Home Server Setup

- Caddy in a SmartOS Native Zone

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On my home server, I am currently using Caddy as a reverse-proxy. For the public sites such as this Bookstack app, Caddy also provides SSL and other key security requirements.

I have Caddy running in a native SmartOS zone. Caddy isn't that resource-intensive, so it could run on as little as 512 MB of RAM. In my zone, I gave it 2 GB of RAM. This is because I want to compile Caddy from scratch. I also gave it access to free CPU cores. I configured the zone in the SmartOS web UI instead of performing manual configuration.

The following are my steps to get Caddy running in a native SmartOS zone.

First, install the Golang compiler.

```
pkgin update
pkgin install go122 git-base gcc12 gmake
```

You might also want to install some creature comforts in your container, such as your preferred text editor. Personally, I like Nano, but you can pick what you want.

```
pkgin install nano
```

Next, set the environment variables to run the compiler.

```
export GOROOT=/opt/local/go122
export GOPATH=/root/go
export PATH=$GOROOT/bin:$GOPATH/bin:$PATH
```

To make installing updates easier, you might want to make this persistent in your shell profile.

```
nano /root/.profile
source /root/.profile
```

Next, pull and install the Caddy source code.

```
go install github.com/caddyserver/xcaddy/cmd/xcaddy@latest
```

Next, build Caddy. You can add any extra plugins here using --with flags.

```
xcaddy build --output /opt/local/bin/caddy
```

Create a user and group for Caddy.

```
groupadd -g 800 caddy
useradd -u 800 -g caddy -d /var/caddy -s /usr/bin/false caddy
```

Create a folder for the Caddy server data and give the user and group permissions on it.

```
mkdir -p /opt/local/etc/caddy
mkdir -p /var/caddy/data
mkdir -p /var/log/caddy

chown -R caddy:caddy /var/caddy /var/log/caddy
chmod 750 /var/caddy /var/log/caddy
```

Create a Caddy file with the configuration options needed for your exact use cases.

```
nano /opt/local/etc/caddy/Caddyfile
```

Create the SMF manifest needed to define the background service.

```
mkdir -p /var/svc/manifest/site
nano /var/svc/manifest/site/caddy.xml
```

```
<?xml version="1.0"?>
<!DOCTYPE service_bundle SYSTEM "/usr/share/lib/xml/dtd/service_bundle.dtd.1">
<service_bundle type="manifest" name="caddy">
  <service name="site/caddy" type="service" version="1">

    <create_default_instance enabled="true"/>
    <single_instance/>

    <dependency name="network" grouping="require_all" restart_on="error" type="service">
      <service_fmri value="svc:/milestone/network:default"/>
    </dependency>

    <dependency name="filesystem" grouping="require_all" restart_on="error" type="service">
      <service_fmri value="svc:/system/filesystem/local:default"/>
    </dependency>
```

```
    <exec_method type="method" name="start"
      exec="/opt/local/bin/caddy run --config /opt/local/etc/caddy/Caddyfile --adapter
caddyfile &amp;amp;"
      timeout_seconds="60">
      <method_context>
        <method_credential user="caddy" group="caddy" privileges="basic,net_privaddr"/>
      </method_context>
    </exec_method>

    <exec_method type="method" name="stop"
      exec=":kill"
      timeout_seconds="30"/>

    <exec_method type="method" name="refresh"
      exec="/opt/local/bin/caddy reload --config /opt/local/etc/caddy/Caddyfile --adapter
caddyfile"
      timeout_seconds="30"/>

    <property_group name="startd" type="framework">
      <propval name="duration" type="astring" value="child"/>
      <propval name="ignore_error" type="astring" value="core,signal"/>
    </property_group>

    <stability value="Evolving"/>
    <template>
      <common_name><loctext xml:lang="C">Caddy web server (compiled from
source)</loctext></common_name>
    </template>
  </service>
</service_bundle>
```

Import and enable the service.

```
svccfg import /var/svc/manifest/site/caddy.xml
svcadm enable svc:/site/caddy:default
```

If you change the Caddyfile, you can reload the Caddy configuration using the following command.

```
svcadm refresh svc:/site/caddy:default
```