

magento **live**
UK 2012



Magento API Best Practices



Jon Jessup – Founder & CEO/CTO



Agenda

- Cloud Conversion Background
- What are APIs and why use them?
- Common Pitfalls to Avoid
- MagentoGo
- Opportunities for Cloud Developers
- Live Demos!
- Q & A



Cloud Conversion Background

About Cloud Conversion

- Founded February 2009 in Park City, UT
- **Focus:** Build innovative eCommerce applications
- **Mission:** Solve real-world business challenges
- **Primary Products:** eCommSource & CloudGento
- Self-funded

We know eCommerce

Team consists of cloud evangelists with over 25 years experience in eCommerce, CRM and ERP.





Key Partners



Key Products



Magento +
Salesforce.com



Enterprise Returns
Management



Multi-Channel
eCommerce CRM



Amazon.com +
Salesforce.com



What are Web APIs (aka Web Services)?

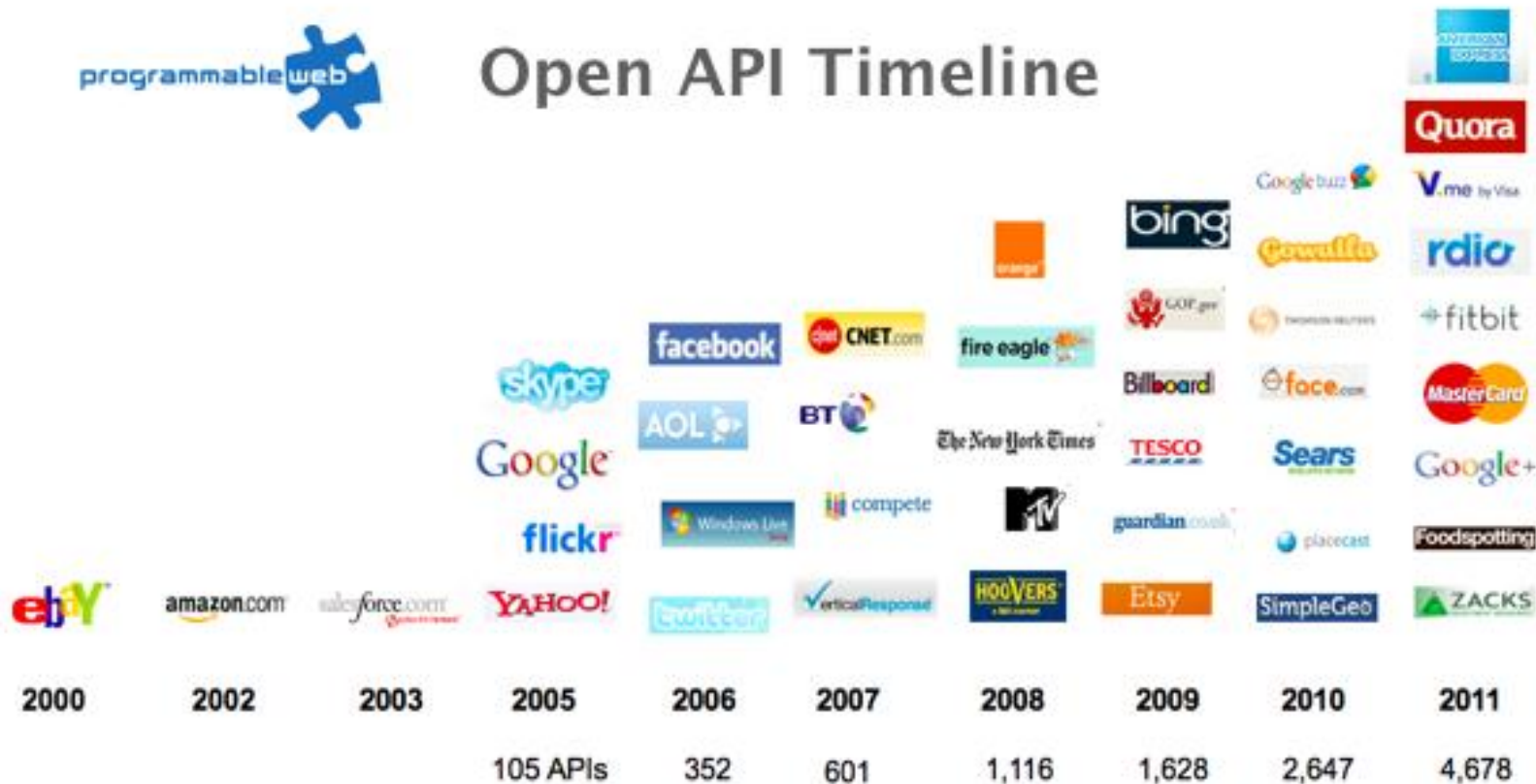
- API (Application Programming Interface)
- Allows you to communicate with Magento via HTTP
- Defined structure of the request & response (typically XML or JSON)



History of Web APIs



Open API Timeline



Why Use Them?

eCommerce is Complex!



Advantages of using the Magento APIs

- Can be used with most programming languages
- Ability to support Magento Community, Enterprise & Go
- Easy to Setup and get customers going quickly
- Nothing to install into the Magento instance!
- Ability to off load complex processing
- Great for integrating with external systems (ERP, CRM, etc)
- Great for building Mobile Apps



Types of Magento APIs

- SOAP
- XML-RPC
- REST



Getting Started with the SOAP APIs

- Make sure API Endpoint is accessible
i.e. – http://www.samplesite.com/api/v2_soap
- Define API User and Appropriate Roles
System -> Web Services
- WSDL can be found at
http://www.samplesite.com/api/v2_soap?wsdl=1

Defining API Role

Magento Admin Panel | Global Record Search | Logged in as megan | Monday, February 7, 2011 | [Log Out](#)

Dashboard | Sales | Catalog | Customers | Promotions | Newsletter | CMS | Reports | **System** | [Get help for this page](#)

Role Information

- Role Info
- Role Resources**
- Role Users

Edit Role 'All'

[Back](#) [Reset](#) [Delete Role](#) [Save Role](#)


Roles Resources

Resource Access: Custom

Resources:

- Catalog
 - Product
 - Retrieve products data
 - Create
 - Update Tier Price
 - Update
 - Delete
 - Product Attributes
 - Change or Retrieve attribute store view
 - Retrieve attribute data
 - Link (Related, Up sell, Cross sell)
 - Remove
 - Update
 - Assign
 - Product Images
 - Remove
 - Update
 - Create (Upload)
- Category
 - Retrieve categories tree
 - Retrieve category data
 - Create
 - Delete
 - Move
 - Update

Defining API Users

 **Magento Admin Panel** Global Record Search Logged in as megan | Monday, February 7, 2011 | [Log Out](#)

Dashboard Sales Catalog Customers Promotions Newsletter CMS Reports **System** Get help for this page

User Information [Back](#) [Reset](#) [Delete User](#) [Save User](#)

Edit User 'salesforce2'

User Info

User Role

Account Information

User Name *	<input type="text" value="salesforce2"/>
First Name *	<input type="text" value="Salesforce"/>
Last Name *	<input type="text" value="Integration"/>
Email *	<input type="text" value="magento@cloudconversion.com"/>
New API Key	<input type="text"/>
API Key Confirmation	<input type="text"/>
This account is	<input type="text" value="Active"/>



Basic Magento API Flow

- Make login request with username/API key -> SessionID
- Store SessionID to make subsequent API calls
- Make API Calls using the SessionID



Basic Magento SOAP API Calls

- login
- startSession
- endSession
- resources
- globalFaults
- resourceFaults



Customer and Order SOAP API Calls

salesOrderList
salesOrderInfo
salesOrderAddComment
salesOrderHold
salesOrderUnhold
salesOrderCancel
salesOrderShipmentList
salesOrderShipmentInfo
salesOrderShipmentCreate
salesOrderShipmentAddComment
salesOrderCreditmemoCreate
salesOrderCreditmemoInfo

salesOrderShipmentAddTrack
salesOrderShipmentRemoveTrack
salesOrderShipmentGetCarriers
salesOrderInvoiceList
salesOrderInvoiceInfo
salesOrderInvoiceCreate
salesOrderInvoiceAddComment
salesOrderInvoiceCapture
salesOrderInvoiceVoid
salesOrderInvoiceCancel

directoryCountryList
directoryRegionList
customerCustomerList
customerCustomerCreate
customerCustomerInfo
customerCustomerUpdate
customerCustomerDelete
customerGroupList
customerAddressList
customerAddressCreate
customerAddressInfo
customerAddressUpdate
customerAddressDelete



Product and Category SOAP Calls

catalogCategoryCurrentStore
catalogCategoryTree
catalogCategoryLevel
catalogCategoryInfo
catalogCategoryCreate
catalogCategoryUpdate
catalogCategoryMove
catalogCategoryDelete
catalogCategoryAssignedProducts
catalogCategoryAssignProduct
catalogCategoryUpdateProduct
catalogCategoryRemoveProduct
catalogProductCurrentStore

catalogProductList
catalogProductInfo
catalogProductCreate
catalogProductUpdate
catalogProductSetSpecialPrice
catalogProductGetSpecialPrice
catalogProductDelete
catalogProductAttributeCurrentStore
catalogProductAttributeList
catalogProductAttributeOptions
catalogProductAttributeSetList
catalogProductTypeList
catalogProductAttributeTierPriceInfo
catalogProductAttributeTierPriceUpdate

catalogCategoryAttributeCurrentStore
catalogCategoryAttributeList
catalogCategoryAttributeOptions
catalogProductAttributeMediaCurrentStore
catalogProductAttributeMediaList
catalogProductAttributeMediaInfo
catalogProductAttributeMediaTypes
catalogProductAttributeMediaCreate
catalogProductAttributeMediaUpdate
catalogProductAttributeMediaRemove
catalogProductLinkList
catalogProductLinkAssign
catalogProductLinkUpdate
catalogProductLinkRemove
catalogProductLinkTypes
catalogProductLinkAttributes



Shopping Cart/Checkout SOAP APIs

cartCreate

cartCustomerSet

cartCustomerAddresses

cartPaymentMethod

cartPaymentList

cartProductAdd

cartProductUpdate

cartProductRemove

cartProductList

cartProductMoveToCustomerQuote

cartShippingMethod

cartShippingList

cartCouponAdd

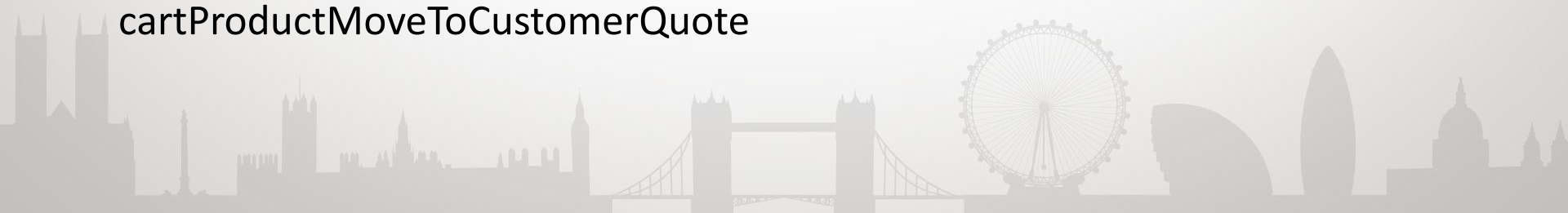
cartCouponRemove

cartOrder

cartInfo

cartTotals

cartLicense



Enterprise Edition SOAP APIs

giftCardCustomerInfo
giftCardCustomerRedeem
giftCardList
giftCardAdd
giftCardRemove
giftCardAccountCreate
giftCardAccountList
giftCardAccountUpdate
giftCardAccountInfo
giftCardAccountRemove

giftMessageSetForQuote
giftMessageSetForQuoteItem
giftMessageSetForQuoteProduct

storeCreditQuoteSetAmount
storeCreditHistory



Miscellaneous SOAP APIs

magentoInfo

- Version
- Edition (Community, Pro, Enterprise)

storeList

- Store Id, Store Code, Website Id, Group Id, Name

storeInfo

- Store Id, Store Code, Website Id, Group Id, Name



Sample PHP Code (v1)

```
<?php
$client = new SoapClient('http://www.yourstore.com/api/soap?wsdl');

// If somestuff requires api authentication,
// then get a session token
$session = $client->login('apiUser', 'apiKey');

$result = $client->call($session, 'somestuff.method');
$result = $client->call($session, 'somestuff.method', 'arg1');
$result = $client->call($session, 'somestuff.method', array('arg1', 'arg2', 'arg3'));
$result = $client->multiCall($session, array(
    array('somestuff.method'),
    array('somestuff.method', 'arg1'),
    array('somestuff.method', array('arg1', 'arg2'))
));

// If you don't need the session anymore
$client->endSession($session);
```


Sample PHP Code (v2)

```
<?php
$client = new SoapClient('http://www.yourstore.com/api/soap?wsdl');

$session = $client->login('apiUser', 'apiKey');
$complexFilter = array(
    'complex_filter' => array(
        array(
            'key' => 'group_id',
            'value' => array('key' => 'in', 'value' => '1,3')
        )
    )
);
$result = $client->customerCustomerList($session, $complexFilter);

var_dump($result);
```



Sample Java Code

```
public static void main(String[] args) {
    MagentoService service = new MagentoService();

    MageApiModelServerWsiHandlerPortType port = service.getMageApiModelServerWsiHandlerPort();
    port.startSession();
    LoginParam parameters = new LoginParam();
    parameters.setUsername("user");
    parameters.setApiKey("key"); LoginResponseParam loginResponse = port.login(parameters);
    CustomerGroupListRequestParam request = new CustomerGroupListRequestParam();
    request.setSessionId(loginResponse.getResult());
    CustomerGroupListResponseParam customerGroupList =
    port.customerGroupList(request);

    List<CustomerGroupEntity> arrayOfCustomerGroups = customerGroupList.getResult().getComplexObjectArray();
    for (CustomerGroupEntity customerGroupEntity : arrayOfCustomerGroups) {
        System.out.println(customerGroupEntity.getCustomerGroupCode());
    }
}
```



Sample XML Request for catalogProductList

```
<?xml version="1.0" encoding="utf-8"?>
  <soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/" xmlns:tns="urn:Magento"
xmlns:types="urn:Magento/encodedTypes" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema">
    <soap:Body soap:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/">
        <tns:catalogProductList>
            <sessionId xsi:type="xsd:string">+sessionId+</sessionId>
            <filters href="#id1" />
        </tns:catalogProductList>
        <tns:filters id="id1" xsi:type="tns:filters"><complex_filter href="#id3" /></tns:filters>
        <soapenc:Array id="id3" soapenc:arrayType="tns:complexFilter[1]"><Item href="#id5"
/></soapenc:Array>

        <tns:complexFilter id="id5" xsi:type="tns:complexFilter">
            <key xsi:type="xsd:string">updated_at</key> <value href="#id8" />
        </tns:complexFilter>
        <tns:associativeEntity id="id8" xsi:type="tns:associativeEntity">
            <key xsi:type="xsd:string">from</key><value
xsi:type="xsd:string">+fromDate+</value>
        </tns:associativeEntity>
    </soap:Body>
</soap:Envelope>
```

Sample XML Response for catalogProductList

```
<?xml version="1.0" encoding="UTF-8"?>
  <SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/" xmlns:ns1="urn:Magento"
xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/encoding/" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" SOAP-ENV:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/">
    <SOAP-ENV:Body>
      <ns1:catalogProductListResponse>
        <storeView SOAP-ENC:arrayType="ns1:catalogProductEntity[1]"
xsi:type="ns1:catalogProductEntityArray">
          <item xsi:type="ns1:catalogProductEntity">
            <product_id xsi:type="xsd:string">43235463</product_id>
            <sku xsi:type="xsd:string">Stack-OnGSB-1616GunCombinationLockSafe</sku>
            <name xsi:type="xsd:string">Stack-On GSB-16 16 Gun Combination Lock
Safe</name>
            <set xsi:type="xsd:string">4</set>
            <type xsi:type="xsd:string">simple</type>
            <category_ids SOAP-ENC:arrayType="xsd:string[0]"
xsi:type="ns1:ArrayOfString"/>
            <website_ids SOAP-ENC:arrayType="xsd:string[1]"
xsi:type="ns1:ArrayOfString"><item xsi:type="xsd:string">1</item></website_ids>
          </item>
        </storeView>
      </ns1:catalogProductListResponse>
    </SOAP-ENV:Body>
  </SOAP-ENV:Envelope>
```

Getting Started with the REST API

- General Capabilities
- Setting up the API users & roles
- Authentication (oAuth 1.0a)
- Making a REST Call

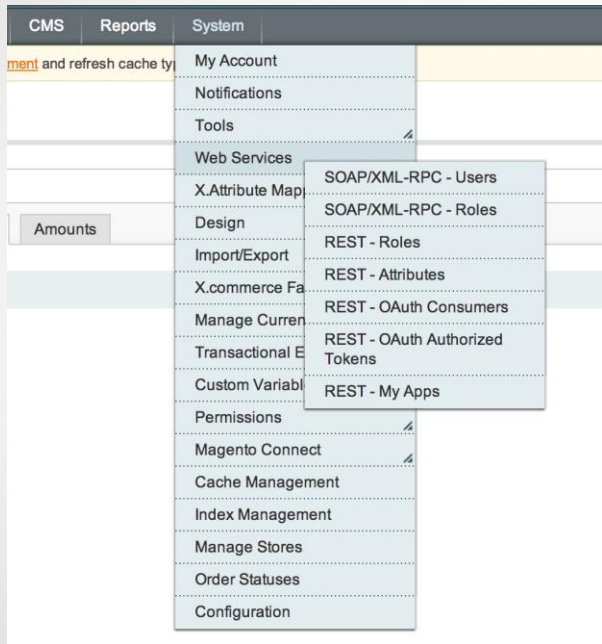


General Capabilities of the REST API

- Managing Customers
- Managing Customer Addresses
- Managing Products
- Retrieving Sales Orders
- Managing Inventory



Enabling the REST API in Magento



oAuth Overview

Open protocol (oAuth.net) for secure API authorization in a “simple” and standard method from applications. Allows MagentoGo accounts to be connected to 3rd party applications without the account owner having to share their password and they can revoke access at any time.

Notable oAuth Implementations: Salesforce.com, LinkedIn, Twitter, Facebook, LivePerson, Magento, etc



The oAuth Dance

- 1) Acquire key and consumer secret
- 2) Ask for a request token and specify your callback
- 3) Direct the user to the Magento authorization screen
- 4) Receive a callback to the URL your specified
- 5) Ask for an access token
- 6) Make API calls!



Making a REST API Call with Curl

```
oauth \  
  --verbose \  
--query-string \  
--consumer-key v484mnii2jyswedm6u343o2cfcjay7uy49snws \  
--consumer-secret koay6845che3437giy5lr17gnrhckkbhf8h5 \  
--access-token-url http://www.yourstore.com/magento/oauth/token \  
--authorize-url http://www.yourstore.com/magento/oauth/authorize \  
--request-token-url http://www.yourstore.com/magento/oauth/initiate \  
authorize  
oauth \  
--consumer-key v484mnii2jyswedm6u343o2cfcjay7uy49snws \  
--consumer-secret koay6845che4347giy5lr17gnrhckkbhf8h5 \  
--token aqvlfv9tuexn0mqiydgkaff4ixxg8743c \  
--secret g9kyz8c7zv868d58343eav1muh3gxvq763 \  
--uri http://www.yourstore.com/magento/api/rest/products \  
debug  
curl \  
  -H "Accept: application/xml" \  
  "http://www.yourstore.com/magento/api/rest/products?  
  oauth_consumer_key=..."
```

So, REST or SOAP?

- SOAP has more functionality
- SOAP is easier to get going
- REST is only available in CE 1.7+ and EE 1.12+
- SOAP support CE 1.3+, EE 1.8+ and Go
- REST has better filtering capabilities
- REST is better for Mobile Development



Best Practices & Common Pitfalls to Avoid

- Keep track of Internal Ids!
- Make Sure the API is properly setup & enabled
- Monitor API Calls and Don't Overload the API/Site
- Understand Complex Filters and Associative Entities
- Always use SSL and Encrypt API Tokens
- Don't Be Afraid to Mash-up Other Services
- WSI-Compliance



Missing API Functionality

- Pagination
- CreateOrder API
- Push Notifications/Web Hooks/pubsubhubbub



Magento 2 APIs

- New API with REST and SOAP with WSI compliance
- Based on a new API architecture
- Support automatic generation of WSDL by the application,
- Improve performance for API routing, support versioning and granular loading of WSDL for only requested resources

- REST Example to retrieve customer resource in version 1 :
- GET <http://magentourl.com/webapi/rest/v1/customers>

- SOAP Example to load the wsdl of the customer resource version 2 and product resource version resource v1

<http://magentourl.com/webapi/soap/?wsdl=1&resources=customer:v2;product:v1>

Let's Build a simple
Magento API App
in 5 minutes!

Q & A