

Media Over QUIC
Internet-Draft
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MoQ CDN Provisioning
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Abstract

This document describes concepts related to provisioning MoQ relay scopes on CDN infrastructure, including scope creation, credential-to-scope mapping, and origin fallback configuration. It uses a provisioning API as a vehicle for describing these concepts and identifying areas where common semantics across CDN providers may be needed for multi-CDN compatibility.

About This Document

This note is to be removed before publishing as an RFC.

The latest revision of this draft can be found at <https://englishm.github.io/moq-cdn-provisioning/draft-englishm-moq-cdn-provisioning.html>. Status information for this document may be found at <https://datatracker.ietf.org/doc/draft-englishm-moq-cdn-provisioning/>.

Discussion of this document takes place on the Media Over QUIC Working Group mailing list (<mailto:moq@ietf.org>), which is archived at <https://mailarchive.ietf.org/arch/browse/moq/>. Subscribe at <https://www.ietf.org/mailman/listinfo/moq/>.

Source for this draft and an issue tracker can be found at <https://github.com/englishm/moq-cdn-provisioning>.

Status of This Memo

This Internet-Draft is submitted in full conformance with the provisions of BCP 78 and BCP 79.

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1. Introduction

Media over QUIC Transport (MoQT) [MOQT] defines a pub/sub protocol for media delivery through relays. CDN providers that deploy MoQ relays need to configure them in ways that are roughly analogous to the rewrite rules, origin selection, and routing configuration associated with HTTP reverse proxies and CDNs. Some of these configurations will need common semantics across providers to support multi-CDN deployments.

This document uses a provisioning API as a vehicle for describing these concepts. A customer creates a scope on a CDN relay, gets back connection credentials, and hands those credentials to their publishers and subscribers. The relay uses the credentials to map incoming connections to the right scope.

The API itself is part of the picture, but the more important contribution here is describing the underlying concepts (scopes, credential-to-scope mapping, origin fallback) in a way that could be consistent across CDN providers.

A machine-readable OpenAPI description of the API described here is maintained alongside this document in the source repository (see `openapi.yaml`).

2. Conventions and Definitions

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "NOT RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in BCP 14 [RFC2119] [RFC8174] when, and only when, they appear in all capitals, as shown here.

Scope: An isolated MoQ delivery context on a relay, as defined in [MOQT]. All namespaces and tracks within a scope are isolated from other scopes on the same relay. A scope is the resource created by the provisioning API.

3. Scope Provisioning

A CDN provider exposes an HTTP API endpoint for creating scopes:

POST /moq/scopes

The request MAY include configuration (see Section 5).

The response includes a server-generated scope identifier and connection credentials:

```
{
  "scope_id": "alb2c3d4e5f6",
  "url": "moqt://relay.example.com",
  "token": "eyJhbGciOiJIJFZDI1NTE5..."
}
```

The url is the base URL of the relay service. The token is a credential that grants access to this scope.

4. Connecting to a Scope

Clients connect to a provisioned scope by combining the URL and token returned at creation time:

```
moqt://relay.example.com/{token}
```

The relay extracts the token from the URL path, validates it, and maps the connection to the corresponding MoQT scope.

Within that scope, all MoQT operations (SUBSCRIBE, ANNOUNCE, etc.) are isolated. Publishers and subscribers in one scope cannot see namespaces or tracks from another scope.

5. Origin Fallback

A scope MAY be configured with an upstream origin URL. When a subscriber requests content that isn't available on the relay, the relay connects to the origin to fetch it.

This is configured at provisioning time:

```
{
  "config": {
    "origin_fallback": {
      "url": "moqt://origin.example.com"
    }
  }
}
```

The relay establishes a MoQT connection to the origin URL and forwards the subscription. The origin could be another relay (at a different CDN provider, or a customer's own infrastructure), or any MoQT-speaking endpoint.

6. Security Considerations

TODO

7. IANA Considerations

This document has no IANA actions.

8. Normative References

- [MOQT] Nandakumar, S., Vasiliev, V., Swett, I., and A. Frindell, "Media over QUIC Transport", Work in Progress, Internet-Draft, draft-ietf-moq-transport-16, 13 January 2026, <<https://datatracker.ietf.org/doc/html/draft-ietf-moq-transport-16>>.
- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, DOI 10.17487/RFC2119, March 1997, <<https://www.rfc-editor.org/rfc/rfc2119>>.
- [RFC8174] Leiba, B., "Ambiguity of Uppercase vs Lowercase in RFC 2119 Key Words", BCP 14, RFC 8174, DOI 10.17487/RFC8174, May 2017, <<https://www.rfc-editor.org/rfc/rfc8174>>.

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