

### Iperf Test 1 (Default window size)

TCP window size: 64 KByte

Client	Interval	Transfer	Bandwidth	Client OS
VMXNET3	0.0-10.0 sec	256 MBytes	214 Mbits/sec	Windows 2012 R2 Standard
SR-IOV	0.0-10.0 sec	356 MBytes	298 Mbits/sec	Windows 2012 Standard

### Iperf Test 2 (130 K window size)

TCP window size: 130 KByte

Client	Interval	Transfer	Bandwidth	Client OS
VMXNET3	0.0-10.0 sec	786 MBytes	657 Mbits/sec	Windows 2012 R2 Standard
SR-IOV	0.0-10.0 sec	797 MBytes	668 Mbits/sec	Windows 2012 Standard

### Iperf Test 3 (300 K window size)

TCP window size: 300 KByte

Client	Interval	Transfer	Bandwidth	Client OS
VMXNET3	0.0-10.0 sec	836 MBytes	699 Mbits/sec	Windows 2012 R2 Standard
SR-IOV	0.0-10.0 sec	775 MBytes	650 Mbits/sec	Windows 2012 Standard

### Iperf Test 4 (300 K window size, 2 parallel streams)

TCP window size: 300 KByte

Client	Note	Interval	Transfer	Bandwidth	Client OS
VMXNET3	Stream 1	0.0-10.0 sec	398 MBytes	334 Mbits/sec	Windows 2012 R2 Standard
	Stream 2	0.0-10.0 sec	383 MBytes	321 Mbits/sec	Windows 2012 R2 Standard
	SUM	0.0-10.0 sec	781 MBytes	654 Mbits/sec	Windows 2012 R2 Standard
SR-IOV	Stream 1	0.0-10.0 sec	388 MBytes	325 Mbits/sec	Windows 2012 Standard
	Stream 2	0.0-10.0 sec	374 MBytes	313 Mbits/sec	Windows 2012 Standard
	SUM	0.0-10.0 sec	762 MBytes	638 Mbits/sec	Windows 2012 Standard

### Iperf Test 5 (300 K window size, 20 parallel streams)

TCP window size: 300 KByte

Client	Note	Interval	Transfer	Bandwidth	Client OS
VMXNET3	Stream 1	0.0- 7.0 sec	29.2 MBytes	34.9 Mbits/sec	Windows 2012 R2 Standard
	Stream 2	0.0- 7.7 sec	25.0 MBytes	27.3 Mbits/sec	Windows 2012 R2 Standard
	Stream 3	0.0- 8.6 sec	26.4 MBytes	25.6 Mbits/sec	Windows 2012 R2 Standard
	Stream 4	0.0- 8.4 sec	23.5 MBytes	23.5 Mbits/sec	Windows 2012 R2 Standard
	Stream 5	0.0- 7.3 sec	24.5 MBytes	28.3 Mbits/sec	Windows 2012 R2 Standard
	Stream 6	0.0- 8.1 sec	23.1 MBytes	24.0 Mbits/sec	Windows 2012 R2 Standard
	Stream 7	0.0- 8.2 sec	24.4 MBytes	24.9 Mbits/sec	Windows 2012 R2 Standard
	Stream 8	0.0- 7.7 sec	35.1 MBytes	38.5 Mbits/sec	Windows 2012 R2 Standard
	Stream 9	0.0- 7.5 sec	36.0 MBytes	40.5 Mbits/sec	Windows 2012 R2 Standard
	Stream 10	0.0- 8.0 sec	28.8 MBytes	30.1 Mbits/sec	Windows 2012 R2 Standard
	Stream 11	0.0- 7.9 sec	31.2 MBytes	33.2 Mbits/sec	Windows 2012 R2 Standard
	Stream 12	0.0- 7.9 sec	33.9 MBytes	36.1 Mbits/sec	Windows 2012 R2 Standard
	Stream 13	0.0- 8.6 sec	21.6 MBytes	21.1 Mbits/sec	Windows 2012 R2 Standard
	Stream 14	0.0- 7.3 sec	30.1 MBytes	34.7 Mbits/sec	Windows 2012 R2 Standard
	Stream 15	0.0- 7.1 sec	26.0 MBytes	30.9 Mbits/sec	Windows 2012 R2 Standard
	Stream 16	0.0- 7.5 sec	21.5 MBytes	24.1 Mbits/sec	Windows 2012 R2 Standard
	Stream 17	0.0- 8.4 sec	22.0 MBytes	21.9 Mbits/sec	Windows 2012 R2 Standard
	Stream 18	0.0- 8.8 sec	22.9 MBytes	21.8 Mbits/sec	Windows 2012 R2 Standard

	Stream 19	0.0- 7.1 sec	25.4 MBytes	30.2 Mbits/sec	Windows 2012 R2 Standard
	Stream 20	0.0-10.8 sec	61.1 Mbytes	30.2 Mbits/sec	Windows 2012 R2 Standard
	<b>SUM</b>	<b>0.0-10.8 sec</b>	<b>572 MBytes</b>	<b>446 Mbits/sec</b>	<b>Windows 2012 R2 Standard</b>
SR-IOV	Stream 1	0.0- 9.0 sec	39.0 MBytes	36.3 Mbits/sec	Windows 2012 Standard
	Stream 2	0.0- 9.0 sec	29.9 MBytes	27.8 Mbits/sec	Windows 2012 Standard
	Stream 3	0.0- 9.0 sec	43.5 MBytes	40.4 Mbits/sec	Windows 2012 Standard
	Stream 4	0.0- 9.0 sec	48.8 MBytes	45.2 Mbits/sec	Windows 2012 Standard
	Stream 5	0.0- 9.1 sec	38.2 MBytes	35.4 Mbits/sec	Windows 2012 Standard
	Stream 6	0.0- 9.1 sec	35.5 MBytes	32.9 Mbits/sec	Windows 2012 Standard
	Stream 7	0.0- 9.1 sec	42.9 MBytes	39.7 Mbits/sec	Windows 2012 Standard
	Stream 8	0.0- 9.1 sec	33.1 MBytes	30.6 Mbits/sec	Windows 2012 Standard
	Stream 9	0.0- 9.1 sec	51.0 MBytes	47.0 Mbits/sec	Windows 2012 Standard
	Stream 10	0.0- 9.6 sec	41.5 MBytes	36.2 Mbits/sec	Windows 2012 Standard
	Stream 11	0.0- 9.6 sec	28.0 MBytes	24.4 Mbits/sec	Windows 2012 Standard
	Stream 12	0.0- 9.6 sec	37.0 MBytes	32.3 Mbits/sec	Windows 2012 Standard
	Stream 13	0.0- 9.7 sec	33.8 MBytes	29.2 Mbits/sec	Windows 2012 Standard
	Stream 14	0.0- 9.8 sec	41.5 MBytes	35.6 Mbits/sec	Windows 2012 Standard
	Stream 15	0.0- 9.8 sec	46.6 MBytes	39.9 Mbits/sec	Windows 2012 Standard
	Stream 16	0.0- 9.9 sec	32.9 MBytes	27.9 Mbits/sec	Windows 2012 Standard
	Stream 17	0.0- 9.9 sec	32.2 MBytes	27.3 Mbits/sec	Windows 2012 Standard
	Stream 18	0.0- 9.9 sec	38.8 MBytes	32.8 Mbits/sec	Windows 2012 Standard
	Stream 19	0.0- 9.9 sec	37.8 MBytes	32.0 Mbits/sec	Windows 2012 Standard
	Stream 20	0.0-10.8 sec	30.8 MBytes	23.9 Mbits/sec	Windows 2012 Standard
	<b>SUM</b>	<b>0.0-10.8 sec</b>	<b>763 MBytes</b>	<b>592 Mbits/sec</b>	<b>Windows 2012 Standard</b>

## Conclusion

SR-IOV configured Virtual Machines perform better handling larger throughput. For heavy load network applications / services SR-IOV will perform better.

## Legend

VMXNET3 (Traditional Virtual Machine, with vSwitch)

SR-IOV (Virtual Machine using SR-IOV adapter and PCI device as network card)

## Test Environment

3 virtual machines located on different ESXi hosts. These ESXi hosts are different blades divided over different enclosures. The iperf tests for servers SR-IOV and VMXNET3 (configured as iperf hosts) or hosted on third virtual machine (configured as iperf server).

## Commands

Mode	Command	Description
Server	iperf.exe -s -w 300k	[-s = server] [-w 300k = window size]
Client	iperf.exe -c 0.0.0.0 -w 300k -P 200	[-c = client] [IP Address Server] [-w 300k = window size] [-P 200 # parallel streams]