

Comprehensive Citrix HDX visibility powered by NetScaler Management and Analytics System

HDX Insight is the only tool in the market that provides end-to-end visibility into Citrix HDX traffic and enables IT to deliver an exceptional user experience. HDX Insight provides network and application data to help IT support admins triage user issues and network admins design networks for the future.

HDX Insight is part of the NetScaler Management and Analytics System (MAS) and is based on the industry standard AppFlow. It provides application- and network-level data for Citrix proprietary standard HDX that is used by both Citrix XenApp and Citrix XenDesktop. NetScaler MAS leverages NetScaler Unified Gateway and NetScaler SD-WAN, situated in the application “line of sight” both in the data center and the branch, to provide a 360-degree view for applications, including virtual desktop traffic.

A growing demand for virtual app and desktop solutions combined with emerging mobile and cloud applications has made performance and reliability paramount to successfully delivering applications to users over a variety of networks to myriad device types. Delivering the performance that is expected by users requires a tool that can instantly analyze real-time and historical data on the user experience to solve issues, as well as proactively monitor the network and application infrastructure for business planning and predictive fault finding.

HDX Insight features

HDX Insight makes it easier for IT organizations to overcome obstacles to better Citrix XenApp and Citrix XenDesktop visibility. These obstacles include lack of visibility into the HDX protocol and the need to deploy intrusive network taps, install software agents on every server, or instrument each application for specialized monitoring.

Proactive monitoring

- Fast failure analysis: HDX Insight allows admins to dissect the network data from various angles including desktop, application, user groups, and at the individual user level. This results in a fast root-cause analysis for customer issues.
 - Network analysis:
 - Data Center (DC) Latency measures how long it takes for packets to travel from NetScaler through the data center to the service.
 - WAN Latency measures how long it takes for packets to cross the network from NetScaler to the client.
 - Non-network analysis:
 - Host Delay measures the server time to respond to requests from users.
 - Application and desktop launch issues show slow launch times for application and desktop servers.
 - Round Trip Time (RTT) measures the time it takes for the application packets to reach the client and return to the server.
- Threshold alerting: Monitor the state of a NetScaler instance and set thresholds on HDX traffic while monitoring instances and entities on managed instances. You can also get an alert, email, or SMS notification when the threshold is breached.

- Real-time client/server latency measurements: In addition to TCP-level jitter and latency information, HDX Insight provides a detailed breakdown of ICA-session latency by client, ICA RTT, and server. These are viewed in real time or historically on simple dashboards.
 - ICA RTT is an application-level RTT that includes network and application delays on the client and the server.

connections to provide complete visibility into the protocol.

- HDX Insight provides the ability to drill down to allow visibility and troubleshooting at the user level. Moreover, HDX Insight can sort issues by a specific application or server that might be impacting a group of users.

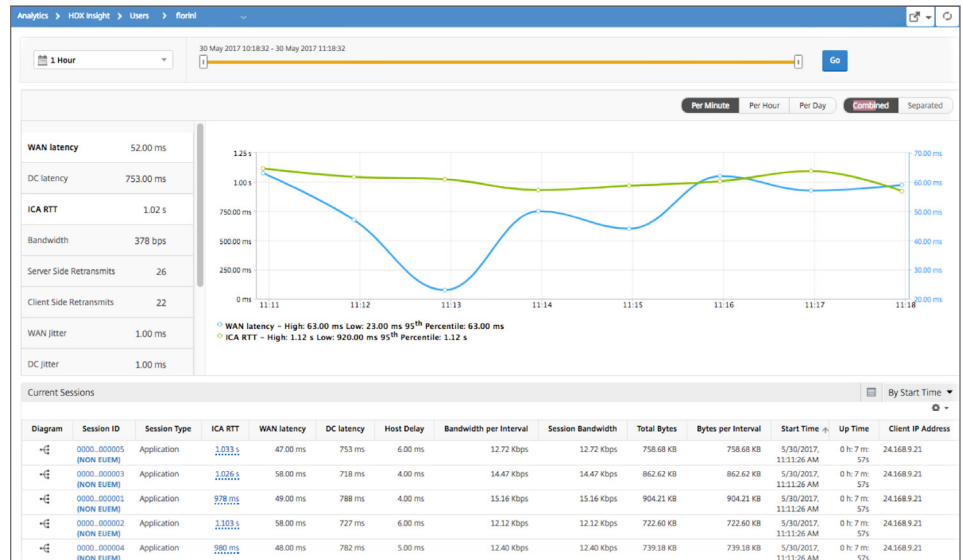
Complete ICA visibility

- Powerful correlation between application and network data enables reporting and analysis on applications, the network, and users.
- When deployed in-line, NetScaler and NetScaler SD-WAN detect and dissect ICA

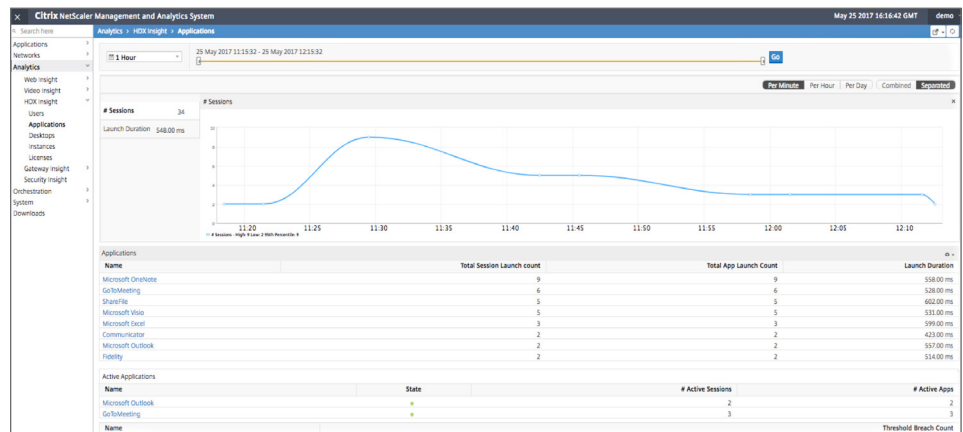
Citrix Director

HDX Insight seamlessly integrates with Citrix Director to provide the most optimal single location for management and monitoring of XenApp and XenDesktop applications. In the Trends page, the Network tab will give an overview of the network details such as average bandwidth, latency, client jitter, ICA RTT, and much more.

User analytics



Application analytics



There are three options: Users, Applications, and Desktops.

Users

- To quickly analyze network health, a summary shows the average network metrics per the time period selected.
- A list of users who have accessed the environment within the time period selected is shown. Metrics such as latency, number of application launches, ICA RTT, bandwidth, and jitter are provided on a per-user basis.
- Admins are able to drill down on a per-user basis for network metrics relevant to that user.

Applications

- Launch duration for the applications and the number of application launches for the specified time frame are shown.
- The list shows each application, number of launches for that application, and the

average logon duration specific to that application.

- Admins are able to drill down into each application for additional metrics.

Desktops

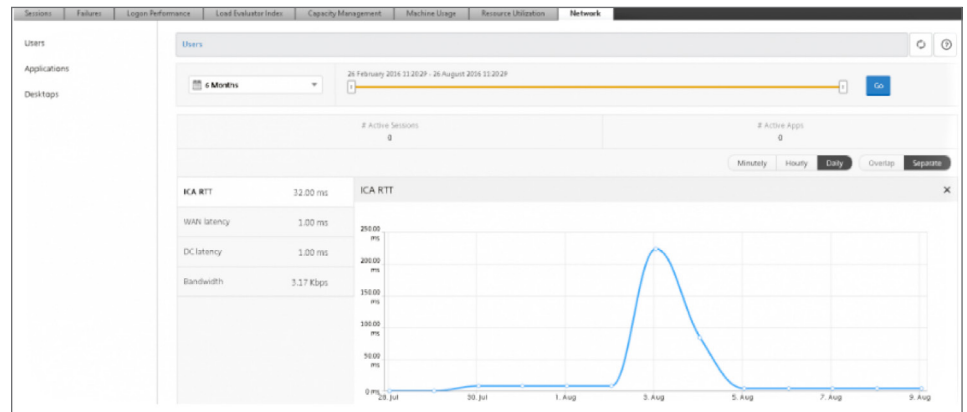
- Average bandwidth used for desktops during the specified time frame is shown.
- Also displayed are the user associated with the desktop, session duration, average latency, average ICA RTT, and average bandwidth used.

IT admins can drill down on a per-user basis for additional detail.

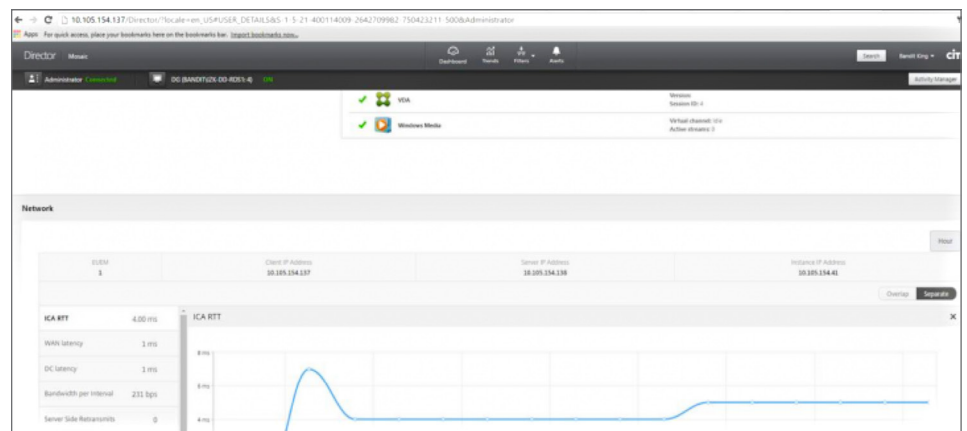
User Details view

The MAS Network details are also available on the User Details view. This panel provides the network details that are specific to the user session.

Users, Applications, and Desktops



Network visibility in Citrix Director



Powerful reports

HDX Insight provides the following reports both in historical and real-time views:

- Top Users by number of apps/desktops launched, bandwidth consumed, client device information, app launch count, active sessions, active desktops, and latency.
- Top Desktop (per specific time frame such as daily, weekly, monthly, or custom) across all XenApp/XenDesktop users by total number of launches, established sessions, uptime, and session latency.
- Top Apps (per specific time frame such as daily, weekly, monthly, or custom) across all XenApp users, by uptime and total number of launches. In addition, HDX Insight also provides ICA-level metrics on bandwidth per channel, Receiver version, application data, and session RTT for each individual XenApp or XenDesktop user.

Simple deployment

HDX Insight is available as part of the NetScaler MAS. NetScaler MAS runs on a virtual server that is fed information via AppFlow from the NetScaler Unified Gateway and NetScaler SD-WAN appliances (including virtual appliances) that are in a unique strategic position to gather relevant HDX traffic for HDX Insight to perform the network and application analytics.

Addressing common user concerns

HDX Insight addresses common user and IT issues and concerns, allowing help desk admins to address these issues quickly.

Scenario 1

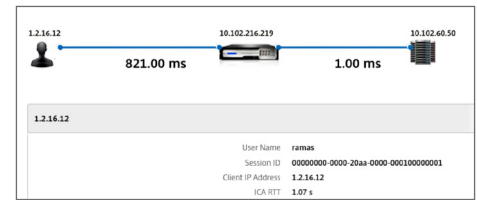
A user is experiencing a delay while accessing XenApp and XenDesktop.

The delay might be due to latency on the server network, HDX traffic delays caused by the server network, or latency on the client network.

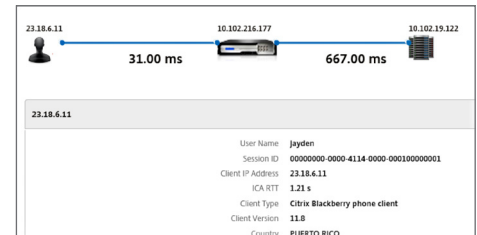
To identify the root cause of the issue, analyze the following metrics: WAN Latency, DC Latency, and Host Delay.

ICA RTT could be high due to WAN latency, DC latency, or host latency.

Looking at NS to branch, look at WAN latency and see if it is high. Look at DC latency (NS to DC) and see if it is high.



The user is experiencing high WAN latency at 821.00 ms



The user is experiencing high DC latency at 667.00 ms

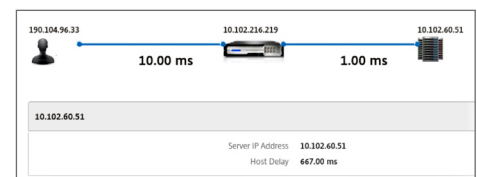
Scenario 2

A user is experiencing a delay while launching an application on XenDesktop or XenApp.

The delay might be due to latency on the server network, ICA-traffic delays caused by the server network, latency on the client network, or time taken to launch an application.

To identify the root cause of the issue, analyze the following metrics: WAN Latency, DC Latency, and Application Launch Duration.

The launch duration issue is being caused by the application, not the user. To confirm, go to the Applications menu under HDX Insight in the left MAS menu and view the Launch Duration column.



The user is experiencing high host delay at 667.00 ms

Active Applications				By # Active Sessions	
Name	# Active Sessions	Launch Duration	# Active Apps		
Communicator	5	3.99 s	5		

Launch duration is slow at 3.99 s

Scenario 3

Users are connecting to a gateway from a single location during peak times. This is causing a high response time.

IT admins can do an overall trend analysis leveraging the Geo Maps capability to display the usage of applications across different geographical locations on a map. IT admins can use this information to understand the trends in application usage across various geographical locations and export and schedule reports in the form of a .csv file, a .jpeg file, etc.

Considerations for implementing HDX Insight

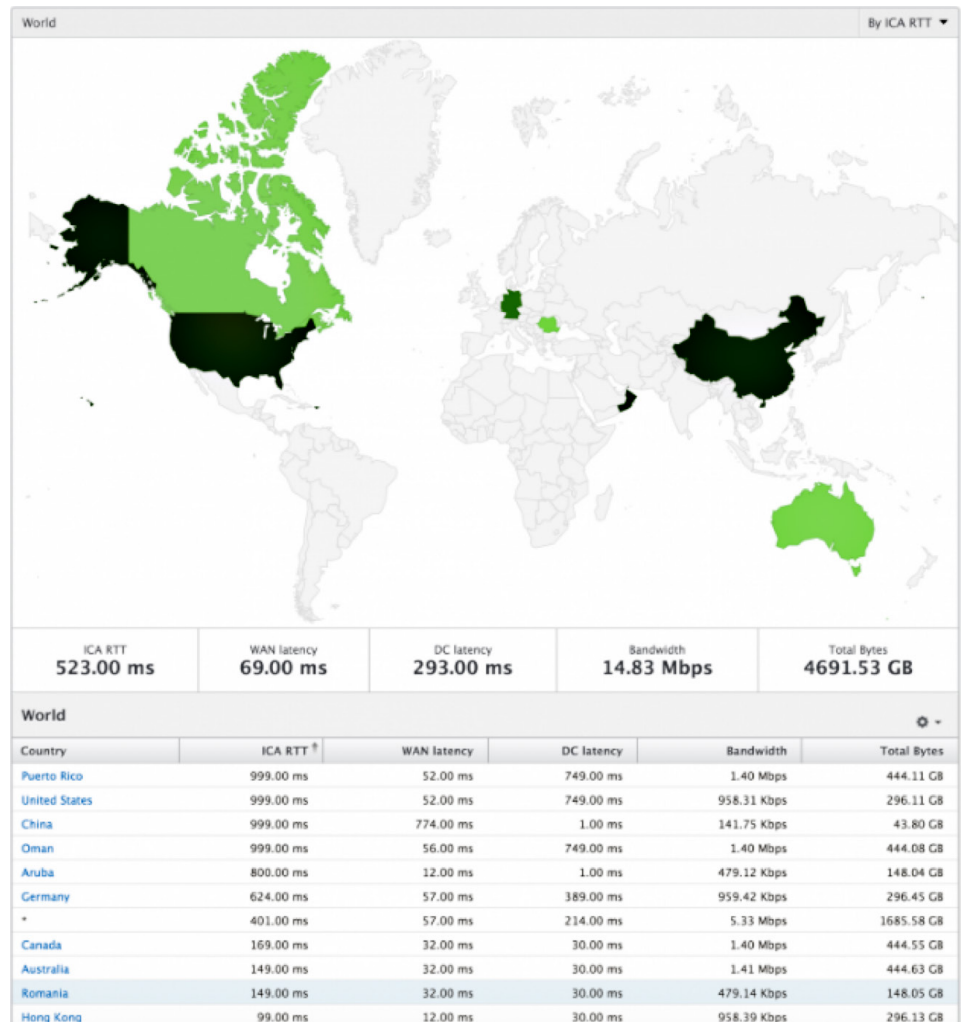
Note the following considerations when implementing HDX Insight.

Note: When AppFlow for ICA traffic is enabled, NetScaler must parse all of the ICA information for every packet in the session. The ICA information is generally compressed and encrypted. To extract ICA-related information for AppFlow records, NetScaler has to decrypt and decompress the data, which can be quite resource intensive with the major overhead being the CPU.

Note: In order to implement HDX Insight, NetScaler MAS must be set up. See: <http://docs.citrix.com/en-us/netscaler-mas/12.html> for further information.

For HDX Insight specific system and licensing requirements, please visit: http://docs.citrix.com/en-us/netscaler-mas/12/system-requirements.html#par_anchor_title_b4ae

GEO Maps



Conclusion

HDX Insight delivers unmatched end-to-end visibility and failure analysis capabilities for networks, virtual desktops, and applications. It makes it easier for IT organizations to overcome the expense and obstacles to achieving better application visibility.

With powerful features such as proactive monitoring, reporting with granularity down to hourly time frames and individual user sessions, and centralized management through MAS and Citrix Director, IT can confidently address the application visibility challenges facing their organizations while keeping users happy and productive.

Get started now with Citrix NetScaler MAS for free by going to: <https://www.citrix.com/products/netscaler-management-and-analytics-system/get-started.html>



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