



APTTUS[®]

Billing Management on Salesforce Summer 2019 API Reference

Guide

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About this Guide

Apttus provides Application Programming Interfaces (API) for you to extend the features offered by Apttus Billing Management. These extensions add more functionality to the features available through configuration on Salesforce.

The Apttus Billing Management API Reference Guide describes the APIs provided to work with payments, usage inputs, credit memos, and invoice calculations.

What's New

The following table lists changes in the documentation to support each release.

Document	Topic	Description
Summer 2019	Creating Direct Credit Memos	New Topic. New API introduced in this release.
Spring 2019	Forecasting Billing Schedules and Billing Summaries	New Topic. New API introduced in this release.
Winter 2018	Creating Billing Plans	New Topic. New API introduced in this release.
Summer 2018	Forecasting Billing Schedules	New Topic. New API introduced in this release.
	Creating Credit and Rebill	New Topic. New API introduced in this release.

Overview

- [API Supported Packages](#)
The package names and version numbers required for the APIs to work seamlessly.
- [API Standards and Development Platforms](#)
Apttus APIs are based on Salesforce APIs and use the same standards and platforms.
- [Field Types](#)
Apttus APIs use a subset of the supported data and field types on Salesforce.

API Supported Packages

The following packages and dependent packages are required for Billing Management APIs:

Product	Latest Certified Version (Name Number)
Apttus Billing Management	4.8.140 4.140
Apttus Quote/Proposal-Configuration Integration	10.4.0275 10.275
Apttus Configuration & Pricing	10.8.1478 10.1478
Apttus CPQ API	1.0.0080 10.80
Apttus Quote/Proposal-Asset Integration	6.5.0014 6.14
Apttus Proposal Management	8.4.167 8.167
Apttus Contract Management	9.1.0397 9.397

API Standards and Development Platforms

Apttus APIs are based on Salesforce APIs and use the same standards and platforms.

Standards

Name	Reference
Simple Object Access Protocol (SOAP) 1.1	http://www.w3.org/TR/2000/NOTE-SOAP-20000508
Web Service Description Language (WSDL) 1.1	http://www.w3.org/TR/2001/NOTE-wsdl-20010315
WS-I Basic Profile 1.1	http://www.ws-i.org/Profiles/BasicProfile-1.1-2004-08-24.html

Development Platforms

Apttus SOAP API works with standard SOAP development environments. For a list of compatible development platforms, see [Salesforce Developer Force API](#) details.

Field Types

Apttus APIs use a subset of the supported data and field types on Salesforce.

The following table lists the field types that Apttus supports. For a comprehensive list of all field types supported by Salesforce, see [Salesforce Data Types](#).

Type	Description
Boolean	The Boolean field has a <code>true</code> (or 1) or <code>false</code> (or 0) value.
Data object	The Data Object field is an ID type and is represented by CPQ.nnDO in this document.
Date	The Date field contains date values only and do not contain relevant time values. Time in a date field is always set to midnight in the UTC time zone. If you want a timestamp you must use a dateTime field.
Decimal	The Decimal field provides an exact numeric value and you can arbitrarily size the precision and scale of the value.

Type	Description
ID	<p>The ID field is an alphanumeric field that acts as the primary key for a specific record associated with an object. The ID value includes a three-character code that identifies which object the record is associated with. The ID for a specific record does not change.</p> <p>For some objects, this field may also be a reference type value, which contains the ID value for a related record. They are identified by field names ending in 'Id', such as priceListId. The ID field acts like foreign keys and their values can be changed using an update() call.</p>
Integer	<p>The Integer field contains whole numbers only. There are no digits after the decimal.</p>
List	<p>The List field includes a fixed set of values from which you must select a single value. Picklists are available as drop-down lists. If a picklist is unrestricted, the API does not limit entries to only currently active values.</p>
String	<p>The String field contains text and may have different length restrictions based on the data you store in the specific field. For instance, City may be limited to 50 characters, while AddressLine1 is limited to 255 characters.</p>

Billing APIs

Apttus Billing Management APIs are categorized into:

Internal APIs

- [Billing Services](#)

External APIs

- [REST Services](#)
- [WSDL Services](#)

Billing Services

Apttus Billing APIs are based on Salesforce APIs and use the same standards and platforms.

You can invoke Apttus Billing APIs from the following command:

```
Apttus_Billing.BillingService.<Name of the Function>  
where the name of the function is API Name and its parameters.
```

Here is a list of APIs along with their parameters:

- [Creating Credit Memo Documents](#)
- [Creating Invoice Documents](#)
- [Creating Invoices](#)
- [Creating Invoices for Orders](#)
- [Previewing Pending Usage Inputs](#)
- [Processing Pending Usage Inputs](#)
- [Processing Rated Usage Inputs](#)
- [Updating Tax Calculations And Breakups on Credit Memos](#)
- [Updating Tax Calculations and Breakups on Invoice](#)
- [Forecasting Billing Schedules](#)
- [Creating Credit and Rebill](#)
- [Creating Billing Plans](#)
- [Forecasting Billing Schedules and Billing Summaries](#)
- [Creating Direct Credit Memos](#)

Creating Credit Memo Documents

createCreditMemoDocuments API is used to generate credit memo documents.

createCreditMemoDocuments(List<Id> creditMemolds, String creditMemoTemplateName)

It generates credit memo documents for the given list of credit memo IDs.

You can generate credit memo documents in the following formats:

- PDF
- DOCX
- DOC
- RTF

It accepts a list of Credit Memo IDs and a valid credit memo template name as input. If you do not specify a valid template name or pass **null** as a value, Billing Management system uses the default template provided at the Account or the Account Location.

If you call this API from a batch or a scheduled job, it can process only one CreditMemo ID. Otherwise, if you call this API from a non-batch or a non-scheduled job, it can process up to 10 CreditMemos.

Request			
Field	Type	Required?	Description
creditMemolds	List<Id>	Yes	IDs of credit memo
creditMemoTemplateName	String	No	Name of the credit memo template

Code Sample

```
Account testAccount = new Account(Name = 'Test Account');
insert testAccount;
CreditMemo__c testCreditMemo = new CreditMemo__c(BillToAccountId__c = testAccount.Id,
  CreditAmount__c = 40.0,
  Status__c = CreditMemo.STATUS_DRAFT);
insert testCreditMemo;
Apttus__APTS_Template__c cmTemplate = new Apttus__APTS_Template__c(Name = 'Default',
  Apttus__IsActive__c = true,
  Apttus__Type__c = 'Credit Memo');
insert cmTemplate;

List<Id> cmIdList = new List<Id> {testCreditMemo.Id};
//create Credit Memo Documents
Apttus_Billing.BillingService.createCreditMemoDocuments(cmIdList, cmTemplate.Name);
```

Creating Invoice Documents

createInvoiceDocuments API creates invoice documents for a given list of Invoice. It accepts a list of invoice IDs as input and produces invoice documents for each corresponding invoice ID. It also accepts Invoice Template Name as a parameter if you want to create Invoice Documents using a specific template.

You can generate invoice documents in the following formats:

- PDF
- DOCX
- DOC
- RTF

The document is generated in the format set at the **Billing Preference** in *Invoice Output Format* field.

If you call this API from a batch or a scheduled job, it can process only one Invoice ID. Otherwise, if you call this API from a non-batch or a non-scheduled job, it can process up to 10 Invoices.

There are two ways of creating Invoice Documents:

- Using the default invoice template
- Using a specific invoice template

createInvoiceDocuments(invoiceIDs)

This API uses the default Invoice Template specified on the Account or Account Location.

Request			
Field	Type	Required?	Description
invoiceIds	List <Id>	Yes	List of Invoice Ids

Code Sample

```
List<ID> invoiceIDs = new List<ID>();
//invoiceIDs.add('a4t1I000000H5hM');
Apttus_Billing.BillingService.createInvoiceDocuments(invoiceIDs);
```

createInvoiceDocuments(invoiceIDs, invoiceTemplateName)

This API is used to create invoice documents using a specific invoice template.

If you do not specify a valid template name or pass null as a value, Billing Management System uses the default template specified on the Account or Account Location.

Request			
Field	Type	Required?	Description
invoiceIds	List <Id>	Yes	List of Invoice Ids
invoiceTemplateName	String	Yes	Invoice Template Name

Code Sample

```
List<ID> invoiceIDs = new List<ID>();
//invoiceIDs.add('a4t1I000000H5hM');
//String invoiceTemplateName = 'myTestTemplate';
Apttus_Billing.BillingService.createInvoiceDocuments(invoiceIDs, invoiceTemplateName);
```

Creating Invoices

createInvoices API is used to create Invoices automatically. It accepts a list of Account IDs and creates Invoices for each AccountID.

createInvoices(billToAccountIDs, invoiceDate, targetDateTime)

This API is used to create invoices for given Account IDs. It accepts a Set of Account IDs, invoiceDate, and targetDateTime as input parameters. It creates invoices for all orders with billing schedules having status as pending billing and end date less than targetDateTime. All the new invoices are created with Invoice Date as the value mentioned in invoiceDate.

Request			
Field	Type	Required?	Description
billToAccountIds	Set <Id>	Yes	Set of bill to Account IDs
targetDateTime	Datetime	Yes	Process through Date
invoiceDate	Date	Yes	Invoice Creation Date

Code Sample

```

Set<ID> billToAccountIDs = new Set<ID>();
Date invoiceDate = Date.newInstance(2017, 1, 1);
Date myDate = Date.newInstance(2017, 1, 1);
Time myTime = Time.newInstance(3, 3, 3, 0);
DateTime targetDateTime = DateTime.newInstance(myDate, myTime);
Apttus_Billing.BillingService.createInvoices(billToAccountIDs, invoiceDate,
targetDateTime);

```


createInvoices(billToAccountIDs, options)

This API is used to create invoices for given Account IDs. It accepts a set of Account IDs and a class containing invoice creation options. the class contains options that influence the creation of an Invoice such as Invoice Date, Invoice Through Date and Auto Approve.

Request			
Field	Type	Required?	Description
billToAccountIds	Set <Id>	Yes	Set of bill to Account IDs
options	Apttus_Billing.InvoiceCreationOptions	Yes	Class holding the Invoice Creation Options
DataObject - Billing.InvoiceCreationOptions			
Field	Type	Description	
abort	Boolean	If the process is aborted.	
autoApprove	Boolean	Mandatory Constructor. If autoApprove for Invoice is set to true.	
autoApproveAmount	Decimal	Mandatory Constructor. The amount provided for auto approval.	
autoApproveCreditMemo	Boolean	Mandatory Constructor. If the autoApproveCreditMemo is set to true	

DataObject - Billing.InvoiceCreationOptions		
Field	Type	Description
autoApproveOperator	String	Mandatory Constructor. The selected autoApproveOperator such as Greater than, Less than etc.
invoiceDate	Date	Mandatory Constructor. The Invoice Date.
invoiceDateType	String	The Invoice Date Type such as month or year.
invoiceRun	Apttus_Billing __InvoiceRun__c	The Invoice Run Object API Name.
invoiceRunResult	Apttus_Billing __InvoiceRunResult__c	The Invoice Run Result Object API Name.
numberAccountsProcessed	Integer	The number of accounts processed as part of the Invoice Runs.
numberCreditMemos Generated	Integer	The number of Credit Memos generated.
numberInvoicesGenerated	Integer	The number of Invoices generated.
numberOfAccountsThat GeneratedCreditMemos	Integer	Number of accounts for which Credit Memos are generated.
numberOfAccountsThat GeneratedInvoices	Integer	Number of accounts for which Invoices are generated.
numberOfAutoApprovedInvoices	Integer	Number of Invoices that are auto-approved.
numberOfCreditMemos AutoApproved	Integer	Number of Credit Memos that are auto-approved.
numberOfSuppressedInvoices	Integer	Number of Invoices that are suppressed.
processThruDate	Date	Mandatory Constructor.The Process through date for invoice

DataObject - Billing.InvoiceCreationOptions		
Field	Type	Description
splitInvoicesByOrder	Boolean	Mandatory Constructor. If Split Invoices By Order is set to true.
suppressInvoicesAmount	Decimal	Mandatory Constructor.The amount till which you want to suppress invoices.
suppressInvoicesOperator	String	Mandatory Constructor. .The selected Suppress Invoices operator such as Greater than, Less than etc.
taxCallbackStatus	String	The status of Tax Callback.
creditMemoCreationOption	String	The credit memo creation option. For information on credit memo creation options, refer to Generating Credit Memos from Invoice Run .
autoSendEmailforInvoice	Boolean	Set it to true to auto-send an email once the invoice is generated.
autoSendEmailforCreditMemo	Boolean	Set it to true to auto-send an email once the credit memo is generated
InvoiceOverrideTemplate	String	Name of the invoice template to override the default invoice template
CreditMemoOverrideTemplate	String	Name of the credit memo template name to override the default credit memo template

-  Only the following values are currently supported for createInvoice API:
- **autoSendEmailforInvoice:** false
 - **autoSendEmailforCreditMemo:** false
 - **InvoiceOverrideTemplate:** NULL
 - **CreditMemoOverrideTemplate:** NULL

Code Sample

```
Set<ID> billToAccountIDs = new Set<ID>();
Date invoiceDate = Date.newInstance(2017, 1, 1);
Date processThruDate = Date.newInstance(2017, 1, 1);
Boolean autoApprove = true;
Boolean splitInvoicesByOrder = true;
String autoApproveOperator = 'Greater than';
Decimal autoApproveAmount = 5.00 ;
String suppressInvoicesOperator = 'Less than';
Decimal suppressInvoicesAmount = 2.00;
Boolean autoApproveCreditMemo = true;
Apttus_Billing.InvoiceCreationOptions options = new
  Apttus_Billing.InvoiceCreationOptions(
  invoiceDate,
  processThruDate,
  autoApprove,
  splitInvoicesByOrder,
  autoApproveOperator,
  autoApproveAmount,
  suppressInvoicesOperator,
  suppressInvoicesAmount,
  autoApproveCreditMemo);

Apttus_Billing.BillingService.createInvoices(billToAccountIDs, options);
```

Code Sample

Use this code sample to provide credit memo creation options while generating invoices through the createInvoices API.


```

Set<ID> billToAccountIDs = new Set<ID>();
Date invoiceDate = Date.newInstance(2018,1,1);
Date processThruDate = Date.newInstance(2018,9,9);
Boolean autoApprove = true;
Boolean splitInvoicesByOrder = false;
String autoApproveOperator = 'Greater than';
Decimal autoApproveAmount = 20.00 ;
String suppressInvoicesOperator = 'Less than';
Decimal suppressInvoicesAmount = 2.00;
Boolean autoApproveCreditMemo = true;
String creditMemoCreationOption = 'Single Credit Memo for all Negative Schedules per Invoice';
Boolean autoSendEmailForInvoice = false;
Boolean autoSendEmailForCreditMemo = false;
String InvoiceOverrideTemplate = NULL;
String CreditMemoOverrideTemplate = NULL;
billToAccountIDs.add('0017F00000tPMvL');
InvoiceCreationOptions
options = new InvoiceCreationOptions( invoiceDate,
processThruDate,
autoApprove,
splitInvoicesByOrder,
autoApproveOperator,
autoApproveAmount,
suppressInvoicesOperator,
suppressInvoicesAmount,
autoApproveCreditMemo,
creditMemoCreationOption,
autoSendEmailForInvoice,
autoSendEmailForCreditMemo,
InvoiceOverrideTemplate,
CreditMemoOverrideTemplate);
BillingService.createInvoices(billToAccountIDs,options);

```

Creating Invoices for Orders

createInvoicesforOrder API is used to create invoices for given orders. It accepts a List of order IDs as input and produces invoices for each order ID.

createInvoicesForOrder(orderId, targetDateTime, invoiceDate)

This API is used to create invoices for given order ID. It accepts the order ID, targetDateTime and invoiceDate as input parameters. It creates invoices for the billing schedules that have status as pending billing and end date less than targetDateTime. All the new invoices are created with Invoice Date as the value mentioned in invoiceDate.

Request			
Field	Type	Required?	Description
orderId	ID	Yes	Order Id
targetDateTime	Datetime	Yes	Invoice Process Through Date
invoiceDate	Date	Yes	Invoice Creation Date

Response		
Field	Type	Description
Apttus_Config2__Invoice_c	List of Invoice objects	Invoices created for each order ID

Code Sample

```

ID orderID = new ID();
Date invoiceDate = Date.newInstance(2017, 1, 1);
Date myDate = Date.newInstance(2017, 1, 1);
Time myTime = Time.newInstance(3, 3, 3, 0);
DateTime targetDateTime= DateTime.newInstance(myDate, myTime);
List <Invoice_c> invoices =
Apttus_Billing.BillingService.createInvoicesForOrder(orderID, targetDateTime,
invoiceDate);

```

createInvoicesForOrder(orderID, options)

This API is used to create invoices for the given order ID. It accepts the order IDs and a class containing invoice creation options. the class contains options that influence the creation of an Invoice such as Invoice Date, Invoice Through Date and Auto Approve. It returns a list of invoices.

Request			
Field	Type	Required?	Description
orderId	ID	Yes	Order Id
options	Apttus_Billing.InvoiceCreationOptions	Yes	Class holding the Invoice Creation Options

Response		
Field	Type	Description
Apttus_Config2__Invoice_c	List of Invoice objects	Invoices created for each order ID

DataObject - Billing.InvoiceCreationOptions			
Field	Type	Option Type	Description
abort	Boolean	Output	If the process is aborted.
autoApprove	Boolean	Input	Mandatory Constructor. If autoApprove for Invoice is set to true.
autoApproveAmount	Decimal	Input	Mandatory Constructor. The amount provided for auto approval.
autoApproveCreditMemo	Boolean	Input	Mandatory Constructor. If autoApproveCreditMemo is set to true
autoApproveOperator	String	Input	Mandatory Constructor. The selected autoApproveOperator such as Greater than, Less than etc.
invoiceDate	Date	Input	Mandatory Constructor. The Invoice Date.
invoiceDateType	String	Input	The Invoice Date Type such as month or year.

DataObject - Billing.InvoiceCreationOptions			
Field	Type	Option Type	Description
invoiceRun	Apttus_Billing__InvoiceRun__c	Input	The Invoice Run Object API Name.
invoiceRunResult	Apttus_Billing__InvoiceRunResult__c	Input/Output	The Invoice Run Result Object API Name.
numberAccountsProcessed	Integer	Output	The number of accounts processed as part of the Invoice Runs.
numberCreditMemosGenerated	Integer	Output	The number of Credit Memos generated.
numberInvoicesGenerated	Integer	Output	The number of Invoices generated.
numberOfAccountsThatGeneratedCreditMemos	Integer	Output	Number of accounts for which Credit Memos are generated.
numberOfAccountsThatGeneratedInvoices	Integer	Output	Number of accounts for which Invoices are generated.
numberOfAutoApprovedInvoices	Integer	Output	Number of Invoices that are auto-approved.
numberOfCreditMemosAutoApproved	Integer	Output	Number of Credit Memos that are auto-approved.
numberOfSuppressedInvoices	Integer	Output	Number of Invoices that are suppressed.

DataObject - Billing.InvoiceCreationOptions			
Field	Type	Option Type	Description
processThruDate	Date	Input	Mandatory Constructor. The Process through date for invoice
splitInvoicesByOrder	Boolean	Input	Mandatory Constructor. If Split Invoices By Order is set to true.
suppressInvoicesAmount	Decimal	Input	Mandatory Constructor. The amount till which you want to suppress invoices.
suppressInvoicesOperator	String	Input	Mandatory Constructor. The selected Suppress Invoices operator such as Greater than, Less than etc.
taxCallbackStatus	String	Output	The status of Tax Callback.

Code Sample

```

ID orderID = new ID();
Date invoiceDate = Date.newInstance(2017, 1, 1);
Date processThruDate = Date.newInstance(2017, 1, 1);
Boolean autoApprove = true;
Boolean splitInvoicesByOrder = true;
String autoApproveOperator = 'Greater than';
Decimal autoApproveAmount = 5.00 ;
String suppressInvoicesOperator = 'Less than';
Decimal suppressInvoicesAmount = 2.00;
Boolean autoApproveCreditMemo = true;

Apttus_Billing.InvoiceCreationOptions options = new
Apttus_Billing.InvoiceCreationOptions(
invoiceDate,
processThruDate,
autoApprove,
splitInvoicesByOrder,
autoApproveOperator,
autoApproveAmount,
suppressInvoicesOperator,
suppressInvoicesAmount,
autoApproveCreditMemo);

Apttus_Billing.BillingService.createInvoicesForOrder(orderID, options);

```

Previewing Pending Usage Inputs

previewPendingUsageInputs API is used to preview the rating amount of usage inputs without altering the Billing Schedules, Usage Schedules, and Usage Inputs. You can rate a maximum of 2000 Usage Inputs at a time.

previewPendingUsageInputs(Set<ID> usageInputIds)

The API accepts a set of Usage Input IDs as input. It validates the number of Usage Inputs to process. If the number of Usage Input Ids entered is less than 2000, it returns a map containing the rating amount for each Usage Input ID. If the number of Usage Input IDs given is more than 2000, Billing Management system throws an error.

Request			
Field	Type	Required?	Description
usageInputIds	Set <Id>	Yes	Set of Usage Input IDs

Response		
Field	Type	Description
mapRatedUsagInputIds	Map	Map containing Usage Inputs for each UsagInputId

Code Sample

```

Set<ID> usageInputIDs = new Set<ID>();
Map<ID, Apttus_Billing__UsageInput__c> mapRatedUsageInputs =
Apttus_Billing.BillingService.previewPendingUsageInputs(usageInputIDs);
for(Apttus_Billing__UsageInput__c usageInput : mapRatedUsageInputs.values()) {
    //Use usageInput.Apttus_Billing__RatedAmount__c
}
    
```

Processing Pending Usage Inputs

processPendingUsageInput API is used to process Usage Inputs. On completion of the batch job, the user receives a batch job status email.

You can process the usage inputs in two ways:

- Process all the loaded usage inputs
- Process an explicit set of usage inputs

processPendingUsageInput()

This API processes all the usage inputs with status as 'Loaded'.

Code Sample

```
Apttus_Billing.BillingService.processPendingUsageInput();
```

processPendingUsageInput(Set<ID> usageInputIDs)

This API processes usage inputs for all the usage inputs IDs with status as 'Loaded'. It accepts a Set of Usage Input IDs as input and checks the Usage Input Status for each Usage Input ID. It processes all the usage inputs with status as 'Loaded'.

Request			
Field	Type	Required?	Description
usageInputIDs	Set<Id>	No	Set of usage input IDs

Code Sample

```
Set<Id> usageInputIds = new Set<ID>{usageInput1.Id, usageInput2.Id};
Apttus_Billing.BillingService.processPendingUsageInput(usageInputIds);
```

processPendingUsageInput(Set<ID> usageInputIDs, Boolean processSynchronously)

This API processes usage inputs for all the usage inputs IDs with status as 'Loaded'. It accepts a Set of Usage Input IDs as input and checks the Usage Input Status for each Usage Input ID. It processes all the usage inputs with status as 'Loaded'. If processSynchronously is set to true, the usage inputs are

processed synchronously without any batch job. You can process only a maximum of 1000 usage inputs. If `processSynchronously` is set to `false`, the API will schedule a batch job to process all the given usage inputs.

Request			
Field	Type	Required?	Description
usageInputIDs	Set <Id>	No	Set of usage input IDs
processSynchronously	Boolean	No	Indicates whether to process the Usage Inputs synchronously or asynchronously. The default value is <code>false</code> .

Code Sample

```
// To process Usage Inputs Synchronously
Set<ID> usageInputIDs = new Set<ID>(); //Max it can be 1000 IDs
Apttus_Billing.BillingService. processPendingUsageInput(usageInputIDs, true);
// To process Usage Inputs Asynchronously
Set<ID> usageInputIDs = new Set<ID>(); //Max it can be any number of IDs
Apttus_Billing.BillingService. processPendingUsageInput(usageInputIDs, false);
```

Processing Rated Usage Inputs

This API is used to unrate the processed usage input. It also reverts the Amount and Quantity from Billing Schedules, Usage Schedules, and Revenue Fee Schedules.

`processRatedUsageInput(Set<ID> usageInputIDs)`

It accepts a Set of Usage Input IDs as input. For all entered Usage Input IDs, it unrates all the usage Inputs and reverts the amount and quantity from the related billing schedules, usage schedules, and revenue fee schedules. On completion of the batch job, the user receives a batch job status email.

Request			
Field	Type	Required?	Description
usageInputIDs	Set <Id>	Yes	Set of usage input IDs

Code Sample

```
Set<Id> usageInputIds = new Set<ID>{usageInput1.Id, usageInput2.Id};
Apttus_Billing.BillingService.processRatedUsageInput(usageInputIds);
```


Updating Tax Calculations And Breakups on Credit Memos

updateCreditMemoTaxCalculationsAndBreakups API calculates Tax Amount and populates it on the Credit Memo.

updateCreditMemoTaxCalculationsAndBreakups(Set<ID> CreditMemoIDs, Boolean autoTransitionFromPendingApprovedToApproved)

This API calculates Tax Amount and Tax Breakups for credit memos with status as 'Draft' or 'Pending Approved'. After tax computation, it updates the Tax Amount on each credit memo line item and creates or updates Credit Memo Line Item Tax Breakups. It then calculates the Total Tax Amount for the credit memo and creates or updates the Credit Memo Tax Breakups.

If autoTransitionFromPendingApprovedToApproved is set to true, it updates the status of Credit Memo from Pending Approved to Approved.

 The billing administrator must register a Tax Callback class for updateCreditMemoTaxCalculationsAndBreakups API to work. For details on how to register a Tax Callback class, refer to Custom Settings for Tax.

Request			
Field	Type	Required?	Description
creditMemoIDs	Set <Id>	Yes	Set of Credit Memo Ids
autoTransitionFromPendingApprovedToApproved	Boolean	Yes	If set to true, the API updates the status of Credit Memo from Pending Approved to Approved. If set to false, the credit memo status is not updated.

Code Sample

The code sample below helps you calculate and fetch Tax Amount for credit memos.

```
Set<ID> creditMemoIDs = new Set<ID>();
//[{creditMemos[0].Id, creditMemos[1].Id}];
Apttus_Billing.BillingService.updateCreditMemoTaxCalculationsAndBreakups(creditMemoIDs,
true);
```

Updating Tax Calculations and Breakups on Invoice

updateInvoiceMemoTaxCalculationsAndBreakups API calculates Tax Amount and populates it on the Invoice.

updateInvoiceTaxCalculationsAndBreakups(Set<ID> InvoiceIds, Boolean autoTransitionFromPendingApprovedToApproved)

This API calculates Tax Amount and Tax Breakups for invoices with status as 'Draft' or 'Pending Approved'. After tax computation, it updates the Tax Amount on each invoice line item and creates or updates Invoice Line Item Tax Breakups. It then calculates the Total Tax Amount for the invoice and creates or updates the Invoice Tax Breakups.

If autoTransitionFromPendingApprovedToApproved is set to true, it updates the status of the invoice from Pending Approved to Approved.

⚠ The billing administrator must register a Tax Callback class for updateInvoiceTaxCalculationsAndBreakups API to work. For details on how to register a Tax Callback class, refer to Custom Settings for Tax.

Request			
Field	Type	Required?	Description
invoiceIds	List <Id>	Yes	List of Invoice Ids
autoTransitionFromPendingApprovedToApproved	Boolean	Yes	If set to true, the API updates the status of the Invoice from Pending Approved to Approved. If set to false, the invoice status is not updated.

Code Sample

The code sample below helps you calculate and fetch Tax Amount for invoices.

```
Set<ID> invoiceIDs = new Set<ID>();
invoiceIDs.add('invoiceID')
Apttus_Billing.BillingService.updateInvoiceTaxCalculationsAndBreakups(invoiceIDs,true);
```


Forecasting Billing Schedules

Forecast Billing Schedules API is used to generate and display forecast billing schedules for a Quote/ Proposal. This API accepts the proposal ID as input parameter and returns the list of forecast billing schedules.

ForecastBillingSchedules retrieveForecastedBillingSchedules(ProposalID)

Forecast Billing Schedules API is used to generate and display forecast billing schedules for a Quote/ Proposal. This API can be invoked by the implementation team on acceptance of the quote/proposal.

If the forecast billing schedules are already generated for the given proposal and no changes are made to the product configurations, the API displays the existing forecast billing schedules. If you perform any asset-based operations or change the product configuration, the generated forecast billing schedules are deleted and new forecast billing schedules are generated to reflect the changes made to the product or the asset.

-  Forecast billing schedule functionality is not supported for:
- Evergreen products
 - Quote/Proposal associated with a billing plan
 - Informational line items of bundle and option products

Request			
Field	Type	Required?	Description
ProposalID	ID	Yes	The proposal ID

Response		
Field	Type	Description
forecastedbillingschedules	List	List of forecast billing schedules generated for the given proposal ID.

```

    If the Forecasted Billing Schedules have already been created and are "current" then
    return the existing
    * Forecasted Billing Schedules, otherwise delete the existing "out of sync" Forecasted
    Billing Schedules and to
    * the following.
    *
    * For each Line Item in the "active" Product Configuration create an in-memory Order
    Line Item (and other
    * relevant in-memory objects) and call the BSM (Billing Schedule Manager) to generate
    the resultant set of
    * _forecasted_ Billing Schedules. When finished persist the aggregate list of
    Forecasted Billing Schedules and
    * and return them
    *
    * @param ProposalId The Id of the Proposal (Quote) to persist and retrieve Forecasted
    Billing Schedules for.
    *
    * @return The list of persisted Forecasted Billing Schedules, which will be sorted by
    "Ready for Invoice Date".
    */
    global static List<ForecastedBillingSchedule__c> retrieveForecastedBillingSchedules(ID
    ProposalId );

```

Creating Credit and Rebill

Credit and Rebill functionality allow you to credit an entire invoice and rebill it.

createCreditRebill(invoiceId, autoApproveCreditMemo)

This API accepts the invoice ID and the option to Auto Approve the credit memo as input parameters.

Request			
Field	Type	Required?	Description
invoiceId	ID	Yes	ID of the invoice
autoApproveCreditMemo	Boolean	Yes	If set to true, credit memos are auto-approved

The API returns a Map<String, Value> as a response parameter.

Response		
Field	Type	Description
Result	Map	The result map contains the success string and a value

If the API executes successfully, the value contains the following keys:

- success - set to true
- creditMemold - the ID of the created credit memo

If the API is not executed successfully, the value contains the following keys:

- success - set to false
- errorMessage - contains the error message
- stackTrace - contains the stackTrack of the API call

Code Sample

```
/**createCreditRebill This method creates a Credit Memo
@param invoiceId
The id of the invoice which has to be credited and rebilled.
@param autoApproveCreditMemo
Tells whether the credit memo should to be approved during creation
*
@return
Returns a map. If creation succeeds, returns success=true and creditMemoId
*
In case of error, success=false, errorMessage and stackTrace
*/
global static Map<String, Object> Apttus_Billing.BillingService.createCreditRebill(Id
invoiceId, Boolean autoApproveCreditMemo);
```

Creating Billing Plans

createBillingPlan API is used to create a billing plan. It creates a billing plan and billing plan line items for the given proposal ID.

createBillingPlan(proposalId,billingPlanTemplateId,proposalLineItemIds)

This API accepts Proposal ID, Billing Plan Template ID, and Proposal Line Item IDs as input parameters. It creates a billing plan and billing plan line items for the given proposal ID. Created billing plan is applied to the list of provided proposal IDs. If you do not provide any proposal line item IDs as input parameters, the created billing plan is applied to all the proposal line items. This API skips the proposal line items that are already linked to a billing plan.

For a billing plan template with plan type as Milestones, createBillingPlan API also creates milestones.

Request			
Field	Type	Required?	Description
proposalID	ID	Yes	ID of the proposal
billingPlanTemplateId	ID	Yes	ID of the Billing Plan Template
proposalLineItemIds	Set <Id>	No	Set of proposal Ids
Response			
Field	Type	Description	
isSuccess	Boolean	Returns true if the API is executed correctly	
errorMessage	String	Error Message if the API is not executed successfully.	
billingPlanId	ID	Id of the created Billing Plan	


Code Sample

```

Id proposalId = 'a2G1N000002RpRZUA0';
Id billingPlanTemplateId = 'a3D1N000000blZc';
Set<Id> proposalLineItemIds = new Set<Id>('a2E1N000001dHox', 'a2E1N000001eHox');
Apttus_Billing.BillingService.BillingPlanAPIResponse response;
// Call API without proposal line item ids parameter
response = Apttus_Billing.BillingService.createBillingPlan(proposalId,
billingPlanTemplateId);

// Call API with proposal line item ids parameter
response = Apttus_Billing.BillingService.createBillingPlan(proposalId,
billingPlanTemplateId, proposalLineItemIds);

```

 createBillingPlan API is not supported for Evergreen Billing and Usage-based products.


Forecasting Billing Schedules and Billing Summaries

Forecast Billing Schedules and Summaries API is used to generate and display forecast billing schedules and forecast billing summaries for a Quote/Proposal. This API accepts the proposal ID and the option to extend the end date with renewal term as input parameters and returns the list of forecast billing schedules and forecast billing summaries.

ForecastResults retrieveForecastedBillingSchedulesAndSummaries(ProposalID, extendEndDateWithRenewalTerm)

Forecast Billing Schedules API is used to generate and display forecast billing schedules and forecast billing summaries for a Quote/Proposal. This API can be invoked by the implementation team on acceptance of the quote/proposal.

If the forecast billing schedules or forecast billing summaries are already generated for the given proposal and no changes are made to the product configurations, the API displays the existing forecast billing schedules. If you perform any asset-based operations or change the product configuration, the generated forecast billing schedules and billing summaries are deleted and new forecast billing schedules and billing summaries are generated to reflect the changes made to the product or the asset.

 Forecast billing schedule functionality is not supported for:

- Evergreen products
- Quote/Proposal associated with a billing plan
- Informational line items of bundle and option products

Request			
Field	Type	Required?	Description
proposalID	ID	Yes	The proposal ID
extendEndDateWithRenewal	Boolean	Yes	If extendEndDateWithRenewal is set to true, then for each proposal line item with Auto-Renew set to True and the Auto Renewal Type set to Fixed. the end date is extended based on the renewal term.

Response		
Field	Type	Description
forecastedSchedules	List	List of forecast billing schedules generated for the given proposal ID.
forecastedSummaries	List	List of forecast billing summaries generated for the given proposal ID.


```

/**
 * Class used to support forecasting of Billing Schedules and Invoices.
 */
global with sharing class ForecastedResults {

    global List<ForecastedBillingSchedule__c> forecastedSchedules { get; private
set; }
    public List<ForecastedBillingSummary__c> forecastedSummaries { get; private
set; }

    public ForecastedResults() {
        this.forecastedSchedules = new List<ForecastedBillingSchedule__c>();
        this.forecastedSummaries = new List<ForecastedBillingSummary__c>();
    }
}

/**
 * Create the list of Forecasted Billing Schedules by leveraging the BSM to "forecast"
each of
 * the Proposal Line Items belonging to the "active" Product Configuration of the
specified Proposal.
 * From the Forecasted Billing Schedules generate the list of Forecasted Billing
Summaries.
 *
 * If the Forecasted Billing Schedules/Summaries have already been created and are
"current",
 * return the existing forecasted Schedules and Summaries. Otherwise delete the
existing
 * "out of sync" forecasted Schedules and Summaries and use the Product Configuration of
the
 * specified Proposal to re-generate (and persist) them.
 *
 * @param ProposalId The Id of the Proposal (Quote) to use when retrieving (and possibly
 * generating) the lists of forecasted Billing Schedules and Summaries.
 * @param extendEndDateWithRenewalTerm If the flag is true, then extend the End Date
 * (based on the Renewal Term) for all Line Items that have Auto Renew set to True and
 * the Auto Renewal Type set to "Fixed".
 *
 * @return The list of persisted forecasted Billing Schedules and Billing Summaries.
The forecasted
 * Billing Schedules will be sorted by "Ready for Invoice Date" and the forecasted
Billing Summaries
 * will be sorted by Invoice Date and Summary Number.
 */
global static ForecastedResults retrieveForecastedBillingSchedulesAndSummaries(
    ID proposalId, Boolean extendEndDateWithRenewalTerm) {

    return new ForecastedResults();
}

```

Creating Direct Credit Memos

createDirectCreditMemos API is used to create credit memos for a list of invoices.

directCreditMemoResult createDirectCreditMemos(directCreditMemInputs)

This API is used to create credit memos for an invoice. It accepts a Set of Account IDs, invoiceDate, and targetDateTime as input parameters. For each DirectCreditMemInput, a credit memo is created in the Draft Status. You can auto-approve a credit memo line item and auto-apply it to an invoice. If you have a Tax Callback registered, this API also calculates Tax and creates Tax breakups for a credit memo line item.

Request - CreateDirectCreditMemInput			
Field	Type	Required?	Description
invoiceId	ID	Yes	The Id of the approved Invoice the credit will be drawn from.
reasonCode	String	Yes	The reason for creating the Credit Memo. Must be null or a valid pick-list value for the Reason Code field declared of the Credit Memo object.
creditMemoLineItemInputs	List<DirectCreditMemoLineItemInput>	Yes	The list of inputs for each Credit Memo Line Item to create.
autoApprove	Boolean	Yes	If true the Credit Memo will be transitioned to Approved otherwise the Credit Memo will be created with a status of Draft. A value of null will be considered as false.
autoApplyCreditMemo	Boolean	Yes	This flag is only relevant when the Auto Approve option is true. If both options are true the newly created direct Credit Memo will be applied to the Invoice the credit was drawn from. A value of null will be considered as false.
TemplateId	ID	Yes	The Id of the Credit Memo template to use when creating the Credit Memo attachment. This parameter is optional and can be null.


Request - CreateDirectCreditMemoInput			
Field	Type	Required?	Description
calculateTax	Boolean	Yes	If this flag is true Tax will be calculated for a non tax exempt Asset. If false, no tax will be calculated. A value of null will be considered as true.

Request - DirectCreditMemoLineItemInput			
Field	Type	Required?	Description
invoiceLineItemID	ID	Yes	The Id of the affiliate Invoice Line Item. It must be a child of the specified Invoice.
creditAmount	Decimal	Yes	The amount of credit to draw from the corresponding Invoice Line Item. The amount must be a positive number and cannot exceed the available credit of the corresponding Invoice Line Item.

Response		
Field	Type	Description
DirectCreditMemoResult	List	A result parameter is returned for each request parameter.

Create Direct Credit Memo API returns an error if:

- The specified invoice does not exist.
- The status of your specified invoice is not Approved.
- Your specified reason code is invalid. Reason code can be null or one of the picklist values declared in the Reason Code field of Credit Memo object.

 Create Direct Credit Memo API does not support the following reason codes:

- Wallet Application
- Credit & Rebill

- Credit Amount is negative or 0.
- Template ID does not exist.
- Template Type is other than Credit Memo.
- Specified Invoice Line Item does not exist.
- Specified Invoice Line Item does not belong to the specified invoice.
- Invoice Line Item is already referenced in more than one Credit Memo Line Item.
- Credit Amount is greater than the Available Credit.

Code Sample

```

// Set Credit Memo input parameters
List<DirectCreditMemoInput> creditMemoInputs = new List<DirectCreditMemoInput>();
List<DirectCreditMemoInput.DirectCreditMemoLineItemInput> creditMemoLineItemInputs;
Set<Id> invoiceIds = new Set<Id>

{'a2V1N000002QbuC', 'a2V1N000002QbuM'}
;
List<Invoice__c> invoices = SELECT Id, Status__c, (Select Id, Amount__c From
InvoiceLineItems__r) FROM Invoice__c Where Id IN:invoiceIds;
Id templateId = 'a1b1N000003QCS';
Decimal creditAmount = 100.00;
String reasonCode = null;

for(Invoice__c invoice : invoices){
creditMemoLineItemInputs = new
List<DirectCreditMemoInput.DirectCreditMemoLineItemInput>();
for(InvoiceLineItem_c invoiceLineItem : invoice.InvoiceLineItems_r)

{ creditMemoLineItemInputs.add(new
DirectCreditMemoInput.DirectCreditMemoLineItemInput(invoiceLineItem.Id,
creditAmount)); }
creditMemoInputs.add(new DirectCreditMemoInput(invoice.Id,
reasonCode,
true,
true,
templateId,
true,
creditMemoLineItemInputs));
}
List<DirectCreditMemoResult> actualCreditMemoResults =
BillingService.createDirectCreditMemos(creditMemoInputs);
System.debug('actualCreditMemoResults====='+actualCreditMemoResults);

```

REST Services

Apttus Billing Management offers the following REST Services:

- [Creating Invoices for Orders - REST Service](#)
- [Creating Invoices - REST Service](#)
- [Processing Pending Usage Inputs - REST Service](#)

Creating Invoices for Orders - REST Service

createInvoicesforOrder API is used to create invoices for given orders. It accepts a List of order IDs as input and produces invoices for each order ID.

`createInvoicesForOrder(orderId, targetDateTime, invoiceDate)`

This REST Service is used to create invoices for given order IDs. It accepts a list of order ID, targetDateTime and invoiceDate as input parameters.

It creates invoices for billing schedules that have status as pending billing, and ReadyForInvoiceDate less than the targetDate. All the new invoices are created with Invoice Date as the value mentioned in invoiceDate.

Code Sample

```

MainClass.cs
=====
namespace ConsoleApplication1
{
    class Program
    {
        static void Main(string[] args)
        {
            SalesforceClient client = new SalesforceClient();
            client.Username = "[yourUsername]";
            client.Password = "[yourPassword]";
            client.Token = "[Token]";
            client.ClientId = "[ConnectedApp_ClientID]";
            client.ClientSecret = "[ConnectedApp_SecretKey]";
            client.Login();

            client.createInvoiceForOrder();
        }
    }
}

SalesforceClient.cs
=====
using Newtonsoft.Json;
using System;
using System.Collections.Generic;
using System.Net;
using System.Net.Http;
using System.Net.Http.Headers;
using System.Text;

namespace ConsoleApplication1
{
    public class SalesforceClient
    {
        private const string LOGIN_ENDPOINT = "https://test.salesforce.com/services/
oauth2/token";
        private const string API_ENDPOINT = "/services/apexrest/";

        public string Username { get; set; }
        public string Password { get; set; }
        public string Token { get; set; }
        public string ClientId { get; set; }
        public string ClientSecret { get; set; }
        public string AuthToken { get; set; }
        public string InstanceUrl { get; set; }

        static SalesforceClient()

```

```

    {
        // SF requires TLS 1.1 or 1.2
        ServicePointManager.SecurityProtocol = SecurityProtocolType.Tls12 |
SecurityProtocolType.Tls11;
    }

    public void Login()
    {
        String jsonResponse;
        using (var client = new HttpClient())
        {
            var request = new FormUrlEncodedContent(new Dictionary<string, string>
                {
                    {"grant_type", "password"},
                    {"client_id", ClientId},
                    {"client_secret", ClientSecret},
                    {"username", Username},
                    {"password", Password + Token}
                }
            );
            request.Headers.Add("X-PrettyPrint", "1");
            var response = client.PostAsync(LOGIN_ENDPOINT, request).Result;
            jsonResponse = response.Content.ReadAsStringAsync().Result;
        }
        Console.WriteLine(jsonResponse);

        var values = JsonConvert.DeserializeObject<Dictionary<string,
string>>(jsonResponse);
        AuthToken = values["access_token"];
        InstanceUrl = values["instance_url"];
    }

    public void createInvoiceForOrder()
    {
        using (var client = new HttpClient())
        {
            string restRequest = InstanceUrl + API_ENDPOINT + "Apttus_Billing/
CreateInvoicesForOrder/v1/";

            string requestMessage = "{\"orderId\":\"a2nW00000010D2G\",
\"targetDate\":\"2018-03-03\", \"invoiceDate\":\"2018-03-03\"}";
            HttpContent content = new StringContent(requestMessage, Encoding.UTF8,
"application/json");

            HttpRequestMessage request = new HttpRequestMessage(HttpMethod.Post,
restRequest);
            request.Headers.Add("X-PrettyPrint", "1");
            request.Headers.Add("Authorization", "Bearer " + AuthToken);
            request.Headers.Accept.Add(new
MediaTypeWithQualityHeaderValue("application/json"));
            request.Content = content;
        }
    }

```

```

        var response = client.SendAsync(request);
        string result = response.Result.Content.ReadAsStringAsync().Result;

        Console.Write(result);
        Console.ReadLine();
    }
}
}
}

```

Input Format

Internally the input format is converted to JSON as follows:

```

{
    "orderId" : "a2nW00000010D2A",
    "invoiceDate" : "2018-03-03",
    "targetDate" : "2018-03-03"
}

```

Output Format

Invoice is created for the given Order ID using the Invoice Date and targetDate parameters. Invoice is created only for billing schedules that have status as pending billing, and ReadyForInvoiceDate less than the targetDate.

```

[ {
    "attributes" : {
        "type" : "Apttus_Billing__Invoice__c",
        "url" : "/services/data/v31.0/subjects/Apttus_Billing__Invoice__c/a5zW00000005EytIAE"
    },
    "Id" : "a5zW00000005EytIAE",
    "Name" : "INV-00000012",
    "Apttus_Billing__Type__c" : "Standard",
    "Apttus_Billing__TotalInvoiceAmount__c" : 2400.00000,
    "Apttus_Billing__ShipToAccountId__c" : "001W000000LSAJHIA5",
    "Apttus_Billing__InvoiceDate__c" : "2018-03-03T12:39:23.000+0000",
    "Apttus_Billing__DueDate__c" : "2018-03-03T12:39:23.000+0000",
    "Apttus_Billing__BillToAccountId__c" : "001W000000LSAJHIA5"
} ]

```


Creating Invoices - REST Service

createInvoices API is used to create Invoices automatically. It accepts a list of Account IDs and creates Invoices for each AccountID.

`createInvoices(billToAccountIDs, invoiceDate, targetDateTime)`

This API is used to create invoices for given Account IDs. It accepts a list of Account IDs, invoiceDate, and targetDateTime as input parameters. It creates invoices for billing scheules that have status as pending billing, and ReadyForInvoiceDate less than the targetDate. All the new invoices are created with Invoice Date as the value mentioned in invoiceDate.

Code Sample

```

MainClass.cs
=====
namespace ConsoleApplication1
{
    class Program
    {
        static void Main(string[] args)
        {
            SalesforceClient client = new SalesforceClient();
            client.Username = "[yourUsername]";
            client.Password = "[yourPassword]";
            client.Token = "[Token]";
            client.ClientId = "[ConnectedApp_ClientID]";
            client.ClientSecret = "[ConnectedApp_SecretKey]";
            client.Login();

            client.createInvoice();
        }
    }
}

SalesforceClient.cs
=====
using Newtonsoft.Json;
using System;
using System.Collections.Generic;
using System.Net;
using System.Net.Http;
using System.Net.Http.Headers;
using System.Text;

namespace ConsoleApplication1
{
    public class SalesforceClient
    {
        private const string LOGIN_ENDPOINT = "https://test.salesforce.com/services/
oauth2/token";
        private const string API_ENDPOINT = "/services/apexrest/";

        public string Username { get; set; }
        public string Password { get; set; }
        public string Token { get; set; }
        public string ClientId { get; set; }
        public string ClientSecret { get; set; }
        public string AuthToken { get; set; }
        public string InstanceUrl { get; set; }

        static SalesforceClient()

```

```

    {
        // SF requires TLS 1.1 or 1.2
        ServicePointManager.SecurityProtocol = SecurityProtocolType.Tls12 |
SecurityProtocolType.Tls11;
    }

    public void Login()
    {
        String jsonResponse;
        using (var client = new HttpClient())
        {
            var request = new FormUrlEncodedContent(new Dictionary<string, string>
                {
                    {"grant_type", "password"},
                    {"client_id", ClientId},
                    {"client_secret", ClientSecret},
                    {"username", Username},
                    {"password", Password + Token}
                }
            );
            request.Headers.Add("X-PrettyPrint", "1");
            var response = client.PostAsync(LOGIN_ENDPOINT, request).Result;
            jsonResponse = response.Content.ReadAsStringAsync().Result;
        }
        Console.WriteLine(jsonResponse);

        var values = JsonConvert.DeserializeObject<Dictionary<string,
string>>(jsonResponse);
        AuthToken = values["access_token"];
        InstanceUrl = values["instance_url"];
    }

    public void createInvoice()
    {
        using (var client = new HttpClient())
        {
            string restRequest = InstanceUrl + API_ENDPOINT + "Apttus_Billing/
CreateInvoices/v1/";

            string requestMessage = "{\"billToAccountIds\":[\"001W000000ecLP8\",
\"001W000000dkQ2c\", \"001W000000LSAJH\"], \"targetDate\": \"2018-03-03\",
\"invoiceDate\": \"2018-03-03\"}";
            HttpContent content = new StringContent(requestMessage, Encoding.UTF8,
"application/json");

            HttpRequestMessage request = new HttpRequestMessage(HttpMethod.Post,
restRequest);
            request.Headers.Add("X-PrettyPrint", "1");
            request.Headers.Add("Authorization", "Bearer " + AuthToken);

```

```

        request.Headers.Accept.Add(new
MediaTyewithQualityHeaderValue("application/json"));
        request.Content = content;

        var response = client.SendAsync(request);
        string result = response.Result.Content.ReadAsStringAsync().Result;

        Console.Write(result);
        Console.ReadLine();
    }
}
}
}

```

Input Format

Internally the input format is converted to JSON as follows:

```

{
    "billToAccountIds" : ["001W000000eclP8", "001W000000dkQ2c",
"001W000000LSAJH"],
    "targetDate" : "2018-03-03",
    "invoiceDate" : "2018-03-03"
}

```

Output

Invoice is created for the given list of Account IDs using the Invoice Date and targetDate parameters. Invoice is created only for billing schedules that have status as pending billing, and ReadyForInvoiceDate less than the targetDate. This API does not return any output.

Processing Pending Usage Inputs - REST Service

processPendingUsageInput API is used to process Usage Inputs.

processPendingUsageInput()

This API processes all the usage inputs with status as 'Loaded'. On completion of the batch job, the user receives a batch job status email.

Code Sample

```

MainClass.cs
=====
namespace ConsoleApplication1
{
    class Program
    {
        static void Main(string[] args)
        {
            SalesforceClient client = new SalesforceClient();
            client.Username = "[yourUsername]";
            client.Password = "[yourPassword]";
            client.Token = "[Token]";
            client.ClientId = "[ConnectedApp_ClientID]";
            client.ClientSecret = "[ConnectedApp_SecretKey]";
            client.Login();

            client.processPendingUsageInputs();
        }
    }
}

SalesforceClient.cs
=====
using Newtonsoft.Json;
using System;
using System.Collections.Generic;
using System.Net;
using System.Net.Http;
using System.Net.Http.Headers;
using System.Text;

namespace ConsoleApplication1
{
    public class SalesforceClient
    {
        private const string LOGIN_ENDPOINT = "https://test.salesforce.com/services/
oauth2/token";
        private const string API_ENDPOINT = "/services/apexrest/";

        public string Username { get; set; }
        public string Password { get; set; }
        public string Token { get; set; }
        public string ClientId { get; set; }
        public string ClientSecret { get; set; }
        public string AuthToken { get; set; }
        public string InstanceUrl { get; set; }

        static SalesforceClient()

```

```

    {
        // SF requires TLS 1.1 or 1.2
        ServicePointManager.SecurityProtocol = SecurityProtocolType.Tls12 |
SecurityProtocolType.Tls11;
    }

    public void Login()
    {
        String jsonResponse;
        using (var client = new HttpClient())
        {
            var request = new FormUrlEncodedContent(new Dictionary<string, string>
                {
                    {"grant_type", "password"},
                    {"client_id", ClientId},
                    {"client_secret", ClientSecret},
                    {"username", Username},
                    {"password", Password + Token}
                }
            );
            request.Headers.Add("X-PrettyPrint", "1");
            var response = client.PostAsync(LOGIN_ENDPOINT, request).Result;
            jsonResponse = response.Content.ReadAsStringAsync().Result;
        }
        Console.WriteLine(jsonResponse);

        var values = JsonConvert.DeserializeObject<Dictionary<string,
string>>(jsonResponse);
        AuthToken = values["access_token"];
        InstanceUrl = values["instance_url"];
    }

    public void processPendingUsageInputs()
    {
        using (var client = new HttpClient())
        {
            string restRequest = InstanceUrl + API_ENDPOINT + "Apttus_Billing/
ProcessUsageInput/v1/";
            var request = new HttpRequestMessage(HttpMethod.Post, restRequest);
            request.Headers.Add("Authorization", "Bearer " + AuthToken);
            request.Headers.Accept.Add(new
MediaTypeWithQualityHeaderValue("application/json"));
            request.Headers.Add("X-PrettyPrint", "1");
            var response = client.SendAsync(request).Result;
            Console.WriteLine(response);
            Console.ReadLine();
        }
    }
}
}

```

```
}

```

Input Format

This API requires no input. All the UsageInputs with status as Loaded are processed.

Output Format

This API does not return any output. On completion of the batch job, the user receives a batch job status email.

WSDL Services

Apttus Billing Management offers the following WSDL Services:

- [Applying Credit Memos to Invoices](#)
- [Applying Payments to Invoices](#)
- [Adding a A/R Transaction - Deprecated](#)
- [Adding Multiple A/R Transactions - Deprecated](#)

Prerequisites for invoking WSDL Services:

1. You need to Generate Enterprise WSDL and Apex WSDL for ARTransactionService. For information on generating enterprise WSDL, refer to [Generating WSDL](#).
2. Add both the Generated WSDLs as a reference in your .Net Project.

Applying Credit Memos to Invoices

This API indirectly applies a Credit Memo to an Invoice by creating Related A/R Transaction records to reduce the tracked balance of the Invoice and the Credit Memo (double entry accounting).

You can use this API for a single invoice or multiple invoices. For each Related A/R Transaction Input passed in, a Related A/R Transaction Result will be returned. However, the order of the results may not be the same as the order of the inputs.

For more details on A/R Transactions, refer to Related A/R transactions in Billing Management User Guide.

applyCreditMemosToInvoices(List<RelatedARTxnInput2> inputs)

Request			
Field	Type	Required?	Description
inputs	List <RelatedARTxnInput2>	Yes	List of RelatedARTaxInput2 records
Apttus_Billing.RelatedARTransactionService.RelatedARTxnInput2			
Field	Type	Description	

Apttus_Billing.RelatedARTransactionService.RelatedARTxnInput2		
Description	String	Description for the transaction.
DestinationObjId	ID	Id of the Destination Object.
ExternalSystemStatus	String	Status of the External System.
IntegrationDate	Datetime	Date of the system Integration.
ReasonCode	String	Reason for applying the A/R transaction.
SourceObjId	ID	Id of the Source Object.
transactionAmount	Decimal	The transaction amount.
transactionDate	Datetime	The transaction date.
transactionISOCurrency	String	The transaction Currency.
transactionNumber	String	The transaction number.
transactionSubType	String	Sub-type of transaction (picklist value).
transactionType	String	Type of transaction.

Response		
Field	Type	Description
results	List <RelatedARTxnResult2>	List of RelatedARTaxResult2 records

Apttus_Billing.RelatedARTransactionService.RelatedARTxnResult2		
Field	Type	Description
destinationARTransactionId	ID	A/R transaction Id for destination object.
destinationObjId	ID	The id of Destination object.

Apttus_Billing.RelatedARTransactionService.RelatedARTxnResult2		
errorString	String	The Error message. Null value implies success and non-empty string value implies failure.
sourceObjId	ID	The id of Source object.
Status	String	The Status of a transaction will be success or failure.
transactionNumber	String	The transaction number.

Code Sample

```

using System;
using sforce = ConsoleApplication1.Sforce1;
using ARService = ConsoleApplication1.ARTransactionService;
using System.Net;

namespace ConsoleApplication1
{
    class Program
    {
        static void Main(string[] args)
        {
            String sessionId;
            using (sforce.SoapClient client = new sforce.SoapClient())
            {
                ServicePointManager.SecurityProtocol = SecurityProtocolType.Tls12 |
                SecurityProtocolType.Tls11;

                //call login service
                sforce.LoginResult result = client.login(null, "[ORG_UserName]",
                "[ORG_Password]");
                //extract authentication token
                sessionId = result.sessionId;
                //serviceUrl = result.serverUrl;
                Console.WriteLine("Token generated: " + sessionId);
            }

            //call Related AR Transaction SOAP API
            ARService.SessionHeader header = new ARService.SessionHeader();
            header.sessionId = sessionId;

            using (ARService.RelatedARTransactionServicePortTypeClient soapClient = new
            ARService.RelatedARTransactionServicePortTypeClient())
            {
                ARService.RelatedARTxnInput2[] inputs = new
                ARService.RelatedARTxnInput2[1];
                ARService.RelatedARTxnInput2 input2 = new
                ARService.RelatedARTxnInput2();
                input2.destinationObjId = "[InvoiceID]";
                input2.sourceObjId = "[CreditMemoID]";
                input2.transactionAmount = 100.00M;
                input2.description = "test description";
                input2.integrationDate = DateTime.Today;
                input2.transactionDate = DateTime.Today;
                input2.transactionNumber = "AR12342";
            }
        }
    }
}

```

```

        input2.transactionType = "Credit Memo";

        inputs[0] = input2;
        ARService.RelatedARTxnResult2[] arResults = new
ARService.RelatedARTxnResult2[1];
        soapClient.applyCreditMemosToInvoices(header, null, null, null, inputs,
out arResults);
        Console.WriteLine("ARResult is: " + arResults[0].destinationARTransactio
nId);
        Console.ReadLine();
    }
}
}
}

```

Applying Payments to Invoices

This API indirectly applies a Payment to an Invoice by creating Related A/R Transaction records to reduce the tracked balance of the Invoice and the Payment (double entry accounting).

If no Payment exists for the specified Transaction Number then a Payment will be created with the Payment Amount set to the Transaction Amount.

The API can be for a single Invoice or multiple Invoices. For each Related A/R Transaction Input passed in, a Related A/R Transaction Result will be returned. However, the order of the results may not be the same as the order of the inputs.

For more details on A/R Transactions, refer to Related A/R transactions in Billing Management User Guide.

applyPaymentsToInvoices(List<RelatedARTxnInput2> inputs)

Request		
Field	Type	Description
inputs	List <RelatedARTxnInput2>	List of RelatedARTaxInput2 records

Apttus_Billing.RelatedARTransactionService.RelatedARTxnInput2		
Field	Type	Description
Description	String	Description for the transaction.

Apttus_Billing.RelatedARTransactionService.RelatedARTxnInput2		
destinationObjId	ID	Id of the Destination Object.
externalSystemStatus	String	Status of the External System.
integrationDate	Datetime	Date of the system Integration.
reasonCode	String	Reason for applying the A/R transaction.
sourceObjId	ID	Id of the Source Object.
transactionAmount	Decimal	The transaction amount.
transactionDate	Datetime	The transaction date.
transactionISOCurrency	String	The transaction Currency.
transactionNumber	String	The transaction number.
transactionSubType	String	Sub-type of transaction (picklist value).
transactionType	String	Type of transaction.

Response

Field	Type	Description
results	List <RelatedARTxnResult2>	List of RelatedARTaxResult2 records

Apttus_Billing.RelatedARTransactionService.RelatedARTxnResult2		
Field	Type	Description
destinationARTransactionId	ID	A/R transaction Id for destination object.
destinationObjId	ID	The id of Destination object.
errorString	String	The Error message.Null value implies success and non-empty string value implies failure.

Apttus_Billing.RelatedARTransactionService.RelatedARTxnResult2		
sourceObjId	ID	The id of Source object.
Status	String	The Status of a transaction will be success or failure.
transactionNumber	String	The transaction number.

Code Sample

```

using System;
using sforce = ConsoleApplication1.Sforce1;
using ARService = ConsoleApplication1.ARTransactionService;
using System.Net;

namespace ConsoleApplication1
{
    class Program
    {
        static void Main(string[] args)
        {
            String sessionId;
            using (sforce.SoapClient client = new sforce.SoapClient())
            {
                ServicePointManager.SecurityProtocol = SecurityProtocolType.Tls12 |
                SecurityProtocolType.Tls11;

                //call login service
                sforce.LoginResult result = client.login(null, "[ORG_UserName]",
                "[ORG_Password]");
                //extract authentication token
                sessionId = result.sessionId;
                //serviceUrl = result.serverUrl;
                Console.WriteLine("Token generated: " + sessionId);
            }

            //call Related AR Transaction SOAP API
            ARService.SessionHeader header = new ARService.SessionHeader();
            header.sessionId = sessionId;

            using (ARService.RelatedARTransactionServicePortTypeClient soapClient = new
            ARService.RelatedARTransactionServicePortTypeClient())
            {
                ARService.RelatedARTxnInput2[] inputs = new
                ARService.RelatedARTxnInput2[1];
                ARService.RelatedARTxnInput2 input2 = new
                ARService.RelatedARTxnInput2();
                input2.destinationObjId = "[InvoiceID]";
                input2.transactionAmount = 100.00M;
                input2.description = "test description";
                input2.integrationDate = DateTime.Today;
                input2.transactionDate = DateTime.Today;
                input2.transactionNumber = "AR12342";
                input2.transactionType = "Payment";
            }
        }
    }
}

```

```

        inputs[0] = input2;
        ARService.RelatedARTxnResult2[] arResults = new
ARService.RelatedARTxnResult2[1];
        soapClient.applyPaymentsToInvoices(header, null, null, null, inputs, out
arResults);
        Console.WriteLine("ARResult is: " + arResults[0].destinationARTransactio
nId);
        Console.ReadLine();
    }
}
}
}

```

Adding a A/R Transaction - Deprecated

addRelatedARTransaction(RelatedARTxnInput input)


This API applies Credit Memo to Invoices as part of the A/R transaction.

Request		
Field	Type	Description
input	RelatedARTxnInput	List of RelatedARTxnInput2 records
Apttus_Billing.RelatedARTransactionService.RelatedARTxnInput		
Field	Type	Description
collectionStatus	String	The Collection Status.
description	String	Description for A/R Transaction.
externalSystemStatus	String	The Status of external system.
impactARAMount	Decimal	The A/R impact amount.
integrationDate	Datetime	Date of Integration.
invoiceId	ID	Invoice Id.
reasonCode	String	Reason code for creating A/R transaction.

Apttus_Billing.RelatedARTransactionService.RelatedARTxnInput		
relatedTransactionId	String	Related transaction id.
transactionAmount	Decimal	Transaction amount.
transactionDate	Datetime	Transaction date.
transactionEffectiveDate	Datetime	The effective date of transaction.
transactionNumber	String	Transaction number.
transactionType	String	The type of transaction.

Response		
Field	Type	Description
result	RelatedARTxnResult	List of RelatedARTaxResult2 records

Apttus_Billing.RelatedARTransactionService.RelatedARTxnResult		
Field	Type	Description
errorString	String	Error string showing the error message.
invoiceId	ID	Invoice Id.
relatedARTransactionId	ID	The related A/R transaction Id.
Status	String	Status of the transaction.
transactionNumber	String	Transaction number.

 This API is deprecated. Calling this API will result in an error.

Adding Multiple A/R Transactions - Deprecated

This API invokes RelatedAR Transactions.

`addRelatedARTransactions(List<RelatedARTxnInput> inputs)`

This API is used to accept A/R Transactions in bulk.


Request			
Field	Type	Required?	Description
inputs	RelatedARTxnInput	Yes	List of RelatedARTaxInput2 records

Apttus_Billing.RelatedARTransactionService.RelatedARTxnInput		
Field	Type	Description
collectionStatus	String	The Collection Status.
description	String	Description for A/R Transaction.
externalSystemStatus	String	The Status of external system.
impactARAMount	Decimal	The A/R impact amount.
integrationDate	Datetime	Date of Integration.
invoiceId	ID	Invoice Id.
reasonCode	String	Reason code for creating A/R transaction.
relatedTransactionId	String	Related transaction id.
transactionAmount	Decimal	Transaction amount.

Apttus_Billing.RelatedARTransactionService.RelatedARTxnInput		
transactionDate	Datetime	Transaction date.
transactionEffectiveDate	Datetime	The effective date of transaction.
transactionNumber	String	Transaction number.
transactionType	String	The type of transaction.

Response		
Field	Type	Description
results	List <RelatedARTxnResult>	List of RelatedARTaxResult2 records

Apttus_Billing.RelatedARTransactionService.RelatedARTxnResult		
Field	Type	Description
errorString	String	Error string showing the error message.
invoiceld	ID	Invoice Id.
relatedARTransactionId	ID	The related A/R transaction Id.
Status	String	Status of the transaction.
transactionNumber	String	Transaction number.

 This API is deprecated. Calling this API will result in an error.

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