: ENGAGE_CLIENT_ID_DS Data source login: ClientID (or any non-empty string) Data source password: <CLIENT_ID>	This is the Engage Client ID data source. You can obtain the password from the Engage Org Admin.
Data source: ENGAGE_CLIENT_SECRET_DS Data source login: ClientSecret (or any non-empty string) Data source password: <CLIENT_SECRET>	This is the Engage Client Secret data source. You can obtain the password from the Engage Org Admin.
Data source: ENGAGE_CLIENT_REF_TOK_DS Data source login: ClientRefTok (or any non-empty string) Data source password: <CLIENT_REFRESH_TOKEN>	This is the Engage Client Refresh Token data source. The password for the Client Refresh Token Login was provided by email to the Engage Org Admin (or the user who was specified under **Add account access** in Engage, at provisioning time).
Data source: ENGAGE_FTP_DS Data source login: <FTP_LOGIN> Data source password: <FTP_PASSWORD>	The Engage FTP data source provides the credentials for FTP communication between Campaign and Engage. The login and password were assigned in Engage. You can obtain thm from the Engage Org Admin.

5. Click **Save changes** and **OK**.

The user account and data source names must exactly match the configuration values that are specified for the Engage partition settings. Choose **Settings** > **Configuration**, go to "Campaign | partitions | partition[n] | Engage," and confirm that the values match.

Setting configuration properties

You must set the configuration properties that control authentication and data exchange between IBM Campaign, IBM Engage, and IBM UBX.

To access the configuration properties, choose **Settings** > **Configuration**.

Set the following configuration property:
- "Campaign | partitions | partition[n] | Engage"

The application has the built in ability to connect to IBM Universal Behavior exchange (IBM UBX). To use this feature, you must set the following configuration properties:
- "Campaign | partitions | partition[n] | Engage | contactAndResponseHistTracking" on page 16
- "Campaign | partitions | partition[n] | UBX" on page 18
- "Campaign | partitions | partition[n] | UBX | Event Download Schedule" on page 18
- "Campaign | Engage Rest API Filter" on page 19
- "Campaign | proxy" on page 19

Campaign | partitions | partition[n] | Engage

These properties control authentication and data exchange between IBM Campaign and IBM Engage if the products are integrated.

To access these properties, choose **Settings** > **Configuration**. If your Campaign installation has multiple partitions, set these properties for each partition that uses the integration.

Service URL

Configuration category

  Campaign | partitions | partition[n] | Engage

Description

  The Service URL indicates the URL where Campaign can access the IBM Engage application. The Engage Org Admin must provide this value.

Default value

  <none>

Example

  https://engageapi.abc01.com/

OAuth URL Suffix

Configuration category

  Campaign | partitions | partition[n] | Engage

Description

  The OAuth URL Suffix specifies the authentication token for the Engage APIs.

Default value

  oauth/token

API URL Suffix

Configuration category

Campaign | partitions | partition[n] | Engage

Description

The API URL Suffix is set to XMLAPI to ensure that Campaign uses the Engage XML APIs. Best practice is to leave this set to the default value.

Default value

XMLAPI

Platform User with Data Sources for Engage Credentials

Configuration category

Campaign | partitions | partition[n] | Engage

Description

The Platform User with Data Sources for Engage Credentials indicates the name of the IBM Marketing Platform user account that is allowed to connect to the IBM Engage server. This user account contains the data sources that provide Engage credentials. Typically, asm_admin is used.

Default value

No default value defined.

Valid values

The IBM Marketing Platform user account that contains the data sources for Engage integration credentials.

Data Source for Client ID

Configuration category

Campaign | partitions | partition[n] | Engage

Description

The Data Source for Client ID value must exactly match the name of the Engage Client ID data source that was created for the user account that connects to the IBM Engage server (**Platform User with Data Sources for Engage Credentials**). In other words, the value must match what is set up as the datasource for the IBM Marketing Platform user. Best practice is to leave this set to the default value.

Default value

ENGAGE_CLIENT_ID_DS

Data Source for Client Secret

Configuration category

Campaign | partitions | partition[n] | Engage

Description

The Data Source for Client Secret value must exactly match the name of the Engage Client Secret data source that was created for the user account that connects to the IBM Engage server (**Platform User with Data Sources for Engage Credentials**). Best practice is to leave this set to the default value.

Default value

ENGAGE_CLIENT_SECRET_DS

Data Source for Client Refresh Token

Configuration category

Campaign | partitions | partition[n] | Engage

Description

The Data Source for Client Refresh Token value must exactly match the name of the Engage Client Refresh Token data source that was created for the user account that connects to the IBM Engage server (**Platform User with Data Sources for Engage Credentials**). Best practice is to leave this set to the default value.

Default value

ENGAGE_CLIENT_REF_TOK_DS

Data Source for File Transfer Credentials

Configuration category

Campaign | partitions | partition[n] | Engage

Description

The Data Source for File Transfer Credentials indicates the name of the data source that provides the credentials for FTP communication between Campaign and Engage. This value must exactly match the name of the Engage FTP data source that was created for the user account that connects to the IBM Engage server (**Platform User with Data Sources for Engage Credentials**). Best practice is to leave this set to the default value.

Default value

ENGAGE_FTP_DS

Host Name for File Transfer

Configuration category

Campaign | partitions | partition[n] | Engage

Description

The Host Name for File Transfer indicates the host name of the Engage FTP server where Campaign uploads the contact list in TSV format. This file gets deleted automatically after it is uploaded into a contact list.

Default value

<none>

Valid values

Any valid address in the list of IBM Marketing Cloud FTP addresses: http://www.ibm.com/support/knowledgecenter/SSTSRG/Setting_up_an_FTP_or_SFTP_account.html?lang=en. For example: transfer2.silverpop.com

Port Number for File Transfer

Configuration category

Campaign | partitions | partition[n] | Engage

Description

The Port Number for File Transfer indicates the port number for the FTP server that is specified in **Host Name for File Transfer**.

Default value

22

Valid values

Any valid FTP port number

Use proxy for ServiceURL

Description

> Determine if you use proxy for ServiceURL. If you select Yes, your connection uses the proxy server. Proxy server details can be configured under Campaign | proxy. If you select No, a proxy server is not used to connect to Engage.

Default value

> No

Valid values

> Yes, No

Use proxy for FTP

Description

> Determine if you use proxy for FTP. If you select Yes, your connection to the Engage FTP server uses the proxy server. Proxy server details can be configured under Campaign | proxy. If you select No, a proxy server is not used to connect to the Engage FTP server.

Default value

> No

Valid values

> Yes, No

allowableFailurePercentage

Description

> When a campaign contact list is processed in Engage, an error is returned to Campaign if a contact fails for any reason. Use the allowableFailurePercentage property to specify the percentage of failed records that are allowed before the campaign process fails. If the percentage of failed records is greater than the configured allowableFailurePercentage, the process fails.
>
> If the percentage of failed records is less than or equal to the configured allowableFailurePercentage, the process does not fail. Duplicate records are considered as valid records and so they do not affect the allowableFailurePercentage for a process box. All valid records are imported into Engage.
>
> The percentage of failed records is calculated as ([TOTAL_ROWS - TOTAL_VALID]/ TOTAL_ROWS) *100.
>
> Any warnings and errors for the process are logged in the ImportErrors log file. You can delete this file at regular intervals. The ImportErrors log file is located in the <Campaign_home>/logs folder.

Default value

> 0

Valid values

> Integers between 0-100.

Campaign | partitions | partition[n] | Engage | contactAndResponseHistTracking

These properties specify the ETL of events that are downloaded from UBX in the Campaign history tables.

To access these properties, choose **Settings** > **Configuration**. If your Campaign installation has multiple partitions, set these properties for each partition that uses the integration.

etlEnabled

Description

Determine whether you want to enable the ETL transfer of data from the events table in the Campaign history table.

Default value

No

Valid values

Yes, No

runOnceADay

Description

Determine whether the ETL runs once a day. It can run repeatedly if you specify the sleepIntervalInMinutes property. If *runOnceADay* is set to yes, ETL runs once a day at the specified time.

Valid values

Yes, No

batchSize

Description

The number of records that are processed in one ETL cycle.

Default value

100

Valid values

100, 200, 500, 1000, 10000, 100000

sleepIntervalInMinutes

Description

Specify the number of minutes the ETL waits it runs again. This value is used when runOnceADay is set to No.

Default value

60

Valid values

Positive integers.

startTime

Description

When runOnceADay is set to Yes, this property determines the ETL run start.

Default value

12:00:00 AM

Valid values

Any valid time in the format hh:mm:ss AM/PM.

notificationScript

Description

Enter any script that can run after the ETL execution is complete.

Default value

No default value defined.

Valid values

> Any valid path that the Campaign server can access with Read and Execute permissions. Example: `D:\myscripts\scriptname.exe`

Campaign | partitions | partition[n] | UBX

These properties control authentication and data exchange between IBM Campaign, IBM Engage, and IBM UBX if the products are integrated.

To access these properties, choose **Settings** > **Configuration**. If your Campaign installation has multiple partitions, set these properties for each partition that uses the integration.

API URL

Description

> Specify the UBX Server API URL.

Data Source for UBX Endpoint Authorization key

Description

> Specify the datasource name that contains the authorization key for the Campaign registered endpoint. For example, `UBX_DS`.

Platform User with Data Sources for UBX Credentials

Description

> Specify the Marketing Platform user name that contains the datasource with the name specified under the configuration property **Data Source for UBX Endpoint Authorization key**.

Use proxy for API URL

Description

> Determine if you want to use a proxy server for the UBX connection. If you select `Yes`, the proxy server details are configured under Campaign | proxy.

Campaign | partitions | partition[n] | UBX | Event Download Schedule

These properties specify the schedule for when events are downloaded from UBX into Campaign.

To access these properties, choose **Settings** > **Configuration**. If your Campaign installation has multiple partitions, set these properties for each partition that uses the integration.

Event Download Enabled

Description

> Determine if you want to enable events from UBX to download to the events table in the Campaign system schema.

Default value

> No

Valid values

> Yes, No

runOnceADay

Description

> Determine if the download should occur on a daily basis. It can run repeatedly if you specify the sleepIntervalInMinutes property.

sleepIntervalInMinutes

Description
> Specify the number of minutes the download waits before executing again. This value is used when runOnceADay is set to No.

startTime

Description
> When runOnceADay is set to Yes, this property determines when the event download starts.

Campaign | Engage Rest API Filter

In an integrated environment, to use the offers from IBM Campaign in IBM Engage, you must disable all the Engage Rest API Filter properties.

To access these properties, go to `Affinium|suite|security|apiSecurity|campaign|Engage Rest API Filter`.

Block API access

Default value
> enabled

Valid value
> enabled, disabled

Secure API access over HTTPS

Default value
> enabled

Valid value
> enabled, disabled

Require authentication for API access

Default value
> enabled

Valid value
> enabled, disabled

Campaign | proxy

The Campaign, Engage, and UBX integration is supported with outbound proxy connections.

To access these properties, choose **Settings** > **Configuration**.

Proxy host name

Description
> Specify the hostname or the IP address of your proxy server.

Proxy port number

Description
> Specify the port number of your proxy server.

Proxy type

Description
> Select the proxy server type.

Default value
> HTTP

Valid value
> HTTP, SOCK5

Data source for credentials

Description
> Specify the datasource name that contains the proxy server user name and password details.

Platform user with data source for proxy credentials

Description
> Specify the name of the Marketing Platform user that has the specified datasource in the **Data source for credentials** property.

Note: When you deploy Campaign on a WebLogic server and HTTP proxy is configured, you need to add the variable `DUseSunHttpHandler=true` in `JAVA_OPTION` to the `setDomainEnv.cmd` file.

Registering IBM Campaign Endpoint as a Subscriber in UBX

In an integrated environment, to download events from UBX, you must register IBM Campaign Endpoint as a subscriber in UBX.

You must add IBM Engage or IBM Mobile Customer Engagement as publishers in UBX.

Note: If you are using the UBX Toolkit to download events from UBX and you want to continue using the UBX Toolkit, this topic is not applicable for you and you can skip these steps.

To register IBM Campaign Endpoint as a subscriber, complete the following steps:

1. Go to UBX by clicking the UBX URL.
2. On the EndPoints tab, click **Register New Endpoint**.
3. Select **IBM Campaign** as the **Endpoint type** and click **Next**.
4. Click **Next** to complete the endpoint registration request. The endpoint can be seen on the EndPoints tab with the status as `Pending`.
5. On the EndPoints tab, open the endpoint details for the endpoint that you requested.
6. Copy the **Authentication Key**. This is required in the next steps.
7. Log in to the IBM Marketing Platform.
8. Create a data source under the IBM Marketing Platform user account that has permissions to connect to IBM UBX.
9. Specify the endpoint user name as `UBX` (or any non-empty string) and add the `Authentication Key` that you copied earlier as the password for the data source.
10. Specify the endpoint properties located at `Affinium|Campaign|partitions|partition[n]|ubx`.
11. Ensure that the following environment variables are configured in the `setenv` file located at `<CAMPAIGN_HOME>/tools/UBXTools/`.
    - JAVA_HOME
    - CAMPAIGN_HOME
    - JDBCDRIVER_CLASSPATH
    - UNICA_PLATFORM_HOME

12. To register Endpoint, go to `<CAMPAIGN_HOME>/tools/UBXTools/` and run the following command:
    - For Windows: `RegisterEndPoint.bat partition_name`
    - For Unix: `./RegisterEndPoint.sh partition_name`
13. Go to the EndPoints tab in UBX and click **Refresh**. Ensure that the endpoint is `Active`.

Installing and configuring UBX Toolkit for the integration

To support response tracking from IBM Engage to IBM Campaign, you must install and configure the UBX Toolkit. The UBX Toolkit installs behind your corporate firewall to securely connect Campaign and its databases to UBX APIs and the IBM Commerce ecosystem.

- You must have administrative access to install and configure the UBX Toolkit files on a local server.
- You must know the UBX API URL that was established for your account. You must enter this value for `ubx.api.service.url` in the UBX Toolkit `config.properties` file. IBM Provisioning typically provides this URL as part of the provisioning process. If you do not know the URL, see "IBM Provisioning requirements for Campaign, Engage, and UBX" on page 8.

From IBM Campaign version 10.0.0.1 onwards, you do not require the UBX toolkit to download events. Use the Campaign built-in feature to register a Campaign endpoint in the UBX user interface and download events. If you syndicate audiences, the UBX Toolkit is still required for the audience publisher and audience subscription pieces.

The UBX Toolkit consists of property files and scripts that you install in your local network environment and modify to satisfy your business requirements.

In the context of this integration, IBM Campaign is the event destination (event consumer endpoint). When you use the UBX Toolkit documentation to complete the following steps, only the instructions for event consumers apply. Instructions for audience endpoints do not apply.

Only the following portions of the UBX Toolkit documentation are relevant to this integration:
- Chapter 1. Overview of the UBX Toolkit.
- Chapter 2. UBX Toolkit installation and configuration.
- Chapter 3. Event destination endpoints.
1. Use this link to access the IBM UBX Toolkit documentation: https://developer.ibm.com/customer-engagement/docs/watson-marketing/ibm-universal-behavior-exchange-ubx/ubx-toolkit-overview-requirements/.
2. Follow the instructions in https://developer.ibm.com/customer-engagement/tutorials/ubx-toolkit-installation-configuration/.

   Remember that Campaign is an event consumer. Therefore, you only need to follow the instructions for event consumers.

   Instructions for audience producers and endpoints do not apply. For example, UBX account-level authentication keys do not pertain to this integration. Only the endpoint-level authentication key pertains.
3. Follow the instructions in *Chapter 3. Event destination endpoints* of the UBX Toolkit documentation to register IBM Campaign as an event destination endpoint.

If you have not already done so, create response tracking tables to hold event data that will be downloaded from Engage to Campaign via UBX and the UBX Toolkit. See "Creating response tracking tables for the integration" on page 22.

Creating response tracking tables for the integration

Creating response tables is a one-time task that is performed as part of the integration configuration. However, if you are using IBM Campaign version 10.0.0.1 or later, this step is not applicable for your setup. From IBM Campaign version 10.0.0.1 onwards, when you use IBM Campaign to download events, the response tracking tables are created automatically.

- The UBX Toolkit must be installed and configured.
- You must have administrative access to install and configure files on the database server where you will create the tables.

Response tracking tables are required to store event data about customer responses. Events include information about customer actions such as opens, clicks, and bounces. The tables that you create will be populated when users run UBX Toolkit scripts to download and then import data. Campaign can then access the populated tables as data sources in flowcharts.

1. The UBX Toolkit provides DDL sample scripts for SQL, DB2, and Oracle. Use the appropriate script to create database tables in the desired format.

   For instructions, see https://developer.ibm.com/customer-engagement/tutorials/ubx-toolkit-installation-configuration/#tocstep6.

   Tip: By examining the script files in a text editor, you can see the fields and data types that will be created, and you can easily identify the primary keys.

2. Use the database table mapping file (`EventToDBTableMapping.xml`) provided in the UBX Toolkit to match event data to field names in the database tables. This determines how data gets inserted into the tables.

   See https://developer.ibm.com/customer-engagement/tutorials/registering-downloading-importing-event-destination-endpoints/#tocstep1.

3. To learn more about using and managing tracking tables, see Chapter 6, "Response tracking tables for the integration," on page 59.

4. To see which events can be stored in the response tracking tables, see "Email: Response tracking" on page 36.

The next step is to configure UBX. See "Configuring UBX for the integration."

Configuring UBX for the integration

This task involves using UBX to configure event producer endpoints and subscribe Campaign to events. This task is required to support response tracking from IBM Engage to IBM Campaign.

Before you begin:
- IBM Provisioning must complete all required provisioning tasks.
- IBM UBX Toolkit must be installed and configured.
- You must know the Engage organization refresh token and pod name. Contact your Engage Org Admin if you are not sure.

There are two main types of endpoints: Producers (applications that produce events) and destinations (applications that consume those events). Engage is an event producer. Campaign is an event consumer or subscriber. By completing this task, you ensure that UBX can process customer response events, such as clicks and bounces, for communication back to Campaign (via UBX Toolkit).

The response event data will be stored in response tracking tables. Creating the response tracking tables is a separate configuration step.

1. If you are using email or SMS text messaging, use UBX to register Engage as an event producer endpoint:

a. On the Endpoints tab in UBX, click **Register new endpoint**.

b. Select **Engage** as an event producer endpoint and click **Next**.

c. Follow the on-screen instructions to complete the registration.

For more information, read about UBX endpoint registration at http://www.ibm.com/support/knowledgecenter/SS9JVY/UBX/Endpoints_ubx/Endpoint_registration_ch.dita.

2. If you are using mobile app messaging (push), use UBX to register IBM Mobile Customer Engagement (Xtify) as an event producer endpoint:

a. On the Endpoints tab in UBX, click **Register new endpoint**.

b. Select **IBM Mobile Customer Engagement** as an event producer endpoint and click **Next**.

c. Follow the on-screen instructions to complete the registration.

For more information, read about UBX endpoint registration at http://www.ibm.com/support/knowledgecenter/SS9JVY/UBX/Endpoints_ubx/Endpoint_registration_ch.dita.

3. If you are capturing email, PUSH, or SMS responses, use UBX to subscribe Campaign to email, PUSH, and SMS events:

a. On the Events tab in UBX, click **Subscribe to events**.

b. In the Select events column, select **IBM Engage** and select all available email, PUSH, and SMS events.

c. In the Select destinations column, select **IBM Campaign** as the event destination.

d. Click **Subscribe**.

For more information about event publication and subscription, see http://www.ibm.com/support/knowledgecenter/SS9JVY/UBX/Events_ubx/Event_sharing.html.

4. From IBM Engage version 16.4 onwards, mobile PUSH events are published by Endpoint. If you have previously configured the Campaign-Engage integration, you must complete the following steps on the Events tab in UBX:

a. Subscribe to all the Mobile PUSH Events that are published by IBM Engage in Endpoint.

b. Unsubscribe all the Mobile PUSH Events that are published by IBM Mobile Customer Engagement in Endpoint.

Note: If the Events are not unsubscribed, then all the Events that are generated by IBM Mobile Customer Engagement are populated into the UA_Gen_Event_Record table of Campaign.

Confirm that you have completed all of the configuration steps in Chapter 2, "Configuring the Campaign and Engage integration," on page 7.

Setting the sync field for audience information

When you complete a test run or a production run, audience information is exported by IBM Campaign to IBM Engage. For the Email and Push processes, you can specify the fields that must be used as sync fields for the audience information.

Setting sync fields for audience information

For the Email and Push processes, the `campaignaudienceId` is used as the sync field by default. For the SMS process, the phone number is used as the sync field.

To set the sync fields, go to the Field mappings tab of the Email or Push process. Select the **Fields to export to Engage** and complete the mapping. Click the check mark ✓ in the **Sync** column for the field or fields that are to be used as the sync fields.

Consider the following points about the sync fields and the uploading of data to Engage:

- If the combination of sync fields results in a unique record, the audience data is uploaded to Engage as new audience data.
- If the combination of sync fields does not result in a unique record, the existing audience data is updated in Engage.
- The Email and MobileUserIDs are case sensitive.
- `campaignaudienceId` is uploaded to Engage even if other fields are selected as sync fields.
- The response from Engage also contains the `campaignaudienceId`. Changing the sync field does not change the response tracking mechanism for the Email process.
- Duplicate records are considered as valid records and so they do not affect the **allowableFailurePercentage** for a process box.
- For more information about how emails are sent if multiple records have the same email address, see https://www.ibm.com/support/knowledgecenter/SSWU4L/Data/imc_Data/Does_my_Database_Send_to_Duplicates.html.

Note: If you are using a keyed (restricted) database, any sync fields that are specified are ignored and only the key field is used for uploading data to Engage.

Note: If the Campaign table is mapped with an audience level of type text, the **EnableSelectOrderBy** property must be set to `False`. For more information, see the Configuration properties in the IBM Campaign Administration Guide.

The `campaignaudienceId` field

When you complete a test run or a production run, audience information is exported by IBM Campaign in one special field, `campaignaudienceId`. Consider the following points about the `campaignaudienceId` field:

- When contact data is uploaded to the IBM Engage database for the first time, a `campaignaudienceId` column is added to the database. This `campaignaudienceId` field is the lookup key by default.
- The `campaignaudienceId` is populated in the IBM Engage database only when the contact data upload is initiated from Campaign.
- After the `campaignaudienceId` column is added, the audience information is uploaded to this column when contact data is uploaded.
- The `campaignaudienceId` is included in each event that is sent by Engage to UBX for contacts. For example, **emailSend**, **emailOpen**, **emailBouce**, **emailClick**.
- You cannot map the `campaignaudienceId` database column from the Field mappings tab of the Email process. The `campaignaudienceId` database column is updated internally.
- When the SMS process is run, the `campaignaudienceId` is populated in the UA_SENTSMS and UA_INTERACTEDSMS system tables after the time specified for the **sleepIntervalInMinutes** property for the Event Download Schedule. The `campaignaudienceId` is also populated in the respective contact list in the Engage database as mentioned in SMS process.
- When the Push process is run, the `campaignaudienceId` is populated in the UA_SIMPNOT_APPOPENED, UA_SIMPNOT_URLCLICKED, and UA_MOB_PUSH_SEND system tables after the time specified for the **sleepIntervalInMinutes** property for the Event Download Schedule. The `campaignaudienceId` is also populated in the respective contact list in the Engage database as mentioned in Push process.
- The format for the `campaignaudienceId` is `AudienceName~#field1Name~#fieldValue~#field2Name~#fieldvalue~#fieldnName~#fieldvalue`.

  For example, `Customer~#CustomerID~#20`.

Campaign and Engage integration logs

When Campaign and Engage are integrated, Campaign Engage import service execution logs can be enabled in `campaign_log4j.properties` file available in the `<Campaign_home>/conf/` folder.

The name of the class is `log4j.logger.com.unica.webservices.campaign.rest.EngageImportService`.

Logs are captured in `INFO`, `WARN`, and `DEBUG` modes.

By default, the log files can be found in the `campaignweb.log` in the `<Campaign_home>/logs` folder.

Logs for Engage ETL

The following parameters are available for Engage ETL logs.

```
log4j.logger.ENGAGE_ETL=DEBUG, ENGAGE_ETL
# Specifying this log is only for ETL and do not append to Campaign web log
log4j.additivity.ENGAGE_ETL=false

log4j.appender.ENGAGE_ETL=org.apache.log4j.RollingFileAppender
log4j.appender.ENGAGE_ETL.layout=org.apache.log4j.PatternLayout
log4j.appender.ENGAGE_ETL.Encoding=UTF-8
log4j.appender.ENGAGE_ETL.MaxBackupIndex=50
log4j.appender.ENGAGE_ETL.File=/opt/IBM/xEMM/Campaign/logs/EngageETL.log
log4j.appender.ENGAGE_ETL.MaxFileSize=10000KB
log4j.appender.ENGAGE_ETL.layout.ConversionPattern=%d{MM/dd/yyyy HH:mm:ss} %-5p %c{2} [%L] - %m%n
```

Logs for UBX

The following parameters are available for UBX logs.

```
log4j.logger.UBX=DEBUG, UBX
# Specifying this log is only for ETL and do not append to Campaign web log
log4j.additivity.UBX=false

log4j.appender.UBX=org.apache.log4j.RollingFileAppender
log4j.appender.UBX.layout=org.apache.log4j.PatternLayout
log4j.appender.UBX.Encoding=UTF-8
log4j.appender.UBX.MaxBackupIndex=50
log4j.appender.UBX.File=/opt/IBM/xEMM/Campaign/logs/UBX.log
log4j.appender.UBX.MaxFileSize=10000KB
log4j.appender.UBX.layout.ConversionPattern=%d{MM/dd/yyyy HH:mm:ss} %-5p %c{2} [%L] - %m%n
```

Chapter 3. Email: using Campaign and Engage

If IBM Campaign and Engage are integrated, you can use IBM Campaign to send personalized email communications from IBM Engage.

Consider the following points about using the Email process:

- Sending email requires a coordinated effort between a Campaign user and an Engage user. Templates must be set up, test runs must be done, and a final production run must be coordinated.
- After the mailing is sent, responses are tracked in IBM Engage and routed back to Campaign via UBX and the UBX Toolkit.
- To route response data from IBM Engage back to Campaign, a UBX Toolkit user (typically the Campaign user) runs scripts. Some organizations automate the scripts so data routing occurs automatically.
- You can then use Campaign to retarget responders and non-responders.
- A contact fails for the Email process if the email address for the contact is NULL or is BAD.

Note: Email messages must be sent either by configuring message delivery in the Email process box or by using the Send Experience in IBM Marketing Cloud. Triggering Email messages with an IBM Marketing Cloud program is not supported with the Campaign integration.

Note: If you are using Email, SMS, and Push channels in the integration, use a separate database for each channel.

Filtering data to avoid violations

If the email addresses contain certain characters or are from certain domains, emails might not be sent to these addresses from Engage.

For more information about the characters that are allowed in email addresses, see https://www.ibm.com/support/knowledgecenter/en/SSWU4L/Data/imc_Data/What_are_valid_characters_in_IBM_Marketi79.html.

Some prefixes and domains are blocked by default from Imports and Sends. A user, who is the Org Admin, can modify the list of blocked prefixes and domain applicable for a particular organization from **Settings > Email Blocking** in Engage. For more information, see https://www.ibm.com/support/knowledgecenter/en/SSWU4L/OrgAdmin/imc_OrgAdmin/Email_Blocking11.html

Creating and sending emails

Follow these steps to use IBM Campaign to send personalized email communications from IBM Engage.

Sending email involves using both IBM Campaign and IBM Engage for Marketing Cloud.

1. Use IBM Engage to prepare the email template.

   For documentation, see http://www.ibm.com/support/knowledgecenter/SSTSRG/Mailings.html

   Follow these guidelines:

   - Give the template a name that is meaningful to the campaign that it belongs to, so you can easily identify it in both applications.
   - For the template, select **Contact Source**, select Database, Contact List, or Query. The **Contact Source** must be in the Shared section.
   - For the **Template Location**, select Shared. *Only shared templates will be available in Campaign.*

- Save the template, then preview it for testing.
- For the email body, create the content, including personalization variables if needed.

2. Use IBM Campaign to create a campaign and add a flowchart to it.

   For documentation, see the *IBM Campaign User's Guide*: http://www.ibm.com/support/knowledgecenter/SSCVKV_10.0.0/Campaign/kc_welcome_campaign.dita

3. Configure the Email process in the IBM Campaign flowchart.

   For documentation, see "Email: Configuring the Email process in a Campaign flowchart."

4. Do a test run in IBM Campaign.

   For documentation, see "Email: Doing a test run" on page 34.

5. Do a production run in IBM Campaign.

   For documentation, see "Email: Doing a production run" on page 35.

6. Perform response tracking.

   See "Email: Response tracking" on page 36.

Email: Configuring the Email process in a Campaign flowchart

If IBM Campaign is integrated with IBM Engage, you can use the **Email** process in Campaign to send personalized email communications.

Before you can perform this task, the following actions must be completed:
- In IBM Campaign: Create a marketing campaign and add a flowchart to it.
- In IBM Engage: Create the Engage email template and body.
- The IBM Engage user must provide the Campaign user with the following details:
  - The name of the Engage database to use for the contact list that will be generated by Campaign. This is the database for the specific Email channel that will be used to send the messages.
  - The list of Engage database table fields, with the data type for each field (Text, Date, Time, etc.) and data format examples.
  - The name of the Engage email template.
  - Whether to create a new Engage contact list or update an existing one (when the flowchart runs).
  - Whether to use Inbox Monitoring.
  - Whether any personalizations should be applied in Campaign (for example, use a different Subject line that the one that is specified in the Engage email template).
  - Whether all emails should be sent immediately when the Campaign flowchart runs. If yes, which "Sent" folder should be used?

For more information about IBM Engage email, see http://www.ibm.com/support/knowledgecenter/SSTSRG/Mailings.html.

A flowchart can include multiple channels (Email, SMS, Push), but each channel must be configured as a separate process. This topic explains how to use the Email process box in a Campaign flowchart.

Note: Email messages must be sent either by configuring message delivery in the Email process box or by using the Send Experience in IBM Marketing Cloud. Triggering Email messages with a IBM Marketing Cloud program is not supported with the Campaign integration.

1. Configure processes in the flowchart to select the segments that will be used for the email campaign. For example, select all males age 25-31. As with any flowchart, you can use multiple processes, such as Select, Segment, and Merge.

2. Add an Email process to the flowchart. The Email process must be the last process in the flowchart.

3. Connect at least one of the processes that you created in step 1 as input to the Email process. For example:

- Connect a single Select process (such as all males age 25-31) into the Email process.
- Connect multiple Select processes (High, Medium, and Low value contacts) into the Email process.
- Segment customers by country, and connect each segment to a separate Email process (to generate unique email lists for separate mailings by country).

4. Double-click the Email process to open the Email process configuration dialog.
5. Configure the **Engage properties** tab of the Email process:

Engage properties tab (Email process)	
Engage database	Required. Select a flexible Engage database associated with the contact list. All shared Engage databases are listed. A single flexible database is used for each channel (Email, SMS, and Push).
Selected input cells	Required. Select the segments who will receive this mailing. The input cells that you see depend on which process boxes (such as Select or Segment) are connected to the Email process. For example, if two Select processes are providing input to the Email process, two input cells are listed. Typically, you select all of the input cells. All of the IDs from the selected cells are then available to create the contact list and for customization (personalization).
Select all	Quickly select all of the listed input cells (the segments that are connected as input to the Email list process).
Clear all	Quickly clear the list of selections.
Use single contact list	Select **Use single contact list** to use the same Engage contact list every time the process runs. Then select an Engage contact list. All contacts in the list will be included in the mailing. Check **Clear contact list before updating** if you want to remove all contacts from the list before reusing the list for a new run. Use the following controls to indicate how to update the contact list upon each subsequent run: • **Always add new contacts**: Do not update matching contacts. If the Campaign data includes contacts that are not in the list, add them to the list. • **Update matching contacts; skip contacts that are not found**: Update an existing contact with data from Campaign. Do not add any new contacts to the list. • **Update matching contacts; add contacts that are not found**: Update an existing contact with data from Campaign. If a contact is not in the list, add it. When you do a test or production run of the process box, a contact list is created or updated. All contacts in the list will be included in the mailing.
Create new contact list for every run	Select **Create new contact list for every run** if you want to create a new Engage contact list every time the process runs. All contacts in the list will be included in the mailing. Specify a **Name** for the contact list. Select either **Add suffix** or **Add prefix** to indicate whether to include the timestamp at the start or end of the filename. A timestamp for the process run is always added to ensure that the list name is unique. Optionally, include the **Campaign ID** and/or the Email **Cell name** as part of the filename.

6. Configure the **Content customization** tab of the Email process:

Content customization tab (Email process)	
Email template	Optional. Select an Engage email template. All shared templates are listed. The template determines the content of the email. If you do not make any changes in this dialog box, then all content comes directly from the template. Any changes that you make in this dialog override the content in the template. Changes are not saved to the template, but are used in the mailing for the current run of this process box. The Email process box execution can upload only the contact list in Engage database without selecting Email Template or anything on the Content Customization tab. The Email process box will only upload the data to engage database. It will not send emails as no email template or customization information is passed from IBM Campaign. If no email template is selected in the Email process box, then all fields related to email send will be disabled. The Email process box will be shown as configured even if nothing is specified or selected under Content Customization tab. This feature is applicable only to Email process box and not to the Push process box or SMS process box.
Enable inbox monitoring	**Important:** There are cost and reporting implications regarding the use of this feature. If you have any questions, consult the Engage product documentation. Inbox monitoring is an optional Engage feature. If this feature was purchased and enabled in Engage, you can choose whether to use it by checking or clearing this option. Using this feature might incur additional costs. If this feature was not purchased and enabled in Engage, this option is ignored for the email send in the integration. (You can check or clear the box; it doesn't matter.)
Send email to all contacts immediately	**Important:** This option immediately delivers email to all recipients when you do a production run in Campaign. We recommend that you do a test run first. • The **Send email to all contacts immediately** option is available only after you select the **Email Template**. • If you check **Send email to all contacts immediately**, the email is sent to all recipients when you do a production run in Campaign. (Note that a test run in Campaign never sends emails, regardless of whether this option is selected.) • Leave this option unchecked if you prefer to use Engage to send the emails. When this option is **not** checked, a production run in Campaign uploads the contact list to Engage but does not send out the emails. You can then initiate/schedule the send from Engage.
Subject	Optional. If you leave this field blank, the Subject line from the Engage template is used. If you enter content in this field, it will be used as the Subject line in the mailing. To indicate variables, surround them with %%. For example, specify `Hello %%FirstName%%!` to use values from the `FirstName` field. If a value in that field is "John" the email Subject line will resolve to `Hello John!`. **Note:** The mappings that you provide on the **Field mappings** tab of the Email dialog box determine which Campaign fields will be used for personalization. For example, if you map the Campaign field `FirstName` to the Engage field `CustomerFirstName`, the values are pulled from the Campaign `FirstName` field. When the contact list is uploaded to Engage, the value of the Campaign `FirstName` field will be used to update the `CustomerFirstName` field in the Engage database. Engage will then use the newly updated `CustomerFirstName` field when populating the email template.

Content customization tab (Email process)	
Email name	Required. The Email name identifies the mailing in Engage and Campaign. The name that you specify is used instead of the **Mailing Name** that is specified in the Engage template. You can use a name that indicates the purpose of the mailing and its flowchart, so you can easily identify it later. Use static text only (no variables). Recipients never see this name. To support response tracking, a timestamp for the process run is added to the name at process run time to ensure that the mailing name is unique for every process run. Additionally, the campaign code is included to track responses. This unique mailing name is included in every event generated by Engage, so it is used to correlate responses. **Note:** The maximum number of characters that can be used for the **Email Name** is 256. This includes the timestamp that is appended and the campaign code that is added as a prefix. If the number of characters for the **Email Name** exceeds 256, the name that is entered by the user is truncated.
From name	Optional. Override the **From Name** that is specified in the email template. The template itself remains unchanged. Recipients see this name as the "From" name in the mailing. Use static text only (no variables). If you leave the field empty, the mailing uses the "From Name" that is specified in the email template. If you have any questions about what was used in the email template, check with an Engage marketing specialist who can look at the template in Engage. Example of a From name: Jane Smith
Reply-to address	Optional. Override the Reply To Address that is specified in the email template. The template itself remains unchanged. Use static text only (no variables). If you leave the field empty, the mailing uses the Reply To Address that is specified in the template. If you have any questions about what was used in the email template, check with an Engage marketing specialist who can look at the template in Engage. Example of a Reply-to address: jsmith@example.com
From address	Optional. Override the From Address that is specified in the email template. The template itself remains unchanged. Use static text only (no variables). If you leave the field empty, the mailing uses the From Address that is specified in the template. If you have any questions about what was used in the email template, check with an Engage marketing specialist who can look at the template in Engage. Example of a From address: jsmith@example.com **Note:** To avoid being blocked by ISPs, use the same domain for the **From address** and **Reply-to address**. Be sure to consult the IBM Marketing Cloud documentation for complete information about sending emails.
Static values for template	Optional. Use the **Static values for template** field to override variables in the email body with static text. The text that you provide appears in the body of the email when it is sent. Syntax: Specify name:value pairs. Use a semicolon (;) to separate multiple pairs. `Field1:StaticText;Field2:StaticText` Example: The email contains the variable `%%Country%%` in the email body. You specify `Country:Canada` in the **Static values for template** field. The resulting email uses "Canada" in place of `%%Country%%`. Use case: You configure a flowchart to segment data by country (Canada, USA, Mexico). You add three Email process boxes to the flowchart and configure each one with a different static value. For example: Country:Canada and Country:USA and Country:Mexico. When you run the flowchart, the static text (country name) replaces the variable (%%Country%%) that is defined in the email. The result is three contact lists, each customized for a specific country.

Content customization tab (Email process)	
File in folder	Optional. This option applies only if **Send email to all contacts immediately** is selected. Specify where the sent mailing will be stored in Engage (**Content** > **View Mailings** > **Sent**). If you do not specify a folder, the mailing will appear in the root of the Sent tab. If you specify a folder that does not exist in Engage, you are given the opportunity to create it as a subfolder (under "Sent"). Guidelines for specifying paths: Only use forward slashes. Do not use periods. Do not specify leading or trailing slashes. Do not specify static paths such as C:\Folder. If you specify an invalid path, you receive a runtime error of "Folder not found." Only the following characters are supported: `# _ - () A-Z a-z 0-9 /` Example: Specify `Campaign/Test` to save the mailing in `Sent/Campaign/Test`.

7. Configure the **Field mappings** tab of the Email process:

Field mappings tab (Email process)	
Refresh ↻	Refresh the table fields information for the selected **Engage database**. Use this option if any new fields are added to the Engage database or if any existing fields are modified. **Important:** If the fields information is modified, all the table column mapping information is removed. You must validate all the field mappings after refresh completes.
Candidate fields	This list shows all of the available fields from the processes that are providing input to the Email process box. These are the IBM Campaign fields that contain data such as contact names and addresses, demographics, purchase history, or other information that is stored in Campaign databases or flat files.

Field mappings tab (Email process)	
Fields to export to Engage	The fields in this list provide data to create or update the Engage contact list. The values for the mapped fields come from Campaign databases or flat files. For example, if you map the Campaign field `FirstName` to the Engage field `CustomerFirstName`, the values are pulled from the Campaign `FirstName` field. When the contact list is uploaded to Engage, the value of the Campaign `FirstName` field will be used to update the `CustomerFirstName` field in the Engage database. Engage will then use the newly updated `CustomerFirstName` field when populating the email template. When you map **Candidate fields** (in Campaign) to **Fields to export to Engage** (in Engage), be sure that the mapped fields use the same Field Type (data type), such as Text, Date, Time, etc. If the data types do not match, errors occur when the system tries to import the values in the Candidate fields into the mapped Engage database fields. **EMAIL** (Text data type) is a required field, so be sure to match an equivalent Candidate field from Campaign (one that uses a Text data type) by clicking **>>**. **Note:** Engage has a data type called SMS Phone Number that does not exist in Campaign. The SMS phone number from Engage can be mapped with any data type from Campaign, provided the data from that column matches with the required SMS number formats that is defined in Engage. The valid SMS phone number format is Country code+Phone number. For example, it would be 16786775565 for United States or 445554647635 for United Kingdom. Also ensure that the order of fields in the list matches the order of the fields in the Engage contact list. Use the arrow icons to move a selected field up or down in the list. For example, move First Name before Last Name. Note: The order of the fields in this list determines the order of the fields in the commas-separated values (CSV) file that is created to form the contact list. If a field for a specific record lacks a value, that field is left empty in the contact list. For example, if you map the ZIP field in Campaign to the ZipCode field in Engage, and the zip code field is empty for a particular customer, that field is not populated in the comma-separated values (CSV) field that is used to create the contact list. After you complete the mapping, click the check mark ✓ in the **Sync** column for the field or fields that are to be used as the sync fields. If you do not select any sync fields, the `campaignaudienceId` is used as the sync field by default.
Profile	It can be helpful to see the actual values that are stored in a database field in Campaign. To do so, select a Candidate field and click **Profile**. Wait until profiling is complete to ensure that you see all of the values. For example, profile a field called Email to see a list of email addresses that are stored in that field.
Derived fields	Optionally, click the **Derived fields** button to create a new variable for querying, segmenting, sorting, calculating, or providing output to a table. Derived fields are variables that do not exist in a data source and are created from one or more existing fields, even across different data sources.

8. Configure the **General** tab of the Email process:

General tab (Email process)	
Process name	Assign a descriptive name. The process name is used as the box label on the flowchart. It is also used in various dialogs and reports to identify the process. Customers never see this name.
Note	Provide information to help you and other IBM Campaign users understand the purpose or result of this process. The content of this field appears when you rest your cursor over the process box in a flowchart. Customers never see this note.

9. Click **OK** to save and close the configuration dialog.

10. Save the flowchart.

Now you are ready to do a test run: See "Email: Doing a test run." A test run is important because it is your opportunity to confirm that the mailing is properly configured before you send it out into the world.

Email: Doing a test run

This task pertains to using IBM Campaign to send email communications from IBM Engage. It is important to do a test run before committing to a production run.

A test run is extremely important because it is your opportunity to confirm that the mailing is properly configured before you deliver it to customers. Never do a production run without first doing a test run.

Typically, you do a test run after you finish configuring the Email process in an IBM Campaign flowchart.

The purpose of the test run is to confirm connectivity between Campaign and Engage and to spot-check several emails in IBM Engage. For example, if you used IBM Campaign to override the Subject line in the email template, you must confirm that the correct substitution was made.

A test run in Campaign never sends a production email to customers, even if **Send email to all contacts immediately** (in the Email configuration dialog) is checked.

Important: See the IBM Marketing Cloud documentation for complete information about doing email test runs. This topic covers only a small portion of the process (testing from IBM Campaign to IBM Engage).

1. Use IBM Campaign to open the flowchart (in Edit mode) that contains the configured Email process.
2. Limit the test run to just a few records. You will remove this restriction later, after the test run is complete.

    Note: This step is recommended but not required.

    If you do not limit the test run, the entire contact list is sent to IBM Engage during the test run, which is unneccessary and time consuming.

    a. Double-click the process box that provides input to the Email process. For example, if a Select process is connected to the Email process, open the Select process configuration dialog.

    b. Select the **Cell size limit** tab.

    c. Use the **Limit output cell size** option under **Test run output cell size limitations** to restrict the number of records. Typically, 5 or 10 records are sufficient for a test run.
3. Save the flowchart.
4. Open the **Run** menu ▶▼ and use one of the **Test run** options to do a test run of the flowchart, branch, or process.

    The contact list is sent to Engage but no emails are sent (regardless of whether **Send email to all contacts immediately** is selected).
5. In IBM Engage, use the Test Mailing feature to send a test email and confirm that the email content and contact list are correct. (You can do a Normal Test or a Quick Test, but Quick Test sends HTML mailings, not text only.) A test mailing is typically sent to a "black hole" address or an internal marketing email address.

    Confirm that all of the selections that were made in IBM Campaign are accurately reflected in the test email. For example:

    • If you changed the Subject line in Campaign or made any static value substitutions for variables, confirm that they are correct in the test email.

    • Confirm that the Engage contact list includes all of the expected fields from IBM Campaign.

- Confirm that the contact list was either created or updated, depending on which selection was made in Campaign.
- Confirm that the test send was saved in the correct folder on the Sent tab in Engage.

6. Follow all of the instructions in the IBM Marketing Cloud documentation to confirm that the email is properly prepared.

   For more information, read about IBM Engage mailings: http://www.ibm.com/support/knowledgecenter/SSTSRG/Mailings.html?lang=en

If you encounter any errors, resolve them and then do another test run. When you are satisfied with the test run results, you are ready to do a production run. See "Email: Doing a production run."

Email: Doing a production run

This task pertains to using IBM Campaign to send email communications from IBM Engage.

Be sure to do a test run before doing a production run! See "Email: Doing a test run" on page 34.

If the flowchart includes multiple channels, do not do a production run of the entire flowchart until you complete test runs for all of the channels (SMS, Push, Email).

A production run uploads a contact list from IBM Campaign to IBM Engage. If you configured the Email process to **Send email to all contacts immediately**, the emails are sent to all contacts in the list. If you did not select that option, emails are not sent, so you must schedule the mailing in IBM Engage.

A production run sends email to the audience segments that you selected in the IBM Campaign flowchart.

1. In Campaign, open the flowchart (in Edit mode) that contains the configured Email process.
2. Make a final determination as to whether you want to deliver email immediately to all selected contacts: Double-click the Email process to open the configuration dialog. Select the **Content customization** tab and make your choice:
   - If you want to deliver the emails as soon as the flowchart runs in production mode, check **Send email to all contacts immediately**.
   - If you prefer to schedule the mailing in IBM Engage, clear **Send email to all contacts immediately**. The contact list will be sent to IBM Engage but emails will not be sent.
3. Save the flowchart.
4. Open the **Run** menu ▶ ▼ and select one of the **Save and run** options to do a production run of the selected process, branch, or flowchart. Or use the IBM Marketing Platform Scheduler to schedule the flowchart.

IBM Campaign sends the contact list to IBM Engage. If **Send email to all contacts immediately** was selected, the emails are sent immediately to all recipients in the contact list.

When the contact list is uploaded to Engage, the values in the Campaign fields are used to update the corresponding fields in the Engage database, based on the **Field mappings** defined in the Email process box. For example, if you mapped the FirstName field (in IBM Campaign) to the CustomerFirstName field in IBM Engage, Engage will use the newly updated CustomerFirstName field when populating the email template.

If you checked **Send email to all contacts immediately** in the Email process box, go to IBM Engage and use the **Sent** tab to confirm that the mailing was sent correctly.

If you did not check **Send email to all contacts immediately**, the contact list was updated in IBM Engage but the mailing was not sent. You must use IBM Engage to schedule or send the mailing.

Email: Response tracking

The Campaign and Engage integration performs response tracking, so marketers can retarget responders and non-responders.

Prerequisites to support response tracking
- The UBX Toolkit was installed and configured.
- Response tracking tables were created with the UBX Toolkit.
- A Campaign administrator configured the response tracking tables as a user data source.

How does tracking work?

IBM Engage records information about email transmission, delivery, and responses. It makes this information available to UBX.

To get the information from UBX to Campaign, run UBX Toolkit scripts to download event data and import it into response tracking tables.

Campaign flowcharts can then access those tables as a user data source.

In some organizations, the routing of response data is automated through scripts that administrators set up. If the scripts are on the Campaign listener (Analytics) server, you can create a flowchart that calls a trigger to run the scripts and use the IBM Marketing Platform Scheduler to schedule the trigger. The Scheduler also allows you to run external scripts, so you can use that method as well.

If response routing has not been automated, you must run the scripts manually, periodically.

Attributing responses to a particular mailing and campaign is handled by the integration: IBM Campaign assigns a unique name to each mailing. That unique name is included in Engage events, for correlation back to Campaign. The unique name is generated based on the Email name that is assigned in the process box on the flowchart.

When the Email process is run in IBM Campaign, emails are sent using the email Template that is assigned to the IBM Campaign offers. When the Email process is run in Engage and the emails are sent, Engage generates treatments for each of the assigned offers in the email template. Information about the treatments is maintained in Campaign in the UA_TREATMENT table. This treatment information is used when the contact and response information for these treatments is saved in Campaign in the contact and response history tables.

What events are tracked?

Information about the following email events can be imported into the response tracking tables, so it is available to Campaign:
- Email Send (emailSend): Information that describes sending an email related to a product or brand.
- Email Open (emailOpen): Information that describes an individual opening an email that relates to a product or brand.
- Email Click (emailClick): Information that relates to an individual clicking a link in an email.
- Email Bounce (emailBounce): Information that relates to an email that was not delivered successfully.
- Email Optout(emailoptout): Information pertaining to opting out from Email communication.

As a marketing user, how do I populate and use these tables?

You must periodically download events from UBX and import them into your local response tracking tables. You can run the scripts manually or as a scheduled job:

1. To download events, run the `eventsDownload` script that is provided with the UBX Toolkit.

   For instructions, see http://www.ibm.com/support/knowledgecenter/SS9JVY/UBXtoolkit/ Operation_toolkit/Downloading_events_from_UBX.dita

   Note: The `eventsDownload` script downloads tracking data related to email, SMS messages, and mobile push notifications. You may or may not be using all of those features.

2. To import the downloaded events into the response tracking tables, run the `eventsImport` script that is provided with the UBX Toolkit.

   For instructions, see http://www.ibm.com/support/knowledgecenter/SS9JVY/UBXtoolkit/ Operation_toolkit/Importing_event_data_into_a_database.html.

3. Be sure to follow all of the instructions that are provided in the UBX Toolkit documentation. Specifically, see *Chapter 3. Event destination endpoints*.

4. Once the tables are populated, you can access them in Campaign flowcharts to retarget responders and non-responders.

   Typically, you design a response flowchart and configure the process boxes to read data from the response tracking tables. For example, you can configure Select or Extract process boxes to target message opens or clicks, as you implement the next wave of the campaign.

5. For additional information, see Chapter 6, "Response tracking tables for the integration," on page 59.

Chapter 4. SMS text messaging: using Campaign and Engage

If IBM Campaign is integrated with Engage, you can you can use IBM Campaign to send SMS text messages from IBM Engage.

Consider the following points about using the Email process:

- SMS text messages are short messages sent between two or more mobile phones.
- Sending SMS text notifications requires a coordinated effort between a Campaign user and an Engage user. Templates must be set up, test runs must be done, and a final production run must be coordinated.
- Engage de-dupes when sending SMS messages to duplicate numbers. If there are two contact records with the same phone number and both are opted in to the same Program, Engage sends only one message.
- After the text notifications are sent, responses are tracked in IBM Engage and routed back to Campaign via UBX and the UBX Toolkit.
- To route response data from IBM Engage back to Campaign, a UBX Toolkit user (typically the Campaign user) runs scripts. Some organizations automate the scripts so data routing occurs automatically.
- You can then use Campaign to retarget responders and non-responders.
- The SMS process accepts contact numbers in integer format. Numbers that contain a space or a dash, or are NULL are failed and result in an error for the process.

Note: SMS messages must be sent either by configuring message delivery in the SMS process box or by using the Send Experience in IBM Marketing Cloud. Triggering SMS messages with a IBM Marketing Cloud program is not supported with the Campaign integration.

Enabling SMS mobile messaging

Several one-time setup tasks must be completed to enable IBM Engage to send SMS messages.

This task outlines the main steps that are required to enable SMS mobile messaging. It does not provide complete instructions. For complete information, see http://www.ibm.com/support/knowledgecenter/SSTSRG/SMS_-_Silverpop_Mobile_Messaging.html?lang=en.

1. The IBM Engage Provisioning team enables SMS for your Engage organization.
2. The IBM Engage Org Admin logs into Engage and creates and enables an Engage database for SMS. The database must be a flexible database.

   Note: If you are using Email, SMS, and Push channels in the integration, use a separate database for each channel.
3. The Engage Org Admin configures SMS integration between Engage and the SMS Campaign Manager.

Requirements for sending SMS messages

To contact customers with SMS messages through Engage, you must meet certain requirements and understand important restrictions around SMS messaging.

For complete information about SMS messaging through Engage, see http://www.ibm.com/support/knowledgecenter/SSTSRG/SMS_-_Silverpop_Mobile_Messaging.html?lang=en.

SMS: Creating and sending SMS text messages

Follow these steps to use IBM Campaign to send SMS text messages from IBM Engage.

- SMS mobile messaging must be enabled for your organization. See "Enabling SMS mobile messaging" on page 39.
- You must meet legal requirements and restrictions before you contact customers with SMS messages. See "Requirements for sending SMS messages" on page 39.

1. Use IBM Engage to prepare the SMS text message.

   For documentation, see http://www.ibm.com/support/knowledgecenter/SSTSRG/SMS_-_Silverpop_Mobile_Messaging.html?lang=en

   Follow these guidelines:
   - Give the SMS template a name that is meaningful to the campaign that it belongs to, so you can easily identify it in both applications.
   - For **Contact Source**, select Database, Contact List, or Query.
   - For **Template Location**, select Shared. *Only shared templates will be available in Campaign.*
   - After saving the template, be sure to preview it for testing.

2. Use IBM Campaign to create a campaign and add a flowchart to it.

   For documentation, see the *IBM Campaign User's Guide*: http://www.ibm.com/support/knowledgecenter/SSCVKV_10.0.0/Campaign/kc_welcome_campaign.dita

3. Configure the SMS process in the IBM Campaign flowchart.

   See "SMS: Configuring the SMS process in a Campaign flowchart."

4. Do a test run in IBM Campaign.

   See "SMS: Doing a test run" on page 44.

5. Do a production run in IBM Campaign.

   See "SMS: Doing a production run" on page 45.

6. Perform response tracking.

   See "SMS: Response tracking" on page 46.

SMS: Configuring the SMS process in a Campaign flowchart

If IBM Campaign is integrated with IBM Engage, you can configure the **SMS** process in a flowchart to send SMS text messages.

Before you can perform this task, the following actions must be completed:

- In IBM Campaign: Create a marketing campaign and add a flowchart to it.
- In IBM Engage: Create the SMS template and body.
- The IBM Engage user must provide the Campaign user with the following details:
  - The name of the Engage database to use for the contact list that will be generated by Campaign. This is the database for the specific SMS channel that will be used to send the messages.
  - The list of Engage database table fields, with the data type for each field (Text, Date, Time, etc.) and data format examples.
  - The name of the Engage SMS template.
  - Whether to create a new contact list or update an existing one (when the flowchart runs).
  - Whether to override the existing SMS name with a new name (for example, to identify the flowchart that was used to send the message).
  - Whether the SMS text message should be sent immediately when the Campaign flowchart runs in production mode.

For more information, see http://www.ibm.com/support/knowledgecenter/SSTSRG/SMS_-_Silverpop_Mobile_Messaging.html.

A flowchart can include multiple channels (Email, SMS, Push), but each channel must be configured as a separate process. This topic explains how to use the SMS process box in a Campaign flowchart.

Note: SMS messages must be sent either by configuring message delivery in the SMS process box or by using the Send Experience in IBM Marketing Cloud. Triggering SMS messages with an IBM Marketing Cloud program is not supported with the Campaign integration.

1. Configure processes in the flowchart to select the segments that will be used for the SMS text messaging campaign. As with any flowchart, you can use multiple processes, such as Select, Segment, and Merge.
2. Add a SMS process to the flowchart. The SMS process must be the last process in the flowchart.
3. Connect at least one of the processes that you created in step 1 as input to the SMS process. For example:
   - Connect a single Select process (such as all males age 25-31) into the SMS process.
   - Connect multiple Select processes (such as High, Medium, and Low value contacts) into the SMS process.
   - Segment customers by geography, and connect each segment to a separate SMS process (to generate unique lists for separate messaging by region).
4. Double-click the SMS process to open the SMS process configuration dialog.
5. Configure the **Engage properties** tab of the SMS process:

Engage properties tab (SMS process)	
Engage database	Required. Select the flexible Engage database associated with the contact list. All shared Engage databases are listed. You must select the flexible database that is used for the SMS channel. If you are using Email, SMS, and Push channels in the integration, use a separate database for each channel.
Selected input cells	Required. Select the segments who will receive the SMS text message. The input cells that you see depend on which process boxes (such as Select or Segment) are connected to the SMS process. For example, if two Select processes are providing input to the SMS process, two input cells are listed. Typically, you select all of the input cells. All of the IDs from the selected cells are then available to create the contact list.
Select all	Quickly select all of the listed input cells (the segments that are connected as input to the SMS process).
Clear all	Quickly clear the list of selections.

Engage properties tab (SMS process)	
Use single contact list	Select **Use single contact list** to use the same contact list every time the process runs. Then select an Engage contact list. All contacts in the list will be included. Check **Clear contact list before updating** if you want to remove all contacts from the list before reusing the list for a new run. Use the following controls to indicate how to update the contact list upon each subsequent run: • **Always add new contacts**: Do not update matching contacts. If the Campaign data includes contacts that are not in the list, add them to the list. • **Update matching contacts; skip contacts that are not found**: Update an existing contact with data from Campaign. Do not add any new contacts to the list. • **Update matching contacts; add contacts that are not found**: Update an existing contact with data from Campaign. If a contact is not in the list, add it. When you do a test or production run of the process box, a contact list is created or updated. All contacts in the list will be included.
Create new contact list for every run	Select **Create new contact list for every run** if you want to create a new contact list every time the process runs. All contacts in the list will be included. Specify a **Name** for the contact list. Select either **Add suffix** or **Add prefix** to indicate whether to include the timestamp at the start or end of the filename. A timestamp for the process run is always added to ensure that the list name is unique. Optionally, include the **Campaign ID** and/or the SMS **Cell name** as part of the filename.

6. Configure the **Content customization** tab of the SMS process:

Content customization tab (SMS process)	
SMS template	Required. Select an Engage SMS template. All shared templates are listed. The template determines the content of the SMS text message. If you do not make any changes in this dialog box, then all content comes directly from the template. Any changes that you make here override the content from the template. Changes are not saved to the template, but are used in the SMS text message that is sent for the current run of this process box.
SMS name	Required. The SMS name identifies the mailing in Engage and Campaign. The name that you specify is used instead of the **SMS Name** that is specified in the Engage template. Use a name that indicates the purpose of the message and its flowchart, so you can easily identify it later. Use static text only (no variables). Recipients never see this name. To support response tracking, a timestamp for the process run is added to the name at process run time to ensure that the SMS name is unique for every process run. Additionally, the campaign code is included to track responses. This unique SMS name is included in every event generated by Engage, so it is used to correlate responses. **Note:** The maximum number of characters that can be used for the **SMS Name** is 256. This includes the timestamp that is appended and the campaign code that is added as a prefix. If the number of characters for the **SMS Name** exceeds 256, the name that is entered by the user is truncated.

Content customization tab (SMS process)	
Send SMS to all contacts immediately	**Important:** This option immediately delivers SMS messages to all recipients when you do a production run in Campaign. We recommend that you do a test run first. • The **Send SMS to all contacts immediately** option is available only after you select the **SMS Template**. • If you check **Send SMS to all contacts immediately**, the message is sent to all recipients when you do a production run in Campaign. (Note that a test run in Campaign never does a send, regardless of whether this option is selected.) • Leave this option unchecked if you prefer to use IBM Engage to send the messages. When this option is **not** checked, a production run in Campaign uploads the contact list to Engage but does not send out the SMS messages. You can then initiate/schedule the send from Engage.

7. Configure the **Field mappings** tab of the SMS process:

Field mappings tab (SMS process)	
Refresh ↻	Refresh the table fields information for the selected **Engage database**. Use this option if any new fields are added to the Engage database or if any existing fields are modified. **Important:** If the fields information is modified, all the table column mapping information is removed. You must validate all the field mappings after refresh completes.
Candidate fields	This list shows all of the available fields from all of the processes that are providing input to the SMS process. These are the IBM Campaign fields that contain data such as contact names and addresses, demographics, purchase history, or other information stored in Campaign databases or flat files.
Fields to export to Engage	The fields in this list provide data to create or update the Engage contact list. The values for the mapped fields come from Campaign databases or flat files. For example, if you map the Campaign field `FirstName` to the Engage field `CustomerFirstName`, the values are pulled from the Campaign `FirstName` field. When the contact list is uploaded to Engage, the value of the Campaign `FirstName` field will be used to update the `CustomerFirstName` field in the Engage database. Engage will then use the newly updated `CustomerFirstName` field when populating the SMS template. When you map Campaign **Candidate fields** to **Fields to export to Engage**, be sure that the mapped fields use the same Field Type (data type), such as Text, Date, Time, etc. If the data types do not match, errors occur when the system tries to import the values in the Candidate fields into the mapped Engage database fields. Ensure that the order of fields in the list matches the order of the fields in the Engage contact list. Use the arrow icons to move a selected field up or down in the list. For example, move First Name before Last Name. Note: The order of the fields in this list determines the order of the fields in the commas-separated values (CSV) file that is created to form the contact list. If a field for a specific record lacks a value, that field is left empty in the contact list. In other words, that field is not populated in the comma-separated values (CSV) field that is used to create the contact list.
Profile	It can be helpful to see the actual values that are stored in a database field in Campaign. To do so, select a Candidate field and click **Profile**. Wait until profiling is complete to ensure that you see all of the values. For example, profile a field called Surname to see a list of names that are stored in that field.
Derived fields	Optionally, click the **Derived fields** button to create a new variable for querying, segmenting, sorting, calculating, or providing output to a table. Derived fields are variables that do not exist in a data source and are created from one or more existing fields, even across different data sources.

8. Configure the **General** tab of the SMS process:

General tab (SMS process)	
Process name	Assign a descriptive name. The process name is used as the box label on the flowchart. It is also used in various dialogs and reports to identify the process. Customers never see this name.
Note	Provide information to help you or others understand the purpose or result of this process. The content of this field appears when you rest your cursor over the process box in a flowchart. Customers never see this note.

9. Click **OK** to save and close the configuration dialog.
10. Save the flowchart.

Now you are ready to do a test run: See "SMS: Doing a test run." A test run is important because it is your opportunity to confirm that the text messages are properly configured before you send them out into the world.

SMS: Doing a test run

This task pertains to using IBM Campaign to send SMS text messages from IBM Engage. It is important to do a test run before committing to a production run.

A test run is extremely important because it is your opportunity to confirm that the text message is properly configured before you deliver it to customers. Never do a production run without first doing a test run.

Typically, you do a test run after you finish configuring the SMS process in an IBM Campaign flowchart.

The purpose of the test run is to confirm connectivity between Campaign and Engage and to spot-check several text messages in IBM Engage. For example, if you used IBM Campaign to override the Subject line in the SMS template, you must confirm that the correct substitution was made.

A test run in Campaign never sends production SMS text messages to customers, even if **Send SMS to all contacts immediately** (in the SMS configuration dialog) is checked.

Important: See the IBM Marketing Cloud documentation for complete information about doing SMS test runs. This topic covers only a small portion of the process (testing from IBM Campaign to IBM Engage).

1. Use IBM Campaign to open the flowchart (in Edit mode) that contains the configured SMS process.
2. Limit the test run to just a few records. You will remove this restriction later, after the test run is complete.

   Note: This step is recommended but not required.

   If you do not limit the test run, the entire contact list is sent to IBM Engage during the test run, which is unneccessary and time consuming.

   a. Double-click the process box that provides input to the SMS process. For example, if a Select process is connected to the SMS process, open the Select process configuration dialog.
   b. Select the **Cell size limit** tab.
   c. Use the **Limit output cell size** option under **Test run output cell size limitations** to restrict the number of records. Typically, 5 or 10 records are sufficient for a test run.
3. Save the flowchart.
4. Open the **Run** menu and use one of the **Test run** options to do a test run of the flowchart, branch, or process.

   The contact list is sent to Engage but no texts are sent (regardless of whether **Send SMS to all contacts immediately** is selected).

5. In IBM Engage, use the Test Mailing feature to send a test SMS and confirm that the text content and contact list are correct. A test mailing is typically sent to a "black hole" address or an internal marketing address.

   Confirm that all of the selections that were made in IBM Campaign are accurately reflected in the test text message. For example:
   - Confirm that the Engage contact list includes all of the expected fields from IBM Campaign.
   - Confirm that the contact list was either created or updated, depending on which selection was made in Campaign.
   - Confirm that the test send was saved in the correct folder on the Sent tab in Engage.

   Follow all of the instructions in the IBM Marketing Cloud documentation to confirm that the SMS text message is properly prepared.

   For more information, read about SMS text messaging in the IBM Marketing Cloud documentation: http://www.ibm.com/support/knowledgecenter/SSTSRG/SMS_-_Silverpop_Mobile_Messaging.html?lang=en.

If you encounter any errors, resolve them and then do another test run. When you are satisfied with the test run results, you are ready to do a production run. See "SMS: Doing a production run."

SMS: Doing a production run

This task pertains to using IBM Campaign to send SMS text messages from IBM Engage.

Be sure to do a test run before doing a production run! See "SMS: Doing a test run" on page 44.

If the flowchart includes multiple channels, do not do a production run of the entire flowchart until you complete test runs for all of the channels (SMS, Push, Email).

A production run uploads a contact list from IBM Campaign to IBM Engage. If you configured the SMS process to **Send SMS to all contacts immediately**, the text messages are sent to all contacts in the list. If you did not select that option, SMS texts are not sent, so you must schedule the SMS in IBM Engage.

A production run sends text messages to the audience segments that you selected in the IBM Campaign flowchart.

1. In Campaign, open the flowchart (in Edit mode) that contains the configured SMS process.
2. Make a final determination as to whether you want to deliver email immediately to all selected contacts: Double-click the SMS process to open the configuration dialog. Select the **Content customization** tab and make your choice:
   - If you want to deliver the text messages as soon as the flowchart runs in production mode, check **Send SMS to all contacts immediately**.
   - If you prefer to schedule the send in IBM Engage, clear **Send SMS to all contacts immediately**. The contact list will be sent to IBM Engage but text messages will not be sent.
3. Save the flowchart.
4. Open the **Run** menu ▶▼ and select one of the **Save and run** options to do a production run of the selected process, branch, or flowchart. Or use the IBM Marketing Platform Scheduler to schedule the flowchart.

IBM Campaign sends the contact list to IBM Engage. If **Send SMS to all contacts immediately** was selected, the text messages are sent immediately to all recipients in the contact list.

When the contact list is uploaded to Engage, the values in the Campaign fields are used to update the corresponding fields in the Engage database, based on the **Field mappings** defined in the SMS process

box. For example, if you mapped the `FirstName` field (in IBM Campaign) to the `CustomerFirstName` field in IBM Engage, Engage will use the newly updated `CustomerFirstName` field when populating the SMS template.

IBM Campaign can send Mobile SMS with Watson Campaign Automation (WCA), using the SMS process box. In the 11.0 release IBM Campaign can track the SMS replies to the SMS sent from IBM Campaign using Watson Campaign Automation. SMS Reply messages are captured in a new column MessageBody that is added to the the UA_InteractedSMS table.

Multiple replies will result in multiple entries in the UA_InteractedSMS table, one for each reply. The table column Source is null for these SMS reply records.

For an SMS sent from IBM Campaign, there will be a record present in UA_InteractedSMS table with the Source table column containing the value 'campaign'.

To send an SMS with WCA, the user must have the Text to Join program available and attached to the SMS templates. The Text to Join program contains a list of Keywords that must be used for WCA receive replies. SMS replies my use only these keywords. SMS replies with any other text or without these keywords are discarded by MGAGE (underlying service provider for WCA).

If you checked **Send SMS to all contacts immediately** in the SMS process box, go to IBM Engage and confirm that the text messages were sent correctly.

If you did not check **Send SMS to all contacts immediately**, the contact list was updated in IBM Engage but the text messages were not sent. You must use IBM Engage to schedule or send the text messages.

SMS: Response tracking

The Campaign and Engage integration performs response tracking, so marketers can retarget responders and non-responders.

Prerequisites to support response tracking
- The UBX Toolkit was installed and configured.
- The UBX Toolkit user created the necessary response tracking tables.
- A Campaign administrator configured the tables as a user data source.

How does tracking work?

IBM Engage records information about SMS transmission, delivery, and responses. It makes this information available to UBX.

To get the information from UBX to Campaign, run UBX Toolkit scripts to download event data and import it into response tracking tables.

Campaign flowcharts can then access those tables as a user data source.

In some organizations, the routing of response data is automated through scripts that administrators set up. If the scripts are on the Campaign listener (Analytics) server, you can create a flowchart that calls a trigger to run the scripts and use the IBM Marketing Platform Scheduler to schedule the trigger. The Scheduler also allows you to run external scripts, so you can use that method as well.

If response routing has not been automated, you must run the scripts manually, periodically.

Attributing responses to a particular mailing and campaign is handled by the integration: IBM Campaign assigns a unique name to each SMS mailing. That unique name is included in Engage events, for

correlation back to Campaign. The unique name is generated based on the SMS name that is assigned in the process box on the flowchart.

What events are tracked?

Information about the following SMS events can be imported into the response tracking tables, so it is available to Campaign:

* Message sent from a SMS program (sentSMS): Information that describes what happens when a message is sent from an SMS program.
* Interacted with a SMS program (interactedSMS): Information that describes the interaction between a mobile user and an SMS program.

As a marketing user, how do I populate and use these tables?

You must periodically download events from UBX and import them into your local response tracking tables. You can run the scripts manually or as a scheduled job:

1. To download events, run the `eventsDownload` script that is provided with the UBX Toolkit.

   For instructions, see http://www.ibm.com/support/knowledgecenter/SS9JVY/UBXtoolkit/ Operation_toolkit/Downloading_events_from_UBX.dita

   Note: The `eventsDownload` script downloads tracking data related to email, SMS messages, and mobile push notifications. You may or may not be using all of those features.

2. To import the downloaded events into the response tracking tables, run the `eventsImport` script that is provided with the UBX Toolkit.

   For instructions, see http://www.ibm.com/support/knowledgecenter/SS9JVY/UBXtoolkit/ Operation_toolkit/Importing_event_data_into_a_database.html.

3. Be sure to follow all of the instructions that are provided in the UBX Toolkit documentation. Specifically, see *Chapter 3. Event destination endpoints*.

4. Once the tables are populated, you can access the tables in Campaign flowcharts to retarget responders and non-responders.

   Typically, you design a response flowchart and configure the process boxes to read data from the response tracking tables. For example, you can configure Select or Extract process boxes to target SMS interactions, as you implement the next wave of the campaign.

5. For additional information, see Chapter 6, "Response tracking tables for the integration," on page 59.

SMS opt-in and opt-out synchronization between Campaign and Engage

To ensure that consent records for SMS are as up-to-date as possible, you can update opt-in and opt-out requests for SMS that you receive through various channels. To synchronize SMS subscription data between Campaign and Engage, upload and download opt-in and opt-out updates regularly.

Managing opt-in and opt-out records for SMS requires specific steps. The OPT_IN and OPT_OUT options for the **contactUpload** and **contactDownload** scripts do not apply to SMS messaging. Instead, you must use the custom SMS mapping file that is provided as part of the Campaign integration with Engage download package.

The first time that you add contact information for a recipient, the record is marked as an Opt-in record. If the individual did not consent to be contacted by SMS, you must subsequently mark the record as an Opt-out. You cannot add a record as an Opt-out record. You can identify a record as an Opt-out only after you enter it as an Opt-in.

To keep SMS subscriptions up to date, you can schedule Campaign flowcharts that trigger the **contactUpload** and **contactDownload** scripts to run automatically. Use the instructions in the example_SMSmappingFile in the conf directory to update SMS consent status. In Engage, schedule queries that update opt-in and opt-out status so that the most current information is available for download to Campaign.

Chapter 5. Mobile push: using Campaign and Engage

If IBM Campaign and Engage are integrated, you can use Campaign to send mobile push notifications from IBM Engage.

Consider the following points about using the Push process:

- Mobile push notifications are short messages sent by installed mobile apps that alert smartphone users of offers, updates, and reminders. Push notification is a one-way communication channel. Users can receive messages but they cannot respond. Mobile push notifications are also called Mobile App Messages.
- Sending mobile push notifications requires a coordinated effort between a Campaign user and an Engage user. Templates must be set up, test runs must be done, and a final production run must be coordinated.
- After the push is sent, responses are tracked in IBM Engage and routed back to Campaign via UBX and the UBX Toolkit.
- To route response data from IBM Engage back to Campaign, a UBX Toolkit user (typically the Campaign user) runs scripts. Some organizations automate the scripts so data routing occurs automatically.
- You can then use Campaign to design the next wave of the campaign.
- A contact fails for the Push process if the data is NULL or if the contact number is NULL.

Note: Push messages must be sent either by configuring message delivery in the Push process box or by using the Send Experience in IBM Marketing Cloud. Triggering Push messages with a IBM Marketing Cloud program is not supported with the Campaign integration.

Enabling mobile app messages (push notifications)

Several one-time setup tasks must be completed to enable IBM Engage to send Mobile App Messages (push notifications).

This task outlines the main steps. For more information, see http://www.ibm.com/support/knowledgecenter/SSTSRG/Mobile_App_Messages.html?lang=en.

1. IBM Provisioning enables Mobile App Messages for the Engage organization.
2. The Engage Org Admin grants Mobile App Messages permissions for the Engage user.
3. The Engage user creates one or multiple app keys in the Engage UI. To do this, the Engage user needs the Apple certificate for IOS and/or Google API key for Android from the mobile app developer.
4. The mobile app developer downloads the SDK and uses the SDK and the Engage app key to build the apps.
5. The Engage Org Admin or Engage user enables a flexible database for the Mobile App Message. It can be a new or existing database.

   Note: Each Engage organization can have only one mobile app-enabled database. If you are using Email, SMS, and Push channels in the integration, use a separate database for each channel.

Push: Creating and sending mobile push notifications

Follow these steps to use IBM Campaign to send mobile push notifications from IBM Engage.

Mobile push must be enabled. See "Enabling mobile app messages (push notifications)" on page 49.

Sending mobile push notifications involves using both IBM Campaign and IBM Engage.

1. Use IBM Engage to prepare the mobile app message.

   This step involves coordination among the following users:
   - Developer
   - Org Admin
   - Marketer

   Note: The Mobile App Messages database must be a flexible database, meaning it has no unique identifier. Each organization can have only one mobile app-enabled database. If your organization is also SMS-enabled, you must have one SMS database and one mobile app database.

   For documentation, see http://www.ibm.com/support/knowledgecenter/SSTSRG/ Mobile_App_Messages.html.

2. To support response tracking, you must set the `campaignName` attribute in the Engage Push template to match the campaign code that is defined within IBM Campaign. For example: `C000000518`.

   A campaign code is the globally unique identifier for a campaign.

   Campaign codes are listed on the All campaigns page in IBM Campaign.

3. Use IBM Campaign to create a campaign and add a flowchart to it.

   For documentation, see the *IBM Campaign User's Guide*: http://www.ibm.com/support/ knowledgecenter/SSCVKV_10.0.0/Campaign/kc_welcome_campaign.dita

4. Configure the Push process in the IBM Campaign flowchart.

   See "Push: Configuring the Push process in a Campaign flowchart."

5. Do a test run in IBM Campaign.

   See "Push: Doing a test run" on page 54.

6. Do a production run in IBM Campaign.

   See "Push: Doing a production run" on page 55.

7. Perform response tracking.

   See "Push: Response tracking" on page 56.

Push: Configuring the Push process in a Campaign flowchart

If IBM Campaign is integrated with IBM Engage, you can configure the **Push** process in a flowchart to send mobile push notifications from Engage.

Before you can perform this task, the following actions must be completed:
- In IBM Campaign: Create a marketing campaign and add a flowchart to it.
- In IBM Engage: Create the push template and body.
- The IBM Engage user must provide the IBM Campaign user with the following details:
  - The name of the Engage database to use for the contact list that will be generated by Campaign. This is the database for the specific Push channel that will be used to send the messages.
  - The list of Engage database table fields, with the data type for each field (Text, Date, Time, etc.) and data format examples.
  - The name of the Engage push template.
  - Whether to create a new contact list or update an existing one (when the flowchart runs).

- Whether to override the existing Push name with a new name (for example, to identify the flowchart that was used to send the message).
- Whether the push notification should be sent immediately when the Campaign flowchart runs in production mode.

A flowchart can include multiple channels (Email, SMS, Push), but each channel must be configured as a separate process. This topic explains how to use the Push process box in a Campaign flowchart.

Note: Push messages must be sent either by configuring message delivery in the Push process box or by using the Send Experience in IBM Marketing Cloud. Triggering Push messages with a IBM Marketing Cloud program is not supported with the Campaign integration.

Note: For complete information about mobile app messaging, see http://www.ibm.com/support/knowledgecenter/SSTSRG/Mobile_App_Messages.html.

1. Configure processes in the flowchart to select the segments that will be used for the mobile push campaign. As with any flowchart, you can use multiple processes, such as Select, Segment, and Merge.
2. Add a Push process to the flowchart. The Push process must be the last process in the flowchart.
3. Connect at least one of the processes that you created in step 1 as input to the Push process. For example:
   - Connect a single Select process (such as all males age 25-31) into the Push process.
   - Connect multiple Select processes (such as High, Medium, and Low value contacts) into the Push process.
   - Segment customers by geography, and connect each segment to a separate Push process (to generate unique lists for separate pushes by region).
4. Double-click the Push process to open the Push process configuration dialog.
5. Configure the **Engage properties** tab of the Push process:

Engage properties tab (Push process)	
Engage database	Required. Select a flexible Engage database associated with the contact list. All shared Engage databases are listed. You must select the flexible database that is used for the Push channel. If you are using Email, SMS, and Push channels in the integration, use a separate database for each channel.
Selected input cells	Required. Select the segments who will receive the mobile push notification. The input cells that you see depend on which process boxes (such as Select or Segment) are connected to the Push process. For example, if two Select processes are providing input to the Push process, two input cells are listed. Typically, you select all of the input cells. All of the IDs from the selected cells are then available to create the contact list.
Select all	Quickly select all of the listed input cells (the segments that are connected as input to the Push process).
Clear all	Quickly clear the list of selections.

Engage properties tab (Push process)	
Use single contact list	Select **Use single contact list** to use the same contact list every time the process runs. Then select an Engage contact list. All contacts in the list will be included.
	Check **Clear contact list before updating** if you want to remove all contacts from the list before reusing the list for a new run.
	Use the following controls to indicate how to update the contact list upon each subsequent run: • **Always add new contacts**: Do not update matching contacts. If the Campaign data includes contacts that are not in the list, add them to the list. • **Update matching contacts; skip contacts that are not found**: Update an existing contact with data from Campaign. Do not add any new contacts to the list. • **Update matching contacts; add contacts that are not found**: Update an existing contact with data from Campaign. If a contact is not in the list, add it.
	When you do a test or production run of the process box, a contact list is created or updated. All contacts in the list will be included in the push.
Create new contact list for every run	Select **Create new contact list for every run** if you want to create a new contact list every time the process runs. All contacts in the list will be included.
	Specify a **Name** for the contact list.
	Select either **Add suffix** or **Add prefix** to indicate whether to include the timestamp at the start or end of the filename. A timestamp for the process run is always added to ensure that the list name is unique.
	Optionally, include the **Campaign ID** and/or the Push **Cell name** as part of the filename.

6. Configure the **Content customization** tab of the Push process:

Content customization tab (Push process)	
Push template	Required. Select an Engage push template. All shared templates are listed. The template determines the content of the push notification. If you do not make any changes in this dialog box, then all content comes directly from the template. Any changes that you make here override the content from the template. Changes are not saved to the template, but are used in the push notifications that are sent for the current run of this process box.
Push name	Required. The Push name identifies the push in Engage and Campaign. The name that you specify is used instead of the **Push Name** that is specified in the Engage template. You can use a name that indicates the purpose of the push and its flowchart, so you can easily identify it later. Use static text only (no variables). Recipients never see this name.
	To support response tracking, a timestamp for the process run is added to the name at process run time to ensure that the push name is unique for every process run. Additionally, the campaign code is included to track responses. This unique push name is included in every event generated by Engage, so it is used to correlate responses.
	Note: The maximum number of characters that can be used for the **Push Name** is 256. This includes the timestamp that is appended and the campaign code that is added as a prefix. If the number of characters for the **Push Name** exceeds 256, the name that is entered by the user is truncated.

Content customization tab (Push process)	
Send push notifications to all contacts immediately	**Important:** This option immediately delivers push notifications to all recipients when you do a production run in Campaign. We recommend that you do a test run first. • The **Send push notifications to all contacts immediately** option is available only after you select the **Push Template**. • If you check **Send push notifications to all contacts immediately**, the push notification is sent to all recipients when you do a production run in Campaign. (Note that a test run in Campaign never does a push, regardless of whether this option is selected.) • Leave this option unchecked if you prefer to use IBM Engage to send out the push. When this option is **not** checked, a production run in Campaign uploads the contact list to IBM Engage but does not send out the push notifications. You can then initiate/schedule the push from IBM Engage.

7. Configure the **Field mappings** tab of the Push process:

Field mappings tab (Push process)	
Refresh ↻	Refresh the table fields information for the selected **Engage database**. Use this option if any new fields are added to the Engage database or if any existing fields are modified. **Important:** If the fields information is modified, all the table column mapping information is removed. You must validate all the field mappings after refresh completes.
Candidate fields	This list shows all of the available fields from all of the processes that are providing input to the Push process. These are the IBM Campaign fields that contain data such as contact names and addresses, demographics, purchase history, or other information that is stored in Campaign databases or flat files.
Fields to export to Engage	The fields in this list provide data to create or update the Engage contact list. The values for the mapped fields come from Campaign databases or flat files. When you map Campaign **Candidate fields** to **Fields to export to Engage**, be sure that the mapped fields use the same Field Type (data type), such as Text, Date, Time, etc. If the data types do not match, errors occur when the system tries to import the values in the Candidate fields into the mapped Engage database fields. Ensure that the order of fields in the list matches the order of the fields in the Engage contact list. Use the arrow icons to move a selected field up or down in the list. For example, move First Name before Last Name. Note: The order of the fields in this list determines the order of the fields in the commas-separated values (CSV) file that is created to form the contact list. If a field for a specific record lacks a value, that field is left empty in the contact list. In other words, that field is not populated in the comma-separated values (CSV) field that is used to create the contact list. After you complete the mapping, click the check mark ✓ in the **Sync** column for the field or fields that are to be used as the sync fields. If you do not select any sync fields, the `campaignaudienceId` is used as the sync field by default.
Sync	In the **Fields to export to Engage** list, check at least one field in the **Sync** column that identifies a unique mobile user ID on the Engage side. For example, use a mobile phone number field. An Engage flexible database is used for Push. To update data in this database, the Sync fields are treated as a primary key and the row that matches the columns in the **Sync** field is updated. For example, if **MobilePhone** is the **Sync** field, then the update happens on the row in which the criteria of the **Sync** field is matched.
Profile	It can be helpful to see the actual values that are stored in a database field in Campaign. To do so, select a Candidate field and click **Profile**. Wait until profiling is complete to ensure that you see all of the values. For example, profile a field called Surname to see a list of names that are stored in that field.

Field mappings tab (Push process)	
Derived fields	Optionally, click the **Derived fields** button to create a new variable for querying, segmenting, sorting, calculating, or providing output to a table. Derived fields are variables that do not exist in a data source and are created from one or more existing fields, even across different data sources.

8. Configure the **General** tab of the Push process:

General tab (Push process)	
Process name	Assign a descriptive name. The process name is used as the box label on the flowchart. It is also used in various dialogs and reports to identify the process. Customers never see this name.
Note	Provide information to help you or others understand the purpose or result of this process. The content of this field appears when you rest your cursor over the process box in a flowchart. Customers never see this note.

9. Click **OK** to save and close the configuration dialog.
10. Save the flowchart.

Now you are ready to do a test run: See "Push: Doing a test run." A test run is important because it is your opportunity to confirm that the notification is properly configured before you send it out into the world.

Push: Doing a test run

This task pertains to using IBM Campaign to send mobile push notifications from IBM Engage. It is important to do a test run before committing to a production run.

Important: See the IBM Marketing Cloud documentation for complete information about doing test runs. This topic only covers a small portion of the process (testing from IBM Campaign to IBM Engage).

A test run is extremely important because it is your opportunity to confirm that the notification is properly configured before you deliver it to customers.

Typically, you do a test run after you finish configuring the Push process in an IBM Campaign flowchart.

The purpose of this test run is to confirm connectivity between Campaign and Engage and to spot-check several notifications in IBM Engage.

Note that a test run in Campaign never sends a production push to customers, even if **Send push notifications to all contacts immediately** (in the Push configuration dialog) is checked.

Remember: Never do a production run without first doing a test run.
1. Use IBM Campaign to open the flowchart (in Edit mode) that contains the configured Push process.
2. Limit the test run to just a few records. You will remove this restriction later, after the test run is complete.

   Note: This step is recommended but not required.
   If you do not limit the test run, the entire contact list is sent to IBM Engage during the test run, which is unnecessary and time consuming.
   a. Double-click the process box that provides input to the Push process. For example, if a Select process is connected to the Push process, open the Select process configuration dialog.
   b. Select the **Cell size limit** tab.

c. Use the **Limit output cell size** option under **Test run output cell size limitations** to restrict the number of records. Typically, 5 or 10 records are sufficient for a test run.
3. Save the flowchart.
4. Open the **Run** menu and use one of the **Test run** options to do a test run of the flowchart, branch, or process.

   The contact list is sent to IBM Engage but no push notifications are sent (regardless of whether **Send push notifications to all contacts immediately** is selected).
5. Use IBM Engage to test the push as you normally would, and confirm that the notification content and contact list are correct.

   Be sure to confirm that all of the selections that were made in IBM Campaign are accurately reflected in IBM Engage. For example:

   - If you changed the Push name in Campaign, confirm that the name change appears in Engage.
   - Confirm that the Engage contact list includes all of the expected fields from IBM Campaign.
   - Confirm that the contact list was either created or updated, depending on which selection was made in Campaign.

   Important: Follow all of the instructions in the IBM Engage documentation to confirm that the push is properly prepared, and that you have met all of the requirements for doing a push. For example, confirm that opt-ins and opt-outs will be handled properly.

   For more information, see http://www.ibm.com/support/knowledgecenter/SSTSRG/ Mobile_App_Messages.html.

If you encounter any errors, resolve them and then do another test run. When you confirm that the test run was successful, you are ready to do a production run. See "Push: Doing a production run."

Push: Doing a production run

This task pertains to using IBM Campaign to send SMS push notifications from IBM Engage.

Be sure to do a test run before doing a production run! See "Push: Doing a test run" on page 54.

If the flowchart includes multiple channels, do not do a production run of the entire flowchart until you complete test runs for all of the channels (SMS, Push, Email).

A production run uploads a contact list from IBM Campaign to IBM Engage. If you configured the Push process to **Send push notifications to all contacts immediately**, the notifications are sent to all contacts in the list. If you did not select that option, notifications are not sent, so you must schedule the push in IBM Engage.

A production run sends the push notification to the audience segments that you selected in the IBM Campaign flowchart.
1. In Campaign, open the flowchart (in Edit mode) that contains the configured Push process.
2. Make a final determination as to whether you want to deliver the push immediately to all selected contacts: Double-click the Push process to open the configuration dialog. Select the **Content customization** tab and make your choice:
   - If you want to deliver the push as soon as the flowchart runs in production mode, check **Send push notifications to all contacts immediately**.
   - If you prefer to schedule the push in IBM Engage, clear **Send push notifications to all contacts immediately**. The contact list will be sent to Engage but the push will not be sent.
3. Save the flowchart.

4. Open the **Run** menu ![run menu icon] and select one of the **Save and run** options to do a production run of the selected process, branch, or flowchart. Or use the IBM Marketing Platform Scheduler to schedule the flowchart.

IBM Campaign sends the contact list to IBM Engage. If **Send push notifications to all contacts immediately** was selected, the notifications are sent immediately to all recipients in the contact list.

When the contact list is uploaded to Engage, the values in the Campaign fields are used to update the corresponding fields in the Engage database, based on the **Field mappings** defined in the Push process box. For example, if you mapped the `FirstName` field (in IBM Campaign) to the `CustomerFirstName` field in IBM Engage, Engage will use the newly updated `CustomerFirstName` field when populating the Push template.

If you checked **Send push notifications to all contacts immediately** in the Push process box, go to IBM Engage and confirm that the push was sent correctly.

If you did not check **Send push notifications to all contacts immediately**, the contact list was updated in IBM Engage but the push was not sent. You must use IBM Engage to schedule or send the push.

Push: Response tracking

The Campaign and Engage integration performs response tracking, so marketers can retarget responders and non-responders.

Prerequisites to support response tracking

- The UBX Toolkit was installed and configured.
- The UBX Toolkit user created the necessary response tracking tables.
- A Campaign administrator configured the tables as a user data source.

How does tracking work?

IBM Engage records information about mobile push transmission, delivery, and responses. It makes this information available to UBX.

To get the information from UBX to Campaign, run UBX Toolkit scripts to download event data and import it into response tracking tables.

Campaign flowcharts can then access those tables as a user data source.

In some organizations, the routing of response data is automated through scripts that administrators set up. If the scripts are on the Campaign listener (Analytics) server, you can create a flowchart that calls a trigger to run the scripts and use the IBM Marketing Platform Scheduler to schedule the trigger. The Scheduler also allows you to run external scripts, so you can use that method as well.

If response routing has not been automated, you must run the scripts manually, periodically.

Attributing responses to a particular mailing and campaign is handled by the integration: IBM Campaign assigns a unique name to each push. That unique name is included in Engage events, for correlation back to Campaign. The unique name is generated based on the Push name that is assigned in the process box on the flowchart.

What events are tracked?

Information about the following Push events can be imported into the response tracking tables, so it is available to Campaign:

- Application Install (appInstalled): Information that relates to an individual installing a mobile app on a mobile device. The app is installed and the app registration information is received.
- Application Uninstall (appUninstalled): Information that relates to an individual removing an app from a mobile device. Apple or Google informs IBM that the app is no longer reachable by push. This might be due to uninstalling the mobile app.
- Application Opened (appOpened): Information to describe what happens when a mobile user clicks in a simple notification to open an app.
- Application Click (urlClicked): Information to describe what happens when a mobile user clicks a button in a simple notification, providing the mobile OS with a URL to be handled. This typically happens when the user opens a browser on a mobile device.
- Application Notification Push Enabled (uiPushEnabled): Information that describes what happens when an APNS user uses a mobile app to opt in to receiving push notifications.
- Application Notification Push Disabled (uiPushDisabled): Information that describes what happens when an APNS user has used the application settings to opt out of receiving push notifications.
- Application Session Start (sessionStarted): Information that describes what happens when the mobile user opens the application for the first time in a configurable number of minutes.
- Application Session End (sessionEnded): Information to describe when the mobile user session ends.

As a marketing user, how do I populate and use these tables?

You must periodically download events from UBX and import them into your local response tracking tables. You can run the scripts manually or as a scheduled job:

1. To download events, run the `eventsDownload` script that is provided with the UBX Toolkit.

   For instructions, see http://www.ibm.com/support/knowledgecenter/SS9JVY/UBXtoolkit/ Operation_toolkit/Downloading_events_from_UBX.dita

   Note: The `eventsDownload` script downloads tracking data related to email, SMS messages, and mobile push notifications. You may or may not be using all of those features.

2. To import the downloaded events into the response tracking tables, run the `eventsImport` script that is provided with the UBX Toolkit.

   For instructions, see http://www.ibm.com/support/knowledgecenter/SS9JVY/UBXtoolkit/ Operation_toolkit/Importing_event_data_into_a_database.html.

3. Be sure to follow all of the instructions that are provided in the UBX Toolkit documentation. Specifically, see *Chapter 3. Event destination endpoints*.

4. Once the tables are populated, you can access the tables in Campaign flowcharts to retarget responders and non-responders.

   Typically, you design a response flowchart and configure the process boxes to read data from the response tracking tables. For example, you can configure Select or Extract process boxes to target users who opened an application.

5. For additional information, see Chapter 6, "Response tracking tables for the integration," on page 59.

Chapter 6. Response tracking tables for the integration

To support the Campaign and Engage integration, response tracking tables are required to store data about user responses to email, SMS, and push events.

What is the purpose of the tables?

Response events such as clicks or bounces occur as a result of an Engage mailing. These events flow from Engage to UBX and are downloaded to IBM Campaign using the UBX Toolkit. After the events are downloaded to Campaign, they need to be imported into tables so Campaign can access the event data. Once the event data is imported into the tables, those tables can serve as a user data source in IBM Campaign flowcharts.

How do the tables get created?

The person who is responsible for configuring the integration uses the UBX Toolkit to create the tables. This is a one-time setup operation. For more information, see "Creating response tracking tables for the integration" on page 22.

How do the tables get populated?

The tables get populated whenever someone runs the `eventsDownload` and `eventsImport` scripts that are provided with the UBX Toolkit.

The scripts can be run manually or as a scheduled job. For details, see the appropriate topic for the features that you are using:
- "Email: Response tracking" on page 36
- "SMS: Response tracking" on page 46
- "Push: Response tracking" on page 56

How are responses tracked?

Response tracking between Campaign and Engage is possible because each mailing has a unique name. This unique name is included in every event generated by Engage, so it is used to correlate responses. The integration takes care of this automatically.

Note: The `EventNameSpace` and `EventVersion` columns of all Campaign Event tables have the value `NULL`.

Response and Contact Mapping

When IBM Campaign and IBM Engage are integrated, the contact and response mapping is defined by default.

Contact Mapping

You cannot change the Contact mapping.

Table 4. IBM Campaign and IBM Engage Contact mapping

Type	IBM Campaign	IBM Engage
Contact type	Campaign Send (`ContactStatusID` – 1)	EmailSend

Table 4. IBM Campaign and IBM Engage Contact mapping (continued)

Type	IBM Campaign	IBM Engage
Contact type	Undelivered (`ContactStatusID - 3`)	EmailBounce

Response Mapping

When IBM Campaign and IBM Engage are integrated, the response mapping is defined in the `UA_CampaignEngageResponseMap` table. You can edit the Response mapping if required.

Table 5. IBM Campaign and IBM Engage Response mapping

Type	CampaignEventType	EngageEventType
Response type	Link click (`ResponseTypeID - 9`)	EmailClick
Response type	Explore (`ResponseTypeID - 1`)	EmailOpen

Email tracking data available as an event

The following table lists the email tracking data that can be downloaded from UBX Toolkit to IBM Campaign.

Engage supports specific email events that provide tracking data for email messaging. Engage makes this data available as UBX events. You use UBX Toolkit to download the event data to IBM Campaign and load it into response tracking tables for Campaign consumption. The **Event name** might differ between mailings. The **Event code** must appear in the tracking data exactly as shown.

Information from the `Mailing - sent` event and the `Mailing - bounced` event is processed to populate the Detailed contact history. These events are processed for different audience level history tables based on the `audienceID`.

Information from the `Mailing - open` event and `Mailing – clicked` event is processed to populate the Response history. These events are processed for different audience level history tables based on the `audienceID`.

Information from the mailing: opt-out event . WCA customers can receive opt-out links for opting out of WCA mailing, in the emails delivered to them, This event is now tracked by Campaign via UBX. The Mailing Opt-Out Event (emailOptOut) is being tracked in the Campaign system database in a new table called UA_EMAILOPTOUT

Email Opt-Out requirement from WCA - To track the email opt-out event, users must have an email template containing the 'Email OptOut' hyperlink of Type: Opt-out Email. The complete flow of opt-out events are as follows.
1.The User receives the email with OptOut link.
2. The User opens the email with OptOut link and click on the link.
3. A reply email message to WCA is opened which the user will have to send back to WCA.
4. After this email is sent respective contact is marked as 'OptedOut' in the WCA database .
5. WCA Publishes the Mailing OptOut Event (emailOptOut) event to UBX .
6. Campaign downloads the events published to UBX to Campaign system table "UA_EMAILOPTOUT".
Note:
At present emailOptOut event is not included in the ETL to Campaign contact/detail history and response history tables.
Offer Tracking code is not populating in email Optout events.

The following events are picked up by ETL tool and transferred in the history tables:
- `Mailing - sent` event and `Mailing - bounced` event to populate Detailed contact history.

- `Mailing - open` event and `Mailing - clicked` event to populate in Response History.

Table 6. Email tracking events through UBX

Event name	Event code	Campaign system table
Mailing - sent	`emailSend`	UA_EmailSend
Mailing - opened	`emailOpen`	UA_EmailOpen
Mailing - clicked	`emailClick`	UA_EmailClick
Mailing - bounced	emailBounce	UA_EmailBounce
Mailing - optedout	emailOptOut	UA_EmailOptOut

SMS tracking data available as an event

The following table lists the SMS tracking data that can be downloaded from UBX Toolkit to IBM Campaign.

Engage supports specific SMS events that provide tracking data. Engage makes this data available as UBX events. You use UBX Toolkit to download the event data to IBM Campaign and load it into response tracking tables for Campaign consumption. The **Event name** might differ between programs. The **Event code** must appear in the tracking data exactly as shown.

Table 7. SMS tracking events through UBX

Event name	Event code	Campaign system table
SMS - Sent from a SMS Program	`sentSMS`	UA_SentSMS
SMS - Interacted with an SMS program	`interactedSMS`	UA_InteractedSMS

Mobile push tracking data available as an event

The following table lists the mobile push tracking data that can be downloaded from UBX Toolkit to IBM Campaign.

Engage supports specific mobile push events that provide tracking data. Engage makes this data available as UBX events. You use UBX Toolkit to download the event data to IBM Campaign and load it into response tracking tables for Campaign consumption.

If you have upgraded to version 10.0.0.1 or later and are using the Campaign built-in ability to connect to UBX, then the UBX events are downloaded directly into IBM Campaign.

The **Event name** might differ between mailings. The **Event code** must appear in the tracking data exactly as shown.

Table 8. Mobile push tracking events through UBX

Event name	Event code	Campaign system table
Mobile App - Installed	`appInstalled`	UA_App_Installed
Mobile App - Uninstalled	`appUninstalled`	UA_App_Uninstalled
Mobile App - Opened a Push Notification	`appNotificationOpen` actionTaken = `app`	UA_SimpNot_appOpened
Mobile App - Clicked a URL	`appNotificationOpen` actionTaken = `url`	UA_SimpNot_URLClicked

Table 8. Mobile push tracking events through UBX (continued)

Event name	Event code	Campaign system table
Mobile App - Enabled a Push Notification	`appPushEnabled`	UA_App_UIPushEnabled
Mobile App - Disabled a Push Notification	`appPushDisabled`	UA_App_UIPushDisabled
Mobile App - Started a Session	`appSessionOpen`	UA_App_SessionStarted
Mobile App - Ended a Session	`appSessionClose`	UA_App_SessionEnded

Integration database tables, ETL, and partitioning

The Campaign integration with Engage populates database tables that IBM Campaign uses for auditing and tracking. Consult with your database administrator to discuss how long you need to keep the data for querying. Depending on the volume of activity for your account, the tables can grow large over time.

Each integration table shares some characteristics.
- The primary key is an identity or sequence column. The IDs in the primary keys reflect the order in which rows were inserted.
- The tables have a datetime/timestamp column to indicate the time at which a particular event happened.
- The rows in each table are inserted once and the integration does not update them after the initial insert.
- There are no predefined indexes, foreign keys, or check constraints other than the primary key.

If you are not using recipient email address as the audience level in Campaign, you can add one or more columns to the tracking tables. However, your data must include a way to look up audience level for any contact. You must configure the integration to download the values for those columns from your Engage database. When you add columns, do not use unique indexes or constraints because you might prevent data from being inserted.

The integration does not automatically purge or archive the tables. Your administrator can schedule archiving or purging of the data. A typical purging scheme might set up range partitioning on the datetime/timestamp field, with partitions for each month or quarter. The purging plan can drop partitions when they become outdated. However, different database capabilities and performance characteristics can affect your strategy for partitioning and purging of data. How you query the data might also affect your strategy.

As the Engage ETL runs on the Campaign web application, a cluster user can control the Engage ETL execution on individual nodes by specifying the JVM option `-Dengage.etl.disabled=true`. If `-Dengage.etl.disabled=true`, Engage ETL does not work on the specified cluster node.

Event types

The tracking tables provide data to describe different types of message responses. The type of response is considered an event type.

The tracking tables include values for the following event types.

Event type	Valid value
Open	0
Click Through	1

Event type	Valid value
Clickstream	2
Conversion	3
Attachment	4
Media	5
Forward	6
Opt In	7
Opt Out	8
Reply Abuse	10
Reply Change Address	11
Reply Mail Block	12
Reply Mail Restriction	13
Reply Other	14
Suppressed	15
Sent	16
Soft Bounce	98
Hard Bounce	99

Report IDs

IBM Engage Report IDs appear in the tracking tables.

Typically, you can find aggregate mailing reporting in IBM Engage at **Reports** > **Reporting**. You can find and export raw/individual reports at **Reporting** > **Single Mailing Report**.

Downloaded data includes a Report ID.

Report IDs are assigned in various ways, depending on the type of mailing:
- For individual, one-off mailings, a single Report ID is generated.
- For event-driven Autoresponders, a single Report ID is associated with every mailing for a day.
- For a recurring Automated Message or Program Mailings, a single Report ID is associated with each occurrence of the mailing.
- For a standard mailing, there is a one-to-one relationship between a Report ID and Mailing ID.

Reasons for contact suppression

Engage sometimes does not send a message to an address for various reasons.

If Engage suppresses a message, the reason for doing so is included in the data that is downloaded from Engage. Engage provides the following reasons for contact suppression. For more information, see http://www.ibm.com/support/knowledgecenter/SSTSRG/ What_are_the_suppression_codes_and_descriptions.html?lang=en.

Suppression reason	Valid values
Invalid System Email Domain	1
Invalid System Email Local	2
Invalid Organization Email Domain	3

Suppression reason	Valid values
Organization Suppression List	4
Global Suppression	5
Invalid Organization Email Local	6
Frequency Control	7
Database Level Suppression	8
Query Level Suppression	9
Mailing Level Suppression	10

Purging data from response tracking tables

You can periodically archive or purge the rows that have been processed by the ETL in order to free up space in the database.

The following tables are populated when events are downloaded.
- UA_EmailSend
- UA_EmailOpen
- UA_EmailClick
- UA_EmailBounce
- UA_EmailOptOut
- UA_EngageEtlTracker

The UA_EngageEtlTracker table keeps track of the rows that have been processed. This table contains the information for the EventType and the LastProcessedRecordId.
- EMAIL_SEND_EVT_CODE = 1;
- EMAIL_OPEN_EVT_CODE = 2;
- EMAIL_CLICK_EVT_CODE = 3;
- EMAIL_BOUNCE_EVT_CODE = 4;
- EMAIL_OptOut_EVT_CODE = 5;

You can archive or purge the following rows:
- Select * from UA_EmailSend where RecordID <= (select LastProcessedRecordId from UA_EngageEtlTracker where EventType = 1)
- Select * from UA_EmailOpen where RecordID <= (select LastProcessedRecordId from UA_EngageEtlTracker where EventType = 2)
- Select * from UA_EmailClick where RecordID <= (select LastProcessedRecordId from UA_EngageEtlTracker where EventType = 3)
- Select * from UA_EmailBounce where RecordID <= (select LastProcessedRecordId from UA_EngageEtlTracker where EventType = 4)
- Select * from UA_Emailoptout where RecordID <= (select LastProcessedRecordId from UA_EngageEtlTracker where EventType = 5)

From 11.1 version, if ETL is enabled, Campaign-UBX integration data from contact and response tracking table will be purged automatically after it is processed and populated to Detailed contact history and Response history. While ETL is processing the contact/response record, it will match up tracking code and externalsystemrefranceid and logs the status of each record to UA_EngageEtlRecordStatus table.

Multi-thread Implementation of Event Download and Processing

If you are using IBM Campaign version 11.1 or later, multiple threads are used for UBX event download to Campaign and ETL processing. Campaign-UBX integration involve 2 phase of operations.

- Pulling events published by Engage to UBX and putting those in contact/response tracking tables.
- Process (i.e ETL) contact/response tracking tables and populate the Detailed contact history and Response history as per the event.

Previous to 11.1 release, only 2 main threads were used for these operations. One thread used for reading data from UBX and populate the event tracking tables. Second thread used for reading from event tracking tables and populating Detailed contact history and Response history for different events.

With 11.1, we are having 10 threads to download and populate events from UBX and then 10 parallel threads to process contact tracking event like email send and another 10 threads to process response tracking events like email bounce, email click, email opened. With this parallel processing, integration performance is significantly improved.

Note: As we are spawning multiple threads and to run these threads more CPU and memory will be utilized on Campaign application server.

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If you encounter a problem that you cannot resolve by consulting the documentation, your company's designated support contact can log a call with IBM technical support. Use these guidelines to ensure that your problem is resolved efficiently and successfully.

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- Detailed error messages that you see when the issue occurs.
- Detailed steps to reproduce the issue.
- Related log files, session files, configuration files, and data files.
- Information about your product and system environment, which you can obtain as described in "System information."

System information

When you call IBM technical support, you might be asked to provide information about your environment.

If your problem does not prevent you from logging in, much of this information is available on the About page, which provides information about your installed IBM applications.

You can access the About page by selecting **Help > About**. If the About page is not accessible, check for a `version.txt` file that is located under the installation directory for your application.

Contact information for IBM technical support

For ways to contact IBM technical support, see the IBM Product Technical Support website: (http://www.ibm.com/support/entry/portal/open_service_request).

Note: To enter a support request, you must log in with an IBM account. This account must be linked to your IBM customer number. To learn more about associating your account with your IBM customer number, see **Support Resources > Entitled Software Support** on the Support Portal.

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