WEBMETHODS CLOUDSTREAMS PROVIDER FOR AVALARA AVATAX INSTALLATION AND USER'S GUIDE

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1 Using the webMethods CloudStreams Provider for Avalara AvaTax

1.1 Description

The webMethods CloudStreams Provider for Avalara AvaTax enables you to connect to AvaTax for integration purposes. Avalara develops cloud-based sales tax and compliance systems.

1.2 Getting Started

1. For installation instructions, see the *webMethods CloudStreams Provider Installation Guide* available on the Software AG Documentation website.
2. Create, configure, and enable a CloudStreams connection for the webMethods CloudStreams Provider for Avalara AvaTax.
3. Create a cloud connector service for the webMethods CloudStreams provider for Avalara.
4. Execute the cloud connector service by providing required inputs, if any.

1.3 Details

- **SaaS Provider**: Avalara
- **Connector Name**: Avalara AvaTax
- **API Version**: 15.4
- **API Type**: SOAP
- **Developer**: Software AG
- **Group**: Avalara
- **CloudStreams Minimum Version Compatibility**: 9.8
- **Package Name**: WmAvalaraAvaTaxProvider

The webMethods CloudStreams Provider for Avalara AvaTax supports the same OS platforms as those supported by webMethods CloudStreams.

1.4 Connection

Avalara supports WSS and Basic authentication schemes wherein the combination of username and password is used. These values need to be passed in the header of every request.

1.5 Managing Cloud Connections for the Connector

You can create one or more connections for the webMethods CloudStreams Provider for Avalara AvaTax at design time to use in integrations. A cloud connector service uses a cloud connection to connect to Avalara at runtime. You must create and enable a cloud connection before you can create cloud connector services. The number of connections you create depends on your integration needs. You can create and manage a cloud connection using Integration Server Administrator.

You must perform the following tasks to prepare to configure a connection:

To prepare to configure a connection

1. Install webMethods Integration Server, webMethods CloudStreams, and the webMethods CloudStreams Provider for Avalara AvaTax on the same machine.
2. Ensure that you have webMethods administrator privileges so that you can access the webMethods CloudStreams connector administrative screens. For information about setting user privileges, see *webMethods Integration Server Administrator's Guide*.
3. Start Integration Server and Integration Server Administrator if they are not already running.
4. Using Integration Server Administrator, ensure that the *WmAvalaraAvaTaxProvider* package is enabled. See *webMethods Integration Server Administrator's Guide* for instructions.
5. Using Software AG Designer, create a user-defined package to contain connections, if you have not already done so. See *webMethods Service Development Help* for instructions.

1.5.1 Creating Cloud Connections

You can create cloud connections for the installed WebMethods CloudStreams Provider for Avalara AvaTax using Integration Server Administrator.

To create a connection

1. In Integration Server Administrator, go to **Solutions > CloudStreams > Providers**.
2. Click the name of the cloud application provider you require, for example, Avalara AvaTax.
3. In the **Connector Name** column on the **Connectors** screen, click Avalara AvaTax.
4. On the **Connections** screen, click **Configure New Connection**.
5. On the **Configure Connection** screen, select in which view you want to create the connection:

- **Basic view**: This is the default view. Use this view to configure the standard parameters for a cloud connection.
- **Advanced view**: Use this view to configure additional and optional parameters for a cloud connection.

6. Complete the following standard parameters:

Section	Field	Description
Configure Connection > Avalara AvaTax	Package	The package in which we want to create the connection. You must create the package using Designer before you can specify it using this parameter. For general information about creating and managing packages, see the Service Development Help. By default, the connection is created in the Integration Server Default package. **Note**: It is recommended that you configure the connection in a user-defined package. The custom package that you create must have a dependency on the WmCloudStreams package.
	Folder Name	The folder in which you want to create the connection. If the folder does not exist in the package, Integration Server creates the folder automatically.
	Connection Name	The name of the new connection. Connection names cannot have spaces or use special characters reserved by Integration Server or Designer. For more information about the use of special characters in the package, folder and element names, see the webMethods Service Development Help.
Connection Groups: connection	Server URL	The login endpoint to initiate communication with Avalara AvaTax.
Connection Management Properties	Enable Connection Pooling	Whether connection pooling is enabled for a connection. Valid values: • true: Connection pooling is enabled for this connection. • false: Connection pooling is disabled for this connection. Default: true
	Initial Pool Size	The minimum number of connection objects that remain in the connection pool at all times, if connection pooling is enabled. When the connector creates the pool, it creates this number of connections. Default: 1

Section	Field	Description
	Maximum Pool Size	The maximum number of connection objects that can exist in the connection pool if connection pooling is enabled. When the connection pool has reached its maximum number of connections, the connector will reuse any inactive connections in the pool, or, if all connections are active, it will wait for a connection to become available. Default:10
	Pool Increment Size	The number of connections by which the pool will be incremented, up to the maximum pool size, if connection pooling is enabled and connections are needed. Default:**1**
	Block Timeout (msec)	The number of milliseconds that Integration Server will wait to obtain a connection with the SaaS provider before the connection times out and returns an error. For example, you have a pool with Maximum Pool Size of 20. If you receive 30 simultaneous requests for a connection, 10 requests will be waiting for a connection from the pool. If you set the Block Timeout to 5000, the 10 requests will wait for a connection for 5 seconds before they time out and return an error. If the services using the connections require 10 seconds to complete and return connections to the pool, the pending requests will fail and return an error message stating that no connections are available. If you set the Block Timeout value too high, you may encounter problems during error conditions. If a request contains errors that delay the response, other requests will not be sent. This setting should be tuned in conjunction with the Maximum Pool Size to accommodate such bursts in processing. Default: 1000

Section	Field	Description
	Expire Timeout (msec)	The number of milliseconds that an inactive connection can remain in the pool before it is closed and removed from the pool, if connection pooling is enabled. The connection pool will remove inactive connections until the number of connections in the pool is equal to the Initial Pool Size. The inactivity timer for a connection is reset when the connection is used by the connector. This setting should be tuned in conjunction with the Initial Pool Size to avoid excessive opening/closing of connections during normal processing. Default: 1000
	Startup Retry Count	The number of times that the system should attempt to initialize the connection pool at startup if the initial attempt fails. **Note**: The retry mechanism is invoked only when the connection is configured correctly, but the target server URL cannot be reached or a network issue occurs while attempting to initialize the connection. Default: 0 (a single attempt)
	Startup Backoff Timeout (sec)	The number of seconds that the system should wait between attempts to initialize the connection pool. This value is ignored if Startup Retry Count is 0. Default: 10

Section	Field	Description
	Session Management	The type of timeout for the connection session. Select the type of session management that fits the requirements of your SaaS provider backend. It is recommended that you set this field to idle if you want the CloudStreams server to manage the session. Valid values: • **none**: The CloudStreams server does not manage session timeout. The session times out based on the settings of the SaaS provider's backend. • **idle**: If no activity happens for the time specified in Session Timeout, the session times out. If the session is not idle (it is used actively), the session will not timeout. The CloudStreams server takes into account the idle timeout. For example, if the session is idle for the time specified in Session Timeout, the server renews the session before making the service call. • **fixed**: The session will time-out at a fixed time interval (specified in Session Timeout) irrespective of the session usage or current activity. The CloudStreams server renews the session as soon as the fixed timeout value expires.
	Session Timeout (min)	The maximum number of minutes a session can remain active, that is, how long you want the server to wait before terminating a session. The value should be equal to the session timeout value specified at the SaaS provider's backend.

7. If you selected **Advanced view**, complete the following fields in addition to the fields you configured in the **Basic view**:

Important! If you do not want to use **Advanced view**, skip this step and continue with Step 8.

Connection Groups: Connection	Server URL	The login endpoint to initiate communication with Avalara.
	Connection Timeout	The number of milliseconds a connection waits before cancelling its attempt to connect to the resource. If you specify 0, the connection waits indefinitely. **Important!** It is recommended that you specify a value other than 0 to avoid using a socket with no timeout. Default: **30000**
	Socket Read Timeout	The number of milliseconds in which the client must read a response message from the server. If you specify 0, the connection waits indefinitely. **Important!** It is recommended that you specify a value other than 0 to avoid using a socket with no timeout. Default: **30000**
	Use Stale Checking	Whether the connection performs additional processing to test if the socket is still functional each time the socket is used. Valid values: • **true**: The connection tests the socket. • **false**: The connection does not test the socket. **Note**: The additional testing of the socket adds a little performance overhead. Default: false
	Connection Retry Count	The number of times the system should attempt to initialize the connection at startup if the initial attempt fails. The system retries to establish a connection when an I/O error occurs while sending the request message to the backend. If an I/O exception occurs when the system is reading a response back from the backend, the system will only retry if **Retry on Response Failure** is set to true. Default: **1**

	Retry on Response Failure	Whether the system should attempt to resend the request when the response has failed, even though the request was sent successfully. Valid values: • **true**: The system attempts to re-establish the connection. • **false**: The system does not attempt to re-establish the connection. Default: **false**
	Use TCP NoDelay	Whether the connection uses Nagle's algorithm to optimize socket usage. Valid values: • **true**: The connection does not use Nagle's algorithm. • **false**: The connection uses Nagle's algorithm. Default: **false**
	Socket Linger	The number of seconds before a client socket closes. Valid values: **-1**: Use the Java VM default. **0**: Close the socket connection immediately. n > **0**: Wait for n seconds before closing the socket connection. Default: **-1**
	Socket Buffer Size	The size of the read and write socket buffers in bytes. Default: **8192**
	Socket Reuse Address	Whether the socket will be reused even if it is in the TIME_WAIT state because of a previous socket closure. Valid values: • **true**: The socket will be reused. • **false**: The socket will not be reused. Default: **false**

	Proxy Server Alias	The alias name of an enabled proxy server configuration on Integration Server that will be used to route the connection. **Note**: When the corresponding proxy server configuration on Integration Server is updated, the changes are detected automatically. You do not need to re-enable the connection to use the updated proxy server configuration.
	Trust Store Alias	The alias name of an Integration Server trust store configuration. The trust store contains trusted certificates used to determine trust for the remote server peer certificates. **Note**: Setting the Integration Server watt.security.cert.wmChainVerifier.trustByDefault property to “true” overrides the value in this field. In this case, the server will trust all remote server peer certificates. If you want to use the Trust Store Alias field, set the Integration Server watt.security.cert.wmChainVerifier.trustByDefault property to “false”.
	Hostname Verifier	The fully qualified classname of the Apache X509HostnameVerifier interface. Default: **org.apache.http.conn.ssl.StrictHostnameVerifier** When you configure strict hostname enforcement, the connection verifies whether the server certificate matches the server host. If you do not specify a value in this field, the connection uses org.apache.http.conn.ssl.AllowAllHostnameVerifier that disables hostname enforcement.

8. Click **Save**.

You must enable a cloud connection before you can use it. For information about how to enable a connection, see Enabling Cloud Connections.

1.5.2 Enabling Cloud Connections

You must enable a cloud connection before you can use the WebMethods CloudStreams Provider for Avalara AvaTax. You can enable cloud connections using Integration Server Administrator.

To enable a connection

1. In Integration Server Administrator, go to **Solutions > CloudStreams > Providers**.
2. Click the name of the cloud application provider you require, for example, Avalara AvaTax.
3. On the **Connectors** screen, click the Connector Name for the CloudStreams connector whose connection you want to enable.
4. On the **Connections** screen, click **No** in the **Enabled** column for the connection you want to enable.

Integration Server Administrator enables the cloud connection and displays **Yes** in the **Enabled** column.

1.5.3 Viewing Cloud Connections

You can view cloud connections and each connection's parameters from the Integration Server Administrator.

Note: You can also view this information from the cloud connection editor in the Service Development perspective in Designer.

To view a connection:

1. In the Integration Server Administrator, go to **Solutions > CloudStreams > Providers**.
2. Click the name of the cloud application provider you require, for example, Avalara AvaTax.
3. On the **Connectors** screen, click the Connector Name for the CloudStreams connector whose connection you want to view.
4. On the **Connections** screen, click the icon in the **View** column for the connection you want to view.
5. On the **View Connection** screen, select in which view you want to view the connection parameters:

- **Basic view**: This is the default. Use it to view the standard parameters for a cloud connection
- **Advanced view**: To view additional parameters for a cloud connection, click the Advanced view link

The **View Connection** screen displays the parameters for the connection. For descriptions of the connection parameters, see the table of parameters in Creating Cloud Connections.

Sorting and Filtering Connections

You can sort and filter the list of connections that appears on the **Connections** screen.

To sort and filter connections

1. To sort information on the **Connections** screen, click the **Up** and **Down** arrows in each column.
2. To filter the list of connections:
   a. On the Connections screen, click **Filter Connections**.
   b. Type the criterion by which you want to filter, into the **Filter criteria** box. Filtering is based on the connection alias. To locate all connections containing specific alphanumeric

characters, use asterisks (*) as wildcards. For example, if you want to display all connections containing the string “abc”, type *abc* in the **Filter criteria** box.

c. Click **Search**. The Connections screen displays the connections that match the filter criteria.

d. To redisplay all connections, click **Show All Connections**.

The **Connections** screen appears, listing all the current connections.

1.5.4 Disabling Cloud Connections

You can disable cloud connections when you want to edit or delete them using the Integration Server Administrator.

To disable a connection:

1. In the Integration Server Administrator, go to **Solutions > CloudStreams > Providers**.
2. Click the name of the cloud application provider you require, for example, Avalara.
3. On the **Connectors** screen, click the Connector Name for the CloudStreams connector whose connection you want to disable.
4. On the **Connections** screen, click **Yes** in the **Enabled** column for the connection you want to disable.

Integration Server Administrator disables the connection and displays **No** in the **Enabled** column.

1.5.5 Editing Cloud Connections

If a connection parameter changes, or if you want to redefine parameters that a connection uses when connecting to a cloud application provider, you can update a connection’s parameters using the Integration Server Administrator.

To edit a connection:

1. In Integration Server Administrator, go to **Solutions > CloudStreams > Providers**.
2. Click the name of the cloud application provider you require, for example, Avalara AvaTax.
3. On the **Connectors** screen, click the Connector Name for the CloudStreams connector whose connection you want to edit.
4. Ensure that the connection is disabled before editing. To disable the connection, click **Yes** in the **Enabled** column. The **Enabled** column now shows **No** (disabled) for the connection.
5. On the **Connections** screen, click the **Edit** icon for the connection you want to edit. The **Edit Connection** screen displays the current parameters for the connection. Select the view in which you want to edit and update the connection’s parameters by typing or selecting the values you want to specify.

   For descriptions of the connection parameters, see Creating Cloud Connections.
6. Click **Save** Changes.

1.5.6 Dynamically Changing a Cloud Service's connection at Run-Time

You can dynamically select the cloud connection a cloud service uses to interact with a cloud application. You can run a cloud service using a cloud connection other than the default connection that was associated with the cloud service when the service was created. This feature enables one cloud service to interact with multiple, similar cloud applications.

To override the default cloud connection, you must code your flow to pass a value through the pipeline into the service's *$connectionAlias* field.

1.5.7 Copying Cloud Connections

You can copy an existing cloud connection to configure a new connection with the same or similar connection properties without having to retype all of the properties for the connection. You can copy cloud connections using the Integration Server Administrator.

To copy a connection:

1. In Integration Server Administrator, go to **Solutions > CloudStreams > Providers.**
2. Click the name of the cloud application provider you require, for example, Avalara AvaTax.
3. On the **Connectors** screen, click the **Connector Name** for the CloudStreams connector whose connection you want to copy.
4. On the **Connections** screen, click the **Copy** icon for the connection you want to copy. The **Copy Connection** screen displays the current parameters for the connection you want to copy.
5. Name the new connection, specify a package name and folder name and edit any connection parameters as needed by typing or selecting the values you want to specify.

   Note: When you copy a connection, the new connection does not save the password of the original connection. You must enter the password before you can save the new connection.

   For descriptions of the connection parameters, see Creating Cloud Connections.
6. Click **Create**.

1.5.8 Deleting Cloud Connections

You can delete cloud connections using the Integration Server Administrator.

To delete a connection

1. In the Integration Server Administrator, go to **Solutions > CloudStreams > Providers**.
2. Click the name of the cloud application provider you require, for example, Avalara AvaTax.
3. On the **Connectors** screen, click the **Connector Name** for the CloudStreams connector whose connection you want to delete.
4. **Ensure that the connection is disabled before deleting. To disable the connection, click Yes in the Enabled column.** The **Enabled** column now shows **No** (disabled) for the connection.
5. Click the **Delete** icon for the connection you want to delete. Integration Server deletes the cloud connection.

1.6 Operations

The webMethods CloudStreams Provider for Avalara AvaTax supports the following operations:

No.	Operation	Description
1.	Adjust tax	Allows you to make adjustments to existing committed documents.
2.	Cancel tax	Voids or deletes an existing transaction record from the AvaTax system.
3.	Commit tax	Changes the state of a document to committed.
4.	Get tax	Calculates taxes on a document such as a sales order, sales invoice, purchase order, purchase invoice, or credit memo.
5.	Get tax history	Retrieves details for previously saved documents.
6.	Post tax	Changes the state to **Posted** for the documents saved to the AvaTax database through SalesInvoice, ReturnInvoice, or PurchaseInvoice methods.
7.	Validate	Normalizes a single US or Canadian address by providing a non-ambiguous address match.

1.7 Notes

- The currently configured **Server URL** is for a trial account for Avalara. In case of a paid account, drop **altsec** from the right-end of the URL.
- **Apply Payment** operation is included in the WSDL for backward compatibility and is no longer supported.
- Web Service Security (WSS) is not supported in the trial version of Avalara.

2 FAQ and Troubleshooting

I come across network connectivity related issues, for example, IO and read timeout, while enabling a connection or executing a service.

These errors may be due to network connectivity issues, which can be handled by observing the following guidelines:

- If your company has the proxy server configured, set up the proxy settings in the **Integration Server Administrator**. Go to **Settings > Proxy Servers** and specify the proxy alias in the respective Connector Connection page.
  If you have already configured that alias as the default proxy for **Integration Server**, you do not need to specify the proxy alias in the Connector Connection page.
  If you have not configured any proxy alias as the default proxy, then you must explicitly set the proxy alias name in the CloudStreams connection page in the **Proxy Server Alias** field.
- In case the network is slow or the backend processing takes longer than usual, increase the Connection Timeout and the Socket Read Timeout values.

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