

# Oracle Utilities Opower Digital Self Service Transactions - Bill Download Integration Guide

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# Getting Started

The Digital Self Service - Transactions Cloud Service includes a suite of digital experiences that allows customers to perform self-service transactions on a desktop or mobile device. This functionality includes the ability to view, download, and pay bills. In order for the bill download feature to work, Digital Self Service - Transactions must be able to request and receive data from your utility's chosen bill storage solution. This guide provides information about the Bill Provisioning Service API necessary to integrate Digital Self Service - Transactions with the utility bill storage solution.

For an overview of all cloud services available from Oracle Utilities, see the *Oracle Energy and Water Cloud Service Descriptions* online at [Oracle Contracts - Cloud Services Service Descriptions](#).

**Note:** This documentation reflects the most recent release of Digital Self Service - Transactions, which is listed as part of the [Release Readiness documentation](#).

## Requirements and Limitations

All data requirements and limitations for Digital Self Service - Transactions must be met. See [Oracle Utilities Opower Digital Self Service - Transactions Cloud Service Product Overview](#) to learn more about the requirements and limitations that apply to this product.

## Bill Download Feature

Digital Self Service - Transactions provides customers with the ability to view their bill and learn about additional information related to their bill, supported through an integration with the Oracle Utilities Customer Care and Billing or Customer to Meter systems. Since customer billing data storage is managed by utility partners internally or through third-party vendors, Digital Self Service - Transactions must integrate with your utility's custom solutions to provide the bill download feature.

**Note** The specific platform and framework of the bill storage solution is determined by the utility.

## Bill Download Links

Links allowing customers to download their bill can be made available in Digital Self Service - Transactions, which are available to customers viewing their billing and payment

history, bill details, and breakdown of new charges. Examples of these features which include bill download links are provided below. Requests must be submitted using [My Oracle Support](#), to complete required bill download inputs, which are described in the [Digital Self Service - Transactions Configuration Guide](#).

## Bill Details

Bill download links can be made available near the bottom of the bill details.

<b>Bill Details</b>	
Posted November 1, 2019	
<hr/>	
<b>Previous Balance</b>	<b>\$715.58</b>
<b>Payment Towards Previous Balance</b>	<b>\$0.00</b>
<hr/>	
<b>Past Due</b>	<b>\$715.58</b>
Please pay this balance right away	
<b>New Charges</b>	<b>\$290.87</b>
<a href="#">See details in module below</a>	
<hr/>	
<b>Total</b>	<b>\$1,006.45</b>
<hr/>	
<a href="#">View bill (PDF)</a>	<a href="#">MAKE A PAYMENT</a>
Due November 18, 2019	

## Breakdown of New Charges

Bill download links can be made available near the bottom of the breakdown of new charges.

## Breakdown of new charges

1900 Great Dane Dr, San Francisco, CA, 94103

**Electric residential rate** **\$85.24**

**Apr 1 - May 1** 30 days

**Apr 2 - May 1**

Service charge	\$15.00
166.36 kWh at \$0.134 per kWh peak usage	\$22.29
552.12 kWh at \$0.03029 per kWh off peak usage	\$16.72
143.00 kWh at \$0.06783 per kWh mid peak usage	\$9.70
PCA 861.48 kWh at \$0.00547 per kWh	\$4.71
Energy total	\$53.42
City sales tax 11.5%	\$7.87
State sales tax 7.5%	\$8.78
County sales tax 0.25%	\$0.17
<b>Total charges</b>	<b>\$85.24</b>

Service ID: 9949136356

Rate Plan: Electric residential time of use (on/off/mid)

**Total new charges** **\$85.24**

[View bill \(PDF\)](#)

## Billing and Payment History

Bill download links can be made available near the top of billing and payment history, as well as alongside applicable bill postings.

### Billing and payment history

All transactions ▼ All dates ▼ Clear [Download history](#)

**i** You can only download files up to a year old.

Date	Activity	Amount	
Oct 15, 2022	▼ Bill posted	-\$8.70	<a href="#">↓</a>
	Gas service	\$41.30	
	Adjustment	-\$50.00	
	<b>Total bill</b>	<b>-\$8.70</b>	
	<a href="#">View bill details</a>		
Sep 23, 2018	► Payment received	-\$38.00	
Sep 12, 2018	► Bill posted	\$38.00	<a href="#">↓</a>
Sep 12, 2018	► Bill posted		<a href="#">↓</a>

## Making Bill Requests

The request flow is triggered when customers attempt to download their bill:

1. **Customer request:** The Bill Provision Service REST API is invoked when the customer clicks the **Download Bill** link in the Oracle Utilities Opower Digital Self Service - Transactions user interface.
2. **Bill request:** The bill retrieval operation requests the bill document from the utility bill provisioning service. The request is sent from Digital Self Service - Transactions over a TLS connection with no content. The request can occur over a secure tunnel if desired. For more information on network configuration for Digital Self Service - Transactions, see the [Oracle Utilities Opower Digital Self Service - Transactions Configuration Guide](#).
3. **Bill retrieval:** The bill provisioning service response is returned to Digital Self Service - Transactions with the requested bill document.

## Setting Up the Bill Download API

Integrating your utility's chosen bill storage service with Digital Self Service - Transactions involves providing Oracle Utilities with the IP address of your utility's bill storage center

and implementing the Bill Provisioning API provided in this documentation.

**Note:** Bill provisioning services hosted in third-party data centers are supported if the network is correctly and securely configured by the utility partner.

## Providing the Data Center IP Address

Your utility must provide Oracle Utilities Opower with the IP addresses of the data center that hosts their bill storage solution. The IP address is used to grant inbound access from the Oracle Utilities data center to the utility bill provisional service. For more information on network configuration for Digital Self Service - Transactions, see the [Oracle Utilities Opower Digital Self Service - Transactions Configuration Guide](#).

- The IP address must be provided out of band and be reachable from the Oracle Utilities data center either by IPsec tunnel or over another secure tunnel, or over HTTPS using basic auth.
- It is recommended that the utility partner set up a High Availability configuration for the bill provision service implementation set to the IP address of the load balancer.

## Implementing the Bill Provisioning API

**Note:** The wide range of bill storage solutions used by utilities makes including step-by-step integration instructions beyond the scope of this documentation. Your utility must work with their bill storage solution partner to implement the API integration requirements captured in this documentation.

The bill storage solution must be configured to implement the Bill Provisioning API specified in this document and account for the following:

- **Security:** Oracle Utilities requires HTTPS protocol to secure the connection with the data centers when invoking the API. Self-signed certificates are accepted for data centers that are unable to resolve hostnames.
- **Request scale:** The number of requests to the bill provisioning service to perform a bill retrieval operation is directly proportional to the number of requests by users to download their bills. The implementation must properly scale to support the number of simultaneous requests to the bill provisioning service. Additionally, Digital Self Service may queue bill retrieval requests on its side. This has no impact on the utility bill provision service implementation.



- **Health check:** The implementation must support a health check load every 10 seconds.
- **Timeout:** Timeout for all requests made before retrieval response is five seconds or more. Timeout for retrieval of the entire bill is 60 seconds or more.
- **Load balance:** The load-balance end point must conform to the API described in this guide. To allow load distribution, failover, and zero-downtime deployment, it is highly recommended that the utility or utility bill storage service partner implement the bill storage solution as Highly Available. This can be done by setting up a health-aware load balancer in front of multiple instances of the implementation.

## API Specification

This section describes the distinct API requirements that must be met to enable data transfer from your utility billing storage solution to Digital Self Service - Transactions. The API used to request and retrieve bill information from your utility bill provisioning service is designed according to the industry-standard REST principals.

## Bill Retrieval Operation

The bill retrieval operation is invoked to request the bill document from your utility bill provision service. The request is then sent from Oracle Utilities Opower Digital Self Service - Transactions over a TLS connection with no content. The response is returned with the bill document or no content.

**Note:** The API request can be made using either no authentication or the standard HTTP Basic Authentication. The credentials must be shared out-of-band and will be securely stored by Oracle Utilities.

## Bill Retrieval Request

**Method:** GET

**URL Pattern:** `https://[ip_addr]/dss/bill/download/[bill_id]`

The URL pattern must meet the following criteria:

- The IP address must be provided out of band and be reachable from the Oracle Utilities or over HTTPS using basic auth. It must be reachable from the Oracle Utilities data center using the IPsec tunnel or reachable over a secure tunnel.
- It is recommended that your utility partner set up a High Availability configuration for the bill provision service implementation set to the IP address of the load balancer.

- The `bill_id` parameter is the Bill ID assigned by Oracle Utilities Customer to Meter or Customer Care and Billing system to the bill being retrieved.

## Headers

The following header must be included with the request:

**Note:** The request may include additional information, but this information is treated as informative only and will not impact the semantics of the API described in this documentation.

Header	Value	Description
Accept	application/pdf	Specifies the format of the processed bill document. PDF is the only supported format.

## Bill Retrieval Response

In order for Digital Self Service - Transactions to identify and appropriately escalate various problems and security errors, it is important that the bill retrieval service implemented by your utility return the supported response status codes.

**200 OK:** The bill retrieval is successful. The response body must include the following:

- The complete binary image of the bill document in PDF format.
- Header content-type is set to application / pdf.
- Header content-length is set to the size of the image in bytes.

**Note:** The maximum supported size for content-length is 5 MB.

**404 Not Found:** The bill document for the given `bill_id` was not found.

**500 Server Error:** Signals an internal error with the bill provisioning service implementation.

**Note:** Responses that fall outside of the supported response codes will be handled as a 500 Server Error.

## Health Check Operation

The health check operation is used by Digital Self Service - Transactions to check the status of your utility's bill provision service to ensure that bill requests can be answered. The health check operation may be invoked as frequently as every ten seconds.

### Health Check Request

**Method:** GET

**URL pattern:** `https://[ip_addr]/dss/bill/healthcheck`

**Note:** This request has no parameters.

**Headers:** The health check has no specific headers. Any headers that might be included with the request are expected to be informative and not affect the semantics of the API described in this guide.

### Health Check Response

In order for Digital Self Service - Transactions to monitor its integration with the bill provisioning service implemented by your utility, it is important that only supported response status codes are returned following a health check. Response status codes not listed in this section indicate abnormal health of the bill provisioning service.

**200 OK:** Signals of normal health of the service and that the health check was a success. The header content-length of the 200 OK response must be set to zero.

## Contacting Your Delivery Team

Your Oracle Utilities Delivery Team is the group responsible for assisting your deployment of Digital Self Service - Transactions. Contact your Delivery Team if you have any questions about your program products and implementation. Open a service request in My Oracle Support to coordinate configuration of Digital Self Service - Transactions features.

**To request changes to default product and message configurations:**

1. Review the tables provided in this documentation for each feature that has applicable configuration options.
2. Provide any changes to the default product and message configurations listed for each feature by submitting your request through [My Oracle Support](#).

- a. Go to [My Oracle Support](#). Click **Cloud Support** and log in.
- b. Click the **Create Service Request** button and follow the prompts to complete the Service Request.