



Avalara AvaTax for Microsoft Dynamics AX for Retail

System Integration Document for Avalara AvaTax

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1.3. Integrations on Back office (Dynamics AX 2012)

1.3.1. Customer Orders

Sr. No.	Form Name	Address Validation	Latitude / Longitude	Entity/ Use Code Mapping	Tax Override	Sales Tax
1.	Sales Order	Yes	Yes	Yes	No	Yes
2.	Sales Order List Page (With order type as Return Order)	Yes	Yes	Yes	Yes	Yes
3.	Sales Order (With order type as Return Order)	Yes	Yes	Yes	Yes	Yes

1.3.2. Cash and Carry Transaction

Sr. No.	Form Name	Tax Amount Override	Transaction Batch Upload	Tax Code Mapping
1.	Cash and carry sales	Yes	Yes	Yes
2.	Cash and carry return	Yes	Yes	Yes

2.0. 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.

2.1. 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

2.2. 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”.

3.0. AvaTax Integration Tax Service Field Mapping

3.1. Tax Service Header Request

Sr. No.	AvaTax Field Name	Transaction	Customer Order
1.	CompanyCode	AvaTaxConfiguration.CompanyCode	AvaTaxConfiguration.CompanyCode
2.	DocType	DocumentType.SalesOrder	DocumentType.SalesOrder
3.	DocCode	Transaction.Id	Transaction.Id
4.	DocDat	Transaction.ModifiedDateTime.Date	Transaction.ModifiedDateTime.Date
5.	SalespersonCode	No	No
6.	CustomerCode	"No customer"	Transaction. CustomerCode
7.	Discount	0	0
8.	ExemptionNo	Info codes	customer.TaxExemptNumber
9.	Origin Address	Channel address from GetPrincipal().ChannelId	Channel address from GetPrincipal().ChannelId
10.	Destination Address	Store warehouse address i.e. address of GetPrincipal().ChannelId	Transaction shipping address request.Transaction.ShippingAddress
11.	DetailLevel	Diagnostic	Diagnostic
12.	LocationCode	Transaction.InventoryLocationId	Transaction.InventoryLocationId
13.	Commit	False	False
14.	CurrencyCode	No	No

3.2. Tax Service Lines Request

Sr. No.	AvaTax Field Name	Transaction	Customer Order
1.	No	salesLine.LineId	salesLine.LineId
2.	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
3.	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
4.	ItemCode	SalesLine.ItemId	SalesLine.ItemId
5.	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
6.	Description	salesLine.Description	salesLine.Description
7.	Qty	salesLine.Quantity	salesLine.Quantity
8.	Amount	salesLine.NetAmount	salesLine.NetAmount
9.	ExemptionNo	salesTable.VATNum	salesTable.VATNum
10.	Description	salesLine.Description	salesLine.Description
11.	Tax Override - Date	In case of return OriginalDocDate	In case of return OriginalDocDate

3.3. Address Service Field Mapping

Sr. No.	AvaTax Field Name	Properties of ValidateAddressDataRequest.Address
1.	Line1	Street
2.	Line2	No
3.	Line3	No
4.	City	City
5.	PostalCode	ZipCode
6.	Region	State
7.	Country	ThreeLetterISORegionName