

## Layer7 Gateway Migration made Easy.

Layer7 API Gateway has both Gateway Migration Utility (GMU) and RestMan (API's) that would support migration of gateway components from source to destination, Layer7 Engineering team is continuously working towards enhancing the experience of DevOps team in enabling a smooth and seamless migration of gateway configuration and policies.

In that context we are introducing next gen migration utility "Graphman" - It is an API running on a Layer7 Gateway for interacting with the gateway configuration.

This Graphman API let's you retrieve full or partial gateway configuration from a Layer7 Gateway with Graphman running on it, bundle configuration for the purposes of applying configuration as code and apply configuration to a gateway.

### Graphman

Graphman is a GraphQL API but you don't need prior experience with, or an understanding of GraphQL to use it with this client. This client abstracts out the GraphQL API layer by providing commands to perform common Graphman operations.

Power users can dive into the GraphQL layer to create their own queries that can then be used with this client. Custom GraphQL queries let you control the specific configuration that needs to be bundled for your domain-specific use case. To help dive into that layer, power users should refer to the provided Postman collection which provides samples for all the queries and mutations supported by Graphman.

While Graphman can be leveraged using Postman (refer postman collection enclosed), it also supports a command line utility with the help of NodeJS. In this blog I am going to talk more about command line utility.

## Jenkins Pipeline

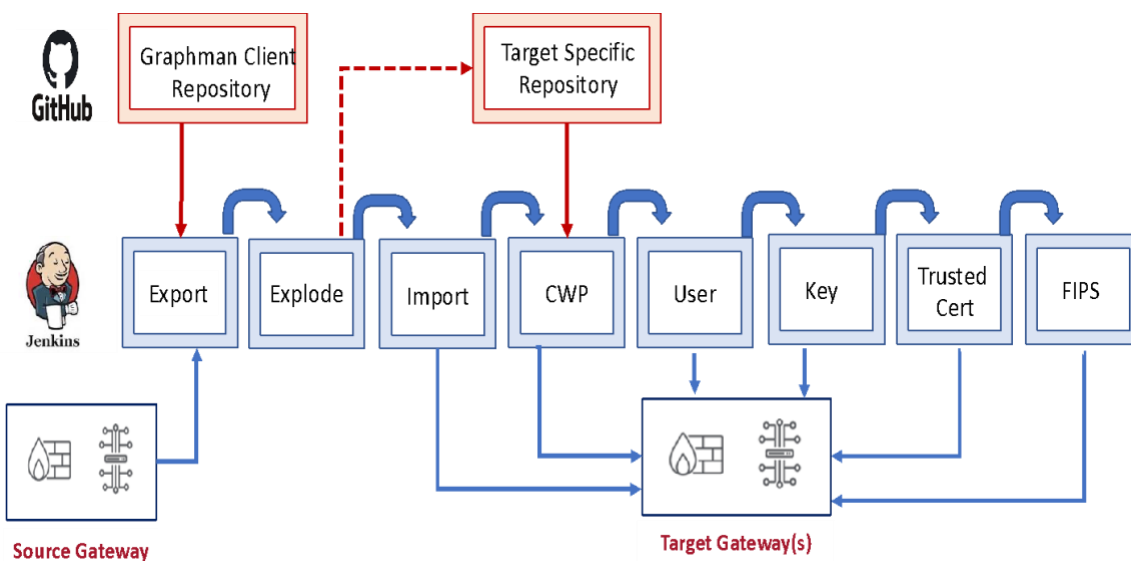
### Stage View

Average stage times: (Average full run time: ~35s)		Declarative: Tool Install	GRAPHMAN- CLIENT [GIT]	EXPORT From SOURCE	IMPORT To TARGET	TARGET- SPECIFIC [GIT]	CWP Change	ADD USER	ADD KEY	ADD POLICY, FIPS & TruST Certs	EXPLODE BUNDLE	TARGET-REPO UPDATE [GIT]	Declarative: Post Actions
Build	Apr 03 12:27	5s	2s	6s	2s	2s	2s	2s	2s	2s	1s	3s	1s

My approach is to showcase how easy it is to incorporate Graphman as part of your gateway migration process, where we could automate the migration from single source (either git repos/CM or from source gateway itself) to single or multiple gateway destinations.

Also customize or decorate the destination gateways with specific private keys, trusted certs, FIPS and add unique users specific to destination.

All these migrations and customization from source to destination(s) will be automated using Jenkins Pipeline, where I will have distinct stages and steps within the pipeline that would be executed upon schedule and complete the whole process within seconds.



## Key Stages

### Preparing Migration

- Install NodeJS env for migration.
- Get Graphman Client from a private repo – This is the command line utility that would help us in the migration process.

### Export from Source

- Export Folders/Services from source Gateway and create a unique bundle, followed by exploding that bundle into individual components (trusted certs, keys, fips etc.,)

### Preparing for Import to Destination(s)

- Get any Target Specific components like keys, FIPS, users etc., from Target Specific Repo.
- Push and commit those Export outcomes (previous steps) to Repo.

### Import

- Import bundles and target specific user, SSL key, trusted certs etc.,

Now that I have explained the approach using Graphman, context, and scenario of the flow, let us watch the demo of the pipeline followed by a few test cases.

## Graphman Use Case Presentation and Demo

<https://www.youtube.com/watch?v=gzZPGAeLqlg>

## References:

### → Graphman API built into Layer7 Gateway

- v10.1 cr03
- v11.0 cr01 (later this year)
- Container Image (tag 10.1.00\_CR03)

### → Graphman tooling

- ◆ <https://github.com/caapim/graphman-client> (public)

### → Operator

- ◆ <https://github.com/caapim/layer7-operator> (private repo by-invite)