debuginfod

and its interaction with the Yocto Project

Dylan Garza

June 3, 2022

debuginfod

- What is debuginfod? debuginfod is a daemon turns a machine that holds debug artifacts into file server for easier debugging.
- Why use it? Debug info is too big to be stored locally on the target devices. Different versions of binaries exist, storing and searching for debug artifacts manually is too slow.

Installing debuginfod

There are two ways to install on a Ubuntu machine:

- Upgrade to Ubuntu 22.04
- append the impish package to `/etc/apt/sources.list`

Setting up and using debuginfod

Starting the debuginfod server:

- To start the file server, simply run `debuginfod -F`. Different arguments will search for different debug artifacts (`-F -R -U`)
- Providing a path to a directory will point debuginfod where to scan for the debug artifacts.
- To set a rescan time, provide `-t [time in seconds]`

Setting up and using debuginfod (cont.)

On the host machine:

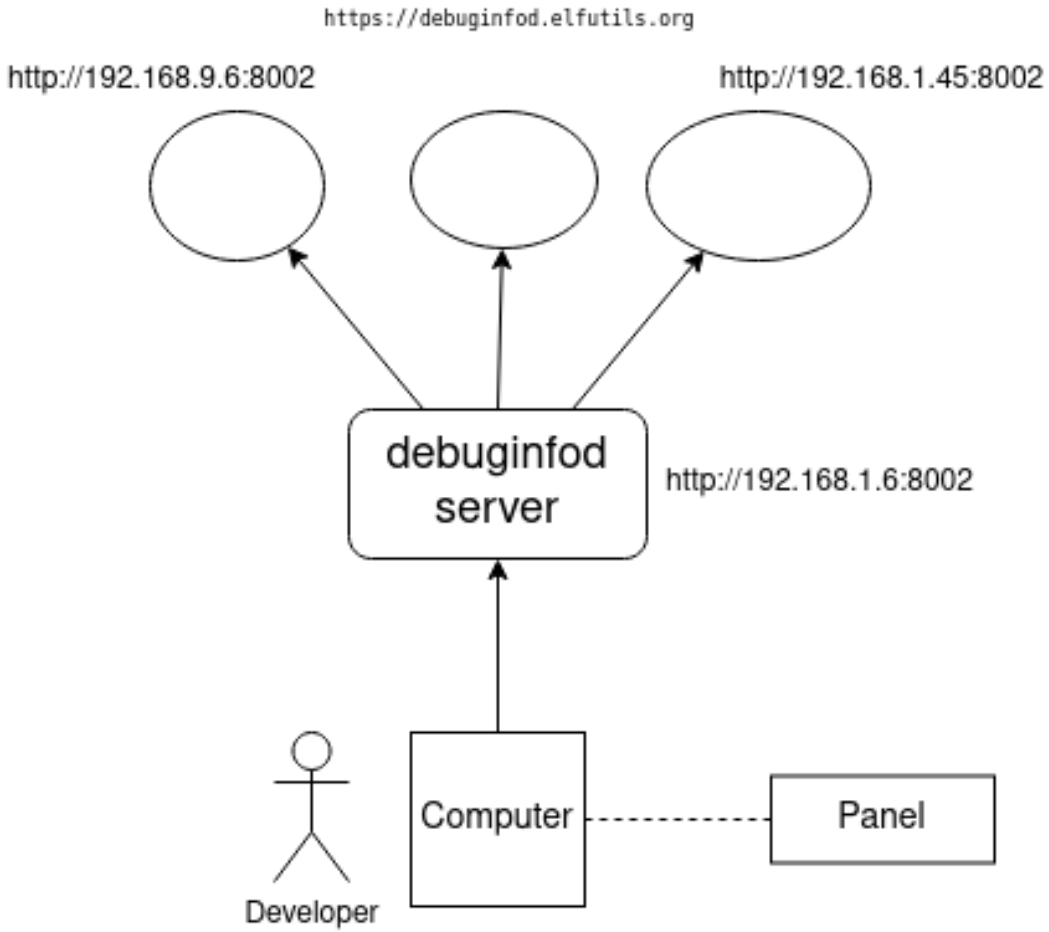
- set environment variable `DEBUGINFOD_URLS` to the ip address of the file server, prefixed by `http://` and suffixed by the port number defaulted to `:8002`, which can be changed by `-p [port num]`

```
export DEBUGINFOD_URLS="http://ip_addr:8002"
```

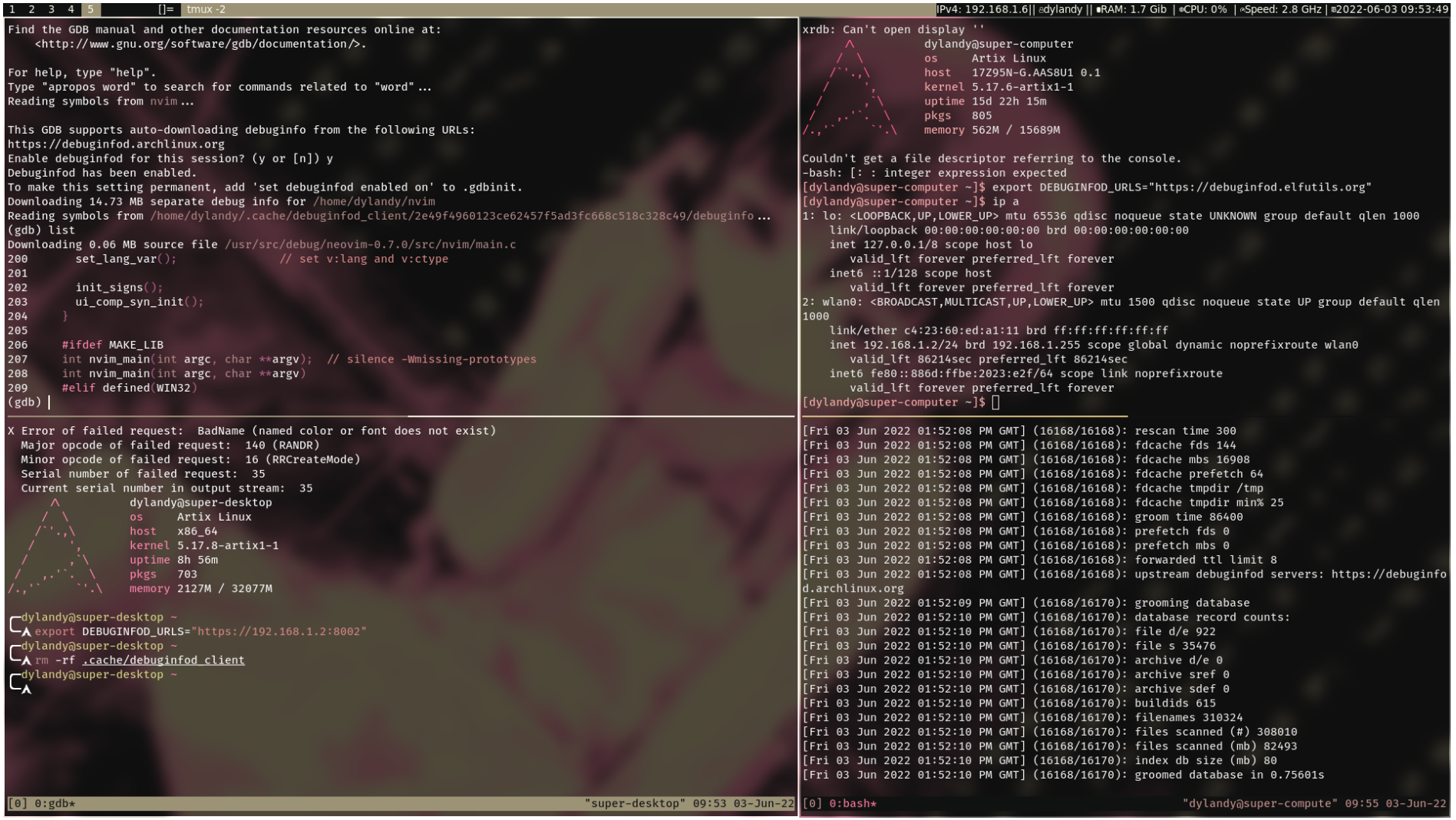
Federating debuginfod servers

debuginfod servers can act as a host machine and query other servers

federated debuginfod servers



Federeating debuginfod servers (cont.)



Demo

debuginfod with the Yocto Project

For versions after 3.4(honister) only 2 changes are needed for debuginfod to work on a build. Append the following the `local.conf`:

1. ```
   PACKAGE_CONFIG_pn-elfutils-native="debuginfod libdebuginfod
   ```
2. ```
   DISTROFEATURES += "debuginfod"
   ```

Yocto Project has built in script for debuginfod to eliminate compatability issues.

debuginfod-find

Command apart of elfutils, it performs debuginfod server querying without gdb. Can query for debuginfo, executables, and sources.

```
debuginfod-find [debuginfo/executable/source] [path/to/file or Build-ID] [path/to/source]
```

If the path to the source is not known, but debug info is available, use the `list` command under gdb to provide source path.

Demo