



## Chapter3.1\_Vector Add\_Print

ROCm Tutorial | AMD 2020

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## Chapter 3.1: Kernel Printing

This hands-on tutorial shows how we can enable GPU kernels to print an variable of interest and display the output

### Preparation

1. In the tutorial repository:
  - `cd 01_HIP_Vector_Add/Vector_Add_GPU_Print`
2. The source code that we covered in the ppt is in the file `vadd_hip.cpp`
3. The kernel in the source file `vadd_hip.cpp` has been modified to print the contents of the “c” array which is the output

### Compiling and Executing

1. We will be using `hipcc` for compiling the application
2. By default, `hipcc` will be added to your environment variable “PATH” upon a successful ROCm installation.

If not add `/opt/rocm/bin/` to your “PATH” environment variable

3. To compile run the following command:

```
hipcc vadd_hip.cpp -o vadd_hip
```

4. Run the program:

```
./vadd_hip
```

5. You will see the program run to completion as shown in the picture below:

```
C[0] 0.000000
C[1] 2.000000
C[64] 128.000000
C[96] 192.000000
C[32] 64.000000
C[2] 4.000000
C[65] 130.000000
C[97] 194.000000
C[33] 66.000000
C[3] 6.000000
C[66] 132.000000
C[98] 196.000000
C[34] 68.000000
C[16] 32.000000
C[67] 134.000000
C[99] 198.000000
C[35] 70.000000
C[17] 34.000000
C[80] 160.000000
C[112] 224.000000
C[48] 96.000000
C[18] 36.000000
C[81] 162.000000
C[113] 226.000000
C[49] 98.000000
C[19] 38.000000
C[82] 164.000000
C[114] 228.000000
C[50] 100.000000
C[4] 8.000000
C[83] 166.000000
C[115] 230.000000
C[51] 102.000000
```

**Figure 1: Printing the contents of an array from a GPU kernel**

Printing from kernels is useful to observe intermediate values when debugging. Enabling it in HIP is extremely simple as demonstrated in the code example for this tutorial