#### Introduction

MacroPoint (MP) LITE integration uses RESTful web services to accomplish the following tasks:

- 1. Post location updates to your server
- 2. Post order status changes to your server
- 3. Create new order tracking sessions
- 4. Stop existing order tracking sessions
- 5. Change existing orders

For purposes of this document, the word "order" and "load" may be used interchangeably.

Not all integration implementations require using all features.

The basic flow of integration is:

- 1. You place an order by calling "Add New Order".
- 2. MP LITE sends you locations at regular intervals.
- 3. MP LITE sends you status changes as they occur.

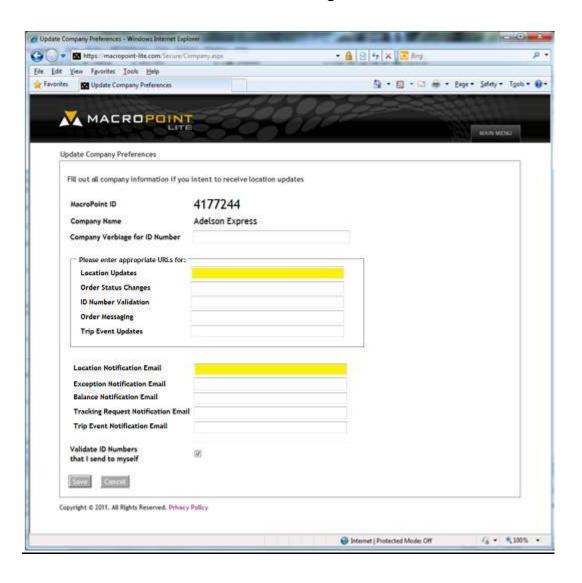
Below is an example order status change flow:

- a. Requesting Installation (waiting for owner of the device to install MP LITE).
- b. Ready To Track (MP LITE device is ready to begin sending location updates).
- c. Tracking Now (MP LITE service is tracking MP LITE enabled device now).
- d. Tracking Completed Successfully (*Tracking session completed its session with successful location updates*).

Prior to receiving location updates and order status changes from MP LITE, you will supply URIs that implement the appropriate RESTful web services for each. You supply these URIs on the "Update Company Preferences" page of MacroPoint-LITE.com.

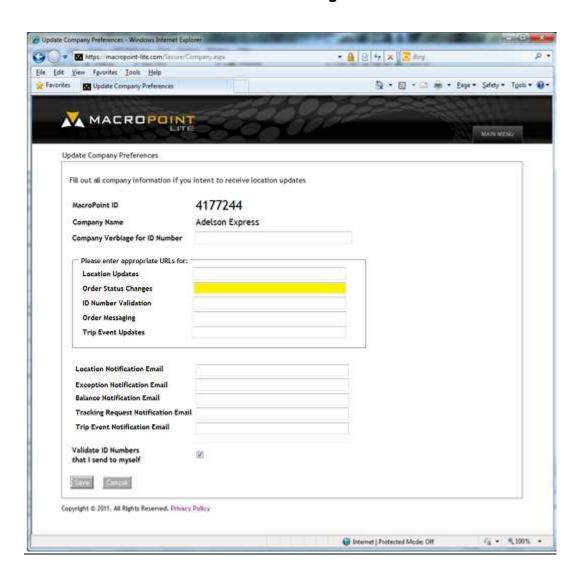
# **Notify On Location**

Description:	Provide location information to customer URI in the format:		
	$http(s)://CustomerSpecifiedURL?ID=\{1\}\&Latitude=\{2\}\&Longitude=\{3\}\&Uncertaint y=\{4\}\&Street1=\{5\}\&Street2=\{6\}\&Neighborhood=\{7\}\&City=\{8\}\&State=\{9\}\&Postal=\{10\}\&Country=\{11\}\&LocationDateTimeUTC=\{12\}$		
	ID:	Customers specific order ID.	
	Latitude:	Latitude, in decimal degrees.	
	Longitude:	Longitude, in decimal degrees.	
	Uncertainty: Approximate uncertainty radius, in miles.		
	Street1:	Street address, if available.	
	Street2:	Second street address line, if available.	
	Neighborhood:	Neighborhood name, if available.	
City: City name, if available.  State or Province: State name, if available.		City name, if available.	
		State name, if available.	
	Postal: Postal code, if available.		
Country: Country, if available.		Country, if available.	
	LocationDateTimeUTC:	Date and time in ISO 8601 that location was obtained.	
Direction:	MP LITE to customer.		
Return:	MP LITE expects HTTP status code 200 back on success, 400 on bad request.		
Security:	Optional. Recommend IP filtering.		
Notes:	All data URL encoded.		



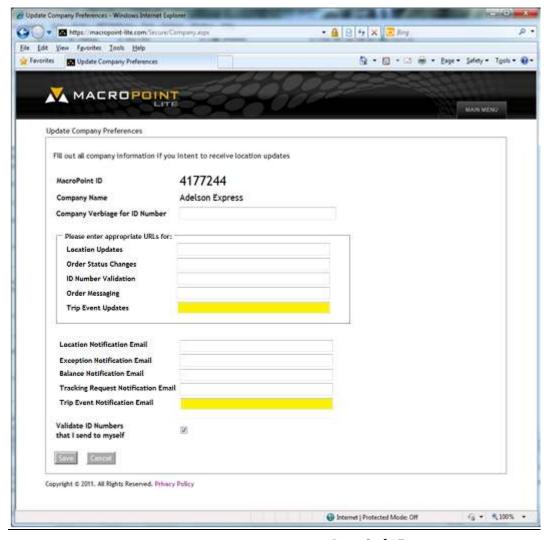
# **Notify On Order Status Change**

Description:	Provide status comment when order status changes:		
	http(s)://CustomerSpecifiedURL?ID={1}&Code={2}&Message={3}		
	ID:	Customers specific order ID.	
	Code:	Order Status Code.	
	Message:	Text explaining the order status code.	
Direction:	MP LITE to customer.		
Return:	MP LITE expects HTTP:	status code 200 back on success, 400 on bad request.	
Security:	Optional. Recommend	IP filtering.	
Notes:	<ol> <li>All data URL er</li> </ol>	ncoded.	
	<ol><li>Message text r</li></ol>	nay change in the future. Do not rely on literals.	
	3. List of current	Order Status Codes (see glossary, more may be added in future)	
	a. 1001 -	Requesting Installation	
	b. 1020 -	Ready To Track	
	c. 1021 -	Tracking Now	
		Tracking Completed Successfully	
		Stopped By Creator	
		Stopped Early By Driver	
	_	Denied By Driver	
		Location Hidden By Driver	
		Tracking - Waiting For Update	
	j. 1061 - Incompatible Phone		
		Invalid Number - Not Trackable	
		Landline Not Trackable	
		Driver Refused Installation	
		Expired Without Installation	
		Expired Without Location	
	·	Trip Sheet Deployed	
	<u> </u>	Trip Sheet In Progress	
		Trip Sheet Completed	
	s. 1113 -	Trip Sheet Expired	



### **Notify On Event Update**

Description:	Provide event notification when driver confirms an event (example: arrived):  http(s)://CustomerSpecifiedURL?ID={1}&Stop={2}&Event={3}&EventDateTime={4}	
	LoadID:	Customer specific order ID.
	Stop:	Name of the stop
	Event:	Event is the "code" that goes with the event. E.g.,
		X1 for Arrived at delivery location. X3 for arrived at
		pick-up location.
	EventDateTime:	Time in ISO8601 and in UTC
Direction:	MP LITE to customer.	
Return:	MP LITE expects HTTP status code 200 back on success, 400 on bad request.	
Security:	Optional. Recommend IP filtering.	
Notes:	All data URL encoded	



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# **Add New Order**

Description:	Allows customer to add new order:	
	https://macropoint-lite.com/api/1.0/orders/createorder	
Direction:	Customer to MP LITE	
Return:	MP LITE returns HTTP status code 201 on order created success, 400 on bad request	
	and 5xx on server failure.	
Security:	Required. Basic Authentication	
Notes:	<ol> <li>Use HTTP POST verb for this request.</li> <li>HTTP POST XML shown below</li> </ol>	
	2. Basic Authentication Required	
	We will supply user id and password	
	3. {Number Type="?"} is required	
	Valid types are listed below:	
	a. "Mobile"	
	i. means cell phone number	
	ii. format must be 999999999	
	b. "MacroPoint"	
	<ul><li>i. means valid MacroPoint Tracking Number</li><li>ii. format must be 12 character alphanumeric MacroPoint ID</li></ul>	
	4. {TrackStartDateTime} is required and must be in the following format:	
	YYYY-MM-DD HH:{MM} {SupportedTimeZone}	
	{ <i>MM</i> } must be [ 00   15   30   45 ]	
	{SupportedTimeZone} [ET   CT   Arizona   MT   PT   Alaska   Hawaii ]	
	Examples:	
	2011-03-15 8:00 ET	
	2011-04-12 14:45 MT	
	2010-12-23 23:45 PT	
	Please note spaces: YYYY-MM-DD {space} HH:{MM} {space} {SupportedTimeZone}	
	5. {TrackDurationInHours} is required and must be one of the following values:	
	[1   2   4   8   12   18   24   48   72   96   120   144   168]	

This table continues on the next page

6. {TrackIntervalInMinutes} is required and must be one of the following values:

[15 | 30 | 60 | 120 | 240 | 480 | 720]

- 7. Order track start time may not be chronologically more than 15 minutes in the past.
- 8. At least one notification is required
- 9. For a notification
  - a. {MacroPointID} is required and should be set to your MacroPoint ID if you want notifications to be sent to yourself. If you want notifications to be sent to a different company such as your customer, please ask us for their MacroPointID and you can then automatically send notices to them.
  - b. {IDNumber} is required
- 10. Carrier is optional
  - a. {CarrierName} is the name of the carrier.
  - b. {DispatcherName} is the name of the dispatcher
  - c. {DispatcherPhone} is the phone number of the dispatcher
  - d. {DispatcherEmail} is the email address of the dispatcher
  - e. {CarrierName}, {DispatcherName} have a 64 character maximum size.
  - f. {DispatcherPhone} has a 10 character maximum size and must be all numeric
  - g. {DispatcherEmail} has a 128 character maximum size and must be a properly formatted email address.
- 11. TripSheet is optional.
  - a. TripSheet contains many stops.
  - b. {StopID} is a unique value (within a tripsheet) to assign to a stop
  - c. {Name} is a name you give a stop (example: ABC company)
  - d. {StopType} is "Pickup" or "DropOff"
  - e. Address or {Latitude}{Longitude} combination accepted.
  - f. If provided, {Latitude}{Longitude} are in decimal degrees
  - g. If provided, Address has the following components
    - i. {Line1} is the first line of the address
    - ii. {Line1} is the second line of the address
    - iii. {City} is the city of the address
    - iv. {StateOrProvince} is the state or province of the address
    - v. {PostalCode} is the postal code of the address
  - h. {StartDateTime} Estimated Arrival Date and time in ISO 8601.
  - i. {EndDateTime} Estimated Departure Date and time in ISO 8601.
  - j. {Name}, {Line1}, {Line2}, {City}, and {StateOrProvince} have a 64 character maximum size.
  - k. {PostalCode} has a 16 character maximum size.

#### Order XML to be passed to the service in the POST Request Body

```
<Order xmlns="http://macropoint-lite.com/xml/1.0" >
     <Number Type="{Type}">{Number}
     <TrackStartDateTime>{TrackStartDateTime}
     <Notifications>
           <Notification>
                 <PartnerMPID>{MacroPointID}
                 <IDNumber>{IDNumber}
                 <TrackDurationInHours>
                      {TrackDurationInHours}
                 </TrackDurationInHours>
                 <TrackIntervalInMinutes>
                      {TrackIntervalInMinutes}
                 </TrackIntervalInMinutes>
           </Notification>
     </Notifications>
     <Carrier>
           <Name>{CarrierName}</Name>
           <Dispatcher>
                 <Name>{DispatcherName}</Name>
                 <Phone>{DispatcherPhone}
                 <Email>{DispatcherEmail}
           </Dispatcher>
     </Carrier>
     <TripSheet>
           <Stops>
                 <Stop>
                      <StopID>{StopID}</StopID>
                      <Name>{StopName}</Name>
                      <StopType>{StopType}
                      <Address>
                            <Line1>{Line1}</Line1>
                            <Line2>{Line2}</Line2>
                            <City>{Line2}</City>
                            <StateOrProvince>
                                  {StateOrProvince}
                            </StateOrProvince>
                            <PostalCode>{PostalCode}</PostalCode>
                      </Address>
                      <Latitude>{Latitude}</Latitude>
                      <Longitude>{Longitude}</Longitude/>
                      <StartDateTime>{StartDateTime}
                      <EndDateTime>{EndDateTime}
                 </Stop>
           </Stops>
     </TripSheet>
</Order>
```

#### When an order is successfully created

- 1. HTTP Status Code 201 is returned
- 2. Response Body: OrderResult Entity (shown below) is returned

- 3. {Status} will be a "Success" or "PartialSuccess".
- 4. If status is "Success" the <Errors /> node will be empty or contain code 1009.
- 5. "PartialSuccess" will be returned if the order had multiple notifications and one or more were accepted and one or more were rejected. If status is "PartialSuccess" at least one <Error> node will be present for each notification that was not accepted. {Code} and {Message} are described in the "When an order is not successfully created" section (below).
- 6. {OrderID} will be a 32 digit alphanumeric code that can be referenced in the future to indicate the order.

#### When an order is **not** successfully created

- 1. HTTP Status Code 400 is returned
- 2. Response Body: OrderResult Entity (shown below) is returned

- 3. {Status} will be a "Failure".
- 4. {Code} indicating the type of error
  - a. 1000 All argument/domain-rule validation exceptions
  - b. 1001 Insufficient Funds
  - c. 1002 Possible land line or incompatible cell phone (deprecated)
  - d. 1003 Phone on do not contact list
  - e. 1009 Custom text indicating that validation URL was unavailable
  - f. 3000 Feature not provisioned
  - g. 9999 Unexpected error occurred Administrator notified
- 5. {Message} is text explaining the error

# Server cannot process the request

- 1. HTTP Status Code 5xx is returned
- 2. Response Body: {unspecified}

#### **Stop Order**

Description:	Allows customer to stop an existing order: <a href="https://macropoint-lite.com/api/1.0/orders/stoporder/{orderid}">https://macropoint-lite.com/api/1.0/orders/stoporder/{orderid}</a>	
Direction:	Customer to MP LITE	
Return:	MP LITE returns HTTP status code 200 on order stop success, 400 on bad request and 5xx on server failure.	
Security:	Required. Basic Authentication	
Notes:	Use HTTP POST verb for this request.	
	2. {orderid} is the 32 digit alphanumeric code returned by "Add New Order"	

## When an order is successfully stopped

1. HTTP Status Code 200 is returned

#### When an order is **not** successfully stopped

- 1. HTTP Status Code 400 is returned
- 2. Response Body: OrderResult Entity (shown below) is returned

- 7. {Code} indicating the type of error
  - a. 2000 Order ID not valid
  - b. 2001 Order is completed or expired
  - c. 9999 Unexpected error occurred Administrator notified
- 8. {Message} is text explaining the error

#### **Change Order**

Description:	Allows customer to change an existing order: <a href="https://macropoint-lite.com/api/1.0/orders/changeorder/{orderid}">https://macropoint-lite.com/api/1.0/orders/changeorder/{orderid}</a>	
Direction:	Customer to MP LITE	
Return:	MP LITE returns HTTP status code 200 on order change success, 400 on bad request and 5xx on server failure.	
Security:	Required. Basic Authentication	
Notes:	Use HTTP POST verb for this request.	
	2. {orderid} is the 32 digit alphanumeric code returned by "Add New Order"	

#### Order XML to be passed to the service in the POST Request Body

### When an order is successfully changed

1. HTTP Status Code 200 is returned

#### When an order is not successfully changed

- 1. HTTP Status Code 400 is returned
- 2. Response Body: OrderResult Entity (shown below) is returned

- 3. {Code} indicating the type of error
  - a. 1000 All argument/domain-rule validation exceptions
  - b. 1001 Insufficient Funds
  - d. 2000 Order ID not valid

- e. 2001 Order is completed or expired
- f. 2002 Order duration cannot be less than current duration
- g. 9999 Unexpected error occurred Administrator notified
- 4. {Message} is text explaining the error

#### SendMessage

Description:	Allows customer to send a two-way message:	
	https://macropoint-lite.com/api/1.0/orders/SendMessage	
Direction:	Customer to MP LITE	
Return:	MP LITE returns HTTP status code 200 on success, 400 on bad request and 5xx on	
	server failure.	
Security:	Required. Basic Authentication	
Notes:	1. Use HTTP POST verb for this request.	
	2. {OrderID} is the 32 digit alphanumeric code returned by "Add New Order"	
	3. {Message} is the text to send	

#### Message XML to be passed to the service in the POST Request Body

#### When a message is successfully sent

HTTP Status Code 200 is returned

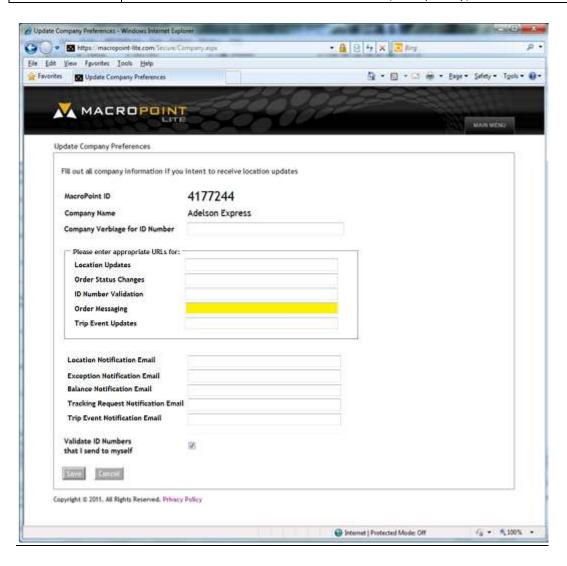
### When a message is **not** successfully sent

- 1. HTTP Status Code 400 is returned
- 2. Response Body: MessageResult Entity (shown below) is returned

- 3. {Code} indicating the type of error
  - a. 2000 OrderID Not Valid
  - b. 2005 Order Message Feature Not Provisioned
  - c. 2006 Order Message Url Empty
  - d. 9999 Unexpected error occurred Administrator notified
- 4. {Message} is text explaining the error

#### **Notify On Incoming Message**

Description:	Relays incoming two-way message from driver for specific load:		
	http(s)://Custome	http(s)://CustomerSpecifiedURL?OrderID={1}& Message={2}	
	OrderID:	OrderID is the 32 digit alphanumeric code returned by "Add New Order"	
	Message:	Text of incoming message.	
Direction:	MP LITE to customer.		
Return:	MP LITE expects HTTP status code 200 back on success, 400 on bad request.		
Security:	Optional. Recommend IP filtering.		
Notes:	1. All data U	1. All data URL encoded.	
	2. Data received via SMS can at times (infrequently) be disordered		



# **Glossary**

Code	Text	Description
1001	Requesting Installation	Waiting for owner of the device to install MacroPoint LITE.
1020	Ready To Track	MacroPoint LITE device is ready to begin sending location updates.
1021	Tracking Now	MacroPoint LITE service is tracking MacroPoint LITE enabled device now.
1022	Tracking Completed Successfully	Tracking session completed its session with successful location updates.
1050	Stopped By Creator	Tracking session was ended by the account holder who originally set up the session.
1051	Stopped Early By Driver	Tracking session was ended by owner of the MacroPoint LITE enabled device.
1052	Denied By Driver	Owner of the device opted out of MacroPoint LITE and can no longer be tracked.
1053	Location Hidden By Driver	MacroPoint LITE device is currently hidden by the owner of the device.
1060	Tracking - Waiting For Update	System is waiting for the most recent location update.
1061	Incompatible Phone	Driver cell phone is not compatible with MacroPoint LITE.
1062	Invalid Number -	Owner of cell phone was contacted and reported wrong number (or an
	Not Trackable	internal process determined it was a wrong number).
1063	Landline Not Trackable	Owner of cell phone was contacted and reported wrong number, specifically this number is a landline (or an internal process determined it was a landline).
1064	Driver Refused Installation	Owner of the device refused installation.
1070	Expired Without Installation	Owner of the device never completed the MacroPoint LITE installation process.
1071	Expired Without Location	A tracking session completed without obtaining a location update.
1110	Trip Sheet Deployed	"Trip sheet only" load session is ready to begin accepting event updates
1111	Trip Sheet In Progress	"Trip sheet only" load session in progress with event updates
1112	Trip Sheet Completed	"Trip sheet only" load session completed with successful event status updates
1113	Trip Sheet Expired	"Trip sheet only" load session completed without any event status updates