ASO APIs - Getting Started

Purpose

The purpose of this document is to assist new ASO API customers accessing ASO API endpoints for the first time. It will walk users through how to obtain and use customer-specific configuration values, bearer access token acquisition, and making an initial call to an existing ASO API endpoint.

Configuration

Base URLs

Production

Resource Server	Base URL
Authorization Utility Service (AUS)	https://auth.api.combinenet.com/
Customer Host Entity Service (CHES)	https://ches.api.combinenet.com/
Event Entity Service (EES)	https://ees.api.combinenet.com/

Demo

Resource Server	Base URL
Authorization Utility Service (AUS)	https://auth.demo-api.combinenet.com/
Customer Host Entity Service (CHES)	https://ches.demo-api.combinenet.com/
Event Entity Service (EES)	https://ees.demo-api.combinenet.com/

Customer Specific Configurations

There are several configuration values specific to each customer that are required to access ASO APIs. These values will be supplied to each customer by their Jaggaer ASO contact. The following table details those values:

Config Value	Environment Specific	Description
Client-ID	No	The customer client-id is only used during bearer-token acquisition, which will be described in detail below.
Secret	Yes	The customer secret is only used during bearer-token acquisition, which will be described in detail below.
Customer-Host-ID	Yes	The ASO customer-host-id may be used during bearer-token acquisition in order to scope the bearer token and can also be used as an input parameter to various ASO endpoints.
API Key	Yes	The customer api-key is sent in the 'X-API-Key' request header and used for all ASO API calls. Examples will be provided below.

Other necessary pieces of customer data needed to invoke ASO APIs may include various ASO entity IDs, including event IDs, user IDs, bid, item, or supplier IDs, etc.

Bearer Access Token Acquisition

All calls to EES and CHES endpoints require that a bearer access token (BAT) be sent in the 'Authorization' request header. A BAT can be acquired by making a call to the ASO Authorization Utility Service (AUS). The endpoint for bearer token issuance can be found documented here:

http://docs.aso.engineering/oauth-ccg.html#oauth2_token_post

This is the only place that the customer client-id and secret are needed when calling an ASO API. The value used in the 'Authorization' request header after the authentication schema 'Basic' for the BAT request is the base64'd value of the customer client-id, a colon (':'), and the customer secret:

```
$ echo -n "{client_id}:{secret}" | base64 -w0
c2NobmVpZGVyX2FwatpkZTQ0N2RiNC0ymWYxLTExZWEtOTZjZC0wMDUwNTZiNzVlOTY=
```

Depending on the type of client the it may be required to set the `'scope'` of the BAT being generated. If the client is an admin client (internal ASO integration partner) then the `scope` will need to be included in the BAT request, because an admin client can request BAT's for various scopes. If the client is a non-admin client (external ASO customer) then the `scope` should be omitted because a non-admin client is already implicitly scoped to for the customer.

Non-Admin Clients (External ASO Customer)

The following is an example BAT acquisition request (POST /oauth2/token) in the Demo environment using curl for a non-admin client:

AUS POST /oauth2/token (request)

```
$ curl -X POST \
 https://auth.demo-api.combinenet.com/oauth2/token \
 -H 'Authorization: Basic c2NobmVpZGVyX2FwatpkZTQ0N2RiNC0ymWYxLTExZWEtOTZjZC0wMDUwNTZiNzVlOTY=' \
 -H 'Content-Type: application/x-www-form-urlencoded' \
 -H 'Accept: application/json' \
 -H 'X-API-Key: {api-key}' \
 -d 'grant_type=client_credentials'
```

Note that in the request-body only `grant_type` is required, `scope` is not required for a non-admin client BAT acquisition requests.

BAT acquisition response:

AUS POST /oauth2/token (response)

```
{
  "scope": "{customer-host-id}",
  "access_token": "xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx",
  "token_type": "bearer",
  "expires_in": 86400
}
```

A system-to-system BAT will have a long-lived expiration -- as you can see in this case it is 86,400 seconds (24 hours). We encourage API users to re-use BATs as much as possible. When the current BAT gets near its expiration time or has expired, simply acquire a new one.

Admin Clients (Internal ASO Integration Partner)

As mentioned above admin clients need to include `scope` for all BAT acquisition requests. There are currently two ways to specify `scope` in the request-body – by ASO customer-host-ID and by J1-tenant-ID. The following examples show how to specify a scope in the request-body in each way:

Scoping With ASO Customer Host ID:

```
'scope=tenant-aso 275&grant_type=client_credentials'
```

Scoping With J1 Tenant ID:

```
'scope=tenant-j1 99999999009&grant_type=client_credentials'
```

The following is an example BAT acquisition request (POST /oauth2/token) in the Demo environment using curl for an admin client:

AUS POST /oauth2/token (request)

```
$ curl -X POST \
 https://auth.demo-api.combinenet.com/oauth2/token \
 -H 'Authorization: Basic ajFwX2FkbWluX2FwaWYxLTExZWEtOTZjZC0wMDUwNTZiNzVlOTYTozYTMzZjc5ZC00ZDYzL=' \
 -H 'Content-Type: application/x-www-form-urlencoded' \
 -H 'Accept: application/json' \
 -H 'X-API-Key: {api-key}' \
 -d 'scope=tenant-aso 275&grant_type=client_credentials'
```

BAT acquisition response:

AUS POST /oauth2/token (response)

```
{
  "scope": "{aso-customer-host-id}",
  "access_token": "xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx",
  "token_type": "bearer",
  "expires_in": 86400
}
```

A system-to-system BAT will have a long-lived expiration -- as you can see in this case it is 86,400 seconds (24 hours). Also note in the response JSON that the BAT is scoped to the ASO customer host that was sent as the `scope` value in the request (or the ASO customer host that corresponds to the J1 tenant that was send as the `scope`). We encourage API users to re-use BATs as much as possible. When the current BAT gets near its expiration time or has expired, simply acquire a new one.

Endpoint Invocation

Once a system-to-system bearer access token has been acquired it is now possible to call any ASO API endpoint. The following is an example curl call using the newly acquired BAT in the 'Authorization' header of a request to the CHES 'GET Events' endpoint. The full documentation for this endpoint can be found here:

http://docs.aso.engineering/ches.html#chost__chost_id__user__user_id__apievents_get

Note that the customer-host-id and a valid ASO user-id (for that customer host) are required as path parameters to this endpoint.

CHES GET Events (request)

```
curl -X GET \
 https://ches.demo-api.combinenet.com/chost/{customer-host-id}/user/{user-id}/apiEvents \
 -H 'Authorization: Bearer xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx' \
 -H 'Accept: application/vnd.sciquest.com.ches+json' \
 -H 'X-API-Key: {api-key}'
```

The response below returns 5 events under specified customer-host-id to which the given user-id has access:

CHES GET Events (response)

```
[
  {
    "eventId": 10001,
    "customerHostId": 100,
    "name": "Company X RFX Template",
    "uriName": "10001",
    "url": "https://companyx.demo.combinenet.com/clearview/10001",
    "description": "Company X RFX event template",
    "isTestEvent": false,
    "isTemplate": true,
    "archivalState": "not_archived",
    "eventOwner": "Brian McMahon",
    "eventOwnerEmail": "mcmahon@jaggaer.com",
```

```
    "publicOrPrivate": "private",
    "templateTypeName": "RFxpress",
    "eventTypeName": "Sealed Bid",
    "eventTypeCategory": "RFX",
    "subcategory1": null,
    "subcategory2": null,
    "active": true,
    "createdOn": 1576686197000,
    "projectStartDate": 1576686197000,
    "biddingOpen": null,
    "roundOneBiddingOpen": null,
    "biddingClose": null,
    "optimizationAvailable": null,
    "optimizationUnavailable": null,
    "analysisEnds": null,
    "lastModified": 1576686226000
  },
  {
    "eventId": 10002,
    "customerHostId": 101,
    "name": "Company X auction template",
    "uriName": "34917",
    "url": "https://companyx.demo.combinenet.com/clearview/10002",
    "description": "Company X auction template",
    "isTestEvent": false,
    "isTemplate": true,
    "archivalState": "not_archived",
    "eventOwner": "Brian McMahon",
    "eventOwnerEmail": "bmcmahon@jaggaer.com",
    "publicOrPrivate": "private",
    "templateTypeName": "RFxpress",
    "eventTypeName": "Reverse Auction",
    "eventTypeCategory": "eAuction",
    "subcategory1": null,
    "subcategory2": null,
    "active": true,
    "createdOn": 1576686289000,
    "projectStartDate": 1576686289000,
    "biddingOpen": null,
    "roundOneBiddingOpen": null,
    "biddingClose": null,
    "optimizationAvailable": null,
    "optimizationUnavailable": null,
    "analysisEnds": null,
    "lastModified": 1576686289000
  },
  {
    "eventId": 10003,
    "customerHostId": 101,
    "name": "Company X - 1Q20 TL Bid",
    "uriName": "10003",
    "url": "https://companyx.demo.combinenet.com/clearview/34918",
    "description": "Company X - 1Q20 TL Bid event",
    "isTestEvent": true,
    "isTemplate": false,
    "archivalState": "not_archived",
    "eventOwner": "Brian McMahon",
    "eventOwnerEmail": "bmcmahon@jaggaer.com",
    "publicOrPrivate": "private",
    "templateTypeName": "Transportation",
    "eventTypeName": "Sealed Bid",
    "eventTypeCategory": "RFX",
    "subcategory1": "TL",
    "subcategory2": null,
    "active": true,
    "createdOn": 1576686523000,
    "projectStartDate": 1576686522000,
    "biddingOpen": null,
    "roundOneBiddingOpen": null,
    "biddingClose": null,
    "optimizationAvailable": null,
```

```
    "optimizationUnavailable": null,
    "analysisEnds": null,
    "lastModified": 1576686531000
  },
  {
    "eventId": 10004,
    "customerHostId": 101,
    "name": "Company X - 2020 LTL Bid",
    "uriName": "10004",
    "url": "https://companyx.demo.combinenet.com/clearview/34919",
    "description": "Company X - 2020 LTL Bid event",
    "isTestEvent": true,
    "isTemplate": false,
    "archivalState": "not_archived",
    "eventOwner": "Brian McMahon",
    "eventOwnerEmail": "bmcmahon@jaggaer.com",
    "publicOrPrivate": "private",
    "templateTypeName": "Transportation",
    "eventTypeName": "Sealed Bid",
    "eventTypeCategory": "RFX",
    "subcategory1": "LTL",
    "subcategory2": null,
    "active": true,
    "createdOn": 1576686780000,
    "projectStartDate": 1576686780000,
    "biddingOpen": null,
    "roundOneBiddingOpen": null,
    "biddingClose": null,
    "optimizationAvailable": null,
    "optimizationUnavailable": null,
    "analysisEnds": null,
    "lastModified": 1576686788000
  },
  {
    "eventId": 10005,
    "customerHostId": 101,
    "name": "Company X - 2020 Truckload / Intermodal Bid",
    "uriName": "10005",
    "url": "https://companyx.demo.combinenet.com/clearview/34921",
    "description": "Company X - 2020 Truckload / Intermodal Bid event",
    "isTestEvent": true,
    "isTemplate": false,
    "archivalState": "not_archived",
    "eventOwner": "Brian McMahon",
    "eventOwnerEmail": "bmcmahon@jaggaer.com",
    "publicOrPrivate": "private",
    "templateTypeName": "Transportation",
    "eventTypeName": "Sealed Bid",
    "eventTypeCategory": "RFX",
    "subcategory1": "TL/IM",
    "subcategory2": null,
    "active": true,
    "createdOn": 1576686935000,
    "projectStartDate": 1576686935000,
    "biddingOpen": null,
    "roundOneBiddingOpen": null,
    "biddingClose": null,
    "optimizationAvailable": null,
    "optimizationUnavailable": null,
    "analysisEnds": null,
    "lastModified": 1576686942000
  }
]
```


Summary

The above sections should contain all the information necessary to help customers get set up and interacting with ASO APIs successfully. For details on what ASO APIs and endpoints are available current documentation can be found at http://docs.aso.engineering/. Please keep in mind this documentation will be changing periodically, as we continue adding and updating endpoints. If you have any further questions or concerns do not hesitate to get in touch with your ASO Jaggaer contact.