

Introduction

Using iperf to benchmark network performance

1. Results
2. Hardware Configuration
3. Software/Operating System Configuration
4. Cable Connections

1. Results

	Speed	CPU Utilization
Receive	9.49Gbps	7%
Transmit	9.49Gbps	9%

2. Hardware Configuration

Device Under Test	Link Partner
Asus ROG STRIX X299-E GAMING BIOS 1301 03/07/2018 Intel Core i9-7920X Sky Lake 2.9GHz Corsair Vengeance LPX 32GB (4x8GB) DDR4 2400MHz C14 IP Address: 10.10.10.1	Asus ROG STRIX X299-E GAMING BIOS 1301 03/07/2018 Intel Core i9-7920X Sky Lake 2.9GHz Corsair Vengeance LPX 32GB (4x8GB) DDR4 2400MHz C14 P Address: 10.10.10.2

CPU

CPU-Z

CPU

Caches

Mainboard

Memory

SPD

Graphics

Bench

About

Processor

Name

Intel Core i9 7920X

Code Name

Skylake-X

Max TDP

140.0 W

Package

Socket 2066 LGA

Technology

14 nm

Core VID

0.890 V

intel

CORE i9

X-series

Specification

Intel® Core™ i9-7920X CPU @ 2.90GHz

Family

6

Model

5

Stepping

4

Ext. Family

6

Ext. Model

55

Revision

H0/U0

Instructions

MMX, SSE, SSE2, SSE3, SSSE3, SSE4.1, SSE4.2, EM64T, VT-x, AES, AVX, AVX2, AVX512F, FMA3, TSX

Clocks (Core #0)

Core Speed

1197.86 MHz

Multiplier

x 12.0 (12 - 43)

Bus Speed

99.81 MHz

Rated FSB

Cache

L1 Data

12 x 32 KBytes

8-way

L1 Inst.

12 x 32 KBytes

8-way

Level 2

12 x 1 MBytes

16-way

Level 3

16.50 MBytes

11-way

Selection

Socket #1

Cores

12

Threads

24

CPU-Z

Ver. 1.85.0.x64

Tools

Validate

Close

Motherboard

CPU-Z

CPU

Caches

Mainboard

Memory

SPD

Graphics

Bench

About

Motherboard

Manufacturer

ASUSTeK COMPUTER INC.

Model

ROG STRIX X299-E GAMING

Rev

1.xx

Chipset

Intel

Skylake-X

Rev.

04

Southbridge

Intel

X299

Rev.

00

LPCIO

Nuvoton

NCT6796

BIOS

Brand

American Megatrends Inc.

Version

1301

Date

03/07/2018

Graphic Interface

Version

PCI-Express

Link Width

x16

Max. Supported

x16

Side Band Addressing

CPU-Z

Ver. 1.85.0.x64

Tools

Validate

Close

[Keywords] Version 0.1 – 6/14/2017

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3. Software Configuration

- a) Windows 10 Pro Version 1709 64-bit
- b) Iperf v3.1.3 (<https://iperf.fr/download/windows/iperf-3.1.3-win64.zip>)
 - i) SERVER: `Iperf -s`
 - ii) CLIENT Test Transmit for 300 sec: `Iperf -c 10.10.10.2 -P4 -t300`
 - iii) CLIENT Test Receive for 300 sec: `Iperf -c 10.10.10.2 -P4 -t300 -R`

Device specifications

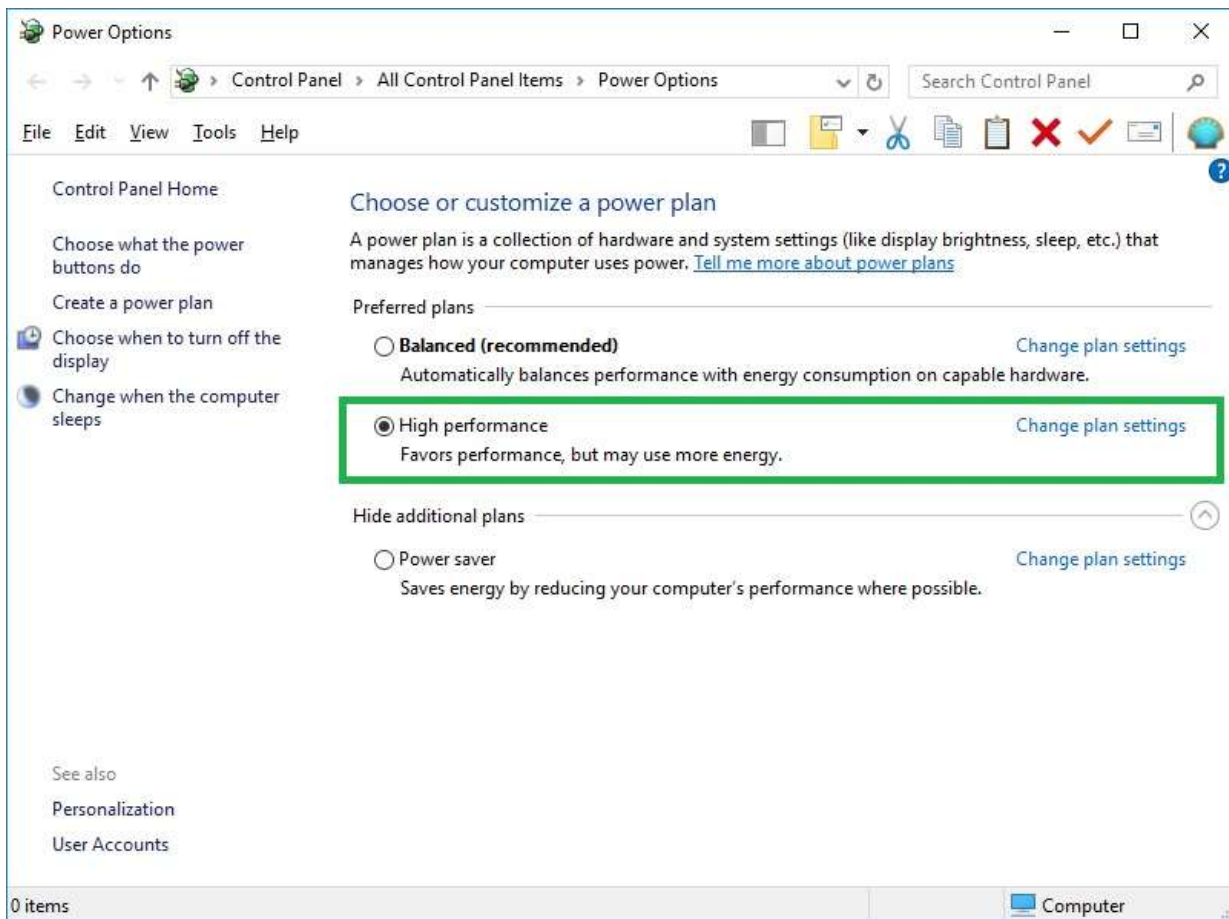
Device name	DESKTOP-029KDNC
Processor	Intel(R) Core(TM) i9-7920X CPU @ 2.90GHz 2.90 GHz
Installed RAM	32.0 GB (31.7 GB usable)
Device ID	F74D9095-4CE1-4143-A66F-2ED11E882CE2
Product ID	00330-80000-00000-AA715
System type	64-bit operating system, x64-based processor
Pen and touch	No pen or touch input is available for this display

Rename this PC

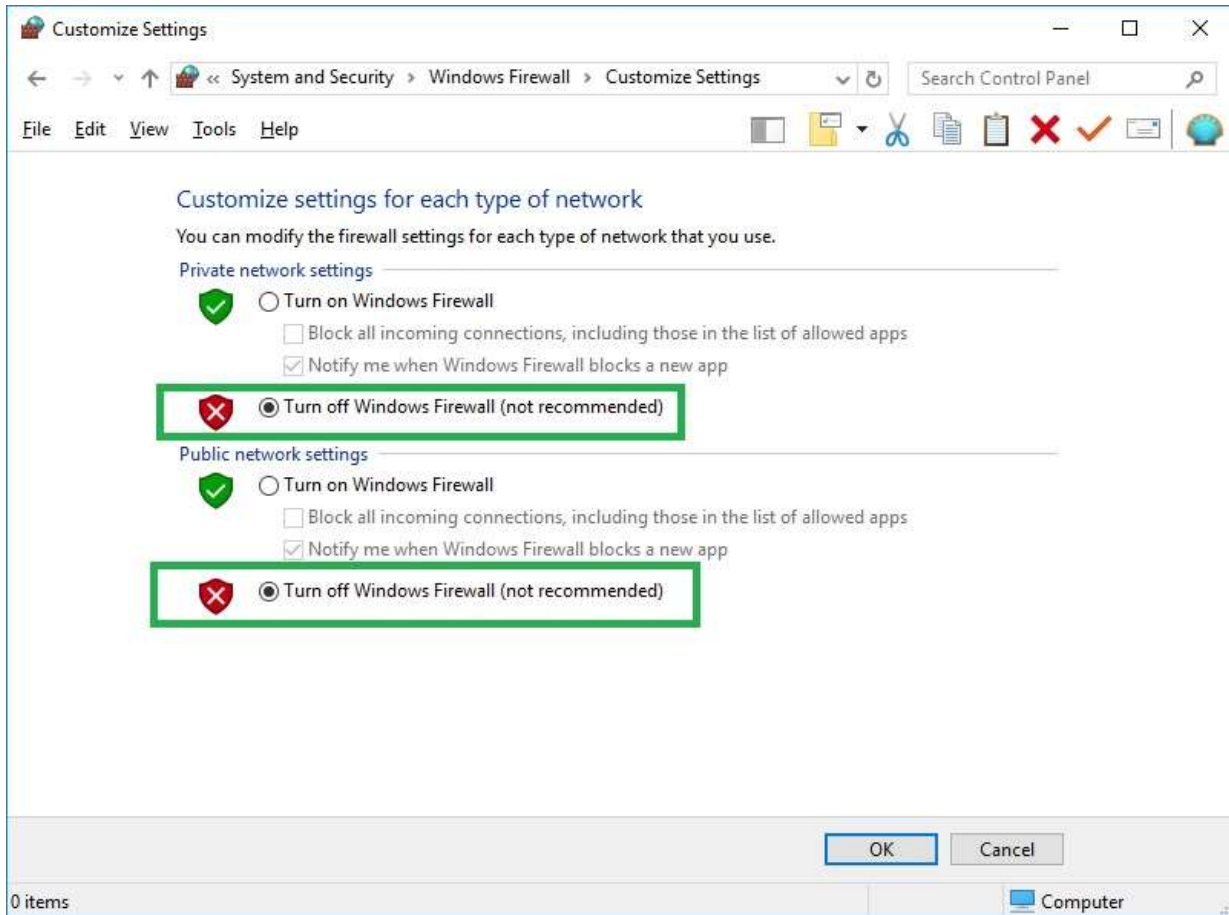
Windows specifications

Edition	Windows 10 Pro
Version	1709
OS Build	16299.431

c) Windows Power Options set to High Performance



d) Windows Firewall Disabled



- e) For consistent performance, setting the TCP Window Size to higher to 64K or 128K can improve the performance if the TCP Window Size is optimally set. Using more parallel stream like “-P4” can have more aggregate throughput.

Iperf Receive Performance = 9.46bps

C:\Windows\system32\cmd.exe					
[9]	93.00-94.00	sec	226 MBytes	1.90 Gbits/sec	
[11]	93.00-94.00	sec	225 MBytes	1.89 Gbits/sec	
[13]	93.00-94.00	sec	224 MBytes	1.88 Gbits/sec	
[SUM]	93.00-94.00	sec	1.10 GBytes	9.48 Gbits/sec	

[5]	94.00-95.00	sec	228 MBytes	1.92 Gbits/sec	
[7]	94.00-95.00	sec	227 MBytes	1.90 Gbits/sec	
[9]	94.00-95.00	sec	226 MBytes	1.89 Gbits/sec	
[11]	94.00-95.00	sec	225 MBytes	1.89 Gbits/sec	
[13]	94.00-95.00	sec	223 MBytes	1.87 Gbits/sec	
[SUM]	94.00-95.00	sec	1.10 GBytes	9.47 Gbits/sec	

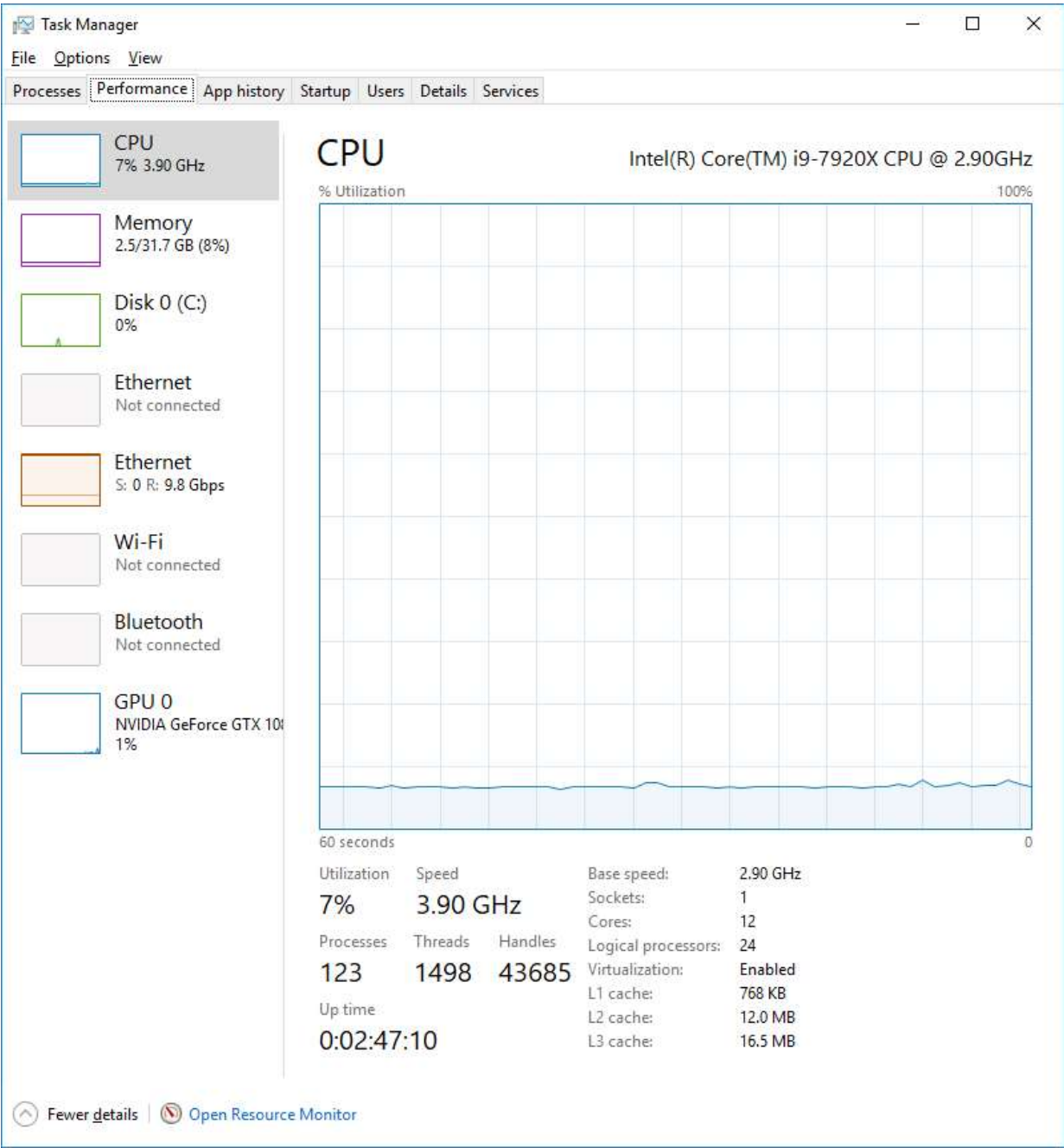
[5]	95.00-96.00	sec	229 MBytes	1.92 Gbits/sec	
[7]	95.00-96.00	sec	227 MBytes	1.91 Gbits/sec	
[9]	95.00-96.00	sec	226 MBytes	1.89 Gbits/sec	
[11]	95.00-96.00	sec	224 MBytes	1.88 Gbits/sec	
[13]	95.00-96.00	sec	222 MBytes	1.86 Gbits/sec	
[SUM]	95.00-96.00	sec	1.10 GBytes	9.47 Gbits/sec	

[5]	96.00-97.00	sec	229 MBytes	1.92 Gbits/sec	
[7]	96.00-97.00	sec	227 MBytes	1.90 Gbits/sec	
[9]	96.00-97.00	sec	226 MBytes	1.89 Gbits/sec	
[11]	96.00-97.00	sec	225 MBytes	1.89 Gbits/sec	
[13]	96.00-97.00	sec	222 MBytes	1.86 Gbits/sec	
[SUM]	96.00-97.00	sec	1.10 GBytes	9.47 Gbits/sec	

[5]	97.00-98.00	sec	229 MBytes	1.92 Gbits/sec	
[7]	97.00-98.00	sec	227 MBytes	1.90 Gbits/sec	
[9]	97.00-98.00	sec	227 MBytes	1.90 Gbits/sec	
[11]	97.00-98.00	sec	224 MBytes	1.88 Gbits/sec	
[13]	97.00-98.00	sec	223 MBytes	1.87 Gbits/sec	
[SUM]	97.00-98.00	sec	1.10 GBytes	9.47 Gbits/sec	

[5]	98.00-99.00	sec	228 MBytes	1.91 Gbits/sec	
[7]	98.00-99.00	sec	227 MBytes	1.91 Gbits/sec	
[9]	98.00-99.00	sec	226 MBytes	1.90 Gbits/sec	
[11]	98.00-99.00	sec	225 MBytes	1.88 Gbits/sec	
[13]	98.00-99.00	sec	222 MBytes	1.86 Gbits/sec	
[SUM]	98.00-99.00	sec	1.10 GBytes	9.46 Gbits/sec	

Iperf Receive CPU Utilization 7%

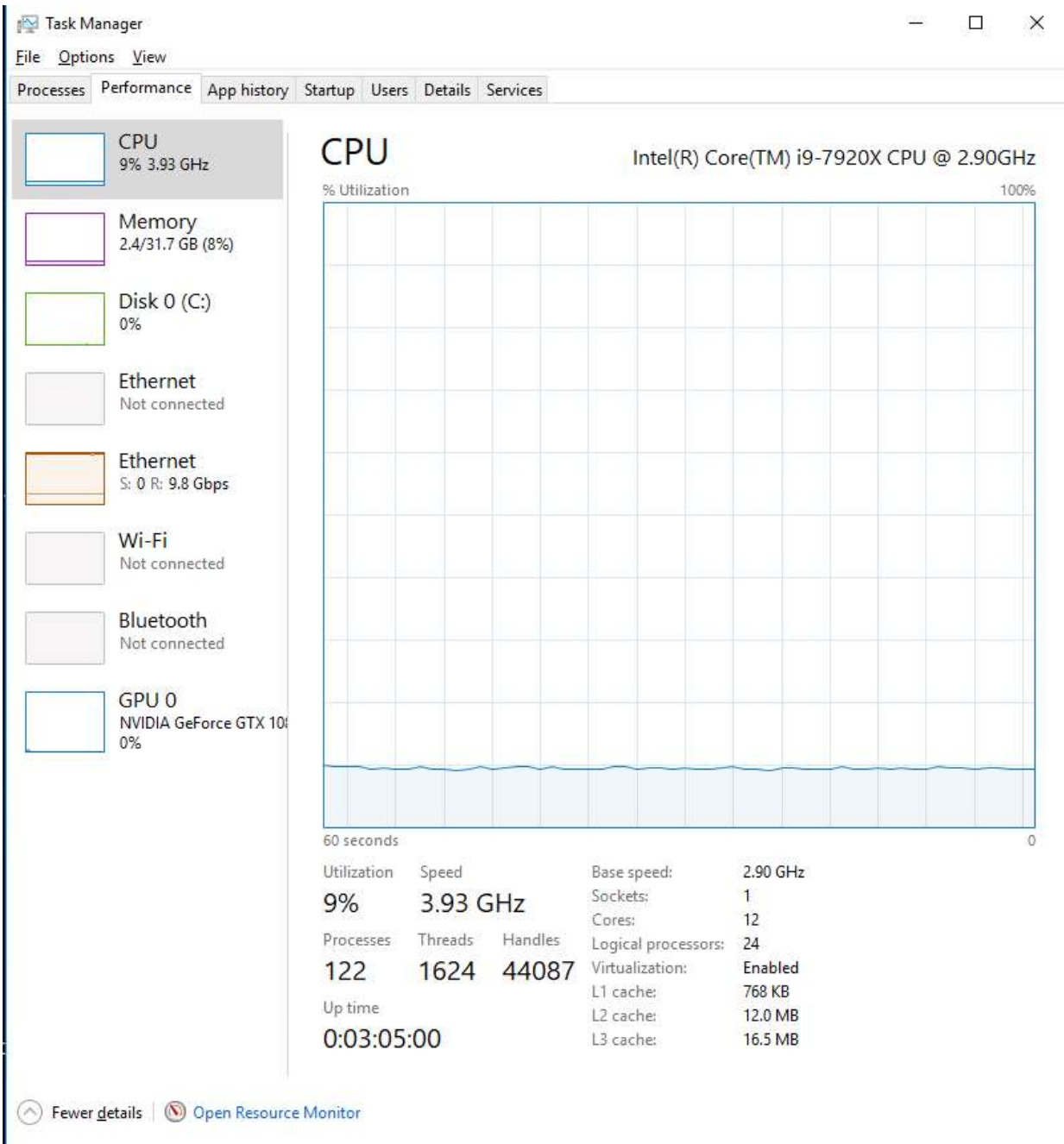


Iperf Transmit Performance = 9.44Gbps

```
C:\Windows\system32\cmd.exe
[ ID] Interval      Transfer      Bandwidth
[  4]  0.00-60.00 sec  13.9 GBytes   1.98 Gbits/sec
[  6]  0.00-60.00 sec  8.75 GBytes   1.25 Gbits/sec
[  8]  0.00-60.00 sec  17.3 GBytes   2.48 Gbits/sec
[ 10]  0.00-60.00 sec  17.3 GBytes   2.48 Gbits/sec
[ 12]  0.00-60.00 sec  8.62 GBytes   1.23 Gbits/sec
[SUM] 0.00-60.00 sec  65.9 GBytes   9.43 Gbits/sec
- - - - -
[  4]  60.00-120.00 sec  13.9 GBytes   1.98 Gbits/sec
[  6]  60.00-120.00 sec  8.75 GBytes   1.25 Gbits/sec
[  8]  60.00-120.00 sec  17.3 GBytes   2.48 Gbits/sec
[ 10]  60.00-120.00 sec  17.3 GBytes   2.48 Gbits/sec
[ 12]  60.00-120.00 sec  8.63 GBytes   1.23 Gbits/sec
[SUM] 60.00-120.00 sec  65.9 GBytes   9.43 Gbits/sec
- - - - -
[  4] 120.00-180.00 sec  13.9 GBytes   1.98 Gbits/sec
[  6] 120.00-180.00 sec  8.75 GBytes   1.25 Gbits/sec
[  8] 120.00-180.00 sec  17.3 GBytes   2.48 Gbits/sec
[ 10] 120.00-180.00 sec  17.3 GBytes   2.48 Gbits/sec
[ 12] 120.00-180.00 sec  8.63 GBytes   1.23 Gbits/sec
[SUM] 120.00-180.00 sec  65.9 GBytes   9.44 Gbits/sec
- - - - -
[  4] 180.00-240.00 sec  13.9 GBytes   1.98 Gbits/sec
[  6] 180.00-240.00 sec  8.75 GBytes   1.25 Gbits/sec
[  8] 180.00-240.00 sec  17.3 GBytes   2.48 Gbits/sec
[ 10] 180.00-240.00 sec  17.3 GBytes   2.48 Gbits/sec
[ 12] 180.00-240.00 sec  8.63 GBytes   1.24 Gbits/sec
[SUM] 180.00-240.00 sec  65.9 GBytes   9.44 Gbits/sec
- - - - -
[  4] 240.00-300.00 sec  13.9 GBytes   1.98 Gbits/sec
[  6] 240.00-300.00 sec  8.75 GBytes   1.25 Gbits/sec
[  8] 240.00-300.00 sec  17.3 GBytes   2.48 Gbits/sec
[ 10] 240.00-300.00 sec  17.3 GBytes   2.48 Gbits/sec
[ 12] 240.00-300.00 sec  8.62 GBytes   1.23 Gbits/sec
[SUM] 240.00-300.00 sec  65.9 GBytes   9.44 Gbits/sec
- - - - -
[ ID] Interval      Transfer      Bandwidth
[  4]  0.00-300.00 sec  69.3 GBytes   1.98 Gbits/sec      sender
[  4]  0.00-300.00 sec  69.3 GBytes   1.98 Gbits/sec      receiver
[  6]  0.00-300.00 sec  43.7 GBytes   1.25 Gbits/sec      sender
[  6]  0.00-300.00 sec  43.7 GBytes   1.25 Gbits/sec      receiver
[  8]  0.00-300.00 sec  86.7 GBytes   2.48 Gbits/sec      sender
[  8]  0.00-300.00 sec  86.7 GBytes   2.48 Gbits/sec      receiver
[ 10]  0.00-300.00 sec  86.7 GBytes   2.48 Gbits/sec      sender
[ 10]  0.00-300.00 sec  86.7 GBytes   2.48 Gbits/sec      receiver
[ 12]  0.00-300.00 sec  43.1 GBytes   1.23 Gbits/sec      sender
[ 12]  0.00-300.00 sec  43.1 GBytes   1.23 Gbits/sec      receiver
[SUM] 0.00-300.00 sec  330 GBytes   9.44 Gbits/sec      sender
[SUM] 0.00-300.00 sec  330 GBytes   9.44 Gbits/sec      receiver

iperf Done.
```

Iperf Transmit CPU Utilization 9%



4. Cable Connections



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