Peter Gustafson writing sample
Epic Games
May 16, 2021

Ownership Verification

The Ecom Interface provides two methods for ownership verification. The first is the online method.

Online Method
The online method integrates directly with the Epic Entitlement Service. It’s useful for trusted game servers or less-secure checks on client systems for simple validation.

To determine if a user owns a specific Catalog item, make a call to `EOS_Ecom_QueryOwnership` to get ownership information from the server. The callback receives a void pointer containing information about the user.

Make a call to `EOS_Ecom_QueryOwnershipOptions` using the parameters below:
Parameter	Description
`ApiVersion`	Set to `EOS_ECOM_QUERYOFFERS_API_LATEST`.
`LocalUserId`	The local user Epic account ID.
`CatalogItemIds`	The number of elements in `EntitlementIds`.
`CompletionDelegate`	Called when the operation completes using a `EOS_Achievements_OnQueryDefinitionsCompleteCallback` signature.
`CatalogNamespace`	Optional product namespace.

EOS returns the data you requested (and your void pointer) stored in an `EOS_Ecom_OnQueryOwnershipCallback` structure. This structure contains an array of `EOS_Ecom_EntitlementOwnership` users. Items that the server doesn't recognize are returned as not owned.

Offline Method
The second option is the offline method. It provides a signed token that the user verifies, or passes to a third-party service. When integrating with a third-party service for ownership verification, the offline method is recommended because it avoids granting the outside service access to the user's data.

To check ownership and cache the results locally, make a call to `EOS_Ecom_QueryOwnershipToken`. Use the parameters below:

Parameter	Description
`ApiVersion`	Set to `EOS_ECOM_QUERYOFFERS_API_LATEST`.
`LocalUserId`	The local user Epic account ID.

`CatalogItemIdCount`	The quantity of Catalog items.
`CompletionDelegate`	Called when the operation completes using a `EOS_Achievements_OnQueryDefinitionsCompleteCallback` signature.
`CatalogNamespace`	Optional product namespace.

Upon success, you will receive an `EOS_Ecom_QueryOwnershipTokenCallbackInfo` structure that includes a JSON Web Token (JWT) with a five-minute expiration time.

Verify the JWT with a public key and unpack it to extract the Key ID. Send the Key ID to third-party services if needed to verify the Entitlement information came from Epic Games Services (EGS).

Example
Below is an example request. Use this endpoint:
```
https://ecommerceintegration-public-service-ecomprod02.ol.epicgames.com/ecommerceintegration/api/public/publickeys/{kid}
```

Below is the example response:
```

GET/ecommerceintegration/api/public/publickeys/pbvnNIE97vErdePGIRoG41h8hnP_2wIxG8xbwZCIj3g HTTP/1.1

Host: ecommerceintegration-public-service-ecomprod02.ol.epicgames.com

{

"kty": "RSA",

"e": "AQAB",

"kid": "pbvnNIE97vErdePGIRoG41h8hnP_2wIxG8xbwZCIj3g",

"n":
"gcStqtD8XD9c9ifNuxXT9Xd_EEZLLCw34yxINRQPt0MxEWkoOFsuisRWGktSFtGrnUuQnp8GQY0k4Pyl_yDItWAcRtO7JUjrhQnxx3xXp_0P8xJMH1ny-RcxHF3bEJWhDzNW5PBpBjQTQZis-83499z-4OlNA7oUnDKEJkqNfzh4mMDFluPxvW_Hwpaw71nhzJI7-N-BdsPsLdqUANajLsFKq9fr06Lek_tm-6-RUxNPE3yS0x0UIsGyapA4Apcczz0xTzRDfwOkq_TyKGZiZc7vtgjkWnqdsCyXZC7dzKJvg0ggO3mKXhqZNNC_2pz24o1X_xCbG8rXtuvX8-ux-Q"

}
```

Token Details

The Ownership Verification Token is a JWT signed using RS512 (RSA PKCS#1 signature with SHA-512, RSA key size 2048). The token contains the following claims:
Claim	Description
`jti`	Set to `A unique identifier for this token`.
`sub`	The account ID that was used to request the token.
`clid`	The client ID used to request the token.
`ent`	An array of Entitlements that were verified for this token. If the value is empty, the account is not entitled to any of the requested Entitlements for a given `sandboxId`.
`iat`	The token expiration.

Below is the flow diagram: