



NETBEEZ[®]

Network monitoring from the end-user perspective

INTRODUCTION

Enterprise networks are already business critical for medium and large enterprises since more and more operations are serviced over online applications. And there is no doubt that building, operating, monitoring, and troubleshooting networks is becoming increasingly difficult and challenging. In addition, networks are also becoming more and more complex since companies are trying to keep up with ever changing technology while constantly trying to trim the IT budget.

In order to keep up, network engineers rely heavily on monitoring tools. These tools make their lives easier during troubleshooting, configuration changes, and managing their network. These are basic streamlined operations, and somebody would expect that by today's standards existing tools would cover all possible needs and use cases. Unfortunately, this is not the case. All of us have come across incidents that, on the heat of the moment, we didn't have the right tool at our fingertips, and we were wondering why such a tool doesn't exist. We wished we knew this or that piece of information from the comfort of our NOC. It is not uncommon for companies to build their own solutions to address their specific needs, and these needs are often shared with many of their peers.

This is where NetBeez comes into play. NetBeez introduces fully scalable distributed network monitoring, and is built for companies with dozens or hundreds of locations and centralized IT. The deployment of the NetBeez agents (Beez) at each remote location puts full end-user network and application visibility at the fingertips of the network engineer. NetBeez enables the detection of network outages that stay undetected by current up/down monitoring and faster troubleshooting of problems by filling in missing information.



Distributed Network Monitoring

NetBeez delivers true distributed network monitoring. The agents connect behind the switch, exactly where the users connect at each location. They “simulate” users in the network, meaning that the agents’ experience is representative of the real users’ experience at that location. This gives end-to-end visibility to the network operator from every location to any other location, service, or host that needs to be access by remote users.

This network of virtual users formed by the Beez can be used to test connectivity (ping, traceroute), services (DNS), applications (HTTP), and bandwidth (iperf). Gone are the days of logging in to a remote desktop or calling a user to run a ping to find out the round-trip-time from a location to a cloud server. You can look at the NetBeez dashboard and get that information instantly. There are many other great features in the dashboard such as viewing last night’s hop-by-hop route to your datacenter at the exact time you received a ticket.

PRODUCT COMPONENTS

NetBeez Agent (BEEZ™)

The BEEZ are small hardware devices that are plug-and-play and require zero configuration during installation. They have an RJ-45 interface and are preconfigured with DHCP. The agents connect automatically to the server as soon as they are powered up and from that point forward they are centrally managed for any updates, IP settings, tests, etc. They are credit-card sized, and their power consumption is less than 3W.

Power Consumption	3 Watts
Dimensions (HxWxD)	4”x2.5”x1.2”
Connector Type Speed	RJ-45 10/100 Mbps

Table 1. Agent’s Technical Specifications



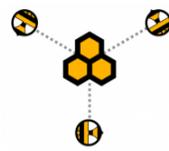
Figure 1. The BEEZ

The agents can run the following tests:

- **Ping** - Verify connectivity and round-trip time either between any two agents or an agent and any other host.
- **DNS** - Check the performance and the status of address resolution from every location with any DNS server.
- **HTTP** - Check the status and the performance of any HTTP application from all you network locations. Database queries can be used to check backend performance.
- **Traceroute** - Detect changes in your routing, identify the bottleneck hops, and MTU changes.
- **Iperf** - Perform bandwidth stress test between any two agents. Test multicast, QoS policies with DSCP marking, and jitter.

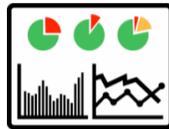
The 10/100Mbps agent is only the first member of the BEEZ family. Contact us to learn more about our virtual, external, GigE, and wireless agents.

The NetBeez server can be deployed at your datacenter as a virtual appliance or reside on the cloud.



NetBeez Server

The NetBeez server is the engine that drives the tool’s capabilities. It controls the agents and collect all data produced by the monitoring tests. It starts and stops tests, collects results, and raises alerts. The user controls these functionalities through the NetBeez GUI, which is a browser-based dashboard with an intuitive and easy to use interface.



Dashboard

The NetBeez dashboard has several different types of views that can be used for different purposes and circumstances. Each one focuses on different aspects of the network (locations, targets, historical data), and can be used during troubleshooting, monitoring, and trend analysis.

Target View: Target-focused status information. A “target” is a user-defined collection of agents monitoring a specific resource. An example would be if a user wanted to monitor whether the agents at US and EU offices can access the Internet. Through the NetBeez wizard, he creates a target named “Internet” with ping and traceroute tests to a public host. In the next step he chooses the agents at the US and EU offices. As soon as he finishes with the wizard the NetBeez server starts the tests on those agents, and he has a single view of the Internet accessibility from those two locations. Similarly, he can create targets for catalog searches, datacenter servers, or cloud applications.

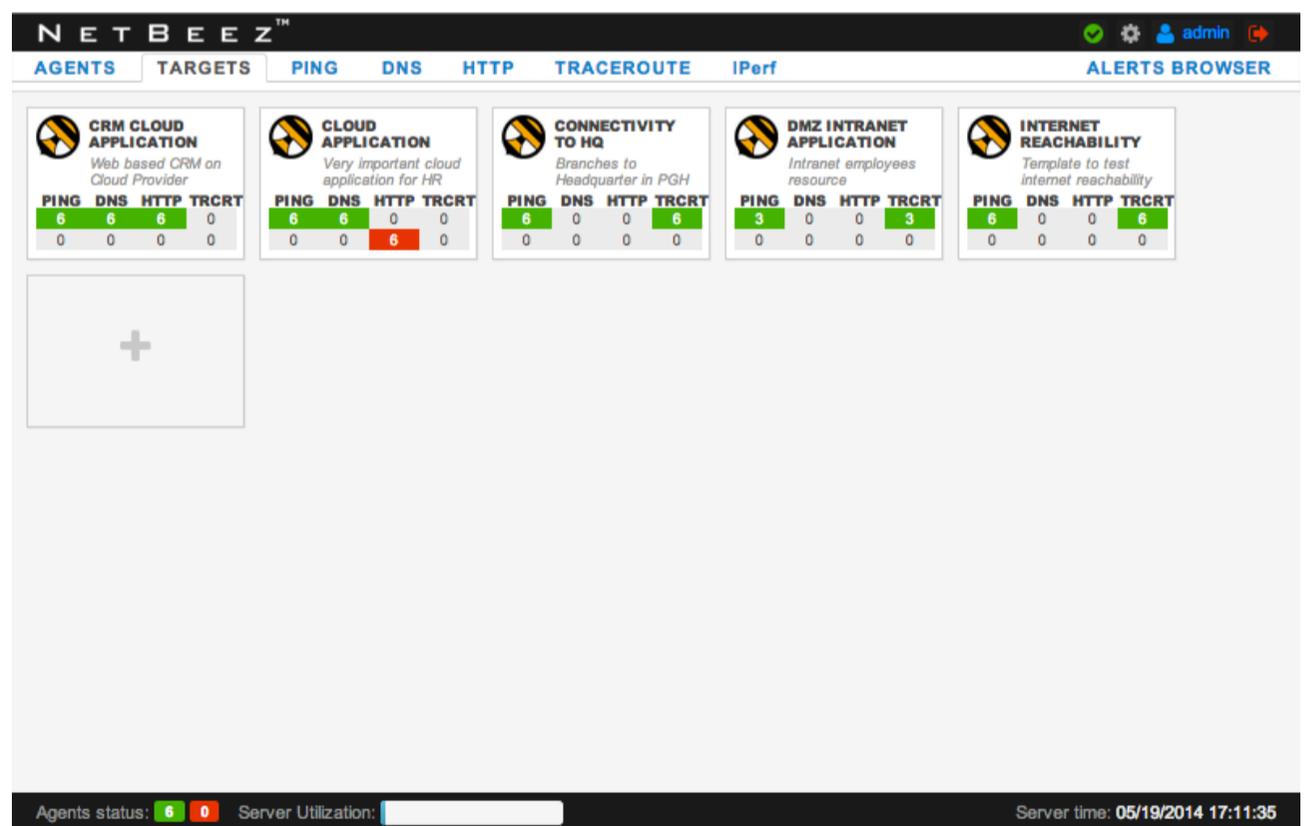


Figure 2. The target view tab on the NetBeez dashboard.



Agent View: Agent-focused status information. For each agent the user can see how many tests of each type fail as shown in the picture below. If he selects a specific agent, he gets a detailed view and he can drill down on the status of each test and access the real-time results or the historical data. Also accessible in this view are statistics for each test (averages for different time windows, lost packets) and agent (uptime, Rx and Tx rates, total tests). On the bottom of the screen he can see alerts related to the chosen agent or test.

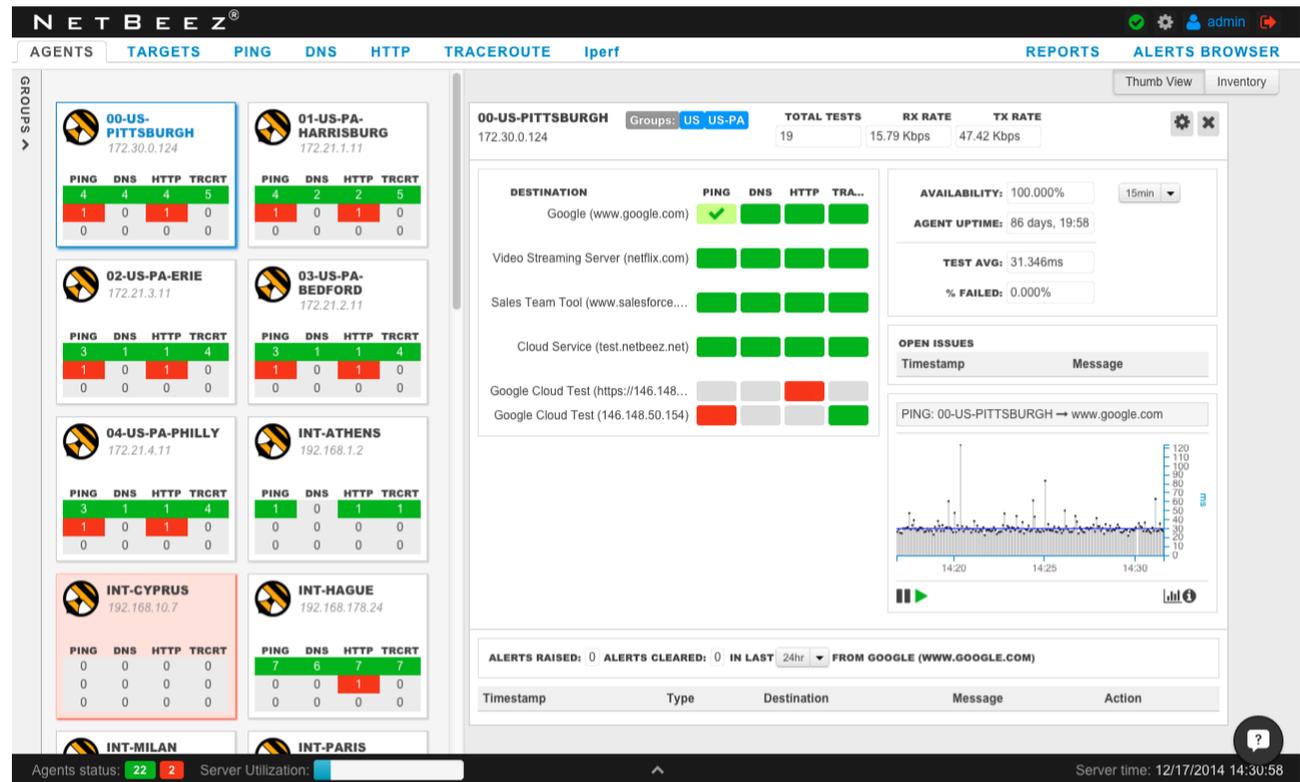


Figure 3. The agents view tab on the NetBeez dashboard.

Grid View: Detailed view of each test type. On this view the user has a detailed overview of the test status for all tests. This view is common for the ping, DNS, HTTP, and traceroute tests. On the left of the grid the user can see each agent, and on the top all targeted hosts. Each tile represents the status of the test, and by clicking on them a graph pops up that displays real-time results. It is easy to compare the performance of different tests in real time.

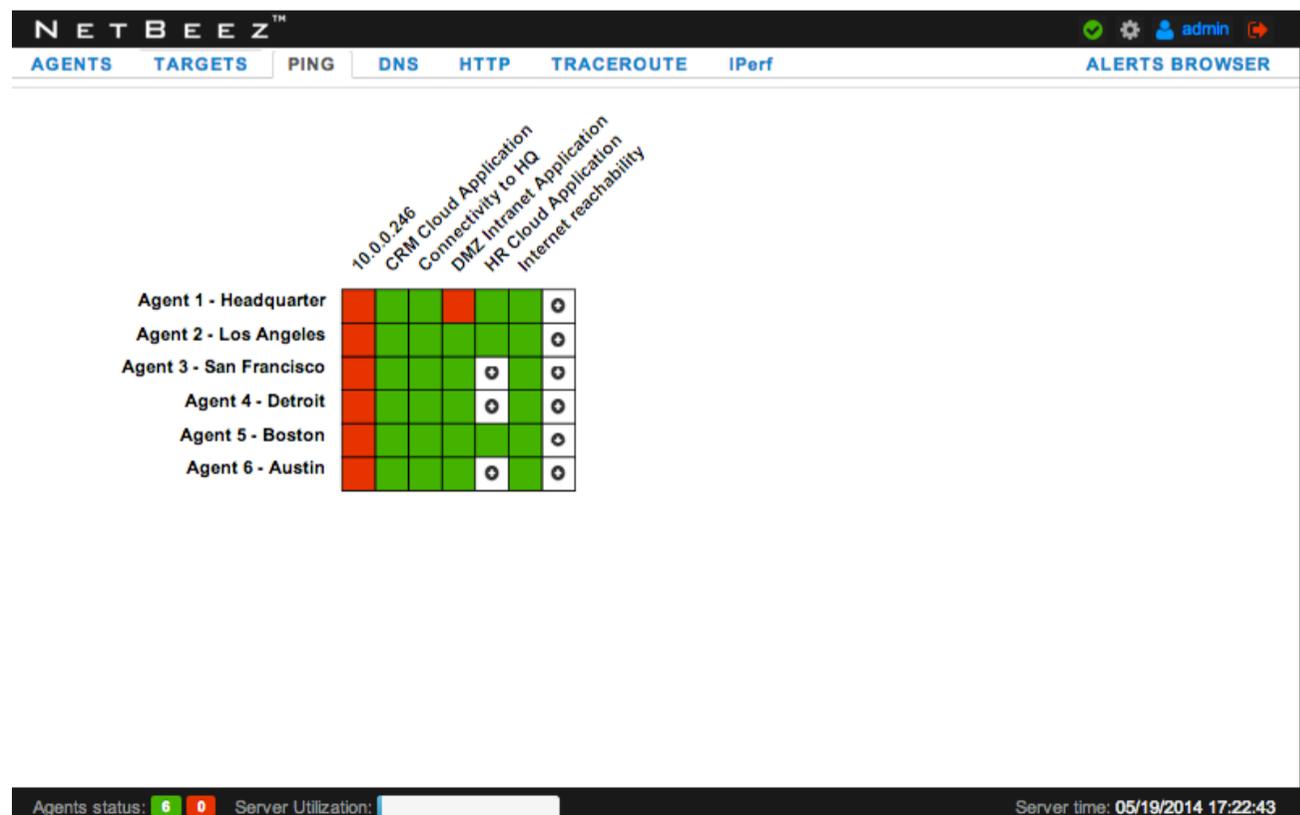


Figure 4. The grid view tab on the NetBeez dashboard.

Alerts: A single pane of glass for all the NetBeez alerts. On this view the user can browse, sort, and search the alerts that have been collected by NetBeez. By clicking on the “History” button a historical graph pops up focused at the specific point in time the alert occurred. Users can receive alerts by SMTP or SNMP traps, simplifying its integration with your SNMP based monitoring tools and existing escalation procedures. NetBeez can generate alerts based on up-down status of a resource that is monitored via PING, DNS, and HTTP or performance (watermark or historical) based on packet loss, round-trip-time, DNS query time, HTTP response time, or number of traceroute hops.

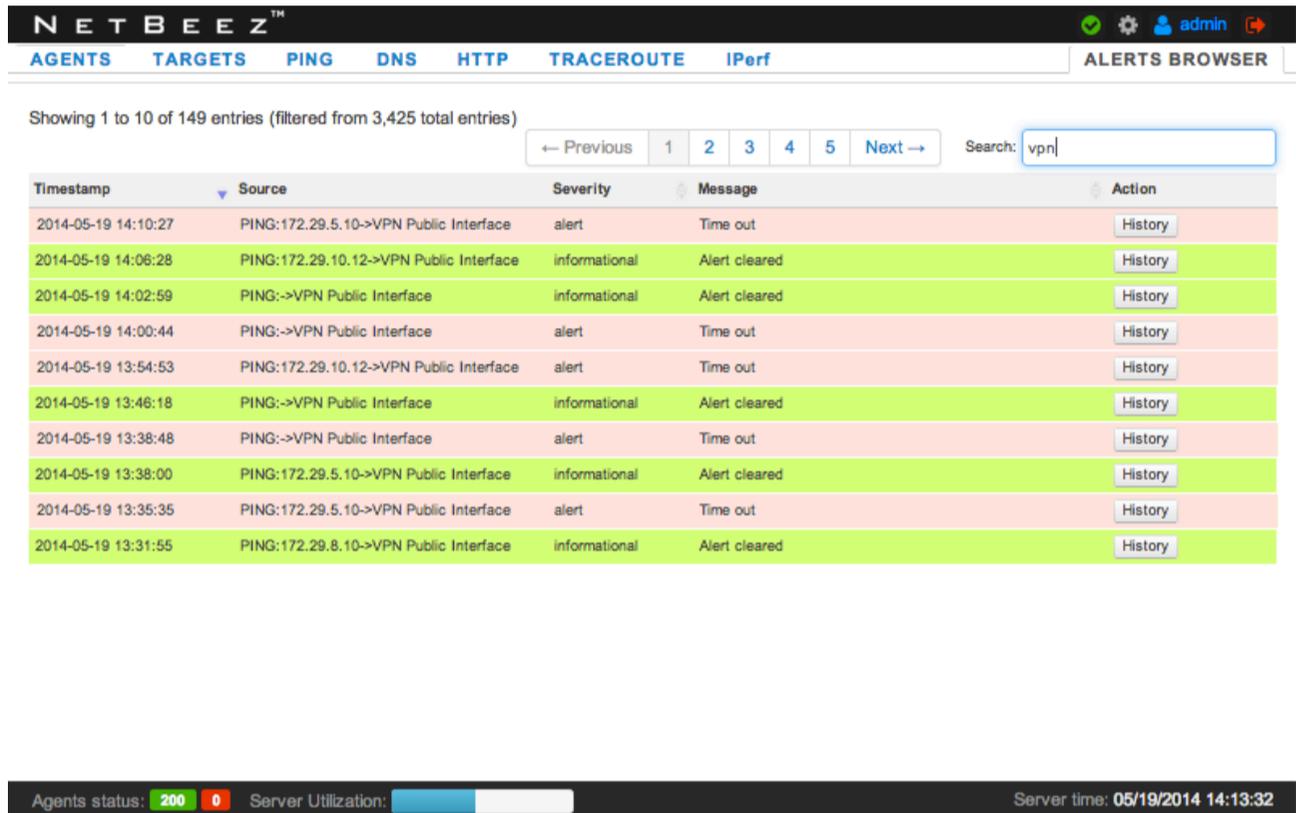


Figure 5. The alert panel tab on the NetBeez dashboard.

Historical Data: All results collected by NetBeez are stored in a database for future analysis and troubleshooting. Depending on the data retention policy and the hard drive size the user can save results and statistics for several months to several years. During troubleshooting, this provides valuable data that can help identify the root cause of a problem. In addition, trend analysis and statistics can reveal troubled areas, and this can inform business decisions on how to improve network performance.

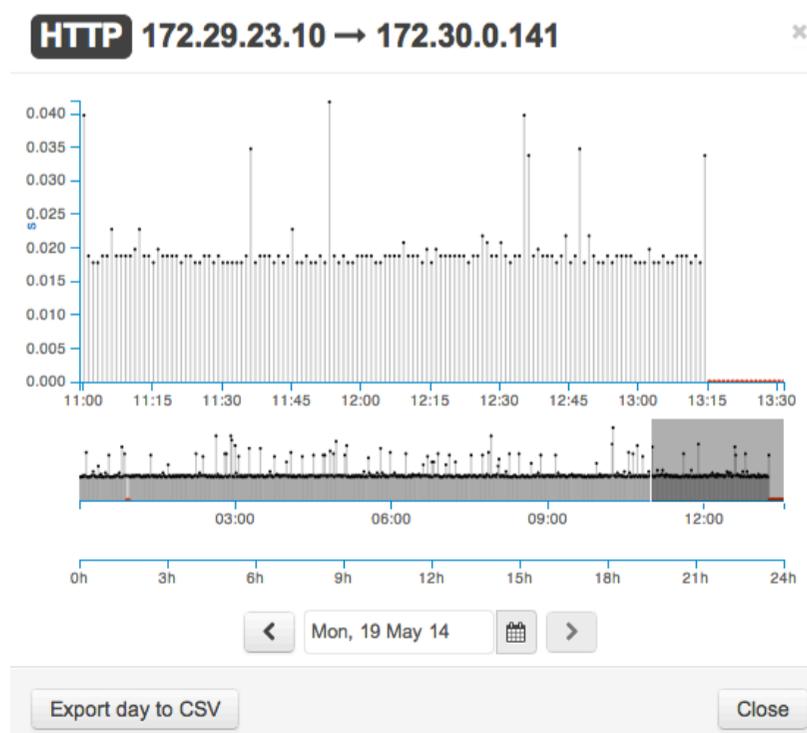


Figure 6. The historical data window on the NetBeez dashboard.

Performance alerts are triggered based on specific user-defined thresholds (e.g. over one minute packet loss is greater than 5%) or historical baseline (e.g. 15 minute average round trip time is higher than monthly average). This feature enables NetBeez users to proactively monitor the reliability and availability of the underlying IP infrastructure and detect anomalies that may impact the operations of the network.

Reports: The user can generate daily, weekly, and monthly performance reports of the targets configured. This feature is useful for monitoring and enforcing service level agreements with network providers or internal systems. IT managers and operations controllers can get from NetBeez all the data that is necessary to identify locations or network segments that underperform or that don't conform to specific requirements.

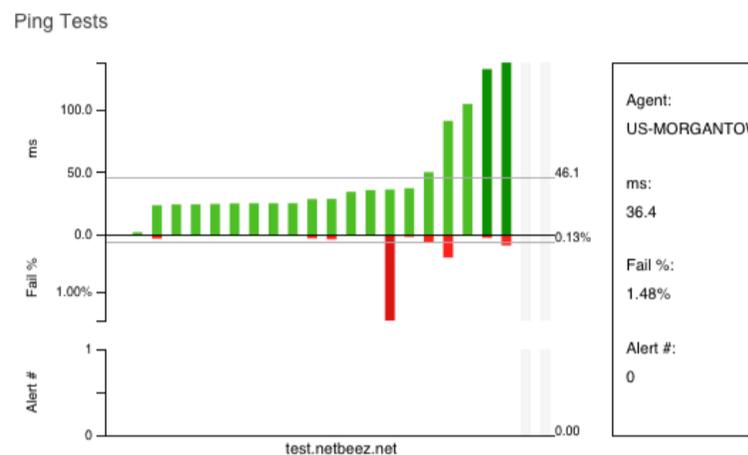


Figure 7. Performance report of PING tests to the test.netbeez.net resource.

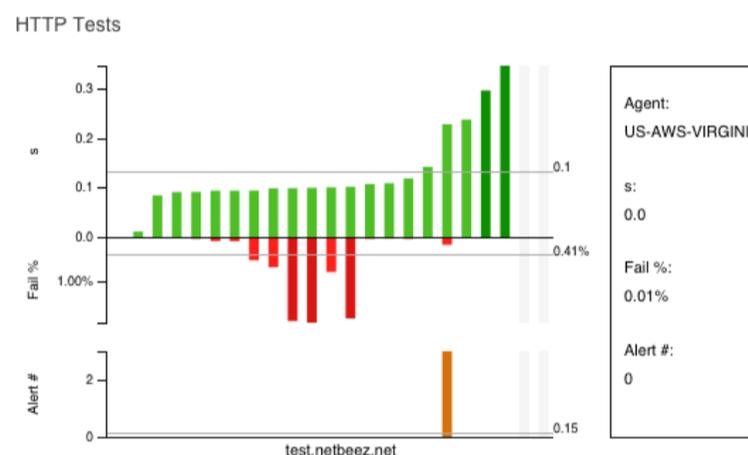


Figure 8. Performance report of HTTP tests to the test.netbeez.net resource.

CONCLUSIONS

NetBeez has more functionalities than what is presented here, such as grouping agents, changing agent IP settings (e.g. from DHCP to static), user roles (read only, read/write, administrator), data retention policy, and others.

It should be clear by now what the capabilities of NetBeez are, and how it can be used as a standalone or as a complementary tool to existing up/down monitoring. To name a few:

- Network integrity verification and configuration changes validation
- Synthetic probing of network and application performance
- Remote monitoring and troubleshooting from the end-user perspective
- Provides data for budgeting and planning purposes

Our customers have applied NetBeez to many use cases (covered in another document), and they have managed to reduce dispatches and troubleshooting time. We would be happy to talk to you and tell you more about NetBeez.

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