



# Technical Specifications Guide

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# Introduction

Kount aggregates and evaluates data from two primary sources, the *Data Collector (DC)* and the *Risk Inquiry Service (RIS)*. After collecting and evaluating customer data, Kount returns a string of key-value pairs to the merchant. Order-related data is also displayed in the Agent Web Console accessible via a secured merchant login over the Internet.

The Data Collector gathers information from a customer's device by redirecting the device browser momentarily to Kount then back to the merchant. This passive analysis obfuscates Kount's interaction with the customer and does not affect the customer's purchasing experience.

The Risk Inquiry Service evaluates the data provided by the Data Collector and the order-form data submitted from the merchant to create a fraud score. Merchant specified rules are also assessed for each transaction during this evaluation process. Once an order has been evaluated, a response string of key value pairs is returned to the merchant including a score, device fingerprint, and an automated response code. Upon receipt of this response data the merchant can disposition orders based upon specified rules.

## Kount Environments

Kount has separate environments for test and production. Initial integration for both the Data Collector and Risk Inquiry Service will take place in the test environment. A boarding document containing required test environment information will be sent to the merchant.

The test environment is not engineered to support load testing; it is designed primarily to verify connectivity and proper data submission. Many features such as order linking, scoring, device location, and persona related information are limited in the test environment. The following features are not available or will not display accurately in the test environment:

- Persona orders will not link to merchants across the Kount network.
- Persona Risk Score
- Boost Safety Rating
- Address and phone validation through Melissa Data
- VELO and VMAX
- Network and device information
- Distance calculators
- External services

Test credit cards can be passed into the test environment but will fail in the production environment.

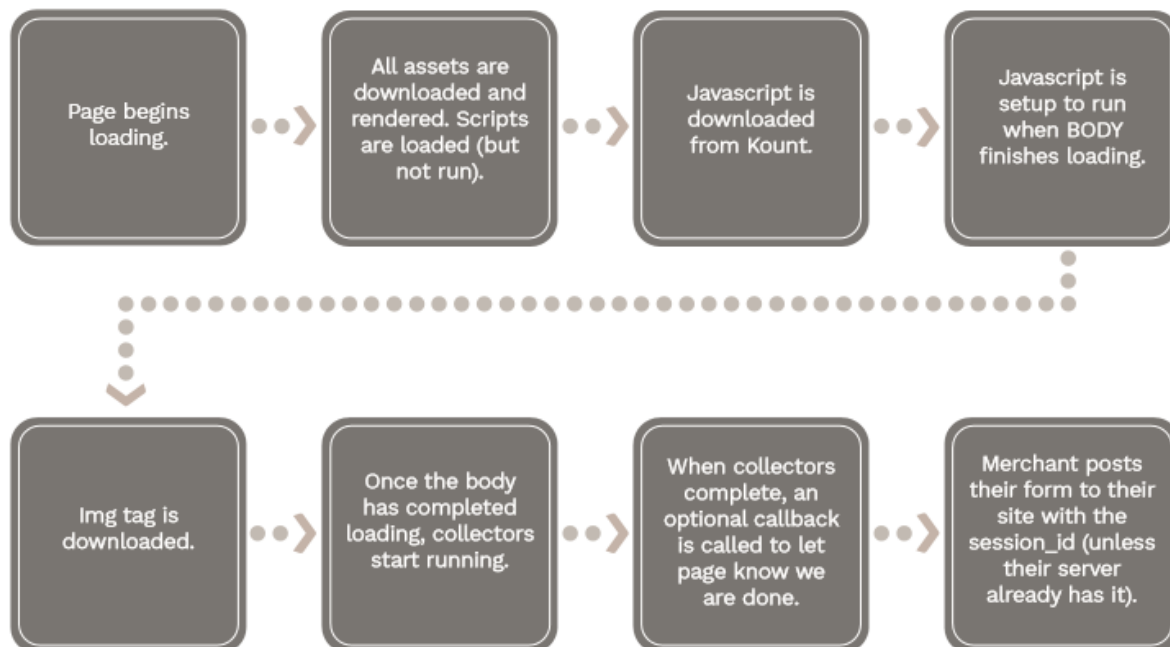
Port 443/HTTPS is required for submission and receipt of Data Collector and Risk Inquiry Service data in both the test and production environments.

Upon certifying that the correct data is being passed for both the Data Collector and Risk Inquiry Service, the merchant will be issued a Certification Letter and additional production boarding information. Any customized data created in the test environment will have to be re-created in the production environment. This includes users, rules, site IDs, user defined fields, and API Keys.

The test environment will continue to be available for testing purposes but should not be used for production traffic. Typically, Kount has quarterly releases with new or enhanced features that are backward compatible. These new features will be available in the test environment, as well.

## Data Collector

The Kount Data Collector runs in the background while the user is logging into the website via a web client or browser or via a mobile app (iOS or Android). Following are the standard requirements for any Data Collection event.



The Risk Inquiry Service is designed to be used in conjunction with the Data Collection process. The Data Collection process is passive and provides no information back to a merchant independent of the Access Inquiry Service.

The following code can be inserted anywhere on the merchant's webpage prior to submission of the order. For faster results the merchant should place this code at the top of their html page coding.

## Session ID Discussion

The Session ID is the identifier for the collection event and is specific to the user's request. You will use the Session ID for subsequent calls to the API service for device information regarding the current user's interaction.

- Session ID field name = sessionId
- Session ID values should be 32-character length and must be alpha-numeric values (0-9, a-z or A-Z). Dashes (-) and underscores (\_) are acceptable.
- Session IDs must be unique per request. They must be unique for a minimum of 30 days.
- Script tag parameter value = s Example: s=abcdefg12345abababab123456789012.

### Session Creation Code example

```
<?php
$sess = session_id();
if (!$sess) {
    // If the session hasn't already been started, start it now and look up the id
    session_start();
    $sess = session_id();
}
// The session id is now available for use in the variable $sess
// For more details and examples on working with sessions in PHP, see:
// http://us2.php.net/manual/en/book.session.php
// http://us2.php.net/session\_start
// http://us2.php.net/session\_id
?>
```

## Web Clients or Browser

The Data Collector runs on a client's browser and collects a variety of information that helps uniquely identify the device.

Add the `<script>` tag and an `<img>` tag to the web page where you want to trigger the Data Collection to occur.

Field	Parameter	Value
merchantId	m	Merchant ID number issued by Kount
sessionId	s	10- to 32-character session id; see Session ID Discussion above for more information

Below is an example where the Data Collector URL is denoted with DATA\_COLLECTOR and the Merchant ID field (m=ABC123) and the Session ID field (s=abcdefg12345abababab123456789012) are set.

## Collector Script Example

```
<script type='text/javascript'
src='https://DATA_COLLECTOR/collect/sdk?m=123456&s=abcdefg12345abababab123456789012'><
/script>
```

The `script` tag will not affect the UI with its placement.

DATA\_COLLECTOR URL:

Sandbox: <https://tst.kaptcha.com>

Production: <https://ssl.kaptcha.com>

## Creating the kaxsdc Class (Responsible for Triggering Data Collection)

The Client Collector SDK data collection process is triggered by the load data event. This gives the collector the most available time to complete its work. The collection is bound to the page load event by adding the kaxsdc class and data-event='load' to an HTML element, such as the HTML body or a div.

**Note:** It is required to have the above `/collect/sdk` script tag on your page, as it will import the Client Collector SDK.

## Namespace & ka.ClientSDK Object

The Kount collector JavaScript is namespaced under the ka JavaScript object. To start using the Client Collector SDK, create a new ClientSDK object: `var client = new ka.ClientSDK();`

Available methods in the ka.ClientSDK object:

Method	Description
<code>autoLoadEvents()</code>	Attaches the collection process to be automatically triggered by the page elements load event with the className "kaxsdc."
<b>(This is optional for troubleshooting data collection)</b> <code>setupCallback(config)</code>	<p><b>(OPTIONAL)</b> A client programmable callback system that allows the client to execute custom code at certain points in the data collection process. This method allows a merchant to add a callback function to be called at a specified life-cycle hook. A merchant can pass a JavaScript object containing one or more life cycle hooks with a function pointer or an anonymous function to be executed.</p> <p>List of hooks (in order of firing):</p> <ul style="list-style-type: none"> <li>• collect-begin - Triggers when the collection starts.</li> <li>• collect-end - Triggers when the collection ends.</li> </ul> <p>When executed, the callback function is passed a JavaScript object containing the following properties:</p> <ul style="list-style-type: none"> <li>• MercSessId – The merchant provided session.</li> <li>• MerchantId – The merchant Id.</li> </ul>



## Code Example

This code collects device information on page load.

```

1<html>
2  <head>
3
4
5    <!-- The following is only required when using a CSP. If a CSP is used, the
collection will not run without the following. -->
6    <meta http-equiv="Content-Security-Policy" content="img-src
https://*.kaptcha.com; script-src 'unsafe-inline' https://*.kaptcha.com; child-src
https://*.kaptcha.com"><!-- end comment -->
7  </head>
8  <body class='kaxsdc' data-event='load'>
9
10
11
12    <script type='text/javascript'
src='https://placeholderdomain_talk_to_a_Kount_rep.com/collect/sdk?m=123456&s=testsess
ion'></script>
13    <script type='text/javascript'>
14      var client=new ka.ClientSDK();
15      client.autoLoadEvents();
16    </script>
17  </body>
18</html>

```

## Phone-to-Web Order Submissions

When a merchant submits phone orders via the same web page interface as a customer, the data regarding the merchant's device is being sent to Kount, not the customer's device data. This will cause order linking to occur and in time will elevate the score of all orders associated with the persona.

**IMPORTANT:** Linking will also occur if the browser session ID is used as the transaction session ID and multiple orders are submitted from within the same browser session without closing the browser. This type of linking can be avoided in three ways:

- Increment the browser session ID, appending the UNIX timestamp.
- Choose a different methodology for creating the session ID.
- Ensure agents close the browser between orders.

There are two different methods for receiving phone orders.

1. If the customer service agents navigate to a separate order entry page that does not implement the Data Collector: Call Center/Phone Orders will be posted as a Mode=P; hard code the IP address specifically to 10.0.0.1 and provide the phone number within the ANID field (if no phone number is available, pass 0123456789 hard coded).
2. If the customer service agents navigate to the same page as the customer (executes the Data Collector): Phone-to-Web Order Submission script example is in **Appendix A** (to exclude

merchant owned IP addresses that should not be forwarded to Kount), post Call Center Orders as a Mode=Q; hard code the IP address specifically to 10.0.0.1.

In any of the above circumstances, if the email address is not provided to the agents, the agents will need to input noemail@Kount.com as the email address to prevent linking.

The scripts found in **Appendix A** demonstrate configuration examples of excluding merchant-owned IP addresses that should not be forwarded on to the company's server.

Required and Optional fields can be found in **Appendix B**.

## Data Collector FAQ

### General:

**Q:** Where do I get the Merchant ID?

A Sandbox Boarding Information document will be sent following the initial kick-off call. It contains the Merchant ID and URLs associated with the DC and RIS processes. A separate document for production will be sent with the production service URLs once the test transactions are certified.

**Q:** How do I receive a login to the Agent Web Console?

Kount will create the initial administrator user. Once the user has been created, an automated e-mail will be sent requesting a password creation.

**Q:** Should I send production traffic to the test environment?

Production traffic should not be sent to the test environment due to the possibility of skewed scoring from the test orders.

### JavaScript:

**Q:** Where should I place the Javascript on my website?

On any webpage prior to the completion of the order, typically somewhere in the order summary or checkout process. This could be different if various payment methods take the customer "off of the site" prior to completion of the order.

### Session Identifier:

**Q:** What does the session identifier do?

The session identifier is used to join the device data with the order data sent to the RIS service. When the RIS process posts data to Kount it must use the session identifier that was created when the customer initiated the Data Collection.

**Q:** Does the session identifier need to be unique?

Yes, the session identifier must be unique over a thirty-day period. If there are duplicate session identifiers, device data originating from the Data Collection process may be erroneously connected to RIS order data. See [Session ID Discussion](#) for more information.

**Q:** Are there limitations on the session identifier?

Yes, it must be alpha-numeric, a minimum of 10, and a maximum of 32 characters long. Dashes and underscores are allowed.

**Q:** What should I use for the session identifier?

The merchant may determine what is used, as long as the limitation guidelines are followed. Potential identifiers include the unique web session, UNIX time stamp, and order number appended by time stamp.

### Troubleshooting the Data Collector:

**Q:** Have appropriate DNS entries, NATs, and firewall settings been configured correctly?

Due to the security concerns regarding test environments or production environment the merchant's network operations may need to verify that proper access is available.

**Q:** Does the JavaScript code contain the correct Merchant ID?

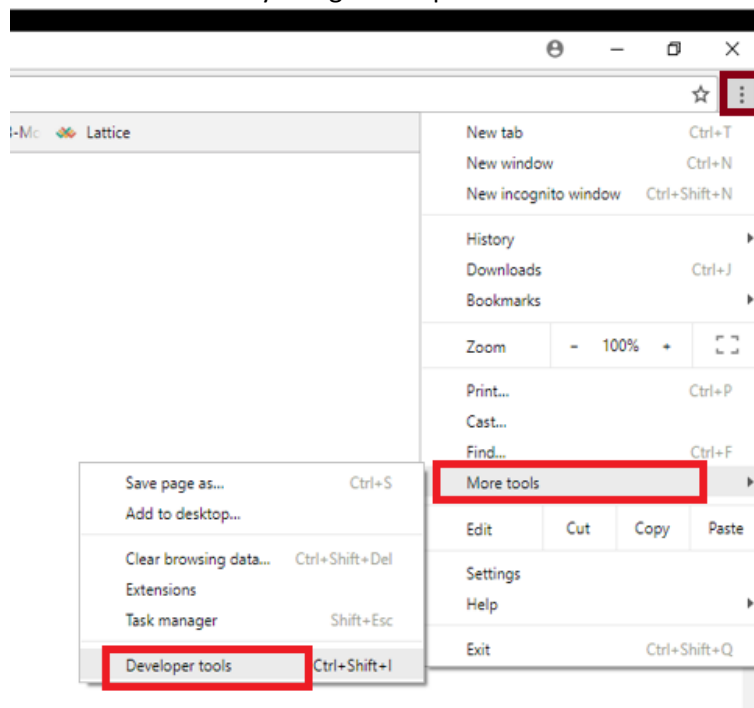
Verify that the Merchant ID is the correct ID supplied by Kount.

**Q:** Is the Session ID created in the DC process the same session ID being sent with the RIS post?

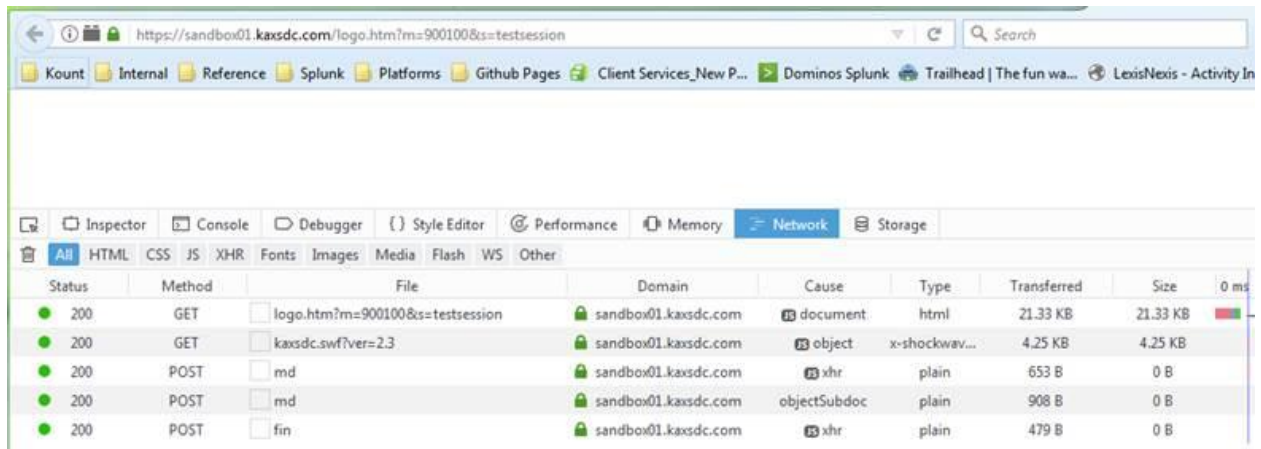
Ensure that the Session ID being created and stored during the DC process is the correct one being used in the RIS post to Kount and adheres to the session ID requirements.

**Q:** How do I know the Data Collection process is Successful?

Determine if the process was successful by using Developer Tools within Chrome or Firefox:



A successful data collection will be represented by multiple GET/POST requests, including one in which the file, "fin," indicates the data collection process is complete.

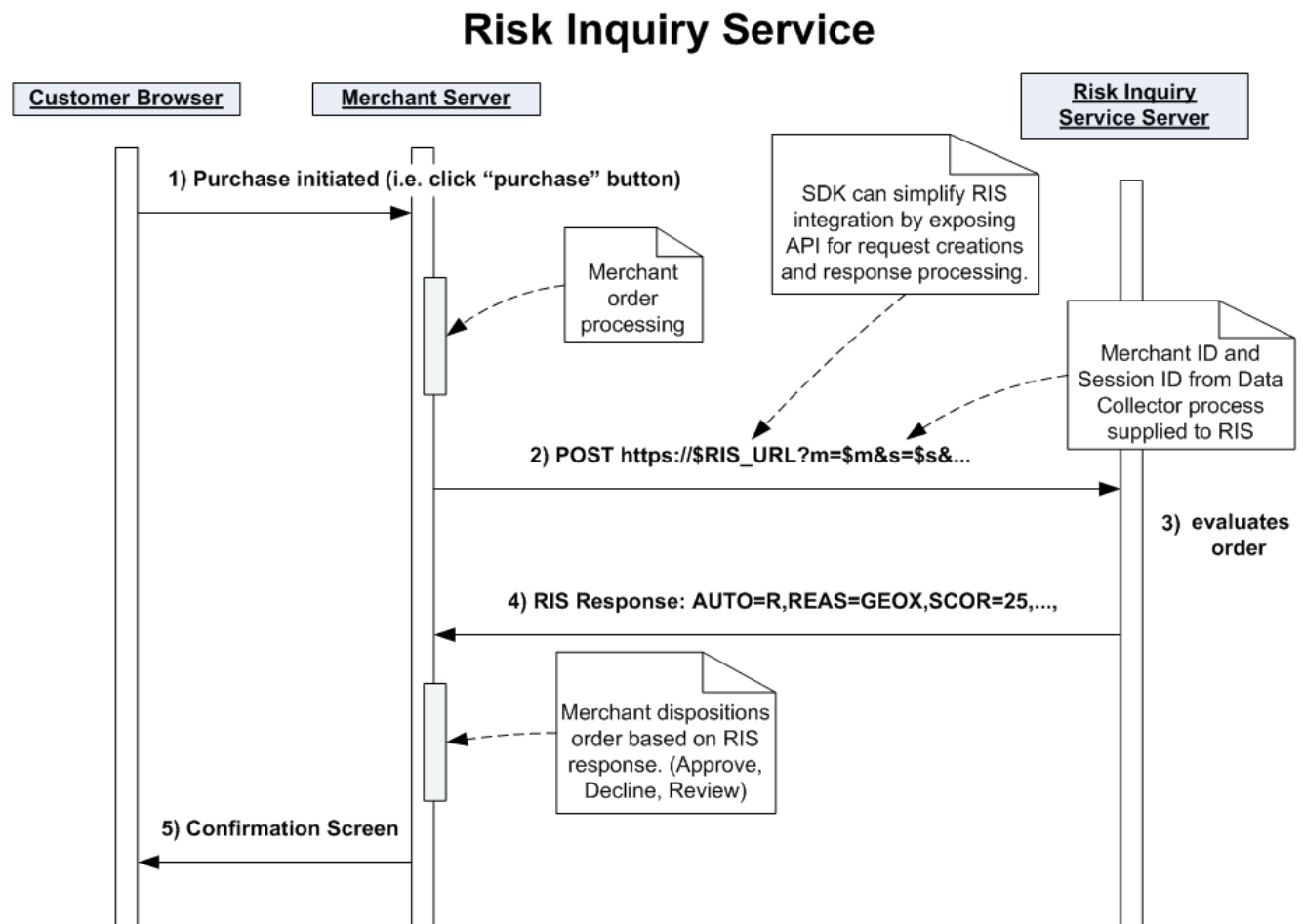


The screenshot shows a web browser window with the address bar displaying `https://sandbox01.kaxsdc.com/logo.htm?m=900100&cs=testsession`. The browser's developer tools are open, and the 'Network' tab is selected. It displays a list of five network requests, all with a status of 200. The requests are as follows:

Status	Method	File	Domain	Cause	Type	Transferred	Size	0 ms
200	GET	logo.htm?m=900100&cs=testsession	sandbox01.kaxsdc.com	document	html	21.33 KB	21.33 KB	
200	GET	kaxsdc.swf?ver=2.3	sandbox01.kaxsdc.com	object	x-shockwav...	4.25 KB	4.25 KB	
200	POST	md	sandbox01.kaxsdc.com	xhr	plain	653 B	0 B	
200	POST	md	sandbox01.kaxsdc.com	objectSubdoc	plain	908 B	0 B	
200	POST	fin	sandbox01.kaxsdc.com	xhr	plain	479 B	0 B	

## Risk Inquiry Service (RIS)

The Risk Inquiry Service (RIS) joins device data provided from the data collector process with the customer order data sent from the merchant. Once the device data and the order data are combined, RIS evaluates and scores each transaction. After the evaluation, RIS returns a response string back to the merchant to be used by the merchant to approve, decline or hold the order for review. Each transaction will continue to be evaluated and dynamically scored for up to fourteen days. The following section describes how to implement the Risk Inquiry Service.



The following sequence describes the RIS process:

1. Customer initiates purchase
2. Merchant initiates RIS request to Kount via HTTPS URL encoded post
3. Kount evaluates transaction
4. Kount returns evaluation response to merchant
5. Notification is displayed to customer

## Risk Inquiry Service Requirements

RIS data posted to Kount must be URL encoded and submitted as key-value pairs. Much of the work can be simplified by utilizing a Kount provided SDK, including URL encoding. Kount provides a Software Development Kit (SDK) for Java, .NET, PHP, Perl, and Mobile environments.

Recommendations regarding each development environment and their supported versions, configuration, logging, and paths are found in the README file located in the “docs” directory in each respective SDK, please read the documentation associated with each SDK.

1. Port 443 must be available to post and receive data from Kount.
2. API Keys are used to authenticate the RIS HTTPS submission to Kount, (similar to a password). A single API Key will be used for RIS submissions, the key is not subject to expiration date and does not require re-issuance. To generate an API Key, navigate to the ADMIN tab -> API Keys. See the RIS API Keys section of this document for more detailed instructions. Note: API Keys can only be used with Kount version 0630 and newer.
3. SSL support is required for the RIS process. TLS versions 1.2 and 1.1 are currently supported.
4. The session identifier created during the data collector process must be passed as the session identifier for the RIS transaction. This identifier must be unique for at least 30 days. If a single session ID were to be used on multiple transactions, those transactions would link together and erroneously affect the persona information in the risk score.
5. RIS posts are limited to a total of 40,000 characters.
6. To utilize the various SDKs, several required static settings must be configured. Please refer to the README files included in each of the SDKs.
  - PHP settings.ini
  - .NET App.config
  - Python
  - Java All settings are included in inquiry

The table below describes the required static settings found in the SDK:

Data	Size	Description	Example
<b>Merchant_ID</b>	6	Six-digit identifier issued by Kount.	999999
<b>COMPANY_SERVER_URL</b>	N/A	HTTPS URL path to the company's servers provided in boarding documentation from Kount.	<a href="https://risk.test.kount.net">https://risk.test.kount.net</a>
<b>LOGGER</b>	N/A	Specifies which logger to use: SIMPLE or NOP.	SIMPLE
<b>SIMPLE_LOG_LEVEL</b>	N/A	If SIMPLE logging is enabled, this lists logging levels in order of decreasing severity: FATAL, ERROR, WARN, INFO,DEBUG	WARN
<b>SIMPLE_LOG_FILE</b>	N/A	Name of the log file for SIMPLE logging	company-sdk-ris.log
<b>SIMPLE_LOG_PATH</b>	N/A	Path to where log file will be written. (Must be a valid path)	/some/path/to/log
<b>APIKEY</b>	Varies	API Key value copied from clipboard - originating from API Key page within Agent Web Console	Alpha/Numeric hashed value provided by Kount
<b>Client Certificate (deprecated field for legacy certificates)</b>	N/A	Depending on the SDK environment certain client certificate information will be required.	company-ris-certificate.p12

## When to Invoke the Risk Inquiry Service

1. **Pre-Authorization:** Query Kount before attempting an authorization from the payment gateway, below are the considerations regarding pre-authorization
  - Allows the merchant to avoid processing fees on orders set to “decline” by the merchant.
  - All credit card information can be sent to Kount
  - An update RIS call (MODE=U) must be made to update order number and status of payment authorization including AUTH, AVST, AVSZ, and CVVR data provided by payment gateway
    - For pre-authorization queries set the following required fields as:
      - MACK=Y
      - AUTH=A

- Once the transaction has been processed, update required and additional fields with MODE=U post (see RIS Service Modes section)
2. **Post-Authorization:** Query Kount after the payment gateway has been contacted, below are the considerations regarding post-authorization
- All payment gateway information can be passed to Kount (Authorization, AVS, CVV) allowing rules to be created regarding AVS and CVV data.
  - Some payment gateways do not pass credit card data once they have received it
  - Single RIS query, no update is necessary



## RIS Data Submission

When submitting data to RIS, it is recommended to send as much data as possible. As part of the RIS post there are required fields and if not populated an error will be returned in the RIS response. Please refer to the SDK documentation with details on how to submit the data for both optional and required fields.

**Appendix B** lists all fields that are available to post to Kount .

## Phone-to-Web Order Submissions

When a merchant submits phone orders via the same web page interface as a customer, the data regarding the merchant's device is being sent to Kount, not the customer's device data. This will cause order linking to occur and in time will elevate the score of all orders associated with the persona.

**IMPORTANT:** Linking will also occur if the browser session ID is used as the transaction session ID and multiple orders are submitted from within the same browser session without closing the browser. To avoid this type of linking, the browser session ID could be incremented appending the UNIX timestamp, choose a different methodology for creating the session ID, **or agents must close the browser between orders to ensure a new session has been created.**

There are two different methods for receiving phone orders.

1. If the customer service agents navigate to a separate order entry page that does not implement the Data Collector: Call Center/Phone Orders will be posted as a Mode=P; hard code the IP address specifically to 10.0.0.1 and provide the phone number within the ANID field (if no phone number is available, pass 0123456789 hard coded).
2. If the customer service agents navigate to the same page as the customer (executes the Data Collector): Phone to-Web Order Submission script example is in **Appendix A** (to exclude merchant owned IP addresses that should not be forwarded to Kount), post Call Center Orders as a Mode=Q; hard code the IP address specifically to 10.0.0.1.

In any of the above circumstances, if the email address is not provided to the agents, the agents will need to input [noemail@Kount.com](mailto:noemail@Kount.com) as the email address in order to prevent linking.

The scripts found in **Appendix A** demonstrate configuration examples of excluding merchant owned IP addresses that should not be forwarded on to the company's server.

Required and Optional fields can be found in **Appendix B**.

## Risk Inquiry Service Modes

Modes are used to specify what type of data is being submitted to Kount.

Note that ALL FIELD NAMES for a RIS call must be UPPERCASE. They cannot be other case combinations such as sess, Merc, mOdE. However, the values for fields can be mixed case, such as SESS=UpperMixedCaseSessID95628.

### Mode Q

Initial queries directed from the merchant to Kount that do not originate from a call center environment.

### Mode U

Update call to Kount, does not cause a reevaluation of the transaction but will update what is displayed in the Agent Web Console. This update call does not count towards the number of RIS transactions purchased. Only certain fields can be updated with MODE=U calls. The PTYP field can only be updated if the initial post to Kount was PTYP=NONE

Name	Description	Character Limit	Valid Values	Required
<b>AUTH</b>	Authorization Status returned to merchant from processor. Acceptable values for the AUTH field are 'A' for Authorized or 'D' for Decline. In orders where AUTH=A will aggregate towards order velocity of the persona while orders where AUTH=D will decrement the velocity of the persona.	1	A or D	No
<b>AVST</b>	Address Verification System Street verification response returned to merchant from processor. Acceptable values are 'M' for match, 'N' for no-match, or 'X' for unsupported or unavailable.	1	M (Match) or N (Not a Match)	No
<b>AVSZ</b>	Address Verification System Zip Code verification response returned to merchant from processor. Acceptable values are 'M' for match, 'N' for no match, or 'X' for unsupported or unavailable.	1	M (Match) or N (Not a Match)	No
<b>CVVR</b>	Card Verification Value response returned to merchant from processor. Acceptable values are 'M' for match, 'N' for no-match, or 'X' unsupported or unavailable.	1	M (Match) or N (Not a Match)	No
<b>FRMT</b>	Specifies the format of the RIS response if not using SDK, XML, JSON, YAML	4	SDK, XML, JSON, YAML	No

<b>LAST4</b>	Last 4 numbers of Credit Card Value	4	Numeric field must be 4 numbers	No
<b>MACK</b>	Merchants acknowledgement to ship/process the order. The MACK field must be set as 'Y' if persona data is to be collected to strengthen the score.	1	Y or N	Yes
<b>MERC</b>	Merchant ID assigned to the merchant by Kount.	6	Numeric field must be 6 numbers	Yes
<b>MODE</b>	Specifies what mode type the RIS post is: MODE=Q MODE=P MODE=X MODE=U	1	Q, P, X, U	Yes
<b>ORDR</b>	Merchant's Order Number	32	Alphanumeric field	No
<b>PENC</b>	RIS parameter for payment encoding.	KHASH	KHASH OR MASK	No
<b>PTOK</b>	PTOK value will replace Null value passed in original RIS Post.	32	Value to replace Null value passed in original RIS Post	No
<b>PTYP</b>	Payment Type submitted by merchant: PYPL BLML GDMP GOOG NOTE that PTYP must have been set to actual payment PTYP that will be updated within the initial RIS Post. PTOK must have been set to Null. If the PTYP is set to NONE no update can be performed.	4	PYPL, BLML, GDMP, GOOG	No
<b>RFCB</b>	Refund/Chargeback status: R = Refund C = Chargeback	1	R (Refund) or C (Chargeback)	No
<b>SESS</b>	Unique Session ID. Must be unique over a 30-day span	32	Alphanumeric field; must be match original RIS Post	Yes
<b>TRAN</b>	Transaction ID required for update calls to Kount	12	Transaction ID generated by Kount,	Yes

			must match original RIS Post	
<b>VERS</b>	Specifies version of Kount, built into SDK, must be supplied by the merchant if not using the SDK	4	Version of Kount being used	Yes

### Mode P

Initial queries originating from a call center environment.

- IP Address must be hard coded as "10.0.0.1".
- If customer does not provide an e-mail address, use the value [EMAL=noemail@Kount.com](mailto:EMAL=noemail@Kount.com).
- PayPal is not a valid payment type for MODE=P.

### Mode X

Update query made after an initial MODE=Q or P request and/or any MODE=U updates have been made. Updates to certain fields can be made and the transaction will be re-evaluated and return an updated RIS response to the merchant. These updates will be displayed in the Agent Web Console. This query will count towards the number of RIS transactions purchased. The same fields listed in the MODE=U section can be changed for MODE=X transactions except for PTYP which is not accepted by MODE=X.

Name	Description	Character Limit	Valid Values	Required
<b>AUTH</b>	Authorization Status returned to merchant from processor. Acceptable values for the AUTH field are 'A' for Authorized or 'D' for Decline. In orders where AUTH=A will aggregate towards order velocity of the persona while orders where AUTH=D will decrement the velocity of the persona.	1	A or D	No
<b>AVST</b>	Address Verification System Street verification response returned to merchant from processor. Acceptable values are 'M' for match, 'N' for no-match, or 'X' for unsupported or unavailable.	1	M (Match) or N (Not a Match)	No
<b>AVSZ</b>	Address Verification System Street verification response returned to merchant from processor. Acceptable values are 'M' for match, 'N' for no-match, or 'X' for unsupported or unavailable.	1	M (Match) or N (Not a Match)	No
<b>CVVR</b>	Card Verification Value response returned to merchant from processor. Acceptable values are 'M' for match, 'N' for no-match, or 'X' unsupported or unavailable.	1	M (Match) or N (Not a Match)	No

<b>FRMT</b>	Specifies the format of the RIS response if not using SDK, XML, JSON, YAML	4	SDK, XML, JSON, YAML	No
<b>LAST4</b>	Last 4 numbers of Credit Card Value	4	Numeric field must be 4 numbers	No
<b>MACK</b>	Merchants acknowledgement to ship/process the order. The MACK field must be set as 'Y' if persona data is to be collected to strengthen the score.	1	Y or N	Yes
<b>MERC</b>	Merchant ID assigned to the merchant by Kount.	6	Numeric field must be 6 numbers	Yes
<b>MODE</b>	Specifies what mode type the RIS post is: MODE=Q MODE=P MODE=X MODE=U	1	Q, P, X, U	Yes
<b>ORDR</b>	Merchant's Order Number	32	Alphanumeric field	No
<b>PENC</b>	RIS parameter for payment encoding.	KHASH	KHASH OR MASK	No
<b>PTOK</b>	PTOK value will replace Null value passed in original RIS Post.	32	Value to replace Null value passed in original RIS Post	No
<b>PTYP</b>	Payment Type submitted by merchant: PYPL BLML GDMP GOOG NOTE that PTYP must have been set to actual payment PTYP that will be updated within the initial RIS Post. PTOK must have been set to Null. If the PTYP is set to NONE no update can be performed.	4	PYPL, BLML, GDMP, GOOG	No
<b>RFCB</b>	Refund/Chargeback status: R = Refund C = Chargeback	1	R (Refund) or C (Chargeback)	No
<b>SESS</b>	Unique Session ID. Must be unique over a 30-day span	32	Alphanumeric field; must be match original RIS Post	Yes

<b>TRAN</b>	Transaction ID required for update calls to Kount	32	Transaction ID generated by Kount, must match original RIS Post	Yes
<b>VERS</b>	Specifies version of Kount, built into SDK, must be supplied by the merchant if not using the SDK	4	Version of Kount being used	Yes

**NOTE:** There are caveats to the PENC, PTOK and PTYP fields. Please contact your Client Success Manager for further details.

### Mode E

This mode designates an error has occurred and is returned to the merchant in the RIS response.

**NOTE:** If you are a Payment Processor using Kount Central, you have access to two additional modes available:

### Mode J (for Kount Central merchants only)

This is a simplified RIS call. It only performs Fraud Manager threshold evaluation for the processor's specified customer, and does not include Portfolio Manager Rule evaluation or calculation of a Kount Score. This gives Mode J the advantage of increased performance.

### Mode W (for Kount Central merchants only)

This is basically a standard Mode Q with Mode J response appended to the end. Thresholds are evaluated in addition to Portfolio Manager rules. Mode W has the same input requirements as mode Q, with the addition of CUSTOMER\_ID. In a Mode W, the threshold decision/response is appended to the Mode Q decision/response. It is the responsibility of the Processor to evaluate both decisions in a Mode W and take appropriate action. Please see your Merchant Services representative for more information.

**NOTE:** **Appendix C** lists all warning and error codes.

## RIS Payment Types

Kount supports multiple payment types and depending upon the payment type chosen by the customer certain payment tokens are required. If the PayPal Payer ID or Google Checkout Account ID is not sent in the inquiry mode, then it must be sent in the update mode related to the transaction otherwise the order details will not be displayed in the Agent Web Console.

Kount can add arbitrary payment types rapidly to support an international market. To view the current list of supported payment types, use the API endpoint:

<https://api.kount.net/rpc/support/payments.html>

See the API Specification Guide for further details.

The content of the endpoint is generated in HTML but changing the extension to .xml or .json will produce content in those formats.

## RIS Payment Encryption Options

When using the Kount SDK all credit card information, by default, uses the KHASH encryption method where the credit card information is irreversibly hashed prior to transmission from the merchant to Kount.

When using the JAVA or .Net SDKs (due to the compiled nature of the languages) KHASH is the only option for payment encryption. JAVA or .Net environments must use a direct post (outside of the SDK) method if MASK encryption is chosen.

If not using the SDK the following encryption options are available.

**KHASH** Kount proprietary hash used to hash the credit card number before passing it to Kount. The hashing algorithm source code can be found in each one of the SDKs or can be requested from Kount.

PTYP=CARD PENC=KHASH

Output - BIN + 14 alpha-numeric characters.

Example - 123456A12C34E56G7DFG

**MASK** Ability to pass the first six and last four of a credit card filled in with XXXs. PENC=MASK is only valid with PTYP=CARD.

PTYP=CARD PENC=MASK

Output BIN + 10 capital "X" characters + Last 4 of credit card.

Example - 123456XXXXXXXXXX7890

**Note:** the "X" characters must all be capital "X".

**Important:** The above example value is just for purposes of illustration. The PTOK should be the same length as the original card number. You can use the card number with the first 6 and last 4 numerals present and the rest of the numbers in the card masked by "Xs" but the number of characters must be the same as those of the actual card number.

## Shopping Cart Data

Each RIS request must be submitted with a minimum of one shopping cart item. While other RIS data is entered in as key-value pairs, shopping cart items must be submitted as an array. Each item is an index in the array, and each index must contain the following five attributes:

Attribute	Type	Size	Description	Example
<b>PROD_TYPE[ ]</b>	String	1-255	High level description of the item.	TV
<b>PROD_ITEM[ ]</b>	String	1-255	Typically, the SKU number for the item.	SKU-2385-42P
<b>PROD_DESC[ ]</b>	String	0-255	Specific description of the item.	42 Inch Plasma
<b>PROD_QUANT[ ]</b>	Integer	Long	The quantity of the item being purchased.	1
<b>PROD_PRICE[ ]</b>	Integer	Long	Price per unit item, displayed in lowest currency factor.	75890

## User Defined Fields

Kount provides a way for merchants to include additional information related to their business that may not be a standard field in Kount by creating user defined fields. UDFs are created in the Agent Web Console by browsing to the Fraud Control tab and clicking on User Defined Fields. Once you have defined the UDF in the Agent Web Console you will be able to pass this data into Kount via an array called UDF as key-value pairs where the label is the key and the data passed in is the value. The maximum number of UDFs that can be created is 500, and response time for evaluating transactions will degrade as more UDFs are added. There are four data types available for user defined fields.

**NOTE:** UDF labels can be up to 28 characters in length and cannot begin with a number.

### UDF Data Types

1. **Number:** This UDF type is not eligible for VIP List options or for Velocity tracking; however, it is available for use in the Kount Rules Engine.
2. **Alpha-Numeric:** This UDF type is eligible for VIP List Management, as well as for tracking Persona Velocities within the Kount Rules Engine. Separate VIP Lists for the values being passed in these UDFs may be created. Additionally, Persona Velocity for a specific value contained within the UDF may be tracked.
3. **Date:** This UDF type is not eligible for VIP List options or for Velocity tracking; however, it is available for use in the Kount Rules Engine.
4. **Amount:** This UDF type is not eligible for VIP List options or for Velocity tracking; however, it is available for use in the Kount Rules Engine.



Attribute	Size	Description	Example
UDF[ <b>NUMERIC_LABEL</b> ]=value	1-255	Whole numbers and decimal points.	UDF[FREQUENCY]=107.9
UDF[ <b>ALPHA_NUMERIC_LABEL</b> ]=value	1-255	Letters, numbers or both.	UDF[COUPON]=BUY11
UDF[ <b>DATE_LABEL</b> ]=value	1-20	Formatted as YYYY-MM-DD or YYYYMM- DD HH:MI:SS	UDF[FIRST_CONTACT]=2012-04-10 17:00:01
UDF[ <b>AMOUNT_LABEL</b> ]=value	1-255	Integers only, no decimal points, signs or symbols.	UDF[BALANCE]=1100

## RIS Response

After a merchant has posted RIS information to Kount, a key-value pair string will be returned to the merchant. The RIS response format will be the same that was specified in the RIS post, with the default being named pairs. Each data field must be invoked by 'getter' methods on the response object found in the SDK. The merchant can then use the RIS response to automate the order management process by keying off the AUTO field and can utilize any of the additional data returned for internal processing.

An important use of the RIS response is the ability to verify if the Data Collector process was successful and view any warnings or errors that were made during the RIS post from the merchant. The KAPT field is used to determine if the Data Collector process was successful. KAPT=Y means successful, KAPT=N means the process was unsuccessful. All warnings will be displayed in the response and if errors do occur the RIS response will be returned with a MODE=E.

**Appendix C** lists all warning and error codes.

Kount recommends at the minimum the following methods/functions used in the RIS response:

RIS response Java method examples:

MERC	getMerchantId()
MODE	getMode()

TRAN	getTransactionId()
ORDR	getOrderNumber()
AUTO	getAuto()
SCOR	getScore()
KAPT	getKaptcha()
SITE	getSite()
WARNING	hasWarnings()
	getWarningCount()
	getWarnings()
ERROR	hasErrors()
	getErrorCount()
	getErrors()
	getErrorCode()

**Appendix D** lists examples of RIS Responses.

## Predictive Response - Test environment only

Predictive Response is a mechanism that can be used by Kount merchants to submit test requests and receive back predictable RIS responses. This means that a merchant, in order to test RIS, can generate a particular request that is designed to provide one or more specific RIS responses and/or errors. The predictive response inquiries are not actual RIS inquiries, which means the data will never be submitted to the database and will not be displayed in the Agent Web Console.

The primary reason for having Predictive Response functionality is to diagnose error responses being received from RIS. For instance, a merchant may receive a large number of different error codes after submitting a RIS request. Most of these errors can be reliably reproduced by passing malformed,

missing, or additional data in the RIS request. However, some of the errors are extremely difficult or even impossible to reproduce through simple means. There is no way to re-create these errors in a systematic or predictable fashion using RIS request input, rules, and/or Data Collector.

In addition, the merchant may wish to invoke a specific response in order to understand how their respective OMS will manage certain responses or data returned in the response. Predictive Response allows merchants to submit requests designed to return exact responses including errors. An example would be if a merchant wanted to submit a RIS request that would return the very specific responses SCOR=71, AUTO=E, and GEOX=CA.

Predictive Responses are created using the UDF (User Defined Fields) override option. These User Defined Fields do not need to be created through the Agent Web Console, they can be simply passed in as additional fields in the Predictive Response RIS inquiry.

To create a Predictive Response RIS Inquiry, the request must contain a specific email parameter in the EMAL field: [predictive@Kount.com](mailto:predictive@Kount.com).

All other elements of the RIS request you submit must be valid elements and contain the minimum set of required RIS keys.

Below is the hard coded default reply:

```
'TRAN' => '6V100HV36D98',
'AUTO' => 'A',
'SCOR' => 50,
'GEOX' => 'US',
'BRND' => 'VISA',
'REGN' => 'US_ID',
'NETW' => 'A',
'CARDS' => 2,
'DEVICES' => 1,
'EMAILS' => 3,
'VELO' => 4,
'VMAX' => 4,
'SITE' => 'DEFAULT',
'DEVICE_LAYERS' => 'D67BC18BAD.6EF0902E51.8C96FA9E7B.61FD602D96.940A6D1454',
'FINGERPRINT' => '00482B9BED15A272730FCB590FFEBDDD',
'TIMEZONE' => 420,
'REGION' => 'ID',
'COUNTRY' => 'US',
'PROXY' => 'N',
'JAVASCRIPT' => 'Y',
'FLASH' => 'Y',
'COOKIES' => 'Y',
```

```

'HTTP_COUNTRY' => 'US',
'LANGUAGE' => 'EN',
'MOBILE_DEVICE' => 'N',
'MOBILE_TYPE' => "",
'MOBILE_FORWARDER' => 'N',
'VOICE_DEVICE' => 'N',
'PC_REMOTE' => 'N',
'REASON_CODE' => "",
'MASTERCARD' => "",
'DDFS' => '2013-07-19',
'DSR' => '1080x1920',
'UAS' => 'Mozilla/5.0 (X11; Linux x86_64) AppleWebKit/537.31 (KHTML, like Gecko)
Chrome/26.0.1410.63 Safari/537.31',
'BROWSER' => 'Chrome 26.0.1410.63',
'OS' => 'Linux x86_64',
'PIP_IPAD' => "",
'PIP_LAT' => "",
'PIP_LON' => "",
'PIP_COUNTRY' => "",
'PIP_REGION' => "",
'PIP_CITY' => "",
'PIP_ORG' => "",
'IP_IPAD' => '10.0.0.1',
'IP_LAT' => '43.6091',
'IP_LON' => '-116.2097',
'IP_COUNTRY' => 'US',
'IP_REGION' => 'Idaho',
'IP_CITY' => 'Boise',
'IP_ORG' => 'Company Inc.'

```

Note that the MASTERCARD field is used to return the MasterCard EMS Score if the 3rd party callout was performed as part of the RIS evaluation. If the callout was not performed, the field has a null value.

To pass in a request that will result in a specific response, use one or more UDF overrides to trigger a mock RIS response.

The basic syntax is: **UDF[~K!\_label]="foo"**

~K!\_ is the prefix, label is the desired field for which you want a response, such as **SCOR** or **ERRO**, and after the equal sign (=), enter the specific value you want returned. The ~K!\_ prefix is required to trigger the **UDF** to become a predictive response field.

#### Example 1:

You want to send in a request that will result in a Kount Score of **18**, an Auto Decision of **E**, and a **601 System Error** code.

**Request:**

```
UDF[~K!_SCOR]=18
UDF[~K!_AUTO]=E
UDF[~K!_ERRO]=601
```

**Response:**

```
SCOR=18
AUTO=E
ERRO=601
```

**Example 2:**

You want to pass in a request that will result in a Kount Score of 42, an Auto Decision of Decline and a GEOX of Nigeria.

**Request:**

```
UDF[~K!_SCOR]=42
UDF[~K!_AUTO]=D
UDF[~K!_GEOX]=NG
```

**Response:**

```
SCOR=42
AUTO=D
GEOX=NG
```

You can use **UDF** overrides to pass in an unlimited number of mock requests but all of the fields you pass in that are not overrides must be valid. In the response, all of the other elements, besides the **UDF** overrides will be the default values, including **MODE** and **MERC**.

## Kount Event Notification System (ENS) and Kount Application Programming Interface (API)

Kount allows a great deal of control over fraud management through a variety of methods including the risk score, rules to determine risk thresholds, VIP lists, and many others that are administered through the Agent Web Console. Kount also provides the ability for interaction for some functions without the need of the Agent Web Console by utilizing the Event Notification System (ENS) and the Application Programming Interface (API).

Specification guides for the ENS and API can be requested from your account manager or access the API endpoints list by pointing your browser to <https://api.kount.net/rpc/list.html>.

## RIS API Keys

To preserve the security of RIS data, merchants must authenticate to Kount using an API Key when submitting RIS requests. API Keys are created within the Agent Web Console. Additional coding examples can be found in the SDK Guide.

**API Keys** are used to track and control permissions to Kount **APIs** and **RIS**. Rather than creating separate certificates for APIs and RIS, a single API Key can be used to manage both.

**NOTE:** For Kount Central customers, an API Key can manage APIs, RIS, and Kount Central permissions.

To open the API Key's page, click Admin in the main menu and then click API Keys.

By default, no API Keys exist when the API Keys page is opened for the first time. To create a key, click the **Create API Key** button at the lower right of the table.

The **Create API Key** dialog box appears.

1. **Key Name:** Give the new key a name.
2. **Key Permissions:** Select RIS, API, or both.
3. **Create API Key:** Click this button to create the key.

**NOTE:** If the merchant is a Kount Central customer, a third check box for Kount Central will be present under Key Permissions and available to be selected.

Once the new key is created, it appears on the API Keys page.

1. **Name:** The name of the newly created key appears here.

2. **Permissions:** The permissions given to the key during creation appear here.
3. **Key:** A truncated version of the key value appears here. Do not attempt to copy the key value from this field. Use the **Copy Key** button.
4. **Created:** The date and time the key was created appears here.
5. **Revoke:** Click the "gears" and then click Revoke to revoke the key.
6. **Create API Key:** Click this button to create a new key. You can create as many keys as you want.
7. **Success Message:** Like any other success message, click on this green box to close it.

Once you have created the API Key in the Agent Web Console, send the custom header request to Kount. The value of the header is the API Key generated in the Agent Web Console. Below are examples in PHP, .NET, and Java. For instance, the actual header in PHP is:

```
array("X-Kount-API-Key: {$this->apiKey}");
```

#### PHP settings.initial

```
$ch = curl_init();
curl_setopt($ch, CURLOPT_HTTPHEADER,
array("X-Kount-API-Key: {$this->apiKey}"));
```

#### .NET App.config

```
HttpWebRequest webReq = (HttpWebRequest)WebRequest.Create(this.url);
webReq.Headers["X-Kount-API-Key"] = this.apiKey;
```

#### Java

```
URL url = new URL(this.risServerUrl);
HttpsURLConnection urlConn = (HttpsURLConnection) url.openConnection();
urlConn.setRequestProperty("X-Kount-API-Key", getApiKeyData());
```

## FAQ Risk Inquiry Service

### General

**Q:** Do RIS requests need to be initiated from the same server as the Data Collector process?

No, they can be autonomous, but the RIS session ID must be the same session ID sent from the DC process for that transaction.

**Q:** How soon does the RIS request need to be sent after the Data Collector?

There is no set time though the sooner the better.

**Q:** How do I code for the PayPal payment type?

On the initial RIS inquiry call (MODE=Q), specify the payment type as PayPal (PTYP=PYPL). With this method of coding for PayPal the order details will not be displayed in the Agent Web Console until after the PayPal Payer ID has been returned to Kount in the subsequent RIS update call (MODE=U).

**Q:** Why am I not seeing any log files in the path I specified?

Check your configuration file and make sure the logger is set to the desired logging level.



## Appendix A

**NOTE:** For backward compatibility, the Data Collector feature of Kount is referenced in the commented code and code samples in this appendix as Kaptcha. Any time you see a mention of Kaptcha below, it is a reference to the the Data Collector Service.

### PHP example of the Phone-to-Web logo.htm script

```
<?php
/**
 * Example analyzer re-direct script.
 *
 *
 * <p>Expects to be called with 2 GET mode query parameters:
 * <dl>
 * <dt>m</dt>
 * <dd>Company Merchant ID</dd>
 * <dt>s</dt>
 * <dd>Unique customer session ID</dd>
 * </dl>
 *
 */
// -- BEGIN CONFIGURATION --
/**
 * Hostname of Company endpoint.
 * MUST BE SET BY MERCHANT BEFORE USE
 *
 * @var string
 */
$COMPANY_SERVER = null;
/**
 *
 * List of ip addresses in dotted quad format (eg "127.0.0.1") that should
 * not be redirected to the Company. These IP addresses are the public facing IP
 * addresses that have been assigned by the merchant service provider.
 *
 * @var array
 */
$EXCLUDED_IPS = array();
// -- END CONFIGURATION --
function send_empty_page () {
echo '<html><head></head><body></body></html>';
}
// validate configuration
```

```

if (!isset($COMPANY_SERVER)) {
    error_log("COMPANY_SERVER must be defined in " . __FILE__);
    send_empty_page();
    exit();
}
if (!isset($EXCLUDED_IPS) || !is_array($EXCLUDED_IPS)) {
    error_log("EXCLUDED_IPS must be defined in " . __FILE__);
    send_empty_page();
    exit();
}
// validate input
$MERC = rawurlencode($_GET['m']);
$SESS = rawurlencode($_GET['s']);
// process request
$remoteIP = $_SERVER['REMOTE_ADDR'];
if (false !== array_search($remoteIP, $EXCLUDED_IPS)) {
    // current visitor is in the exclude list
    send_empty_page();
} else {
    // Redirect the browser
    header("HTTP/1.1 302 Found");
    header("Location: https://{ $COMPANY_SERVER }/logo.htm?m={$MERC}&s={$SESS}");
}

```

## C# example of the Phone-to-Web logo.htm script

```

C#
using System;
using System.Data;
using System.Configuration;
using System.Collections;
using System.Web;
using System.Web.Security;
using System.Web.UI;
using System.Web.UI.WebControls;
using System.Web.UI.WebControls.WebParts;
using System.Web.UI.HtmlControls;
namespace KaptchaExample
{
    /// <summary>
    /// Kaptcha redirect code sample.
    ///
    /// In addition to the basic redirect functionality required by the
    /// specification this class allows configuration of an "exclude list"
    /// of IP addresses that should NOT be forwarded on to the Company's Kaptcha

```

```

/// server. This non-typical use case can arise when a Merchant is doing
/// phone-to-web orders in a call center and needs to keep Kaptcha data
/// from those call center orders from reaching the Company.
///
/// 2011 Company, Inc. All Rights Reserved.
/// </summary>
public partial class _Default : System.Web.UI.Page
{
    /// <summary>
    /// Kaptcha URL provided by the Company. Check with your
    /// representative for the correct value.
    /// </summary>
    protected const string KaptchaUrl = "https://tst.kaptcha.com";
    /// <summary>
    /// Your merchant ID goes here. Check with your representative
    /// for the correct value.
    /// </summary>
    protected const string MerchantId = "999999";
    /// <summary>
    /// A list of excluded IP addresses. This should be populated with
    /// a list of the IP addresses to be excluded.
    /// </summary>
    protected IList ExcludedIps = new ArrayList();
    /// <summary>
    /// The code to be executed on page load.
    /// </summary>
    /// <param name="sender"></param>
    /// <param name="e"></param>
    protected void Page_Load(object sender, EventArgs e)
    {
        this.LoadExcludedIps();
        string ClientIp = Request.UserHostAddress;
        if (this.ExcludedIps.Contains(ClientIp))
        {
            // The client is on the exclusion list. Might be a good
            // idea to log this here.
        }
        else
        {
            Response.Redirect(this.KaptchaUrl + "/logo.htm?m=" + MerchantId +
                "&s=" + HttpContext.Current.Session.SessionID);
        }
    }
    /// <summary>
    /// Load up the IP addresses to be excluded here.
    /// </summary>
    protected void LoadExcludedIps()

```

```

{
    // Add the list of IP addresses here...
    // Ideally these should not be hard coded but read from a
    // config file. For brevity and clarity we'll just do the
    // following. Same with the hard coded merchant ID and
    // Kaptcha endpoint URL.
    ExcludedIps.Add("127.0.0.1");
    ExcludedIps.Add("10.0.0.1");
    // etc...

}
}
}

```

## Java example of the Phone-to-Web logo.htm script

```
package com.company.example;
```

```

import java.io.IOException;
import java.io.PrintWriter;
import java.net.URLEncoder;
import java.util.Arrays;
import java.util.List;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.ServletConfig;
import javax.servlet.ServletException;
import javax.servlet.UnavailableException;

```

```

/**
 * Example Kaptcha redirect script.
 *
 * <p>In addition to the basic redirect functionality required by the
 * specification this servlet allows configuration of an "exclude list" of ip
 * addresses that should NOT be forwarded on to the Kaptcha server. This
 * non-typical use case can arise when a Merchant is doing phone-to-web orders
 * in a call center and needs to keep Kaptcha data from those call center
 * orders from reaching the Company.
 *
 * <p>The servlet uses ServletConfig provided configuration parameters to
 * specify these settings:
 * <dl>
 *   <dt>MERC</dt>

```

```

* <dd>REQUIRED</dd>
* <dd>Merchant ID assigned by the Company</dd>
*
* <dt>KAPTCHA_URL</dt>
* <dd>REQUIRED</dd>
* <dd>URL to the Kaptcha endpoint</dd>
* <dd>The proper values for testing and production will be provided to you
* during the boarding process by your Boarding Manager.</dd>
*
* <dt>EXCLUDE_IPS</dt>
* <dd>OPTIONAL</dd>
* <dd>Comma separated list of IP addresses in dotted-quad notation to
* exclude from the Kaptcha redirect.</dd>
* </dl>
*
* <p>See your servlet container documentation for the proper file and format to
* provide ServletConfig parameters at deploy time.
*
* @copyright 2011 Company Inc.
*/
public class LogoHtmServlet extends HttpServlet {
/**
 * Empty html response body.
 */
static final String EMPTY_HTML = "<html><head></head><body></body></html>";
/**
 * Merchant ID assigned by the Company.
 * Set via the MERC parameter in the ServletConfig.
 */
protected String merc;
/**
 * URL to the Kaptcha endpoint.
 * Set via the KAPTCHA_URL parameter in the ServletConfig.
 */
protected String kaptchaUrl;
/**
 * List of ip addresses in dotted quad format (eg "127.0.0.1") that should
 * not be redirected to the real Kaptcha server.
 * Set via the EXCLUDE_IPS parameter in the ServletConfig. EXCLUDE_IPS
 * should be a comma separated list of ip addresses to exclude (eg
 * "127.0.0.1,127.0.0.2,127.0.0.3")
 */
protected List<String> excludedIps;
/**
 * Initialize the servlet.
 *
 * @param config the ServletConfig object that contains configuration

```

```

* information for this servlet
* @throws ServletException if an exception occurs that interrupts the
* servlet's normal operation
* @throws UnavailableException if required configuration parameters are not
* supplied
*/
public void init (ServletConfig config) throws ServletException {
    super.init(config);
    this.merc = config.getInitParameter("MERC");
    if (null == this.merc) {
        throw new UnavailableException(
            "Missing required servlet config parameter MERC");
    }
    this.kaptchaUrl = config.getInitParameter("KAPTCHA_URL");
    if (null == this.merc) {
        throw new UnavailableException(
            "Missing required servlet config parameter KAPTCHA_URL");
    }
    final String exclude = config.getInitParameter("EXCLUDE_IPS");
    if (null != exclude) {
        this.excludedIps = Arrays.asList(exclude.split(", "));
    }
} //end init
/**
 * Process an HTTP GET request.
 *
 * @param req HttpServletRequest that encapsulates the request to the
 * servlet
 * @param resp HttpServletResponse that encapsulates the response from the
 * servlet
 * @throws IOException if detected when handling the request
 * @throws ServletException if the request could not be handled
 */

```

```

public void doGet (HttpServletRequest request, HttpServletResponse response)
    throws ServletException, IOException {

```

```

    final String remoteIP = request.getRemoteAddr();
    if (null != this.excludedIps &&
        this.excludedIps.contains(remoteIP)) {
        // current visitor is in the exclude list
        this.getServletContext().log(
            "Excluding " + remoteIP + " from Katptcha processing");
        // return an empty html response instead of redirecting
        response.setStatus(HttpServletResponse.SC_OK);
        response.setContentType("text/html");
        final PrintWriter writer = response.getWriter();
    }
}

```

```
writer.print(EMPTY_HTML);
writer.flush();
} else {
    // normal processing path.
    // get the id of the current session
    final String sess = request.getSession().getId();
    // construct the full URL to the Kaptcha server
    final String url = this.kaptchaUrl +
        "?m=" + URLEncoder.encode(this.merc, "UTF-8") +
        "&s=" + URLEncoder.encode(sess, "UTF-8");
    // Redirect the browser to Kaptcha
    response.setStatus(HttpServletResponse.SC_MOVED_TEMPORARILY);
    response.sendRedirect(url);
}
} //end doGet
} //end LogoHtmServlet
```

## Appendix B

### RIS Required Inquiry Keys

RIS Required Inquiry Key	Description	Max Field Length	Source	Required
<b>ANID</b>	Automatic Number Identification (ANI) submitted with order. If the ANI cannot be determined, merchant must pass 0123456789 as the ANID. This field is only valid for MODE=P RIS submissions.	32	Merchant	MODE=P
<b>AUTH</b>	Authorization Status returned to merchant from processor. Acceptable values for the AUTH field are 'A' for Authorized or 'D' for Decline. In orders where AUTH=A will aggregate towards order velocity of the persona while orders where AUTH=D will decrement the velocity of the persona.	1	Merchant	MODE=Q MODE=P
<b>CURR</b>	Country of currency submitted on order	3	Merchant	MODE=Q MODE=P
<b>EMAL</b>	Email address submitted by customer. If a call center is accepting orders on behalf of customers and the customer does not provide an email address, <a href="mailto:noemail@Kount.com">noemail@Kount.com</a> must be submitted. Kount currently supports 2 bit character sets. Unicode character sets are not supported at this time.	64	Merchant	MODE=Q
<b>IPAD</b>	Dotted Decimal IPv4 address that the merchant sees coming from the customer. If MODE=P or the Phone to Web exclusion is used, the IPAD field should be hard coded to be 10.0.0.1. Other than MODE=P or Phone to Web, the IPAD field should never be an anonymous IP address (i.e. 10.X.X.X or 192.168.X.X). IPv6 Addresses are not currently supported. Please use the IPv4 dual stack equivalent or pass 10.0.0.1 in the IPAD field if an IPv4 address is not available.	16	Merchant	MODE=Q MODE=P
<b>MACK</b>	Merchants acknowledgement to ship/process the order. The MACK field must be set as 'Y' if persona data is to be collected to strengthen the score.	1	Merchant	MODE=Q MODE=P
<b>MERC</b>	Merchant ID assigned to the merchant by Kount.	6	Merchant	MODE=Q MODE=P MODE=X MODE=U
<b>MODE</b>	Specifies what mode type the RIS post is: MODE=Q MODE=P	1	Merchant	MODE=Q MODE=P MODE=X



RIS Required Inquiry Key	Description	Max Field Length	Source	Required																				
	MODE=X MODE=U			MODE=U																				
PROD_DESC	Shopping cart data array attribute for specific description of the item being purchased.  <b>Note:</b> Product Descriptions should not contain any markup or unicode values. Non-alpha numeric characters will increment the character count exponentially depending on the special character used. RIS Post Limits: There is a 4,000 character limit that makes up an entire RIS post. Should the RIS post exceed the 4k limit, an HTTP standard error will be returned, typically an error code: 413 - Request Entity Too Large	256	Merchant	MODE=Q MODE=P																				
PROD_ITEM	Shopping cart data array attribute typically the SKU for an item; this value should be free from any markup or Unicode values. This value should be passed as plain text.	256	Merchant	MODE=Q MODE=P																				
PROD_PRICE	Shopping cart data array attribute for the price of the single item. Must be a natural number including 0.	no max	Merchant	MODE=Q MODE=P																				
PROD_QUANT	Shopping cart data array attribute signifying the quantity of the item being purchased	no max	Merchant	MODE=Q MODE=P																				
PROD_TYPE	Shopping cart data array attribute high level or generalized description of the item added to the shopping cart; this value should be free from any markup or Unicode values. This value should be passed as plain text.	256	Merchant	MODE=Q MODE=P																				
PTOK	Payment token submitted by merchant for order (credit card, payer ID, routing/transit, MICR, and account number). When using KHASH the BIN is extracted from the PTOK value, Last4 may be passed independently - it is lost during KHASH.	32	Merchant	MODE=Q MODE=P																				
PTYP	Payment Type submitted by merchant: <table><tr><th>PTYP Value</th><th>Description</th></tr><tr><td>APAY</td><td>Apple Pay</td></tr><tr><td>CARD</td><td>Credit Card</td></tr><tr><td>PYPL</td><td>Paypal</td></tr><tr><td>CHEK</td><td>Check</td></tr><tr><td>NONE</td><td>None</td></tr><tr><td>GDMP</td><td>Green Dot Money Pack</td></tr><tr><td>GOOG</td><td>Google Checkout</td></tr><tr><td>BLML</td><td>Bill Me Later</td></tr><tr><td>GIFT</td><td>Gift Card</td></tr></table>	PTYP Value	Description	APAY	Apple Pay	CARD	Credit Card	PYPL	Paypal	CHEK	Check	NONE	None	GDMP	Green Dot Money Pack	GOOG	Google Checkout	BLML	Bill Me Later	GIFT	Gift Card	varies	Merchant	MODE=Q MODE=P
PTYP Value	Description																							
APAY	Apple Pay																							
CARD	Credit Card																							
PYPL	Paypal																							
CHEK	Check																							
NONE	None																							
GDMP	Green Dot Money Pack																							
GOOG	Google Checkout																							
BLML	Bill Me Later																							
GIFT	Gift Card																							

RIS Required Inquiry Key	Description		Max Field Length	Source	Required																						
	<table><tr><td>BPAY</td><td>BPAY</td></tr><tr><td>NETELLAR</td><td>Netellar</td></tr><tr><td>GIROPAY</td><td>GiroPay</td></tr><tr><td>ELV</td><td>ELV</td></tr><tr><td>MERCADE_PAGO</td><td>Mercade Pago</td></tr><tr><td>SEPA</td><td>Single Euro Payments Area</td></tr><tr><td>INTERAC</td><td>Interac</td></tr><tr><td>POLI</td><td>POLi</td></tr><tr><td>SKRILL</td><td>Skrill/Moneybookers</td></tr><tr><td>SOFORT</td><td>Sofort</td></tr><tr><td>TOKEN</td><td>Token</td></tr></table>		BPAY	BPAY	NETELLAR	Netellar	GIROPAY	GiroPay	ELV	ELV	MERCADE_PAGO	Mercade Pago	SEPA	Single Euro Payments Area	INTERAC	Interac	POLI	POLi	SKRILL	Skrill/Moneybookers	SOFORT	Sofort	TOKEN	Token			
BPAY	BPAY																										
NETELLAR	Netellar																										
GIROPAY	GiroPay																										
ELV	ELV																										
MERCADE_PAGO	Mercade Pago																										
SEPA	Single Euro Payments Area																										
INTERAC	Interac																										
POLI	POLi																										
SKRILL	Skrill/Moneybookers																										
SOFORT	Sofort																										
TOKEN	Token																										
SESS	Unique <a href="#">Session ID</a>		32	Merchant	MODE=Q MODE=P MODE=X MODE=U																						
SITE	Website identifier of where order originated. Value must exist inside of the Agent Web Console prior to post.		8	Merchant	MODE=Q MODE=P																						
TOTL	Total amount in currency submitted in lowest currency factor. e.g. USD = pennies (\$1.00 = 100). TOTL must be a natural number including 0.		15	Merchant	MODE=Q MODE=P																						
TRAN	Transaction ID required for update calls to Kount. MODE=U and MODE=X			Kount	MODE=U MODE=X																						
VERS	Specifies the version of Kount built into SDK, must be supplied by merchant if not using the SDK		4	Kount-Merchant	MODE=Q MODE=P MODE=X MODE=U																						

## Kount Central Merchants Only (Payment Processors)

RIS Required Inquiry Key	Description	Max Field Length	Source	Required
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<b>CUSTOMER_ID</b>	A unique ID assigned to a Gateway Customer when the customer is created by a Payment Processor	32 (string)	Merchant	MODE=J MODE=W
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## RIS Optional Keys

<b>RIS Optional Inquiry Key</b>	<b>Description</b>	<b>Max Field Length</b>	<b>Source</b>
<b>ANID</b>	Automatic Number Identification (ANI) submitted with order. If the ANI cannot be determined, merchant must pass 0123456789 as the ANID. This field is optional for MODE=Q RIS submissions.	32	Merchant
<b>AVST</b>	Address Verification System Street verification response returned to merchant from processor. Acceptable values are 'M' for match, 'N' for no-match, or 'X' for unsupported or unavailable.	1	Merchant
<b>AVSZ</b>	Address Verification System Zip Code verification response returned to merchant from processor. Acceptable values are 'M' for match, 'N' for no-match, or 'X' for unsupported or unavailable.	1	Merchant
<b>B2A1</b>	Billing street address - Line 1	256	Merchant
<b>B2A2</b>	Billing street address - Line 2	256	Merchant
<b>B2CC</b>	Billing address - Country Code	2	Merchant
<b>B2CI</b>	Billing address - City	256	Merchant
<b>B2PC</b>	Billing address - Postal Code	20	Merchant
<b>B2PN</b>	Bill-to-phone Number	32	Merchant
<b>B2ST</b>	Billing address - State/Province	256	Merchant
<b>BPREMISE</b>	Bill-to Premise address for UK (Required for 192.com)	256	Merchant

<b>BSTREET</b>	Bill-to street address for UK (Required for 192.com)	256	Merchant
<b>CASH</b>	Total cash amount in currency submitted	15	Merchant
<b>CVVR</b>	Card Verification Value response returned to merchant from processor. Acceptable values are 'M' for Match, 'N' for no-match, or 'X' unsupported or unavailable.	1	Merchant
<b>DOB</b>	Date of Birth   Format YYYY-MM-DD	YYYY-MM-DD	Merchant
<b>EPOC</b>	<p>The EPOC date is a special “timestamp” value that represents the date a customer account was created. The EPOC date is found on the Transaction Details page under the Customer section in the field called <b>Created</b>: The timestamp is expressed as a number such as 1422377956. The timestamp value represents the number of seconds elapsed since midnight 01/01/1970. Reference: <a href="http://www.epochconverter.com/">http://www.epochconverter.com/</a></p> <p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>The <b>Cust. ID</b>: field is populated on the Transaction Details page using the UNIQ key.</li> <li>If EPOC is not sent in the RIS call, the default time will be the time of the transaction.</li> </ul>	10	Merchant
<b>FRMT</b>	Specifies the format of the RIS response if not using SDK, XML, JSON, YAML	4	Merchant
<b>GENDER</b>	M or F	1	Merchant
<b>LAST4</b>	Last 4 numbers of the Credit Card Value	4	Merchant
<b>NAME</b>	Name submitted with the order. Kount currently supports 2 bit character sets. Unicode character sets are not supported at this time.	64	Merchant
<b>ORDR</b>	Merchant's Order Number	32	Merchant
<b>S2A1</b>	Shipping Street address - Line 1	256	Merchant
<b>S2A2</b>	Shipping Street address - Line 2	256	Merchant
<b>S2CC</b>	Shipping Address Country Code	2	Merchant
<b>S2CI</b>	Shipping Address City	256	Merchant
<b>S2EM</b>	Shipping Address - Email address of Recipient	64	Merchant
<b>S2NM</b>	Shipping Address - Name of Recipient	64	Merchant

<b>S2PC</b>	Shipping Address - Postal Code	20	Merchant
<b>S2PN</b>	Ship-to phone number	32	Merchant
<b>S2ST</b>	Shipping Address - State/Province	256	Merchant
<b>SHTP</b>	Shipping type. The following nomenclature is expected for shipping types to be passed to Kount. SHTP: Same Day = SD Next Day = ND Second Day = 2D Standard = ST	2	Merchant
<b>SPREMISE</b>	Ship-to premise address for UK (Required for 192.com)	256	Merchant
<b>SSTREET</b>	Ship-to street address for UK (Required for 192.com)	256	Merchant
<b>UNIQ</b>	Merchant-assigned, alpha-numeric account number for consumer, which maps to customer ID.	32	Merchant
<b>UAGT</b>	Customer User-Agent HTTP header	1024	Merchant

## RIS Response Keys

RIS Response Keys	Description	Char Limit	Example Data	Source
<b>AUTO</b> (Displayed as a STAT in Agent Web Console)	Auto-decision response code: <ul style="list-style-type: none"> <li>• A - Approve</li> <li>• D - Decline</li> <li>• R - Review</li> <li>• E - Escalate</li> </ul>	1	R	Kount
<b>BROWSER</b>	Web Browser	64	Chrome 26.0.1410.63	Kount
<b>BRND</b>	Brand of credit card used when payment type is 'credit card'	4	DISC	Kount
<b>CARDS</b>	Total number of credit cards associated to persona as seen by Kount	Number	39	Kount
<b>COOKIES</b>	A flag to indicate if the device placing order has 'cookies' enabled or not	1	Y/N	Kount
<b>COUNTERS_TRIGGERED</b>	Number of unique counter names triggered during rules evaluation	Number	1	Kount

<b>COUNTER_NAME_X</b>	Name of counter triggered	64	MYCOUNTER	Kount
<b>COUNTER_VALUE_X</b>	Sum of the number of times a counter was triggered	Number	1	
<b>COUNTRY</b>	Two character ISO country code associated with the physical device	2	US	Kount
<b>DDFS</b>	Date Device First Seen	10	2013-08-28	Kount
<b>DEVICE_LAYERS</b>	5 device layers representing the operating system, browser, javascript settings, cookie setting and flash settings. Device layers are used to create the device fingerprint.	55	.1A4B4CF8CF .963B6935DF .61FD602D96 .B602984541 (one continuous string with no spaces)	Kount
<b>DEVICES</b>	Total number of unique devices associated to the persona as seen by Kount	Number	1	Kount
<b>DSR</b>	Device screen resolution	10	1080x1920	Kount
<b>EMAILS</b>	Total number of unique email addresses associated to persona as seen by Kount	Number	1	Kount
<b>ERROR_COUNT</b>	Number of errors merchant RIS post created	N/A	N/A	Kount
<b>ERROR_N</b>	Error code displayed in RIS response	N/A	N/A	Kount
<b>FINGERPRINT</b>	The unique fingerprint of the device placing the order	32	1679091C5A880FAF6FB5E 6087EB1B2DC (one continuous string with no spaces)	Kount
<b>FLASH</b>	A flag to indicate if the device placing order has 'flash' enabled or not	1	Y/N	Kount
<b>GEOX</b>	Persona related country with highest probability of fraud	2	FJ	Kount
<b>HTTP_COUNTRY</b>	User Home country the device owner has set in the device's Control Panel	2	US	Kount
<b>IP_IPAD</b>	IP address of proxy • IP_COUNTRY - Country of proxy IP address (2, US) • IP_LAT - Latitude of proxy IP address (Number, -90.1922) • IP_LON - Longitude of proxy IP address (Number, 38.6312) • IP_CITY - City of proxy IP address (255, Houston) • IP_REGION - State/Region of	16	214.43.99.120 (See bullet points in Description column for further data on Char Limit and Example)	Kount

	proxy IP address (2, TX) • IP_ORG - Owner of IP address or address block (64, Organization Name)			
<b>JAVASCRIPT</b>	A flag to indicate if the device placing order has 'javascript' enabled or not	1	Y/N	Kount
<b>KAPT</b>	Whether or not device data was collected by the Data Collector process	1	Y/N	Kount
<b>KYCF</b>	Know Your Customer Flag	N/A	N/A	Kount
<b>LANGUAGE</b>	The language the device owner has set in the device's Control Panel	2	EN	Kount
<b>LOCALTIME</b>	The local time the device owner has set in the device's Control Panel	20	2013-07-23 22:04:57	Kount
<b>MERC</b>	Kount Merchant ID	number	0555	Merchant
<b>MOBILE_DEVICE</b>	Is the device placing the order of a mobile nature (iPhone; Android; Blackberry; iPad, etc.)	1	Y/N	Kount
<b>MOBILE_FORWARDER</b>	If device is mobile, is it using a forwarder to process the carrier's service	1	Y/N	Kount
<b>MOBILE_TYPE</b>	iPhone; Android; Blackberry; iPad, etc.	32	Blackberry	Kount
<b>MODE</b>	Specifies what mode type the RIS post is, Q, P, X, U, E	1	Q	Merchant
<b>NETW</b>	Riskiest network type associated with persona within the last 14 days • A - Anonymous • H - High School • L - Library • N - Normal • O - Open Proxy • P - Prison • S - Satellite	1	H	Kount
<b>ORDER</b>	Merchant's Order Number	32	b53928bc51	Merchant
<b>OS</b>	Operating System	64	Linux x86_64	Kount
<b>PC_REMOTE</b>	Is the device enabled to use PC Remote software	1	Y/N	Kount
<b>PIP_IPAD</b>	Pierced IP address • PIP_COUNTRY - Country of	16	214.43.99.120 (See bullet points in Description column)	Kount

	<p>pierced IP address (2, US)</p> <ul style="list-style-type: none"> <li>• PIP_LAT - Latitude of pierced IP address (Number, -90.1922)</li> <li>• PIP_LON - Longitude of pierced IP address (Number, 38.6312)</li> <li>• PIP_CITY - City of pierced IP address (255, Houston)</li> <li>• PIP_REGION - State/Region of pierced IP address (2,TX)</li> <li>• PIP_ORG - Owner of pierced IP address or address block (64, Organization Name)</li> </ul>		for further data on Char Limit and Example)	
<b>PROXY</b>	Was a proxy server detected with this order	1	Y/N	Kount
<b>REAS</b>	<p>Reason code associated with AUTO field</p> <ul style="list-style-type: none"> <li>• AMNT - Amount</li> <li>• GEOX - Persona related country with highest probability of fraud</li> <li>• LIST - VIP List (EMail, Card, Address, Gift Card, Device ID)</li> <li>• NETW - Network Type</li> <li>• SCOR - Score</li> <li>• VELO - Sales velocity in a fourteen day time frame</li> <li>• VMAX - Sales velocity in a six hour time frame</li> </ul>	N/A	N/A	Kount
<b>REASON_CODE</b>	Custom Reason Code associated with Rule Action	16	Will display as NONE if no reason_code is defined	Kount
<b>REGN</b>	Region associated to the device location	5	US_TX	Kount
<b>REGION</b>	Region associated to the GEOX location (highest risk location)	2	VN	Kount
<b>RULES_TRIGGERED</b>	Number of rules triggered by the RIS Post	Number	1	Kount
<b>RULE_DESCRIPTION_X</b>	Rule Descriptions associated with RULE_ID_X	255	Rule Description	Kount
<b>RULE_ID_X</b>	Rule ID associated with merchant created rules	Number	1211986	Kount
<b>SCOR</b>	Kount Score	Number	99	Kount
<b>SESS</b>	Unique Session ID	32	faa6370074b53928bc51ef913441e0cd (one continuous string with no spaces)	Merchant



<b>SITE</b>	Website or Merchant ID (processor) identifier of where the order originated	8	DEFAULT	Merchant
<b>STAT</b>	<p>Status returned as AUTO by Kount:</p> <ul style="list-style-type: none"> <li>• A – Approve</li> <li>• C – Change</li> <li>• D – Decline</li> <li>• E – Escalate</li> <li>• R – Review</li> <li>• X, Y – Timed Out</li> </ul> <p>Status is automatically generated when a defined rule runs. Alternatively, status can be manually assigned by an agent.</p>	1	R	Kount
<b>TIMEZONE</b>	The timezone the device owner has set in the device's Control Panel. The value listed represents the number of minutes from Greenwich Meantime. Divide by 60 to get number of hours.	6	360	Kount
<b>TRAN</b>	Kount transaction ID number	12	13KP0ZY4M345	Kount
<b>UAS</b>	User Agent String	1024	Mozilla/5.0 (X11; U; Linux i686; en-US; rv:1.9a8)	Merchant
<b>VELO</b>	Quantity of orders seen from persona within last 14 days. AUTH field must be equal to 'A'.	Number	19	Kount
<b>VERS</b>	Specifies version of Kount built into SDK, must be supplied by merchant if not using the SDK	4	0555	Merchant-Kount
<b>VMAX</b>	Quantity of orders from persona within the most active 6 hour window in last 14 days. AUTH field must be equal to 'A'.	Number	11	Kount
<b>VOICE_DEVICE</b>	Is the device voice activated (related to mobile devices)	1	Y/N	Kount
<b>WARNING_COUNT</b>	Number of warnings merchant RIS post created	N/A	N/A	Kount
<b>WARNING_N</b>	Warning code displayed in RIS response	N/A	N/A	Kount

## Appendix C

## RIS Warning and Error Codes

RIS Response Keys	Warning/Error Label	Brief Description
201	MISSING_VERS	Missing version of Kount, this is built into SDK but must be supplied by merchant if not using the SDK
202	MISSING_MODE	The mode type for post is missing Refer to Risk Inquiry Service Modes section of this document
203	MISSING_MERC	The six digit Merchant ID was not sent
204	MISSING_SESS	The unique session ID was not sent
205	MISSING_TRAN	Transaction ID number
211	MISSING_CURR	The currency was missing in the RIS submission
212	MISSING_TOTL	The total amount was missing
221	MISSING_EMAL	The email address was missing
222	MISSING_ANID	For MODE=P RIS inquiries the caller ID is missing
223	MISSING_SITE	The website identifier that was created in the Agent Web Console ('DEFAULT' is the default website ID) is missing
231	MISSING_PTYP	The payment type is missing. Refer to the RIS Payment Types section of this document for details
232	MISSING_CARD	The credit card information is missing
233	MISSING_MICR	Missing Magnetic Ink Character Recognition string
234	MISSING_PYPL	The PayPal Payer ID is missing

<b>235</b>	MISSING_PTOK	The payment token is missing. Refer to the RIS Payment Types section of this document for details
<b>241</b>	MISSING_IPAD	The IP address is missing
<b>251</b>	MISSING_MACK	The merchant acknowledgement is missing
<b>261</b>	MISSING_POST	The RIS query submitted to Kount contained no data
<b>271</b>	MISSING_PROD_TYPE	The shopping cart data array attribute is missing. Refer to the Shopping Cart Data section of this document for details
<b>272</b>	MISSING_PROD_ITEM	The shopping cart data array attribute is missing. Refer to the Shopping Cart Data section of this document for details
<b>273</b>	MISSING_PROD_DESC	The shopping cart data array attribute is missing. Refer to the Shopping Cart Data section of this document for details
<b>274</b>	MISSING_PROD_QUANT	The shopping cart data array attribute is missing. Refer to the Shopping Cart Data section of this document for details
<b>275</b>	MISSING_PROD_PRICE	The shopping cart data array attribute is missing. Refer to the Shopping Cart Data section of this document for details
<b>301</b>	BAD_VERS	The version of Kount supplied by merchant does not fit the four integer parameter
<b>302</b>	BAD_MODE	The mode type is invalid. Refer to the RIS Inquiry Service Modes section of this document for details
<b>303</b>	BAD_MERC	The six digit Merchant ID is malformed or wrong
<b>304</b>	BAD_SESS	The unique session ID is invalid. Refer to the Data Collector Requirements and Session creation code example sections of this document for details
<b>305</b>	BAD_TRAN	Transaction ID number is malformed
<b>311</b>	BAD_CURR	The currency was wrong in the RIS submission

312	BAD_TOTL	The total amount is wrong. TOTL is the whole number amount charged to customer
321	BAD_EMAL	The email address does not meet required format or is greater than 64 characters in length
322	BAD_ANID	For MODE=P RIS inquiries the caller ID is malformed
323	BAD_SITE	The website identifier that was created in the Agent Web Console ('DEFAULT' is the default website ID) does not match what was created in the Agent Web Console.
324	BAD_FRMT	The specified format is wrong. Format options are key value pairs, XML, JSON, YAML
331	BAD_PTyp	The payment type is wrong. Refer to the RIS Payment Types section of this document for details
332	BAD_CARD	The credit card information is malformed or wrong, test cards do not work in the production environment
333	BAD_MICR	Malformed or improper Magnetic Ink Character Recognition string. Refer to the RIS Payment Types section of this document for details
334	BAD_PYPL	The PayPal Payer ID is malformed or corrupt. Refer to the RIS Payment Types section of this document for details
335	BAD_GOOG	Malformed or improper Google Checkout Account ID string. Refer to the RIS Payment Types section of this document for details
336	BAD_BLML	Malformed or improper Bill Me Later account number. Refer to the RIS Payment Types section of this document for details
337	BAD_PENC	The encryption method specified is wrong
338	BAD_GDMP	The GreenDot payment token is not a valid payment token
339	BAD_HASH	When payment type equals 'CARD', [PTYP=CARD] and payment encryption type equals 'KHASH', [PENC=KHASH] the value must be 20 characters in length.

340	BAD_MASK	Invalid or excessive characters in the PTOK field
341	BAD_IPAD	The IP address does not match specifications
342	BAD_GIFT	The Gift Card payment token is invalid due to invalid characters, null, or exceeding character length
351	BAD_MACK	The merchant acknowledgement must be 'Y' or 'N'
362	BAD_CART	There is a discrepancy in the shopping cart key count and the number of items actually being sent in the cart
371	BAD_PROD_TYPE	The shopping cart data array attribute is missing. Refer to the Shopping Cart Data section of this document for details
372	BAD_PROD_ITEM	The shopping cart data array attribute is corrupt or missing. Refer to the Shopping Cart Data section of this document for details
373	BAD_PROD_DESC	The shopping cart data array attribute is corrupt or missing. Refer to the Shopping Cart Data section of this document for details
374	BAD_PROD_QUANT	The shopping cart data array attribute is corrupt or missing. Refer to the Shopping Cart Data section of this document for details
375	BAD_PROD_PRICE	The shopping cart data array attribute is corrupt or missing. Refer to the Shopping Cart Data section of this document for details
399	BAD_OPTN	A UDF has been mistyped or does not exist in the Agent Web Console.
401	EXTRA_DATA	RIS keys submitted by merchant were not part of SDK
404	UNNECESSARY_PTOK	When PTYP equals NONE and a PTOK is submitted
413	REQUEST_ENTITY_TOO_LARGE	The RIS Post to Kount exceeded the 4K limit. Refer to the Shopping Cart Data section for further details.
404	UNNECESSARY_PTOK	When PTYP equals NONE and a PTOK is submitted

501	UNAUTH_REQ	Error regarding certificate • Using test certificate in prod
502	UNAUTH_MERC	Invalid Merchant ID has been entered
601	SYS_ERR	Unspecified system error - Contact Merchant Services
602	SYS_NOPROCESS	Kount will not process particular transaction
701	NO_HDR	No header found with merchantId=[XXXXX], sessionId=[htot2kk5khpamo45f777q455], trans=[122347] This error occurs when a RIS request goes to the database and there is no data available in the reply. The Update post had an invalid transaction ID#. Check all required fields for update post and confirm they are being passed correctly.

- **Missing:** When this designation appears, the customer has failed to complete a required field.
- **Bad:** When this designation appears, some data was sent but failed to meet specifications. This could also be explained as malformed data or bad code that did not meet specifications, such as AVS=W instead of AVS=M.

## Appendix D

### RIS Response example from recommended methods

MERC=900100  
 MODE=Q  
 TRAN=6GJX0Y6HVQ72  
 ORDR=736d473edd  
 AUTO=A  
 SCOR=29  
 KAPT=Y  
 SITE=DEFAULT  
 WARNING\_COUNT=2  
 WARNING\_0=399 BAD\_OPTN Field: [DOB], Value: [1980-00-00]  
 WARNING\_1=399 BAD\_OPTN Field: [GENDER], Value: [H]

MODE=E  
 ERRO=323  
 ERROR\_0=323 BAD\_SITE Field: [SITE], Value: [DEFAULT1]  
 ERROR\_1=311 BAD\_CURR Field: [CURR], Value: [US]  
 ERROR\_2=341 BAD\_IPAD Field: [IPAD], Value: [127.0.0.1234]  
 ERROR\_COUNT=3  
 WARNING\_0=399 BAD\_OPTN Field: [DOB], Value: [1980-00-00]  
 WARNING\_1=399 BAD\_OPTN Field: [GENDER], Value: [K]  
 WARNING\_COUNT=2

### RIS Response example using all methods without warnings and with rules triggered

VERS=0690  
 MODE=Q  
 TRAN=6GJX0Y6HVQ72  
 MERC=100100  
 SESS=51b4511430736d473eddc2022a22d556  
 ORDR=736d473edd  
 AUTO=A  
 SCOR=29  
 GEOX=US  
 BRND=DISC  
 REGN=US\_ID  
 NETW=A

KYCF=N  
KAPT=Y  
CARDS=1  
DEVICES=1  
EMAILS=1  
VELO=0  
VMAX=0  
SITE=DEFAULT  
DEVICE\_LAYERS=.877D53E52E.910C7E4A6A.61FD602D96.DFBD320050  
FINGERPRINT=00482B9BED15A272730FCB590FFEBDDD  
TIMEZONE=420  
LOCALTIME=2016-08-30 18:00  
REGION=  
COUNTRY=US  
PROXY=N  
JAVASCRIPT=Y  
FLASH=Y  
COOKIES=Y  
HTTP\_COUNTRY=US  
LANGUAGE=EN  
MOBILE\_DEVICE=N  
MOBILE\_TYPE=  
MOBILE\_FORWARDER=N  
VOICE\_DEVICE=N  
PC\_REMOTE=N  
RULES\_TRIGGERED=2  
// If RULES\_TRIGGERED=0, then RULE\_ID\_X and RULE\_DESCRIPTION\_X lines do not appear.  
RULE\_ID\_0=417436  
RULE\_DESCRIPTION\_0=Custom Counter 3  
RULE\_ID\_1=417488  
RULE\_DESCRIPTION\_1=Custom Counter 1  
// If COUNTERS\_TRIGGERED > 0, then COUNTER\_NAME\_X and COUNTER\_VALUE\_X appear.  
COUNTERS\_TRIGGERED=2  
COUNTER\_NAME\_0=COUNTER WITH SPACES  
COUNTER\_VALUE\_0=4  
COUNTER\_NAME\_1=MYCOUNTER  
COUNTER\_VALUE\_1=3  
REASON\_CODE=  
MASTERCARD=  
DDFS=2016-08-15  
DSR=768x1024  
UAS=Mozilla/5.0 (Windows NT 6.1; WOW64) AppleWebKit/537.36 (KHTML, like Gecko)  
Chrome/29.0.1547.62 Safari/537.36  
BROWSER=Chrome 29.0.1547.62  
OS=Windows 7  
PIP\_IPAD=192.168.0.1



PIP\_LAT=13.0788  
PIP\_LON=-59.5853  
PIP\_COUNTRY=BB  
PIP\_REGION=Saint Michael  
PIP\_CITY=Bridgetown  
PIP\_ORG=Example Organization  
IP\_IPAD=10.0.0.1  
IP\_LAT=43.6091  
IP\_LON=-116.2097  
IP\_COUNTRY=US  
IP\_REGION=Idaho  
IP\_CITY=Boise  
IP\_ORG=Company Inc.  
WARNING\_COUNT=0

## RIS Response using all methods with warnings and rules triggered example

VERS=0690  
MODE=Q  
TRAN=6GJX0HJD1RM9  
MERC=100100  
SESS=51b4511430736d473eddc2022a22d556  
ORDR=736d473edd  
AUTO=A  
SCOR=29  
GEOX=US  
BRND=DISC  
REGN=US\_ID  
NETW=A  
KYCF=N  
KAPT=Y  
CARDS=1  
DEVICES=1  
EMAILS=1  
VELO=0  
VMAX=0  
SITE=DEFAULT  
DEVICE\_LAYERS=.877D53E52E.910C7E4A6A.61FD602D96.DFBD320050  
FINGERPRINT=00482B9BED15A272730FCB590FFEBDDD  
TIMEZONE=420  
LOCALTIME=2016-08-30 18:01  
REGION=  
COUNTRY=US

PROXY=N  
JAVASCRIPT=Y  
FLASH=Y  
COOKIES=Y  
HTTP\_COUNTRY=US  
LANGUAGE=EN  
MOBILE\_DEVICE=N  
MOBILE\_TYPE=  
MOBILE\_FORWARDER=N  
VOICE\_DEVICE=N  
PC\_REMOTE=N  
RULES\_TRIGGERED=1  
RULE\_ID\_0=1234  
RULE\_DESCRIPTION\_0=Deny all orders originating from Country  
COUNTERS\_TRIGGERED=0  
REASON\_CODE=  
MASTERCARD=  
DDFS=2016-08-15  
DSR=768x1024  
UAS=Mozilla/5.0 (Windows NT 6.1; WOW64) AppleWebKit/537.36 (KHTML, like Gecko)  
Chrome/29.0.1547.62 Safari/537.36  
BROWSER=Chrome 29.0.1547.62  
OS=Windows 7  
PIP\_IPAD=192.168.0.1  
PIP\_LAT=13.0788  
PIP\_LON=-59.5853  
PIP\_COUNTRY=BB  
PIP\_REGION=Saint Michael  
PIP\_CITY=Bridgetown  
PIP\_ORG=Example Organization  
IP\_IPAD=10.0.0.1  
IP\_LAT=43.6091  
IP\_LON=-116.2097  
IP\_COUNTRY=US  
IP\_REGION=Idaho  
IP\_CITY=Boise  
IP\_ORG=Company Inc.  
WARNING\_0=399 BAD\_OPTN Field: [DOB], Value: [1980-00-00]  
WARNING\_1=399 BAD\_OPTN Field: [GENDER], Value: [H]  
WARNING\_COUNT=2

## RIS response error without warnings

MODE=E  
ERRO=323

ERROR\_0=323 BAD\_SITE Field: [SITE], Value: [DEFAULT1]  
ERROR\_1=341 BAD\_IPAD Field: [IPAD], Value: [127.0.0.1234]  
ERROR\_COUNT=2  
WARNING\_COUNT=0

## RIS response error with warnings

MODE=E  
ERRO=323  
ERROR\_0=323 BAD\_SITE Field: [SITE], Value: [DEFAULT1]  
ERROR\_1=311 BAD\_CURR Field: [CURR], Value: [US]  
ERROR\_2=341 BAD\_IPAD Field: [IPAD], Value: [127.0.0.1234]  
ERROR\_COUNT=3  
WARNING\_0=399 BAD\_OPTN Field: [DOB], Value: [1980-00-00]  
WARNING\_1=399 BAD\_OPTN Field: [GENDER], Value: [K]  
WARNING\_COUNT=2

Note in the previous examples the MASTERCARD field is used to return the MasterCard EMS Score if the 3rd party callout was performed as part of the RIS evaluation. If the callout was not performed, the field has a null value.

# Appendix E

## Standard Test Scenarios

### Approve Test Scenarios

1. Add [JohnDoeApprove@Acme.com](mailto:JohnDoeApprove@Acme.com) email address to the VIP Approve list in the Test environment.
2. Place a test order using any item, via the front end of the test website.
  - a. When filling out the customer information, please use [JohnDoeApprove@Acme.com](mailto:JohnDoeApprove@Acme.com) as the email address.
  - b. Fill in necessary Test Credit Card information.
3. Confirm that after the order has been placed that the proper customer experience message is displaying.
4. Confirm that appears as approved in the Agent Web Console.

### Decline Test Scenario

1. Add JohnDoeDecline@Acme.com email address to the VIP Decline list in the Test environment.
2. Place a test order using any item, via the front end of the test website
  - a. When filling out the customer information, please use JohnDoeDecline@Acme.com as the email address.
  - b. Fill in necessary Test Credit Card information.
3. Confirm that after the order has been placed that the proper customer experience message is displaying.
4. Confirm that appears as declined in the Agent Web Console.

### Review Test Scenario

1. Add JohnDoeReview@Acme.com email address to the VIP Decline list in the Test environment.
2. Place a test order using any item, via the front end of the test website.
  - a. When filling out the customer information, please use JohnDoeReview@Acme.com as the email address.
  - b. Fill in necessary Test Credit Card information.
3. Confirm that after the order has been placed that the proper customer experience message is displaying.
4. Confirm that appears as declined in the Agent Web Console.

Note: Merchants are responsible for checking interaction with their OMS to validate expected behavior.

## Optional Test Scenarios

### Shipping/Billing Address Test Scenario

1. Add JohnDoeReview@Acme.com email address to the VIP Review list in the Test environment.
2. Place a test order using any item, via the front end of the test website.

- a. When filling out the customer information, please use JohnDoeReview@Acme.com as the email address.
  - b. Enter 1234 Main Street, Any Town, ID, USA 83705 for the Shipping Address.
  - c. Enter 5678 Oak Street, Any Town, ID 83705 for the Billing Address.
  - d. Fill in necessary Test Credit Card information.
3. Confirm that after the order has been placed that the proper customer experience message is displaying.
4. Confirm that the order is held as review in the Agent Web Console.
5. Confirm the Shipping Address passed correctly.
6. Confirm the Billing Address passed correctly.

#### **Shipping Phone/Billing Phone Test Scenario**

1. Add JohnDoeReview@Acme.com email address to the VIP Review list in the Test environment.
2. Place a test order using any item, via the front end of the test website.
  - a. When filling out the customer information, please use JohnDoeReview@Acme.com as the email address.
  - b. Enter 123-456-7890 for the Shipping Phone Number.
  - c. Enter 102-345-6789 for the Billing Phone Number.
  - d. Fill in necessary Test Credit Card information.
3. Confirm that after the order has been placed that the proper customer experience message is displaying.
4. Confirm that the order is held as review in the Agent Web Console.
5. Confirm the Shipping Phone passed correctly.
6. Confirm the Billing Phone passed correctly.

#### **Order Number Test Scenario**

1. Add JohnDoeReview@Acme.com email address to the VIP Review list in the Test environment.
2. Place a test order using any item, via the front end of the test website.
  - (a) When filling out the customer information, please use JohnDoeReview@Acme.com as the email address.
3. Confirm that after the order has been placed that the proper customer experience message is displaying.
4. Confirm that the order is held as review in the Agent Web Console.
5. Confirm that the order number has populated correctly.

Note: Merchants are responsible for checking interaction with their OMS to validate expected behavior.

# Appendix F

## Required Elements

The following features should be tested prior to Kount certification. Utilize this checklist to help ensure that all data is posting as expected.

### Data Device Collector

- Merchant\_ID
- Unique Session\_ID
- Merchant\_URL
- Company\_Server\_URL

### Risk Inquiry Service

- Unique Session\_ID is being passed
- API Key for RIS submissions
- Required Inquiry Keys

**Note:** Session IDs link the Device Data to the Risk Inquiry Service Data. All Session IDs must be unique for 30 days.

### Payment Type Testing

- Test all Payment Types that will be passed by the Merchant.

## Optional Elements

When applicable, test the optional features prior to Kount certification. Additionally, all features should be tested for each type of customer available on the merchant website.

### Phone Order Testing

1. If the customer service agents navigate to a separate order entry page:
  - Orders posted as a Mode=P
  - Hard code IP address to 10.0.0.1
  - Phone Number within the ANID field is provided
    - If no phone number is available, ANID field is hard coded to 0123456789
    - If no email is provided, EMAIL field is being submitted as [noemail@Kount.com](mailto:noemail@Kount.com) so that linking does not happen.
2. If the customer service agents navigate to the same order entry page as the customer:
  - Orders posted as a Mode=Q
  - Hard code IP address to 10.0.0.1
  - If no email is provided, EMAIL field is being submitted as noemail@Kount.com so that linking does not happen

**Risk Inquiry Service Testing**

Confirm that the optional information, listed below, is being passed to Kount during the Risk Inquiry System (RIS) call.

- Optional Inquiry Keys

**User Defined Fields**

- Validate that any user defined fields defined in the Agent Web Console are being passed to Kount during RIS call.

**Event Notification System (ENS) Testing**

- Verify the ENS XML file is being received by the URL defined within the Agent Web Console.
- Validate that ENS is enabled and to the correct URL within the Agent Web Console Website settings page.

**Items that cannot be tested in the Sandbox environment:**

Persona Orders	Address and Phone Number Validation through Melissa Data
VELO Information	Network Information
VMAX Information	Device Information
Distance Calculators	External Services

# Appendix G

## Direct Integration Milestones (High Level)

### **Milestone 1: Install the Data Collector image on the order form**

Data Collector is the method by which Kount collects key identity and network data from the customer's computer. The Data Collector image may be a 1x1 transparent pixel or another image as desired by the merchant.

### **Milestone 2: Code the order form data post to the Risk Inquiry System (RIS) specification**

Order information is sent from the merchant to Kount when a customer checks out of the cart. Specific required information is sent to Kount, as described in the Technical Specification Guide, such as E-mail, card number, cart item; additional information is desirable. The HTTPS post constitutes a RIS Inquiry to Kount and will result in a real-time reply containing, among other things, a risk score. The merchant needs to code to the Technical Specification Guide in order to properly format the RIS Inquiry and also to accept the real-time reply.

### **Milestone 3: Testing and Certification**

Upon completion of internal testing, the merchant should contact a Client Success Manager and request verification that the RIS inquiries are properly formatted. Using test data, Kount will verify if the merchant's RIS Inquiries are properly formatted and result in the appropriate response from Kount. Upon successful completion of this process, the merchant will achieve certification and can move into production.

### **Milestone 4: Merchant Training**

A Client Success Manager will schedule training for the personnel who will use the system. Ideally, this training should be done concurrently with the testing and certification phase in Milestone 3. Kount has available printable guides, training videos, and additional documentation.

### **Milestone 5: Risk Management Calibration**

Upon certification, the merchant may begin sending live transactions to Kount. During this phase, the Client Success Manager will work with the merchant to evaluate the transaction data and fine tune the risk settings to meet the merchant's requirements. Direct action taken on orders may begin upon certification or at the merchant's discretion.

### **Milestone 6: Maintenance**



The Client Success Manager will continue to monitor performance, make periodic recommendations, and be available for consultation as needed.

## Change Log

The following table documents substantive changes to the Technical Specifications Guide. Click embedded links to jump directly to the section referenced in the Change column and review changes in context.

Change Summary/Date	Change Detail	Change Visible in Date/Version
Addition to <a href="#">RIS Inquiry Service Requirements/2018_04_09</a>	RIS posts are limited to a total of 40,000 characters.	4/2018/7.0.x
Edit to description for <a href="#">RIS Optional Inquiry Key</a> , UNIQ/2018_04_09	UNIQ accepts alpha-numeric format.	
Addition to <a href="#">UDF Data Types/2018_04_09</a>	Different data types (numeric, alpha-numeric, etc.) are subject to different uses in the calculation of persona velocity.	
Update to <a href="#">RIS Response Key, STAT/2018_04_09</a>	The table reflects current status codes. Status is automatically generated when a defined rule runs. Alternatively, status can be manually assigned by an agent.	
REGN character limit correction.	REGN character requirement is 5; for example, "US_ID."	

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