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<u>Cloud Security Command Center</u> (https://cloud.google.com/security-command-center/)

Guides

Viewing vulnerabilities and threats in Security Command Center

This page provides information about the Google Cloud native security sources available in Security Command Center. When enabled, a security source provides vulnerability and threat data in the Security Command Center dashboard.

Security Command Center enables you to filter and view vulnerability and threat findings in many different ways, like filtering on a specific finding type, resource type, or for a specific asset. Each security source might provide more filters to help you organize your organization's findings.

For more information about how to use the Security Command Center dashboard, see <u>using the assets display</u> (https://cloud.google.com/security-command-center/docs/how-to-assets-display) and <u>using findings</u> (https://cloud.google.com/security-command-center/docs/how-to-findings).

Vulnerabilities

Vulnerability scanners can help you find potential weaknesses.

Security Health Analytics vulnerability types

Beta

This feature is in a pre-release state and might change or have limited support. For more information, see the <u>product launch stages</u> (https://cloud.google.com/products/#product-launch-stages).

Security Health Analytics

(https://cloud.google.com/security-command-center/docs/how-to-enable-security-health-analytics) managed vulnerability assessment scanning for Google Cloud can automatically detect common vulnerabilities and misconfigurations across:

- Stackdriver Monitoring and Stackdriver Logging
- Compute Engine
- Google Kubernetes Engine containers and networks
- Cloud Storage
- Cloud SOL
- Cloud Identity and Access Management (Cloud IAM)
- Cloud Key Management Service (Cloud KMS)
- Cloud DNS

To get started with Security Health Analytics, follow the guide to Enable Security Health Analytics, follow the guide to Enable Security Health-Analytics). When Security Health Analytics is enabled, scans automatically run twice a day, 12-hours apart.

Security Health Analytics scans for many vulnerability types. You can group findings by scanner type. Use Security Health Analytics scanner names to filter findings by the resource type the finding is for.

To view a complete list of Security Health Analytics scanners and findings, see the <u>Security Health Analytics</u> <u>findings</u>

(https://cloud.google.com/security-command-center/docs/concepts-security-health-analytics-findings) page, or expand the following section.

Security Health Analytics scanners

The following tables describe the scanner types and specific vulnerability finding types that Security Health Analytics can generate. You can filter findings by scanner name and finding type using the Security Command Center Vulnerabilities tab in the Google Cloud Console. Available finding categories include:

- <u>2-Step verification vulnerability findings</u> (#two-sv-findings)
- API key vulnerability findings (#api-findings)
- Compute image vulnerability findings (#compute-image-findings)
- <u>Compute instance vulnerability findings</u> (#compute-instance-findings)
- Container vulnerability findings (#container-findings)

- <u>Dataset vulnerability findings</u> (#dataset-findings)
- DNS vulnerability findings (#dns-findings)
- Firewall vulnerability findings (#firewall-findings)
- IAM vulnerability findings (#iam-findings)
- KMS vulnerability findings (#kms-findings)
- <u>Logging vulnerability findings</u> (#logging-findings)
- Monitoring vulnerability findings (#monitoring-findings)
- Network vulnerability findings (#network-findings)
- <u>SSH password vulnerability findings</u> (#ssh-findings)
- <u>SQL vulnerability findings</u> (#sql-findings)
- Storage vulnerability findings (#storage-findings)
- <u>Subnetwork vulnerability findings</u> (#subnetwork-findings)

2-Step verification findings

The 2SV_SCANNER detects vulnerabilities related to 2-step verification for users.

Table 1. 2-Step verification scanner	
Category	Finding description
2SV_NOT_ENFORCED	Indicates that there are users who aren't using 2-step verification.

API key vulnerability findings

The API_KEY_SCANNER scanner detects vulnerabilities related to API keys used in your cloud deployment.

Table	2. AP	l key	scanner
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API_KEY_APIS_UNRESTRICTEDIndicates that there are API keys being used too broadly, and should be limited to allow only the APIs needed by the application.

API_KEY_APPS_UNRESTRICTEDIndicates that there are API keys being used in an unrestricted way, allowing use by any untrusted app.	
API_KEY_EXISTS	Indicates that a project is using API keys instead of standard authentication.
API_KEY_NOT_ROTATED	Indicates that the API key hasn't been rotated for more than 90 days.

Compute image vulnerability findings

The **COMPUTE_IMAGE_SCANNER** scanner detects vulnerabilities related to Google Cloud image configurations.

Table 3. Compute image scanner		
Category	Finding description	
PUBLIC_COMPUTE_IMAGE	Indicates that a Compute Engine instance is using a public image.	

Compute instance vulnerability findings

The **COMPUTE_INSTANCE_SCANNER** scanner detects vulnerabilities related to Google Cloud instance configurations.

Table 4. Compute instance scanner	
Category	Finding description
COMPUTE_PROJECT_WIDE_SSH_KEYS_ALLOWE	DIndicates that project-wide SSH keys are used, allowing login to all instances in the project.
COMPUTE_SERIAL_PORTS_ENABLED	Indicates that serial ports are enabled for an instance, allowing connections to the instance's serial console.
DISK_CSEK_DISABLED	Indicates that disks on this VM are not encrypted with Customer Supplied Encryption Keys (CSEK). This scanner requires additional configuration to enable. To enable this detector, apply the security-mark (https://cloud.google.com/security-command-center/docs/how-to-security-marks) enforce_customer_supplied_disk_encryption_keys with a value of true to the assets you want to monitor.

FULL_API_ACCESS	Indicates that an instance is configured to use the default service account with full access to all Google Cloud APIs.
IP_FORWARDING_ENABLED	Indicates that IP forwarding is enabled on Instances.
OS_LOGIN_DISABLED	Indicates that OS Login is disabled on this instance.
PUBLIC_IP_ADDRESS	Indicates that an instance has a public IP address.
WEAK_SSL_POLICY	Indicates that an instance has a weak SSL policy.

Container vulnerability findings

These finding types all relate to GKE container configurations, and belong to the **CONTAINER_SCANNER** scanner type.

Table 5. Container scanner	
Category	Finding description
AUTO_REPAIR_DISABLED	Indicates that the GKE clusters auto repair feature, which keeps nodes in a healthy, running state, is disabled.
AUTO_UPGRADE_DISABLED	Indicates that GKE clusters auto upgrade feature, which keeps clusters and node pools on the latest stable version of Kubernetes, is disabled.
CLUSTER_LOGGING_DISABLED	Indicates that logging is not enabled for a GKE cluster.
CLUSTER_MONITORING_DISABLED	Indicates that Stackdriver Monitoring is disabled on GKE clusters.
CLUSTER_PRIVATE_GOOGLE_ACCESS_DISABLE	EDIndicates that cluster hosts are not configured to use only private, internal IP addresses to access Google APIs.
COS_NOT_USED	Indicates that Compute Engine VMs are not using the Container-Optimized OS designed for running Docker containers on Google Cloud securely.
IP_ALIAS_DISABLED	Indicates that a GKE cluster was created with Alias IP ranges enabled.
LEGACY_AUTHORIZATION_ENABLED	Indicates that Legacy Authorization is enabled on GKE clusters.

LEGACY_METADATA_ENABLED	Indicates that legacy metadata is enabled on GKE clusters.
MASTER_AUTHORIZED_NETWORKS_DISABLED	Indicates that Master authorized networks is not enabled on GKE clusters.
NETWORK_POLICY_DISABLED	Indicates that Network policy is disabled on GKE clusters.
OVER_PRIVILEGED_ACCOUNT	Indicates that a service account has overly broad project access in a cluster.
OVER_PRIVILEGED_SCOPES	Indicates that a node service account has broad access scopes.
POD_SECURITY_POLICY_DISABLED	Indicates that PodSecurityPolicy is disabled on a GKE cluster.
PRIVATE_CLUSTER_DISABLED	Indicates that a GKE cluster has a Private cluster disabled.
WEB_UI_ENABLED	Indicates that the GKE web UI (dashboard) is enabled.
WORKLOAD_IDENTITY_DISABLED	Indicates that Workload Identity is disabled on a GKE cluster.

Dataset vulnerability findings

Vulnerabilities of this scanner type all relate to BigQuery Dataset configurations, and belong to the DATASET_SCANNER scanner type.

Table 6. Dataset scanner	
Category	Finding description
PUBLIC_DATASET	Indicates that a dataset is configured to be open to public access.

DNS vulnerability findings

Vulnerabilities of this scanner type all relate to Cloud DNS configurations, and belong to the DNS_SCANNER scanner type.

	Table 7. DNS scanner
Category	Finding description

DNSSEC_DISABLED	Indicates that DNSSEC is disabled for Cloud DNS zones.
RSASHA1_FOR_SIGNING	Indicates that RSASHA1 is used for key signing in Cloud DNS zones.

Firewall vulnerability findings

Vulnerabilities of this scanner type all relate to firewall configurations, and belong to the FIREWALL_SCANNER scanner type.

Table 8. Firewall scanner	
Category	Finding description
OPEN_FIREWAL	LIndicates that a firewall is configured to be open to public access.
OPEN_RDP_PORTIndicates that a firewall is configured to have an open RDP port that allows generic access.	
OPEN_SSH_POF	RTIndicates that a firewall is configured to have an open SSH port that allows generic access.

IAM vulnerability findings

Vulnerabilities of this scanner type all relate to Cloud Identity and Access Management (Cloud IAM) configuration, and belong to the IAM_SCANNER scanner type.

Table 9. IAM Scanner	
Category	Finding description
ADMIN_SERVICE_ACCOUNT	Indicates that there is a service account configured with administrator roles.
KMS_ROLE_SEPARATION	Indicates that separation of duties is not enforced, and a user exists who has any of the: Cloud Key Management Service (Cloud KMS) CryptoKey Encrypter/Decrypter, Encrypter, or Decrypter roles at the same time.
NON_ORG_IAM_MEMBER	Indicates that there is a user who isn't using organizational credentials.
OVER_PRIVILEGED_SERVICE_ACCOUNT_USE	RIndicates that a user has the Service Account User role at the project level, instead of for a specific service account.

SERVICE_ACCOUNT_ROLE_SEPARATION	Indicates that a user has been assigned the Service Account
	Admin and Service Account User roles. This violates the
	"Separation of Duties" principle.

KMS vulnerability findings

Vulnerabilities of this scanner type all relate to Cloud KMS configurations, and belong to the KMS_SCANNER scanner type.

Table 10. KMS scanner		
Category	Finding description	
KMS_KEY_NOT_ROTATED	Indicates that rotation isn't configured on a Cloud KMS encryption key.	

Logging vulnerability findings

Vulnerabilities of this scanner type all relate to logging configurations, and belong to the LOGGING_SCANNER scanner type.

Table 11. Logging scanner		
Category	Finding description	
AUDIT_LOGGING_DISABLED	Indicates that audit logging has been disabled for this resource.	
BUCKET_LOGGING_DISABLED	Indicates that there is a storage bucket without logging enabled.	
LOG_NOT_EXPORTED	Indicates there is a resource that does not have an appropriate log sink configured.	
OBJECT_VERSIONING_DISABLEDIndicates that object versioning isn't enabled on a storage bucket where sinks are configured.		

Monitoring vulnerability findings

Vulnerabilities of this scanner type all relate to monitoring configurations, and belong to the MONITORING_SCANNER type. All Monitoring scanner finding properties will include:

• The RecommendedLogFilter to use in creating the log metrics.

- The QualifiedLogMetricNames that cover the conditions listed in the recommended log filter.
- TheAlertPolicyFailureReasonsthat indicate if the project does not have alert policies created for any of the qualified log metrics or the existing alert policies do not have the recommended settings.

Table 12. Monitoring scanner

Category	Finding description
AUDIT_CONFIG_NOT_MONITORE	Olndicates that log metrics and alerts aren't configured to monitor Audit Configuration Changes.
BUCKET_IAM_NOT_MONITORED	Indicates that log metrics and alerts aren't configured to monitor Cloud Storage Cloud IAM permission changes.
CUSTOM_ROLE_NOT_MONITORED	Indicates that log metrics and alerts aren't configured to monitor Custom Role changes.
FIREWALL_NOT_MONITORED	Indicates that log metrics and alerts aren't configured to monitor VPC Network Firewall rule changes.
NETWORK_NOT_MONITORED	Indicates that log metrics and alerts aren't configured to monitor VPC network changes.
OWNER_NOT_MONITORED	Indicates that log metrics and alerts aren't configured to monitor Project Ownership assignments or changes.
ROUTE_NOT_MONITORED	Indicates that log metrics and alerts aren't configured to monitor VPC network route changes.
SQL_INSTANCE_NOT_MONITORE	OIndicates that log metrics and alerts aren't configured to monitor Cloud SQL instance configuration changes.

Network vulnerability findings

Vulnerabilities of this scanner type all relate to an organization's network configurations, and belong to the NETWORK_SCANNER type.

Table 13. Network scanner

Category	Finding description	

DEFAULT_NETWORK	Indicates that the default network exists in a project.
LEGACY_NETWORK	Indicates that a legacy network exists in a project.

SSH password vulnerability findings

Vulnerabilities of this scanner type all relate to passwords, and belong to the SSH_PASSWORD type.

Table 14. SSH password scanner		
Category	Finding description	
WEAK_SSH_PASSWORD	Indicates that a resource has a weak SSH password.	

SQL vulnerability findings

Vulnerabilities of this scanner type all relate to Cloud SQL configurations, and belong to the SQL_SCANNER type.

Table 15. SQL scanner		
Category	Finding description	
AUTO_BACKUP_DISABLED	Indicates that a Cloud SQL database doesn't have automatic backups enabled.	
PUBLIC_SQL_INSTANCE	Indicates that a Cloud SQL database instance accepts connections from all IP addresses.	
SSL_NOT_ENFORCED	Indicates that a Cloud SQL database instance doesn't require all incoming connections to use SSL.	
SQL_NO_ROOT_PASSWORD	Indicates that a Cloud SQL database doesn't have a password configured for the root account.	
SQL_WEAK_ROOT_PASSWORDIndicates that a Cloud SQL database has a weak password configured for the root account.		

Storage vulnerability findings

Vulnerabilities of this scanner type all relate to Cloud Storage Buckets configurations, and belong to the STORAGE_SCANNER type.

Table 16. Storage scanner		
Category	Finding description	
BUCKET_POLICY_ONLY_DISABLEDIndicates that uniform bucket-level access, previously called Bucket Policy Only, isn't configured.		
LOGGING_DISABLED	Indicates that logging is disabled for a Cloud Storage bucket.	
PUBLIC_BUCKET_ACL	Indicates that a Cloud Storage bucket is publicly accessible.	

Subnetwork vulnerability findings

Vulnerabilities of this scanner type all relate to an organization's subnetwork configurations, and belong to the SUBNETWORK_SCANNER type.

Table 17. Subnetwork scanner		
Category	Finding description	
FLOW_LOGS_DISABLED	Indicates there is a VPC subnetwork that has flow logs disabled.	
PRIVATE_GOOGLE_ACCESS_DISABLED	Indicates private subnets without access to Google public APIs.	

Web Security Scanner

Web Security Scanner (https://cloud.google.com/security-scanner/) provides managed web vulnerability scanning for public App Engine, GKE, and Compute Engine serviced web applications. Web Security Scanner displays granular information about application vulnerability findings, like outdated libraries, cross-site scripting, or use of mixed content. Web Security Scanner findings are available in Security Command Center if you've completed the Web Security Scanner quickstart (https://cloud.google.com/security-scanner/docs/quickstart).

	Table A. Web Security Scanner finding types
VulnerabilityDescription	

Mixed ContentA page that was served over HTTPS also serves resources over HTTP. A man-in-the-middle attacker could tamper with the HTTP resource and gain full access to the website that loads the resource or monitor users' actions.

Outdated Library

The version of an included library is known to contain a security issue. The scanner checks the version of library in use against a known list of vulnerable libraries. False positives are possible if the version detection fails or if the library has been manually patched.

Web Security Scanner identifies some vulnerable versions of the following popular libraries:

- jQuery, for example: CVE-2011-4969 (https://nvd.nist.gov/vuln/detail/CVE-2011-4969)
- jQuery Mobile, for example: <u>known XSS vulnerability</u>
 (https://github.com/jquery/jquery-mobile/issues/4787)
- AngularJS, for example: XSS via SVG vulnerability
 (https://vulnerabledoma.in/ngSanitize1.6.8_bypass.html)

This list is updated periodically with new libraries and updated vulnerabilities as applicable.

Rosetta Flash This type of vulnerability occurs when the value of a request parameter is reflected at the beginning of the response. For example, the format of JSONP requests can allow this type of exploit. An attacker can supply an alphanumeric-only Flash file in the vulnerable parameter, and then the browser executes it as if the file originated on the vulnerable server.

XSS Callback A cross-site scripting (XSS) bug is found via JavaScript callback. For detailed explanations on XSS, see <u>Cross-site scripting</u> (https://www.google.com/about/appsecurity/learning/xss/).

XSS Error

A potential cross-site scripting (XSS) bug due to JavaScript breakage. In some circumstances, the application under test might modify the test string before the browser parses it. When the browser attempts to run this modified test string, it is likely to break and throw a JavaScript execution error, causing an injection issue. However, it might not be exploitable. To determine if the issue is an XSS vulnerability, you must manually verify that the test string modifications can be evaded. For detailed explanations on XSS, see Cross-site scripting (https://www.google.com/about/appsecurity/learning/xss/).

XSS Angular Callback

An application appears to be transmitting a password field in clear text. An attacker can eavesdrop network traffic and sniff the password field.

Clear Text Password

An application returns sensitive content with an invalid content type, or without an X-Content-Type-Options: nosniff header.

Invalid A cross-site scripting (XSS) vulnerability in AngularJS module that occurs when Angular Content Type interpolates a user-provided string.

Invalid Header A malformed or invalid valued header.

Misspelled Misspelled security header name.

Security		
Header Name		
Mismatching	Mismatching values in a duplicate security header.	
Security		
Header Valu	es	
Accessible G	ITThe scan found an accessible git repository.	
Repository		
Accessible	The scan found an accessible SVN repository.	
SVN		
Repository		

To display Web Security Scanner results in Security Command Center, you need to run the security scan in the project that contains the public-facing candidate App Engine, Compute Engine, or GKE application. Any application vulnerabilities that are detected are automatically displayed in Security Command Center.

- To explore details about a specific finding, click the finding under Finding.
- To display details about all Web Security Scanner findings, click View all security findings.

Threats

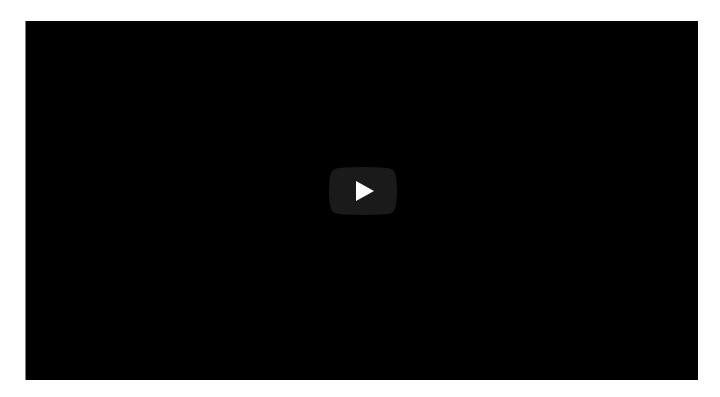
Threat detectors can help you find potentially harmful events.

Anomaly Detection

Anomaly Detection is a built-in service that uses behavior signals from *outside* your system. It displays granular information about security anomalies detected for your projects and Virtual Machine (VM) instances, like potential leaked credentials, unusual activity, and coin mining. Anomaly Detection findings are automatically available in Security Command Center and are displayed when you <u>enable it as a security source</u>

(https://cloud.google.com/security-command-center/docs/quickstart-scc#add-security-sources).

The following video shows you how to enable Anomaly Detection and then review and remediate a finding. Example finding types are also described in Table B later on this page.



Example Anomaly Detection findings include the following:

Table B. Anomaly Detection finding types		
Potential for Compromise	Description	
Leaked Service Account Credentials	Google Cloud service account credentials that are accidentally leaked online or compromised.	
Potential Compromised Machine	Potential compromise of a resource in your organization.	
Abuse Scenarios	s Description	
Resource used for cryptomining	Behavioral signals around a VM in your organization indicate that it might have been compromised and could be getting used for cryptomining.	
	Intrusion attempts and Port scans: One of the resources or Google Cloud services in your organization is being used for intrusion activities, like an attempt to break in or compromise a target system. These include SSH brute force attacks, Port scans, and FTP brute force attacks.	
Resource used for	One of the resources or Google Cloud services in your organization is being used for	

phishing	phishing.
Anomalies	Description
Unusual Unusual activity from a resource in your organization. Activity/Connection	

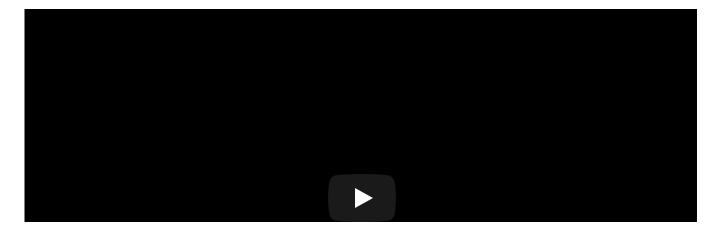
Cloud Data Loss Prevention

Cloud DLP Data Discovery enables you to surface the results of Cloud Data Loss Prevention (Cloud DLP) scans directly in the Security Command Center dashboard and Findings inventory. Cloud DLP can help you to better understand and manage sensitive data and Personally Identifiable Information (PII) like the following:

- · Credit card numbers
- Names
- Social security numbers
- US and selected international identifying numbers
- Phone numbers
- Google Cloud credentials

Each Cloud DLP Data Discovery finding **only includes the category type** of the identified PII data and the resource it was found in. It doesn't include any of the specific underlying data.

The following video shows you how to set up Cloud DLP to send scan results to Security Command Center. The setup steps are also described in the guide to <u>send DLP API results to Security Command Center</u> (https://cloud.google.com/dlp/docs/sending-results-to-cscc).





After you complete the guide, Cloud DLP scan results will display in Security Command Center:

- To display details about a specific category of findings, click the finding under **Finding**.
- To display details about all Cloud DLP scanner findings, click More.

For more information:

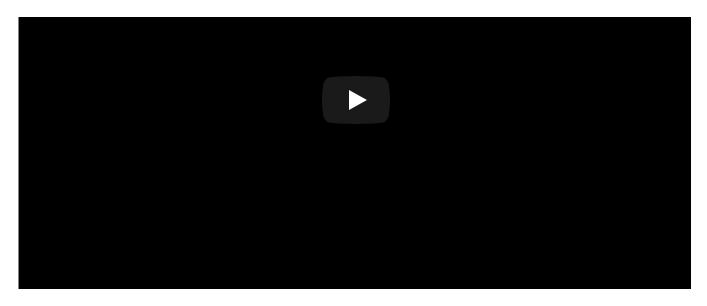
- Learn more about the <u>publishSummaryToCscc action</u>
 (https://cloud.google.com/dlp/docs/reference/rpc/google.privacy.dlp.v2#google.privacy.dlp.v2.Actio n.PublishSummaryToCscc)
 in Cloud DLP.
- Learn more about <u>scanning storage repositories for sensitive data</u> (https://cloud.google.com/dlp/docs/inspecting-storage) using Cloud DLP.

Event Threat Detection

Event Threat Detection uses log data from *inside* your systems. It watches your organization's Stackdriver Logging stream for one or more projects, and consumes logs as they become available. When a threat is detected, Event Threat Detection writes a Finding to Security Command Center and to a Logging project. Event Threat Detection findings are available in Security Command Center after you <u>set up Event Threat Detection</u> (https://cloud.google.com/event-threat-detection).

The following video describes some of the threat types that Event Threat Detection detects, and how to review them in the Security Command Center dashboard. The threat types are also described in Table C later on this page.





Example Event Threat Detection findings include the following:

Table C. Event Threat Detection finding types		
Description		
Event Threat Detection detects brute force of SSH by examining SSH logs for repeated failures followed by success.		
gEvent Threat Detection detects coin mining malware by examining VPC logs for connections to known bad domains for mining pools and other log data.		
Malicious grants - Event Threat Detection detects the addition of accounts from outside of your organization's domain that have the Owner or Editor permission at the organization or project level. The malicious grants finding helps you to identify:		
Which accounts have which permissions		
The resource the permission applies to		
The user inside your organization that granted the permissions		
Event Threat Detection detects Malware by examining VPC logs for connections to known bad domains and other log data.		
Event Threat Detection detects Phishing by examining VPC logs for connections and other log data.		

<u>Get started with Event Threat Detection</u> (https://cloud.google.com/event-threat-detection).

Forseti Security

Forseti Security gives you tools to understand all the resources you have in Google Cloud. The core Forseti modules work together to provide complete information so you can secure resources and minimize security risks.

To display Forseti violation notifications in Security Command Center, follow the Forseti Security Command Center notification guide

(https://forsetisecurity.org/docs/latest/configure/notifier/#cloud-scc-notification).

For more information:

- Learn about Forseti (https://forsetisecurity.org/about/).
- Get help with Forseti (https://forsetisecurity.org/docs/latest/use/get-help.html).

Phishing Protection

Phishing Protection helps prevent users from accessing phishing sites by classifying malicious content that uses your brand and reporting the unsafe URLs to <u>Google Safe Browsing</u> (https://safebrowsing.google.com/). After a site is propagated to Safe Browsing, users will see warnings across more than three billion devices.

To get started with Phishing Protection, follow the guide to <u>Enable Phishing Protection</u> (https://cloud.google.com/phishing-protection/docs/quickstart-console). After you enable Phishing Protection, results are displayed in Security Command Center in the **Phishing Protection** card under **Findings**.

What's next

- Learn about Security Command Center and example use cases in the <u>Security Command Center overview</u> (https://cloud.google.com/security-command-center/docs/concepts-overview).
- Learn how to <u>add security sources to Security Command Center</u> (https://cloud.google.com/security-command-center/docs/how-to-security-sources).

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