



Examining network performance

OnCommand Insight

NetApp

October 02, 2024

Table of Contents

- Examining network performance 1
 - The Importance of Ports 1
 - Insight Server Ports 1
 - Data Warehouse Ports 1
- Analyzing slow PC performance 2
- Analyzing correlated resources 3

Examining network performance

You can examine your storage environment performance and identify under-utilized and over-utilized resources and identify risks before they turn into problems.

Insight helps you to resolve or prevent performance and availability problems that are revealed through the collected storage data.

You can use Insight to perform these performance management tasks:

- Monitor performance across your environment
- Identify resources influencing the performance of other devices

The Importance of Ports

The Insight Server and Data Warehouse (DWH) server may require a number of TCP ports to be free in order to operate reliably. Some of these ports are only utilized for processes bound to the localhost adapter (127.0.0.1), but are still required for core services to operate reliably. The number of ports required is a superset of what ports are used across the network.

Insight Server Ports

Insight Servers can have software firewalls installed. The "holes" that would need to be opened would be as described below.

Inbound HTTPS 443 - assuming you have the Insight WebUI running on TCP 443, you must expose that as to allow any and all of the following consumers:

- Insight users of the WebUI
- Remote Acquisition Units seeking to connect to the Insight server
- OCI DWH servers with connectors to this Insight server.
- Any programmatic interactions with the Insight REST API

Our general recommendation for anyone looking to implement Insight server host-level firewalling is to allow HTTPS access to all corporate network IP blocks.

Inbound MySQL (TCP 3306). This port only needs to be exposed to any Insight DWH server with a connector

While Insight has dozens of data collectors, they are all poll-based - Insight will cause its Acquisition Units (AUs) to initiate outbound communication to various devices. As long as your host based firewall is "stateful" such that it allows return traffic to be allowed through the firewall, host based firewalls on the Insight Server should not impact data acquisition.

Data Warehouse Ports

For Insight DWH servers:

Inbound HTTPS 443 - assuming you have the Insight WebUI running on TCP 443, you must expose that as to allow the following consumers:

- Insight administrative users of the DWH admin portal

Inbound HTTPS (TCP 9300) - this is the Cognos reporting interface. If you will have users interacting with the Cognos reporting interface, this must be exposed remotely.

We can imagine environments where the DWH may not need to be exposed - perhaps the report authors just make RDP connections to the DWH server, and craft and schedule reports there, while having all reports scheduled to be delivered via SMTP, or written to a remote file system.

Inbound MySQL (TCP 3306). This port only needs to be exposed if your organization has any MySQL-based integrations with DWH data - are you extracting data out of the various DWH data marts for ingestion into other applications like CMDBs, chargeback systems, etc.

Analyzing slow PC performance

If you receive calls from network users complaining that their computers are running slowly, you need to analyze host performance and identify the affected resources.

Before you begin

In this example, the caller gave the host name.

Steps

1. Open Insight in your browser.
2. Enter the host name in the **Search assets** box and click the host name in the search results.

The *asset page* for the resource opens.

3. On the asset page for the host, examine the performance charts in the center of the page. You might want to show different types of data in addition to the Latency and IOPS that are usually pre-selected. Click the check boxes for other types of data, such as Throughput, Memory, CPU, or IP Throughput depending on the device type.
4. To display a description of a point on a chart, position the mouse pointer over the point.
5. You might also want to change the time range with the selection at the top of the page to be 3 hours up to 7 days or All of the available data.
6. Examine the list of **Top correlated resources** to see if there are other resources with the same pattern of activity as the base resource.

The first resource in the list is always the base resource.

- a. Click a linked percentage beside a correlated resource to see if the correlated activity pattern is for IOPS or CPU for the base resource and another resource.
 - b. Click the check box for a correlated resource to add its data to the performance charts.
 - c. Click the linked name of the correlated resource to display its asset page.
7. For a VM, as in this example, locate the storage pool in the **Top correlated resources** and click the storage pool name.

Analyzing correlated resources

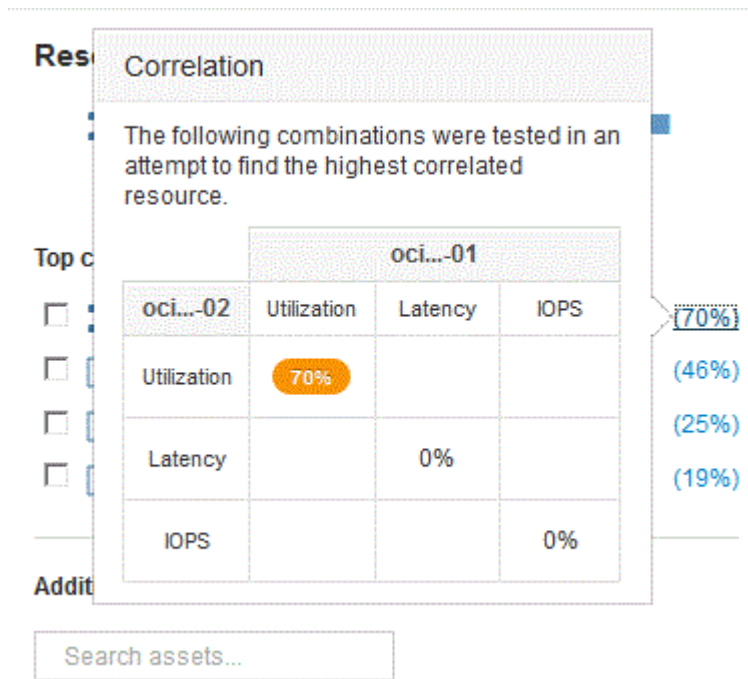
When you are researching performance problems and you open the *asset page* for a device, you should use the Top correlated resources list to refine data displayed in the performance charts. A resource with a high percentage indicates that resource has similar activity to the base resource.

About this task

You are investigating a performance problem and opened the asset page for a device.

Steps

1. In the **Top correlated resources** list, the first resource is the base resource. The correlated resources in the list are ranked by percentage of correlated activity to the first device. Click the linked percentage of correlation to see the details. In this example, the 70% correlation is in Utilization, so both the base resource and this correlated resource have equally high utilization.



2. To add a correlated resource to the performance charts, select the check box in the **Top correlated resources** list for the resource you want to add. By default each resource provides the Total data available, but you can select only Read or only Write data from the menu on the check box.

Each resource in the charts has a different color so that you can compare the performance measurements for each resource. Only the appropriate type of data is plotted for the selected measurement metrics. For example, CPU data does not include Read or Write metrics, so only Total data is available.

3. Click the linked name of the correlated resource to display its asset page.
4. If you do not see a resource listed in the Top correlated resources that you believe should be considered in the analysis, you can use the **Search assets** box to find that resource.

Copyright information

Copyright © 2024 NetApp, Inc. All Rights Reserved. Printed in the U.S. No part of this document covered by copyright may be reproduced in any form or by any means—graphic, electronic, or mechanical, including photocopying, recording, taping, or storage in an electronic retrieval system—without prior written permission of the copyright owner.

Software derived from copyrighted NetApp material is subject to the following license and disclaimer:

THIS SOFTWARE IS PROVIDED BY NETAPP "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL NETAPP BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

NetApp reserves the right to change any products described herein at any time, and without notice. NetApp assumes no responsibility or liability arising from the use of products described herein, except as expressly agreed to in writing by NetApp. The use or purchase of this product does not convey a license under any patent rights, trademark rights, or any other intellectual property rights of NetApp.

The product described in this manual may be protected by one or more U.S. patents, foreign patents, or pending applications.

LIMITED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (b)(3) of the Rights in Technical Data -Noncommercial Items at DFARS 252.227-7013 (FEB 2014) and FAR 52.227-19 (DEC 2007).

Data contained herein pertains to a commercial product and/or commercial service (as defined in FAR 2.101) and is proprietary to NetApp, Inc. All NetApp technical data and computer software provided under this Agreement is commercial in nature and developed solely at private expense. The U.S. Government has a non-exclusive, non-transferrable, nonsublicensable, worldwide, limited irrevocable license to use the Data only in connection with and in support of the U.S. Government contract under which the Data was delivered. Except as provided herein, the Data may not be used, disclosed, reproduced, modified, performed, or displayed without the prior written approval of NetApp, Inc. United States Government license rights for the Department of Defense are limited to those rights identified in DFARS clause 252.227-7015(b) (FEB 2014).

Trademark information

NETAPP, the NETAPP logo, and the marks listed at <http://www.netapp.com/TM> are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.