Akamai Connector for Varnish

Installation Guide

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1 Introduction

The Akamai Connector for Varnish allows for the integration of data and configuration between an origin Varnish server and Akamai's CDN network.

2 Installation

2.1 Overview

Installing the Connector involves:

- Installing the Akamai Connector VMOD and VCL
- Configuration of Akamai CCU API parameters for purge coordination (optional)

There are 2 ways to install the Connector:

- Via package
- Via source

2.2 Varnish Package Installation

In order to install the Akamai Connector for Varnish, you first need to setup access to the connector repo. If you have not already done so, please contact support at support@varnish-software.com to get assistance with repo setup.

2.2.1 Ubuntu Installation

To install:

```
> apt-get install varnish-plus-akamai-connector
```

2.2.2 Redhat Enterprise Linux Installation

To install:

```
> yum install varnish-plus-akamai-connector
```

2.3 Varnish Cache Open Source Installation

In order to install the Akamai Connector for Varnish Cache open source, you need access to the source tarball (akamai-connector-VERSION.tar.gz). If you have not done so already, please email support@varnish-software.com to request access to the Akamai Connector for Varnish Cache open source.

Before starting, please make a backup of any previous Akamai Connector settings located in `/etc/akamai-connector.conf`.

Also, make sure you have the following developer packages and libraries installed.

For Red Hat distributions:

```
> yum install varnish-devel curl-devel openssl-devel python-docutils
```

For Debian and Ubuntu distributions:

```
> apt-get install varnish-dev libcurl4-openssl-dev python-docutils make
```

First, download the Akamai Connector source tarball to your server, extract the source, and cd into the directory:

```
> wget [URL]
> tar -xvzf akamai-connector-VERSION.tar.gz
> cd akamai-connector-VERSION
```

The above `[URL]` will be provided to you by Varnish Software.

If you have installed Varnish Cache open source from package or have Varnish Cache installed using a standard installation prefix, run:

```
> ./configure
```

If you have installed Varnish Cache using an alternate installation prefix, you need to specify the location of the pkgconfig folder (the one containing `varnishapi.pc`) and export it as `PKG_CONFIG_PATH` before running `configure`.

Next, compile the VMOD:

```
> make
```

You can now optionally test the VMOD and VCL against your Varnish Cache installation:

```
> make check
```

Note that if you have a working Akamai Connector configuration file in place, it needs to be backed up before installing:

```
> cp /etc/akamai-connector.conf /etc/akamai-connector.conf.backup
```

Install the Akamai Connector VMOD and VCL:

```
> make install
```

3 Configuration

The following configuration steps are required to get the Akamai Connector running within your Varnish Cache setup.

3.1 Automatic VCL Integration

To auto configure the Akamai Connector into your Varnish Cache VCL configuration, add the following 3 lines to the top of your VCL:

```
import std;
import akamai;
include "akamai_auto.vcl";
```

This will automatically hook Akamai request and response logic into the appropriate `vcl_*` subroutines. All Connector functionality is enabled and no further configuration is required.

Note that if you already have `import std;` in your VCL, you do not need to import it again.

3.2 Purge Synchronization

If you would like to synchronize purge requests on this host to the Akamai network, the following Akamai CCU API fields need to be configured within the `akamai-connector.conf` file:

- purge_host
- purge_client_token
- purge_client_secret
- purge_access_token

Omitting these fields or removing this configuration file will cause the Akamai purge functionality to be skipped entirely.

You can also point Varnish Cache to an alternate configuration path by setting `VMOD_AKAMAI_CONFIG_FILE` to the alternate path. For example:

```
export VMOD_AKAMAI_CONFIG_FILE=/opt/akamai/.ac.conf
```

3.3 Advanced VCL Integration

To selectively choose which features of the Connector you wish to use, you can use the following vcl subroutines (via `akamai.vcl`):

- akamai_init_sureroute
- akamai_recv_timeout
- akamai_recv_esi
- akamai_recv_device_detection
- akamai_recv_true_client_ip
- akamai_recv_sureroute
- akamai_purge
- akamai_deliver_edge_control
- akamai_deliver_esi
- akamai_deliver_vary

- akamai_deliver_via

Each subroutines need to be called in the appropriate `vcl_*` subroutine as specified in the 2nd part of the name. For example, `akamai_deliver_edge_control` needs to be called in `vcl_deliver`. If multiple subroutines have the same functionality label, as specified by the 3rd part of the name, each one needs to be invoked. For example, both `akamai_recv_esi` and `akamai_deliver_esi` need to be called to integrate ESI with Akamai.

Sureroute Example:

```
import std;
import akamai;
include "akamai.vcl";

sub vcl_init {
        call akamai_init_sureroute;
}

sub vcl_recv {
        call akamai_recv_sureroute;
}
```

If you have unused subroutines, you can disable Varnish Cache from reporting this as an error by adding the following startup parameter to `varnishd`:

```
-p vcc_err_unref=false
```

3.4 Akamai Configuration

The Akamai Connector requires no additional changes to your Akamai configuration and is designed to operate with your current Akamai environment as-is.

For best results, ensure that your Akamai configuration classifies requests as cacheable by default and excludes those requests that are not cacheable. While the Connector, using VCL will correctly define the cacheability status and appropriate TTLs, the early classification will ensure that the Akamai Intelligent Platform will use SureRoute and Tiered Distribution for non cacheable and cacheable content respectfully.

To utilize Device Characteristics in Varnish you will need to enable the behavior for Device Characteristics on your Configuration.

4 Feature Overview

The Akamai Connector for Varnish offers the following functionality.

4.1 Object TTL and Grace

The Varnish Cache internal value of `beresp.ttl`, `beresp.grace`, and `beresp.uncacheable` will be synchronized with the Akamai CDN on each request. These values will supersede the Cache-Control header.

In your Luna Property Configuration for Akamai, set your caching behavior to honor origin cache control and expires.

4.2 Purge Synchronization

When a purge request is handled by Varnish Cache, the Connector will synchronize the invalidation request against the Akamai CDN. The Connector will use the value of `req.url` and `req.http.Host` for invalidation.

The `akamai-connector.conf` needs to have all of the purge_* fields filled in, otherwise purge synchronization is skipped on this host.

If purge synchronization is configured, Varnish Cache will relay the Akamai CCU API response as its purge response.

CCU API credentials need to be generated via the Luna Control Center.

4.3 True Client IP

The Varnish Cache value of `req.http.True-Client-IP` will always contain the True Client IP of the requestor.

In Luna, make sure the header used is `True-Client-IP`.

4.4 SureRoute

The Connector will respond to requests for `/akamai/testobject.html` with a native SureRoute response.

The response size is configured via `sureroute_resp_bytes` in `akamai-connector.conf`.

In Luna, make sure the SureRoute test object path is `/akamai/testobject.html`.

4.5 ESI

ESI processing in Varnish Cache is deferred to Akamai when requests originate from the Akamai CDN.

In Luna, make sure the ESI processor is enabled.

4.6 Device Characterization

Each characteristic in the X-Akamai-Device-Characteristics field will be put into its own header. The header name is `X-ADC-[characteristic]` where `[characteristic]` is the characteristic name. For example, the value of `is_mobile` will be put into the `X-ADC-is_mobile` header.

4.7 Connection Keep-Alive

Connections between Akamai CDN and Varnish Cache will be held open for 301 seconds.

This is only supported in Varnish Plus.

5 Frequently Asked Questions

5.1 How do I validate the Connector is installed and functioning?

Run the following `curl` command:

```
curl -I http://[host]/akamai/testobject.html \
     -H "Via: akamai.net(ghost) (AkamaiGHost)"
```

Substitute `[host]` with the name or IP address of the Varnish server running the Akamai Connector. You should see the following response:

```
HTTP/1.1 200 OK
Content-Length: 20480
Date: Thu, 09 Mar 2017 23:19:41 GMT
X-Varnish: 2
Edge-Control: max-age=130
Cache-Control: post-check=120
Via: 1.1 varnish-v4, Akamai Connector/[version]
X-varnish-hits: 0
Accept-Ranges: bytes
Connection: keep-alive
```

In particular, verify you have a successful `200` response code or that the `Via` header states `Akamai Connector`.

5.2 What versions of Varnish Cache and Varnish Cache Plus are support?

The connector supports both Varnish Cache and Varnish Cache Plus versions 4.1 and higher.

5.3 What if I am using Varnish Cache or Varnish Cache Plus 4.0?

Upgrading from 4.0 to 4.1 requires no VCL changes and minimal config changes. If using VMODs, they need to be rebuilt against 4.1. The full list of changes are outlined here:

https://varnish-cache.org/docs/4.1/whats-new/upgrading.html

5.4 What if I am using Varnish Cache or Varnish Cache Plus 3.0?

Varnish Cache 3.0 was released in 2011 and the open sourced version has been end of life since 2015 (Varnish Cache Plus 3.0 is still supported). If using 3.0, please make immediately plans to upgrade to at least 4.1.

If you are a Varnish Plus customer, please contact support for upgrade assistance. If you are an open source user, please contact sales@varnish-software.com for upgrade assistance.

The full list of changes from 3.0 to 4.0 are outlined here:

https://varnish-cache.org/docs/4.0/whats-new/upgrading.html

6 Getting help

You can reach support at ccare@akamai.com. If this is an emergency, please call our 24x7 support line at 1-877-4-AKATEC (1-877-425-2832) or 1-617-444-4699.

For general questions, please contact akamai-connector@varnish-software.com.