



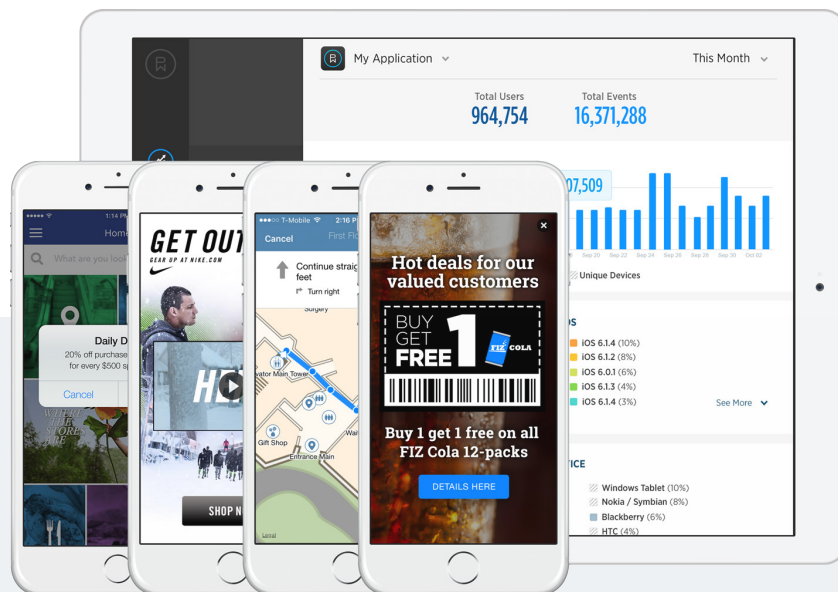
THE PHUNWARE PLATFORM

Standardize Mobile Experiences on the Phunware Platform

Phunware supports every stage of mobile application lifecycle management.

Create the ideal mobile application for your business, build and monetize your app's audience, and create hyper-personalized mobile experiences with our exclusive data.

Whether you're just getting started or you're ready for the next stage of your mobile strategy, Phunware's platform can enrich your app. Our "off-the-shelf" solutions allow you to launch a new app quickly with our brandable industry-specific app solutions, and for those who prefer to "do-it-yourself" choose one or more of our platform modules to create or modify an existing app.



INDUSTRY-SPECIFIC MOBILE SOLUTIONS Licensable and Ready-for-Market

The Phunware Application Framework enables fast and easy native app deployment instead of building from scratch. By leveraging pre-built, fully tested SDKs and modules, the Phunware Application Framework offers off-the-shelf solutions for various industries.



RESIDENTIAL

Differentiate the resident experience with on-demand lifestyle management.



RETAIL

Elevate the shopper experience by impacting the shopper journey and improving store operations.



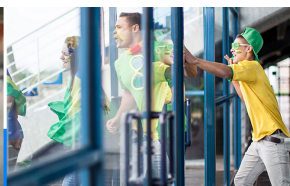
HEALTHCARE

Improve the patient experience and streamline business workflows at hospitals and medical campuses.



AVIATION

Drive non-aeronautical revenue while enhancing the passenger experience.



LIVE VENUES

Create the ultimate omni-channel fan experience for your anytime / anywhere users including stadiums and arenas.

Additional brandable mobile solution venues: casinos, commercial facilities, corporate campuses, museums, hotels and resorts

THE PHUNWARE PLATFORM

Phunware's feature-rich mobile platform create immersive mobile experiences for Apple iOS and Android devices and our robust features can be integrated a la carte as SDKs.



LOCATION-BASED SERVICES

Expand the power of your app with location technology and bring your venue to life.



MARKETING AUTOMATION

Use users' location data to personalize campaigns and maximize revenue opportunities.



CONTENT MANAGEMENT

Easily manage app content from anywhere—without republishing to the app marketplace.



ANALYTICS

Connect the dots between app users, locations, devices, promotions and more.



AUDIENCE MONETIZATION

Monetize an app through branded experiences and contextual ad formats.



TOOLS, UTILITIES AND SCRIPTS

Integrate with our partners to enhance your app with capabilities such as smart locks, EHRs, and loyalty programs.

BENEFITS OF THE PHUNWARE PLATFORM

- Cloud-based user engagement platform provides enterprise-class reliability and scalability
- Updates are made in the cloud and automatically pushed to users without requiring the applications to be republished in the app marketplace
- Quick time to market and regular feature releases
- Easy-to-use MaaS Portal allows even non-technical users to manage platform experiences through the web without extensive training, coding experience or dedicated support

LOCATION-BASED SERVICES

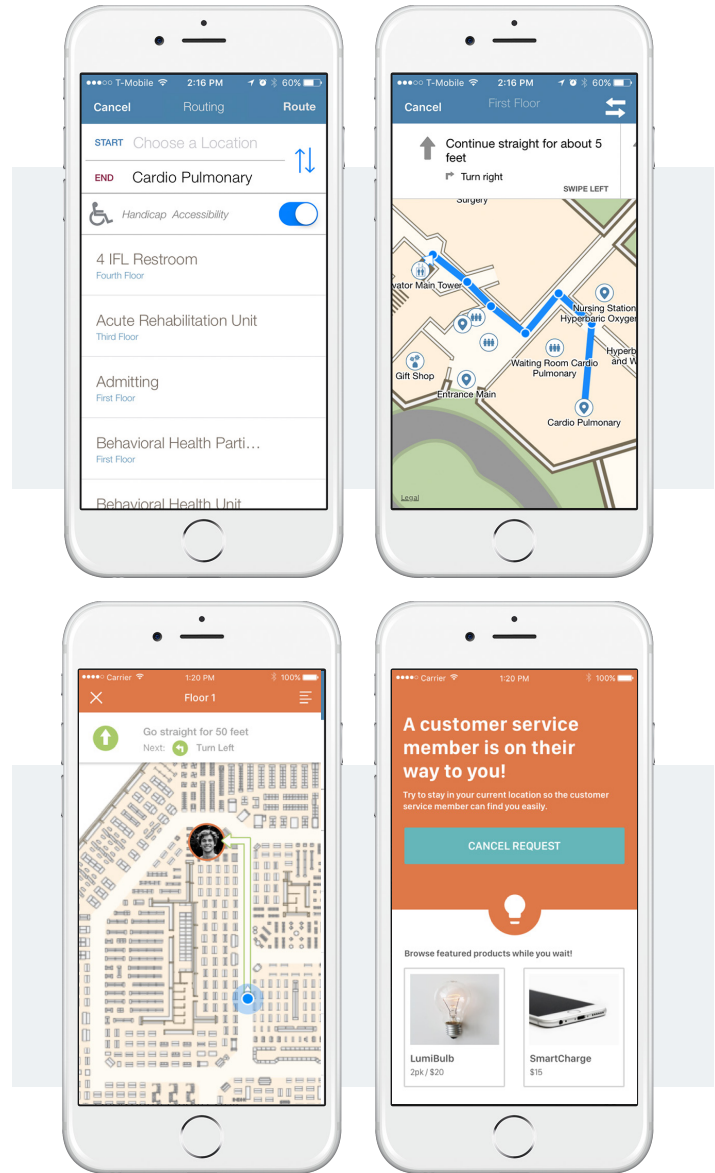
Bring your venue to life with interactive mapping and navigation that guides app users indoors with optimal routing to their destination.

Includes

- Mapping SDK for iOS and Android
- Location SDK for iOS and Android
- Content Management SDK for iOS and Android
- Analytics SDK for iOS and Android
- MaaS Portal
 - Mapping Portal
 - Content Management Portal
 - Analytics Portal

Capabilities

- Indoor routing and navigation: Leverage users' location in real time to enable navigation throughout your facility with static or dynamic wayfinding
 - Static wayfinding: Includes highlighted map routes and step-by-step directions to points of interest
 - Dynamic wayfinding: Includes interactive maps that route users to their locations in real-time by using their actual position and movements
- Customizable points of interest (POI): Create, configure and display POIs—such as ATMs and restroom facilities—making your venue map more helpful and valuable
- Location sharing: Empower users to share, view and route to each other's locations from within your venue
- Real time map management: Phunware maps are easy to edit, manage and update on the fly, directly within the cloud
- Hardware agnostic: Phunware's Location-Based Services module is hardware-agnostic. We work with multiple hardware providers and support location technologies including Wi-Fi, physical and virtual BLE beacons and even VLC (visual light communications) via LED lighting



Use Cases

- Healthcare: Minimize revenue loss due to missed appointments by guiding patients directly to their appointment location within the hospital campus
- Retail: Help associates navigate to aisles and shelves to stock inventory as soon as it arrives from the loading dock
- Service: Receive customers' location and navigate quickly to customers requesting assistance

Full Feature List

- MaaS Portal Access: Access the MaaS Web portal to configure location-based services details and functions
- Venues: Configure a venue, the top level of the Mapping Hierarchy. Venues must have Campuses, Buildings, and Floors. Each Venue is assigned to one or more apps for the Org.
- Campuses: Configure a campus, the second level of the Mapping Hierarchy. Campuses are the children of Venues and the parents of Buildings
- Buildings: Configure a building, the third level of the Mapping Hierarchy. Buildings are the children of Campuses and the parents of Floors.
- Floors: Configure floors, the bottom level of the Mapping Hierarchy. Each floor has one map where you configure POIs and Routes
- Map Assets: Upload and store floor detail maps in PDF and SVG file formats. Users can configure a map's position relative to the real world
- Routes: Create navigable routes between locations on a map used in wayfinding
- Points of Interest (POIs): Create specified locations on a map that contain detail information such as image, label, and description
- Publishing: Publish a draft venue for migrating changes to the live version of the venue
- Render Map: Display a map (floor) in a native application as it is configured in the MaaS Portal
- Native Map Hierarchy: Display map hierarchy (campus, buildings, floors) leveraged by the native application as it is defined in the MaaS Portal
- Route Between Points of Interest: Create navigable route between two points of interest
- Dynamic User Position: Display blue dot on the map representing the device's current location
- Route From Current Location: Retrieve a navigable route from their current position to a desired point of interest
- Mapping API: Includes REST API allowing remote clients to manage resources associated with mapping, including venues, campuses, buildings, floors, points of interest, segments and routes, including security and protocols

- Mars API: Includes REST API allowing location hardware providers to publish updates to Phunware
- Analytics: Includes system for capturing actions associated with mapping, wayfinding, and navigation including a dashboard within MaaS and may be expanded with custom tagging

MOBILE MARKETING AUTOMATION

Unleash the power of location and context to personalize your mobile marketing strategy.

Includes

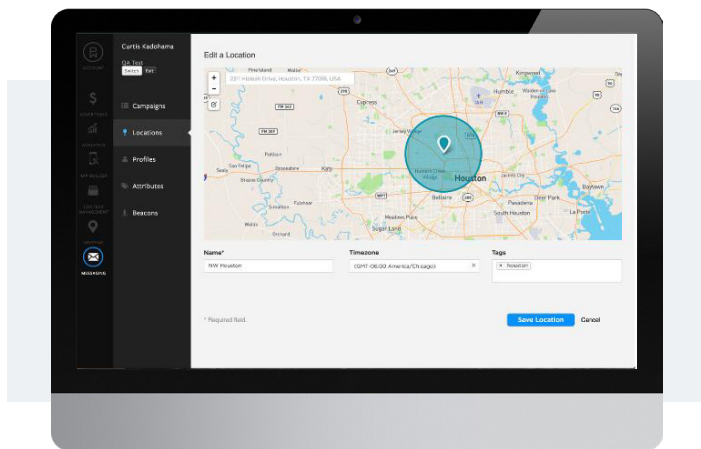
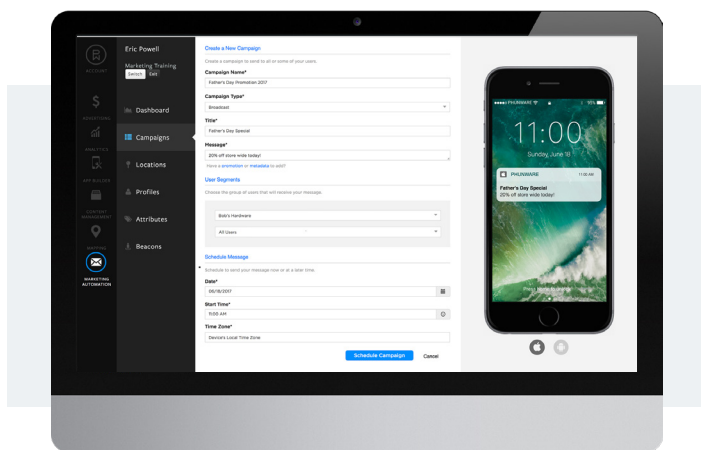
- Mobile Engagement SDK for iOS and Android
- Content Management SDK for iOS and Android
- Analytics SDK for iOS and Android
- MaaS Portal
 - Campaign Management Portal
 - Content Management Portal
 - Analytics Portal

Capabilities

- License alerts and notifications by itself to engage users on-demand, or take your strategy to the next level by adding marketing automation for contextually-triggered messaging
- Broadcast campaigns: Reach your whole user base with messages scheduled at a predetermined time
- Geo-fence campaigns: Reach app users when they enter or exit geofenced locations (5-50,000 meters in diameter)
- Beacon campaigns: Target audiences at a more granular level. Messages are sent to users who pass into, out of, or stay within range of tagged beacons.
- Campaign management portal: Create and manage campaigns, reporting, targeting, geofence locations and beacon configurations

Use Cases

- Geo-conquesting: Draw geo-fences at competitor stores and target messaging to reach users when they enter or exit a competitor store
- Live event venues: Enhance the fan experience by rewarding season ticket holders with deals on merchandise as they enter the gift shop
- Retail: Integrate with your inventory management system for even more targeted promotions



Full Feature List

- Native Mobile Engagement SDKs: Includes native SDKs for both iOS and Android with functionality to receive notifications and trigger location-based events for proximity and geofence messaging
- Lock-Screen Display: Display native notifications when user device is in the lockscreen
- In-app Display: Display native notification while user is in application
- MaaS Portal Access: Access the MaaS Portal for configuring details and functions of Mobile Engagement services including campaigns, segments and attributes, geofences, and beacon data
- Broadcast Messaging: Send messages from the Phunware server (MaaS) to an individual or group of users based on a scheduled event (including “send now”). Campaigns are authored completely within the MaaS portal and can be delivered to groups based on meta-data stored about the user or device
- Geofence Messaging: Send messages to a user device based on entering or exiting a defined physical area defined in the MaaS portal using lat/long points (geofence). Campaigns are authored in the MaaS portal and delivered directly to the user device that entered or exited the geofence
- Beacon Messaging: Send messages to a user device based on proximity to a defined point (based on a BLE beacon). Campaigns are authored in the MaaS portal and delivered directly to the user device that reaches a certain distance from that defined point (either moving closer or farther away)
- Campaigns: Create campaigns that include a message, recipients, and the business rules used to deliver the message
- Multi time zone support
- Profiles and Attributes: Leverage device profiles that store user or device information to create campaigns. Custom attributes can store information based on preferences, usage, or other details that might be used to identify individuals or groups. Setting attributes may come from in-app events (e.g., manually selecting subscription preferences) or through external system integration via APIs (e.g., an external CRM system)

Reach up to:

- 50 million active users per campaign
- 1 million messages per second
- 50,000 device registrations per minute

- **Locations:** Define geofences in the MaaS portal that represent the physical area leveraged in geofence messaging
- **Beacons:** Store details in the MaaS portal about the beacons used in proximity messaging
- **External System Integration:** Includes API access for integrating other platforms, systems, and data. External systems may access or provide campaign, geofence, or beacon data and the content to be delivered.
- **Analytics:** Includes system for capturing messaging campaigns including a dashboard within MaaS. Metrics may be expanded with custom tagging

Use Cases

- **Residential:** Add an extra image to the app's home screen carousel to promote an upcoming community event or a new property amenity
- **Retail:** Capture how much users are engaging with the running shoe category on their app by establishing parameters for engagement levels within the content management portal (Users who interact with this content beyond a certain threshold might then be classified as "Running Enthusiast" and targeted with content or sales messages that specifically match their interests.)

CONTENT MANAGEMENT

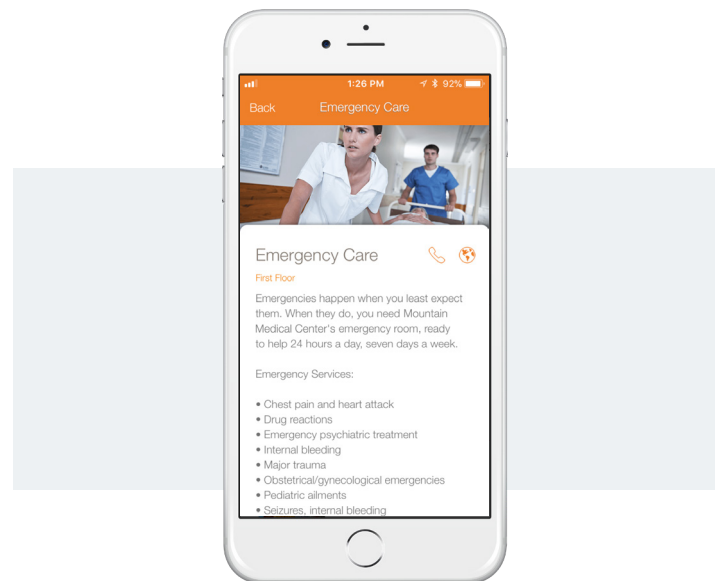
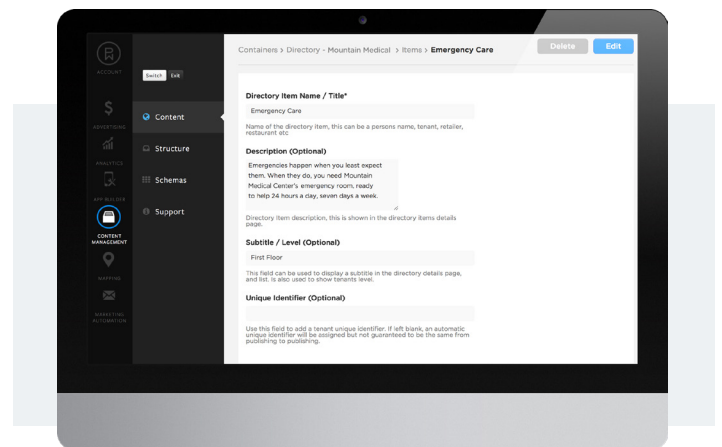
Spend time building your brand—not unnecessary mobile infrastructure.

Includes

- Content Management SDK for iOS and Android
- Analytics SDK for iOS and Android
- Maas Portal
 - Content Management Portal
 - Analytics Portal

Capabilities

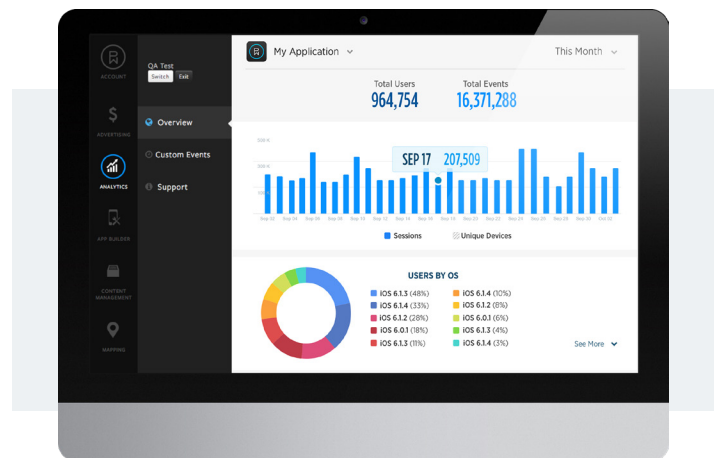
- Deploy updates and new content through the cloud—no client updates or app store re-submissions required
- Create and manage content across multiple platforms from one user-friendly web portal.
- Highly scalable AWS S3 content storage (private S3 bucket optional) and CloudFront CDN integration
- Easily create custom data structures with support for Single Line Text, Multi Line Text, Single Line HTML, Multi Line HTML, Single Select, Multi Select, Date, Time, Boolean, File, Number, Integer, Decimal and Object ID
- Support for optional key value pair metadata for ultimate flexibility



Full Feature List

- Custom data repositories: Configure schemas, create structures around the schemas, and enter content into those structures
 - Content: Add data that populates your application pages
 - Nested content: Create content that falls under another type of content or is logically on a lower level in a hierarchy
 - Schemas: Add data or content group that identifies the content to be displayed in your app and configure how it is stored in the database
 - Structures: Create data sets that consists of a name, field name, one or more schema structures and a type
 - Containers: Create a collection of structures to organize content and data displayed in your app
- External System Integration: Includes API access for integrating other platforms, systems, and data.
- Bulk or batch import and export: Upload your content from a .csv file to an established array structure with one record. To make changes, download the structure content to a .csv file, make your changes on the spreadsheet, and upload the entire data set again.
- Multi-language support

- Discover what leads users to your app and which features they value
- Understand how much time users spend in your app and when they use it most (or least)
- Evaluate the success of your mobile initiatives and how well you retain users
- All metrics are available in the following timeframes: Today (current day), yesterday, last 7 days, current month to date, last month, last 3 months, and all time (since app launch)



ANALYTICS

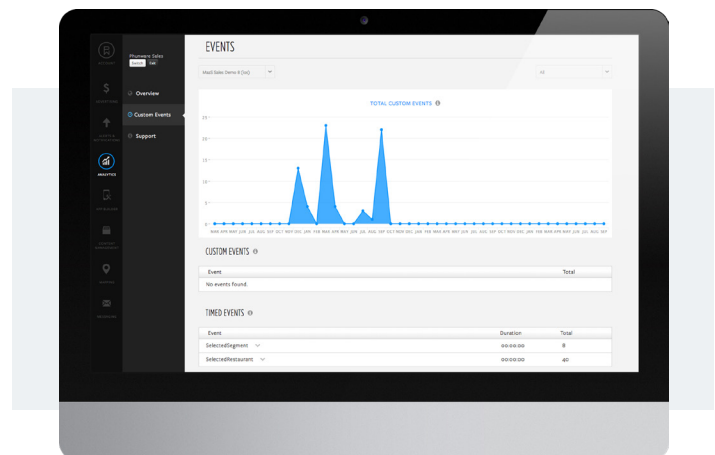
Increase engagement and monetization opportunities with a deep understanding of your mobile audience.

Includes

- Analytics SDK for iOS and Android
- Analytics Portal

Capabilities

- Track app engagement and conversion metrics related to unique devices, app session count and duration, events, actions and more.
- Create custom analytics that enable you to track relevant actions to optimize user experience and conversions



Use Cases

- Retail: To drive more foot traffic, retailers could identify when mobile app usage is highest (app sessions per hour and/or day) and send marketing automation promotions at peak usage times
- Healthcare: To understand how patients and visitors search for directions within an indoor wayfinding app, hospitals could compare the sources of “Routing Start” request events over the past month (from the app’s map, from the directory, etc.)

Full Feature List

- Total Unique Devices: See how many times your app has been accessed by different devices
- Total Sessions Per Hour: See when users are using your app over the course of a day
- Unique Devices by Make/Model: See the breakdown of unique devices that have used your app version within the selected timeframe (Ex: iPhone6, iPhone 7, iPad Mini)
- Unique Devices By OS: See the operating system (OS) breakdown of unique devices that have used your app within the selected timeframe (Ex: iOS 5, iOS 6, iOS 7)
- Unique Devices By Carrier: See carrier breakdown of unique devices that have used your selected app version within the selected timeframe (Ex: Wi-Fi, At&T, Sprint, Verizon, T-Mobile)
- Custom Events: Ability to set an app-specific event type defined by a customer to measure a configured activity in the app. Total Custom Events shows you an overview of the number of custom events (that you have configured) that have been triggered in the the selected time frame.
- Timed Events: Ability to set up custom events related to time. (Ex: how long users spend on a page or in the app.) See the median duration of timed events.

AUDIENCE MONETIZATION

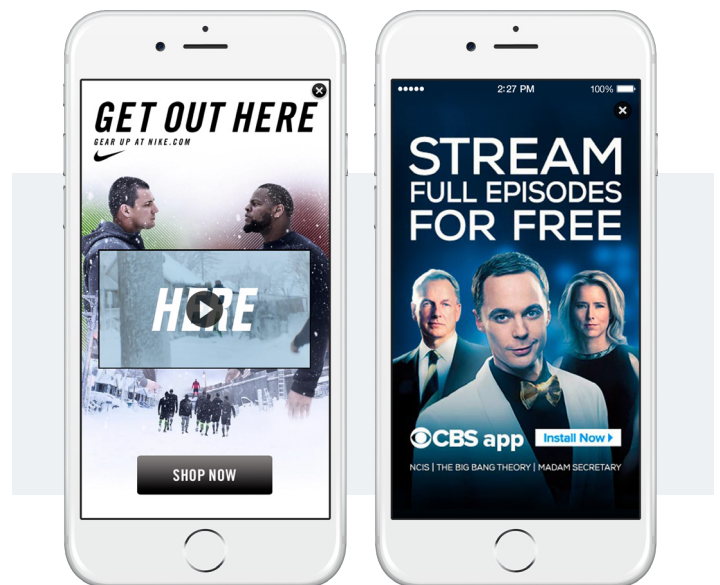
Monetize your app with innovative ad experiences.

Includes

- Advertising SDK for iOS and Android
- Campaign management portal

Capabilities

- Premium, direct-sold demand from Phunware Fortune 500 advertising partners
- Create engaging experiences with video, interstitial, banner, native and rewarded video ad formats without compromising the user experience or interface
- Connect to private marketplaces, and get full integration support for your own demand, creating even more monetization options
- Real-time, customizable reporting and analytics for each of your inventory item
- Brand-level filtering gives you full control of which advertisers can display ads on your apps





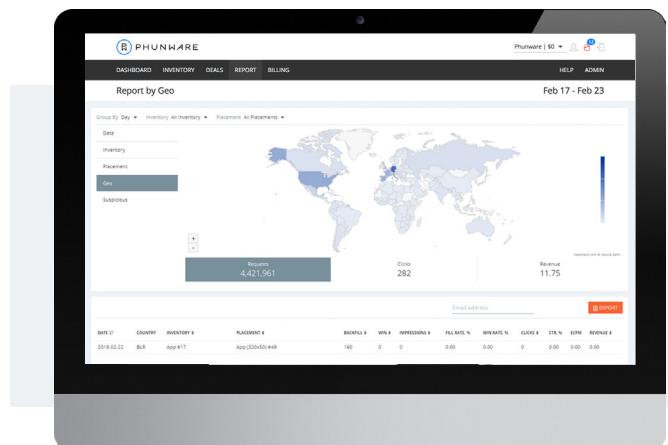
Use Cases

- Offer a freemium app model and still monetize your users outside of in-app purchases
- Use mobile-optimized bite-sized surveys to keep monetizing your user data even after they leave your app

Full Feature List

- Create and manage ad units
- Create video, interstitial, rewarded video, native, banner placements in dashboard
- Display banner, interstitial, native method, video or rewarded video with callbacks
- Generate tags for use in most major mediation platforms
- Set up automatic payments or request payment
- View near real-time reporting on requests, impressions, earnings, and calculated fields (CTR, eCPM, fill rate) by date range
- Set blocked or whitelisted ad categories by placement
- Set price floors
- Block ads from specific brands and domains per placement

- Create rewarded video placements
- Set up s2s Postback URLs and passthrough macros for ad completes
- Activate or deactivate placements and inventory
- Set custom ad sizes
- Option to toggle dynamic yield optimization
- Create PMPs and organize direct deals with advertisers
- Preload Ad method (precaching)
- Includes companion Ad support for video (MRAID and Static)
- Includes close button for skippable or completed video
- Includes close button on Interstitial
- Single Line Install - cocoapods (iOS) and Gradle/Maven/JCenter (Android)
- Send GDPR parameters to notify advertisers of user consent
- Send additional optional parameters for better targeting and revenue



LEARN MORE!

[PHUNWARE.COM/PLATFORM](https://phunware.com/platform)

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