



NETBEEZ[®]

Monitoring the connected enterprise

Troubleshooting with NetBeez

INTRODUCTION

When working on a large and complex network environment, SNMP network management tools are not enough to deliver the visibility required to support thousands of users located in dozens or hundreds of network locations. Ideally, network engineers should be deployed to each site so they can provide early detection and prompt response to network and application performance issues that affect the end-users. This is not always possible, especially for companies that do business in many locations.

In this document we will demonstrate how NetBeez enables companies with a distributed network and centralized IT can achieve the best end-user support. To do this, we will rely on three use cases that explain how NetBeez can help your organization save time, money, and frustration in dealing with network issues. We will present the following scenarios:

1. Web application performance slowness
2. Retail stores with intermittent connection issues
3. Web content filtering verification

These scenarios are based on the experiences of NetBeez customers, who have deployed many of our agents in their network locations.

Top three drawbacks of SNMP-based monitoring tools:

- X** Lack end-to-end data
- X** Device status only
- X** No performance data

Did you know? More than 1 out of 4 network engineers spend more than 50% of their time troubleshooting network and application problems.

I. WEB APPLICATION PERFORMANCE SLOWNESS

The network group receives a ticket about users complaining that a core catalog search (a web based application) had poor performance. Oftentimes, the information reported by the users to the help desk is incomplete and insufficient to assess the scale of the problem. Before NetBeez, the network engineer had to spend considerable amount of time to figure out if it is the network, the application itself, or the end-user's workstation that is causing the problem. The network engineer would have to connect via remote desktop to client machines to have a better view of the problem. This is an approach that does not scale in a multi-site enterprise network. Also, this web-based catalog search is an important customer-facing application for this organization and it's critical to quickly address and solve the problem.

NetBeez was configured to run the following tests from all the agents deployed at different network locations:

- PING test to the catalog server to measure the network round-trip-time and packet loss
- HTTP test to the catalog's homepage to measure the response time of the application's front-end
- HTTP test with extended GET parameters to check how the backend system (the database) would increase the response time of the overall web-based application

As you can see in the following screenshots, out of the three tests, the first two plots did not show any change in the response time of the network layer and application's front-end to the network support group.

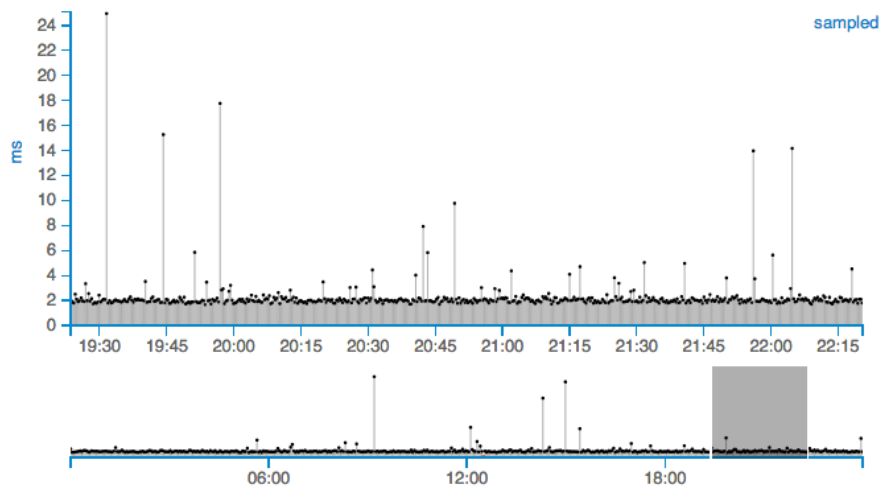


Figure 1. Plot of the PING test's round trip time to the application's front-end server.

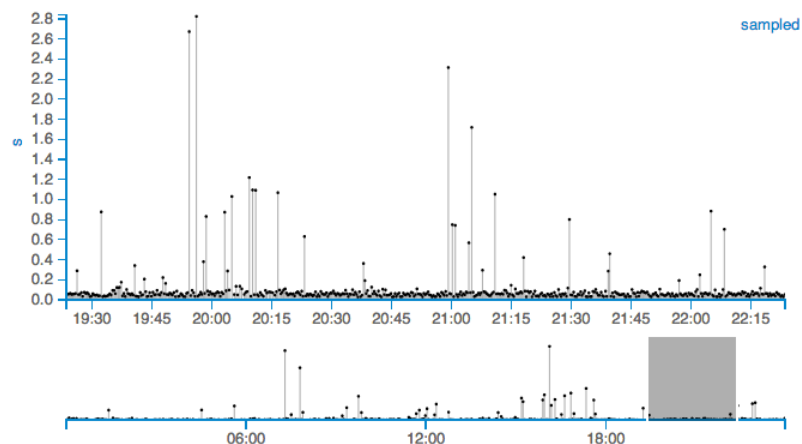


Figure 2. Plot of the HTTP test's response time of the web based catalog application.

"We cut approximately 30 minutes off service outage otherwise spent troubleshooting the scale of problem. We saved a couple hours staff time. The HTTP tests reported issues with the backend while the PING tests were clean, providing early indication of a problem with the application."

The plot of the HTTP test with extended GET parameters was telling the network engineer a different story, as it showed a spike that very clearly indicated that the slowness was due to the database.

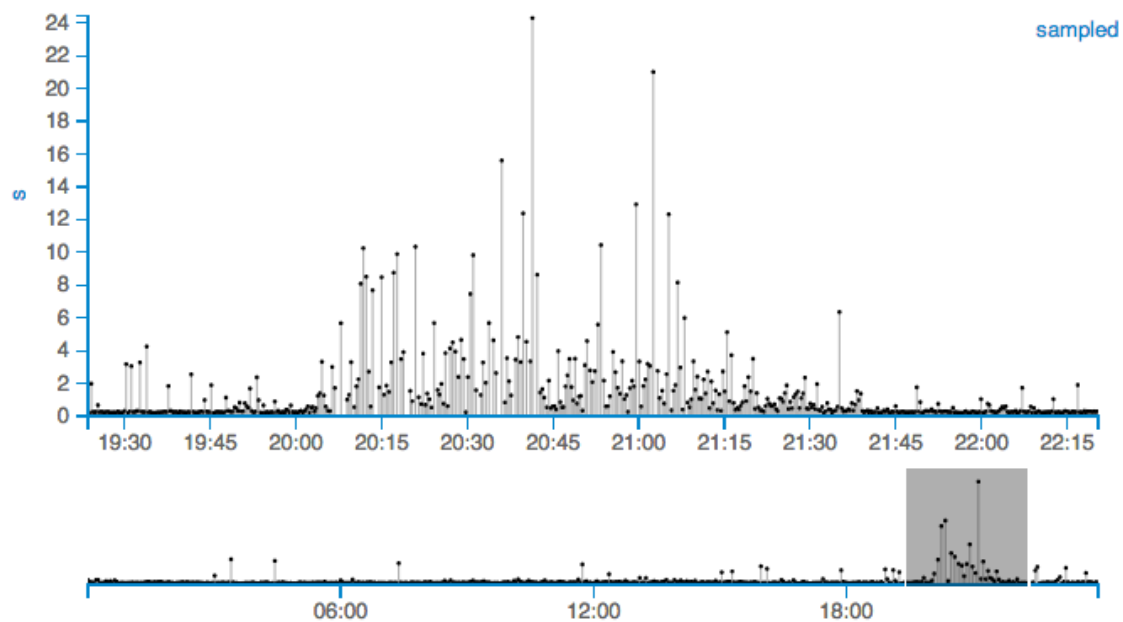


Figure 3. Plot of the HTTP test with extended GET parameters response time.

In addition, the network engineer could also see the same pattern on multiple agents across this organization that signaled that the problem was not isolated at one location only, but was affecting hundreds of users. Thanks to the information provided by NetBeez, the network group was able to correct the issue that was consuming resources on the database. This corrective action improved the performances of the web-based catalog application and restored the customer-facing application.

It has been estimated that the information provided by NetBeez reduced the duration of the outage by at least 30 minutes. This is an application that is regularly used by 2,500 users.

Without NetBeez, the help-desk group would have had to wait for multiple reports from users residing in different locations to verify whether the problem was common to all the users or not. Successively, the help-desk would have escalated the ticket to the network group, that would have had to test the application from different locations to get measurements on the application's performance. Finally the network group and application support would start troubleshooting in parallel at both the application layer and network layer by logging to the network hardware and end-systems.

2. RETAIL STORES WITH INTERMITTENT NETWORK ISSUES

For two weeks, cashiers from a specific store reported intermittent problems with their registers. However, they were not able to provide enough information to narrow down the problem.

The retailer installed a NetBeez agent at the store with the following configuration:

- PING tests targeting internal network hardware, such as the firewall, switch, and cash register
- PING tests targeting external network locations, such as datacenter's devices and other Internet resources

Without NetBeez, the help-desk group would have had to wait for multiple reports from users residing in different locations to verify if the problem was common to all the users or not.

UPDATE - The new version of NetBeez supports performance alerts! That means that you can proactively detect performance issues before your end users do.

| CATALOG APP Hosted at DR facility | | | |
|--------------------------------------|-----|------|-------|
| PING | DNS | HTTP | TRCRT |
| 20 | 20 | 0 | 20 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 20 | 0 |

In the screenshot above you can see that all the 20 agents have detected the same HTTP performance issue.

"This issue was two weeks old, and the Alarm bypass eluded initial inspections; we may have needed to replace the ISP connection entirely to uncover the root cause. We estimate an additional 40-60 man hours would have been required over a two to three week period."

The historical data of the PING test to the internal network hardware (cash register included) did not reveal any momentary disconnections, packets losses, or interruptions.

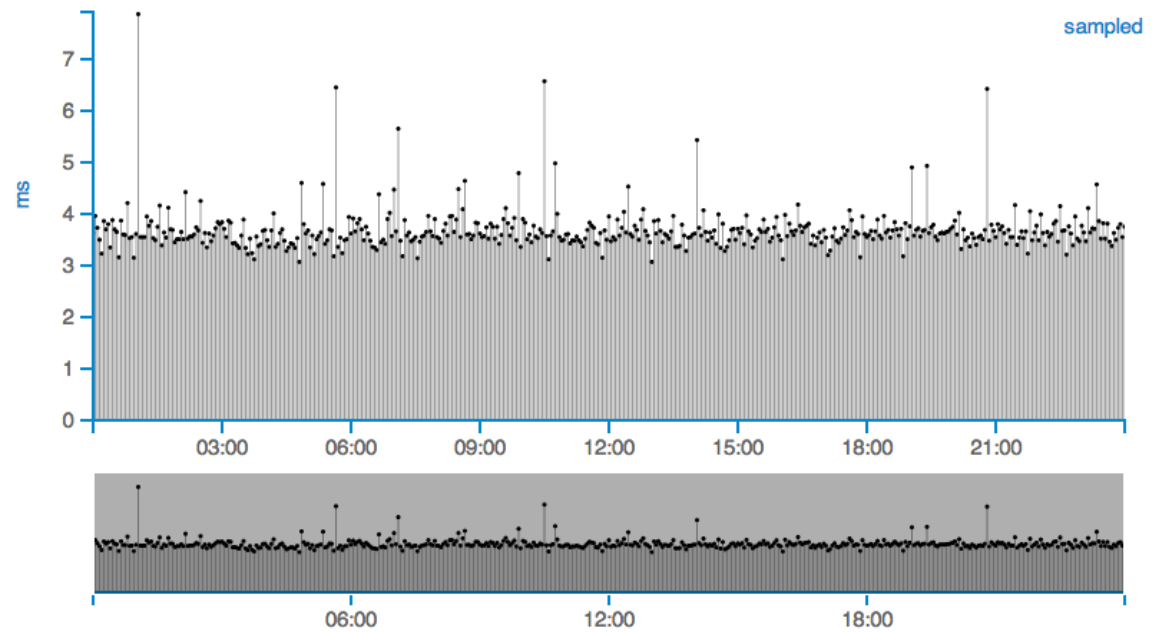


Figure 4. Plot of the PING test to internal network locations is stable and does not reveal any issue within the LAN segment.

On the other hand, the historical data of the PING test to external network locations recorded by the NetBeez agent revealed momentary outages lasting around 5 minutes occurring every 12 hours.

“The Beez has revealed a pattern!” ... the historical data of the PING test to external network locations recorded by the NetBeez agent revealed momentary outages lasting from 1 to 5 minutes occurring every 12 hours.

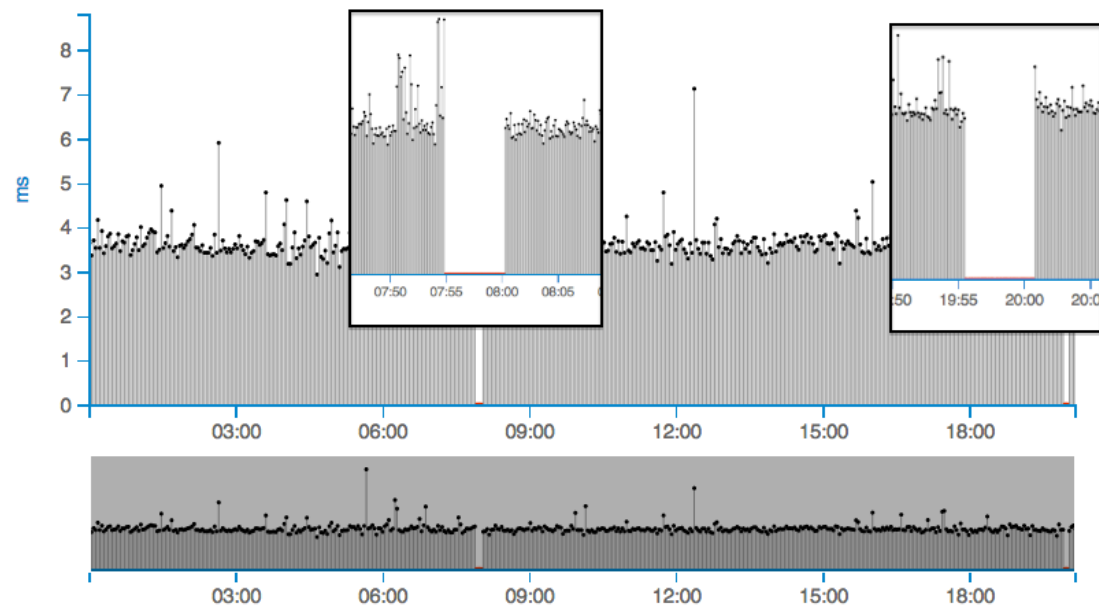


Figure 5. The plot of the PING test to external network locations clearly shows 5 minutes network loss every 12 hours.

The PING data reported on the browser-based NetBeez dashboard was key for the network engineer to pinpoint the root cause of the sporadic intermittence issues. The DSL phone line was first passing through the alarm system bypass, which uploaded its status over the phone line every 12 hours. The alarm bypass hardware was also degrading the DSL signal strength and quality, causing multiple registers at the store location to disconnect unexpectedly.

This problem lingered for quite some time, and our customer did not have a good way to identify and troubleshoot the issue. Due to the sporadic nature of the problem, a field tech dispatch would likely have had difficulties in locating its source.

This customer has dozens of store locations, and it has been estimated that NetBeez has already helped them reduce tech dispatches by 50% and network troubleshooting time by a third in a two-month period.

3. WEB CONTENT FILTERING VERIFICATION

Organizations that provide education services, such as universities, colleges, schools and non-profits, have the duty to prevent students from accessing websites with inappropriate content. While our team was reviewing a customer's installation, we noticed that they had configured an HTTP test to a well-known adult website. This is a very reputable educational institution and we found it odd that they wanted to monitor the response time of this particular site. However, the HTTP test was returning 503 errors and we realized that our customer was monitoring the opposite: whether their content filter was blocking the website.

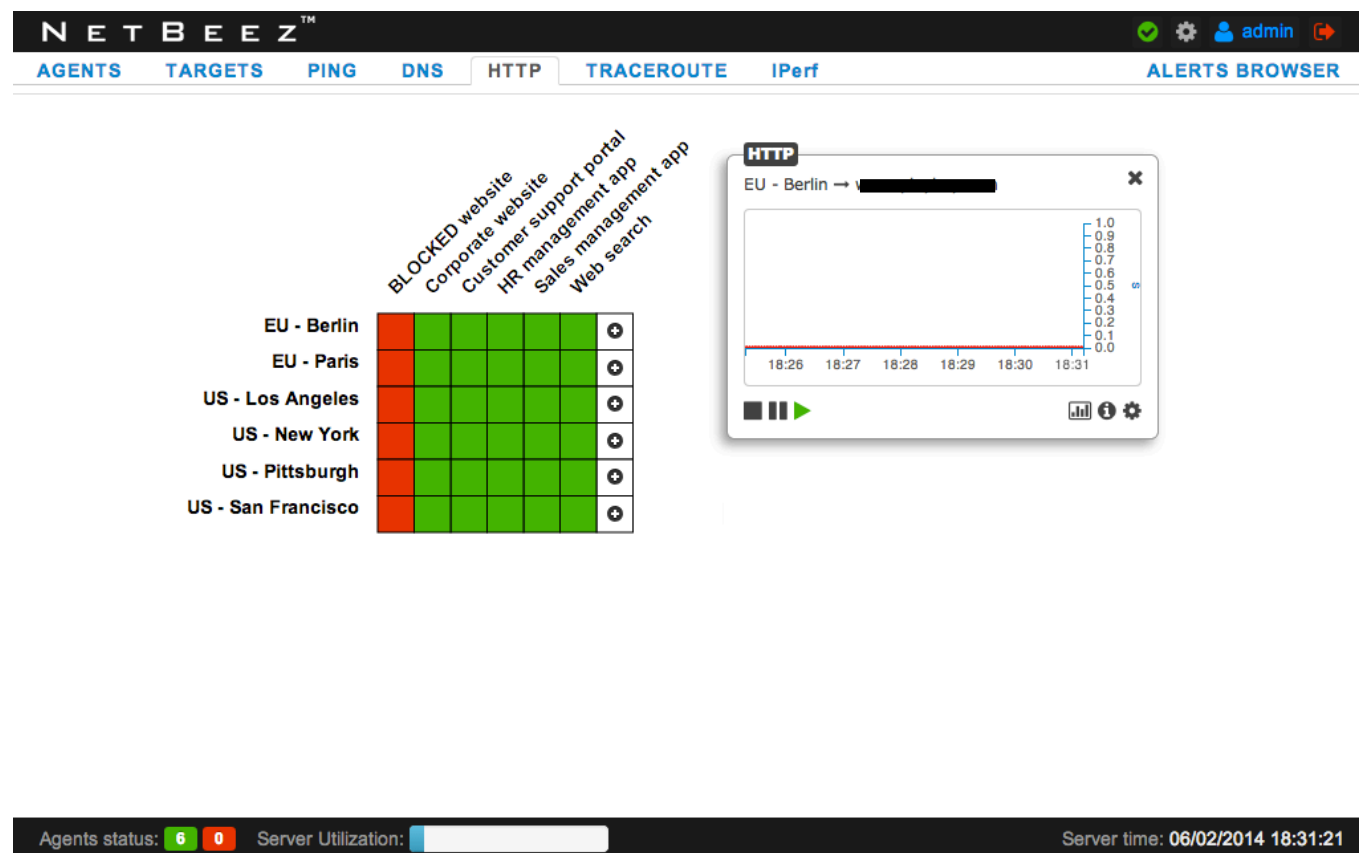


Figure 6. Plot of the HTTP test's with extended GET parameters Response Time.

As you can see from the above picture, the customer was able to monitor the correct functioning of the corporate web content filter from all the locations where a NetBeez agent was installed. In the grid view (under the HTTP tab) it is possible to ascertain that the resource marked as "BLOCKED website" is not accessible to web users. The real-time graph of the HTTP test from the "EU - Berlin" agent confirms this with a red line.

Most of today's organizations cannot afford waiting for the users to detect the correct functioning of business critical applications, such as a web content filter at an educational institution. In such a context, IT must adopt a monitoring solution that performs network and application integrity from the end-user perspective.

CONCLUSIONS

These three use cases highlighted the way the NetBeez agents can be used to provide visibility at each network location, and how they can help to detect and troubleshoot network problems. Companies can now rely on a dedicated monitoring solution that reports the user-experience about network and application performance. NetBeez makes it easy to obtain this invaluable information, which used to require difficult and time-consuming methods.

Welcome to the future of network monitoring. Welcome to NetBeez.

You can request a demo at demo@netbeez.net and sign up for a free trial at trial@netbeez.net.