

Marathon Vended Laundry Solutions

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Abstract

This whitepaper describes the vended laundry software developed by Marathon Laundry Machines, Inc. Vended laundry includes payment systems, resource management, and authorization structures for allowing people to do laundry on machines that don't belong to them, in laundromats, dorms, apartments, etc.

Vended Laundry

What is Vended Laundry?

Vended laundry is an industry term referring to people doing their laundry on machines that they don't own, in a Laundromat, shared living facility, boarding school, military, or other situations where payment is typically required. Vended laundry is distinguished from "on-premise" laundry (OPL) where the laundry machines are typically owned by a business and employees do laundry for the company, such as a hotel or gym or restaurant which may generate linens and other laundry needs. Vended laundry used to be called "coin laundry" because most vending machines (laundry and otherwise) had coin slot mechanisms. This is no longer true, and various forms of payment are used, but the concept is still the same.

Marathon is uniquely positioned to provide sophisticated vended laundry solutions, with the first smart, interactive commercial-grade laundry machine.



Marathon Vended Laundry Overview

Authorization

At the heart of vended laundry is the concept of *Authorization* — permission to use the machine to do laundry. Traditionally this has been accomplished with a payment system such as coin-operated machines or credit card swipes.

- Pay per use (coin / card payment systems)
- Account model (pre-authorized, “on account”)
- Promotions (customer loyalty, holidays, etc)
- Special authorization (customer service, managers, etc)

Networked Machines

Marathon Laundry Machines are networked, in groups or individually. A machine located in a public or semi-public, shared space may require authorization to use.

Note that an authorization code can be used on any Marathon machine, unlike coin or card systems where the machine must be authorized directly before use.

Users

Once a machine is authorized, the user will have access to its status via mobile app, can receive alerts, remotely start/stop the machine, and monitor progress.

- Remote tracking
- Loyalty programs (repeat use)
- Favorite machines
- Reservations (lock a machine before use)

Authorization

There are two basic concepts in Marathon Vended Laundry authorization, either of which allows a user to do laundry.

Single-Use

The first model is the traditional “pay per use” model, in which each load of laundry is individually authorized.

Single-use authorization is accomplished by generating an *Authorization Code* which is then entered on the machine to use it. This model is similar to coin-operated or card systems where each load is individually authorized.

Authorization Codes

Authorization codes are similar to those used by airlines for reservations, but are shorter (4 characters) because they have more limited scope. Letters are used instead of numbers because there are more possible codes (26 choices for each position instead of 10). An authorization code looks like this:

KEJA
PMAL

Auth Code Generation

Authorization Codes can be generated in a variety of ways, but all must be validated by the Marathon server before they can be used. This requires both the key generator and the machine to be connected to the internet.

Mobile App: Auth Codes can be generated by the user directly on a mobile app, either by direct payment (credit card, Apple Pay, etc), or through membership in a program such as a homeowner’s association or a student program.

On-Site Vending: Coin- or card-operated vending machines are currently under development that will accept traditional payment methods and generate per-use codes. These vending machines are a bit like those that vend tokens at a car wash, except that they are internet-connected and validate the generated tokens through the Marathon server.

Point of Sale: Attendants can take payment in any form and generate codes directly using a web-based app.

Administrative: Laundromat owners, building managers, and other authorized people can generate single-use Auth Codes through the administration tools. This is useful for customer service, maintenance, and other scenarios.

Membership / Subscription

The second form of authorization is not based on authorization codes, but by authenticating users themselves as having permission to use the machine based on a pre-existing relationship like being a health club member, a student at a university, or a tenant in an apartment building.

User authentication matches a given user to a machine or set of machines that has been pre-authorized for use — a health club membership might allow you to do laundry at any of several locations for that health club, but not at the local university.

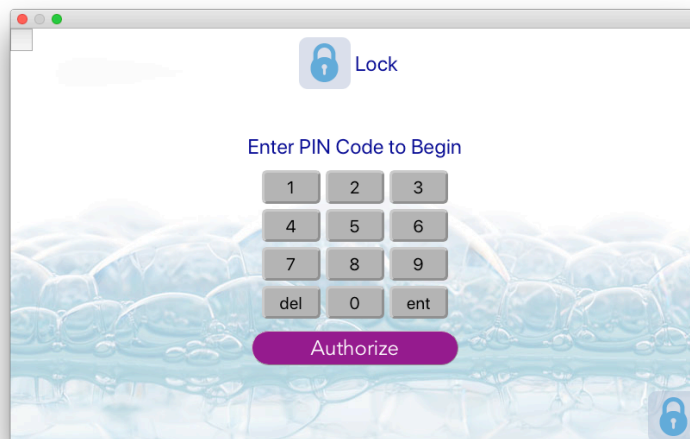
User Login

The simplest model for membership-based authorization is for the user to directly log in to a Marathon machine. This is accomplished using a familiar but simpler version of a “login name” that is always the same, and a “passcode” that can be changed occasionally, like a PIN number for a bank card.

Login Name: The format of the login name for authorization can be determined by the administrator, to accommodate practices already in place. For example, a room number in an apartment building or dorm or hotel could be used, or a short alphanumeric [unique] identifier generated by the administrator or even the user. It is encouraged to keep these relatively short, 4-6 characters, but can be of any length.

Passcode: passcodes are also flexible but for ease of use, a 4-digit PIN number or 4-character “airline code” is encouraged.

Once entered into the touchscreen, login/passcode credentials are verified on the Marathon server (by the Marathon machine itself) to authenticate the user for that particular machine.



Machine Use

Once a machine is authorized for use by a given user, the machine is ready to do laundry. The user “owns” this machine for the duration of the load of laundry, and has privileges to see the status, start/stop the machine, and otherwise interact with it. These privileges expire when the laundry is finished, so you can’t see what the next user is doing.

Settings

Settings can be established by a user for the duration of the laundry session. If the user is on a membership/subscription model, these settings will be retained in their online account and can be accessed on other machines in the Marathon universe, once logged in again. So if you logged in to Machine 5 in your dorm yesterday, but you are logged in to Machine 7 today, your settings will be visible on Machine 7.

For single-use authorization, settings are not saved across sessions or different users.

Tracking & Status

When a load of laundry is in session, the authorized user can see the status remotely via mobile app, including detailed timing, state of machine (in Rinse cycle, Dry, etc) and time till finished. Energy use, water temperature, and other statistics are available as well.

For a given room full of machines, the basic status will be visible to users who have permission to see the status of machines which they are *not* currently using. For example, in a membership-based model, those who are authorized to use a certain room full of machines can check the status of the room, see which machines are available, the usage patterns (“Tuesday morning is historically a slow time”) and other generic status. If a machine is in use, it may show the time it will be finished, but not who the active user is, or any personal data.

Reservations

In a membership-based model users will have the ability to reserve a machine for future use, based on rules determined by the administrator. These rules include how long in advance a machine can be reserved, the duration of the reservation (e.g. “we will hold it for 10 minutes but if you don’t show up, it will be released to the next available user”) and if there are any costs associated with reserving a machine.

Favorites

A machine can be tagged as a “Favorite” to make it easier to check on a particular machine if you’re picky about always using Machine 9.

Favorites can be combined with reservation systems so a user can be alerted if a favorite machine is coming available and they would like to reserve it and be next in line to use it.

Data, Statistics, Usage Patterns

Given the data-intensive nature of Marathon Vended Laundry software, it is possible to learn a great deal about who is doing their laundry, and when. This can obviously be a privacy concern, and Marathon goes to great lengths to make sure the appropriate privacy measures are in place.

Loyalty Programs

The most direct benefit of usage data is the opportunity to provide customer loyalty programs. This can take various forms, but the idea that you can get discounted laundry by being a frequent user is straightforward.

Other perks can be accrued by frequent users, such as priority in reservation systems, pre-notifications that a Favorite machine may be coming available, detergent preferences, etc.

Promotions

Promotions for discounted use can be made in a number of ways, to promote use during downtime (discounts for late-night use, perhaps) or to incent specific behavior. Users can be targeted based on use patterns or memberships, etc. Promotions can be implemented for both single-use and membership models.