Protect a Wowza CDN on Akamai stream target with token authentication in Wowza Streaming Cloud

Originally Published on 09/08/2016 | Updated on 01/08/2020 10:47 am PST

The Wowza Streaming Cloud™ service can secure Wowza CDN on Akamai stream targets with token authentication. Token authentication protects streams by ensuring that they are accessed only by viewers who have the token. You can use token authentication to make the stream playback URL unavailable after a certain length of time, to limit access to approved IP addresses, or apply other restrictions. Token authentication prevents playback URLs from being shared by unauthorized links or player hijacking attacks.

Token authentication is disabled by default. To use it, enable it, test it, and then generate your own query parameters to secure the stream as you choose.

**Note:** This article applies to Wowza CDN on Akamai stream targets only.

**About token authentication**

Token-based authentication uses a multipart token that consists of a delimited list of string fields. One field is an HMAC, or *keyed-hash message authentication code*. HMAC is a common mechanism for message authentication that uses cryptographic hash functions. The HMAC portion of the token hashes a trusted shared secret that you create in Wowza Streaming Cloud. It is short-lived and secures initial access to the stream.

The second part of the token, a cookie, is valid for the duration of the stream and protects segments that are delivered during playback. It restricts access to the stream according to query parameters that you specify. For example, you can expire the stream after a certain length of time or only allow whitelisted IP addresses to access it.

You append the token to the stream target’s playback URL, and then Wowza Streaming Cloud only lets viewers receive the content after it verifies the presence and validity of the token.

Token authentication is managed by the browser, and viewers' browsers must allow cookies in order for streams protected by token authentication to play.

**Notes:**

- Token authentication works with third-party players and with Wowza Player Builder. It doesn't work with a player created in the Wowza Streaming Cloud live stream workflow and embedded in a hosted or third-party webpage.
- Third-party players must be configured to allow cross-site access control requests using credentials such as cookies.
- When using token authorization to play Wowza Streaming Cloud streams in Wowza Player, you must include the `withCredentials` Player configuration property in your player embed code and set its value to `true`. See Customize Wowza Player with configuration properties for more information.

**Enable token authentication**

To enable token authentication, start by creating a trusted shared secret, sometimes called a secret key or a password, in Wowza Streaming Cloud.

1. Click **Advanced** on the menu bar, click **Stream Targets**, and then select the Wowza CDN on Akamai target that you want to secure.
2. Click the **Authentication** tab of the target's detail page and then click **Edit**.
3. Select **Enabled**.
4. Enter a **Trusted Shared Secret** or click **Generate Random Password**.
Trusted shared secrets must contain only hexadecimal characters (the digits 0 through 9 and/or the letters a through f). The length of the secret must be an even number of characters between 2 and 32.

5. Click **Save**.
6. **Contact Support** in order for your changes to take effect.

When token authentication is enabled, you can view the trusted shared secret on the **Authentication** tab of the target detail page by clicking the show (eyeball) icon.

### Test the authentication

After authentication is enabled, generate sample query parameters to complete and test the token. The sample parameters in Wowza Streaming Cloud allow access to the protected stream for 10 minutes. During that period, start the stream and access it by appending the sample parameters to the stream's playback URLs.

After the stream starts, the sample token allows access to the playback URLs for 24 hours. However, changing the trusted shared secret invalidates the token.

1. On the **Authentication** tab of the stream target detail page, click **Generate Query Parameters**.
2. Append the sample query string to the stream target’s playback URLs, which you can find on the **Setup** tab of the stream target detail page.
3. Within 10 minutes, start the stream or transcoder and access the playback URLs.

**Example HLS playback URL with token authentication**

http://[wowza_streaming_cloud_domain].akamaihd.net/i/[streamname_angle]?[stream_id]/master.m3u8?
hdnts=exp=1461972009~acl=/*~hmac=de43455a65009cbb538495e5bc70c9565a3c559406c0c7bc2a1cfeaff9344706

**Example HDS playback URL with token authentication**

http://[wowza_streaming_cloud_domain].akamaihd.net/z/[streamname_angle]?[stream_id]/manifest.f4m?
hdnts=exp=1461972009~acl=/*~hmac=de43455a65009cbb538495e5bc70c9565a3c559406c0c7bc2a1cfeaff9344706

### Generate query parameters

When authentication is configured and working, generate your own query parameters for your stream.

We’ve provided a .zip file with some code samples with queries written in Java, Perl, PHP, Ruby, and other languages. You can use these samples to generate your own tokens for playback, or write your own query parameters. **Download query code samples.**