Web Services Reference for Oracle Self-Service E-Billing

Version 6.1.1

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Contents

Chapter 5: Customizing RESTful Resources

Chapter 6: Examples of Web Services

1 What's New in This Release

What's New in Web Services Reference for Oracle Self-Service E-Billing, Version 6.1.1

Table 1 lists changes in this revision of the documentation to support release 6.1.1 of the software.

Table 1. What's New in Web Services Reference for Oracle Self-Service E-Billing, Version 6.1.1

Topic	Description
"Web Service API Resource for Authentication" on page 17	Modified topic. Added an API resource for impersonation.
"Web Service API Resources for Hierarchies" on page 27	Modified topic. Added additional hierarchy API resources for managing hierarchy information. Updated the resource URI for getting a list of root nodes for a hierarchy and added the option to specify a period.
"Web Service API Resources for Payments" on page 30	Modified topic. Added additional payment API resources for managing payment information.
"Examples of the Authentication Web Service" on page 41	Modified topic. Added an example of how to use the impersonation resource.
"Examples of the Users Web Service" on page 74	Modified topic. Updated the examples of managing user information for DAISY (Digital Accessible Information System) audio files.
"Examples of the Hierarchy Web Service" on page 82	New topic. Describes examples of how to use the hierarchy resources.

What's New in Web Services Reference for Oracle Self-Service E-Billing, Version 6.1.

This is a new guide for Oracle Self-Service E-Billing. Web services are a new feature in this release of the software. Table 2 lists the chapters in this guide.

Table 2. Chapters for Web Services Reference for Oracle Self-Service E-Billing, Version 6.1

Topic	Description
Chapter 2, "Overview of Web Services"	This chapter provides general information about using Web services with Oracle Self-Service E-Billing.
Chapter 3, "Discovering RESTful Web Service Resources"	This chapter describes how to discover Web service resources using the RESTful Services Client, a Web browser, or the Web Application Definition Language (WADL).

Table 2. Chapters for Web Services Reference for Oracle Self-Service E-Billing, Version 6.1

Topic	Description
Chapter 4, "RESTful API Resource Reference"	This chapter describes the RESTful API resources for using Web services with Oracle Self-Service E-Billing.
Chapter 5, "Customizing RESTful Resources"	This chapter describes how to customize some of the RESTful resources that are available with Web services.
Chapter 6, "Examples of Web Services"	This chapter provides examples of how to use Oracle Self-Service E-Billing Web services.

2 Overview of Web Services

This chapter provides an overview of Oracle Self-Service E-Billing Web services. It includes the following topics:

About Oracle Self-Service E-Billing Web Services

Oracle Self-Service E-Billing Web services provide a programmatic interface over the Web that developers and system integrators can use to build applications to integrate with Oracle Self-Service E-Billing applications.

A *Web service* is a discrete piece of business logic, accessible through Internet protocols, that allows businesses to communicate with each other and with other clients, without detailed knowledge of each other's IT systems.

Figure 1 shows how Web services interact with a user and the Oracle Self-Service E-Billing database.

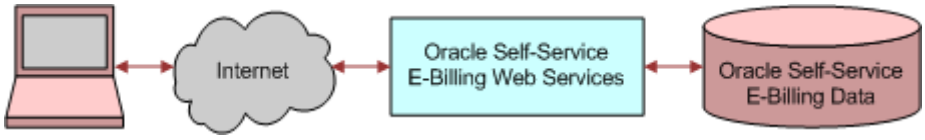

Figure 1. Web Services Communication with Oracle Self-Service E-Billing

The user communicates with Oracle Self-Service E-Billing over the Internet using HTTP and HTTPS requests. Oracle Self-Service E-Billing Web services use the Java API for RESTful Web services (JAX-RS) Specification. JAX-RS is a Java programming language API that provides support for creating Web services according to the Representational State Transfer (REST) architectural style.

The Web services APIs allow you to build programs to integrate with Oracle Self-Service E-Billing. Some common examples of client integrations include the following:

- **Web-based portal applications.** You can create customized Web-based applications using Active Server Pages (ASPs), Java Server Pages (JSPs), or similar Web technologies that access Oracle Self-Service E-Billing through a Web services interface. For example, a portal site can create a portlet that invokes the Oracle Self-Service E-Billing Web services APIs to get a billing account summary or display the billing trend for the current user.

- **Native mobile applications.** Your native mobile applications can invoke Oracle Self-Service E-Billing Web services to perform functions, such as retrieving account balances and returning analytic reports. All Oracle Self-Service E-Billing Web services can be invoked by mobile applications.
- **CRM, provisioning, and back-office applications.** You can request a provisioning service to create companies, accounts, or services. The provisioning system can then call Oracle Self-Service E-Billing Web services to create those business objects in the Oracle Self-Service E-Billing application, which allows users to view their service information immediately. Similarly, an account receivable system that received a payment from a customer for an account could call an Oracle Self-Service E-Billing Web service to update the account balance in Oracle Self-Service E-Billing, enabling a user to view her updated account balance immediately.
- **Add-on read operations.** You can extend Oracle Self-Service E-Billing functionality to add additional reports that query data from Oracle Self-Service E-Billing database tables or any customized or additional database tables. These reports can be configured and function as part of the RESTful Web services.

Oracle Self-Service E-Billing provides a separate EAR file with Web-services functionality, which you deploy on a separate application server.

About Web Services Security

Oracle Self-Service E-Billing Web services currently support custom token authentication. The authentication generates a unique token for each registered API user, then the token for the registered user is sent with every request to the service.

A *token* is a secure random text string with a default length of 48. The following string is an example of a token:

```
Dlc7lkpeVp9InmOUB82dJMg6LF7WQ6ZnujTHq8zP94uCWtjg
```

When a token is created, it stays on the server temporarily and expires automatically after a certain period. The default value is 20 minutes, and it is preconfigured. The valid token must be passed in an HTTP header for each subsequent Web service request. If a request is made with an invalid token, then an exception with status code 401, which is a standard code for unauthorized access, is returned.

Types of Web Services

Oracle Self-Service E-Billing uses the following types of Web services:

- **Transactional data access services.** Transactional data access services provide access to Oracle Self-Service E-Billing business objects and provide Create, Read, Update, and Delete (CRUD) operations to these objects. A list of these types of Web services can be is in *rsclient,* which is a Web-service test-harness application provided to help you find services. The Web service information in the rsclient test-harness application includes the name of the service, input, and output.

- **Analytics report services.** Analytics report services generate analytics reports from Oracle Self-Service E-Billing for various business needs. These services provide read-only operations. You can extend these services to retrieve additional information from Oracle Self-Service E-Billing by using the report XML file configuration.

About Web Services Localization

The locale of the content for requests and responses is typically based on the authenticated user's locale preference, which is set on the User Profile Preferences page in the Oracle Self-Service E-Billing Web application.

Each API call has a passed-in token that represents the authenticated user. The locale values are specified in the HTML header of requests and responses. In Web service requests, you can retrieve the locale from the Accept-Language attribute. Oracle Self-Service E-Billing supports one acceptable language for each request. In Web service responses, the locale value is in the Content-Language attribute.

The Date and Number values are displayed in the format that is specific to the locale. The currency amount is based on the billing account statement, not on the authenticated user's preferred locale. For more information about localizing your implementation, see “About Customizing Localization Values” on page 36.

3 Discovering RESTful Web Service Resources

This chapter describes the various methods that you can use to view Oracle Self-Service E-Billing Web-service resources. It includes the following topics:

Discovering Oracle Self-Service E-Billing RESTful Services Using the RESTful Services Client

You can use the rsclient test-harness application to discover API input and output when using Create, Read, Update, Delete (CRUD) operations in development. Using the rsclient test-harness application, you can view PUT, POST, and some GET operations, and any other operations with a payload. *Payload* refers to the content of the XML.

To discover API input and output

1. Start the RESTful Service server domain.
2. Start the RESTful Service client domain.
3. Start the rsclient test-harness application by using the following URL:

   http://host2:port2/rsclient/webservice.action
4. Obtain an authentication token by using one of the following methods:
   - From the RS Name list, select the authenticate Web service.
   - Log in to the REST services server with a URL in the following format:

     http://host1:port1/ebillingrs/rsLogin.action

   The token has an expiration period of 20 minutes, which is preconfigured. When the token expires, you must invoke the authenticate service again to get a new token.
5. Select a Web service from the RS Name list.

   The rsclient test-harness application displays the resource and the method for discovery associated with the selected REST services name.
6. Enter the following information as required:

- Any fields that are specific to the selected service. For example, if you select the showUser resource, then the Resource field shows the URI as /users/{userId}, and the additional userId field enables you to enter the valid user ID for the URI.
- Enter any additional parameters in the Parameters field, using the format name=value pair. This format is the same as the URL.

  For example, for the showReport Web service, you must enter the report ID in the report_id field with the valid parameters in the Parameters field. If more than one parameter is needed, then you can concatenate the name=value pairs using a comma (,), semicolon (;), or ampersand (&).Enter a valid token value in the token field.
- If the input XML text area is displayed, then enter the XML payload data for POST and PUT operations.

  For information on how to format the XML payload data, see Chapter 6, "Examples of Web Services."

  The Generate URI button lets you see the URI generated for the selected service.

7 Click Submit to send the request to the Web server and to display the response in the Response text area.

Discovering Oracle Self-Service E-Billing RESTful Services Using a Web Browser

You can access read-only RESTful service resources, such as GET operations, using a Web browser.

To discover RESTful services using a Web browser

1 Start the RESTful Service server domain.

2 Start a new browser using the following URL, and enter a valid user name and password:

http://host1:port1/ebillingrs/rsLogin.action

This action returns a secure token for the session.

3 Edit the same URL with the name of an individual resource, and enter the edited URL in a different window of the same browser.

For example, the following URL returns an account summary for all accounts that the login user can access:

http://host1:port1/ebillingrs/rs/analytics/accounts

The URL response returns link elements that you can use to drill down further. From the drill-down link, you can view all the GET Web services using a browser session.

4 To find response HTML header information, use third-party browser plug-ins to view the HTML header in a separate window.

The following Web sites provide a toolbar for viewing an HTTP header for Firefox and describe how to add it to your Firefox browser:

https://addons.mozilla.org/en-US/firefox/addon/live-http-headers/

http://www.addictivetips.com/internet-tips/view-http-headers-of-any-web-page-in-firefox/

Discovering Oracle Self-Service E-Billing RESTful Services Using the Web Application Definition Language

You can use Web Application Definition Language (WADL) to discover all supported Oracle Self-Service E-Billing RESTful service resources. WADL lets you view the overall XML schema.

To discover Oracle Self-Service E-Billing RESTful services using WADL

- Use the following URL:

  http://host1:port1/ebillingrs/rs/application.wadl

4 RESTful API Resource Reference

This chapter describes the RESTful API resources for using Web services with Oracle Self-Service E-Billing. It includes the following topics:

Web Service API Resource for Authentication

You use the authenticate resource as described in Table 3 to authenticate an Oracle Self-Service E-Billing user.

Table 3. API Resource for Authentication

Operation	Resource URI	Additional Input Parameters	Description
POST	/authentication	None	Returns an authenticated user token.
POST	/authentication/ impersonation	csr_id, target_user_ id	Returns an impersonation token.

Web Service API Resources for Statements

You use the statements resource described in Table 4 to manage statement information in Oracle Self-Service E-Billing.

Table 4. API Resources for Statements

Operation	Resource URI	Additional Input Parameters	Description
GET	/statements/{account_id}/latest	None	Returns the latest statement summary for the account, where account_id is the unique account identifier, and it is the concatenation of biller id and account number, for example, BS1%7C7836380DEMO1.
GET	/statements/{account_id}/	None	Returns the list of statements available for the account, including the statement date and number.
GET	/statements/{statement_key}/summary	accountKey, reportPeriodStart	Returns the statement summary, where the statement key is an internal key for the statement object, which can be available from calls to the /statements/{account_id}/latest, or /statement/{account_id} resources.
GET	/statements/{statement_key}/account_summary	accountKey, reportPeriodStart	Returns the summary for an account within a statement, where the statement key is an internal key for the statement object, which can be available from calls to the /statements/{account_id}/latest, or /statement/{account_id} resources.
GET	/statements/{statement_key}/service_agreements/{service_key}/summary	accountKey, reportPeriodStart	Returns the summary of a service within a statement. Service_key can be retrieved from a call to the /statements/{statement_key}/account_summary resource.
GET	/statements/{statement_key}/service_agreements/{service_key}/usage	accountKey, reportPeriodStart	Returns the statement usage summary for a particular service agreement. Service_key can be retrieved from a call to the /statements/{statement_key}/account_summary resource.

Table 4. API Resources for Statements

Operation	Resource URI	Additional Input Parameters	Description
GET	/statements/{statement_key}/service_agreements/{service_key}/usage_details	accountKey, reportPeriodStart	Returns the statement usage details for a particular service agreement. Service_key can be retrieved from a call to the /statements/{statement_key}/account_summary resource.
GET	/statements/{statement_key}/service_agreements/{service_key}/transaction_details	serviceDetailKey	Returns the statement transaction details for a particular service agreement. Service_key can be retrieved from a call to the /statements/{statement_key}/account_summary resource.

Web Service API Resources for Analytics Based on the Billing Account

You use the analytics resource described in Table 5 to manage analytics that are based on the billing account.

Table 5. API Resources for Analytics That Are Based on the Billing Account

Operation	Resource URI	Additional Input Parameters	Description
GET	/analytics/accounts	period	Returns the overview summary of the account that the current user can access for a particular period. If no period ID is passed, then the data for the latest period that has ETL data loaded is returned. The period must be the period name returned from a call to the /periods service.
GET	/analytics/{account_id}/summary	reportPeriodStart, reportPeriodEnd	Returns the account summary. The account_id can be retrieved from the response of the /analytics/accounts service.

Table 5. API Resources for Analytics That Are Based on the Billing Account

Operation	Resource URI	Additional Input Parameters	Description
GET	/analytics/{account_id}/amount_due	None	Returns the current amount due for an account, which can be different from the statement due. The account_id can be retrieved from the response of the /analytics/accounts service.
GET	/analytics/{account_id}/billing_trend	reportPeriodStart, reportPeriodEnd	Returns the account billing trend for the period specified. The value of {account_id} can be retrieved from the response of the /analytics/accounts service.
GET	/analytics/{account_id}/service_agreements	period	Returns the list of service agreements for a particular account. The value of {account_id} can be retrieved from the response of the /analytics/accounts service.
GET	/analytics/{account_id}/service_agreements/{service_number}/overview	reportPeriodStart, reportPeriodEnd	Returns the service overview for a particular service agreement number. The value of {service_number} is available from the call to the /analytics/{account_id}/service_agreements service.
GET	/analytics/{account_id}/service_agreements/{service_number}/details	reportPeriodStart, reportPeriodEnd, parameter(usage Type)	Returns the service details. The value of {service_number} is available from the call to the /analytics/{account_id}/service_agreements service.
GET	/analytics/{account_id}/service_agreements/{service_number}/transaction_details	serviceDetailKey	Returns the transaction details for a service agreement. The value of {service_number} is available from the call to the /analytics/{account_id}/service_agreements service.
GET	/analytics/{account_id}/service_agreements/{service_number}/usage_trend	reportPeriodStart, reportPeriodEnd	Returns the usage trend for a service agreement. The value of {service_number} is available from the call to the /analytics/{account_id}/service_agreements service.

Table 5. API Resources for Analytics That Are Based on the Billing Account

Operation	Resource URI	Additional Input Parameters	Description
GET	/analytics/{account_id}/topx/highest_spending_services	reportPeriodStart, reportPeriodEnd, parameter(numResults)	Returns the highest spending services for an account.
GET	/analytics/{account_id}/topx/most_expensive_calls	reportPeriodStart, reportPeriodEnd, parameter(numResults)	Returns the most expensive calls for an account.
GET	/analytics/{account_id}/topx/longest_calls	reportPeriodStart, reportPeriodEnd, parameter(numResults)	Returns the longest calls for an account.
GET	/analytics/{account_id}/topx/most_frequently_called_numbers	reportPeriodStart, reportPeriodEnd, parameter(numResults)	Returns the most frequently called number for an account.
GET	/analytics/{account_id}/topx/most_frequently_called_destinations	reportPeriodStart, reportPeriodEnd, parameter(numResults)	Returns the most frequently called destinations for an account.
GET	/analytics/{account_id}/topx/most_frequently_called_countries	reportPeriodStart, reportPeriodEnd, parameter(numResults)	Returns the most frequently called countries for an account.

Web Service API Resources for Analytics Based on the Billing Hierarchy (Business Edition Only)

You use the analytics and dashboard resources to manage statement information for Oracle Self-Service E-Billing as described in Table 6. The number of returned entries is based on the calling user's access within the company's billing hierarchy.

Table 6. API Resources for Analytics That Are Based on the Billing Hierarchy (B2B Only)

Operation	Resource URI	Additional Input Parameters	Description
GET	/dashboard/ account_billing_overview	reportPeriodStart, reportPeriodEnd	Returns the account billing overview for all accounts that a user can access from her position in the company's billing hierarchy.
GET	/dashboard/ account_billing_trend	reportPeriodStart, reportPeriodEnd	Returns the account billing overview for all accounts that a user can access from her position in the company's billing hierarchy.
GET	/dashboard/service_trend	reportPeriodStart, reportPeriodEnd	Returns the service agreement trend for all service agreements that a user can access from her position in the company's billing hierarchy.
GET	/analytics/ highest_spending_service s	reportPeriodStart, reportPeriodEnd, parameter(num Results)	Returns the highest-spending services of all services that a user can access from her position in the company's billing hierarchy.
GET	/analytics/ most_expensive_calls	reportPeriodStart, reportPeriodEnd, parameter(num Results)	Returns the most expensive calls of all service agreements that a user can access from her position in the company's billing hierarchy.
GET	/analytics/longest_calls	reportPeriodStart, reportPeriodEnd, parameter(num Results)	Returns the longest calls of all service agreements that a user can access from her position in the company's billing hierarchy.
GET	/analytics/ most_frequently_called_ numbers	reportPeriodStart, reportPeriodEnd, parameter(num Results)	Returns the most frequently called numbers of all service agreements that a user can access from her position in the company's billing hierarchy.

Table 6. API Resources for Analytics That Are Based on the Billing Hierarchy (B2B Only)

Operation	Resource URI	Additional Input Parameters	Description
GET	/analytics/most_frequently_called_destinations	reportPeriodStart, reportPeriodEnd, parameter(numResults)	Returns the most frequently called destinations of all service agreements that a user can access from her position in the company's billing hierarchy.
GET	/analytics/most_frequently_called_countries	reportPeriodStart, reportPeriodEnd, parameter(numResults)	Returns the most frequently called destinations of all service agreements that a user can access from her position in the company's billing hierarchy.

Web Service API Resources for Analytics Based on the Business Hierarchy (B2B Only)

You use the analytics resource to manage analytics that are based on the B2B business hierarchy as described in Table 7. The number of entries returned is based on the calling user's access to the company's specific business hierarchy.

Table 7. API Resources for Analytics That Are Based on the Business Hierarchy (B2B Only)

Operation	Resource URI	Additional Input Parameters	Description
GET	/analytics/{hierarchy_id}/{hierarchy_node_id}/group_spending_trend	reportPeriodStart, reportPeriodEnd	Returns the group-spending trend for all groups under a particular business hierarchy position.
GET	/analytics/{hierarchy_id}/{hierarchy_node_id}/service_spending_trend	reportPeriodStart, reportPeriodEnd	Returns the service-spending trend for all services under a particular business hierarchy position.
GET	/analytics/{hierarchy_id}/{hierarchy_node_id}/highest_spending_services	reportPeriodStart, reportPeriodEnd, parameter(numResults)	Returns the highest-spending service of all services agreements under a particular business hierarchy position.
GET	/analytics/{hierarchy_id}/{hierarchy_node_id}/most_expensive_calls	reportPeriodStart, reportPeriodEnd, parameter(numResults)	Returns the most expensive calls of all service agreements under a particular business hierarchy position.

Table 7. API Resources for Analytics That Are Based on the Business Hierarchy (B2B Only)

Operation	Resource URI	Additional Input Parameters	Description
GET	/analytics/{hierarchy_id}/{hierarchy_node_id}/longest_calls	reportPeriodStart, reportPeriodEnd, parameter(numResults)	Returns the longest calls of all services agreements under a particular business hierarchy position.
GET	/analytics/{hierarchy_id}/{hierarchy_node_id}/most_frequently_called_numbers	reportPeriodStart, reportPeriodEnd, parameter(numResults)	Returns the most frequently called numbers of all services agreements under a particular business hierarchy position.
GET	/analytics/{hierarchy_id}/{hierarchy_node_id}/most_frequently_called_destinations	reportPeriodStart, reportPeriodEnd, parameter(numResults)	Returns the most frequently called destinations of all service agreements that a user can access from her position in the company's billing hierarchy.
GET	/analytics/{hierarchy_id}/{hierarchy_node_id}/most_frequently_called_countries	reportPeriodStart, reportPeriodEnd, parameter(numResults)	Returns the most frequently called countries of all service agreements that a user can access from her position in the company's billing hierarchy.

Web Service API Resources for General Analytics

You use the analytics resource for general analytics as described in Table 8. You can use it to map to any existing or custom reports.

Table 8. API Resources for Generic Analytics

Operation	Resource URI	Additional Input Parameters	Description
GET	/analytics/reports/{report_id}	Report-specific	Returns any reports that you define. The report_id is the ID defined in the report configuration XML file.

Web Service API Resources for Billing Accounts

You use the accounts resource for billing account resources as described in Table 9.

Table 9. API Resources for Billing Accounts

Operation	Resource URI	Additional Input Parameters	Description
GET	/accounts	None	Returns all accounts for the latest period. This information is retrieved from the billing hierarchy in the Business Edition (B2B) or from a user account link table in the Consumer Edition (B2C).
POST	/accounts/b2b	None	Creates a B2B billing account and adds the account to the company's latest period of the billing hierarchy. This API is primarily for object creation. The ETL billing file load can override any attribute values that are entered. For more information about the ETL load, see *Administration Guide for Oracle Self-Service E-Billing*.
POST	/accounts/b2c	None	Creates a B2C billing account.
GET	/accounts/{account_id}	None	Returns an account.
PUT	/accounts/{account_id}	None	Updates an account.
GET	/accounts/{account_id}/balance	None	Returns the current account balance. The balance can differ from the most recent statement.
PUT	/accounts/{account_id}/balance	None	Updates the current balance of the account.

Web Service API Resources for Billing Periods

You use the periods resource described in Table 10 to manage billing period-related information in Oracle Self-Service E-Billing.

Table 10. API Resources for Billing Periods

Operation	Resource URI	Additional Input Parameters	Description
GET	/periods	numResults	Returns a list of the available billing periods.
GET	/periods/current	None	Returns the current period for the system date.
GET	/periods/latest	None	Returns the latest period for which a user has the billing data loaded.

Web Service API Resources for Companies

You use the companies resource described in Table 11 to manage company information in Oracle Self-Service E-Billing.

Table 11. API Resources for Companies

Operation	Resource URI	Additional Input Parameters	Description
GET	/companies	None	Returns all companies.
POST	/companies	None	Creates a company, creates a billing hierarchy for the company, and publishes the billing hierarchy to the current period.
GET	/companies/{company_id	None	Returns a company's information.
PUT	/companies/{company_id}	None	Updates a company's information.

Web Service API Resources for Disputes

You use the disputes resource described in Table 12 to manage disputes in Oracle Self-Service E-Billing.

Table 12. API Resources for Disputes

Operation	Resource URI	Additional Input Parameters	Description
GET	/disputes/account/{account_id}	None	Returns all disputes created for a particular account.
GET	/disputes/{dispute_id}	None	Returns detailed information for a dispute.
PUT	/disputes/{dispute_id}	None	Updates information for a dispute.

Web Service API Resources for Hierarchies

You use the hierarchies resource described in Table 13 to manage hierarchy information in Oracle Self-Service E-Billing.

Table 13. API Resources for Hierarchies

Operation	Resource URI	Additional Input Parameters	Description
GET	/hierarchies	None	Returns a list of hierarchies that the current user can access.
GET	/hierarchies/billing	None	Returns a list of billing hierarchies, including IDs and names, that the current user can access.
GET	/hierarchies/business	None	Returns a list of business hierarchies, including hierarchy IDs and names, that the current user can access.
GET	/hierarchies/type/{hierarchy_type}	None	Returns a list of hierarchies by hierarchy type, that the current user can access.
GET	/hierarchies/{hierarchy_id}/my_root_nodes	period (Optional)	Returns the list of root nodes of the hierarchy that the current user can access, for the latest period. You can optionally specify a different period.

Table 13. API Resources for Hierarchies

Operation	Resource URI	Additional Input Parameters	Description
GET	/hierarchies/{hierarchy_id}/linktarget_type/	None	Returns a list of valid link target types for a hierarchy.
GET	/hierarchies/{hierarchy_id}/{node_id}/accounts	None	Returns a list of accounts for the hierarchy that the current user can access, and an index.
GET	/hierarchies/{hierarchy_id}/{node_id}/service_agreements	None	Returns a list of service agreements for the hierarchy that the current user can access.
GET	/hierarchies/{hierarchy_id}/{node_id}/groups	None	Returns a list of groups for the hierarchy that the current user can access.
GET	/hierarchies/{hierarchy_id}/{node_id}/children	None	Returns a list of child nodes for a particular node, and a node index.
GET	/hierarchies/{hierarchy_id}/{node_id}/{linktarget_type}	None	Returns a list of link targets for a particular node.
GET	/hierarchies/{hierarchy_id}/{node_id}/users/assigned	None	Returns a list of users assigned to a node.
GET	/hierarchies/{hierarchy_id}/{node_id}/users/unassigned	None	Returns a list of users unassigned to a node.
GET	/hierarchies/{hierarchy_id}/{node_id}/users/authorized	None	Returns a list of users authorized for this node.
GET	/hierarchies/{hierarchy_id}/{node_id}/users/unauthorized	None	Returns a list of users unauthorized for this node.
GET	/hierarchies/{hierarchy_id}/linktarget_node/{linktarget_uri}	None	Returns a node ID using the unique link target URI, without the hierarchy node type.
POST	/hierarchies/{hierarchy_id}/{node_id}/accounts	None	Adds an account to a node as a child node.
POST	/hierarchies/{hierarchy_id}/{nodeid}/service_agreements	None	Adds a service agreement to a node as a child node.
POST	/hierarchies/{hierarchy_id}/{nodeid}/groups	None	Adds a group to a node as a child node.
POST	/hierarchies/{hierarchy_id}/{nodeid}/{linktarget_type}	None	Adds a linktarget node with a particular link target type as a child node.

Table 13. API Resources for Hierarchies

Operation	Resource URI	Additional Input Parameters	Description
POST	/hierarchies/type/{hierarchy_type}	None	Creates a hierarchy for a particular hierarchy type.
POST	/hierarchies/{hierarchy_id}/{nodeid}/users/	None	Assigns a user to a node using the user ID from the payload.

Web Service API Resources for Service Agreements

You use the serviceagreements resource described in Table 14 to manage service agreements in Oracle Self-Service E-Billing.

Table 14. API Resources for Service Agreements

Operation	Resource URI	Additional Input Parameters	Description
GET	/serviceagreements	None	Returns all service agreements for the current period.
POST	/serviceagreements	None	Creates a service agreement and adds it to the billing hierarchy.
GET	/serviceagreements/accounts/{account_id}	None	Returns all service agreements for an account.
GET	/serviceagreements/accounts/{account_id}/{sa_number}	None	Returns information for a service agreement.
PUT	/serviceagreements/accounts/{account_id}/{sa_number}	None	Updates information for a service agreement.

Web Service API Resources for Users

You use the users resource described in Table 15 to manage user information in Oracle Self-Service E-Billing.

Table 15. API Resources for Users

Operation	Resource URI	Additional Input Parameters	Description
GET	/users	None	Returns a list of users whom you can access.
POST	/users/b2b	None	Creates a B2B user for synchronization only.
POST	/users/b2c	None	Creates a B2C user.
GET	/users/{user_id}	None	Returns a user.
PUT	/users/{user_id}	None	Updates a user's information.

Web Service API Resources for Payments

You use the payment resources described in Table 16 to manage payment information in Oracle Self-Service E-Billing.

Table 16. API Resources for Payments

Operation	Resource URI	Additional Input Parameters	Description
POST	/payments/externals/ billingaccount/{account_id}	None	Posts a payment transaction for a particular billing account, made externally to Oracle Self-Service E-Billing.
PUT	/payments/externals/ {transaction_id}	None	Updates a payment transaction made externally to Oracle Self-Service E-Billing.
GET	/payments/externals/ {transaction_id}	None	Returns a payment transaction made externally to Oracle Self-Service E-Billing.

Table 16. API Resources for Payments

Operation	Resource URI	Additional Input Parameters	Description
POST	/payments/txns/billingaccount/{account_id}	None	Posts a payment for a particular amount on the account using the default payment account. The payment amount is in the payload and must be compatible with international standards.
GET	/payments/txns/billingaccount/{account_id}	Optional start and end dates. If the start date is empty, then the default is 30 days prior to today's date.	Returns a list of payment transactions made for a particular billing account.
GET	/payments/txns/billingaccount/{account_id}/scheduled	Optional start and end dates.	Returns a list of scheduled payment transactions for a particular billing account.
GET	/payments/txns/billingaccount/{account_id}/paid	Optional start and end dates. If the start date is empty, then the default is 30 days prior to today's date.	Returns a list of completed payment transactions for a particular billing account.
GET	/payments/txns/billingaccount/{account_id}/processing	Optional start and end dates.	Returns a list of in-process payment transactions for a particular billing account.

Table 16. API Resources for Payments

Operation	Resource URI	Additional Input Parameters	Description
GET	/payments/txns/billingaccount/{account_id}/failed	Optional start and end dates. If the start date is empty, then the default is 30 days prior to today's date.	Returns a list of failed payment transactions for a particular billing account.
GET	/payments/txns/billingaccount/{account_id}/canceled	Optional start and end dates. If the start date is empty, then the default is 30 days prior to today's date.	Returns a list of canceled payment transactions for a specific billing account.
GET	/payments/txns/bank/{paymentID}	None	Returns a specific bank payment, showing only the last four digits of the bank card.
GET	/payments/txns/creditcard/{paymentID}	None	Returns a specific credit card payment, showing only the last four digits of the credit card.
GET	/payments/externals/billingaccount/{account_id}	None	Returns all payment transactions made externally for a particular billing account.

5 Customizing RESTful Resources

This chapter describes how to customize some of the RESTful resources that are available with Web services. It includes the following topics:

Customizing Analytics Resources

Many of Oracle Self-Service E-Billing RESTful read APIs are provided through the Oracle Self-Service E-Billing reporting engine framework. Each resource is mapped to an Oracle Self-Service E-Billing report, in which data sources, SQL, and transformers can be specified in an XML configuration. With this flexible architecture, you can extend the current analytic REST resources if needed.

Resource and Report ID Mapping File

All preconfigured resources implemented using the reporting engine are listed in the ws_reportIdMap.properties file, located in the following directory:

- **UNIX.** *edx_home*/config/webservice
- **Windows.** *edx_home*\config\webservice

In the directory path, *edx_home* is the directory where you installed Oracle Self-Service E-Billing. You can edit the file to customize or extend existing analytics RESTful resources. Each resource entry uses the following format:

```
URI Resource=reportId, {reportId for B2C}
```

URI represents the resource without the input parameter, and reportId is the report identifier specified in the report XML file. If the same URI can be used for both the B2B and B2C applications but with a different report ID, then specify the report ID for the B2B application first, followed by the B2C application. Any additional parameters that you provide must be passed as parameters in the URL. The following report examples are from the report ID mapping property file:

```
/analytics/{account_id}/service_agreements/{service_number}/
overview=telco_std_r3,telco_std_b2c_r3

/statements/{statement_key}/account_summary=statementAccountSummary
```

Resource Mapping Customization

You can use the Oracle Self-Service E-Billing reporting engine to define additional reporting XML. For more information on creating additional analytic reports, see *Implementation Guide for Oracle Self-Service E-Billing*.

Oracle Self-Service E-Billing supports the following types of customization for Web services:

- **Replacing preconfigured REST resources in the property file with your own reports and report IDs.** The property file, ws_reportIdMap.properties, is in one of the following directories:
  - **UNIX.** *edx_home*/config/webservice
  - **Windows.** *edx_home*\config\webservice

  For example, you can change the existing resource entries in the property file as shown in the following examples:

  ```
  /analytics/{account_id}/service_agreements/{service_number}/
  overview=telco_std_r3,my_b2c_serviceoverview_rpt

  /statements/{statement_key}/account_summary=my_statementAccountSummary
  ```

- **Adding a resource to an existing resource category.** A resource category is defined in the URI section of a resource entry in the ws_reportIdMap.properties file, between the first and last forward slashes (/). For example, each of the following are categories:

  ```
  /analytics/{account_id}/service_agreements/{service_number}/

  /statements/{statement_key}/
  ```

  You can add additional resources to a preconfigured category in the ws_reportIdMap.properties property file. The additional mapping entry allows the Oracle Self-Service E-Billing REST services framework to invoke the corresponding reports without recompiling the application. For example, you can add the following entry to the property file:

  ```
  /analytics/{account_id}/service_agreements/{service_number}/peaktime-
  calls=my_peaktime_call_report
  ```

- **Using the generic analytic report resource.** If you want to add additional URI resources to the reporting engine, but if the report does not match any of the preconfigured categories, then you can use the generic analytic report resource:

  ```
  /analytics/reports/{report_id}
  ```

  This entry is not required in the resource mapping file.

Creating Additional Analytic Resources with the Reporting Engine

The Oracle Self-Service E-Billing reporting engine supports many Web services for the GET operation. The reporting engine also includes a separate Velocity template, additional report elements, and attributes to create XML content for Web service responses. All Web service responses created using the reporting engine have a root node of <report> …</report>. Some of the reporting elements and attributes are as follows:

- The collectionId attribute of the Transformer element specifies the name of the list, which contains one or more rows of data.

- The name attribute of the rows element specifies the name for each row returned in the result list.
- The id attribute of the column element specifies the attribute name of each row and object returned.
- The rsLink element links from one REST service to another. The link must be appended to the domain and root name to construct a full URL for the accessing additional REST resource. Links are provided to allow drilling down, as well as to navigate from one page result to the next or previous when multiple pages of results are returned.
- The rsPaging element specifies the page size for the REST services call only. If it is not specified, then the whole query result is returned.

About Authentication and Authorization

This topic provides information about Oracle Self-Service E-Billing user authentication and authorization by using Web services.

About Authentication with Web Services

To invoke Oracle Self-Service E-Billing Web services to create, read, update or delete (CRUD) business objects, the caller must be authenticated as a registered user. The Oracle Self-Service E-Billing REST services server authenticates REST service users in the same way as users who log in using the Oracle Self-Service E-Billing Web application. Once a user is authenticated, the REST services server returns a token to the client. The client must add an HTTP header with the attribute name ebrstoken and add the value of the returned token to each REST services request. For example, in the Jersey client, you can use the WebResource.Builder.header(name,value) method to add the ebrstoken name and the token value to the HTTP header.

The token has an expiration period. The default period is 20 minutes. The default string token has a length of 48. You can optionally change both the string length and duration of the token in the webservice.xma.xml file, located in the following directory:

- **UNIX.** *edx_home*/xma/config/modules/webservice
- **Windows.** *edx_home*\xma\config\modules\webservice

Change the property values in the `IWebserviceAuthTokenProvider` bean.

By default, Oracle Self-Service E-Billing uses its preconfigured authentication provider to authenticate users. You can use a different authentication provider, such as an external system. For information on how to customize Oracle Self-Service E-Billing to use a different authentication server, see *Implementation Guide for Oracle Self-Service E-Billing*.

About Authorization with Web Services

Oracle Self-Service E-Billing REST services server uses the same authorization scheme as the server provided in the Oracle Self-Service E-Billing Web application. For example, if a request is made on behalf of a registered user to the /analytics/accounts service, then only the accounts that the user is permitted to access are returned in the response. In addition, the Web service server provides capabilities that are not supported in the Oracle Self-Service E-Billing Web application. As a result, the Oracle Self-Service E-Billing REST services server provides more authorization rules. For example, using a REST services request, the CSR administrator can create and update companies, accounts, or service agreements.

Protection from Cross-Site Request Forgery

Oracle Self-Service E-Billing uses the server-side request filter, `com.sun.jersey.api.container.filter.CsrfProtectionFilter`, to protect from a cross-site request forgery (CSRF) attack. It checks for an X-Requested-By header in each request. If the header is not found, then it returns `Response.Status.BAD_REQUEST` in response to the client.

You must add an X-Requested-By header in the request from the client. Configure a corresponding client filter provided by Jersey, called com.sun.jersey.api.client.filter.CsrfProtectionFilter, in the client application to make this work. See the following URL for details:

http://jersey.java.net/nonav/apidocs/latest/jersey/com/sun/jersey/api/client/filter/CsrfProtectionFilter.html

You might have to add the following lines to your client code:

```
CsrfProtectionFilter csrfFilter = new CsrfProtectionFilter();

client.addFilter(csrfFilter);
```

About Customizing Localization Values

This topic describes additional information about customizing localization using Web services with Oracle Self-Service E-Billing.

Customizing the Locale

The locale values of the request and response are specified in the HTML header. In service requests, the locale can be retrieved from the Accept-language attribute. Oracle Self-Service E-Billing supports one acceptable language for each request. The following XML shows an example of a request using the Accept-language attribute:

```
POST /rsclient/webservice.action HTTP/1.1

Host: slc402046.us.oracle.com:7001

User-Agent: Mozilla/5.0 (Windows NT 6.1; WOW64; rv:10.0.7) Gecko/20100101 Firefox/
10.0.7

Accept: text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8
```

```
Accept-Language: en-US,en;q=0.5

Accept-Encoding: gzip, deflate
```

In the service responses, the locale value is in the Content-Language attribute, as shown:

```
HTTP/1.1 200ok

Date: Wed, 05 Sep 2012 22:14:15 GMT

Content_Length:533

Content-Type:application/xhtml+xml

Content-Language: en-US

X-Powered-By:Servlet/2.5 JSP/2.1
```

Customizing the Date Format

For a particular locale, when parsing date values in requests or output date values in responses, the pattern used to convert a string to or from the date value is specified in an attribute of the date tag element. For example:

```
<Call_date pattern="MM/dd/yyyy">09/15/2012</Call_date>
```

This date attribute is included in all responses of GET requests.

For all POST and PUT resources, the Oracle Self-Service E-Billing server requires the XML payload to specify date pattern in the tag element attribute. The server code can then parse the information accordingly. In the following input XML example, the Accept-Language element is es_ES in the request header:

```
<paymentAccountActivity>

<billerId>BS1</billerId>

  <accountNumber>7836380B2B1</accountNumber>

    <currBalance>786,00</currBalance>

<lastPaymentReceivedAmount>120,00</lastPaymentReceivedAmount>

<lastPaymentReceivedDate pattern="dd/MM/yyyy">13/08/2012</lastPaymentReceivedDate>

</paymentAccountActivity>
```

If the date pattern is not explicitly specified in the element attribute, then the default date pattern is used. The default date pattern for each supported locale is specified in the webservice.xma.xml file, located in the following directory:

- **UNIX.** *edx_home*/xma/config/modules/webservice
- **Windows.** *edx_home*\xma\config\moduleswebservice

In the webservice.xma.xml file, the bean DatePatternFactory includes a list of DatePattern beans. Each DatePattern bean represents a pattern for a supported locale. The locale value must match the value stored in the EDX_SYS_LANG table locale CODE column. The datePatternMap contains a map of the pattern keys and values, which lists the possible patterns that can be used for pure Date and Datetime. A *pure* Date or Datetime value does not include a presentation format. The key and value must be consistent with the resource bundle files that are used by the Oracle Self-Service E-Billing Web application.

Numbers and Currencies

Numbers in both requests and responses use the default pattern of the authenticated user's preferred locale. For example, the number 120.00 is displayed in locale en_US and 120,00 in the es_ES locale.

The currency information does not change when the user's locale preference changes. The currency information comes from the statement fact, and this currency information is used in the billing system for the account. The currency code that is displayed in the Web application is included as part of the XML response.

For GET business object resources, the currency code is specified in an attribute of a tag element, for example:

```
<disputeInfo currency="USD">

<disputeId>90007</disputeId>

<disputeRefNumber>900067</disputeRefNumber>

<accountNumber>7836380B2B1</accountNumber>

<disputeAmount>12.3</disputeAmount>

<disputeDesc> chris webservice</disputeDesc>

<disputeReason>1</disputeReason>

<disputeStatus>open</disputeStatus>

</disputeInfo>
```

For GET report resources, the currency code is specified in the <Header> tag for each column that requires the currency, for example:

```
<header>

<Total>USD</Total>

</header>
```

Outbound Web Services

Oracle Self-Service E-Billing outbound Web services can be invoked from the Oracle Self-Service E-Billing application. There are two trigger points in the Oracle Self-Service E-Billing Billing and Payment application:

- When a user profile is created or updated
- When a dispute is created or updated

For each of these triggers, there is a Web service connector interface. The methods on the connector interface allow system-integration developers to invoke any operations on the external system, such as updating a user profile to a back-end user management system, or creating a dispute in a CRM system. Configure the implementation classes of these interfaces in the webservice.xma.xml file, located in the following directory:

- **UNIX.** *edx_home*/xma/config/modules/webservice
- **Windows.** *edx_home*\xma\config\moduleswebservice

For example:

```
<bean id="IDisputeWSConnector"
class="com.mycompany.ebilling.myDisputeWSConnector"></bean>

<bean id="IUserProfileWSConnector" class="com.mycompany.myUserProfileWSConnector">
</bean>
```

For more information, see the reference API Javadoc for the following:

- com.edocs.common.api.webservice.connector.IUserProfileWSConnector
- com.edocs.common.api.webservice.connector.IDisputeWSConnector

6 Examples of Web Services

This chapter contains examples of how to use Oracle Self-Service E-Billing Web services. It includes the following topics:

Examples of the Authentication Web Service

This topic shows an example of how to use the authenticate Web service with Oracle Self-Service E-Billing.

Example of Authenticating a User

This example shows you how to use the authenticate Web service to authenticate and return a valid token for a particular user. The token in the XML response must be passed as a parameter in subsequent REST services requests.

Operation

Use the following operation to authenticate a user:

```
POST /authentication
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/authentication

Roles

The following roles are valid for this Web service example:

- CSR Admin
- CSR
- B2B Admin
- B2B Manager
- B2B Subscriber
- B2C User

Sample XML Input

The following is an example of XML input:

```
<credential>
<username>ftown</username>
<password>ftown</password>
</credential>
```

XML Response

The following is an example of the XML response:

```
<token> gI59AFXTa0p6XFgvMzPNOGMMNhYOhKKbcjGN0K8es6fYM5Po</token>
```

Example of Impersonating a User

This example shows you how to use the impersonation Web service to return a valid impersonation token for a particular user. The token in the XML response must be passed as a parameter in subsequent REST services requests.

Operation

Use the following operation to impersonate a user:

```
POST /authentication/impersonation
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/authentication/impersonation

Roles

The following roles are valid for this Web service example:

- CSR Admin
- CSR

Sample XML Input

The following is an example of XML input:

```
<credential>
<username>$trust_user_name</username>
<password>$trust_user_password</password>
</credential>
```

XML Response

The following is an example of the XML response:

```
<token> gI59AFXTa0p6XFgvMzPNOGMMNhYOhKKbcjGN0K8es6fYM5Po</token>
```

Examples of the Accounts Web Service

This topic shows examples of how to use the account Web service to handle account information in Oracle Self-Service E-Billing.

Example of Getting a List of Billing Accounts for a User

This example shows you how to use the accounts Web service to get a list of the billing accounts that a user can access.

Operation

Use the following operation to get a list of accounts for a user:

```
GET /accounts
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/accounts

Roles

The following roles are valid for this Web service example:

- B2B Admin
- B2B Manager

- B2C User

XML Response

The following is an example of the XML response:

```
<accountList>
<count>2</count>
<account currency="USD">
<accountId>BS1|7836380B2B1</accountId>
<billerId>BS1</billerId>
<accountNumber>7836380B2B1</accountNumber>
<currBalance>999</currBalance>
<companyId>Dutch Home Insurance</companyId>
<contactName>John SMITH updated</contactName>
</account>
<account>
<accountId>BS1|7836381B2B1</accountId>
<billerId>BS1</billerId>
<accountNumber>7836381B2B1</accountNumber>
<accountName>7836381B2B1</accountName>
<companyId>Dutch Home Insurance</companyId>
<contactName>xxx</contactName>
<address1>…</address1>
<address2>…</address2>
<address3>…</address3>
<city>…</city>
<state>…</state>
<country>…</country>
<postalCode>…</postalCode>
</account>
</accountList>
```

Example of Creating a B2B Billing Account

This example shows you how to use the accounts Web service to create a B2B billing account and add it to the company's billing hierarchy.

Operation

Use the following operation to create a B2B account:

```
POST accounts/b2b
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/accounts/b2b

Role

CSR Admin

Sample XML Input

The following is an example of XML input:

```
<accountInfo>
<accountId>BS1|7836380B2B1</accountId>
<billerId>BS1</billerId>
<accountNumber>7836380B2B1</accountNumber>
<accountName>7836380B2B1</accountName>
<companyId>Dutch Home Insurance</companyId>
<contactName>xxx</contactName>
<address1>…</address1>
<address2>…</address2>
<address3>…</address3>
<city>…</city>
<state>…</state>
<country>…</country>
<postalCode>…</postalCode>
</accountInfo>
```

Response Message

The following is an example of the response message:

Account Create Success

Visit <link>/accounts/BS1%7C7836380B2B1</link>

Example of Creating a B2C Billing Account

This example shows you how to use the accounts Web service to create a B2C billing account.

Operation

Use the following operation to create a B2C account:

```
POST /accounts/b2c
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/accounts/b2c

Role

CSR Admin

Sample XML Input

The following is an example of XML input:

```
<accountInfo>
<accountId>BS2|7836380B2C1</ accountId >
<billerId>BS2</billerId>
<accountNumber>7836380B2C1</accountNumber>
<accountName>7836380B2C1</accountName>
<contactName>xxx</contactName>
<address1>…</address1>
<address2>…</address2>
<address3>…</address3>
<city>…</city>
<state>…</state>
<country>…</country>
```

```
<postalCode>…</postalCode>

</accountInfo>
```

Response Message

The following is an example of the response message:

Account Create Success

Visit <link>/accounts/BS2%7C7836380B2C1</link>

Example of Getting Billing Account Information

This example shows you how to use the accounts Web service to get the information for a particular billing account.

Operation

Use the following operation to get information for a billing account:

```
GET /accounts/{account_id}
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/accounts/{account_id}

Roles

The following roles are valid for this Web service example:

- CSR Admin
- CSR
- B2B Admin
- B2B Manager
- B2C User

XML Response

The following is an example of the XML response:

```
<accountInfo currency="USD">

<accountId>BS1|7836380B2B1</accountId>

<billerId>BS1</billerId>

<accountNumber>7836380B2B1</accountNumber>

<currBalance>786.75</currBalance>
```

```
<companyId>Dutch Home Insurance</companyId>

<contactName>John Smith</contactName>

</accountInfo>
```

Example of Updating an Existing Billing Account

This example shows you how to use the accounts Web service to update the information for an existing billing account.

Operation

Use the following operation to update an existing billing account:

```
PUT /accounts/{account_id}
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/accounts/{account_id}

Roles

The following roles are valid for this Web service example:

- CSR Admin
- CSR
- B2B Admin
- B2B Manager
- B2C User

Sample XML Input Rules

The following are the XML input rules:

- Tags in bold are required, and the corresponding fields cannot be updated.
- Tags that are not in bold are optional.
- If tags are not present, then the corresponding fields are not updated.
- If tags are present with an empty value, then the corresponding fields are set to empty if a null value is allowed.

Sample XML Input

The following is an example of XML input:

```
<accountInfo>
```

```
<accountId>BS1|7836380B2B1</accountId>
<billerId>BS1</billerId>
<accountNumber>7836380B2B1</accountNumber>
<accountName>7836380B2B1</accountName>
<companyId>Dutch Home Insurance</companyId>
<contactName>xxx</contactName>
<address1>…</address1>
<address2>…</address2>
<address3>…</address3>
<city>…</city>
<state>…</state>
<country>…</country>
<postalCode>…</postalCode>
</accountInfo>
```

Response Message

The following is an example of the response message:

Account Update Success

Visit <link>/accounts/BS1%7C7836380B2B1</link>

Example of Getting a Billing Account Balance

This example shows you how to use the accounts Web service to return the balance amount for a billing account.

Operation

Use the following operation to get a billing account balance:

```
GET /accounts/{account_id}/balance
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/accounts/{account_id}/balance

Roles

The following roles are valid for this Web service example:

- CSR Admin
- CSR
- B2B Admin
- B2B Manager
- B2C User

XML Response

The following is an example of the XML response:

```
<accountInfo currency="USD">
<accountId>BS1|7836380B2B1</accountId>
<billerId>BS1</billerId>
<accountNumber>7836380B2B1</accountNumber>
<currBalance>999</currBalance>
<companyId>Dutch Home Insurance</companyId>
<contactName>John Smith</contactName>
</accountInfo>
```

Example of Updating a Billing Account Balance

This example shows you how to use the accounts Web service to update a billing account balance with additional information.

Operation

Use the following operation to update a billing account balance:

```
PUT /accounts/{account_id}/balance
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/accounts/{account_id}/balance

Roles

The following roles are valid for this Web service example:

- CSR Admin

- CSR
- B2B Admin
- B2B Manager
- B2C User

Sample XML Input Rules

The following are the XML input rules:

- Tags in bold are required, and the corresponding fields cannot be updated.
- Tags that are not in bold are optional.
- If tags are not present, then the corresponding fields are not updated.
- If tags are present with an empty value, then the corresponding fields are set to empty if a null value is allowed.
- The amount uses the localized format and is parsed in the locale that is passed in the Accept Language HTML attribute.

Sample XML Input

The following is an example of XML input:

```
<paymentAccountActivity>
                <billerId>BS1</billerId>
                <accountNumber>7836380B2B1</accountNumber>
                <currBalance>786.00</currBalance>
<lastPaymentReceivedAmount>120.00</lastPaymentReceivedAmount>
<lastPaymentReceivedDate pattern="MM/dd/yyyy">08/13/2012</lastPaymentReceivedDate>
</paymentAccountActivity>
```

Response Message

The following is an example of the response message:

Update Success

Examples of the Companies Web Service

This topic shows examples of how to use the companies Web service to handle company information in Oracle Self-Service E-Billing.

Example of Getting a List of Companies

This example shows you how to use the companies Web service to get a list of all companies.

Operation

Use the following operation to get a list of companies:

```
GET /companies
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/companies

Roles

The following roles are valid for this Web service example:

- CSR Admin
- CSR

XML Response

The following is an example of the XML response:

```
<companyList>
<count>1</count>
<company>
<companyId>Dutch Home Insurance</companyId>
<companyName>Dutch Home Insurance Corporation</companyName>
<taxId>003</taxId>
<address1>UNIV BLVD</address1>
<city>DALLAS</city>
<state>TEXAS</state>
<country>USA</country>
<postalCode>78042</postalCode>
</company>
</companyList>
```

Example of Creating a Company and a Billing Hierarchy

This example shows you how to use the companies Web service to create a company and a billing hierarchy for the company.

Operation

Use the following operation to create a company and a billing hierarchy:

```
POST /companies
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/companies

Role

CSR Admin

Sample XML Input Rule

The following are the XML input rules:

- Tags in bold are required.
- Corresponding fields cannot be updated.

Sample XML Input

The following is an example of XML input:

```
<companyInfo>
< companyId>Dutch Home Insurance</companyId>
<companyName>Dutch Home Insurance Corporation</companyName>
<taxId>…</taxId>
<address1>…</address1>
<city>…</city>
<state>…</state>
<country>…</country>
<postalCode>…</postalCode>
</companyInfo>
```

Response Message

The following is an example of the response message:

Company Create Success

Visit <link>/companies/Dutch%20Home%20Insurance</link>

Example of Getting a Company's Information

This example shows you how to use the companies Web service to get information about a company.

Operation

Use the following operation to get a company's information:

```
GET /companies/{company_id}
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/companies/{company_id}

Roles

The following roles are valid for this Web service example:

- CSR Admin
- CSR
- B2B Admin

XML Response

The following is an example of the XML response:

```
<companyInfo>
< companyId>Dutch Home Insurance</companyId>
<companyName>Dutch Home Insurance Corporation</companyName>
<taxId>…</taxId>
<address1>…</address1>
<city>…</city>
<state>…</state>
<country>…</country>
<postalCode>…</postalCode>
```

```
</companyInfo>
```

Example of Updating a Company's Information

This example shows you how to use the companies Web service to update a company's information.

Operation

Use the following operation to update a company's information:

```
PUT /companies/{company_id}
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/companies/{company_id}

Roles

The following roles are valid for this Web service example:

- CSR Admin
- CSR

Sample XML Input Rules

The following are the XML input rules:

- Tags in bold are required, and the corresponding fields cannot be updated.
- If tags are not present, then the corresponding fields are not updated.
- If tags are present with an empty value, then the corresponding fields are set to empty if a null value is allowed.

Sample XML Input

The following is an example of XML input:

```
<companyInfo>

< companyId>Dutch Home Insurance</companyId>

<companyName>Dutch Home Insurance Corporation UPDATED</companyName>

<taxId>…</taxId>

<address1>…</address1>

<city>…</city>

<state>…</state>
```

```
<country>…</country>

<postalCode>…</postalCode>

</companyInfo>
```

Response Message

The following is an example of the response message:

Company Update Success

Visit <link>/companies/Dutch%20Home%20Insurance</link>

Examples of the Disputes Web Service

This topic shows examples of how to use the disputes Web service to handle dispute information in Oracle Self-Service E-Billing.

Example of Getting a List of Disputes

This example shows you how to use the disputes Web service to get a list of the disputes created for a billing account.

Operation

Use the following operation to get list of disputes:

```
GET /disputes/account/{account_id}
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/disputes/account/{account_id}

Roles

The following roles are valid for this Web service example:

- CSR Admin
- CSR
- B2B Admin
- B2B Manager
- B2B Manager
- B2C User

XML Response

The following is an example of the XML response:

```
<disputeList>
<count>2</count>
<dispute>
<disputeId>90003</disputeId>
<disputeRefNumber>900023</disputeRefNumber>
<link>/disputes/90003</link>
</dispute>
<dispute>
<disputeId>90001</disputeId>
<disputeRefNumber>900000</disputeRefNumber>
<link>/disputes/90001</link>
</dispute>
</disputeList>
```

Example of Updating a Dispute

This example shows you how to use the disputes Web service to update a dispute.

Operation

Use the following operation to update a dispute:

```
PUT /disputes /{dispute_id}
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/disputes/{dispute_id}

Roles

The following roles are valid for this Web service example:

- CSR Admin
- CSR
- B2B Admin
- B2B Manager

- B2B Subscriber
- B2C User

Sample XML Input Rules

The following are the XML input rules:

- Tags in bold are required, and the corresponding fields cannot be updated.
- If tags are not present, then the corresponding fields are not updated.
- If tags are present with an empty value, then the corresponding fields are set to empty if a null value is allowed.
- The amount uses the localized format and is parsed in the locale that is passed in the Accept Language HTML attribute.

Sample XML Input

The following is an example of XML input:

```
<disputeInfo>

<disputeId>90001</disputeId>

<disputeRefNumber>900000</disputeRefNumber>

<disputeAmount>25,99</disputeAmount>

<disputeReason>2</disputeReason>

<disputeStatus>UNK</disputeStatus>

</disputeInfo>
```

Response Message

The following is an example of the response message:

Dispute Update Success

Visit <link>/disputes/90001</link>

Examples of the Payments Web Service

This topic shows you examples of how to use the payments Web service to handle payment activity information in Oracle Self-Service E-Billing.

Example of Posting an External Payment Transaction

This example shows you how to use the payments Web service to post a payment transaction made externally from Oracle Self-Service E-Billing.

Operation

Use the following operation to post an external payment transaction:

```
POST /payments/externals/billingaccount/{account_id}/
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/payments/externals/billingaccount/{account_id}

Roles

The following roles are valid for this Web service example:

- CSR Admin
- CSR
- B2B Admin
- B2B Manager
- B2C User

Sample XML Input

The following is an example of XML input:

```
<paymentExternalTransaction>
  <billerId>BS1</billerId>
  <billingAccountNumber>7836380B2B1</billingAccountNumber>
  <paymentAmount>111</paymentAmount>
  <paymentScheduledDate pattern="MM/dd/yyyy">03/21/2013</paymentScheduledDate>
  <paymentType>Mail In</paymentType>
  <status>paid</status>
  <transactionId>T123</transactionId>
  <flexible1>…</flexible1>
  <flexible2>…</flexible2>
  <flexible3>…</flexible3>
  <flexible4>…</flexible4>
  <flexible5>…</flexible5>
</paymentExternalTransaction>
```

Response Message

The following is an example of the response message:

POST PAYMENT SUCCESS

Visit <link>/payments/externals/T123</link>

Example of Updating an External Payment Transaction

This example shows you how to use the payments Web service to update a payment made externally from Oracle Self-Service E-Billing.

Operation

Use the following operation to update an external payment transaction:

```
PUT /payments/externals/{transaction_id}
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/payments/externals/{transaction_id}

Roles

The following roles are valid for this Web service example:

- CSR Admin
- CSR
- B2B Admin
- B2B Manager
- B2C User

Sample XML Input

The following is an example of XML input:

```
<paymentExternalTransaction>
<billerId>BS1</billerId>
  <billingAccountNumber>7836380B2B1</billingAccountNumber>
  <paymentAmount>222</paymentAmount>
<paymentScheduledDate pattern="MM/dd/yyyy">04/21/2013</paymentScheduledDate>
  <paymentType>Mail In</paymentType>
  <status>paid</status>
```

```
    <transactionId>T123</transactionId>
    <flexible1>…</flexible1>
    <flexible2>…</flexible2>
    <flexible3>…</flexible3>
    <flexible4>…</flexible4>
    <flexible5>…</flexible5>
</paymentExternalTransaction>
```

Response Message

The following is an example of the response message:

POST PAYMENT SUCCESS

Visit <link>/payments/externals/T123</link>

Example of Posting a Payment Transaction

This example shows you how to use the payments Web service to post a payment transaction.

Operation

Use the following operation to post a payment transaction:

```
POST /payments/txns/billingaccount/{account_id}
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/payments/txns/billingaccount/{account_id}

Roles

The following roles are valid for this Web service example:

- B2B Admin
- B2B Manager
- B2B Subscriber
- B2C User

Sample XML Input

The following is an example of XML input:

```
<paymentTransaction>
<billerId>BS1</billerId>
<billingAccountNumber>7836380B2B1</billingAccountNumber>
<paymentAmount>111</paymentAmount>
<paymentScheduledDate pattern="MM/dd/yyyy">04/20/2013</paymentScheduledDate>
<flexible1>…</flexible1>
<flexible2>…</flexible2>
<flexible3>…</flexible3>
<vertical1>…</vertical1>
<vertical2>…</vertical2>
<vertical3>…</vertical3>
<vertical4>…</vertical4>
</paymentTransaction>
```

Response Message

The following is an example of the response message:

POST PAYMENT TRANSACTION SUCCESS

Visit <link>/payments/txns/bank/100201365476391727</link>

Example of Getting a List of Payment Transactions for a Particular Billing Account

This example shows you how to use the payments Web service to get a list of payment transactions made for a particular billing account.

Operation

Use the following operation to get a list of payment transactions made for a particular billing account:

```
GET /payments/txns/billingaccount/{account_id}
```

Sample URL

The following is a sample URL for this Web service example:

```
http://myhost.example.com:7017/ebillingrs/rs/payments/txns/billingaccount/
{account_id}?startDate=02/01/2013&endDate=05/01/2013
```

Roles

The following roles are valid for this Web service example:

- B2B Admin
- B2B Manager
- B2B Subscriber
- B2C User

Sample XML Response

The following is an example of the XML response:

```
<report>
  <paymentTransactionList>
    <count>3</count>
  <header>
    <paymentAmount>USD</paymentAmount>
  </header>
  <paymentTransaction>
    <billingAccountNumber>7836380B2B1</billingAccountNumber>
    <paymentSource>One-time</paymentSource>
    <paymentAmount>111.00</paymentAmount>
    <status>Processed</status>
    <paymentScheduledDate pattern="MM/dd/yyyy">04/20/2013</paymentScheduledDate>
    <paymentTransactionDate pattern="MM/dd/yyyy HH:mm:ss"/>
    <paymentType>check</paymentType>
    <link>/payments/txns/bank/100201365476391727</link>
  </paymentTransaction>
  <paymentTransaction>
    <billingAccountNumber>7836380B2B1</billingAccountNumber>
    <paymentSource>One-time</paymentSource>
    <paymentAmount>222.00</paymentAmount>
    <status>Scheduled</status>
    <paymentScheduledDate pattern="MM/dd/yyyy">04/15/2013</paymentScheduledDate>
```

```
      <paymentTransactionDate pattern="MM/dd/yyyy HH:mm:ss"/>
      <paymentType>check</paymentType>
      <link>/payments/txns/bank/100201365477031555</link>
    </paymentTransaction>
      <paymentTransaction>
      <billingAccountNumber>7836380B2B1</billingAccountNumber>
      <paymentSource>One-time</paymentSource>
      <paymentAmount>333.00</paymentAmount>
      <status>Scheduled</status>
      <paymentScheduledDate pattern="MM/dd/yyyy">04/15/2013</paymentScheduledDate>
      <paymentTransactionDate pattern="MM/dd/yyyy HH:mm:ss"/>
      <paymentType>ccard</paymentType>
      <link>/payments/txns/creditcard/100201365477900447</link>
    </paymentTransaction>
    </paymentTransactionList>
  </report>
```

Example of Getting a List of Scheduled Payment Transactions for a Particular Billing Account

This example shows you how to use the payments Web service to get a list of scheduled payment transactions for a particular billing account.

Operation

Use the following operation to get a list of scheduled payment transactions for a particular billing account:

```
GET /payments/txns/billingaccount/{account_id}/scheduled
```

Sample URL

The following is a sample URL for this Web service example:

```
http://myhost.example.com:7017/ebillingrs/rs/payments/txns/billingaccount/
{account_id}/scheduled?startDate=02/01/2013&endDate=05/01/2013
```

Roles

The following roles are valid for this Web service example:

- B2B Admin
- B2B Manager
- B2B Subscriber
- B2C User

Sample XML Response

The following is an example of the XML response:

```
<report>
  <paymentTransactionList>
    <count>2</count>
  <header>
    <paymentAmount>USD</paymentAmount>
  </header>
  <paymentTransaction>
    <billingAccountNumber>7836380B2B1</billingAccountNumber>
    <paymentSource>One-time</paymentSource>
    <paymentAmount>222.00</paymentAmount>
    <status>Scheduled</status>
    <paymentScheduledDate pattern="MM/dd/yyyy">04/15/2013</paymentScheduledDate>
    <paymentTransactionDate pattern="MM/dd/yyyy HH:mm:ss"/>
    <paymentType>check</paymentType>
    <link>/payments/txns/bank/100201365477031555</link>
  </paymentTransaction>
    <paymentTransaction>
    <billingAccountNumber>7836380B2B1</billingAccountNumber>
    <paymentSource>One-time</paymentSource>
    <paymentAmount>333.00</paymentAmount>
    <status>Scheduled</status>
    <paymentScheduledDate pattern="MM/dd/yyyy">04/15/2013</paymentScheduledDate>
```

```
      <paymentTransactionDate pattern="MM/dd/yyyy HH:mm:ss"/>
      <paymentType>ccard</paymentType>
      <link>/payments/txns/creditcard/100201365477900447</link>
    </paymentTransaction>
    </paymentTransactionList>
  </report>
```

Example of Getting a Specific Bank Payment Transaction

This example shows you how to use the payments Web service to get a specific bank payment transaction.

Operation

Use the following operation to get a specific bank payment transaction:

```
GET /payments/txns/bank/{paymentID}
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/payments/txns/ bank/{paymentID}

Roles

The following roles are valid for this Web service example:

- B2B Admin
- B2B Manager
- B2B Subscriber
- B2C User

Sample XML Response

The following is an example of the XML response:

```
paymentTransactionProfile currency="USD">
  <billingAccountNumber>7836380B2B1</billingAccountNumber>
  <paymentType>check</paymentType>
  <paymentAmount>111</paymentAmount>
```

```
    <status>Scheduled</status>
    <paymentScheduledDate pattern="MM/dd/yyyy">04/20/2013</paymentScheduledDate>
    <paymentAccountName>AutoBankOne</paymentAccountName>
    <paymentAccountNumber>xxxx1111</paymentAccountNumber>
    <paymentCreatedDate pattern="MM/dd/yyyy">04/08/2013</paymentCreatedDate>
    <paymentModifiedDate pattern="MM/dd/yyyy">04/08/2013</paymentModifiedDate>
</paymentTransactionProfile>
```

Example of Getting a Particular Credit Card Payment Transaction

This example shows you how to use the payments Web service to get a specific credit card payment transaction.

Operation

Use the following operation to get a specific bank payment transaction:

```
GET /payments/txns/creditcard/{paymentID}
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/payments/txns/creditcard/{paymentID}

Roles

The following roles are valid for this Web service example:

- B2B Admin
- B2B Manager
- B2B Subscriber
- B2C User

Sample XML Response

The following is an example of the XML response:

```
<paymentTransactionProfile currency="USD">
    <billingAccountNumber>7836380B2B1</billingAccountNumber>
    <paymentType>ccard</paymentType>
```

```
    <paymentAmount>222</paymentAmount>
    <status>Scheduled</status>
    <paymentScheduledDate pattern="MM/dd/yyyy">04/15/2013</paymentScheduledDate>
    <paymentAccountName>AutoCCOnFly27177</paymentAccountName>
    <paymentAccountNumber>xxxxxxxxx2222</paymentAccountNumber>
    <paymentCreatedDate pattern="MM/dd/yyyy">04/08/2013</paymentCreatedDate>
    <paymentModifiedDate pattern="MM/dd/yyyy">04/08/2013</paymentModifiedDate>
</paymentTransactionProfile>
```

Example of Getting a Particular External Payment Transaction

This example shows you how to use the payments Web service to get a specific external payment transaction.

Operation

Use the following operation to get a specific bank payment transaction:

```
GET /payments/externals/{transaction_id}
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/payments/externals/{transaction_ID}

Roles

The following roles are valid for this Web service example:

- B2B Admin
- B2B Manager
- B2B Subscriber
- B2C User

Sample XML Response

The following is an example of the XML response:

The following is an example of the XML response:

```
<paymentExternalTransaction currency="USD">
```

```
    <billerId>BS1</billerId>
    <billingAccountNumber>7836380B2B1</billingAccountNumber>
    <paymentAmount>222</paymentAmount>
    <paymentScheduledDate pattern="MM/dd/yyyy">04/21/2013</paymentScheduledDate>
    <paymentType>Mail In</paymentType>
    <status>Paid</status>
    <transactionId>T123</transactionId>
    <flexible1>aaa</flexible1>
    <flexible2>bbb</flexible2>
    <flexible3>ccc</flexible3>
    <flexible4>ddd</flexible4>
    <flexible5>eee</flexible5>
</paymentExternalTransaction>
```

Examples of the Service Agreements Web Service

This topic shows examples of how to use the service_agreements Web service to handle service agreement information in Oracle Self-Service E-Billing.

Example of Getting a List of Service Agreements

This example shows you how to use the service_agreements Web service to get a list of all service agreements for the current period. The list is based on the billing hierarchy for B2B users and the account-service agreement relationship for B2C users.

Operation

Use the following operation to get a list of service agreements:

```
GET /service_agreements
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/service_agreements

Roles

The following roles are valid for this Web service example:

- B2B Admin
- B2B Manager
- B2B Subscriber
- B2C User

XML Response

The following is an example of the XML response:

```
<serviceAgreementList>
<count>2</count>
<serviceAgreement>
<serviceAgreementId>BS1|7836380B2B1|878-457-B2B1</serviceAgreementId>
<billerId>BS1</billerId>
<accountNumber>7836380B2B1</accountNumber>
<saNumber>878-457-B2B1</saNumber>
</serviceAgreement>
<serviceAgreement>
<serviceAgreementId>BS1|7836380DEMO1|878-342-DEM1</serviceAgreementId>
<billerId>BS1</billerId>
<accountNumber>7836380DEMO1</accountNumber>
<saNumber>878-342-DEM1</saNumber>
</serviceAgreement>
</serviceAgreementList>
```

Example of Getting a List of All Service Agreements for an Account

This example shows you how to use the service_agreements Web service to get a list of all service agreements for a particular account.

Operation

Use the following operation to get a list of all service agreements for an account:

```
GET /service_agreements/accounts/{account_id}
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/service_agreements/accounts/{account_id}

Roles

The following roles are valid for this Web service example:

- B2B Admin
- B2B Manager
- B2B Subscriber
- B2C User

XML Response

The following is an example of the XML response:

```
<serviceAgreementList>
<count>2</count>
<serviceAgreement>
<serviceAgreementId>BS1|7836380B2B1|878-457-B2B1</serviceAgreementId>
<billerId>BS1</billerId>
<accountNumber>7836380B2B1</accountNumber>
<saNumber>878-457-B2B1</saNumber>
</serviceAgreement>
<serviceAgreement>
<serviceAgreementId>BS1|7836380DEMO1|878-342-DEM1</serviceAgreementId>
<billerId>BS1</billerId>
<accountNumber>7836380DEMO1</accountNumber>
<saNumber>878-342-DEM1</saNumber>
</serviceAgreement>
</serviceAgreementList>
```

Example of Getting Information for a Service Agreement

This example shows you how to use the service_agreements Web service to get information about a service agreement.

Operation

Use the following operation to get information for a service agreement:

```
GET /service_agreements/accounts/{account_id}/{sa_number}
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/service_agreements/accounts/{account_id}/{sa_number}

Roles

The following roles are valid for this Web service example:

- B2B Admin
- B2B Manager
- B2B Subscriber
- B2C User

XML Response

The following is an example of the XML response:

```
<serviceAgreementInfo>
<serviceAgreementId>BS1|7836380B2B1|878-457-B2B1</serviceAgreementId>
<billerId>BS1</billerId>
<accountNumber>7836380B2B1</accountNumber>
<saNumber>878-457-B2B1</saNumber>
</serviceAgreementInfo>
```

Example of Creating a Service Agreement

This example shows you how to use the service_agreements Web service to create a service agreement.

Operation

Use the following operation to create a service agreement:

```
POST /service_agreements
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/service_agreements

Roles

The CSR Admin role is valid for this Web service example.

Sample XML Input Rules

The following are the XML input rules:

- Tags in bold are required.
- If tags are not present, then the corresponding fields are set to the default values.
- The value of serviceType must be in the SERVICE_TYPE_CD in the EDX_RPT_SERVICE_TYPE_DIM table in the Online Analytic Processing (OLAP) database.

Sample XML Input

The following is an example of XML input:

```
<serviceAgreementInfo>

<serviceAgreementId>BS1|7836380B2B1|878-457-B2B1</serviceAgreementId>

<billerId>BS1</billerId>

<accountNumber>7836380B2B1</accountNumber>

<saNumber>878-457-B2B1</saNumber>

<serviceType>UNK</serviceType>

<description>xxx</description>

<subscriber>xxx</subscriber>

</serviceAgreementInfo>
```

Response Message

The following is an example of the response message:

Service Agreement Create Success

Visit <link>/BS1%7C7836380B2B1%7C878-457-B2B1</link>

Examples of the Users Web Service

This topic shows examples of how to use the service_agreements Web service to handle user information in Oracle Self-Service E-Billing.

Example of Getting a List of Users

This example shows you how to use the users Web service to get a list of users. The list returned is based on the authenticated user's role.

Operation

Use the following operation to get a list of users:

```
GET /users
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/users

Roles

The following roles are valid for this Web service example:

- CSR Admin
- CSR
- B2B Admin
- B2B Manager
- B2C User

XML Response

The following is an example of the XML response:

```
<userList>
<count>2</count>
<user>
<userId>mdhoni</userId>
<firstName>Mahendra</firstName>
<lastName>Dhoni</lastName>
<email>mdhoni@example.com</email>
```

```
<link>/users/mdhoni</link>
</user>
<user>
<userId>fedorastuart</userId>
<firstName>Fedora</firstName>
<lastName>Stuart</lastName>
<email>fedorastuart@example.com</email>
<link>/users/fedorastuart</link>
</user>
  </userList>
```

Example of Getting a User's Information

This example shows you how to use the users Web service to get information for a user.

Operation

Use the following operation to get a user's information:

```
GET /users/{user_id}
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/users/{user_id}

Roles

The following roles are valid for this Web service example:

- CSR Admin
- CSR
- B2B Admin
- B2B Manage
- B2C User

XML Response

The following is an example of the XML response:

```
<userProfile>
```

```
<userId>mdhoni</userId>
<role>Manager</role>
<firstName>Mahendra</firstName>
<lastName>Dhoni</lastName>
<addressLine1>j street apt 1900</addressLine1>
<city>boston</city>
<state>MA</state>
<zip>04109</zip>
<country>USA</country>
<homePhone>555-111-1884</homePhone>
<email>mdhoni@example.com</email>
<paperOn>Y</paperOn>
<isAccessibleUser>0<isAccessibleUser>
</userProfile>
```

Example of Creating a B2B User

This example shows you how to use the users Web service to create a B2B user.

Operation

Use the following operation to create a B2B user:

```
POST /users/b2b
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/users/b2b

Roles

The following roles are valid for this Web service example:

- CSR Admin
- B2B Admin

Sample XML Input Rules

The following are the XML input rules:

- Tags in bold are required, and the corresponding fields cannot be updated.
- If tags are not present, then the corresponding fields are set to the default values.

Sample XML Input

The following is an example of XML input:

```
<userProfile>
<userId>mdhoni</userId>
<role>Manager</role>
<firstName>Mahendra</firstName>
<lastName>Dhoni</lastName>
<addressLine1>j street apt 1900</addressLine1>
<city>boston</city>
<state>MA</state>
<zip>04109</zip>
<country>USA</country>
<homePhone>555-111-1884</homePhone>
<email>mdhoni@example.com</email>
<paperOn>Y</paperOn>
<language>en_US</language>
<companyId>Dutch Home Insurance</companyId>
<isAccessibleUser>0<isAccessibleUser>
</userProfile>
```

Response Message

The following is an example of the response message:

User Create Success

Visit <link>/users/mdhoni</link>

Example of Creating a B2C User

This example shows you how to use the users Web service to create a B2C user.

Operation

Use the following operation to create a B2C user:

```
POST /users/b2C
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/users/b2b

Roles

The following roles are valid for this Web service example:

- CSR Admin
- B2B Admin

Sample XML Input Rules

The following are the XML input rules:

- Tags in bold are required, and the corresponding fields cannot be updated.
- If tags are not present, then the corresponding fields will be set to the default values.

Sample XML Input

The following is an example of XML input:

```
<userProfile>
<userId>rsam</userId>
<role>User</role>
<firstName>Rich</firstName>
<lastName>Sam</lastName>
<email>mdhoni@example.com</email>
<language>en_US</language>
<billerId>BS2</billerId>
<accountNumber>7836380B2C1</accountNumber>
<isAccessibleUser>0<isAccessibleUser>
</userProfile>
```

Response Message

The following is an example of the response message:

User Create Success

Visit <link>/users/ rsam</link>

Examples of the Analytics Web Service

This topic shows you examples of how to use the analytics Web service to handle account information in Oracle Self-Service E-Billing.

Example of Getting a Summary of Accounts

This example shows you how to use the analytics Web service to get a summary of the accounts that the authenticated user can access for a particular period.

Operation

Use the following operation to get a summary of accounts:

```
GET /analytics/accounts
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/ama;utocs/accounts

Roles

The following roles are valid for this Web service example:

- B2B Admin
- B2B Manager
- B2C User

XML Response

The following is an example of the XML response:

```
<accountList>
<count>2</count>
<account>
<accountId>BS1|7836380B2B1</accountId>
<billerId>BS1</billerId>
<accountNumber>7836380B2B1</accountNumber>
```

```
<link>/analytics/BS1%7C7836380B2B1/
summary?reportPeriodStart=93&reportPeriodEnd=93</link>

</account>

<account>

<accountId>BS1|7836380DEMO1</accountId>

<billerId>BS1</billerId>

<accountNumber>7836380DEMO1</accountNumber>

<link>/analytics/BS1%7C7836380DEMO1/
summary?reportPeriodStart=93&reportPeriodEnd=93</link>

</account>

</accountList>
```

Example of Getting Service Agreement Details

This example shows you how to use the analytics Web service to get service agreement details that an authenticated user can access for a particular period.

Operation

Use the following operation to get service agreement details:

```
GET /analytics/{account_id}/service_agreements/{sa_number}/details
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/analytics/BS1|7836380DEMO1/
service_agreements/878-443-DEM1/details?reportPeriodStart=93&reportPeriodEnd=93

Roles

The following roles are valid for this Web service example:

- B2B Admin
- B2B Manager
- B2B Subscriber
- B2C User

XML Response

The following is an example of the XML response:

```
<report>

<serviceList>

   <count>12</count>

   <totalPages>6</totalPages>

   <firstPage>/analytics/BS1%7C7836380DEMO1/service_agreements/878-443-DEM1/
details?reportPeriodEnd=93&reportPeriodStart=93&page=1</firstPage>

   <currentPage>/analytics/BS1%7C7836380DEMO1/service_agreements/878-443-DEM1/
details?reportPeriodEnd=93&reportPeriodStart=93&page=1</currentPage>

  <nextPage>/analytics/BS1%7C7836380DEMO1/service_agreements/878-443-DEM1/
details?reportPeriodEnd=93&reportPeriodStart=93&page=2</nextPage>

  <lastPage>/analytics/BS1%7C7836380DEMO1/service_agreements/878-443-DEM1/
details?reportPeriodEnd=93&reportPeriodStart=93&page=6</lastPage>

<header>

<Total>USD</Total>

</header>

<service>

<Call_date pattern="MM/dd/yyyy">08/15/2012</Call_date>

<Call_time>13 : 12</Call_time>

<service_number>878-443-DEM1</service_number>

<service_name>btwob ligan</service_name>

<Called_Number>650-359-8601</Called_Number>

<category>Business</category>

<memo_img/><memo/>

<dispute/>

<DISPUTE_NUM/>

<Dispute_detail_desc/>

<Usage_Type>Voice</Usage_Type>

<Call_Type>Roaming -Vodafone</Call_Type>

<DESTINATION_NAME>Foster City, TN USA</DESTINATION_NAME>

<Duration>32 Minutes</Duration>

<Total>3.00</Total>
```

```
<link>/analytics/BS1%7C7836380DEMO1/service_agreements/878-443-DEM1/
transaction_details?serviceDetailKey=263</link>

</service>

<service>

<Call_date pattern="MM/dd/yyyy">08/14/2012</Call_date>

<Call_time>21 : 11</Call_time>

<service_number>878-443-DEM1</service_number>

<service_name>BusinessUser</service_name>

<Called_Number/>

<category>Business</category>

<memo_img/><memo/>

<dispute/>

<DISPUTE_NUM/>

<Dispute_detail_desc/>

<Usage_Type>Data</Usage_Type>

<Call_Type>Data Transfers - Uploads</Call_Type>

<DESTINATION_NAME>Los Angeles, CA USA</DESTINATION_NAME>

<Duration>175 Kilobytes</Duration>

<Total>1.40</Total>

<link>/analytics/BS1%7C7836380DEMO1/service_agreements/878-443-DEM1/
transaction_details?serviceDetailKey=257</link>

</service>

</serviceList>

</report>
```

Examples of the Hierarchy Web Service

This topic shows you examples of how to use the hierarchy Web service to handle hierarchy information in Oracle Self-Service E-Billing.

Example of Getting a List of Hierarchies

This example shows you how to use the hierarchy Web service to get a list of hierarchies that the authenticated user can access.

Operation

Use the following operation to get a list of hierarchies for a user:

```
GET /hierarchies
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/hierarchies

Roles

The following roles are valid for this Web service example:

- B2B Admin
- B2B Manager
- B2B User

XML Response

The following is an example of the XML response:

```
<hierarchyList>
<count>2</count>
<hierarchy>
<hierarchyId>91295</hierarchyId>
<hierName>Billing Hierarchy</hierName>
<hierType>BILLING</hierType>
<company>Dutch Home Insurance</company>
</hierarchy>
<hierarchy>
<hierarchyId>102963</hierarchyId>
<hierName>Hierarchy43358</hierName>
<hierType>BUSINESS</hierType>
<company>Dutch Home Insurance</company>
```

```
</hierarchy>
</hierarchyList>
```

Example of Getting a List of Billing Hierarchies

This example shows you how to use the hierarchy Web service to get a list of billing hierarchies, including IDs and names, that the authenticated user can access.

Operation

Use the following operation to get a list of billing hierarchies for a user:

```
GET /hierarchies/billing
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/hierarchies/billing

Roles

The following roles are valid for this Web service example:

- B2B Admin
- B2B Manager
- B2B User

XML Response

The following is an example of the XML response:

```
<hierarchyList>
<count>1</count>
<hierarchy>
<hierarchyId>91295</hierarchyId>
<hierName>Billing Hierarchy</hierName>
<hierType>BILLING</hierType>
<company>Dutch Home Insurance</company>
</hierarchy>
</hierarchyList>
```

Example of Getting a List of Business Hierarchies

This example shows you how to use the hierarchy Web service to get a list of business hierarchies, including IDs and names, that the authenticated user can access.

Operation

Use the following operation to get a list of business hierarchies for a user:

```
GET /hierarchies/business
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/hierarchies/business

Roles

The following roles are valid for this Web service example:

- B2B Admin
- B2B Manager
- B2B User

XML Response

The following is an example of the XML response:

```
<hierarchyList>
<count>1</count>
<hierarchy>
<hierarchyId>102963</hierarchyId>
<hierName>Hierarchy43358</hierName>
<hierType>BUSINESS</hierType>
<company>Dutch Home Insurance</company>
</hierarchy>
</hierarchyList>
```

Example of Getting a List of Hierarchies by Type

This example shows you how to use the hierarchy Web service to get a list of hierarchies by hierarchy type, that the authenticated user can access.

Operation

Use the following operation to get a list of hierarchies by type, for a user:

```
GET /hierarchies/type/{hierarchy_type}
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/hierarchies/type/BILLING

Roles

The following roles are valid for this Web service example:

- B2B Admin
- B2B Manager
- B2B User

XML Response

The following is an example of the XML response:

```
<hierarchyList>
<count>1</count>
<hierarchy>
<hierarchyId>91295</hierarchyId>
<hierName>Billing Hierarchy</hierName>
<hierType>BILLING</hierType>
<company>Dutch Home Insurance</company>
</hierarchy>
</hierarchyList>
```

Example of Getting a List of Hierarchy Root Nodes

This example shows you how to use the hierarchy Web service to return a list of root nodes of the hierarchy that the authenticated user can access, for the latest period.

Operation

Use the following operation to get a list of hierarchy root nodes for a user:

```
GET /hierarchies/{hierarchy_id}/my_root_nodes
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/hierarchies/91295/my_root_nodes

Roles

The following roles are valid for this Web service example:

- B2B Admin
- B2B Manager
- B2B User

XML Response

The following is an example of the XML response:

```
<hierarchyNodeList>
<count>1</count>
<hierarchyNode>
<nodeId>91296</nodeId>
<hierarchyId>91295</hierarchyId>
<nodeName>Dutch Home Insurance</nodeName>
<linkTargetType>edx:omf:company:</linkTargetType>
<linkTargetURI>edx:omf:company:Dutch Home Insurance</linkTargetURI>
<linkTargetExternalKey>Dutch Home Insurance</linkTargetExternalKey>
</hierarchyNode>
</hierarchyNodeList>
```

Example of Getting a List of Link Targets for a Node

This example shows you how to use the hierarchy Web service to return a list of link targets for a particular node.

Operation

Use the following operation to get a list of link targets for a particular node:

```
GET /hierarchies/{hierarchy_id}/linktarget_type
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/hierarchies/91295/linktarget_type

Roles

The following roles are valid for this Web service example:

- B2B Admin
- B2B Manager
- B2B User

XML Response

The following is an example of the XML response:

```
<linkTargetTypeList>
<count>3</count>
<linkTargetType>
<linkTargetType>edx:amf:billingaccount:</linkTargetType>
</linkTargetType>
<linkTargetType>
<linkTargetType>edx:omf:company:</linkTargetType>
</linkTargetType>
<linkTargetType>
<linkTargetType>edx:omf:serviceagreement:</linkTargetType>
</linkTargetType>
</linkTargetTypeList>
```

Example of Getting a List of Hierarchy Accounts

This example shows you how to use the hierarchy Web service to returns a list of accounts from the hierarchy that the authenticated user can access, and an index.

Operation

Use the following operation to get a list of hierarchy accounts for a user:

```
GET /hierarchies/{hierarchy_id}/{node_id}/accounts
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/hierarchies/91295/91296/accounts

Roles

The following roles are valid for this Web service example:

- B2B Admin
- B2B Manager
- B2B User

XML Response

The following is an example of the XML response:

```
<hierarchyNodeList>
<count>2</count>
<hierarchyNode>
<nodeId>100025</nodeId>
<hierarchyId>91295</hierarchyId>
<parentId>91296</parentId>
<nodeName>7836380B2B1</nodeName>
<linkTargetType>edx:amf:billingaccount:</linkTargetType>
<linkTargetURI>edx:amf:billingaccount:BS1|7836380B2B1</linkTargetURI>
<linkTargetExternalKey>BS1|7836380B2B1</linkTargetExternalKey>
</hierarchyNode>
<hierarchyNode>
<nodeId>91298</nodeId>
<hierarchyId>91295</hierarchyId>
<parentId>91296</parentId>
<nodeName>7836380DEMO1</nodeName>
<linkTargetType>edx:amf:billingaccount:</linkTargetType>
<linkTargetURI>edx:amf:billingaccount:BS1|7836380DEMO1</linkTargetURI>
<linkTargetExternalKey>BS1|7836380DEMO1</linkTargetExternalKey>
</hierarchyNode>
```

```
</hierarchyNodeList>
```

Example of Getting a List of Hierarchy Service Agreements

This example shows you how to use the hierarchy Web service to returns a list of service agreements for the hierarchy that the authenticated user can access.

Operation

Use the following operation to get a list of hierarchy service agreements for a user:

```
GET /hierarchies/{hierarchy_id}/{node_id}/service_agreements
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/hierarchies/91295/91296/service_agreements

Roles

The following roles are valid for this Web service example:

- B2B Admin
- B2B Manager
- B2B User

XML Response

The following is an example of the XML response:

```
<hierarchyNodeList>
<count>2</count>
<hierarchyNode>
<nodeId>100025</nodeId>
<hierarchyId>91295</hierarchyId>
<parentId>91296</parentId>
<nodeName>7836380B2B1</nodeName>
<linkTargetType>edx:amf:billingaccount:</linkTargetType>
<linkTargetURI>edx:amf:billingaccount:BS1|7836380B2B1</linkTargetURI>
<linkTargetExternalKey>BS1|7836380B2B1</linkTargetExternalKey>
```

```
</hierarchyNode>
<hierarchyNode>
<nodeId>91298</nodeId>
<hierarchyId>91295</hierarchyId>
<parentId>91296</parentId>
<nodeName>7836380DEMO1</nodeName>
<linkTargetType>edx:amf:billingaccount:</linkTargetType>
<linkTargetURI>edx:amf:billingaccount:BS1|7836380DEMO1</linkTargetURI>
<linkTargetExternalKey>BS1|7836380DEMO1</linkTargetExternalKey>
</hierarchyNode>
</hierarchyNodeList>
```

Example of Getting a List of Hierarchy Groups

This example shows you how to use the hierarchy Web service to returns a list of groups for the hierarchy that the authenticated user can access.

Operation

Use the following operation to get a list of hierarchy groups for a user:

```
GET /hierarchies/{hierarchy_id}/{node_id}/groups
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/hierarchies/103041/103042/groups

Roles

The following roles are valid for this Web service example:

- B2B Admin
- B2B Manager
- B2B User

XML Response

The following is an example of the XML response:

```
<hierarchyNodeList>
```

```
<count>2</count>
<hierarchyNode>
<nodeId>103042</nodeId>
<hierarchyId>103041</hierarchyId>
<nodeName>Del24410</nodeName>
<linkTargetType>edx:hierarchy:folder:</linkTargetType>
<linkTargetURI>edx:hierarchy:folder:Dutch Home Insurance_Del24410</linkTargetURI>
<linkTargetExternalKey>Dutch Home Insurance_Del24410</linkTargetExternalKey>
</hierarchyNode>
<hierarchyNode>
<nodeId>103043</nodeId>
<hierarchyId>103041</hierarchyId>
<parentId>103042</parentId>
<nodeName>GName</nodeName>
<linkTargetType>edx:hierarchy:folder:</linkTargetType>
<linkTargetURI>edx:hierarchy:folder:GID1</linkTargetURI>
<linkTargetExternalKey>GID1</linkTargetExternalKey>
</hierarchyNode>
</hierarchyNodeList>
```

Example of Getting a List of Child Nodes

This example shows you how to use the hierarchy Web service to returns a list of child nodes for a particular node, and a node index.

Operation

Use the following operation to get a list of child nodes for a node:

```
GET /hierarchies/{hierarchy_id}/{node_id}/children
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/hierarchies/103041/103042/children

Roles

The following roles are valid for this Web service example:

- B2B Admin
- B2B Manager
- B2B User

XML Response

The following is an example of the XML response:

```
<hierarchyNodeList>
<count>2</count>
<hierarchyNode>
<nodeId>103042</nodeId>
<hierarchyId>103041</hierarchyId>
<nodeName>Del24410</nodeName>
<linkTargetType>edx:hierarchy:folder:</linkTargetType>
<linkTargetURI>edx:hierarchy:folder:Dutch Home Insurance_Del24410</linkTargetURI>
<linkTargetExternalKey>Dutch Home Insurance_Del24410</linkTargetExternalKey>
</hierarchyNode>
<hierarchyNode>
<nodeId>103043</nodeId>
<hierarchyId>103041</hierarchyId>
<parentId>103042</parentId>
<nodeName>GName</nodeName>
<linkTargetType>edx:hierarchy:folder:</linkTargetType>
<linkTargetURI>edx:hierarchy:folder:GID1</linkTargetURI>
<linkTargetExternalKey>GID1</linkTargetExternalKey>
</hierarchyNode>
</hierarchyNodeList>
```

Example of Getting a List of Link Target Types for a Node

This example shows you how to use the hierarchy Web service to returns a list of link targets for a particular node.

Operation

Use the following operation to get a list of link target types for a particular node:

```
GET /hierarchies/{hierarchy_id}/{node_id}/{linktarget_type}
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/hierarchies/91295/91296/edx:amf:billingaccount

Roles

The following roles are valid for this Web service example:

- B2B Admin
- B2B Manager
- B2B User

XML Response

The following is an example of the XML response:

```
<hierarchyNodeList>
<count>2</count>
<hierarchyNode>
<nodeId>100025</nodeId>
<hierarchyId>91295</hierarchyId>
<parentId>91296</parentId>
<nodeName>7836380B2B1</nodeName>
<linkTargetType>edx:amf:billingaccount:</linkTargetType>
<linkTargetURI>edx:amf:billingaccount:BS1|7836380B2B1</linkTargetURI>
<linkTargetExternalKey>BS1|7836380B2B1</linkTargetExternalKey>
</hierarchyNode>
<hierarchyNode>
<nodeId>91298</nodeId>
```

```
<hierarchyId>91295</hierarchyId>
<parentId>91296</parentId>
<nodeName>7836380DEMO1</nodeName>
<linkTargetType>edx:amf:billingaccount:</linkTargetType>
<linkTargetURI>edx:amf:billingaccount:BS1|7836380DEMO1</linkTargetURI>
<linkTargetExternalKey>BS1|7836380DEMO1</linkTargetExternalKey>
</hierarchyNode>
</hierarchyNodeList>
```

Example of Getting a List of Users Assigned to a Node

This example shows you how to use the hierarchy Web service to returns a list of users assigned to a node.

Operation

Use the following operation to get a list of users assigned to a node:

```
GET /hierarchies/{hierarchy_id}/{node_id}/users/assigned
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/hierarchies/91295/91296/users/assigned

Roles

The following roles are valid for this Web service example:

- B2B Admin
- B2B Manager
- B2B User

XML Response

The following is an example of the XML response:

```
<userList>
<count>4</count>
<user>
<userId>B2BMANAGER</userId>
```

```
<firstName>BBMANAGER</firstName>
<lastName>BBMANAGER</lastName>
</user>
<user>
<userId>B2B5420130517</userId>
<firstName>Subscriber</firstName>
<lastName>User</lastName>
</user>
<user>
<userId>B2B44201313304</userId>
<firstName>Business</firstName>
<lastName>Changed</lastName>
</user>
<user>
<userId>B2B44201315252</userId>
<firstName>Business</firstName>
<lastName>User</lastName>
</user>
<user>
<userId>B2B442013152145</userId>
<firstName>Business</firstName>
<lastName>User</lastName>
</user>
</userList>
```

Example of Getting a List of Users Unassigned to a Node

This example shows you how to use the hierarchy Web service to return a list of users unassigned to a node.

Operation

Use the following operation to get a list of users unassigned to a node:

```
GET /hierarchies/{hierarchy_id}/{node_id}/users/unassigned
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/hierarchies/91295/91296/users/unassigned

Roles

The following roles are valid for this Web service example:

- B2B Admin
- B2B Manager
- B2B User

XML Response

The following is an example of the XML response:

```
<userList>
<count>3</count>
<user>
<userId>unohu</userId>
<firstName>Uno</firstName>
<lastName>Hu</lastName>
</user>
<user>
<userId>fedorastuart</userId>
<firstName>Fedora</firstName>
<lastName>Stuart</lastName>
</user>
<user>
<userId>mdhoni</userId>
<firstName>Mahendra</firstName>
<lastName>Dhoni</lastName>
</user>
</userList>
```

Example of Getting a List of Users Authorized to a Node

This example shows you how to use the hierarchy Web service to returns a list of users authorized to a node.

Operation

Use the following operation to get a list of users authorized to a node:

```
GET /hierarchies/{hierarchy_id}/{node_id}/users/authorized
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/hierarchies/91295/91296/users/authorized

Roles

The following roles are valid for this Web service example:

- B2B Admin
- B2B Manager
- B2B User

XML Response

The following is an example of the XML response:

```
<userList>
<count>3</count>
<user>
<userId>ftown</userId>
<firstName>Frank</firstName>
<lastName>Town</lastName>
</user>
<user>
<userId>B2B57437</userId>
<firstName>Business</firstName>
<lastName>User</lastName>
</user>
<user>
```

```
<userId>B2B442013134942</userId>
<firstName>Business</firstName>
<lastName>User</lastName>
</user>
</userList>
```

Example of Getting a List of Users Unauthorized to a Node

This example shows you how to use the hierarchy Web service to returns a list of users unauthorized to a node.

Operation

Use the following operation to get a list of users unauthorized to a node:

```
GET /hierarchies/{hierarchy_id}/{node_id}/users/unauthorized
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/hierarchies/91295/91296/users/unauthorized

Roles

The following roles are valid for this Web service example:

- B2B Admin
- B2B Manager
- B2B User

XML Response

The following is an example of the XML response:

```
<userList>
<count>3</count>
<user>
<userId>gracerichard</userId>
<firstName>Grace</firstName>
<lastName>Richard</lastName>
```

```
</user>
<user>
<userId>lgreen</userId>
<firstName>Lisa</firstName>
<lastName>Green</lastName>
</user>
<user>
<userId>klaracey</userId>
<firstName>Kevin</firstName>
<lastName>Laracey</lastName>
</user>
</userList>
```

Example of Getting a Node ID

This example shows you how to use the hierarchy Web service to returns a node ID using the unique link target URI, without the hierarchy node type.

Operation

Use the following operation to get a node ID using the unique link target URI:

```
GET /hierarchies/{hierarchy_id}/linktarget_node/{linktarget_URI}
```

Sample URL

The following is a sample URL for this Web service example:

http://myhost.example.com:7017/ebillingrs/rs/hierarchies/91295/linktarget_node
edx:omf:company:Dutch%20Home%20Insurance

Roles

The following roles are valid for this Web service example:

- B2B Admin
- B2B Manager
- B2B User

XML Response

The following is an example of the XML response:

```
<hierarchyNodeInfo>
<nodeId>91296</nodeId>
<hierarchyId>91295</hierarchyId>
<nodeName>Dutch Home Insurance</nodeName>
<linkTargetType>edx:omf:company:</linkTargetType>
<linkTargetURI>edx:omf:company:Dutch Home Insurance</linkTargetURI>
<linkTargetExternalKey>Dutch Home Insurance</linkTargetExternalKey>
</hierarchyNodeInfo>
```

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