Adobe Experience Manager Mobile
Using a Third-Party Content Source

In just a few short years, enterprise mobile apps have become critical to businesses in virtually every industry.

The list of mobile enterprise apps that companies rely on daily includes sales enablement tools, e-commerce apps, product catalogs and inventory tools, training apps, field service tools, internal and external communications tools, and many more.

Despite the importance of these apps, enterprise mobile app development has, to this point, been a fragmented, complicated and expensive process. Adobe Experience Manager Mobile—Adobe’s solution for building and managing mobile apps—can dramatically change this proposition. Among its many advantages, AEM Mobile offers remarkable deployment flexibility, enabling enterprises to use a variety of content sources. This white paper splits those sources into three options:

<table>
<thead>
<tr>
<th>Purpose of this white paper</th>
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<tbody>
<tr>
<td>This white paper focuses on the deployment of option 2, custom-integrating third-party content using the On-Demand Services API. The discussion includes:</td>
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<tr>
<td>- What it realistically takes to integrate third-party content with AEM Mobile apps.</td>
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<tr>
<td>- How to create, deploy, and extend your app.</td>
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<tr>
<td>- Links to detailed documentation for each major step.</td>
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</table>

Adobe Experience Manager (AEM) as the Content Management System (CMS)

Custom-integrated third-party content using the On-Demand Services API—e.g., a customer relationship management system (CRM), product information management system (PIM), or a CMS other than AEM

Ad Hoc content creation and management using InDesign, Adobe Document Cloud PDFs, or HTML
Structure of the paper

The first part of this paper provides a general overview of all three deployment options, including how to choose the best option for your particular needs, as well as a brief description of the downstream workflow phases following deployment. The second part of the paper is a deep-dive discussion of deployment option 2, using third-party content sources with AEM Mobile.

Detailed discussions of deployment options 1 and 3 ([1] using Experience Manager and [3] ad hoc content) can be found in companion white papers "Using Experience Manager with AEM Mobile" and "Ad Hoc Content Creation and Management with AEM Mobile." Each white paper in the series charts the steps for its individual deployment path.

AEM Mobile Product Overview

AEM Mobile is Adobe’s solution for building and managing enterprise mobile apps. Enterprise mobile apps have different challenges and requirements than consumer mobile apps. AEM Mobile is designed to meet these challenges. It allows organizations to:

- Accelerate time-to-market with business critical apps.
- Develop native mobile apps for iOS, Android and Windows without the complexity and expense of native development. You can also deliver app content and functionality to the Desktop Web Viewer for users without a mobile device.
- Leverage content from Experience Manager and other content management systems for the mobile channel.
- Centrally manage all mobile apps in the enterprise.
- Take advantage of integrated Adobe Marketing Cloud solutions alleviating the need to purchase point products for digital marketing needs.

AEM Mobile Deployment Options

AEM Mobile allows an enterprise app to display content or data from multiple sources. The result is considerable flexibility in how you create, manage, and update content that is published to your app. These are the choices you have and what we’ll cover in detail:

- Adobe Experience Manager (AEM) as the Content Management System (CMS)
- Custom-integrated third-party content using the On-Demand Services API (e.g., a CRM or PIM system) or a CMS other than AEM
- Ad Hoc content creation and management using InDesign, Adobe Document Cloud PDFs, or HTML
How should you choose your content sources?

Choosing your content source or sources will be driven by a number of questions, including:

- Where does the content that you already have come from? Who creates it? Will you repurpose that content and those resources for delivering content to mobile?
- Who will create the content for your mobile app(s), and what kind of skills do they have? Typical content creators include:
  - A designer (web- or print-oriented, HTML, PDF, InDesign).
  - A non-designer marketer or producer (using CMS/templates/workflow).
  - A developer (HTML/database-driven, automated workflows).
- Who will update the content, how frequently, and using which tools?
- What do you need automated based on other content updates or workflows?

Based on these factors, you could choose to use just one of these content sources or any combination of the three. Remember, you are not limited to a single path.

Scenario 1: Experience Manager as a content management and authoring system

If you are an existing AEM customer, you can leverage your investment and infrastructure for your web properties to drive mobile apps. AEM can now be your single source of assets and content for a true multi-channel operation.

Even if you do not currently use AEM, adopting it gives you an opportunity to build a robust content infrastructure that lays the groundwork for an efficient multi-channel content creation and management operation.

If you want to leverage additional custom systems such as a PIM or CRM system, or any other data source, AEM is a logical choice. AEM will act as an integration point and centralized hub to manage incoming data from any number of sources.

Please note that to effectively use AEM in your organization, it needs to be customized to your needs, and you will require a specific set of skills and resources. Many customers work with Adobe Solution Partners and system integrators to deploy, configure and customize AEM and create templates that can then be used by internal staff.

The paper “Using Experience Manager with AEM Mobile” covers these resource requirements, including:

- On-premise server hosting and systems administration (or Adobe Managed Services).
- AEM developers of templates, components, and workflows.
- Content creators and managers.
**Scenario 2: Third-party content sources**

If you already use a content management system (CMS) for authoring and managing content for another channel, such as a web site, and you decide you want to use some or all of the assets that are already in that system for your mobile app, then it may make sense to integrate that CMS with AEM Mobile.

Likewise, if your content source is another system that is not a CMS, such as a product information management system or a customer relationship management system, your best approach may be to leverage AEM Mobile's On-Demand Services APIs to integrate your system(s) with AEM Mobile.

**Scenario 3: Ad hoc content creation and management**

If you don’t use a CMS or another structured data system, and your team creates document- or HTML-based content, your best approach may be to simply manage your content using the AEM Mobile On-Demand Services to distribute to your mobile apps.

This approach supports HTML, Adobe InDesign, and PDF content, with a direct integration with Adobe Document Cloud.

Scenario 2 will be covered in detail in this paper. Scenarios 1 and 3 are covered in separate documents.
The Ultimate Goal: A Mobile App

Before describing in detail the way in which you manage the content of your mobile app, there are common shared practices in the overall app creation workflow and lifecycle of every deployment scenario. After you’ve built and deployed your app, you can update content to it using a number of different authoring tools without requiring a rebuild and update of the app binary.

As shown below, in a breakdown of an app’s workflow:

- Content flows to the app built using AEM Mobile On-Demand Services
- Device-level functionality is introduced with Cordova APIs
- The deployed apps are measured and optimized using insight and tools offered by Marketing Cloud

Once you choose your content source, the workflow for building, extending, delivering, measuring and optimizing your apps is the same.
In this paper, we will be detailing Scenario 2: Using a Third-Party Content Source with AEM Mobile. First, we've outlined the phases of the workflow described above, that are common across all scenarios, no matter what you choose as a content source.

AEM Mobile On-Demand Services are accessible via a Web browser (https://aemmobile.adobe.com) or through the AEM Mobile On-Demand Services API.

The On-Demand Services provide the following capabilities for building and extending apps:

- Manage projects, settings, roles, users, and access.
- Create app binaries to be deployed on individual mobile devices.
- Distribute content to mobile apps.
- Define content organization, visualization, and navigation screens.
- Manage entitlement to content (subscriptions, products, restricted collections).
- Manage text notifications.
- Expose content and notification services through AEM Mobile.
- AEM Mobile On-Demand Services API for third-party system integration

Cordova extensibility, available in HTML articles and web overlays in InDesign-based articles, provides access to the following capabilities:

- Core Cordova plug-ins – Take advantage of core Cordova plug-ins such as Camera, Contacts, Geolocation, and File Sharing.
- Custom Cordova plug-ins – Leverage plug-ins from the Cordova/PhoneGap community or create your own plug-ins. Examples: barcode scanning and mobile databases.
- AEM Mobile specific plug-ins enabled through Cordova – Plug-ins to access specific data related to the application and the content metadata.
Your AEM Mobile apps can be deployed to iOS, Android, Windows as well as a Desktop Web Viewer. Apps can be deployed publicly through each platform’s app store, or internally, including via Mobile Device Management (MDM) systems.

For measuring and optimizing your apps, Analytics Essentials and Push Messaging are included with an AEM Mobile license. In addition, the following products, which are part of Adobe Marketing Cloud, work well with AEM Mobile, but require additional licenses:

- Adobe Mobile Analytics.
- Mobile Marketing, including In-App Messaging, and Acquisition Tracking.

See the "App Deployment" and "Integration with Adobe Marketing Cloud" sections of this document for more information.

**Scenario 2: Implementing Third-Party Systems as Content or Data Sources**

**Third Party Systems**

- AEM Mobile On-Demand Services API

**AEM Mobile On-Demand Services Web Portal**

**Project Services:**
- User/Project Management
- App Building
- Content organization
- Navigation definition and design
- Publishing

**App Services:**
- Push Notifications
- Content Distribution
- Content Entitlement

**Cordova Plug-Ins and Developer Tools** to access device capabilities and develop custom functionality

**Deployed Apps**

- iOS, Android, Windows
- Internal Distribution (MDM)
- External Distribution (App stores)
- Web Viewer

**Marketing Cloud Integration**

- Analytics
- Segmented In-app and Push Messaging
- Acquisition Tracking
The rise of content management systems (CMS) within most organizations predates the creation of mobile strategies by some seven years. So it’s safe to assume that many enterprises invested in a CMS, CRM, digital asset management (DAM) system, or product information management system (PIM) well before needing to deliver content to a mobile channel.

Over the years, these third-party content systems have become indispensable, business-critical pieces of infrastructure. Not surprisingly, changes to or outright replacement of a platform to accommodate new technologies such as a mobile channel is often seen as a monumental undertaking not worth the risk.

Knowing that organizations typically have content and assets stored in a variety of third-party content management systems, Adobe incorporated a cloud-hosted architecture into AEM Mobile that enables you to integrate content from these CMS, DAM, PIM, and other systems using the AEM Mobile On-Demand Service APIs. These APIs enable you to use existing third-party integrations developed by Adobe partners or create custom integrations with your third-party content systems.

Capabilities of AEM Mobile On-Demand Services and APIs

AEM Mobile On-Demand Services provides a variety of capabilities to drive your mobile app projects through the web portal (https://aemmobile.adobe.com). The functions noted in blue below can also be programmatically accessed via APIs to facilitate integration with third-party content sources.

<table>
<thead>
<tr>
<th>User / Project Management</th>
<th>Application Building</th>
<th>Content</th>
<th>Layout</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Roles</td>
<td>• iOS</td>
<td>• Ingestion of content&lt;br&gt;- Articles&lt;br&gt;- Banners&lt;br&gt;- Collections&lt;br&gt;- Shared Content (via API only)&lt;br&gt;• Management / organization of content structure and hierarchy&lt;br&gt;• Identifying content as a “product” to enable entitlement or purchasability&lt;br&gt;• Creation, scheduling and management of push notifications</td>
<td>• Design layout templates for app screens using a visual tool&lt;br&gt;• Map content to visual elements (“cards”) in layouts&lt;br&gt;• Redesign and update layouts without app-rebuild</td>
</tr>
<tr>
<td>• User IDs</td>
<td>• Android</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Defining Projects (apps)</td>
<td>• Windows</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Desktop Web Viewer</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What is possible with the APIs?

With the On-Demand Services API, you can create a system to automate:

- Creation and management of content types known as articles, banners, collections and shared content (see "Strategies for Shared Content" section below).
- Management and application of layout templates.
- Creation and management of products.
- Creation, scheduling, and management of push notifications.
- User authentication based on existing user identities.
- Access to content based on user credentials.
Getting Started: Obtaining an API Key

To begin development of a third-party integration with AEM Mobile On-Demand Services API gateway, you will need access to the AEM Mobile On-Demand Services API gateway. To establish a connection to the gateway you must have an API key and secret. Adobe will grant each specific partner or customer a unique API key and secret combination. To obtain an API key and secret combination, please fill out the linked PDF and send back to wwds@adobe.com.

<table>
<thead>
<tr>
<th>API Key Request Form</th>
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</thead>
<tbody>
<tr>
<td><a href="https://helpx.adobe.com/digital-publishing-solution/help/integrating-dps/_jcr_content/main-pars/download/file.res/20160304-AEM%20Mobile%20On-Demand%20Services%20API%20Key%20request%20form.pdf">API Key Request Form</a></td>
</tr>
</tbody>
</table>

Understanding Content Types

There are three primary content types managed in On-Demand Services: collections, banners and articles.

A collection is a grouping of content that appears in your app. It can contain banners, articles and other collections.


A banner is an image that can be used in a collection as a visual display or divider or as a functional element. Tapping a banner can open a web page, navigate elsewhere in your app, send an email or text message, or initiate a phone call.


An article is a fundamental content entity that has defined metadata, imagery and properties associated with it. The actual content for an article is uploaded to On-Demand Services, and can come from a variety of sources (HTML, PDF, InDesign, CMS). Whatever the source, the content must be packaged in the .article format, which is done automatically via export functions in Adobe InDesign, Document Cloud, or the AEM Mobile Packager tool.

Examples of API Usage

Examples A and B below are specific to creating articles from third-party systems. A basic understanding of the content type and the .article format is a necessary foundation for implementation.

For HTML-based content, the .article format consists of:

- HTML page: index.html
- HTML assets (CSS, JS, images, fonts, etc.)
- Manifest file: manifest.xml

The manifest.xml specifies the target HTML file to load and contains a MD5 hash of the files.

**Example A:** You use a CMS to create blog posts for your site.
You want to push that same content to your mobile app.

Integrating the systems means:

Making a connection to deliver content from the CMS to the On-Demand Services, acting as CDN, to distribute that content to the app.

<table>
<thead>
<tr>
<th>CMS:</th>
<th>Create a mobile-friendly template and styles, considering the template used for the web will require adjustments to accommodate device screen sizes and swipe gestures.</th>
</tr>
</thead>
<tbody>
<tr>
<td>APIs:</td>
<td>Kick off a workflow to create the article entity, package CMS content in the .article format and upload to the article entity in On-Demand Services.</td>
</tr>
<tr>
<td>Optional:</td>
<td>Leverage APIs to automate or specify where the CMS article should go, input appropriate metadata and other article properties used in On-Demand Services, and publish.</td>
</tr>
</tbody>
</table>

**Example B:** You use a DAM to process large quantities of images for catalog production.
You want to automate the creation of a catalog to your mobile app.

**Must Do:**

<table>
<thead>
<tr>
<th>CMS:</th>
<th>Create a mobile-friendly HTML template and styles for your catalog 'page’ – whether that means one page with an image and text, or one long scrolling piece of content with multiple images and text.</th>
</tr>
</thead>
<tbody>
<tr>
<td>APIs:</td>
<td>Programmatically define a path for images displayed on your page, sourced from the DAM; text could similarly be programmatically flowed from a database or other content source.</td>
</tr>
</tbody>
</table>

**Optional:**

<table>
<thead>
<tr>
<th>APIs:</th>
<th>Kick off a workflow to create the article entity, package the catalog content in the .article format and upload to the article entity in On-Demand Services.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optional:</td>
<td>Leverage APIs to automate or specify where the CMS article should go, input appropriate metadata and other article properties used in On-Demand Services, and publish.</td>
</tr>
</tbody>
</table>

**Example C:** You want to leverage your existing Customer Relationship Management (CRM) system in your mobile application.

Define what an integration with your CRM system looks like. For example, are you looking to use your CRM as a listing of identified users for authentication? If so, you would use our Entitlement APIs and build a middleware system to leverage your CRM as a user authentication database. To take this integration a step further, you could map individual users or groups of users to specific products to control access to content.
Strategies for Shared Content

Whether it is CSS, Fonts, or JavaScript libraries, in many cases AEM Mobile articles may re-use the same supporting assets over and over again. When this is the case, it isn’t necessary for these assets to be bundled directly with the article package, as doing so would cause the assets to be downloaded over and over again by the end user when queuing up the article.

Using Shared Content ("sc_one" in depiction below) for common assets provides a more streamlined approach for management of these resources and reduces download times for end-users accessing articles.

For more information on working with Shared Content see: https://helpx.adobe.com/digital-publishing-solution/help/shared-content-api.html

Documentation / Samples

The APIs are REST-based APIs and can be implemented with any programming language. Adobe has provided a reference using the PHP language*.

Extensive supporting documentation and developer samples to assist in third-party system integration with AEM Mobile is available on our help pages at the following links:

<table>
<thead>
<tr>
<th>Integrating third-party systems with AEM Mobile</th>
<th>Using On-Demand Services API to access collection and article details</th>
</tr>
</thead>
<tbody>
<tr>
<td>* On-Demand Services SDK for PHP</td>
<td>AEM Mobile API Key usage</td>
</tr>
</tbody>
</table>
Examples of existing Third-Party Integrations

Here are two examples of existing third-party integrations between a CMS and On-Demand Services:

<table>
<thead>
<tr>
<th>CMS</th>
<th>Integration URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wordpress</td>
<td><a href="http://digitalpublishing.smny.us">http://digitalpublishing.smny.us</a></td>
</tr>
<tr>
<td>Drupal</td>
<td><a href="http://www.dpci.com/dpsbridge">http://www.dpci.com/dpsbridge</a></td>
</tr>
</tbody>
</table>

One important caveat to note here is that third-party implementations are not maintained or managed by Adobe. So we are not responsible for their performance. Questions or comments about these integrations should be directed to the partners that built them.

Adobe's own CMS, Experience Manager, is yet another example of an integration connecting a CMS to On-Demand Services using the APIs.

<table>
<thead>
<tr>
<th>CMS</th>
<th>Integration Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>AEM</td>
<td>See white paper on using Experience Manager as a content source (“Using Experience Manager as the Content Management System”).</td>
</tr>
</tbody>
</table>

App Creation and Management Workflow

Creating and managing an AEM Mobile enterprise app entails using On-Demand Services to build an app and design its basic interface, and then managing the app's content updates, messaging, and analytics. You could choose to bypass managing the app content and/or messaging from On-Demand Services by creating your own content management and workflows using the APIs.

![App Creation and Management Workflow Diagram](image-url)
Required Skills and Staff

The following roles and underlying skills are needed to create and manage an AEM Mobile app:

<table>
<thead>
<tr>
<th>Designers:</th>
<th>Developers:</th>
<th>Content Creators/Managers/Marketers:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• User Experience Design (for app experience)</td>
<td>• HTML/JavaScript/CSS (to extend the app's functionality and leverage Cordova plug-ins)</td>
<td>• Content Authoring and Management</td>
</tr>
<tr>
<td>• Web/Graphic Design (for content templates)</td>
<td>• Back-end Development (to integrate with other enterprise systems or entitlement services)</td>
<td>• Direct Marketing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Business Analysis</td>
</tr>
</tbody>
</table>

These resource and skill requirements depend on the nature of your app. The simplest app might not require custom workflow or back-end development. A single person may perform activities across more than one of the above skill sets.

App Creation Workflow

Anyone can use the simple app building wizard in the On-Demand Services to generate pre-built native apps for iOS, Android, and/or Windows. Please note that:

- Apps are branded with icons and splash screen graphics.
- Apps require appropriate platform-specific certificates for signing the apps prior to installing on devices, using a provided signing tool.

Designing cards & layouts in On-Demand Services

The app experience is determined by the navigation screens and content delivered to the app. Please note that:

- Designers can create app navigation screens using the WYSIWYG Layout Tools.
  - Alternatively, custom app navigation screens can be created using HTML/JavaScript/CSS.
Developers can extend the app via HTML/JavaScript/CSS:

- Dynamic/interactive app screens.
- Native device capabilities via Cordova APIs.

Developers can develop custom and dynamic article templates within AEM. They can:

- Create custom templates to address specific devices and/or to include specific business logic.
- Create custom components to be included into screen templates.

Developers can build custom workflows and logic within AEM to manage app updates automatically.

Back-end developers can build Integrations with enterprise systems such as ERP, CRM, or other systems.

**Content Creation and App Management Workflow**

Marketers or content creators can create and deliver content into the app using template-based workflows, including:

- Templates provided in a third-party Content Management System.
- On-Demand Services enables efficient app updates via a global Content Delivery Network (CDN).

Marketers can send in-app messages and push notifications to app users to notify and engage users, and pull in users who haven’t opened the app in some time.

**Analysis and Iteration Workflow**

Marketers or business analysts can glean app usage insights from Adobe Analytics. With this solution:

- App content/UI/logic/functionality can be iteratively updated.
- Content and app UI updates do NOT require a new build of the app, and therefore do not require resubmission to app store review processes.

**Extend Functionality/Access Device Features Using Cordova**

Apache Cordova is an open-source framework for leveraging and extending mobile device capabilities through the use of simple HTML, CSS, and JavaScript. A host of Cordova core plug-ins can be activated or called from AEM Mobile apps using the appropriate JavaScript functions.
Core plug-ins embedded in AEM Mobile applications include:

<table>
<thead>
<tr>
<th>Core Plug-in</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>File Access</td>
<td>Allows read/write access to files on device</td>
</tr>
<tr>
<td>File Transfer</td>
<td>Provides functionality to upload and download files</td>
</tr>
<tr>
<td>Notification Dialogs</td>
<td>Provides access to native dialog UI elements</td>
</tr>
<tr>
<td>Network Information</td>
<td>Provides information about device cellular and wifi connections</td>
</tr>
<tr>
<td>Geolocation</td>
<td>Provides info about device location</td>
</tr>
<tr>
<td>Camera</td>
<td>Access the device's camera</td>
</tr>
<tr>
<td>Contacts</td>
<td>Access the device's contacts</td>
</tr>
<tr>
<td>Device Info</td>
<td>Describes the device's hardware and software</td>
</tr>
<tr>
<td>Device Motion</td>
<td>Provides access to the device motion sensor</td>
</tr>
<tr>
<td>Device Orientation</td>
<td>Provides access to the compass</td>
</tr>
<tr>
<td>Media</td>
<td>Provides the ability to record and play back audio files on a device</td>
</tr>
<tr>
<td>Media Capture</td>
<td>Provides access to device audio, image and video capture capabilities</td>
</tr>
<tr>
<td>Globalization</td>
<td>Provides access to operations specific to the user locale, language, and timezone</td>
</tr>
<tr>
<td>Vibration</td>
<td>Access to vibrate the device</td>
</tr>
<tr>
<td>WKWebView</td>
<td>Uses WKWebView instead of UIWebView for HTML Articles and Web Overlays on iOS9</td>
</tr>
</tbody>
</table>

These core plug-ins are available to use in any of your AEM Mobile applications. To take advantage of these plug-ins you must first enable them on the app settings page for your iOS, Android, or Windows application.


Beyond the standard set of core Cordova plug-ins, there is an extensive developer community focused on creating Cordova plug-ins. Additional plug-ins built for platforms such as PhoneGap, or Ionic may also be compatible with AEM Mobile applications, as these platforms are also based on the Cordova framework.

**App Previewing and Deployment**

Once you start flowing content into On-Demand Services and designing the app interface, you can preview the end-user experience using the AEM Preflight tool. AEM Preflight is a publicly available app downloadable from app stores that allows you to test all functionality and flow of your app.

When you are ready to go live, you build your app using On-Demand Services, you publish your content, and you deploy your app. Content and app interface updates can be made to your deployed app without requiring app rebuild and redeployment.
The AEM Preflight app for each platform can be found at the following links:

<table>
<thead>
<tr>
<th>Platform</th>
<th>Link</th>
</tr>
</thead>
</table>

Details for building and distributing apps for each target platform can be found at the following links:

<table>
<thead>
<tr>
<th>Platform</th>
<th>Link</th>
</tr>
</thead>
</table>

**Additional App Services**

In addition to the robust range of services described to manage content, build, design, and deploy apps, AEM Mobile also provides the following:

**Global Content Distribution Network**

The AEM Mobile Delivery Service hosts your content for distribution to your end users. When an end user downloads content, the content is fetched from edge servers on a content delivery network. For information on this and other related topics, see:

<table>
<thead>
<tr>
<th>Service</th>
<th>Link</th>
</tr>
</thead>
</table>

**Notifications Service**

Push Notifications can be sent to the devices of all users that have installed your app, or targeted to a specific set of users. These messages do not require users to currently be running your app. Push notifications can trigger content downloads or display text notifications to users.

Once configured, a non-technical user can compose, target, and send push notifications through the AEM Mobile web portal.

Authentication Integration

If you want to add a sign-in function to your app, you can implement and control the authentication process. The custom authentication sign-in experience appears in the app as a full-screen web view that you design. We support the following protocols:

- SAML 2.0, including MFA/OKTA support
- OAuth 2.0, including support for social sharing logins such as Facebook or Gmail

For example, you can allow your sales representatives to login to the app using their email and password plus OKTA verification (SAML 2.0). Or, you could allow customers to log in to the app using their Gmail or Facebook account (OAuth 2.0). The app obtains authorization tokens from these identity providers, which you can use in your entitlement service to grant users access to content.

AEM Mobile also provides support for Generic identity providers, including a setAuthToken API. You can take advantage of custom authentication without having to use SAML or OAuth. Generic identity providers allow two alternate authentication use cases, including:

- Providing a custom UI such as an HTML form instead of using the standard user name and password prompt
- Building a sign-in experience within an article rather than through the standard authentication process.

These enhancements let you expand your authentication capabilities, such as including multiple authentication methods within the same app.

For more information, see:


Entitlement Support

By setting up your own entitlement service for your app, you can allow authenticated users to become entitled to specific content. Adobe has provided example code for a basic entitlement service. Instructions for editing this sample code and uploading it to your server are found at:

| Set up an entitlement service | https://helpx.adobe.com/digital-publishing-solution/help/direct-entitlement.html |

Integration with Adobe Marketing Cloud

AEM Mobile integrates with Adobe Marketing Cloud to add powerful analysis, marketing, and messaging capabilities to your apps. Analytics Essentials is included with all AEM Mobile contracts. In-app messaging and acquisition tracking are provided through the Mobile Marketing SDK and require an additional purchase through the Adobe Marketing Cloud.
Analytics

Analytics in AEM Mobile apps is provided by Adobe Marketing Cloud. You can access these integrated analytics tools as follows:

- If your company has an Adobe Analytics account, you can specify that account information in Master Settings (requires a Master Admin account). Doing so links your projects to the Adobe Analytics account.
- If you do not have an Adobe Analytics account, you can request a complimentary Analytics Essentials account through Master Settings.

The capabilities of full Adobe Analytics enable sophisticated analysis of your apps, including the paths that users take through your apps, and even the behavior of different groups of users over time.
Retention analysis using a Cohort Report shows how likely it is for users that first installed your app during different time periods to return to the app over time. With this data, you can see how changes to the app and content over time impact users’ engagement with the app.

See more: https://helpx.adobe.com/digital-publishing-solution/help/analytics.html

You can also purchase additional Marketing Cloud capabilities such as In-App Messaging and Acquisition tracking.

**Push Notifications**

The ability to send push messages from the Marketing Cloud is complimentary to the Notifications Service, which lets you use the On-Demand Services Portal to send push notifications to app users. Use the Adobe Mobile Marketing Cloud to send push messages to both iOS and Android app users. Push messages appear outside of your app, making them useful for re-engaging passive users or conveying time-specific and location-specific information. Marketing Cloud-based push messages use Google Cloud Messaging (GCM) for Android apps and Apple Push Notification Service (APNS) for iOS apps. You can target push messages to users by specifying Analytics segments or custom segments.


**In-App Messaging**

By leveraging the capabilities of the Mobile Services SDK non-technical users can easily create, manage, publish, and measure custom messages that appear within AEM Mobile apps. You can specify sophisticated triggers and targeting for in-app messages, allowing you to offer targeted product suggestions, cross-promote related apps, or serve up relevant content.


![Adobe Analytics Cohort Report](image-url)
Acquisition Tracking

For publicly available apps created with AEM Mobile, Acquisition Tracking can help you understand exactly which campaigns are driving the most app store downloads, and help you understand the effectiveness of your overall user acquisition efforts.


Conclusion

With the widespread use of content management systems, CRMs, DAMs, and PIMs in many organizations, the ability to integrate these systems with AEM Mobile can deliver obvious advantages such as time savings, increased productivity, and other economic benefits. AEM Mobile’s On-Demand Services API gives you this ability.

Using the On-Demand Services API as described in this paper allows you to integrate your non-AEM content management systems with AEM Mobile to tap existing data for your AEM Mobile enterprise apps. The On-Demand Services API gives you the flexibility to leverage existing third-party data integrations or create custom integrations. In either case, it is important to follow the procedures and recommendations outlined in this document. These guidelines will help ensure that you make the most of AEM Mobile’s powerful tools for leveraging custom-integrated third-party data.

If you have additional questions about this deployment path, refer to the detailed documentation and videos cited throughout this document or consult with your Adobe Representative or Adobe Solution Partner.