

Ampere Computing

How To: Patch Tools/Perf to Enable Ampere Vendor Counters

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TM

Upstream Contribution: Perf Counters

Ampere Computing has upstreamed two Kernel patches to expose additional hardware counters for the perf tooling. Use of perf remains unchanged, reference [the perf wiki](#) for more information.

The two patches can be seen here:

perf vendor events arm64: Enable JSON events for eMAG

This patch is in the mainline kernel and will show up in 4.19.

```
https://git.kernel.org/pub/scm/linux/kernel/git/stable/linux.git/commit/?id=704089e77acf74b17ed294683660937000ecb9ee
```

perf vendor events arm64: Revise core JSON events for eMAG

This patch is currently accepted by a maintainer and awaiting a pull request to mainline. Expected in 4.19.

```
https://git.kernel.org/pub/scm/linux/kernel/git/acme/linux.git/commit/?h=perf/core&id=d35c595bf0053b7df80ef9d44140ac5da6cc698b
```

How To: Rebuild and Use the Perf Tool with These Patches

1. Clone the stable kernel and checkout the 4.18.y branch.

```
git clone git://git.kernel.org/pub/scm/linux/kernel/git/stable/linux-stable.git
```

```
cd linux-stable
```

```
git checkout -b linux-4.18.y origin/linux-4.18.y
```

2. Download the patch files to your cloned kernel repo.

```
wget https://git.kernel.org/pub/scm/linux/kernel/git/stable/linux.git/patch/?id=704089e77acf74b17ed294683660937000ecb9ee -O 0001-perf-vendor-events-arm64-Enable-JSON-events-for-eMAG.patch
```

```
wget  
https://git.kernel.org/pub/scm/linux/kernel/git/acme/linux.git/patch/?id=0836bb1eee18a2ed5c6a3e6b3992174af4d6b275 -O 0002-perf-vendor-events-arm64-Revise-core-JSON-events-for.patch
```

3. Apply the .patch files.

```
git am 0001-perf-vendor-events-arm64-Enable-JSON-events-for-eMAG.patch  
git am 0002-perf-vendor-events-arm64-Revise-core-JSON-events-for.patch
```

4. Change directories to tools/perf.

```
cd tools/perf
```

5. Install dependencies (assumption is Fedora OS)

```
sudo dnf builddep perf
```

6. Make the perf tool.

```
make -j 32 perf
```

TIP

32 refers to the number of threads to target when compiling the perf tool. In this example, we're running on a 32-core system and we've decided to run against an equal number of targets. See the make documentation for more details at: https://www.gnu.org/software/make/manual/html_node/Parallel.html

7. Use the newly built perf tool.

```
./perf list
```