



Avalara AvaTax for Microsoft Dynamics Ax for Retail

System Integration Document for Avalara AvaTax

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AvaTax Integration Points

Avalara AvaTax has been implemented in following area which help you to understand the customized area for AvaTax integrations.

Integrations on Modern Point of Sale

Functional Area	Address Validation	Tax Calculation					
		Customer Exemption	Info code Exemption	Location Code	Tax Code Mapping	Ship-to Address	Offline Support
Customer create	Yes	-	-	-	-	-	-
Cash and carry	-	Yes	Yes	Yes	Yes	-	Yes
Customer Order	-	Yes	Yes	Yes	Yes	Yes	-
Transaction Return – same store	-	Yes	Yes	Yes	Yes	-	Yes
Transaction Return – multi store	-	Yes	Yes	Yes	Yes	-	-
Return Order	-	Yes	Yes	Yes	Yes	Yes	-

Note: “Offline” is disconnected from retail server but connected to internet.

Integrations on Enterprise Point of Sale

Functional Area	Address Validation	Tax Calculation						
		Customer Exemption	Exemption Number	Entity / Use Code	Tax Code Mapping	Location Code	Ship-to Address	Offline Support
Customer create	Yes	-	-	-	-	-	-	-
Cash and carry	-	Yes	Yes	Yes	Yes	Yes	-	Yes
Customer Order	-	Yes	Yes	Yes	Yes	Yes	Yes	-
Transaction Return – same store	-	Yes	Yes	Yes	Yes	Yes	-	Yes
Transaction Return – multi store	-	Yes	Yes	Yes	Yes	Yes	-	-
Return Order	-	Yes	Yes	Yes	Yes	Yes	Yes	-

Integrations on Back office (Dynamics Ax 2012)

Customer Orders

Form Name	Address Validation	Latitude / Longitude	Entity/ Use Code Mapping	Tax Override	Sales Tax
Sales Order	Yes	Yes	Yes	-	Yes
Sales Order List Page (With order type as Return Order)	Yes	Yes	Yes	Yes	Yes
Sales Order (With order type as Return Order)	Yes	Yes	Yes	Yes	Yes

Cash and Carry Transaction

Form Name	Tax Amount Override	Transaction Batch Upload	Tax Code Mapping
Cash and carry sales	Yes	Yes	Yes
Cash and carry return	Yes	Yes	Yes

AvaTax Integration – Modern Point of Sale

AvaTax integrate with Commerce runtime engine (CRT), which is the backbone for Modern POS. This integration is applicable for AX 2012 R3. This integration is based on extension model of CRT engine.

Address Validation

In CRT engine, Avalara has extended “ValidateAddressDataRequest” and provided the response into the “ValidateAddressDataResponse” class after AvaTax address validation.

In case AvaTax address validation is not enabled through configurations, native commerce runtime address validation will be executed.

In case you want to use AvaTax address validation, apart from existing integration you can do it as below:

- Refer the “Avalara.Ax7.CRT.dll” into your project.
- Refer the namespace “using Avalara.Ax7.CRT;” into your class.
- Call to AvaTax address validation method.

```
AvaValidateAddressExtension AvaValidateAddress = new AvaValidateAddressExtension();
ValidateAddressDataRequest validateAddressServiceRequest = (ValidateAddressDataRequest)request;

AvaAddressValidationResponse AvaAddressValidationResponse
= AvaValidateAddress.ValidateShippingAddress(request, out AvaAddressType, out suggestedAddresses);
```

- Make a note, the “request” should be of type “ValidateAddressDataRequest”.
- “AvaAddressType” will return the type of address identified by AvaTax.
- “suggestedAddresses” will return the validated address.
- Avalara provide the response to CRT object with following details:
 - Suggested Address
 - Is valid address
 - Invalid address error message
 - Address Type

Calculate Tax

In CRT engine, Avalara has extended “CalculateTaxServiceRequest” and provided the response into the “CalculateTaxServiceResponse” class after AvaTax Tax calculation.

In case AvaTax Tax calculation is not enabled through configurations, native commerce runtime tax calculation will be executed.

In case you want to use AvaTax Tax calculation, apart from existing integration you can do it as below:

- Refer the “Avalara.Ax7.CRT.dll” into your project.
- Refer the namespace “using Avalara.Ax7.CRT;” into your class.
- Call to AvaTax Tax calculation method. It will calculate tax as per the request and update tax to the transaction.

```
Avalara.Ax7.CRT.AvaTaxTaxSvc oTaxSvc = new Avalara.Ax7.CRT.AvaTaxTaxSvc();  
CalculateTaxServiceResponse response =  
oTaxSvc.CalculateTax((CalculateTaxServiceRequest)request);
```

- Make a note, the “request” should be of type “CalculateTaxServiceRequest”.

AvaTax Integration Field Mapping

Tax Service Field Mapping

Tax Service Header Request

AvaTax Field Name	Transaction	Customer Order
CompanyCode	AvaTaxConfiguration.CompanyCode	AvaTaxConfiguration.CompanyCode
DocType	DocumentType.SalesOrder	DocumentType.SalesOrder
DocCode	Transaction.Id	Transaction.Id
DocDat	Transaction.ModifiedDateTime.Date	Transaction.ModifiedDateTime.Date
SalespersonCode	-	-
CustomerCode	"No customer"	Transaction. CustomerCode
Discount	0	0
ExemptionNo	Info codes	customer.TaxExemptNumber
Origin Address	Channel address from GetPrincipal().ChannelId	Channel address from GetPrincipal().ChannelId
Destination Address	Store warehouse address i.e. address of GetPrincipal().ChannelId	Transaction shipping address request.Transaction.ShippingAddress
DetailLevel	Diagnostic	Diagnostic
LocationCode	Transaction.InventoryLocationId	Transaction.InventoryLocationId
Commit	False	False
CurrencyCode	-	-

Tax Service Lines Request

AvaTax Field Name	Transaction	Customer Order
No	salesLine.LineId	salesLine.LineId
Origin address	Channel address from GetPrincipal().ChannelId	Channel address from GetPrincipal().ChannelId
	Original transaction Origin address in case of return transaction	Original Order origin address in case of return order
Destination address	Channel address from GetPrincipal().ChannelId	Original order salesline Origin address from salesLine.ReturnInventTransId
	Origin channel address from SalesLine.ReturnTransactionId	Original order salesline shipping address from salesLine.ReturnInventTransId
ItemCode	SalesLine.ItemId	SalesLine.ItemId
TaxCode	Tax code from AVA_TaxCodeMapping table with fall back mechanism Item >> Item group	Tax code from AVA_TaxCodeMapping table with fall back mechanism Item >> Item group
Description	salesLine.Description	salesLine.Description
Qty	salesLine.Quantity	salesLine.Quantity
Amount	salesLine.NetAmount	salesLine.NetAmount
ExemptionNo	salesTable.VATNum	salesTable.VATNum
Description	salesLine.Description	salesLine.Description
Tax Override - Date	In case of return OriginalDocDate	In case of return OriginalDocDate

Address Service Field Mapping

AvaTax Field Name	Properties of ValidateAddressDataRequest.Address
Line1	Street
Line2	-
Line3	-
City	City
PostalCode	ZipCode
Region	State
Country	ThreeLetterISORegionName