pitney bowes

# EngageOne Smart Bill

## Document Version 601-00004-001

## Product Overview

US English Edition

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# 1 Introduction

EngageOne Smart Bill is an online billing solution that allows you to access account information, view digital bills, manage notifications, and designate personal profile preferences. Reliable, convenient, and easily customizable, this solution provides an intuitive digital experience.

EngageOne Smart Bill consists of several primary components:

- Customer Portal
    - The online location that allows you to search for account information, view a graphical presentation of your billing history, view document content, manage notifications, and modify personal profile settings.
- Agent Portal
    - The application that allows agents to both search for customer records and provide customers with troubleshooting assistance. This assistance includes *impersonation* which allows an agent to view customer information in the Customer portal, exactly as that customer would view it.
- Core Platform
    - The primary environment on which EngageOne Smart Bill resides, where batch jobs run and monitoring software exists to ensure the site is up, running, and operational.

Meticulously planned and developed, the design of the EngageOne Smart Bill user interface (like all Smart Suite solutions) facilitates the ease by which you can navigate this software. Simple and clean, the layout of each page contains a well-evaluated placement of buttons, drop-down list boxes, and fields along with relevant content and images that allow you to use the application with efficiency.

EngageOne Smart Bill fits easily into your existing online environment. It runs in a standard Java server environment, supports a variety of database platforms, and is easily branded to your online standards; in addition, it provides secure access through your existing authenticated portal or on its own as a secure, stand-alone solution. You can integrate EngageOne Smart Bill with the EngageOne Smart Pay and EngageOne Smart View solutions.

## 1.1 Audience and Manual Design

The *Product Overview* provides business executives, marketing executives, IT executives, and solution architects with a glimpse of EngageOne Smart Bill with emphasis on its attributes, system requirements, and installation process. It bridges the gap between the product brief and the actual product documentation, serving as a guide to understanding the solution without the clutter of details of a deep dive technical manual.

The communications approach is a blend of informational text and images, making the *Product Overview* an easy and informative read.

Enjoy!

## 2 Customer Portal Features and Highlights

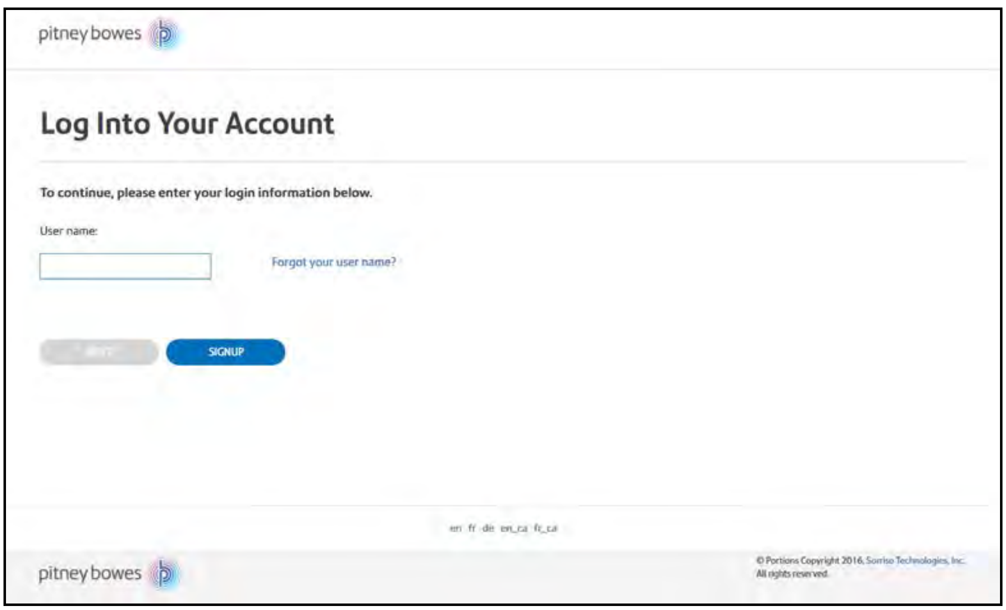
The Customer portal includes several useful features:

| Key Benefits |
| --- |
| ✓ Provides a secure environment which helps prevent phishing and listening attacks. |
| ✓ Integrates with existing enrollment and authentication solution OR operates in a stand-alone environment. |
| ✓ Provides flexible customization - enabling you to maintain your brand, mission, values, and infrastructure. Equally as important, you can have EngageOne Smart Bill up and running before your next month's billing cycle. |
| ✓ Allows you to designate e-mail alerts to include bill delivery options and profile updates. |
| ✓ Provides mobile and tablet optimization. |

### 2.1 Enrollment and Authentication

As a user, the Enrollment and Authentication feature is the first feature you will encounter when EngageOne Smart Bill is configured for stand-alone operation. This feature allows you to enroll and log into the EngageOne Smart Bill portal.

**Note:** You also can configure EngageOne Smart Bill to integrate with your existing enrollment and authentication solution and, as such, disable the product's enrollment and authentication features.




**Customer Portal Login Page**

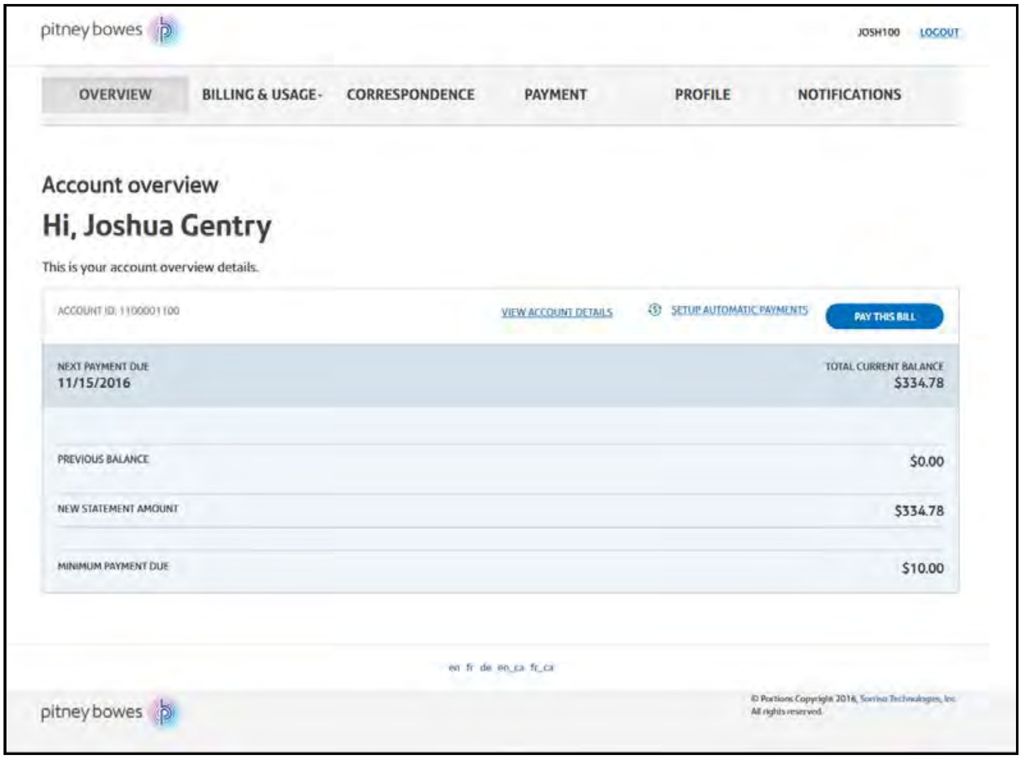
Each window displays a link at the bottom of the page that, upon selection, designates the language that will appear throughout the application; the link will be visible if there is more than one language available. If you are a new user, you must enroll before using the portal. You will click the **SIGNUP** button to begin a multi-step registration process. During this process, you first will view and accept terms and conditions. Next, you will enter specific document information. You will create a user name and password; in addition, you will provide responses to secret questions and choose a personal image. You also will enter an e-mail address and telephone numbers. Finally, before you can gain application access, the system will send you a validation e-mail. This e-mail contains a validation code that you must enter during your first login. These steps comprise (and complete) the enrollment process.

After you complete the enrollment process, you will log into (and authenticate with) the EngageOne Smart Bill portal. EngageOne Smart Bill implements a multi-factor authentication process that helps prevent fraudulent activities such as phishing and listening attacks. Through this process:

- User name and password entry are on separate pages as part of a multi-factor security flow.
- You will encounter a secret question challenge that yields additional security on machines that are not known to the application.
- Your personalized image is shown on the password entry page, providing assurance that you are connected to the correct server and not a victim of a phishing attack.
- Your account is locked for 5 minutes after 3 failed login attempts to prevent brute force attacks.
- You can invoke a flow that allows you to recover a forgotten user name or reset a forgotten password without calling an agent administrator.

Once you have been authenticated, the EngageOne Smart Bill default page appears. This page includes the **Billing & Usage**, **Profile**, and **Notifications** tabs.

**Note:** If you purchased Smart View, you also will have access to the **Correspondence** tab. If you purchased Smart Pay, you also will have access to the **Payment** tab. The **Overview** tab – available and visible with Smart Bill, Smart Pay, and Smart View – provides high-level account details to include the **Total Current Balance**, **Next Payment Due**, **Previous Balance**, **New Statement Amount**, and **Minimum Payment Due**; in addition, this tab includes the **View Account Details** and **Set up Automatic Payments** links.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JOSH100
LOGOUT
OVERVIEW
BILLING & USAGE
CORRESPONDENCE
PAYMENT
PROFILE
NOTIFICATIONS
Account overview
Hi, Joshua Gentry
This is your account overview details.
ACCOUNT ID: 1100001100
VIEW ACCOUNT DETAILS
SETUP AUTOMATIC PAYMENTS
PAY THIS BILL
NEXT PAYMENT DUE
11/15/2016
TOTAL CURRENT BALANCE
$334.78
PREVIOUS BALANCE
$0.00
NEW STATEMENT AMOUNT
$334.78
MINIMUM PAYMENT DUE
$10.00
en fr de en_ca fr_ca
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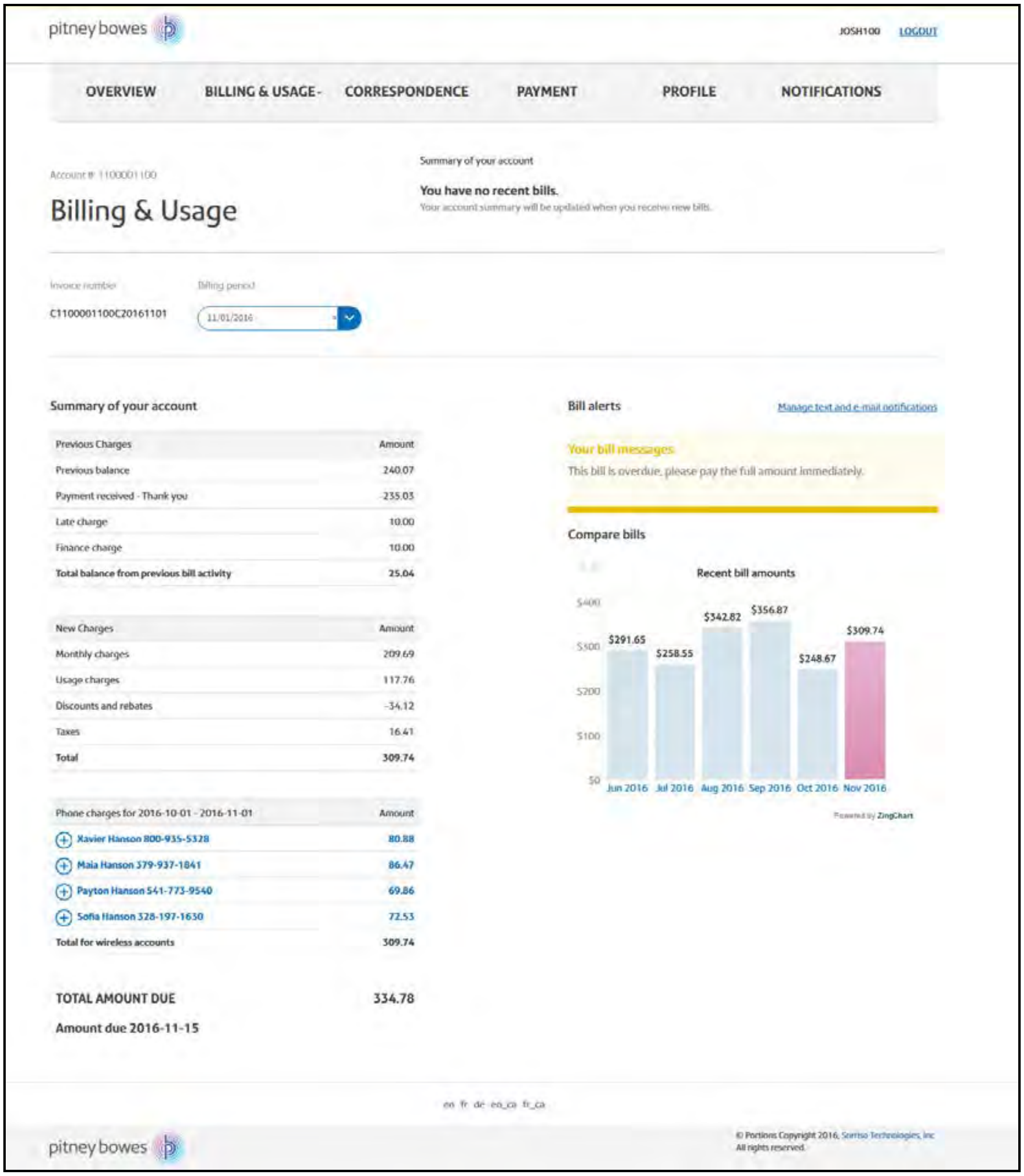
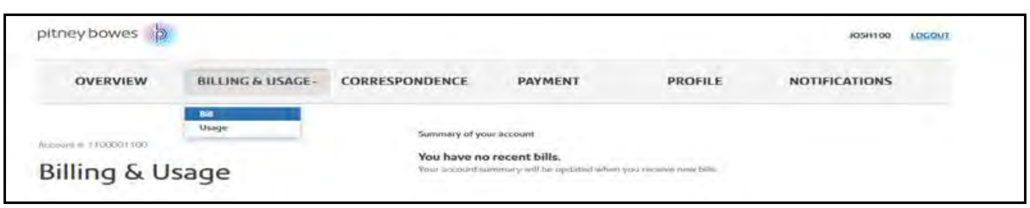
**Overview**

## 2.2 Billing & Usage



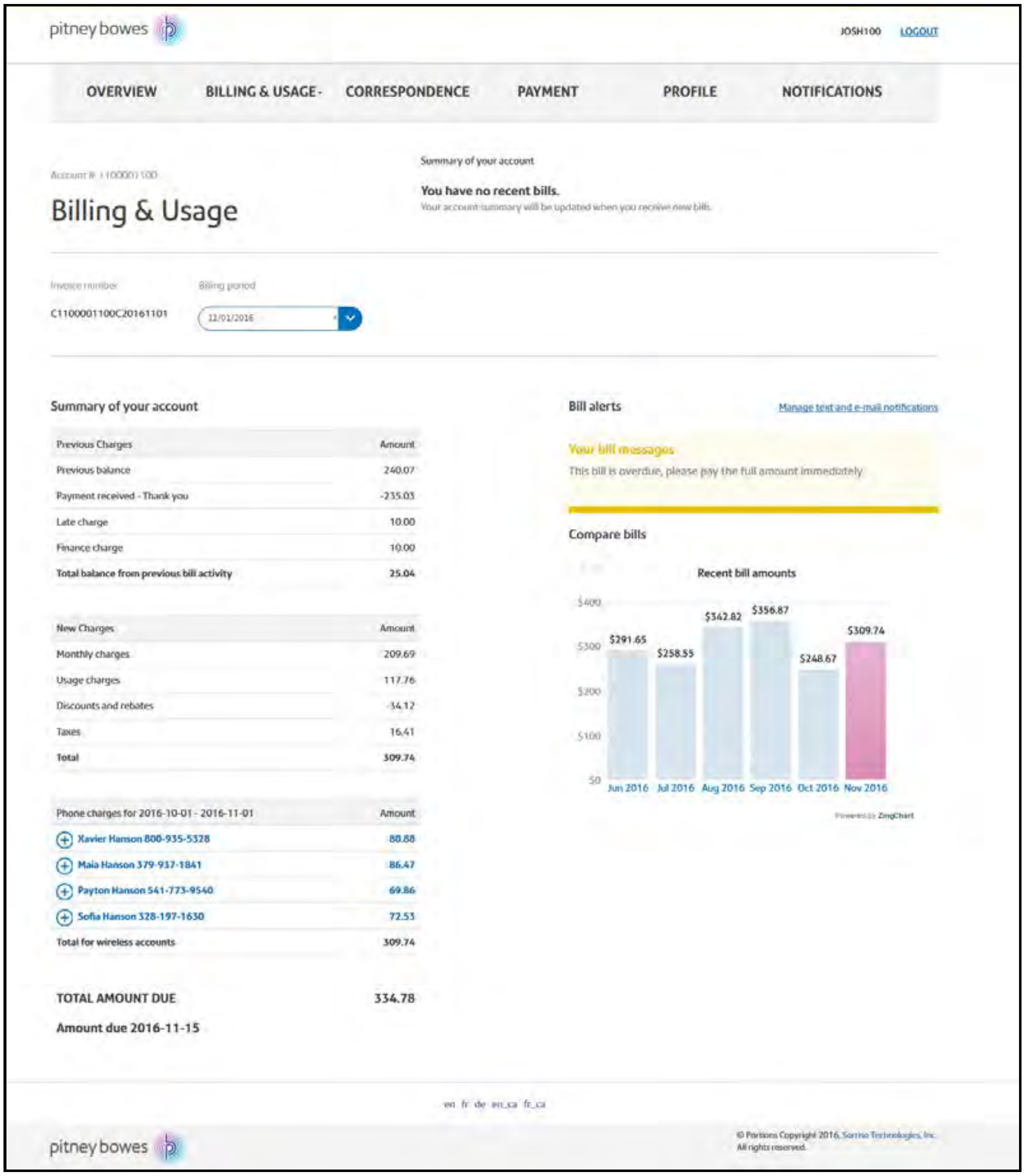

**Billing & Usage**

The **Billing & Usage** tab is inclusive of the **Bill** and **Usage** subtabs, visible via a drop-down list box.



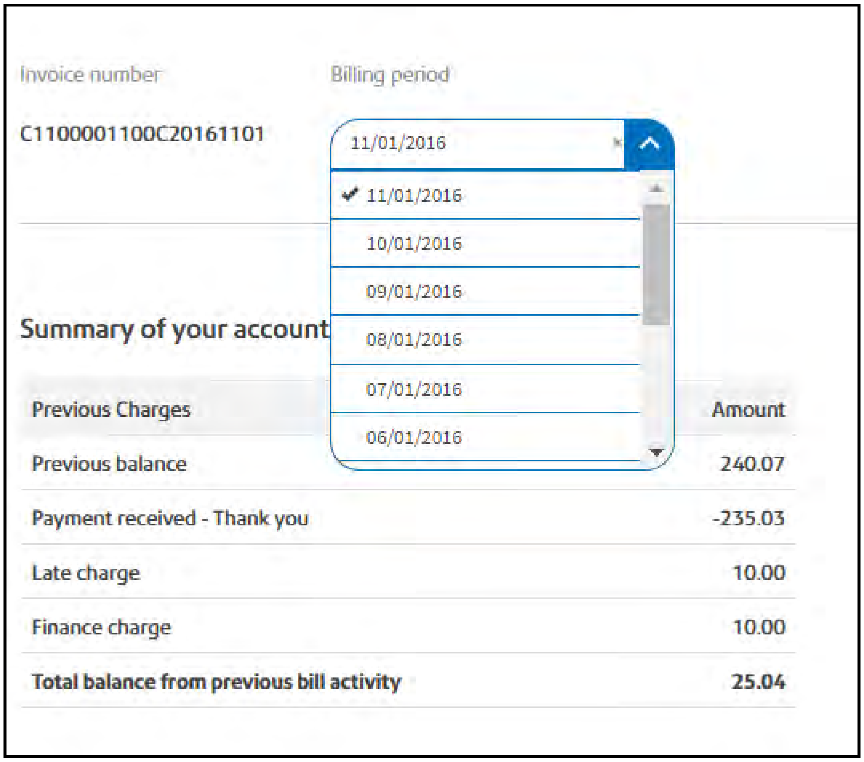

**Bill Subtab and Usage Subtab**

### 2.2.1 Bill Subtab




**Bill Subtab (Default Page)**

The **Bill** subtab provides your account (or document/invoice) number and the current balance due. This subtab also allows you to enter a specific billing period to view the account information aligned with this timeframe.




**Billing Period Search Capability**

The **Bill** subtab also provides an account overview.

## Summary of your account

| Previous Charges | Amount |
| --- | --- |
| Previous balance | 240.07 |
| Payment received - Thank you | -235.03 |
| Late charge | 10.00 |
| Finance charge | 10.00 |
| **Total balance from previous bill activity** | **25.04** |

| New Charges | Amount |
| --- | --- |
| Monthly charges | 209.69 |
| Usage charges | 117.76 |
| Discounts and rebates | -34.12 |
| Taxes | 16.41 |
| **Total** | **309.74** |

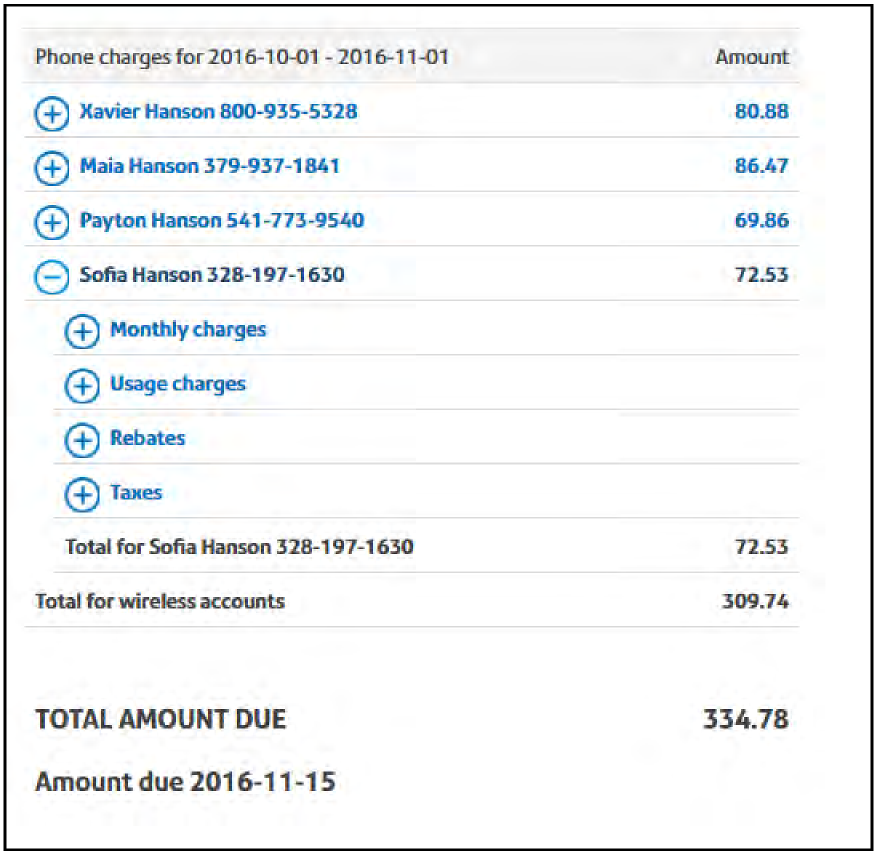
| Phone charges for 2016-10-01 - 2016-11-01 | Amount |
| --- | --- |
| (+) **Xavier Hanson 800-935-5328** | **80.88** |
| (+) **Maia Hanson 379-937-1841** | **86.47** |
| (+) **Payton Hanson 541-773-9540** | **69.86** |
| (+) **Sofia Hanson 328-197-1630** | **72.53** |
| **Total for wireless accounts** | **309.74** |

**TOTAL AMOUNT DUE** **334.78**

**Amount due 2016-11-15**

**Account Summary**

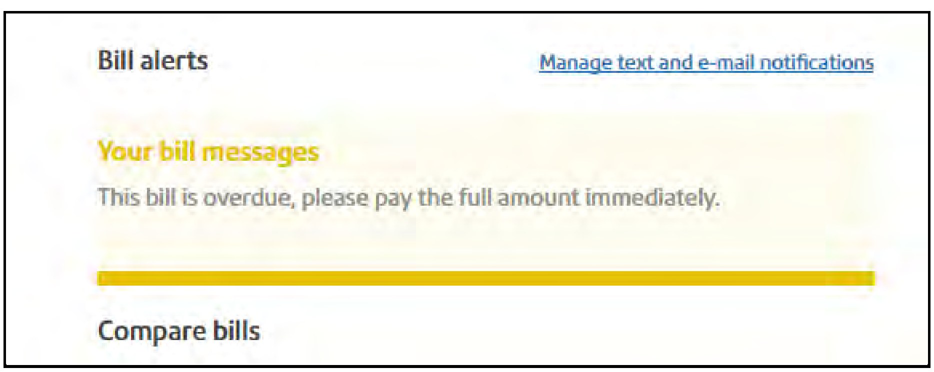
You can click the plus symbol (+) to expand details of your account charges; likewise, you can click the minus symbol (-) to collapse this information.



| Phone charges for 2016-10-01 - 2016-11-01 | Amount |
|---|---|
| Xavier Hanson 800-935-5328 | 80.88 |
| Maia Hanson 379-937-1841 | 86.47 |
| Payton Hanson 541-773-9540 | 69.86 |
| Sofia Hanson 328-197-1630 | 72.53 |
| Monthly charges | |
| Usage charges | |
| Rebates | |
| Taxes | |
| Total for Sofia Hanson 328-197-1630 | 72.53 |
| Total for wireless accounts | 309.74 |
| TOTAL AMOUNT DUE | 334.78 |
| Amount due 2016-11-15 | |

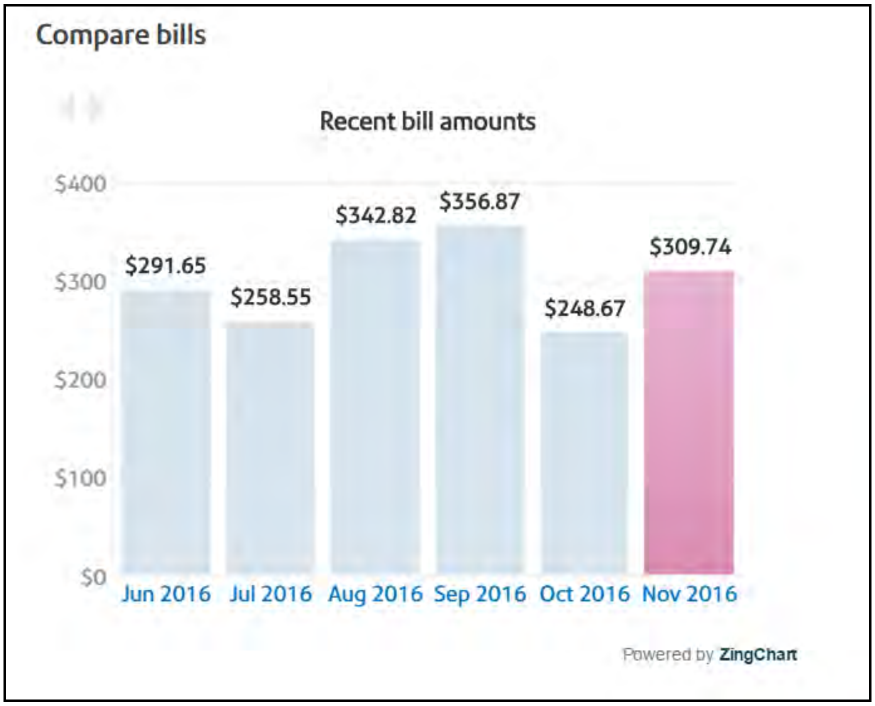
**Expand, Collapse Account Detail**

The **Bill** subtab provides bill alerts, which are messages that notify you of important billing information. This subtab also allows you to click the **Manage text and e-mail notifications** link to access the **Notifications** page. The **Notifications** page allows you to designate settings to alert you when an online bill becomes available.



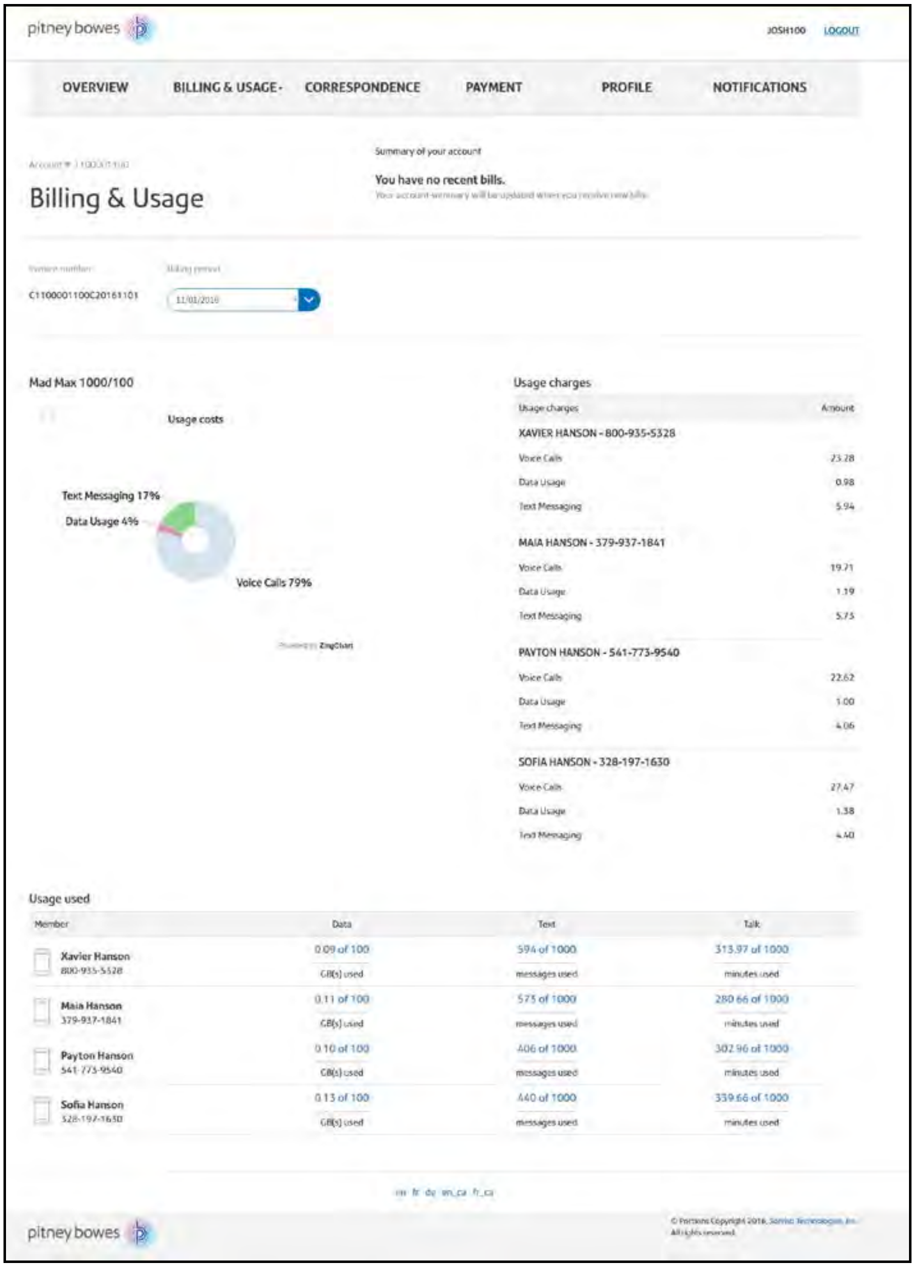

**Bill Alerts**

Next, the **Bill** subtab allows you to compare bills by viewing a graphical presentation of your billing history, thereby allowing you to determine (and compare) peak and non-peak billing periods. In addition, you can hover over the graphical image to view numeric information.




**Compare Bills**

### 2.2.2 Usage Subtab




**Usage Subtab**

Similar to the **Bill** subtab, the **Usage** subtab provides your account (or document/invoice) number and the current balance due. This subtab also allows you to select a specific billing period to view the account information aligned with this timeframe. Equally as important, this subtab allows you to view your usage plan – sharing this information as a graphical presentation, thereby allowing you to determine (and compare) peak and non-peak usage periods. In addition, you can hover over the graphical image to view numeric information.

The **Usage** subtab displays the **CSV**, **PDF**, and **Print** buttons. The **Usage** subtab also displays the **Billing period** and **View details by** drop-down list boxes, allowing you to view specific billing details for a designated timeframe.

Individual usage details for Sofia Hanson | 328-197-1630

Billing period: 11/01/2016 | View details by: Data | CSV | PDF | PRINT

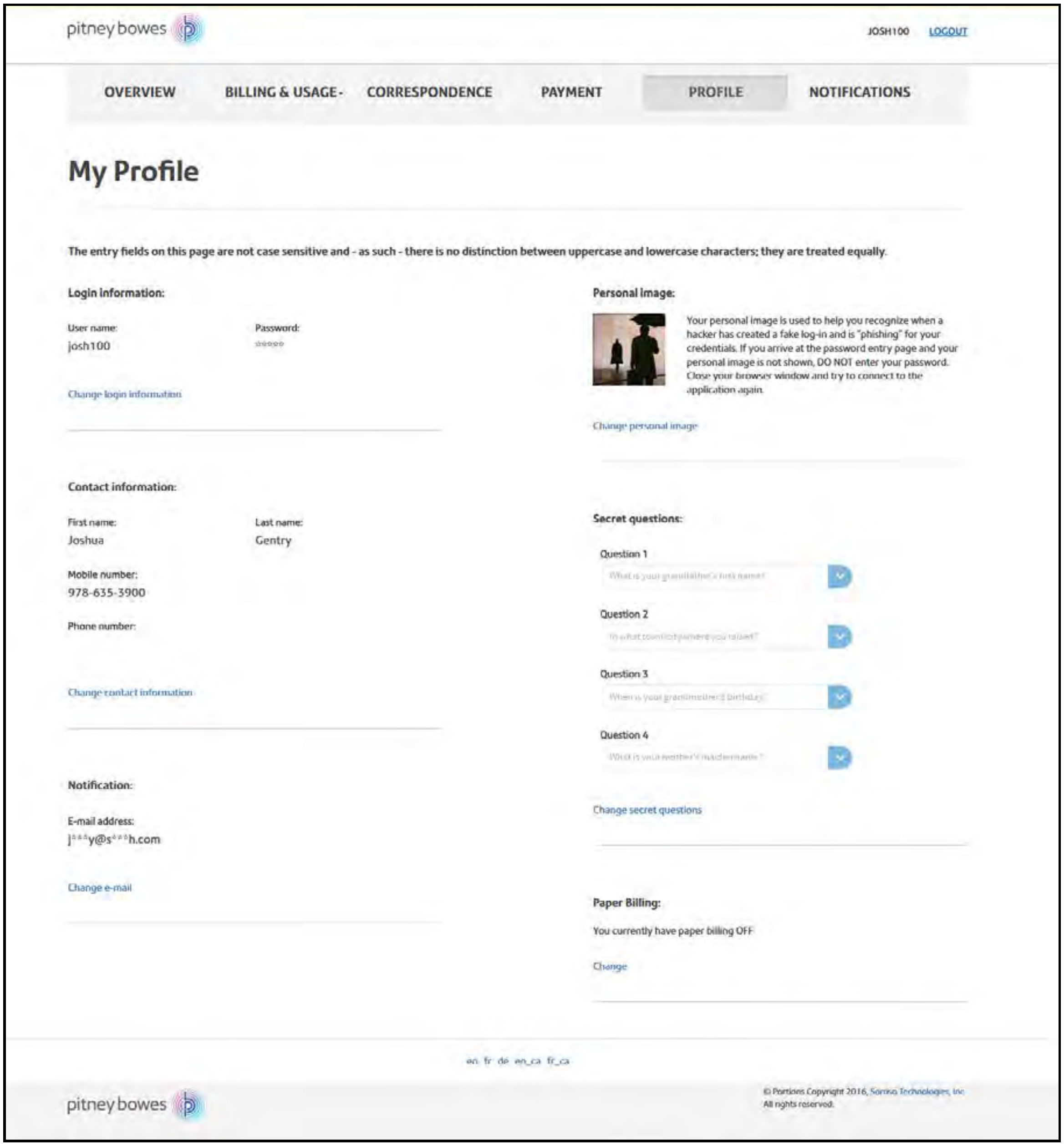
Show 25 entries | « ‹ 1 2 3 4 › »

| Date/Time | Units used | Amount ($) |
|---|---|---|
| 10-01-2016 06:48:15 PM | 25 Kb(s) | $0.00 |
| 10-01-2016 06:56:23 PM | 4930 Mb(s) | $0.05 |
| 10-02-2016 03:13:16 AM | 103 Kb(s) | $0.00 |
| 10-02-2016 04:22:51 AM | 3076 Mb(s) | $0.03 |
| 10-02-2016 08:35:47 AM | 1873 Mb(s) | $0.02 |
| 10-02-2016 11:19:10 AM | 898 Kb(s) | $0.01 |
| 10-03-2016 02:40:52 AM | 257 Kb(s) | $0.00 |
| 10-03-2016 07:35:34 AM | 101 Kb(s) | $0.00 |
| 10-04-2016 08:54:45 AM | 127 Kb(s) | $0.00 |
| 10-04-2016 04:14:22 PM | 92 Kb(s) | $0.00 |
| 10-04-2016 06:55:00 PM | 3373 Mb(s) | $0.03 |
| 10-04-2016 10:04:43 PM | 4295 Mb(s) | $0.04 |
| 10-05-2016 08:53:36 PM | 1465 Mb(s) | $0.02 |
| 10-06-2016 02:58:24 AM | 4146 Mb(s) | $0.04 |
| 10-06-2016 05:27:12 AM | 71 Kb(s) | $0.00 |
| 10-06-2016 06:43:30 AM | 957 Kb(s) | $0.01 |
| 10-07-2016 11:21:15 AM | 984 Kb(s) | $0.01 |
| 10-07-2016 11:33:34 AM | 3847 Mb(s) | $0.04 |
| 10-08-2016 02:25:05 AM | 955 Kb(s) | $0.01 |
| 10-08-2016 02:45:39 AM | 61 Kb(s) | $0.00 |
| 10-08-2016 06:58:23 AM | 369 Kb(s) | $0.00 |
| 10-08-2016 08:36:53 AM | 45 Kb(s) | $0.00 |
| 10-08-2016 09:45:42 AM | 841 Kb(s) | $0.01 |
| 10-08-2016 10:21:06 AM | 15 Kb(s) | $0.00 |
| 10-08-2016 04:33:34 PM | 4866 Mb(s) | $0.05 |
| Includes 100 Gb free data | 0.13 GB(s) | Total: $1.38 |

**Usage Details**

## 2.3 Profile

The **Profile** tab allows you to view and edit personal preference settings.

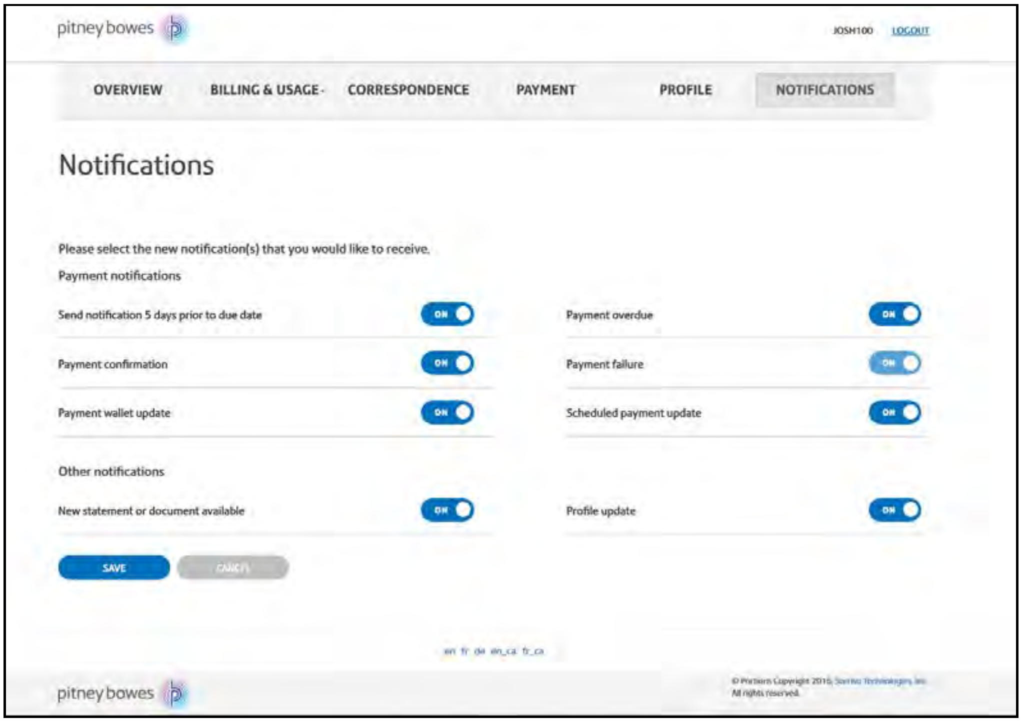



**Profile**

Specifically, the **My profile** page allows you to view and edit **Login information**, which includes entering information in the **User name** and **Password** fields. This page also allows you to update **Contact information** to include completion of the **First name**, **Last name**, **Mobile number**, and **Phone number** fields. Next, the **Notification** section allows you to update your e-mail address. The **My profile** page also allows you to change the **Personal image** and create or modify **Secret questions**. For validation purposes (and after you have established responses to all your secret questions), you may be required – during the login process, for example – to enter a response to one or more secret questions before gaining application access.

EngageOne Smart Bill manages the profile data, sending e-mail messages to alert you of individual account information updates and event transactions.

## 2.4 Notifications




**Notifications**

The **Notifications** tab allows you to set payment alerts. This tab includes the following notifications option:

- Profile update

If you purchased Smart Pay, additional notifications options will be available:

- Send notification 5 days prior to due date
- Payment overdue
- Payment confirmation
- Payment failure
- Payment wallet update
- Scheduled payment update

If you purchased Smart View, an additional notifications option will be available:

- New statement or document available

Sliding a notification button to the *ON* position allows you to receive an e-mail alert for the associated option.

**Note:** Other communications alert options (Short Message Service or WhatsApp, for example) may be available in a future release.

# 3 Agent Portal Features and Highlights

The Agent portal includes several useful features:

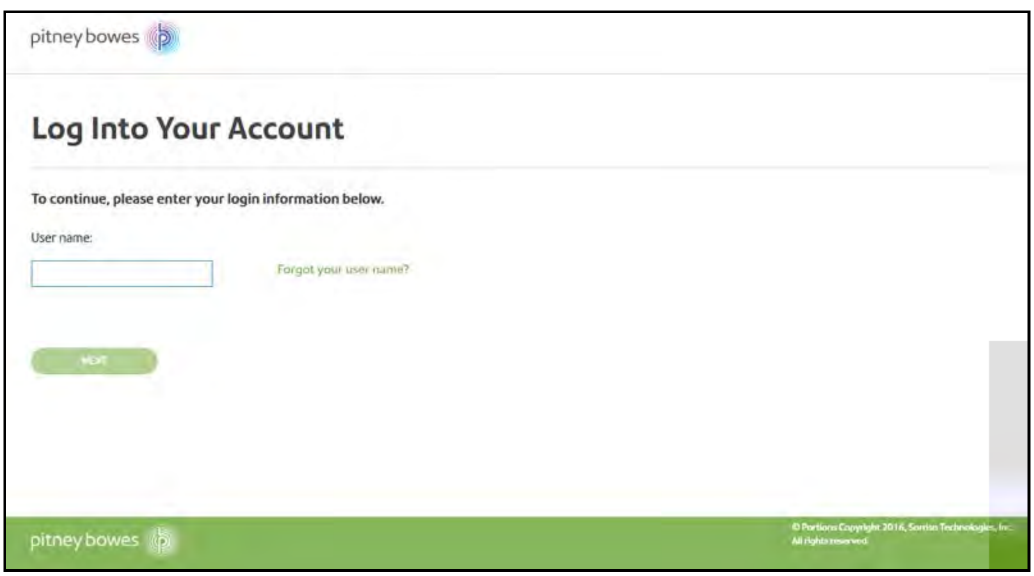
| Key Benefits |
|---|
| ✓ Integrates with existing enrollment and authentication solution OR operates in a stand-alone environment. |
| ✓ Provides quick and efficient customer record search and record access. |
| ✓ Allows agent to use *impersonation* to access Customer portal (as customer) to respond to specific inquiries, provide clarifications, and render troubleshooting assistance. |
| ✓ Provides customer login reset. |
| ✓ Includes agent profile management. |
| ✓ Provides an audit capability, which tracks events of users in **every** application. |

The Agent portal allows agent administrators to support users and manage agent profiles. Agents can search for and view customer documents, troubleshoot customer application issues, and reset customer login credentials. Specially designated agent administrators can create and manage all agent profiles.

## 3.1 Authentication

As an agent, the authentication feature (Login page) is the first feature you will encounter when EngageOne Smart Bill is configured for stand-alone operation.

**Note:** You also can configure the EngageOne Smart Bill Agent portal to integrate with your existing internal authentication solution and, as such, disable the product's authentication features. The integration of the Agent portal and the Customer portal are separate, so it is possible to implement a different authentication model for the Agent portal than you implement for the Customer portal.

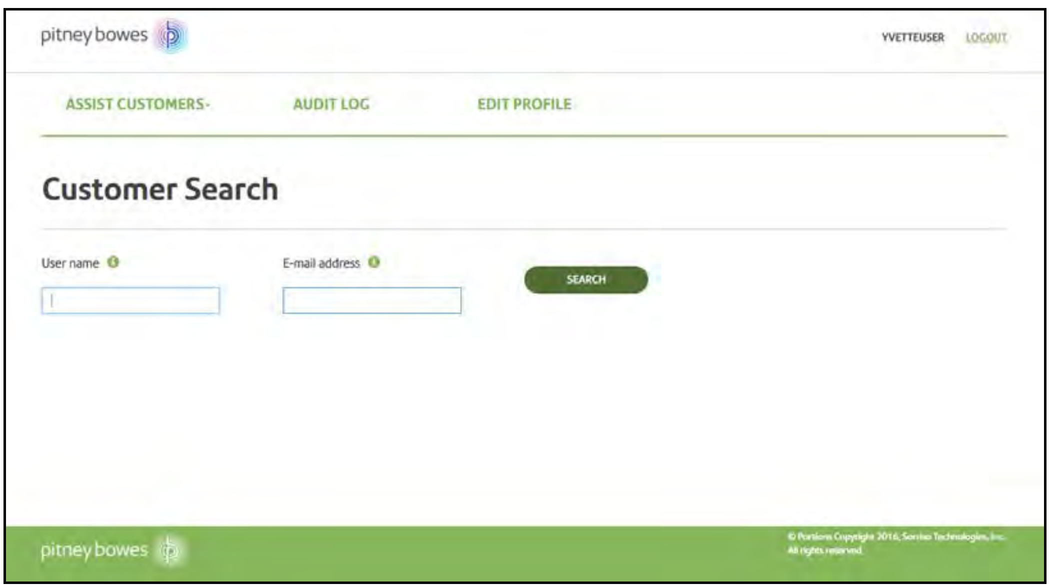



**Agent Portal Login Page**

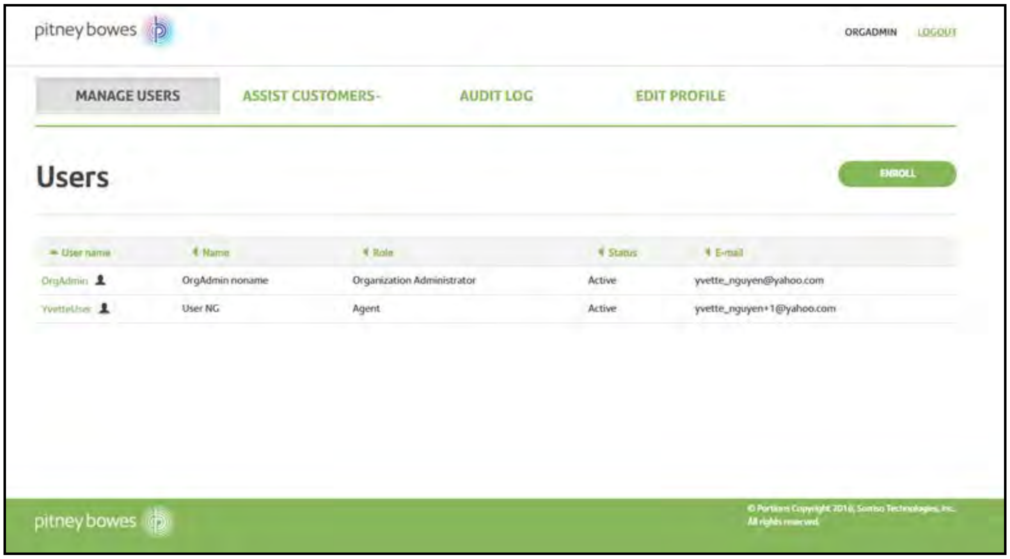
The agent authentication process operates in the same manner as the user authentication process described above. Through this process:

- User name and password entry are on separate pages as part of a multi-factor security flow.
- You will encounter a secret question challenge that yields additional security on machines that are not known to the application.
- Your personalized image is shown on the password entry page, providing assurance that you are connected to the correct server and not a victim of a phishing attack.
- Your account is locked for 5 minutes after 3 failed login attempts to prevent brute force attacks.
- You can invoke a flow that allows you to recover your user name or reset a forgotten password without calling an agent administrator.

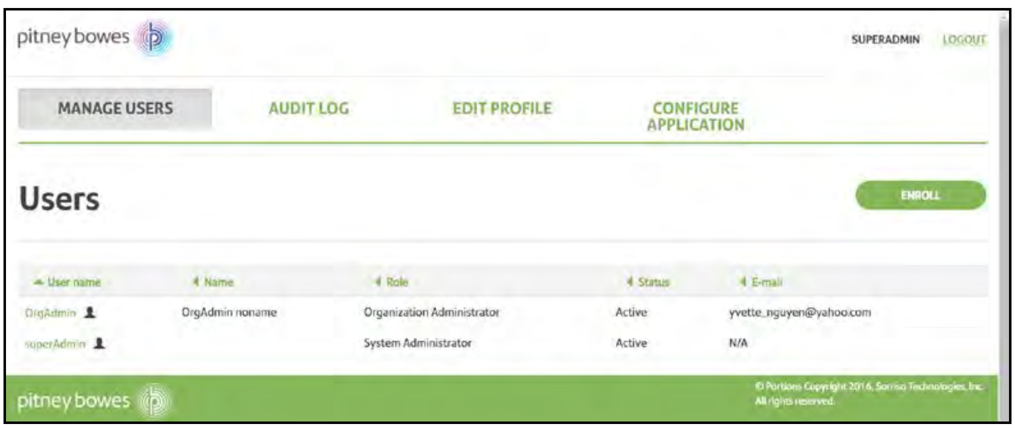
Once you have been authenticated, the EngageOne Smart Bill Agent portal default page appears. If you are simply an agent, you will see the **Assist Customers**, **Audit Log**, and **Edit Profile** tabs. If you are an agent administrator, you also will see the **Manage Users** tab. If you are a system administrator, you will see the **Manage Users**, **Audit Log**, **Edit Profile**, and **Configure Application** tabs.




**Agent Portal Default Page (for Agents)**




**Agent Portal Default Page (for Agent Administrators)**




**Agent Portal Default Page (for System Administrators)**

The Agent portal provides three role designations:

| Role | Responsibility | Enrollment Ability |
|---|---|---|
| Agent | Role designation for individuals who support customers. | Agents cannot manage other user roles; therefore, they can neither enroll other Agent portal users nor view the record information of other Agent portal users. As such, agents do not have access to the Manage Users tab. |
| Agent Administrator | Role designation for individuals assigned to manage other agents in addition to supporting customers. | Agent administrators can enroll agents and agent administrators but cannot enroll system administrators (or view system administrator record information via the Manage Users tab). In addition, they can upgrade roles to agent administrators, or downgrade them to agents. |

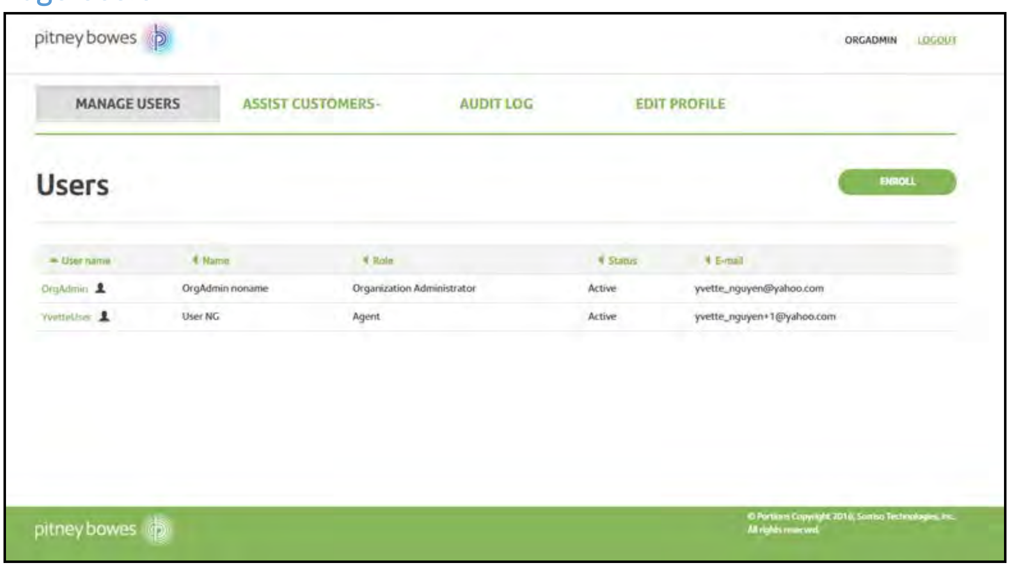
| Role | Responsibility | Enrollment Ability |
|---|---|---|
| System Administrator | An IT person assigned to configure the solution and create the first agent administrator (and system administrator). | System administrators can enroll new users (system administrators or agent administrators) but cannot enroll agents (or view their record information via the Manage Users tab). Additionally, system administrators cannot change the role designations assigned to agent administrators. |

**Agent Portal Role Designations**

The Agent portal contains several tabs and - contingent upon the role designation - different tabs are available/visible:

- Manage Users - Tab that allows agent administrators to manage existing users (agents and agent administrators), and create new users (agents and agent administrators). System administrators also have access to this tab.
- Assist Customers - Tab that allows agents and agent administrators to both search for customer records and perform actions to support customers. This tab is not available to system administrators.
- Audit Log - Tab that presents a searchable view of events of users in **every** application. This tab is available to agents, agent administrators, and system administrators.
- Edit Profile - Tab that allows agents, agent administrators, and system administrators to edit their own user profiles.
- Configure Application - Tab that allows system administrators to establish application and connection settings. This tab is only available to system administrators.

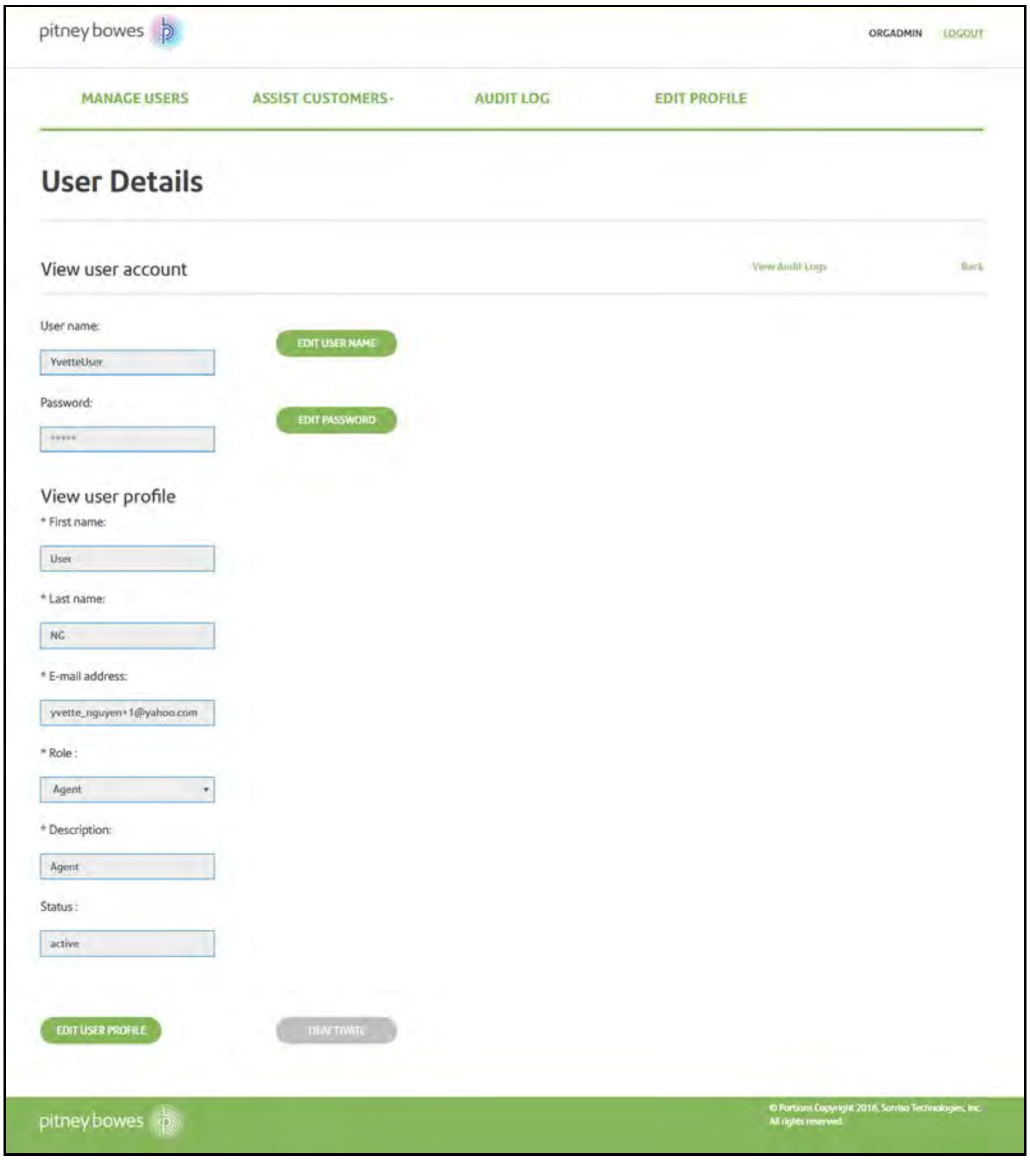
## 3.2 Manage Users




**Agent Portal Default Page (for Agent Administrators)**

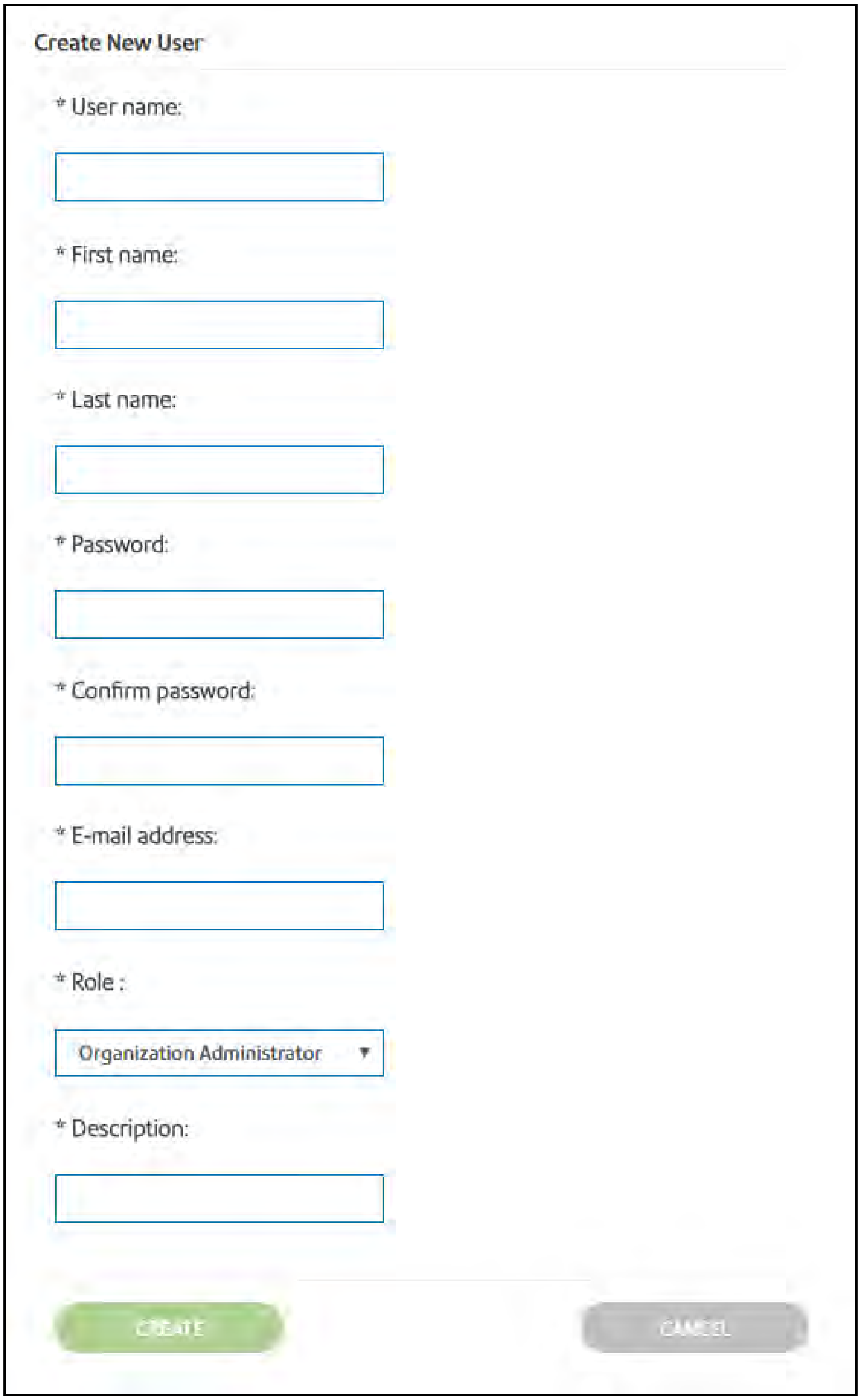
Agent administrators can manage existing users and create new users. To manage existing users, agent administrators may choose the agent from the **User name** column in the **Manage Users** tab. This tab also allows agent administrators to click the **User name**, **Name**, **Role**, **Status**, and **E-mail** column headings to sort the data on this page.

As an agent administrator, you can manage existing agent profiles by clicking an entry (or user) in the **User name** column to access the **User Details** page. Here, you can view and edit user profile properties (to include activating and deactivating users). The **User Details** page also includes the **Edit User Name**, **Edit Password**, and **Edit User Profile** buttons which - as their names imply - allow you to modify agent account or profile information. The **View Audit Logs** link, upon selection, takes you to the **Audit Log** page where you can view the events of the selected (or targeted) user.




**User Details**

The **Manage Users** tab also includes the **Enroll** button, which allows you to create new users.

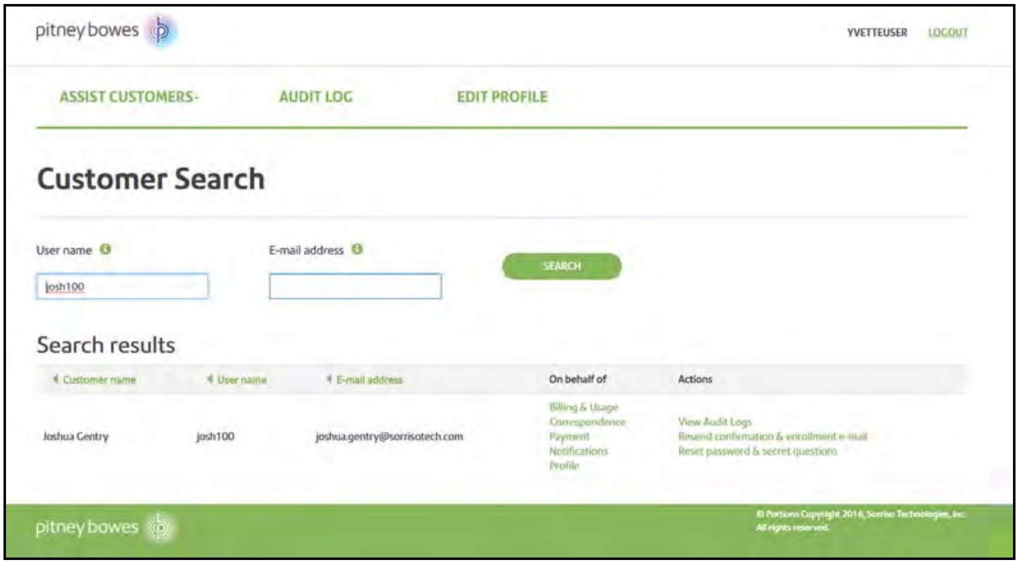



**Enroll - Create New User**

## 3.3 Assist Customers

The **Assist Customers** tab allows agents to look for customer records by entering valid information in the **User name** and/or **E-mail address** field. This tab also has a drop-down list box, allowing you to select **Assist Consumer Customers** or **Assist Business Customers**.


**Assist Customers**



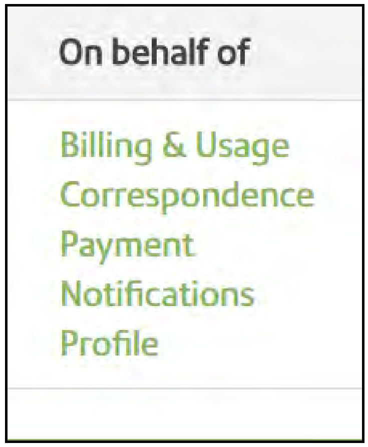

**Customer Search**

Upon entering valid information in the **User name** or **E-mail Address** field, you can click the **Search** button to retrieve records aligned with the specified criterion. The output, if any, provides information in the **Customer name**, **User name**, and **E-mail address** columns. If valid record information exists, the output appears under the **Search Results** heading and can be sorted alphabetically using the link associated with the **Customer name**, **User name**, or **E-mail address** column heading.

The **On behalf of** and **Actions** column headings provide links to additional Customer portal data.

### 3.3.1 On behalf of

Once you have located the requested user account, you can use **On behalf of** (sometimes called user impersonation) to mimic customers - viewing pages with their account information, exactly as they would view this information. Impersonation allows you to investigate customer issues and provide online assistance.




**Impersonation Links**

If you purchased Smart Bill, the **Billing & Usage**, **Notifications**, and **Profile** options will be visible in the **Impersonation Links** image above; if you purchased Smart Pay, the **Payment** option also will appear in this window. If you purchased Smart View, the **Correspondence** option also will be visible.

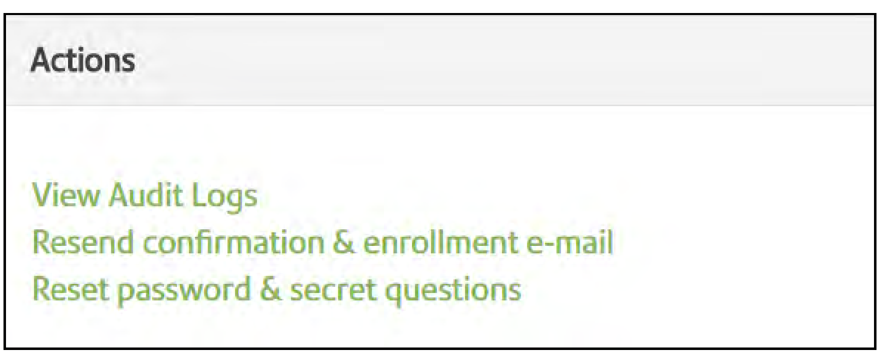
This application allows you to begin providing customer support at specific pages in the Customer portal. Upon Customer portal access, you can navigate to any page that the customer you are impersonating can view. The **Notifications** and **Profile** links associated with the **On behalf of** column immediately direct you to the corresponding page in the Customer portal, where you can begin providing customer support.

If, for example, a customer requests that you review a particular line of an account statement that requires clarification or – perhaps – needs assistance with a document download, you can access the exact and precise Customer portal page (impersonating the customer) to view this information and provide assistance.

While impersonation (at a high level) provides agents with a customer view of data (and allows general access to non-specific pages in the Customer portal), the **On behalf of** links provide specificity – allowing you to navigate to precise and exact Customer portal pages.

### 3.3.2 Actions

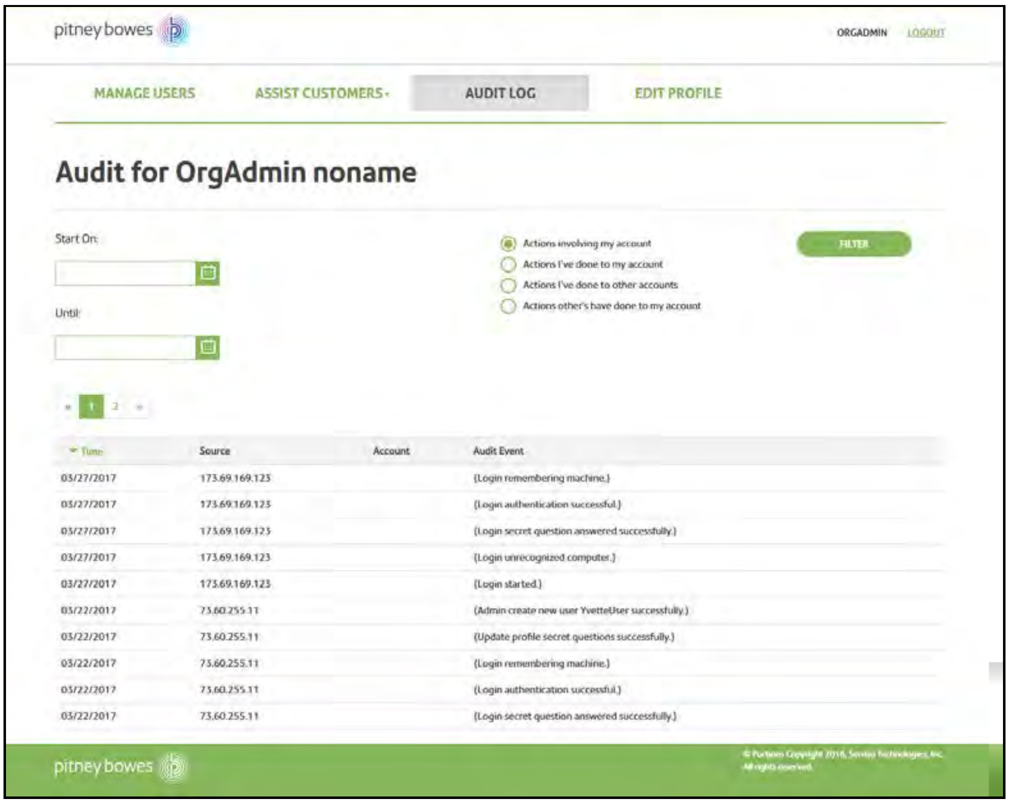
Similar to **On behalf of**, once you have located a customer account, you can perform actions to provide customer assistance.




**Actions Links**

You can click **View Audit Logs** to access a searchable view of the events of the targeted customer (for **every** application). In this circumstance, the system navigates to the **Audit Log** menu and the customer's name appears in the window header. The customer events that appear might include login, logout, and profile updates. Next, if a customer is locked out of the system based on failed login attempts, cannot recall his user name or password information, or cannot recall the responses to the secret questions, you can – first – use the **Reset password & secret questions** link to reset the customer enrollment and login information. Next, you can use the **Resend confirmation & enrollment e-mail** link to notify the customers of their ability to re-enter password and secret questions information to re-gain application access.

## 3.4 Audit Log




**Audit Log**

The audit log tracks events of users in **every** application. This tab displays the **Start On** and **Until** calendar options along with the following radio buttons:

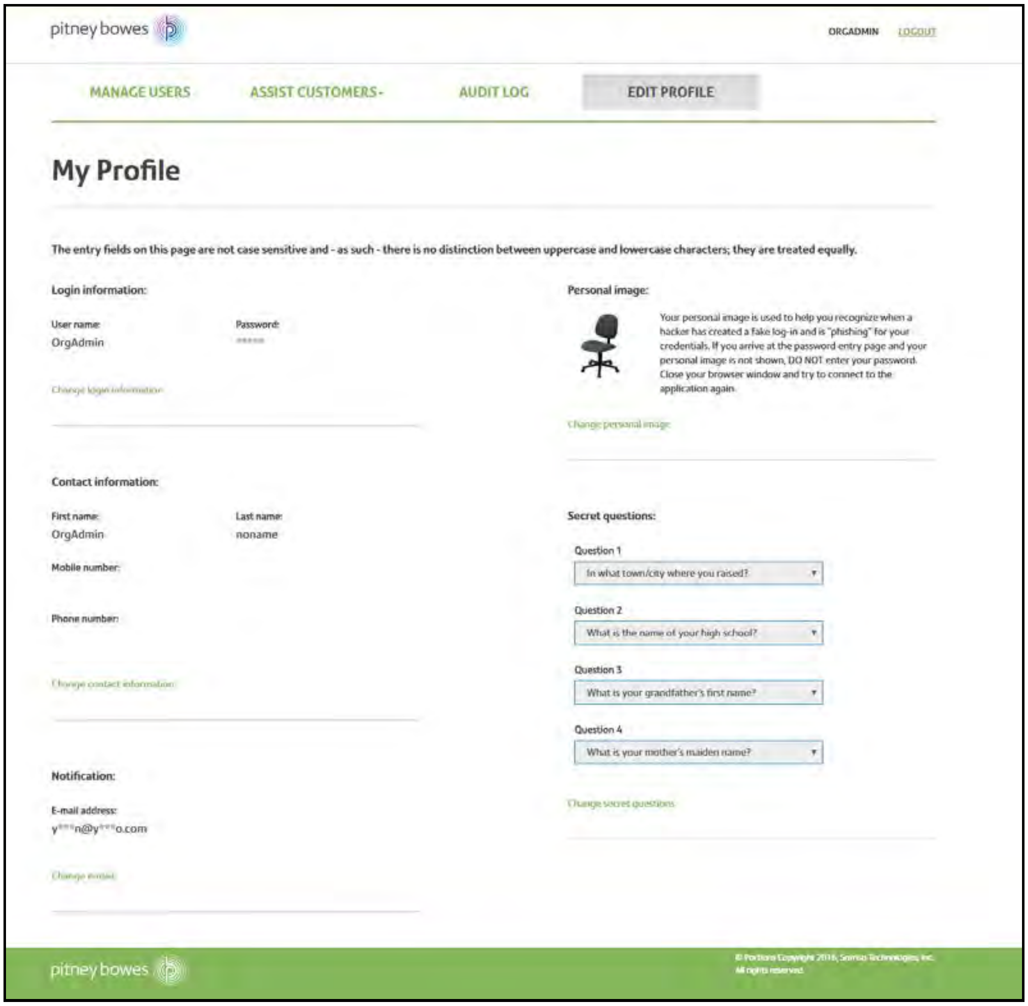
- Actions involving my account
- Actions I've done to my account
- Actions I've done to other accounts
- Actions others have done to my account

After you enter your search criteria (to include date and radio button designations), the output aligned with your request appears on the lower half of the page. You can click the **Filter** button to further narrow (or expand) your search.

If agents access their own accounts from the **Audit Log** tab on the main menu, they can view actions they, themselves, have performed to their own accounts. They also can view the actions other agents have performed to their accounts. In addition, they can view the actions the agents, themselves, have performed to other agent or customer accounts. Similarly, when an agent clicks the **View Audit Log** link to access another agent's account activities, the name of the "searched for agent" appears in the header. The agent who initiated this search can view the actions the "searched for agent" has performed to his own account, actions other agents have performed on this "searched for agent" account, and the actions this "searched for agent" has performed to the accounts of other agents or customers.

## 3.5 Edit Profile

The Personal Profile Management feature allows agents to view and edit their own profile information. From the **Edit Profile** tab, you can access your profile page where you can make modifications and updates.




**Edit Profile**

The **My profile** page allows you to view and edit **Login information**, which includes entering information in the **User name** and **Password** fields. This page also allows you to update **Contact information** to include completion of the **First name**, **Last name**, **Mobile number**, and **Phone number** fields. Next, the **Notification** section allows you to update your e-mail address. The **My profile** page also allows you to change the **Personal image** and create or modify **Secret questions**. For validation purposes (and after you have established responses to all your secret questions), you may be required – during the login process, for example – to enter a response to one or more secret questions before gaining application access.

EngageOne Smart Bill manages the profile data, sending e-mail messages to alert you of individual account information updates and event transactions.

# 4 IT Functions

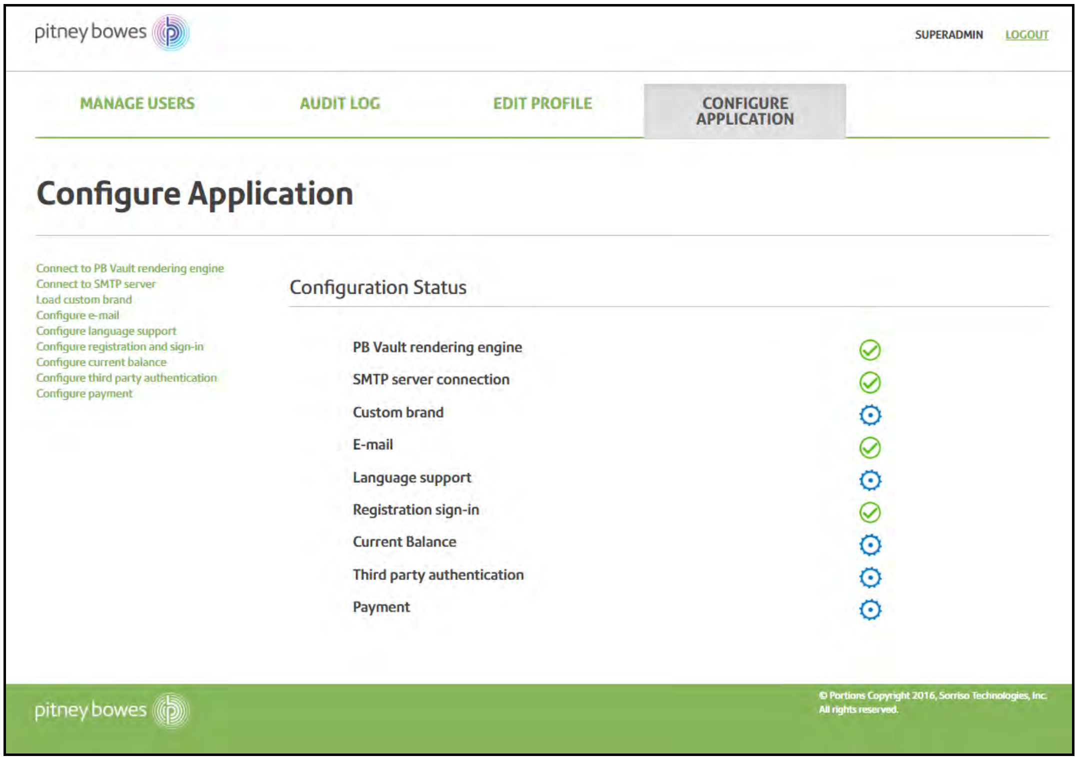
The IT component allows system administrators to:

- Configure the application.
- Monitor and control background (batch) processing.
- Ensure payment handling and tokenization.

## 4.1 Configuring the Application

As previously mentioned, the Agent portal includes the system administrator role designation. In this role, you have access to the **Configure Application** tab. As a system administrator, you are tasked with configuring the Customer portal to meet your business requirements. From this role, you can:

1. Connect to PB Vault rendering engine (available with EngageOne Smart View)
2. Connect to SMTP server
3. Load custom brand
4. Configure e-mail
5. Configure language support
6. Configure registration and sign-in
7. Configure current balance
8. Configure third-party authentication
9. Configure payment




**Configure Application**

The **Configure Application** tab allows you to establish application and connection settings. The links on the left side of each window in this process, upon selection, trigger a configuration wizard for that specific option (or selection). The text in the center of the window provides the status of each configuration step. For example, a checkmark (✓) denotes that the status is complete, and a gear symbol denotes an incomplete status. As you complete the configuration process (and, therefore, successfully execute and complete each of the six wizards as indicated by its status), you must test the application to ensure it is working properly, upload custom brands and templates and – ultimately – enable the site via the web portal to make it active.

As you complete each step in the configuration process, all data saves to the Digital Self-Service database - as multiple servers must access this information. In addition, as you upload data (such as custom brands, e-mail templates, localization/property files, and registration files), you previously must have tested and validated this information on a non-production system. All configuration uploads into the production environment exclude testing, as testing exceeds the scope of this document. (The **Configure Application** process is explained in detail in the *EngageOne Smart Bill Installation Guide*.)

## 4.2 Monitoring and Controlling Background Processing

IT also can monitor and control the batch jobs and other background processes that EngageOne Smart Bill uses to load information into the system, send e-mails, and purge old files.

EngageOne Smart Bill comes with the open source Jenkins job scheduler, pre-configured and accessible through a web URL. As a system administrator, you can use Jenkins to select specific jobs (such as file purges, software updates, and utility loads) and determine when (and how often) they run. When a job runs, you can monitor the job status (by viewing a progress bar) and – contingent upon exactly when and how long the job runs (daily, nightly, every 5 minutes) – observe its completion. You also can configure Jenkins to notify you if a job fails for any reason.

Since many IT organizations have a preferred enterprise job scheduler, EngageOne Smart Bill batch and background processes are configured through shell scripts that you can implement as part of your preferred scheduler. If you choose this option, you can configure your scheduler in an approximately 2-day timeframe.

# 5 EngageOne Smart Bill Solution Architecture

This section describes EngageOne Smart Bill as a two-part architecture:

- Software Structure
- Infrastructure Design

## 5.1 Software Structure

As one of several modular components that comprise the EngageOne Liaison suite of self-service applications, EngageOne Smart Bill is a deployment-ready solution – requiring no programming or integration. Each module follows a common design and implementation architecture aligned with a Java servlet-based platform.

A patented use case engine forms the foundation of all EngageOne Liaison solutions. This use case engine, which emphasizes user and system interactions, is at the heart of the application suite. This engine uses system and data resources, formulates web pages in real time, and drives the application flow. The platform lets developers express a web application as a set of formalized, goal-oriented use cases. The EngageOne Liaison use cases are declarative (less procedural), allowing developers to focus more on describing *what* needs to happen rather than being consumed with the coding details specific to *how* it happens. The roots of this style – describing business use cases – were pioneered by Computer Scientist Alistair Cockburn.

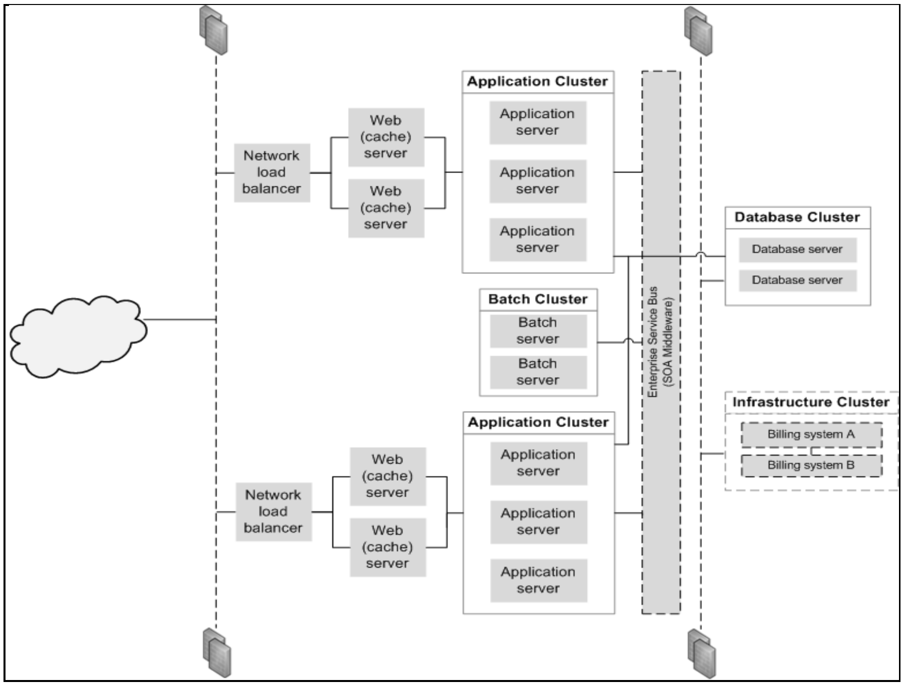
| Use Case-Based Benefits |
|---|
| ✓ A clear delineation of software components allows you to brand, localize, and configure the solution without code modifications.<br>✓ A unified modular design allows you to add other EngageOne Liaison modules (such as Smart Pay and Smart View) without additional coding.<br>✓ An architecture that allows you to move to a fully configurable enterprise solution where you can develop use cases that meet your specific business needs. Style, brand, and localization all fit the architecture; likewise, your custom-configured modules fit seamlessly with existing product modules.<br>✓ A structured software architecture shields you from most technology changes by allowing control and maintenance of platform changes, web technology changes, and enhancements to rest solely in the hands of the Pitney Bowes – a product company committed to the platform. |

Key technical components include:

- A standard platform web archive (WAR) – File that contains the use case engine and core platform services. Use case applications are stored outside the WAR, so platform upgrades are straightforward. The standard WAR runs in a variety of Java application servers including Apache Tomcat, JBoss, Oracle WebLogic, and IBM Websphere.
- Spring Framework-based database queries – Queries that allow the product to support a variety of databases without affecting other components. Supported databases include MySQL, PostgreSQL, and Oracle.
- Jenkins-based background and batch services platform – Open source scheduler with all jobs written in a manner that allows easy integration into your enterprise job scheduler.
- Bootstrap 3 Cascading Style Sheet (CSS) – This popular package allows EngageOne Smart Bill to implement a responsive web design. You can apply any Bootstrap template, or you can create your own when branding EngageOne Smart Bill for your business. The result is an application that works equally well on smartphones, tablets, and computers.
- Angular JavaScript (JS) framework – Framework that allows EngageOne Smart Bill to implement advanced client-side user interactions across all modern browsers. The result is a sophisticated, modern user experience that provides fast and dynamic user interaction without numerous screen refreshes.

## 5.2 Infrastructure Design

EngageOne Smart Bill's proven n-tier deployment model supports configurations with millions of user visits per month. Based on capacity requirements, your installation can reside on a single server or clustered across servers that specialize in managing web access, application functions, database functions, and batch/background operations. EngageOne Smart Bill runs appropriately on realized hardware as well as virtualized systems. The image below depicts the structure of this n-tier architecture.




n-Tier Architecture

EngageOne Smart Bill follows best practices in implementing an n-tier architecture. The tiers are as follows:

- Web Tier – Web servers with caching for frequently accessed static information and images. External access is via HTTPs.
- Application Tier – Application servers running a Java servlet application server. The standard WAR platform and all applications reside on these servers.
- Database Tier – Database servers running your selected database system. Servers can be configured in any fail-over scenario supported by your selected database server.
- Batch and Background Tier – Typically one or two servers that load data, manage application-specific information, and provide e-mail services.

# 6 System Requirements

This section includes the system requirements for the EngageOne Smart Bill payment processing solution. In addition to the system requirements referenced below, you must have reviewed the sizing sheets (specifications provided with this software) to ensure you configure hardware that is sufficient to support your needs. Next, ensure that you have a mail server installed. (Sites such as https://mailtrap.io allow you to create an SMTP server for testing purposes.) Finally, you must have installed Java (minimum version 8) along with the JDK (minimum version 1.8).

## 6.1 Operating System, Production Server Installation

- Redhat Enterprise Linux Versions 6 and 7
- Solaris 10 and Solaris 9
- HP/UX 11i (v2, v3)

- IBM AIX 7, AIX 6
- Windows 7, 8, or 10
- 4g RAM (minimum)
- ANT installation (required)

### 6.2 Database

- Oracle Enterprise Edition 11g or 12g
- MySQL 5.5 - 5.7
- PostgreSQL 9.5 - 9.6
- Database Storage - 100 GB (typical)

### 6.3 Application Server

- Apache Tomcat: Version 7.0 - 9.0
- JBoss Enterprise Application Platform: Version 6.2 - 7.0.0
- JBoss Application Server (Community Version) - renamed WildFly: Version 8.2 - 10.0.0
- Oracle WebLogic Server (Standard Edition or Enterprise Edition): Version 12.1.2 - 12.2.1
- WebSphere Application Server: Version 8.5 - 8.5.5

### 6.4 Browser Support

EngageOne Smart Bill is compatible with current and previous versions of major browsers for desktops, mobile devices, and tablets. Since all modern browsers implement an *auto update* feature, these versions are generally sufficient. Browser and OS support are summarized below:

- Chrome – Current version and previous version; OS includes Android, IOS, Mac OS X, Linux, and Windows.
- Internet Explorer – Version 11; OS includes Windows.
- Microsoft Edge – Current version; OS includes Windows.
- Firefox – Current version and previous version; OS includes Android, Mac OS X, Linux, and Windows.
- Safari – Current version and previous version; OS includes IOS and Mac OS X.

## 7 Installation and Configuration

You install the EngageOne Smart Bill product using the product installer and documentation provided with the release. Prior to EngageOne Smart Bill installation, you must have the prerequisite operating system, application server, and database software installed and configured.

The process for installing and configuring the software is as follows:

- Install the EngageOne Smart Bill software.
  - During the installation process, you run an executable file that will install the solution and run the required scripts.
- Load custom branding for your EngageOne Smart Bill portal.
  - Branding updates the site's CSS with new styles, icons, and images.
- Localize your EngageOne Smart Bill portal.

    - Change text and input validation for each language and locale that you want to support.
- Modify e-mail templates.
    - Template modification allows you to alter the brand and text associated with each type of e-mail that the system can send.

# 8 A Growing Investment

EngageOne Smart Bill is one solution in a range of EngageOne self-service products. Other products include:

- EngageOne Smart View – Portal that provides an online view of documents stored in the client repository. Through EngageOne Smart View, end customers and business support personnel can search for, retrieve, and view a variety of documents including account statements, contracts, policy materials, and other correspondence – both recent and historical. EngageOne Smart View operates as a stand-alone solution or as part of your existing portal. In addition, EngageOne Smart Bill can be combined with EngageOne Smart View to provide a comprehensive view of a customer's bills and documents to include dynamic data and PDFs along with current and historical documents.
- EngageOne Smart Bill – An online billing solution that operates as a stand-alone solution or as part of your existing portal. It can be added to an EngageOne Smart Pay or EngageOne Smart View solution to provide a comprehensive view of a customer's bills and documents to include dynamic data and PDFs along with current and historical documents.
- EngageOne Liaison – The technology that allows Pitney Bowes, Inc. to build EngageOne Liaison solutions. EngageOne Liaison bundles Smart Bill, Smart Pay, and Smart View into an open solution that you can freely extend to meet your business needs.

All products are built on the same base platform; therefore, they combine seamlessly using the same branding, templates, and database schema.