Secure Workload On-Premises Cluster to SaaS Migration

This chapter focuses on Secure Workload on-premises cluster migration to Secure Workload SaaS deployment. In this scenario, each on-premises cluster tenant is migrated to a dedicated tenant on the SaaS. If the on-premises appliance has multiple tenants, migrate each tenant to a corresponding dedicated tenant on the SaaS so that each migrated new SaaS tenant is therefore accessible using a unique URL.

This chapter contains the following sections:

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Overview of Data Migration from On-Premises Cluster to SaaS Deployment

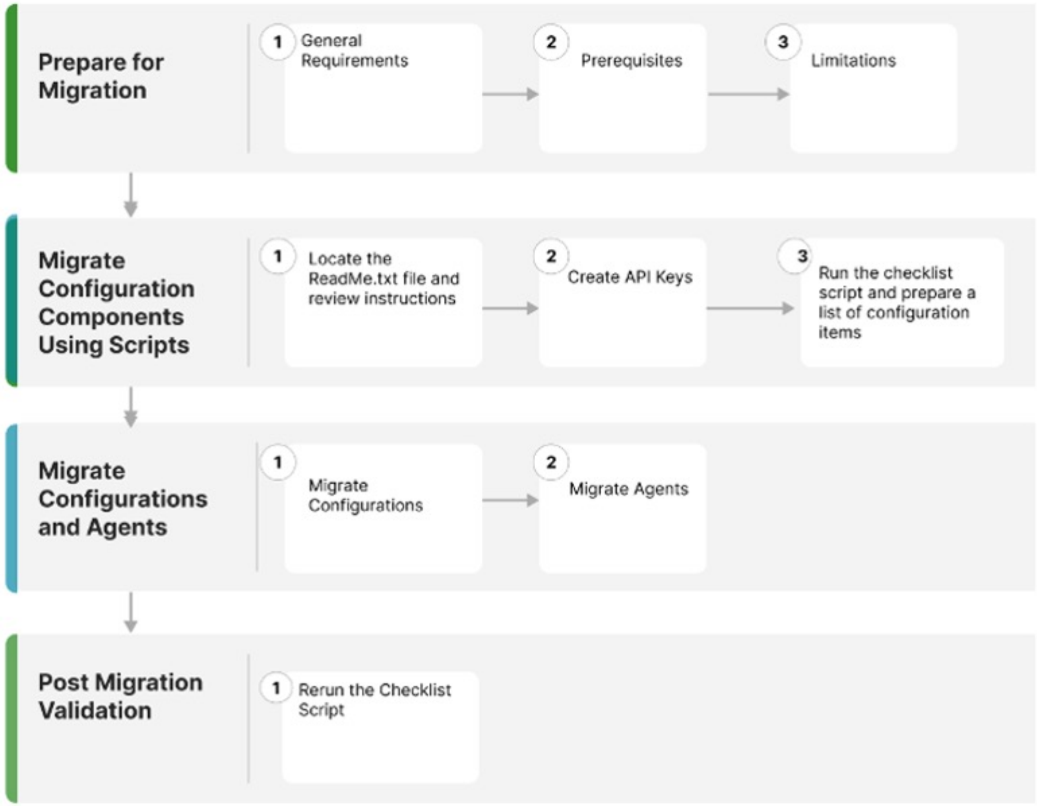
When migrating data from an on-premises cluster to a SaaS deployment in Secure Workload, use APIs to automate the migration process; however, you will require manual configurations for certificates and keys for Orchestrators, Connectors, Virtual Appliances and User Accounts. While migrating user accounts, users must reset their passwords on the new Cisco Secure Workload instance.

Note Configuration data, flow data, audit logs, conversations, and ADM history are not a part of this migration.

End-to-End Migration Workflow

To ensure a smooth migration, follow the following end-to-end workflow that outlines the necessary steps for migrating data and configurations from an on-premise appliance to a SaaS deployment. It is important to complete each step sequentially to maximize the migration activity.

Figure 1: Prepare for Migration


Prepare for Migration
1 General Requirements
2 Prerequisites
3 Limitations
Migrate Configuration Components Using Scripts
1 Locate the ReadMe.txt file and review instructions
2 Create API Keys
3 Run the checklist script and prepare a list of configuration items
Migrate Configurations and Agents
1 Migrate Configurations
2 Migrate Agents
Post Migration Validation
1 Rerun the Checklist Script

1	Prepare for Migration	Prepare for the migration that includes general requirements, prerequisites, and limitations.
2	Migrate Configuration Components Using Scripts	After downloading the migration script, locate the ReadMe.txt file and review the instructions in the text file. Ensure to install the Python environment and the required libraries for the migration scripts on the client machine.
3	Migrate Configurations and Software Agents	After building the premigration checklist, proceed with the migration of configurations and software agents.
4	Post-Migration Validation	After migrating the automated and manual configuration items, rerun the checklist script to verify the migration.

Assumptions

This document assumes familiarity with the Cisco Secure Workload solution and provides other assumptions that are related to the migration process. These assumptions include:

- If there is an on-premises cluster, which is involved in the migration process, then it either has a single tenant or each tenant on the on-premises cluster is migrated to a dedicated SaaS tenant separately.
- Appropriate licenses are available on the destination tenant, and Admin access is available for the SaaS migration.
- No configuration changes on the on-premises cluster environment during the migration period.
- Frozen configuration changes on the on-premises cluster environment for the time period of migration..
- On-premises appliances and services are working as expected and are healthy.
- Ensure that there are no critical or warning level alerts from the on-premises appliances.
- As of release 3.8 the following features are deprecated:
  - Hardware sensors and universal agents.
  - Data Platform – Tetration Lookout Apps (**Organize** > **Look Out**)
  - Dashboard – Flows (**Investigate** > **Traffic Dashboard**).
  - Performance Dashboard (**Investigate** > **Performance Dashboard**).
  - Neighborhood App (**Investigate** > **Neighborhood**).
  - Policy chord view within **Workspace**.

Prepare for Migration

General Requirements

- The on-premises cluster and software agents must be on 3.8 version or later. If the on-premises appliance is running older versions, we recommend upgrading the cluster and software agent to 3.8 version before proceeding with the migration.

  For information on how to upgrade, see Cisco Secure Workload Upgrade Guide.
- Create a list of external systems that communicate with Secure Workload platform APIs. When the migration is complete, make sure you create the appropriate Secure Workload API credentials on the new SaaS tenant and update the external systems with the new keys.
- Expect temporary agent enforcement interruptions during the migration, therefore, plan a maintenance window accordingly.

Prerequisites

- When you create the SaaS tenant, either manually or through automated APIs, transition local users from an on-premises environment to a SaaS tenant

  There are two types of external authentication:

  - Lightweight Directory Access Protocol (LDAP): To migrate unsupported local users in the SaaS environment, you must first migrate users to an Identity Provider (IdP). For migrating the users to an IdP, submit a request in the SaaS platform for manual migration of users and the roles.
  - Single Sign-On(SSO): For SSO migration, use **Federation** with the customer IdP. This type of external authentication involves establishing a trust relationship between the SaaS platform and the IdP. Raise a request in the SaaS platform for manual migration of users and the roles.

- Change the URL to access the Secure Workload tenant.
- Review the CMDB entries and Retention aspects (On-premises versus SaaS).

  For more information, see Cisco Secure Workload as a Service for details on data retention and deletion.

- When migrating from on-premises to SaaS, the Secure Workload UI options under the **Platform** > **Troubleshoot** sections on the On-premise appliance are not available; also, external infrastructure monitoring is not required in a SaaS deployment.
  - HTTP Outbound/Proxy configuration is not required in a SaaS deployment.
  - **Usage Analytics** option is not available in a SaaS deployment.

- Ensure that your enterprise outbound firewall rules allow outbound access to the Secure Workload SaaS destination. The SaaS welcome email has a detailed list of IPs that must be in the allowed list.
- Ensure you document the verification outputs while you are performing the migration workflow.
- Review the release notes for detailed information on the new features. As of release 3.8, the following features are deprecated:
  - Hardware sensors and universal agents
  - Data Platform–Tetration Lookout Apps (**Organize** > **Look Out**)
  - Dashboard–Flows (**Investigate** > **Traffic Dashboard Out**)
  - Performance Dashboard (**Investigate** > **Performance Dashboard**)
  - Neighborhood App (**Investigate** > **Neighborhood**)
  - Policy chord view within workspaces

Limitations

- The following data items are not migrated:
  - Historical flow data
  - Change logs
  - API Keys (recreate and add to the external systems)

- Within a Workspace, the following data items are not migrated:
  - Activity logs and policy version history
  - ADM conversations and historical ADM results and revision history
  - Only the latest version of the policy is migrated. After the migration is complete, reenable the policy analysis.
- The following data items are not available or supported on a SaaS deployment:
  - Agent Remote VRF configuration and Interface configuration intents
  - Login Page Message and SSL certificate options
  - STIX-TAXII
  - Federation
- During migration, the following are either not available or not required in a SaaS deployment:
  - Nonavailability of the GUI options **Platform** > **Troubleshoot** on the on-premises appliance
  - Nonavailability of the **Usage Analytics** option
  - Avoid any external infrastructure monitoring.
  - Avoid any HTTP outbound or proxy configurations.

Migrate Configuration Components Using Scripts

Step 1 After downloading the migration script, locate the ReadMe.txt file and review the instructions to ensure that you create the Python environment and install the required libraries for the migration scripts on the client machine.

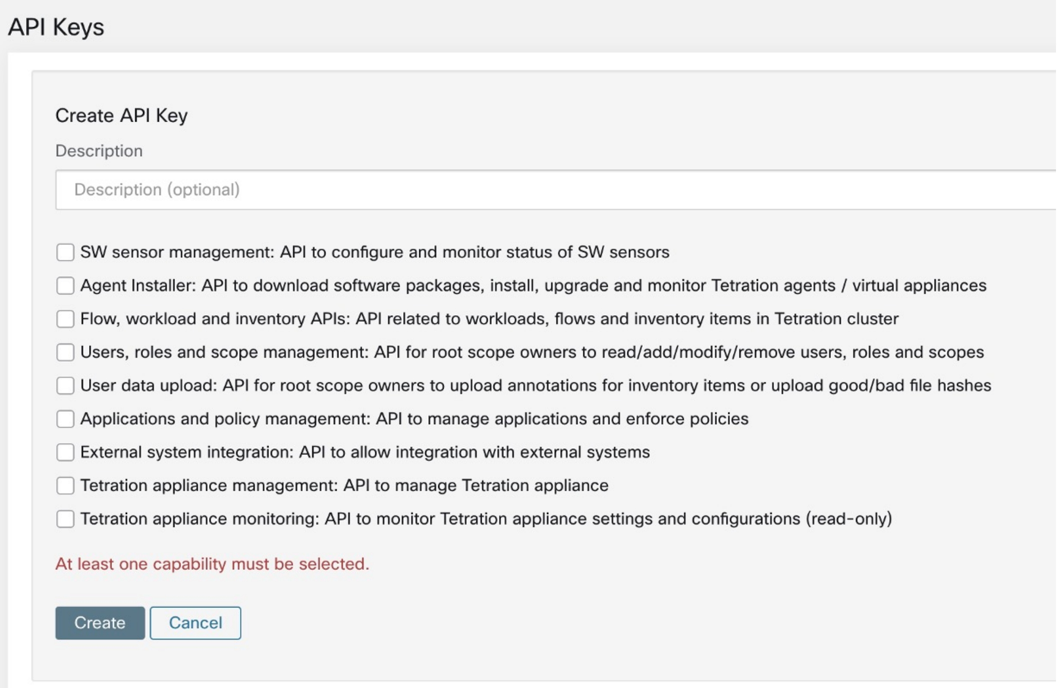
Note Open a TAC case and request access to on-premises to SaaS migration scripts . The actual command usages and output varies in this document; see the README document with the specifics provided at the time of migration.

Step 2 Log in to Secure Workload tenants as a **Site Admin** on both the source and destination cluster tenants.

Step 3 On the Secure Workload UI, choose the **human icon** > **API Keys**.

Step 4 To create API keys, choose **Create API Key** and check at least one API capability from the following list:

Figure 2: API Key Capabilities



API Keys

Create API Key

Description

Description (optional)

- □ SW sensor management: API to configure and monitor status of SW sensors
- □ Agent Installer: API to download software packages, install, upgrade and monitor Tetration agents / virtual appliances
- □ Flow, workload and inventory APIs: API related to workloads, flows and inventory items in Tetration cluster
- □ Users, roles and scope management: API for root scope owners to read/add/modify/remove users, roles and scopes
- □ User data upload: API for root scope owners to upload annotations for inventory items or upload good/bad file hashes
- □ Applications and policy management: API to manage applications and enforce policies
- □ External system integration: API to allow integration with external systems
- □ Tetration appliance management: API to manage Tetration appliance
- □ Tetration appliance monitoring: API to monitor Tetration appliance settings and configurations (read-only)

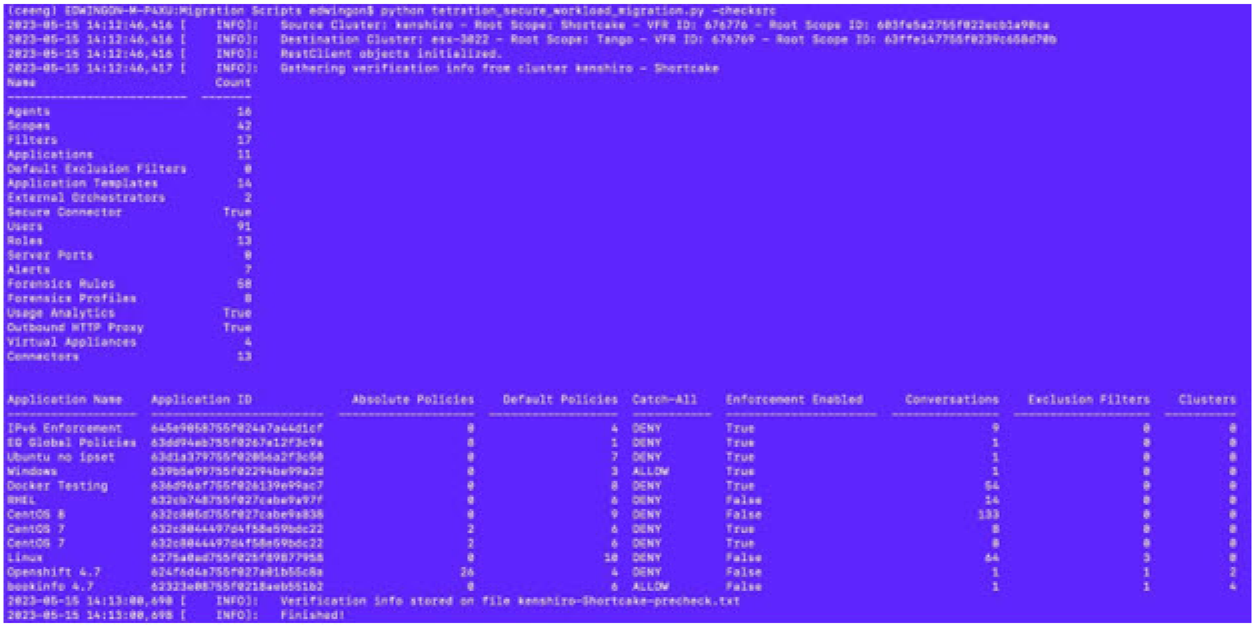
At least one capability must be selected.

Step 5 Download the API key file and save it in the same location as the migration scripts.

Step 6 Run the checklist script on the on-premises tenant to prepare a list of configuration items for migration. Ensure that you record the output from the checklist script.

Step 7 Rerun the checklist script against the new SaaS tenant at various stages of migration to ensure proper migration of all the configuration items.

Figure 3: Checklist Script Output



```
(ceeng) EDWINGON-M-P4XU:Migration Scripts edwingon$ python tetration_secure_workload_migration.py -checksrc
2023-05-15 14:12:46,416 [    INFO]:   Source Cluster: kenshiro - Root Scope: Shortcake - VFR ID: 676776 - Root Scope ID: 603fe5a2755f022ecb1a90ca
2023-05-15 14:12:46,416 [    INFO]:   Destination Cluster: esx-3022 - Root Scope: Tango - VFR ID: 676769 - Root Scope ID: 63ffe147755f0239c668d70b
2023-05-15 14:12:46,416 [    INFO]:   RestClient objects initialized.
2023-05-15 14:12:46,417 [    INFO]:   Gathering verification info from cluster kenshiro - Shortcake
Name                          Count
-------------------------   -------
Agents                           16
Scopes                           42
Filters                          17
Applications                     11
Default Exclusion Filters         0
Application Templates            14
External Orchestrators            2
Secure Connector               True
Users                            91
Roles                            13
Server Ports                      0
Alerts                            7
Forensics Rules                  58
Forensics Profiles                8
Usage Analytics                True
Outbound HTTP Proxy            True
Virtual Appliances                4
Connectors                       13


Application Name    Application ID              Absolute Policies    Default Policies  Catch-All   Enforcement Enabled     Conversations    Exclusion Filters     Clusters
------------------  -------------------------  -------------------  ----------------  ----------  ---------------------  ---------------  -------------------  ----------
IPv6 Enforcement    645e9058755f024a7a44d1cf                     0                 4  DENY        True                                 9                    0           0
EG Global Policies  63dd94ab755f0267e12f3c9a                     0                 1  DENY        True                                 1                    0           0
Ubuntu no ipset     63d1a379755f02066a2f3c50                     0                 7  DENY        True                                 1                    0           0
Windows             639b5e99755f0229 4be99a2d                    0                 3  ALLOW       True                                 1                    0           0
Docker Testing      636d96af755f026139e99ac7                     0                 8  DENY        True                                54                    0           0
RHEL                632cb748755f027cabe9a97f                     0                 6  DENY        False                               14                    0           0
CentOS 8            632c805d755f027cabe9a838                     0                 9  DENY        False                              133                    0           0
CentOS 7            632c804449 7d4f58a59bdc22                    2                 6  DENY        True                                 8                    0           0
CentOS 7            632c804449 7d4f58e69bdc22                    2                 6  DENY        True                                 8                    0           0
Linux               6275a0ad755f025f8987 7958                    0                10  DENY        False                               64                    3           0
Openshift 4.7       624f6d4a755f027a01b55c8a                    26                 4  DENY        False                                1                    1           2
bookinfo 4.7        62323e08755f0218aeb551b2                     0                 6  ALLOW       False                                1                    1           4
2023-05-15 14:13:00,698 [    INFO]:   Verification info stored on file kenshiro-Shortcake-precheck.txt
2023-05-15 14:13:00,698 [    INFO]:   Finished!
```

Note Use the migration scripts to automate some of the configuration items while some may not be automated. The last set of configuration items require manual migration because of lack of API support at this point.

The following table shows the complete list of configuration items for migration:

Table 1: Configuration Components for Migration

Configuration Component	Migration Method
Manual Labels	Automated
Scopes	Automated
Inventory Filters	Automated
Agent Profiles	Automated
Agent Intents	Automated
Workspaces	Automated
Workspace Policies (latest version)	Automated
Workspace Clusters	Automated
Roles	Automated
Users	Automated
Exclusion Filters-Default & Workspace	Automated
External Orchestrators	Automated (Credentials are required)
Client Server Config (Server Ports)	Automated
Forensics - Profiles and Intents	Automated
Policy Templates (custom templates)	Manual (API available, not automated yet)
Collection Rules	Automated
Default ADM configuration	Automated
Alert config/Publishers	Automated
Secure Connector	Manual (APIs not available)
Virtual Appliances (Ingest or edge)	Manual (APIs not available)
Connectors	Manual (API available, not automated yet)
Data tap configuration	Manual (APIs not available)

Note If you are using **External Orchestrators** and **Connectors**, keep the credentials handy before proceeding to the next phase of migration.

Migrate Configurations and Software Agents

As a first step to migrating the configurations and agents, prepare a premigration checklist. After the premigration checklist is ready, start migrating the configurations and the agents. While migrating some configurations in parallel that are without dependencies, we recommend scheduling a maintenance window for disruptive actions such as agent migration, moving, installing, or uninstalling and enforcement cutover activities.

Customer Experience (CX) engineers and partners prepare a plan, detailing the entire migration process considering your environment and specific requirements.

Migrate Configurations

Before you begin

To proceed with migration, we recommend that you redeploy the Virtual Appliances (Injest and Edge) and Secure Connectors if they are already in use.

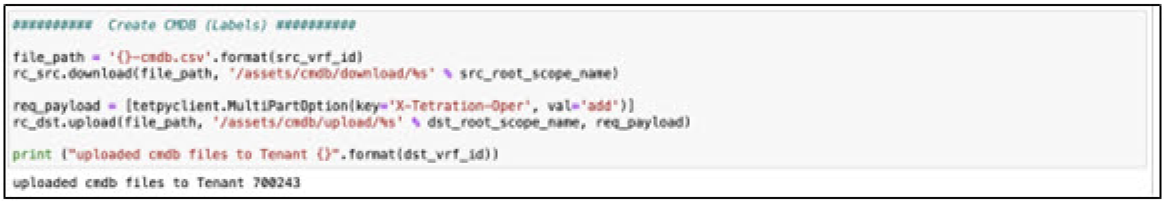
For more information, see Virtual Appliances for Connectors in the *Secure Workload User Guide*.

If you can access the External orchestrators or Connectors only from an on-premises cluster and the migration is to a SaaS tenant, we recommend you deploy a Secure Connector on the on-premises appliance for the connectivity between SaaS and on-premise infrastructure.

For more information, see Secure Connectors in the *Secure Workload User Guide*.

Step 1 Run the migration script to migrate the configuration:

Figure 4: Label Migration



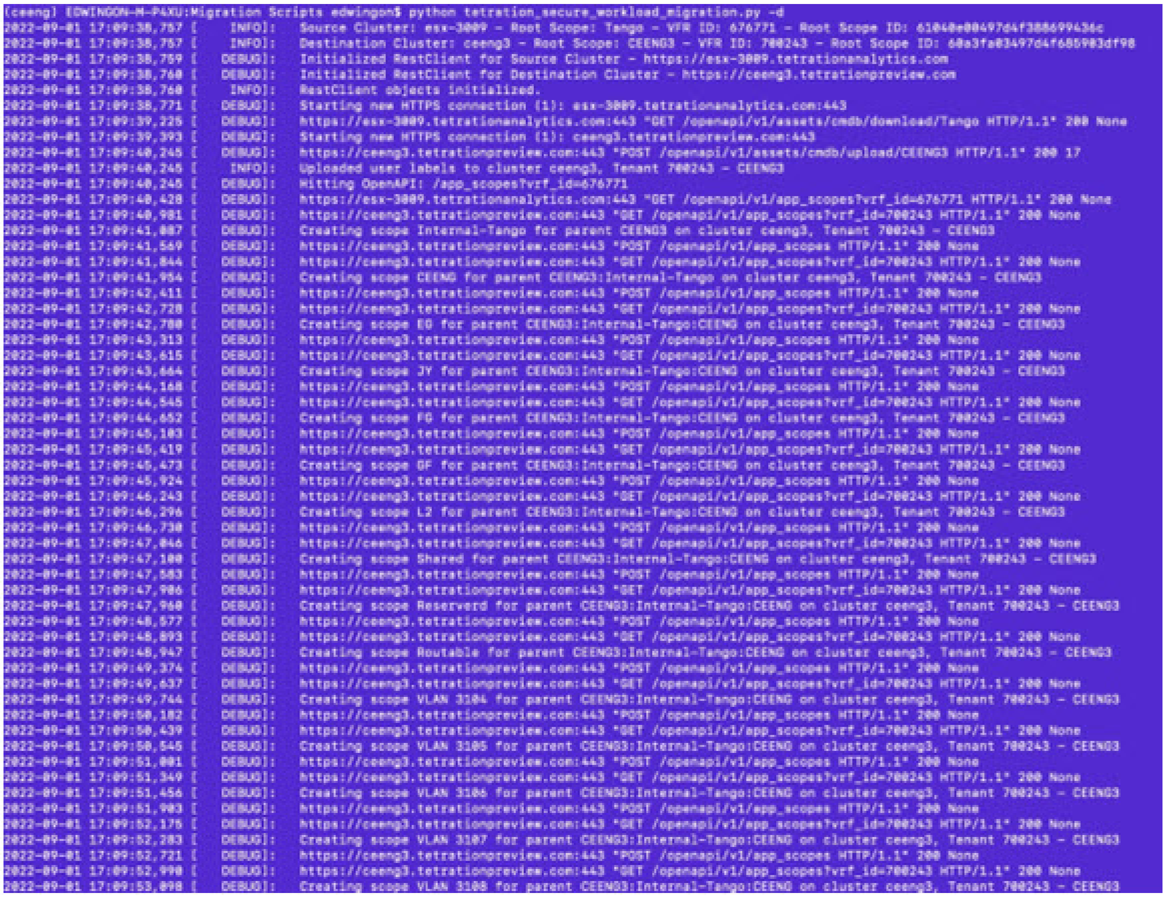
```
##########  Create CMDB (Labels) ##########

file_path = '{}-cmdb.csv'.format(src_vrf_id)
rc_src.download(file_path, '/assets/cmdb/download/%s' % src_root_scope_name)

req_payload = [tetpyclient.MultiPartOption(key='X-Tetration-Oper', val='add')]
rc_dst.upload(file_path, '/assets/cmdb/upload/%s' % dst_root_scope_name, req_payload)

print ("uploaded cmdb files to Tenant {}".format(dst_vrf_id))
uploaded cmdb files to Tenant 700243
```

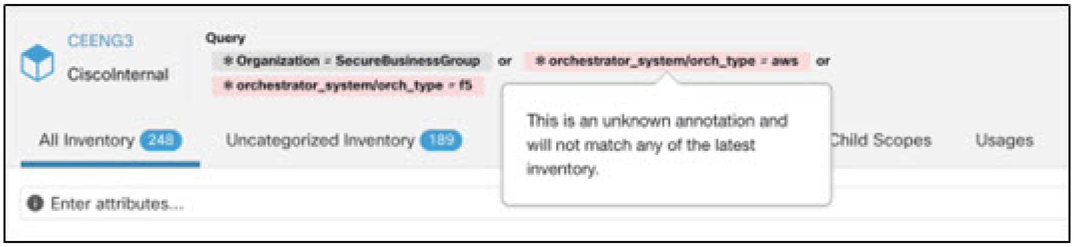
Figure 5: Scope Tree Migration



```
(ceeng) EDWINGON-M-P4XU:Migration Scripts edwingon$ python tetration_secure_workload_migration.py -d
2022-09-01 17:09:38,757 [    INFO]:   Source Cluster: esx-3009 - Root Scope: Tango - VFR ID: 676771 - Root Scope ID: 61040e00497d4f388699436c
2022-09-01 17:09:38,757 [    INFO]:   Destination Cluster: ceeng3 - Root Scope: CEENG3 - VFR ID: 700243 - Root Scope ID: 60a3fa03497d4f685903df98
2022-09-01 17:09:38,759 [   DEBUG]:   Initialized RestClient for Source Cluster - https://esx-3009.tetrationanalytics.com
2022-09-01 17:09:38,760 [   DEBUG]:   Initialized RestClient for Destination Cluster - https://ceeng3.tetrationpreview.com
2022-09-01 17:09:38,760 [    INFO]:   RestClient objects initialized.
2022-09-01 17:09:38,771 [   DEBUG]:   Starting new HTTPS connection (1): esx-3009.tetrationanalytics.com:443
2022-09-01 17:09:39,225 [   DEBUG]:   https://esx-3009.tetrationanalytics.com:443 "GET /openapi/v1/assets/cmdb/download/Tango HTTP/1.1" 200 None
2022-09-01 17:09:39,393 [   DEBUG]:   Starting new HTTPS connection (1): ceeng3.tetrationpreview.com:443
2022-09-01 17:09:40,245 [   DEBUG]:   https://ceeng3.tetrationpreview.com:443 "POST /openapi/v1/assets/cmdb/upload/CEENG3 HTTP/1.1" 200 17
2022-09-01 17:09:40,245 [    INFO]:   Uploaded user labels to cluster ceeng3, Tenant 700243 - CEENG3
2022-09-01 17:09:40,245 [   DEBUG]:   Hitting OpenAPI: /app_scopes?vrf_id=676771
2022-09-01 17:09:40,428 [   DEBUG]:   https://esx-3009.tetrationanalytics.com:443 "GET /openapi/v1/app_scopes?vrf_id=676771 HTTP/1.1" 200 None
2022-09-01 17:09:40,981 [   DEBUG]:   https://ceeng3.tetrationpreview.com:443 "GET /openapi/v1/app_scopes?vrf_id=700243 HTTP/1.1" 200 None
2022-09-01 17:09:41,087 [   DEBUG]:   Creating scope Internal-Tango for parent CEENG3 on cluster ceeng3, Tenant 700243 - CEENG3
2022-09-01 17:09:41,569 [   DEBUG]:   https://ceeng3.tetrationpreview.com:443 "POST /openapi/v1/app_scopes HTTP/1.1" 200 None
2022-09-01 17:09:41,844 [   DEBUG]:   https://ceeng3.tetrationpreview.com:443 "GET /openapi/v1/app_scopes?vrf_id=700243 HTTP/1.1" 200 None
2022-09-01 17:09:41,954 [   DEBUG]:   Creating scope CEENG for parent CEENG3:Internal-Tango on cluster ceeng3, Tenant 700243 - CEENG3
2022-09-01 17:09:42,411 [   DEBUG]:   https://ceeng3.tetrationpreview.com:443 "POST /openapi/v1/app_scopes HTTP/1.1" 200 None
2022-09-01 17:09:42,728 [   DEBUG]:   https://ceeng3.tetrationpreview.com:443 "GET /openapi/v1/app_scopes?vrf_id=700243 HTTP/1.1" 200 None
2022-09-01 17:09:42,780 [   DEBUG]:   Creating scope EG for parent CEENG3:Internal-Tango:CEENG on cluster ceeng3, Tenant 700243 - CEENG3
2022-09-01 17:09:43,313 [   DEBUG]:   https://ceeng3.tetrationpreview.com:443 "POST /openapi/v1/app_scopes HTTP/1.1" 200 None
2022-09-01 17:09:43,615 [   DEBUG]:   https://ceeng3.tetrationpreview.com:443 "GET /openapi/v1/app_scopes?vrf_id=700243 HTTP/1.1" 200 None
2022-09-01 17:09:43,664 [   DEBUG]:   Creating scope JY for parent CEENG3:Internal-Tango:CEENG on cluster ceeng3, Tenant 700243 - CEENG3
2022-09-01 17:09:44,168 [   DEBUG]:   https://ceeng3.tetrationpreview.com:443 "POST /openapi/v1/app_scopes HTTP/1.1" 200 None
2022-09-01 17:09:44,545 [   DEBUG]:   https://ceeng3.tetrationpreview.com:443 "GET /openapi/v1/app_scopes?vrf_id=700243 HTTP/1.1" 200 None
2022-09-01 17:09:44,652 [   DEBUG]:   Creating scope FG for parent CEENG3:Internal-Tango:CEENG on cluster ceeng3, Tenant 700243 - CEENG3
2022-09-01 17:09:45,103 [   DEBUG]:   https://ceeng3.tetrationpreview.com:443 "POST /openapi/v1/app_scopes HTTP/1.1" 200 None
2022-09-01 17:09:45,419 [   DEBUG]:   https://ceeng3.tetrationpreview.com:443 "GET /openapi/v1/app_scopes?vrf_id=700243 HTTP/1.1" 200 None
2022-09-01 17:09:45,473 [   DEBUG]:   Creating scope GF for parent CEENG3:Internal-Tango:CEENG on cluster ceeng3, Tenant 700243 - CEENG3
2022-09-01 17:09:45,924 [   DEBUG]:   https://ceeng3.tetrationpreview.com:443 "POST /openapi/v1/app_scopes HTTP/1.1" 200 None
2022-09-01 17:09:46,243 [   DEBUG]:   https://ceeng3.tetrationpreview.com:443 "GET /openapi/v1/app_scopes?vrf_id=700243 HTTP/1.1" 200 None
2022-09-01 17:09:46,296 [   DEBUG]:   Creating scope L2 for parent CEENG3:Internal-Tango:CEENG on cluster ceeng3, Tenant 700243 - CEENG3
2022-09-01 17:09:46,730 [   DEBUG]:   https://ceeng3.tetrationpreview.com:443 "POST /openapi/v1/app_scopes HTTP/1.1" 200 None
2022-09-01 17:09:47,046 [   DEBUG]:   https://ceeng3.tetrationpreview.com:443 "GET /openapi/v1/app_scopes?vrf_id=700243 HTTP/1.1" 200 None
2022-09-01 17:09:47,100 [   DEBUG]:   Creating scope Shared for parent CEENG3:Internal-Tango:CEENG on cluster ceeng3, Tenant 700243 - CEENG3
2022-09-01 17:09:47,583 [   DEBUG]:   https://ceeng3.tetrationpreview.com:443 "POST /openapi/v1/app_scopes HTTP/1.1" 200 None
2022-09-01 17:09:47,906 [   DEBUG]:   https://ceeng3.tetrationpreview.com:443 "GET /openapi/v1/app_scopes?vrf_id=700243 HTTP/1.1" 200 None
2022-09-01 17:09:47,960 [   DEBUG]:   Creating scope Reserverd for parent CEENG3:Internal-Tango:CEENG on cluster ceeng3, Tenant 700243 - CEENG3
2022-09-01 17:09:48,577 [   DEBUG]:   https://ceeng3.tetrationpreview.com:443 "POST /openapi/v1/app_scopes HTTP/1.1" 200 None
2022-09-01 17:09:48,893 [   DEBUG]:   https://ceeng3.tetrationpreview.com:443 "GET /openapi/v1/app_scopes?vrf_id=700243 HTTP/1.1" 200 None
2022-09-01 17:09:48,947 [   DEBUG]:   Creating scope Routable for parent CEENG3:Internal-Tango:CEENG on cluster ceeng3, Tenant 700243 - CEENG3
2022-09-01 17:09:49,374 [   DEBUG]:   https://ceeng3.tetrationpreview.com:443 "POST /openapi/v1/app_scopes HTTP/1.1" 200 None
2022-09-01 17:09:49,637 [   DEBUG]:   https://ceeng3.tetrationpreview.com:443 "GET /openapi/v1/app_scopes?vrf_id=700243 HTTP/1.1" 200 None
2022-09-01 17:09:49,744 [   DEBUG]:   Creating scope VLAN 3104 for parent CEENG3:Internal-Tango:CEENG on cluster ceeng3, Tenant 700243 - CEENG3
2022-09-01 17:09:50,182 [   DEBUG]:   https://ceeng3.tetrationpreview.com:443 "POST /openapi/v1/app_scopes HTTP/1.1" 200 None
2022-09-01 17:09:50,439 [   DEBUG]:   https://ceeng3.tetrationpreview.com:443 "GET /openapi/v1/app_scopes?vrf_id=700243 HTTP/1.1" 200 None
2022-09-01 17:09:50,545 [   DEBUG]:   Creating scope VLAN 3105 for parent CEENG3:Internal-Tango:CEENG on cluster ceeng3, Tenant 700243 - CEENG3
2022-09-01 17:09:51,001 [   DEBUG]:   https://ceeng3.tetrationpreview.com:443 "POST /openapi/v1/app_scopes HTTP/1.1" 200 None
2022-09-01 17:09:51,349 [   DEBUG]:   https://ceeng3.tetrationpreview.com:443 "GET /openapi/v1/app_scopes?vrf_id=700243 HTTP/1.1" 200 None
2022-09-01 17:09:51,456 [   DEBUG]:   Creating scope VLAN 3106 for parent CEENG3:Internal-Tango:CEENG on cluster ceeng3, Tenant 700243 - CEENG3
2022-09-01 17:09:51,903 [   DEBUG]:   https://ceeng3.tetrationpreview.com:443 "POST /openapi/v1/app_scopes HTTP/1.1" 200 None
2022-09-01 17:09:52,175 [   DEBUG]:   https://ceeng3.tetrationpreview.com:443 "GET /openapi/v1/app_scopes?vrf_id=700243 HTTP/1.1" 200 None
2022-09-01 17:09:52,283 [   DEBUG]:   Creating scope VLAN 3107 for parent CEENG3:Internal-Tango:CEENG on cluster ceeng3, Tenant 700243 - CEENG3
2022-09-01 17:09:52,721 [   DEBUG]:   https://ceeng3.tetrationpreview.com:443 "POST /openapi/v1/app_scopes HTTP/1.1" 200 None
2022-09-01 17:09:52,990 [   DEBUG]:   https://ceeng3.tetrationpreview.com:443 "GET /openapi/v1/app_scopes?vrf_id=700243 HTTP/1.1" 200 None
2022-09-01 17:09:53,098 [   DEBUG]:   Creating scope VLAN 3108 for parent CEENG3:Internal-Tango:CEENG on cluster ceeng3, Tenant 700243 - CEENG3
```

Note Any queries for filters, scopes, and intents that are based on labels from Orchestrators and Connectors, or Agents are migrated to the new SaaS tenant, but the status might display ‘unknown annotations’. After you complete the migration of the agents, Connectors and Orchestrators to the new SaaS tenent, the warning no longer displays on the GUI.

Figure 6: Unknown Annotations



CEENG3
CiscoInternal
Query
* Organization = SecureBusinessGroup
or
* orchestrator_system/orch_type = aws
or
* orchestrator_system/orch_type = f5
All Inventory 248
Uncategorized Inventory 189
Child Scopes
Usages
Enter attributes...

This is an unknown annotation and will not match any of the latest inventory.

Note The migration script disables the enforcement for workspaces in the SaaS tenant, therefore, you must manually reenable the enforcement after completing the agent migration.

Step 2 Run the summary script option to compare each automated configuration item against the output recorded during premigration. For discrepancies on any specific items, identify the configuration item by running a comparison of on-premises tenant configuration versus the SaaS tenant configuration.

Note Work with TAC and SRE teams for further investigation on the migration failures.

Step 3 You cannot automate the migration of **Connectors** using the shared automation scripts, however APIs are available for automated migration. Recreate the API keys, secrets, or credentials for the **Connectors** and add them to the new configuration on the destination SaaS tenant. For more information, see Secure Connectors in the *Secure Workload User Guide*.

Migrate Software Agents

Before you begin

Ensure that the on-premises cluster and the Software agents are on the same version-Secure Workload 3.8.x.x.

Before you begin the migration process, prepare a list of functional tests for the required applications. Run the tests and make sure you are receiving expected outcomes and are recording them.

Step 1 Disable the enforcement for the chosen set of agents for migration. Depending on the migration plan, choose either a single or a phased approach for migrating all the agents.

Step 2 From the navigation pane, choose **Manage** > **Agents** and select the **Agent Rehoming** option to add the agent rehoming configurations.

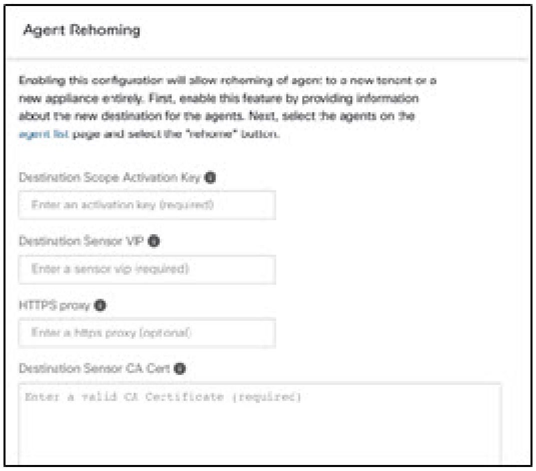
Scope Activation Key: From the navigation pane, choose **Menu** > **Workloads** > **Agents** > **Installer Tab** > **Agent Image Installer**.

Destination Sensor CA Cert: From the navigation pane, choose **Menu** > **Platform** > **Cluster Configuration** on destination cluster.

Destination Sensor VIP: From the navigation pane, choose **Menu** > **Platform** > **Cluster Configuration** on destination cluster.

Note For the SaaS deployment, use the sensor VIP-"wss<cluster_name>.tetrationcloud.com" and the "cluster_name" from the agent installer script name. The filename for the installer script follows the format-tetration_installer_<tenant_name>_<agent_type>_<os>_<cluster_name>.

Figure 7: Agent Rehoming



Agent Rehoming

Enabling this configuration will allow rehoming of agents to a new tenant or a new appliance entirely. First, enable this feature by providing information about the new destination for the agents. Next, select the agents on the agent list page and select the "rehome" button.

Destination Scope Activation Key: Enter an activation key (required)

Destination Sensor VIP: Enter a sensor vip (required)

HTTPS proxy: Enter a https proxy (optional)

Destination Sensor CA Cert: Enter a valid CA Certificate (required)

Step 3 For rehoming the agents, choose all or only the required set of agents for migration and click **Re-home Agents**.

Step 4 Verify that each of the agents registers correctly under the **Manage** > **Agents** > **Agent list** on the Secure Workload UI.

Note The agents take a few hours to display their status as active.

Step 5 After you migrate the agents, enable enforcement on the relevant workspaces.

Step 6 Ensure that you provision the policies on the workspace. From the navigation pane, choose **Defend** > **Enforcement status** on the Secure Workload UI, and verify the following:

- **Concrete Policies in Sync** status displays **Yes** and is in Green.
- **Concrete Policies in Sync** status displays **No** and is in Red.

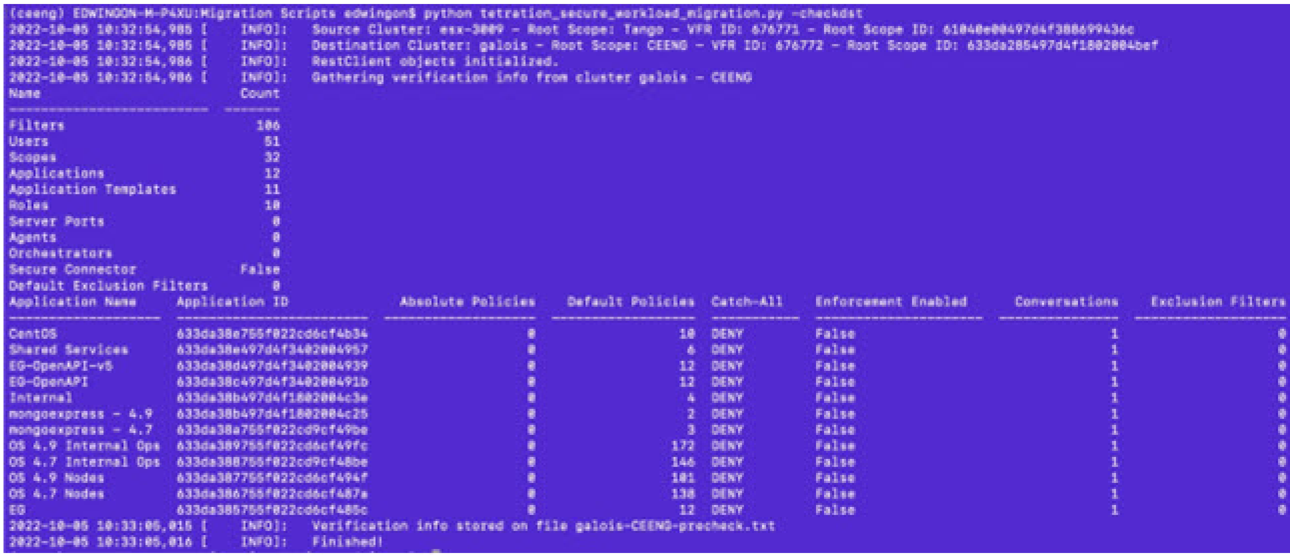
  From the navigation pane, choose **Workload profile** for the given workload and look for errors in the **Download logs** > **Initiate log collection**.

Note Make sure you complete all the required checks before proceeding for the verification check.

Post-Migration Validation

After migrating the automated and manual configurations, rerun the checklist script and make sure that the configuration items (including the number of agents) on the SaaS tenant matches with the items on the on-premises tenant.

Figure 8: Post-Migration Validation



```
(ceeng) EDWINGON-M-P4XU:Migration Scripts edwingon$ python tetration_secure_workload_migration.py -checkdst
2022-10-05 10:32:54,985 [    INFO]:   Source Cluster: esx-3009 - Root Scope: Tango - VFR ID: 676771 - Root Scope ID: 61040e00497d4f388699436c
2022-10-05 10:32:54,985 [    INFO]:   Destination Cluster: galois - Root Scope: CEENG - VFR ID: 676772 - Root Scope ID: 633da285497d4f1802004bef
2022-10-05 10:32:54,986 [    INFO]:   RestClient objects initialized.
2022-10-05 10:32:54,986 [    INFO]:   Gathering verification info from cluster galois - CEENG
Name                         Count
-------------------------   -------
Filters                        106
Users                           51
Scopes                          32
Applications                    12
Application Templates           11
Roles                           10
Server Ports                     0
Agents                           0
Orchestrators                    0
Secure Connector             False
Default Exclusion Filters        0
Application Name     Application ID                Absolute Policies    Default Policies   Catch-All     Enforcement Enabled      Conversations    Exclusion Filters
-------------------  ------------------------    -------------------  ------------------   -----------   ----------------------   ---------------  ---------------------
CentOS               633da38e755f022cd6cf4b34                      0                  10   DENY          False                                1                    0
Shared Services      633da38e497d4f3402004957                      0                   6   DENY          False                                1                    0
EG-OpenAPI-v5        633da38d497d4f3402004939                      0                  12   DENY          False                                1                    0
EG-OpenAPI           633da38c497d4f340200491b                      0                  12   DENY          False                                1                    0
Internal             633da38b497d4f1802004c3e                      0                   4   DENY          False                                1                    0
mongoexpress - 4.9   633da38b497d4f1802004c25                      0                   2   DENY          False                                1                    0
mongoexpress - 4.7   633da38a755f022cd9cf49be                      0                   3   DENY          False                                1                    0
OS 4.9 Internal Ops  633da389755f022cd6cf49fc                      0                 172   DENY          False                                1                    0
OS 4.7 Internal Ops  633da388755f022cd9cf48be                      0                 146   DENY          False                                1                    0
OS 4.9 Nodes         633da387755f022cd6cf494f                      0                 101   DENY          False                                1                    0
OS 4.7 Nodes         633da386755f022cd6cf487a                      0                 130   DENY          False                                1                    0
EG                   633da385755f022cd6cf485c                      0                  12   DENY          False                                1                    0
2022-10-05 10:33:05,015 [    INFO]:   Verification info stored on file galois-CEENG-precheck.txt
2022-10-05 10:33:05,016 [    INFO]:   Finished!
```