ThreatQuotient

A Securonix Company

Censys Operation

Version 1.2.0

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ThreatQ Supported

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Contents

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Integration Details

ThreatQuotient provides the following details for this integration:

Current Integration Version	1.2.0
Compatible with ThreatQ Versions	>= 5.15.0
Support Tier	ThreatQ Supported

Introduction

The Censys Operation enriches ThreatQ objects with context obtained from the Censys API.

The operation provides the following actions:

- **submit_ip** - submits a selected IP Address for analysis.
- **submit_domain** - submits a selected domain for analysis.
- **submit_hash** - submits a selected hash for analysis.

The operation is compatible with the following indicator types:

- FQDN
- IP Address
- SHA-256

Prerequisites

The following is required to run the integration:

- A Censys API Key and API Secret

Installation

Perform the following steps to install the integration:

> The same steps can be used to upgrade the integration to a new version.

1. Log into https://marketplace.threatq.com/.
2. Locate and download the integration file.
3. Navigate to the integrations management page on your ThreatQ instance.
4. Click on the **Add New Integration** button.
5. Upload the integration file using one of the following methods:
    - Drag and drop the file into the dialog box
    - Select **Click to Browse** to locate the integration file on your local machine

> ThreatQ will inform you if the operation already exists on the platform and will require user confirmation before proceeding. ThreatQ will also inform you if the new version of the operation contains changes to the user configuration. The new user configurations will overwrite the existing ones for the operation and will require user confirmation before proceeding.

The operation is now installed and will be displayed in the ThreatQ UI. You will still need to configure and then enable the operation.

Configuration

> ThreatQuotient does not issue API keys for third-party vendors. Contact the specific vendor to obtain API keys and other integration-related credentials.

To configure the integration:

1. Navigate to your integrations management page in ThreatQ.
2. Select the **Operation** option from the *Type* dropdown (optional).
3. Click on the integration entry to open its details page.
4. Enter the following parameters under the **Configuration** tab:

PARAMETER	DESCRIPTION
API Key	Enter your Censys API key.
API Secret	Enter your Censys API Secret.

5. Review any additional settings, make any changes if needed, and click on **Save**.
6. Click on the toggle switch, located above the *Additional Information* section, to enable it.

Actions

The operation provides the following actions:

ACTION	DESCRIPTION	OBJECT TYPE	OBJECT SUBTYPE
submit_ip	Submits IP for analysis.	Indicator	IP
submit_domain	Submits domain for analysis.	Indicator	FQDN
submit_hash	Submits hash for analysis.	Indicator	SHA-256

submit_ip

The submit_ip action submits an ip address for analysis.

`GET https://search.censys.io/api/v2/hosts/{{}}`

Sample Response:


```
{
    "code": 200,
    "status": "OK",
    "result": {
        "ip": "194.28.226.169",
        "services": [
            {
                "_decoded": "ftp",
                "_encoding": {
                    "banner": "DISPLAY_UTF8",
                    "banner_hex": "DISPLAY_HEX"
                },
                "banner": "220 (vsFTPd 3.0.2)\r\n",
                "banner_hashes": [

"sha256:be807b6c864510e24fcd790176022670a059784cdb11dbad8edca428037bcabb"
                ],
                "banner_hex": "323230202876734654506420332e302e32290d0a",
                "discovery_method": "IPV4_WALK_FULL_PRIORITY_1",
                "extended_service_name": "FTP",
                "ftp": {
                    "_encoding": {
                        "banner": "DISPLAY_UTF8",
                        "auth_tls_response": "DISPLAY_UTF8",
                        "auth_ssl_response": "DISPLAY_UTF8"
                    },
                    "banner": "220 (vsFTPd 3.0.2)\r\n",
                    "auth_tls_response": "530 Please login with USER and PASS.
\r\n",
                    "auth_ssl_response": "530 Please login with USER and PASS.
\r\n",
                    "status_code": 220,
                    "status_meaning": "Service ready for new user.",
                    "implicit_tls": false
                },
                "labels": [
                    "file-sharing"
                ],
                "observed_at": "2023-08-21T02:24:56.795849172Z",
                "perspective_id": "PERSPECTIVE_TATA",
                "port": 21,
                "service_name": "FTP",
```

```
                "software": [
                    {
                        "uniform_resource_identifier":
"cpe:2.3:a:vsftpd_project:vsftpd:3.0.2:*:*:*:*:*:*:*",
                        "part": "a",
                        "vendor": "vsFTPd Project",
                        "product": "vsFTPd",
                        "version": "3.0.2",
                        "other": {
                            "family": "vsFTPd"
                        },
                        "source": "OSI_APPLICATION_LAYER"
                    }
                ],
                "source_ip": "167.94.138.36",
                "transport_fingerprint": {
                    "raw": "28960,64,true,MSTNW,1408,false,false"
                },
                "transport_protocol": "TCP",
                "truncated": false
            }
        ],
        "location": {
            "continent": "Europe",
            "country": "Germany",
            "country_code": "DE",
            "city": "Frankfurt am Main",
            "postal_code": "60313",
            "timezone": "Europe/Berlin",
            "province": "Hesse",
            "coordinates": {
                "latitude": 50.1153,
                "longitude": 8.6823
            }
        },
        "location_updated_at": "2023-08-20T00:09:53.056505Z",
        "autonomous_system": {
            "asn": 201671,
            "description": "AS-NUXTCLOUD",
            "bgp_prefix": "194.28.226.0/24",
            "name": "AS-NUXTCLOUD",
            "country_code": "GB"
        },
        "autonomous_system_updated_at": "2023-08-20T00:09:53.056626Z",
        "operating_system": {
            "uniform_resource_identifier":
"cpe:2.3:o:redhat:enterprise_linux:7:*:*:*:*:*:*:*",
            "part": "o",
            "vendor": "Red Hat",
            "product": "Enterprise Linux",
```

```
            "version": "7",
            "other": {
                "family": "Linux"
            }
        },
        "dns": {
            "reverse_dns": {
                "names": [
                    "google.com"
                ],
                "resolved_at": "2023-08-19T11:46:51.655505631Z"
            }
        },
        "last_updated_at": "2023-08-22T03:44:55.321Z",
        "labels": [
            "remote-access",
            "email",
            "file-sharing"
        ]
    }
}
```


ThreatQ provides the following default mapping for this operation action:

PROVIDER DATA PATH	THREATQ ENTITY	THREATQ OBJECT TYPE OR ATTRIBUTE KEY	EXAMPLES	NOTES
`.result.autonomous_system.country_code`	`Indicator.Attribute`	`Network Country Code`	`GB`	N/A
`.result.autonomous_system.name`	`Indicator.Attribute`	`Network`	`AS-NUXTCLOUD`	N/A
`.result.autonomous_system.bgp_prefix`	`Indicator.Attribute`	`BGP Prefix`	`194.28.226.0/24`	N/A
`.result.autonomous_system.description`	`Indicator.Attribute`	`Description`	`AS-NUXTCLOUD`	N/A
`.result.autonomous_system.asn`	`Indicator.Attribute`	`ASN`	`201671`	N/A
`.result.location.postal_code`	`Indicator.Attribute`	`Postal Code`	`60313`	N/A
`.result.location.timezone`	`Indicator.Attribute`	`Timezone`	`Europe/Berlin`	N/A
`.result.location.province`	`Indicator.Attribute`	`Province`	`Hesse`	N/A
`.result.location.country_code`	`Indicator.Attribute`	`Country Code`	`DE`	N/A
`.result.location.continent`	`Indicator.Attribute`	`Continent`	`Europe`	N/A
`.result.location.city`	`Indicator.Attribute`	`City`	`Frankfurt am Main`	N/A

PROVIDER DATA PATH	THREATQ ENTITY	THREATQ OBJECT TYPE OR ATTRIBUTE KEY	EXAMPLES	NOTES
.result.location.country	Indicator.Attribute	Country	Germany	N/A
.result.dns.names	Related Indicator.Value	FQDN	google.com	N/A
.result.dns.reverse_dns.names	Related Indicator.Value	FQDN	google.com	N/A
.result.services.tls.certificates.leaf_data.names	Related Indicator.Value	FQDN	google.com	Values validated as FQDN. Entries that are IP literals are converted to IP Address/IPv6 Address indicators automatically.
.result.services.banner_hashes	Related Indicator.Value	SHA-256/MD5/SHA-1/Hash ION	446a6087825fa73eadb045e5a2e9e2adf7df241b571228187728191d961dda1f	See the Hash Logic Mapping Table.
.result.services.http.response.body_hashes	Related Indicator.Value	SHA-256/MD5/SHA-1/Hash ION	446a6087825fa73eadb045e5a2e9e2adf7df241b571228187728191d961dda1f	See the Hash Logic Mapping Table.
.result.services.http.response.favicons.hashes	Related Indicator.Value	SHA-256/MD5/SHA-1/Hash ION	446a6087825fa73eadb045e5a2e9e2adf7df241b571228187728191d961dda1f	See the Hash Logic Mapping Table.
.result.operating_system.vendor	Indicator.Attribute	Vendor	Red Hat	N/A
.result.operating_system.product	Indicator.Attribute	Product	Enterprise Linux	N/A
.result.operating_system.uniform_resource_identifier	Indicator.Attribute	CPE	cpe:2.3:o:redhat:enterprise_linux:7:*:*:*:*:*:*:*	N/A
.result.labels	Indicator.Attribute	Tag	email	N/A
.result.services.labels	Indicator.Attribute	Tag	remote-access	N/A
.result.services.jarm.fingerprint	Related Fingerprint Indicator.Value	Hash ION	27d27d27d00027d00042d43d00041df04c41293ba84f6efe3a613b22f983e6	N/A
.result.services.tls.ja3s	Related Fingerprint Indicator.Value	Hash ION	d75f9129bb5d05492a65ff78e081bcb2	N/A
.result.services.tls.ja4s	Related Fingerprint Indicator.Value	Hash ION	t130200_1303_234ea6891581	N/A

Hash Logic Mapping Table

The following tables illustrates hash mapping logic from Censys to ThreatQ.

PREFIX	TARGET INDICATOR TYPE	EXAMPLE
`md5`	`MD5`	`49532cbc459e8e7ceb1249f5fdbab31c`
`sha1`	`SHA-1`	`7436e0b4b1f8c222c38069890b75fa2baf9ca620`
`sha256`	`SHA-256`	`9a2e3208b3b63b0f17c1e901a31bb8f1efa50fb21e5260583af2f6e9e4ef9ba8`
`phash`	`Hash ION`	`904e5baf3b54324b`
`tlsh`	`Hash ION`	`46a2623386099470ad747eafcba7750d80f8f19288c357c4e4ad0d65dd6ef0a3a5b298`

submit_domain

The submit_domain action submits a selected domain for analysis.

`GET https://search.censys.io/api/v2/hosts/search?q={{domain}}`

Sample Response:


```
{
    "code": 200,
    "status": "OK",
    "result": {
        "query": "google.com",
        "total": 1055920,
        "duration": 629,
        "hits": [
            {
                "autonomous_system": {
                    "country_code": "RU",
                    "name": "SPACENET-AS Internet Service Provider",
                    "description": "SPACENET-AS Internet Service Provider",
                    "bgp_prefix": "62.173.128.0/19",
                    "asn": 34300
                },
                "last_updated_at": "2023-08-21T05:32:23.796Z",
                "location": {
                    "postal_code": "101000",
                    "timezone": "Europe/Moscow",
                    "province": "Moscow",
                    "country_code": "RU",
                    "continent": "Europe",
                    "city": "Moscow",
                    "coordinates": {
                        "latitude": 55.75222,
                        "longitude": 37.61556
                    },
                    "country": "Russia"
                },
                "ip": "62.173.142.225",
                "operating_system": {
                    "component_uniform_resource_identifiers": [],
                    "source": "OSI_TRANSPORT_LAYER",
                    "other": [],
                    "part": "o",
                    "product": "linux",
                    "cpe": "cpe:2.3:o:*:linux:*:*:*:*:*:*:*:*"
                },
                "services": [
                    {
                        "service_name": "FTP",
```

```
                        "transport_protocol": "TCP",
                        "port": 21,
                        "extended_service_name": "FTP"
                    },
                    {
                        "transport_protocol": "TCP",
                        "port": 22,
                        "extended_service_name": "SSH",
                        "service_name": "SSH"
                    },
                    {
                        "certificate":
"26e97467fb89414a31953aa89f207f602b5d1acfdd939236b87b977b05029097",
                        "port": 25,
                        "extended_service_name": "SMTP-STARTTLS",
                        "transport_protocol": "TCP",
                        "service_name": "SMTP"
                    },
                    {
                        "service_name": "DNS",
                        "port": 53,
                        "transport_protocol": "UDP",
                        "extended_service_name": "DNS"
                    },
                    {
                        "port": 80,
                        "transport_protocol": "TCP",
                        "extended_service_name": "HTTP",
                        "service_name": "HTTP"
                    },
                    {
                        "extended_service_name": "POP3",
                        "port": 110,
                        "transport_protocol": "TCP",
                        "service_name": "POP3"
                    },
                    {
                        "transport_protocol": "TCP",
                        "extended_service_name": "IMAP",
                        "service_name": "IMAP",
                        "port": 143
                    },
                    {
                        "certificate":
"0da9ea92b7a8f30a79e3c59effda579a9a016455c7e24f6db46419a0b117b6c8",
                        "transport_protocol": "TCP",
                        "extended_service_name": "SMTP-STARTTLS",
                        "service_name": "SMTP",
                        "port": 587
                    },
```

```
                    {
                        "extended_service_name": "UNKNOWN",
                        "service_name": "UNKNOWN",
                        "transport_protocol": "TCP",
                        "port": 8243
                    },
                    {
                        "transport_protocol": "TCP",
                        "extended_service_name": "HTTP",
                        "port": 9189,
                        "service_name": "HTTP"
                    }
                ],
                "dns": {
                    "reverse_dns": {
                        "names": [
                            "google.com"
                        ]
                    }
                }
            }
        ]
    }
}
```


ThreatQ provides the following default mapping for this operation action:

PROVIDER DATA PATH	THREATQ ENTITY	THREATQ OBJECT TYPE OR ATTRIBUTE KEY	EXAMPLES	NOTES
.result.hits[].autonomous_system.country_code	Indicator.Attribute	Network Country Code	RU	N/A
.result.hits[].autonomous_system.name	Indicator.Attribute	Network	SPACENET-AS Internet Service Provider	N/A
.result.hits[].autonomous_system.bgp_prefix	Indicator.Attribute	BGP Prefix	62.173.128.0/19	N/A
.result.hits[].autonomous_system.description	Indicator.Attribute	Description	SPACENET-AS Internet Service Provider	N/A
.result.hits[].autonomous_system.asn	Indicator.Attribute	ASN	34300	N/A
.result.hits[].location.postal_code	Indicator.Attribute	Postal Code	101000	N/A
.result.hits[].location.timezone	Indicator.Attribute	Timezone	Europe/Moscow	N/A
.result.hits[].location.province	Indicator.Attribute	Province	Moscow	N/A
.result.hits[].location.country_code	Indicator.Attribute	Country Code	RU	N/A
.result.hits[].location.continent	Indicator.Attribute	Continent	Europe	N/A
.result.hits[].location.city	Indicator.Attribute	City	Moscow	N/A
.result.hits[].location.country	Indicator.Attribute	Country	Russia	N/A
.result.hits[].ip	Related Indicator.Value	IP Address/ IPv6 Address	62.173.142.225	N/A
.result.hits[].operating_system.source	Indicator.Attribute	Source	OSI_TRANSPORT_LAYER	N/A

PROVIDER DATA PATH	THREATQ ENTITY	THREATQ OBJECT TYPE OR ATTRIBUTE KEY	EXAMPLES	NOTES
.result.hits[].operating_system.product	Indicator.Attribute	Product	linux	N/A
.result.hits[].operating_system.cpe	Indicator.Attribute	CPE	`cpe:2.3:o:*:linux:*:*:*:*:*:*:*:*`	N/A

submit_hash

The submit_hash submits the selected hash for analysis.

`GET https://search.censys.io/api/v2/certificates/{{hash}}`

Sample Response:


```
{
    "code": 200,
    "status": "OK",
    "result": {
        "_encoding": {
            "fingerprint_sha256": "DISPLAY_HEX",
            "fingerprint_sha1": "DISPLAY_HEX",
            "fingerprint_md5": "DISPLAY_HEX",
            "tbs_fingerprint_sha256": "DISPLAY_HEX",
            "tbs_no_ct_fingerprint_sha256": "DISPLAY_HEX",
            "spki_fingerprint_sha256": "DISPLAY_HEX",
            "parent_spki_fingerprint_sha256": "DISPLAY_HEX",
            "raw": "DISPLAY_BASE64",
            "spki_subject_fingerprint_sha256": "DISPLAY_HEX",
            "parent_spki_subject_fingerprint_sha256": "DISPLAY_HEX"
        },
        "fingerprint_sha256":
"9b00121b4e85d50667ded1a8aa39855771bdb67ceca6f18726b49374b41f0041",
        "fingerprint_sha1": "d508e7f8163fb67434f84091dc7c2ca8afd5234d",
        "fingerprint_md5": "3818d99263b47ab28f7de5b293ee1418",
        "tbs_fingerprint_sha256":
"4b098b6bd9459340fb0f3cfb80f0bc3283370c455d57ca20da40e7eecce341d5",
        "tbs_no_ct_fingerprint_sha256":
"5c095a40e76c245323086d26d1fa428d3b443b42fb58c7dbb19b32dfe516b749",
        "spki_fingerprint_sha256":
"cc9b074ebf41b484a56923d5585594967bda7a7f8b5be187ef0e7ae1ec90003c",
        "parent_spki_fingerprint_sha256":
"390bc358202771a65e7be7a87924d7f2a079de04feb5ffd4163fae4fbf9b11e9",
        "parsed": {
            "version": 3,
            "serial_number": "311703586789118042424998420179537559397550",
            "issuer_dn": "C=US, O=Let's Encrypt, CN=R3",
            "issuer": {
                "common_name": [
                    "R3"
                ],
                "country": [
                    "US"
                ],
                "organization": [
                    "Let's Encrypt"
                ]
```

```
            },
            "subject_dn": "CN=www.kgcontracting.co",
            "subject": {
                "common_name": [
                    "www.kgcontracting.co"
                ]
            },
            "subject_key_info": {
                "key_algorithm": {
                    "name": "RSA",
                    "oid": "1.2.840.113549.1.1.1"
                },
                "rsa": {
                    "exponent": 65537,
                    "_encoding": {
                        "modulus": "DISPLAY_HEX"
                    },
                    "modulus":
"c0b3b7d595e250fcbc54c6f9e81113c12da29fe35350a02b8ab769a5e43f07df7ac8ff72c482b3
e838d64e97cb3fa15e415acbcfe6758a4e7ac401b4a5294ecca6ad1b583ec2136a408524eeadca5
5ba4a8af490cb9c764efbdecbe59a4ca160905e5972548018f55194e7ac94b2153d97bd5f055d58
ad3abe0d1daa3b3c97fed490f1bb58fc5c819618891d05c32d68aeaabada321736e417f0fa58d70
93d352c1800191645d1b820f5f7c93301ab7ca78393e953b82719741b735a67ce6a63faec0ac9d2
d917f03b9fc0a0ab8012f4763c50118663af897294e85ba6e11c5ca0fd749645c2a58ddf14ad627
17b40b5e7b620d256be28789e1ebd62e8046acd",
                    "length": 2048
                },
                "_encoding": {
                    "fingerprint_sha256": "DISPLAY_HEX"
                },
                "fingerprint_sha256":
"754cb1e2e2088214a5970662bb5a60aec8a2e29b94f53529aa608abee6682c60",
                "_key": "rsa"
            },
            "validity_period": {
                "not_before": "2022-12-31T11:37:55Z",
                "not_after": "2023-03-31T11:37:54Z",
                "length_seconds": 7775999
            },
            "signature": {
                "signature_algorithm": {
                    "name": "SHA256-RSA",
                    "oid": "1.2.840.113549.1.1.11"
                },
                "_encoding": {
                    "value": "DISPLAY_HEX"
                },
                "value":
"95347a7bd89da6a6bd9adcc509669d933b5e2a29b414317d72b02c583bfadbf616f5b6977824ee
80484fe4ae0c38dbb1013d896b5a9db12fdc62296fbefbba84ed089a6e62c148cc9d1e60bfd9cf6
```

```
e7d1c8f5e0f315872618a6805e5bf48432ce2d0aac07d4ab845a7f68c1a61c3dd37c0e40c26b386
b1f37ff2fc50e6eacdc305ecd13da1c43bb1209cb13c5a6387cffb57fad81d01496b3c6499817ed
1cf1a0ef809b6b408035b5de72423c6c7f84c3a9e9513c89fa8fc49bf6f90746561ebd1b4ea22e7
557d3e505b5ecd289dbb8ce71c4d3acc2e67a27bbb12dd242c8fa512d19dc8b7bd6b88bcc6a6484
bb39c894f7b756630a10525a9ab3359030aa2ad",
                "valid": true,
                "self_signed": false
            },
            "extensions": {
                "key_usage": {
                    "digital_signature": true,
                    "key_encipherment": true,
                    "value": 5,
                    "content_commitment": false,
                    "data_encipherment": false,
                    "key_agreement": false,
                    "certificate_sign": false,
                    "crl_sign": false,
                    "encipher_only": false,
                    "decipher_only": false
                },
                "basic_constraints": {
                    "is_ca": false
                },
                "subject_alt_name": {
                    "dns_names": [
                        "kgcontracting.co",
                        "www.kgcontracting.co"
                    ]
                },
                "_encoding": {
                    "authority_key_id": "DISPLAY_HEX",
                    "subject_key_id": "DISPLAY_HEX"
                },
                "authority_key_id": "142eb317b75856cbae500940e61faf9d8b14c2c6",
                "subject_key_id": "a6a1b9ac9d0886b3b58f5faba9f42f741d9ef29d",
                "extended_key_usage": {
                    "server_auth": true,
                    "client_auth": true,
                    "apple_code_signing": false,
                    "apple_code_signing_development": false,
                    "apple_software_update_signing": false,
                    "apple_code_signing_third_party": false,
                    "apple_resource_signing": false,
                    "apple_ichat_signing": false,
                    "apple_ichat_encryption": false,
                    "apple_system_identity": false,
                    "apple_crypto_env": false,
                    "apple_crypto_production_env": false,
                    "apple_crypto_maintenance_env": false,
                    "apple_crypto_test_env": false,
```

```
                "apple_crypto_development_env": false,
                "apple_crypto_qos": false,
                "apple_crypto_tier0_qos": false,
                "apple_crypto_tier1_qos": false,
                "apple_crypto_tier2_qos": false,
                "apple_crypto_tier3_qos": false,
                "microsoft_cert_trust_list_signing": false,
                "microsoft_qualified_subordinate": false,
                "microsoft_key_recovery_3": false,
                "microsoft_document_signing": false,
                "microsoft_lifetime_signing": false,
                "microsoft_mobile_device_software": false,
                "microsoft_smart_display": false,
                "microsoft_csp_signature": false,
                "microsoft_timestamp_signing": false,
                "microsoft_server_gated_crypto": false,
                "microsoft_sgc_serialized": false,
                "microsoft_encrypted_file_system": false,
                "microsoft_efs_recovery": false,
                "microsoft_whql_crypto": false,
                "microsoft_nt5_crypto": false,
                "microsoft_oem_whql_crypto": false,
                "microsoft_embedded_nt_crypto": false,
                "microsoft_root_list_signer": false,
                "microsoft_drm": false,
                "microsoft_drm_individualization": false,
                "microsoft_licenses": false,
                "microsoft_license_server": false,
                "microsoft_enrollment_agent": false,
                "microsoft_smartcard_logon": false,
                "microsoft_ca_exchange": false,
                "microsoft_key_recovery_21": false,
                "microsoft_system_health": false,
                "microsoft_system_health_loophole": false,
                "microsoft_kernel_mode_code_signing": false,
                "dvcs": false,
                "sbgp_cert_aa_service_auth": false,
                "eap_over_ppp": false,
                "eap_over_lan": false,
                "code_signing": false,
                "email_protection": false,
                "ipsec_end_system": false,
                "ipsec_tunnel": false,
                "ipsec_user": false,
                "time_stamping": false,
                "ocsp_signing": false,
                "ipsec_intermediate_system_usage": false,
                "netscape_server_gated_crypto": false,
                "any": false
            },
```

```
                "certificate_policies": [
                    {
                        "id": "2.23.140.1.2.1"
                    },
                    {
                        "id": "1.3.6.1.4.1.44947.1.1.1",
                        "cps": [
                            "http://cps.letsencrypt.org"
                        ]
                    }
                ],
                "authority_info_access": {
                    "ocsp_urls": [
                        "http://r3.o.lencr.org"
                    ],
                    "issuer_urls": [
                        "http://r3.i.lencr.org/"
                    ]
                },
                "signed_certificate_timestamps": [
                    {
                        "_encoding": {
                            "log_id": "DISPLAY_HEX"
                        },
                        "log_id":
"b73efb24df9c4dba75f239c5ba58f46c5dfc42cf7a9f35c49e1d098125edb499",
                        "timestamp": "2022-12-31T12:37:55Z",
                        "signature": {
                            "hash_algorithm": "SHA256",
                            "signature_algorithm": "ECDSA",
                            "_encoding": {
                                "signature": "DISPLAY_HEX"
                            },
                            "signature":
"304402203e73c9d1e7f17087b077237c715039e1d5f36cd75635df44017767227354dd7d022017
cfb6779130c48b496851d5aeb970c3b43e0fa1f31d6bc03f3338d7b8716947"
                        },
                        "version": 0
                    },
                    {
                        "_encoding": {
                            "log_id": "DISPLAY_HEX"
                        },
                        "log_id":
"e83ed0da3ef5063532e75728bc896bc903d3cbd1116beceb69e1777d6d06bd6e",
                        "timestamp": "2022-12-31T12:37:55Z",
                        "signature": {
                            "hash_algorithm": "SHA256",
                            "signature_algorithm": "ECDSA",
                            "_encoding": {
```

```
                                "signature": "DISPLAY_HEX"
                            },
                            "signature":
"30450221009c728da43c9bf4700b6d73c3b3155b5473d629d5b8f06c7335894ce61fbf3af00220
2e677d64f8e7368e39769ba45812fa3d0a2e3cce761d8e898276392d592b5475"
                        },
                        "version": 0
                    }
                ],
                "ct_poison": false
            },
            "serial_number_hex": "039403b7283199171fd9c1af1c8210f5a4ae",
            "redacted": false
        },
        "names": [
            "kgcontracting.co",
            "www.kgcontracting.co"
        ],
        "validation_level": "DV",
        "validation": {
            "nss": {
                "ever_valid": true,
                "had_trusted_path": true,
                "chains": [
                    {
                        "_encoding": {
                            "sha256fp": "DISPLAY_HEX"
                        },
                        "sha256fp": [

"0ac730f6b3a98bab6aa97c9c4c71b34dd5599f4933630e6d24a26751bd12ebac",

"96bcec06264976f37460779acf28c5a7cfe8a3c0aae11a8ffcee05c0bddf08c6"
                        ]
                    },
                    {
                        "_encoding": {
                            "sha256fp": "DISPLAY_HEX"
                        },
                        "sha256fp": [

"67add1166b020ae61b8f5fc96813c04c2aa589960796865572a3c7e737613dfd",

"96bcec06264976f37460779acf28c5a7cfe8a3c0aae11a8ffcee05c0bddf08c6"
                        ]
                    }
                ],
                "_encoding": {
                    "parents": "DISPLAY_HEX"
                },
```

```
                "parents": [

"0ac730f6b3a98bab6aa97c9c4c71b34dd5599f4933630e6d24a26751bd12ebac",

"67add1166b020ae61b8f5fc96813c04c2aa589960796865572a3c7e737613dfd"
                ],
                "type": "LEAF",
                "is_valid": false,
                "has_trusted_path": false,
                "in_revocation_set": false
            },
            "microsoft": {
                "ever_valid": true,
                "had_trusted_path": true,
                "chains": [
                    {
                        "_encoding": {
                            "sha256fp": "DISPLAY_HEX"
                        },
                        "sha256fp": [

"0ac730f6b3a98bab6aa97c9c4c71b34dd5599f4933630e6d24a26751bd12ebac",

"96bcec06264976f37460779acf28c5a7cfe8a3c0aae11a8ffcee05c0bddf08c6"
                        ]
                    },
                    {
                        "_encoding": {
                            "sha256fp": "DISPLAY_HEX"
                        },
                        "sha256fp": [

"67add1166b020ae61b8f5fc96813c04c2aa589960796865572a3c7e737613dfd",

"96bcec06264976f37460779acf28c5a7cfe8a3c0aae11a8ffcee05c0bddf08c6"
                        ]
                    }
                ],
                "_encoding": {
                    "parents": "DISPLAY_HEX"
                },
                "parents": [

"0ac730f6b3a98bab6aa97c9c4c71b34dd5599f4933630e6d24a26751bd12ebac",

"67add1166b020ae61b8f5fc96813c04c2aa589960796865572a3c7e737613dfd"
                ],
                "type": "LEAF",
                "is_valid": false,
                "has_trusted_path": false,
```

```
                "in_revocation_set": false
            },
            "apple": {
                "ever_valid": true,
                "had_trusted_path": true,
                "chains": [
                    {
                        "_encoding": {
                            "sha256fp": "DISPLAY_HEX"
                        },
                        "sha256fp": [

"0ac730f6b3a98bab6aa97c9c4c71b34dd5599f4933630e6d24a26751bd12ebac",

"96bcec06264976f37460779acf28c5a7cfe8a3c0aae11a8ffcee05c0bddf08c6"
                        ]
                    },
                    {
                        "_encoding": {
                            "sha256fp": "DISPLAY_HEX"
                        },
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"67add1166b020ae61b8f5fc96813c04c2aa589960796865572a3c7e737613dfd",

"96bcec06264976f37460779acf28c5a7cfe8a3c0aae11a8ffcee05c0bddf08c6"
                        ]
                    }
                ],
                "_encoding": {
                    "parents": "DISPLAY_HEX"
                },
                "parents": [

"0ac730f6b3a98bab6aa97c9c4c71b34dd5599f4933630e6d24a26751bd12ebac",

"67add1166b020ae61b8f5fc96813c04c2aa589960796865572a3c7e737613dfd"
                ],
                "type": "LEAF",
                "is_valid": false,
                "has_trusted_path": false,
                "in_revocation_set": false
            },
            "chrome": {
                "ever_valid": true,
                "had_trusted_path": true,
                "chains": [
                    {
                        "_encoding": {
                            "sha256fp": "DISPLAY_HEX"
```

```
                        },
                        "sha256fp": [

"0ac730f6b3a98bab6aa97c9c4c71b34dd5599f4933630e6d24a26751bd12ebac",

"96bcec06264976f37460779acf28c5a7cfe8a3c0aae11a8ffcee05c0bddf08c6"
                        ]
                    },
                    {
                        "_encoding": {
                            "sha256fp": "DISPLAY_HEX"
                        },
                        "sha256fp": [

"67add1166b020ae61b8f5fc96813c04c2aa589960796865572a3c7e737613dfd",

"96bcec06264976f37460779acf28c5a7cfe8a3c0aae11a8ffcee05c0bddf08c6"
                        ]
                    }
                ],
                "_encoding": {
                    "parents": "DISPLAY_HEX"
                },
                "parents": [

"0ac730f6b3a98bab6aa97c9c4c71b34dd5599f4933630e6d24a26751bd12ebac",

"67add1166b020ae61b8f5fc96813c04c2aa589960796865572a3c7e737613dfd"
                ],
                "type": "LEAF",
                "is_valid": false,
                "has_trusted_path": false,
                "in_revocation_set": false
            }
        },
        "ct": {
            "entries": {
                "google_xenon_2023": {
                    "index": 593655844,
                    "added_to_ct_at": "2022-12-31T12:37:55.906Z",
                    "ct_to_censys_at": "2023-06-21T10:02:57.281327695Z"
                },
                "google_argon_2023": {
                    "index": 521618614,
                    "added_to_ct_at": "2022-12-31T12:37:55.858Z",
                    "ct_to_censys_at": "2023-05-04T22:00:22.709312248Z"
                }
            }
        },
        "ever_seen_in_scan": true,
```

```
        "raw":
"MIIFPzCCBCegAwIBAgISA5QDtygxmRcf2cGvHIIQ9aSuMA0GCSqGSIb3DQEBCwUAMDIxCzAJBgNVBA
YTAlVTMRYwFAYDVQQKEw1MZXQncyBFbmNyeXB0MQswCQYDVQQDEwJSMzAeFw0yMjEyMzExMTM3NTVaF
w0yMzAzMzExMTM3NTRaMB8xHTAbBgNVBAMTFHd3dy5rZ2NvbnRyYWN0aW5nLmNvMIIBIjANBgkqhkiG
9w0BAQEFAAOCAQ8AMIIBCgKCAQEAwLO31ZXiUPy8VMb56BETwS2in+NTUKArirdppeQ/
B996yP9yxIKz6DjWTpfLP6FeQVrLz+Z1ik56xAG0pSlOzKatG1g+whNqQIUk7q3KVbpKivSQy5x2Tvv
ey+WaTKFgkF5ZclSAGPVRlOeslLIVPZe9XwVdWK06vg0dqjs8l/
7UkPG7WPxcgZYYiR0Fwy1orqq62jIXNuQX8PpY1wk9NSwYABkWRdG4IPX3yTMBq3yng5PpU7gnGXQbc
1pnzmpj+uwKydLZF/A7n8Cgq4AS9HY8UBGGY6+JcpToW6bhHFyg/
XSWRcKljd8UrWJxe0C157Yg0la+KHieHr1i6ARqzQIDAQABo4ICYDCCAlwwDgYDVR0PAQH/
BAQDAgWgMB0GA1UdJQQWMBQGCCsGAQUFBwMBBggrBgEFBQcDAjAMBgNVHRMBAf8EAjAAMB0GA1UdDgQ
WBBSmobmsnQiGs7WPX6up9C90HZ7ynTAfBgNVHSMEGDAWgBQULrMXt1hWy65QCUDmH6+dixTCxjBVBg
grBgEFBQcBAQRJMEcwIQYIKwYBBQUHMAGGFWh0dHA6Ly9yMy5vLmxlbmNyLm9yZzAiBggrBgEFBQcwA
oYWaHR0cDovL3IzLmkubGVuY3Iub3JnLzAxBgNVHREEKjAoghBrZ2NvbnRyYWN0aW5nLmNvghR3d3cu
a2djb250cmFjdGluZy5jbzBMBgNVHSAERTBDMAgGBmeBDAECATA3BgsrBgEEAYLfEwEBATAoMCYGCCs
GAQUFBwIBFhpodHRwOi8vY3BzLmxldHNlbmNyeXB0Lm9yZzCCAQMGCisGAQQB1nkCBAIEgfQEgfEA7w
B1ALc++yTfnE26dfI5xbpY9Gxd/
ELPep81xJ4dCYEl7bSZAAABhWgwUWYAAAQDAEYwRAIgPnPJ0efxcIewdyN8cVA54dXzbNdWNd9EAXdn
InNU3X0CIBfPtneRMMSLSWhR1a65cMO0Pg+h8x1rwD8zONe4cWlHAHYA6D7Q2j71BjUy51covIlryQP
Ty9ERa+zraeF3fW0GvW4AAAGFaDBTWAAABAMARzBFAiEAnHKNpDyb9HALbXPDsxVbVHPWKdW48GxzNY
lM5h+/
OvACIC5nfWT45zaOOXabpFgS+j0KLjzOdh2OiYJ2OS1ZK1R1MA0GCSqGSIb3DQEBCwUAA4IBAQCVNHp
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+7qE7QiabmLBSMydHmC/
2c9ufRyPXg8xWHJhimgF5b9IQyzi0KrAfUq4Raf2jBphw903wOQMJrOGsfN/
8vxQ5urNwwXs0T2hxDuxIJyxPFpjh8/7V/
rYHQFJazxkmYF+0c8aDvgJtrQIA1td5yQjxsf4TDqelRPIn6j8Sb9vkHRlYevRtOoi51V9PlBbXs0on
buM5xxNOswuZ6J7uxLdJCyPpRLRnci3vWuIvMamSEuznIlPe3VmMKEFJamrM1kDCqKt",
        "added_at": "2023-01-06T12:46:27Z",
        "modified_at": "2023-06-21T10:02:57Z",
        "validated_at": "2023-06-10T05:12:10Z",
        "parse_status": "CERTIFICATE_PARSE_STATUS_SUCCESS",
        "zlint": {
            "version": 3,
            "timestamp": "2023-06-13T05:04:17Z",
            "notices_present": true,
            "failed_lints": [
                "n_subject_common_name_included"
            ],
            "warnings_present": false,
            "errors_present": false,
            "fatals_present": false
        },
        "spki_subject_fingerprint_sha256":
"cc9b074ebf41b484a56923d5585594967bda7a7f8b5be187ef0e7ae1ec90003c",
        "parent_spki_subject_fingerprint_sha256":
"390bc358202771a65e7be7a87924d7f2a079de04feb5ffd4163fae4fbf9b11e9",
        "precert": false,
        "revoked": false,
        "labels": [
```

```
            "leaf",
            "ct",
            "ever-trusted",
            "untrusted",
            "dv",
            "was-trusted",
            "expired",
            "google-ct"
        ]
    }
}
```

ThreatQ provides the following default mapping for this operation action:

PROVIDER DATA PATH	THREATQ ENTITY	THREATQ OBJECT TYPE OR ATTRIBUTE KEY	EXAMPLES	NOTES
.result.fingerprint_sha1	Related Indicator.Value	SHA-1	d508e7f8163fb67434f84091dc7c2ca8afd5234d	N/A
.result.fingerprint_md5	Related Indicator.Value	MD5	3818d99263b47ab28f7de5b293ee1418	N/A
.result.tbs_fingerprint_sha256	Related Indicator.Value	SHA-256	4b098b6bd9459340fb0f3cfb80f0bc3283370c455d57ca20da40e7eecce341d5	N/A
.result.tbs_no_ct_fingerprint_sha256	Related Indicator.Value	SHA-256	5c095a40e76c245323086d26d1fa428d3b443b42fb58c7dbb19b32dfe516b749	N/A
.result.spki_fingerprint_sha256	Related Indicator.Value	SHA-256	cc9b074ebf41b484a56923d5585594967bda7a7f8b5be187ef0e7ae1ec90003c	N/A
.result.parent_spki_fingerprint_sha256	Related Indicator.Value	SHA-256	390bc358202771a65e7be7a87924d7f2a079de04feb5ffd4163fae4fbf9b11e9	N/A
.result.parsed.issuer_dn	Indicator.Attribute	Issuer Distinguished Name	C=US, O=Let's Encrypt, CN=R3	N/A
.result.parsed.serial_number	Indicator.Attribute	Serial Number	311703586789118042424998420179537559397550	N/A
.result.parsed.signature.self_signed	Indicator.Attribute	Self Signed	False	N/A
.result.parsed.signature.valid	Indicator.Attribute	Valid Signature	True	N/A
.result.parsed.signature.signature_algorithm.name	Indicator.Attribute	Signature Algorithm Name	SHA256-RSA	N/A

PROVIDER DATA PATH	THREATQ ENTITY	THREATQ OBJECT TYPE OR ATTRIBUTE KEY	EXAMPLES	NOTES
.result.parsed.signature.signature_algorithm.oid	Indicator.Attribute	Signature Algorithm OID	1.2.840.113549.1.1.11	N/A
.result.parsed.signature.value	Indicator.Attribute	Signature	95347a7bd89da6a6bd9adcc509669d933b5e2a29b414317d72b02c583bfadbf616f5b6977824ee80484fe4ae0c38dbb1013d896b5a9db12fdc62296fbefbba84ed089a6e62c148cc9d1e60bfd9cf6e7d1c8f5e0f315872618a6805e5bf48432ce2d0aac07d4ab845a7f68c1a61c3dd37c0e40c26b386b1f37ff2fc50e6eacdc305ecd13da1c43bb1209cb13c5a6387cffb57fad81d01496b3c6499817ed1cf1a0ef809b6b408035b5de72423c6c7f84c3a9e9513c89fa8fc49bf6f90746561ebd1b4ea22e7557d3e505b5ecd289dbb8ce71c4d3acc2e67a27bbb12dd242c8fa512d19dc8b7bd6b88bcc6a6484bb39c894f7b756630a10525a9ab3359030aa2ad	N/A
.result.parsed.extensions.subject_alt_name.dns_names	Indicator.Attribute	DNS Names	kgcontracting.co	N/A
.result.validation.apple.had_trusted_path	Indicator.Attribute	Browser Trust Apple	True	N/A
.result.validation.microsoft.had_trusted_path	Indicator.Attribute	Browser Trust Microsoft	True	N/A
.result.validation.nss.had_trusted_path	Indicator.Attribute	Browser Trust Mozilla NSS	True	N/A
.result.validation.chrome.had_trusted_path	Indicator.Attribute	Browser Trust Chrome	True	N/A
.result.labels	Indicator.Attribute	Tag	leaf	N/A
.result.parsed.subject.common_name	Indicator.Attribute	Common Name	www.kgcontracting.co	N/A
.result.parsed.subject_key_info.key_algorithm.name	Indicator.Attribute	Key Type	RSA	N/A
.result.parsed.subject_key_info.rsa.length	Indicator.Attribute	Key Length	2048	N/A
.result.parsed.subject_key_info.rsa.modulus	Indicator.Attribute	Modulus	c0b3b7d595e250fcbc54c6f9e81113c12da29fe35350a02b8ab769a5e43f07df7ac8ff72c482b3e838d64e97cb3fa15e415acbcfe6758a4e7ac401b4a5294ecca6ad1b583ec2136a408524eeadca55ba4a8af490cb9c764efbdecbe59a4ca160905e5972548018f55194e7ac94b2153d97bd5f055d58ad3abe0d1daa3b3c97fed490f1bb58fc5c819618891d05c32d68aeaabada321736e417f0fa58d7093d352c1800191645d1b820f5f7c93301ab7ca78393e953b82719741b735a67ce6a63faec0ac9d2d917f03b9fc0a0ab8012f4763c50118663af8972	N/A

PROVIDER DATA PATH	THREATQ ENTITY	THREATQ OBJECT TYPE OR ATTRIBUTE KEY	EXAMPLES	NOTES
			94e85ba6e11c5ca0fd749645c2a58ddf14ad62717b40b5e7b620d256be28789e1ebd62e8046acd	
.result.parsed.extensions.key_usage.key_encipherment	Indicator.Attribute	Key Encipherment	True	N/A
.result.parsed.extensions.key_usage.digital_signature	Indicator.Attribute	Digital Signature	True	N/A
.result.parsed.extensions.extended_key_usage.server_auth	Indicator.Attribute	Server Auth	True	N/A
.result.parsed.extensions.extended_key_usage.client_auth	Indicator.Attribute	Client Auth	True	N/A
.result.parsed.extensions.basic_constraints.is_ca	Indicator.Attribute	Constraints	False	N/A
.result.parsed.extensions.authority_info_access.ocsp_urls	Indicator.Attribute	AIA Paths OCSP	http://r3.i.lencr.org/	N/A
.result.parsed.extensions.authority_info_access.issuer_urls	Indicator.Attribute	AIA Paths Issuer	http://r3.o.lencr.org	N/A
.result.ct.entries.google_argon_2023.index	Indicator.Attribute	Certificate Transparency Argon	521618614	N/A
.result.ct.entries.google_argon_2023.added_to_ct_at	Indicator.Attribute	Certificate Transparency Argon Date	2022-12-31T12:37:55.858Z	N/A
.result.ct.entries.google_xenon_2023.index	Indicator.Attribute	Certificate Transparency Xenon	593655844	N/A
.result.ct.entries.google_xenon_2023.added_to_ct_at	Indicator.Attribute	Certificate Transparency Xenon Date	2022-12-31T12:37:55.906Z	N/A

Change Log

- **Version 1.2.0**
  - Service labels are now mapped to Tag attributes. Banner data is preserved, and banner, body, and favicon hashes are normalized and ingested as related indicators, ensuring these fields are consistently captured.
  - DNS and FQDN coverage has been enhanced. Both forward (`dns.names`) and reverse DNS records are now ingested as related FQDN indicators, ensuring all hostnames associated with an IP address—including those previously omitted—are returned.
  - A new fingerprint section has been introduced to surface service JARM fingerprints and TLS JA3S/JA4S values, which are ingested as Hash ION indicators with the corresponding fingerprint type.
  - The minimum supported ThreatQ version has been updated to 5.15.0.
- **Version 1.1.0**
  - Updated the API version and endpoints utilized by the operation.
    - Updated the ingested data samples and mapping tables.
- **Version 1.0.0**
  - Initial release