



Using the Illumio Workload Count Script



This guide describes how to download and run the Illumio Workload Count script for AWS, Azure, and GCP, as well as how to use an AWS CloudFormation template to create a custom role.

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Using the Illumio Workload Count Script

The Illumio Workload Count Script for Illumio Insights and Illumio Segmentation provides you with an automated alternative to the Workload Calculator. The script is available for Azure, AWS, and GCP. To use the script, open a terminal window and run the appropriate script for your CSP.

- For Azure, you can run this script for a single subscription or tenant.
- For AWS, you can run this script for an account or organization.
- For GCP, you can run this script for a folder, organization, or project.



IMPORTANT

Note the following important information about using the Illumio Workload Count Script:

- Do not run any of the scripts using PowerShell.
- You can run the scripts in your cloud's interactive shell (AWS CloudShell, Azure Cloud Shell, or Google Cloud Shell). If you are running the script on your local machine, you must be running Bash version 4.0 or above for AWS and Azure and Bash version 3.0 or above for GCP.
- Make sure that you have downloaded the latest version of the script for your CSP and that you remove any older versions of the script.
- Workload counts may vary slightly depending on your cloud service provider's available regions, supported services, and any potential downtime during script execution.

Downloading the Illumio Workload Count Script

To download the script, open a terminal and run the command for the CSP you are using.



IMPORTANT

Copying the scripts may introduce unwanted line breaks. Remove these line breaks as necessary for the download command to work properly.

Downloading the Illumio Workload Count Script for AWS

Run the following command to download the script for AWS:

```
curl -o aws_resource_count.sh https://raw.githubusercontent.com/illumio-shield/CloudSecure-Tools/main/aws_resource_count.sh && chmod +x aws_resource_count.sh
```

Downloading the Illumio Workload Count Script for Azure

Run the following command to download the script for Azure:

```
curl -o azure_resource_count.sh https://raw.githubusercontent.com/illumio-shield/CloudSecure-Tools/main/azure_resource_count.sh && chmod +x  
azure_resource_count.sh
```

Downloading the Illumio Workload Count Script for GCP

Run the following command to download the script for GCP:

```
curl -o gcp_resource_count.sh https://raw.githubusercontent.com/illumio-shield/CloudSecure-Tools/main/gcp_resource_count.sh && chmod +x  
gcp_resource_count.sh
```

Using the Illumio Workload Count Script for AWS

Before you run the AWS script, make sure that:

- You have installed and authenticated the AWS CLI
- You have installed the jq utility
- You have Bash version 4.0 and above
- Appropriate IAM permissions
- You have the OrganizationAccountAccessRole. If this role is not present in all accounts, you must add a new custom role to all accounts within the organization if you want to use the AWS Workload Count script for organization-level workload counting. See [Adding a Custom Role with a CloudFormation Template \[13\]](#).

The following is an example of the script:

```
./aws_resource_count.sh --scope <scope> --role <role> [options]
```

For --scope <scope>, specify the AWS scope to scan. As previously stated, you can run the script for accounts or organizations.

```
-- scope <scope>      Specify the AWS scope to scan:  
- account:<ACCOUNT_ID> will scan a single account  
- account:<ACCOUNT_ID_1,ACCOUNT_ID2,ACCOUNT_ID_3> will  
scan multiple  
                           accounts as long as they are comma-separated  
- org:<ORG_ID> will scan for all accounts in the  
organization
```

```
-- role <name>        Cross-account role name
```

Additional options:

```
--external-id <id>   Enter an External ID for custom roles (This is  
required if the role is not 'OrganizationAccountAccessRole'.)  
--verbose              Use this option to enable detailed logging  
--help                 Use this option to display help information
```

Examples:

```
# Using OrganizationAccountAccessRole  
.aws_resource_count.sh --scope org:o-abc123def \  
--role OrganizationAccountAccessRole  
  
# Using a StackSet-deployed custom role with an External ID  
.aws_resource_count.sh --scope org:o-abc123def \  
--role IllumioResourceCounterRole \  
--external-id my-secure-external-id  
  
# Scanning a custom set of accounts (comma-separated list using account)  
.aws_resource_count.sh --scope account:  
111111111111,222222222222,333333333333 \  
--role OrganizationAccountAccessRole
```

Note the following:

- ExternalID is required for using a custom role.
- The script scans all regions for regional resources.
- The script will skip accounts without proper access roles and will display warnings.

The following is an example of the AWS resource count script's output:

Using the Illumio Workload Count Script

```
./aws_resource_count.sh --scope org:204970923586 --role OrganizationAccountAccessRole
:information_source: Using AWS Organizations default role: OrganizationAccountAccessRole
:information_source: Starting AWS Resource Counter for Illumio - v1.0
:heavy_check_mark: Prerequisites verified
:information_source: Successfully fetched latest resource mappings
:information_source: Resource mappings loaded (latest - v1, updated: 2025-08-12T18:30:00Z)
:hourglass_flowin... Fetching accounts from organization...
:information_source: Found 7 account(s) to scan
:hourglass_flowin... Scanning resources (this may take several minutes)...
:information_source: Scanning 7 account(s)...
:hourglass_flowin... Scanning account: 204970923586
:hourglass_flowin... Scanning account: 339713055896
:hourglass_flowin... Scanning account: 385569013408
:hourglass_flowin... Scanning account: 416687240462
:hourglass_flowin... Scanning account: 531884252568
:hourglass_flowin... Scanning account: 905418250883
:hourglass_flowin... Scanning account: 992382773322
:warning: Warning: Cannot access account 339713055896 (check role: OrganizationAccountAccessRole)
:heavy_check_mark: Finished counting resources for 992382773322
:heavy_check_mark: Finished counting resources for 416687240462
:heavy_check_mark: Finished counting resources for 385569013408
:heavy_check_mark: Finished counting resources for 204970923586
:heavy_check_mark: Finished counting resources for 531884252568
:heavy_check_mark: Finished counting resources for 905418250883

:bar_chart: Resource Summary for AWS Organization: 204970923586

:mag: Illumio Insights Workloads (IWL)

Resource Type          Count      IWL
CloudStorage           30         3.00
CloudVirtualMachine    2          2.00
NetworkInfrastructureManagement 340        34.00
NetworkRouting          30174      301740.00
NetworkSecurity          449        44.90
ServerlessFunction       104        2.08
VirtualNetwork          102        102.00

TOTAL                  31201      301928 IWLs
:closed_lock_with_key: Illumio Segmentation Workloads (SWL)

Resource Type          Count      SWL
CloudVirtualMachine    2          2.00
ServerlessFunction       104        2.08

TOTAL                  106        5 SWLs
~/Doc/storm/to/sc/resource-counting  pp/resource-counting-scripts *4 !1 ?1
```

**NOTE**

Running the AWS Workload Count script might take 15 minutes to an hour if your organization is large.

Using the Illumio Workload Count Script for Azure

Before you run the Azure script, make sure that you have:

- Installed and authenticated the Azure CLI (az login)
- Installed the jq utility
- Bash version 4.0 and above
- Appropriate Azure RBAC permissions
- The reader role on target subscriptions (Microsoft.Resources/subscriptions/resources/read)

The following is an example of the script:

```
./azure_resource_count.sh --scope <scope> [options]
```

For --scope <scope>, specify the Azure scope to scan. As previously stated, you can run the script for subscriptions or tenants.

```
--scope <scope>      Specify the Azure scope to scan:  
                     -subscription:<SUBSCRIPTION_ID> will scan a single  
                     subscription  
                     -tenant:<TENANT_ID>: will scan all of the  
                     subscriptions in the tenant
```

Additional options:

--verbose	Use this option to enable detailed logging
--help	Use this option to display help information

Examples:

```
# Scan a single subscription  
./azure_resource_count.sh -- scope  
subscription:12345678-1234-1234-12345678910112  
  
# Scan all subscriptions in the tenant  
./azure_resource_count.sh --scope tenant:default  
  
# Scan with verbose output  
./azur..._resource_count.sh --scope tenant:default --verbose
```

Note the following:

- The script will skip subscriptions that you do not have the permission to access.
- Resource accounts are aggregated across all accessible subscriptions.

The following is an example of the Azure resource count script's output:

```
./azure_resource_count.sh --scope tenant:de6b88d1-8289-4d5c-9453-f5c003e8dd5d
Starting Azure Resource Counter for Illumio - v1.0
Prerequisites verified
Verifying tenant access
Tenant access verified
Resource mappings loaded (latest - v1, updated: 2025-08-12T18:30:00Z)
Resolving scope to subscriptions...
Found 5 subscription(s) to scan
Scanning resources (this may take a few minutes)...
Scanning 5 subscription(s)...
Warning: Skipping subscription 36f0988e-f069-4256-aca6-54564502d406:
Insufficient permissions (need Reader role)
Warning: Skipping subscription 6a879a4d-efdc-4b07-ad91-1919203356f5:
Insufficient permissions (need Reader role)
Warning: Skipping subscription 7cc25562-a9a4-42a5-813c-56b5b7a9f3dc:
Insufficient permissions (need Reader role)
Warning: Skipping subscription bfceb866-f073-4df3-88c3-4c6866a07b76:
Insufficient permissions (need Reader role)
Finished counting resources for 87332a70-7c1b-4437-aa3b-ec7c00d72de0
```

Resource Summary for Azure Tenant: de6b88d1-8289-4d5c-9453-f5c003e8dd5d

Illumio Insights Workloads (IWL)

Resource Type	Count	IWL
CloudContainer	19	38.00
CloudDatabase	48	48.00
CloudFirewall	1	100.00
CloudStorage	131	13.10
CloudVirtualMachine	158	158.00
NetworkInfrastructureManagement	532	53.20
NetworkRouting	57	570.00
NetworkSecurity	210	21.00
PrivateEndpoint	54	2.70
ServerlessFunction	10	0.21
VirtualNetwork	173	173.00
TOTAL	1393	1178 IWLs

Illumio Segmentation Workloads (SWL)

Resource Type	Count	SWL
CloudContainer	19	38.00
CloudDatabase	48	48.00
CloudFirewall	1	100.00
CloudStorage	131	13.10
CloudVirtualMachine	158	158.00
NetworkRouting	57	570.00
ServerlessFunction	10	0.21
TOTAL	424	928 SWLs

**NOTE**

Running the Azure Workload Count script might take 15 minutes to an hour if your organization is large.

Using the Illumio Workload Count Script for GCP

Before you run the GCP script, make sure that you have:

- Installed and authenticated the gcloud CLI
- Installed the jg utility
- Bash version 3.0 and above
- Enabled the Cloud Asset API
- The GCP Viewer role (roles/viewer)

The following is an example of the script:

```
./gcp_resource_count.sh --scope <scope> [options]
```

For --scope <scope>, specify the GCP scope to scan. As stated previously, you can run the script for folders, organizations, or projects.

--scope <scope>	Specify the GCP scope to scan: -project:<PROJECT_ID> will scan a single project -folder:<FOLDER_ID> will scan all projects in a folder -org:<ORG_ID> will scan all projects in an organization
-----------------	---

Additional options:

--verbose	Use this option to enable detailed logging
--help	Use this option to display help information

Examples:

```
# Scan a single project
./gcp_resource_count.sh --scope project:my-project-123

# Scan all projects in a folder
./gcp_resource_count.sh --scope folder:123456789

# Scan an entire organization with verbose output
./gcp_resource_count.sh --scope org:123456789101112 --verbose
```

The following is an example of the GCP resource count script's output:

```

./gcp_resource_count.sh --scope org:1092787133793
Starting GCP Resource Counter for Illumio - v1.0
Prerequisites verified
Verifying access to organization: 1092787133793
Organization access verified
Successfully fetched latest resource mappings
Resource mappings loaded (latest - v1, updated: 2025-08-12T18:30:00Z)
Resolving scope to projects...
Found 31 project(s) to scan
Scanning resources (this may take a few minutes)...
Scanning 31 project(s)...
Warning: Skipping project illumio-training: Cloud Asset API not enabled or
insufficient permissions
Finished counting resources for tpm-demo-2
Finished counting resources for illumio-ps-support
Finished counting resources for turing-bebop-463218-s6
Finished counting resources for cloudops-prod-449819
Finished counting resources for test-2-449819
Finished counting resources for cs-prod-01
Finished counting resources for cs-seg-prod-01
Finished counting resources for tpm-stage-01
Finished counting resources for illumio-cross-project
Finished counting resources for cs-seg-dev-01
Finished counting resources for cs-ops-dev
Finished counting resources for helical-kayak-449322-k1
Finished counting resources for cloudops-stage
Finished counting resources for cloudops-dev-449323
Finished counting resources for tpm-demo-01
Finished counting resources for onprem-235202
Finished counting resources for illumio-standalone-saas
Finished counting resources for test-hack-2018
Finished counting resources for illumexa-d75c2
Finished counting resources for business-development-218400
Finished counting resources for office-of-cto
Finished counting resources for cs-project-01-447219
Finished counting resources for viraj-project-447219
Finished counting resources for nth-pottery-258323
Finished counting resources for cs-seg-stage-01
Finished counting resources for gcpdev-449313
Finished counting resources for test-1-449819
Finished counting resources for winter-alliance-447322-h7
Finished counting resources for dev-2-449819
Finished counting resources for dev-1-449819

```

Resource Summary for GCP Organization: 1092787133793

Illumio Insights Workloads (IWL)

Resource Type	Count	IWL
CloudContainer	97	194.00
CloudDatabase	15	15.00
CloudFirewall	5048	504800.00
CloudStorage	225	22.50
CloudVirtualMachine	415	415.00

Using the Illumio Workload Count Script

NetworkInfrastructureManagement	2564	256.40
NetworkRouting	1698	16980.00
VirtualNetwork	72	72.00
TOTAL	10134	522755 IWLs
Illumio Segmentation Workloads (SWL)		
Resource Type	Count	SWL
CloudVirtualMachine	415	415.00
NetworkRouting	1698	16980.00
TOTAL	2113	17395 SWLs

Adding a Custom Role with a CloudFormation Template

If all of the accounts in the organization do not have the OrganizationAccountAccessRole role, you must use a CloudFormation template to add a custom role.

1. Within **AWS Organizations > Dashboard**, search for StackSets.
2. Click **StackSets** in the search results and then click **Create StackSet**.



NOTE

Use a Stack instead of a StackSet if you are only running the script on the Account level.

3. On the **Choose a template** page, select one of the following options and click **Next** after you have provided the information:
 - Download the `aws_resource_cft_READONLY.yaml` file from <https://github.com/illumio-shield/CloudSecure-Tools>.
 - Select **Upload a template file**, click **Choose file**, and upload the `aws_resource_cft_READONLY.yaml` file.
4. On the **Specify StackSet details** page, enter the following values and then click **Next**:
 - a. Enter a name.
 - b. Enter the ExternalId. (Make a note of this value.)
 - c. Edit the **RoleName** or leave it as the default value.
 - d. Enter the AWS organization ID (if you are only running the script on the Org level) or the account ID (if you are only running the script on the Account level) in the **TrustedAccountId** field.



IMPORTANT

You must specify a unique name and role for the StackSet.

5. On the **Configure StackSet options** page, under **Capabilities**, check the check box to acknowledge that AWS CloudFormation might create IAM resources, and click **Next**.
6. On the **Set deployment options** page, under **Deployment targets**, select **Deploy to organizational units (OUS)** and enter the AWS OU ID.



NOTE

- The organization might be preselected, but you can enter an OU ID if necessary.
- Check to make sure that your dashboard scope is the respective account that the Stack or StackSet is being run on.

7. Under **Specify Regions**, select the region where you want to deploy the stack, and click **Next**. You only need to specify one region.
8. Review your configuration and then click **Submit**.
9. Navigate to StackSets and search for the StackSet that you created to verify that it was successfully created:



NOTE

It may take a few minutes for AWS to create the StackSet.

- a. Click the **Stack instances** tab and verify that the **Detailed status** column contains SUCCEEDED.
- b. Click the **Operations** tab and verify that the **Type** column contains CREATE.
If there are errors, check your configuration.

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