

StarWind rPerf: RDMA Performance Benchmarking Tool

2022

TECHNICAL PAPERS



Trademarks

“StarWind”, “StarWind Software” and the StarWind and the StarWind Software logos are registered trademarks of StarWind Software. “StarWind LSFS” is a trademark of StarWind Software which may be registered in some jurisdictions. All other trademarks are owned by their respective owners.

Changes

The material in this document is for information only and is subject to change without notice. While reasonable efforts have been made in the preparation of this document to assure its accuracy, StarWind Software assumes no liability resulting from errors or omissions in this document, or from the use of the information contained herein. StarWind Software reserves the right to make changes in the product design without reservation and without notification to its users.

Technical Support and Services

If you have questions about installing or using this software, check this and other documents first - you will find answers to most of your questions on the [Technical Papers](#) webpage or in [StarWind Forum](#). If you need further assistance, please [contact us](#) .

About StarWind

StarWind is a pioneer in virtualization and a company that participated in the development of this technology from its earliest days. Now the company is among the leading vendors of software and hardware hyper-converged solutions. The company’s core product is the years-proven StarWind Virtual SAN, which allows SMB and ROBO to benefit from cost-efficient hyperconverged IT infrastructure. Having earned a reputation of reliability, StarWind created a hardware product line and is actively tapping into hyperconverged and storage appliances market. In 2016, Gartner named StarWind “Cool Vendor for Compute Platforms” following the success and popularity of StarWind HyperConverged Appliance. StarWind partners with world-known companies: Microsoft, VMware, Veeam, Intel, Dell, Mellanox, Citrix, Western Digital, etc.

Copyright ©2009-2018 StarWind Software Inc.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written consent of StarWind Software.

Introduction To Starwind Rperf

StarWind rPerf is a free software tool, that measures the latency and throughput on RDMA connections between systems with different operating systems. In addition to estimating the RDMA connection performance between Windows operating systems, StarWind rPerf measures latency and throughput on cross-platform scenarios for Windows – Linux.

System Requirements

Servers interconnection diagram is demonstrated in the image below.



In this guide, to measure the RDMA connection between Windows and Linux operating systems, two servers are connected directly over RDMA. As an example, Windows Server 2016 has been installed on Host 1 and Linux CentOS 7 has been installed on Host 2.

Network Requirements

- For Windows-based systems, NIC must have Network Direct Provider v1 and lossless RDMA configured. Latest drivers from NIC manufacturer are recommended, as standard Windows drivers don't have ND API support.
- For Linux-based systems, latest network drivers with RDMA and RoCE support are required.

The utility has been tested on Mellanox ConnectX-3, ConnectX-4 cards.

Software Requirements

StarWind rPerf is compatible with the following operating systems:

- Microsoft Windows 7 or later versions

- Microsoft Windows Server 2012 and later versions
- CentOS 7
- Ubuntu

Implementing Starwind Rperf

1. Download StarWind rPerf tool from the StarWind website at the following link: <https://www.starwindsoftware.com/starwind-rperf#download>
2. Copy the rPerf utility to both Windows and Linux hosts to a directory of choice.
3. Change the utility mode to allow its execution on Linux by executing the following command: `chmod +x rperf`.
4. The list of command line options used to launch the StarWind rPerf tool is provided in the tables below.








General Options	
Command line option	Description
-a addr	IP address. IP address set for the server should be specified on the client side to connect to the server.
-d debug	Emit debugging output.
-p port	The server port for the server to listen on and the client to connect to. This should be the same in both client and server. Default is 17174.

Server Specific Options	
Command line option	Description
-s server	Run StarWind rPerf in a server mode. To bind to any address with IPv6 use -a ::0

Client Specific Options	
Command line option	Description
-c client host	Run StarWind rPerf in a client mode, connecting to the StarWind rPerf server running on host.

-C count	Count the number of iterations.
-o operation	Set the operation to be performed: [S], [R], [W] (SEND/READ/WRITE)
-q queue depth	Set the queue depth.
-S size	Set the data size to be transferred.

Contacts

US Headquarters	EMEA and APAC
 +1 617 449 77 17	 +44 2037 691 857 (United Kingdom)
 +1 617 507 58 45	 +49 800 100 68 26 (Germany)
 +1 866 790 26 46	 +34 629 03 07 17 (Spain and Portugal)
	 +33 788 60 30 06 (France)

Customer Support Portal: <https://www.starwind.com/support>

Support Forum: <https://www.starwind.com/forums>

Sales: sales@starwind.com

General Information: info@starwind.com



StarWind Software, Inc. 100 Cummings Center Suite 224-C Beverly MA 01915, USA
www.starwind.com ©2022, StarWind Software Inc. All rights reserved.