Distributed Network Monitoring

netbeez.net
Booth #2344
Network Blindness

Do users have network connectivity?

Is the network degrading application performance?
The network monitoring stack

- Users
  - Active end-to-end tests
  - Performance measurements
  - Distributed monitoring

- Active Data
  - Passive data
  - Limited historical data
  - Require tap, span ports, flow

- Applications
  - No end-to-end view
  - Device status only
  - No performance data

- Flow Data

- Infrastructure

- SNMP Data
Distributed Network Monitoring
Distributed Network Monitoring

✓ Determine local versus global issues
✓ Real-time and historical availability and performance data
✓ Validate configuration changes
✓ Network planning
NetBeez Architecture

Dashboard
Real-time performance data and analytics
Multi-user and multi-role
HTML5 (no java)

Central server
Agents controller and performance processor
Database for historical data
On premise or cloud based

Monitoring agents (BEEZ)
Support for any network environment
Centrally managed
Plug-and-play
Dashboard Elements

AGENT
• Monitoring endpoint
• Represent location or group of users
• Wired, wireless, external, virtual

TARGET
• Resources and services vital to users
• Push tests to the agents
• Receive alerts on connectivity or performance
# NetBeez Tests

<table>
<thead>
<tr>
<th>Test</th>
<th>Primary Metric</th>
<th>Secondary Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>PING</td>
<td>Round trip time</td>
<td>Packet loss</td>
</tr>
<tr>
<td>DNS</td>
<td>Query time</td>
<td>Failed queries</td>
</tr>
<tr>
<td>HTTP</td>
<td>GET time</td>
<td>Failed requests</td>
</tr>
<tr>
<td>Traceroute</td>
<td>Number of hops</td>
<td>Round trip time, path MTU</td>
</tr>
<tr>
<td>Iperf</td>
<td>Data transfer (TCP/UDP/Multicast)</td>
<td>Bandwidth, data jitter, packet loss</td>
</tr>
</tbody>
</table>
NetBeez Alerts

<table>
<thead>
<tr>
<th>Alert type</th>
<th>Purpose</th>
<th>Triggering condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up/Down</td>
<td>Failure detection</td>
<td>Consecutive tests failed</td>
</tr>
<tr>
<td>Performance Baseline</td>
<td>Performance degradation</td>
<td>Short term vs. long term baseline</td>
</tr>
<tr>
<td>Performance Watermark</td>
<td>Enforce SLA</td>
<td>Metric crosses a set threshold</td>
</tr>
</tbody>
</table>

Alerts can be forwarded via SMTP or SNMP

2015-04-26 16:18:47 HTTP:US-RODOPI-1->test.netbeez.net warning Warning Raised: The 15 minute mean metric is greater than the 1 month mean metric by at least 3 times
2015-04-26 16:08:35 HTTP:US-MLN-3->test.netbeez.net alert Operation timed out after 5000 milliseconds with 320781 out of 460800 bytes received
## What to monitor?

### WEB SERVICES

#### Goals
- Availability and performance
- Connectivity to Internet
- Internal/External issues

#### Tests
- PING
- DNS
- HTTP
- TRACEROUTE

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### FULL MESH

#### Goals
- End-to-end latency and packet loss
- Connectivity across sites
- Configuration changes

#### Tests
- PING
- TRACEROUTE

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### DNS

#### Goals
- Availability and performance

#### Tests
- PING
- DNS
- TRACEROUTE
<table>
<thead>
<tr>
<th>Test</th>
<th>Bytes</th>
<th>Interval</th>
<th>Raw ret.</th>
<th>Averages ret.</th>
<th>Space/Test</th>
<th># Tests</th>
<th>Total/Agent</th>
</tr>
</thead>
<tbody>
<tr>
<td>PING</td>
<td>95</td>
<td>5 sec.</td>
<td>6 months</td>
<td>3 years</td>
<td>0.42 GB</td>
<td>4</td>
<td>1.67 GB</td>
</tr>
<tr>
<td>DNS</td>
<td>95</td>
<td>30 sec.</td>
<td>6 months</td>
<td>3 years</td>
<td>0.19 GB</td>
<td>5</td>
<td>0.95 GB</td>
</tr>
<tr>
<td>HTTP</td>
<td>95</td>
<td>60 sec.</td>
<td>6 months</td>
<td>3 years</td>
<td>0.17 GB</td>
<td>5</td>
<td>0.84 GB</td>
</tr>
<tr>
<td>Traceroute</td>
<td>2600</td>
<td>120 sec.</td>
<td>6 months</td>
<td>3 years</td>
<td>0.39 GB</td>
<td>4</td>
<td>1.55 GB</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>18</td>
<td>5.02 GB</td>
</tr>
</tbody>
</table>
## Hardware BEEZ

<table>
<thead>
<tr>
<th>Wired GigE</th>
<th>Wired FastE</th>
<th>Wireless</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU: 1.2 GHz (2 cores)</td>
<td>CPU: 900 MHz (4 cores)</td>
<td>CPU: 900 MHz (4 cores)</td>
</tr>
<tr>
<td>RAM: 2GB</td>
<td>RAM: 1GB</td>
<td>RAM: 1GB</td>
</tr>
<tr>
<td>HDD: 8GB</td>
<td>HDD: 8GB</td>
<td>HDD: 8GB</td>
</tr>
<tr>
<td>NIC: 10/100/1000Mbps</td>
<td>NIC: 10/100Mbps</td>
<td>NIC: 10/100Mbps</td>
</tr>
</tbody>
</table>

Powered by Utilite

Powered by Raspberry Pi

Powered by Raspberry Pi
Wireless BEEZ

- Authentication
  - WEP
  - WPA/WPA2 PSK
  - WPA/WPA2 EAP
- Metrics
  - Signal Strength, Link quality
  - Channel and Bit Rate
  - BSSID
- SSID scan
Wireless BEEZ - Usage

✓ Complement data from wireless controllers
✓ Real-time and historical data of wireless performance
✓ Identify network versus client issues
✓ Track performance during peak hours
✓ Verify SSID availability after changes
External BEEZ

Support for Amazon and Google cloud
External monitoring

Virtual BEEZ

Support for VMWare, vBox, KVM
Delivered as an OVA/OVF file
NetBeez @ InteropNet

• Agents (42)
  • 1 External agent
  • 23 FastE agents
  • 6 GigE agents
  • 12 Wireless agents

• Targets
  • Interop website
  • Full mesh PING, TRCT
  • To colos in SFO/DEN
  • DNS server
Request Access

Do you want to get access to the InteropNet dashboard?

https://interopnet.netbeez.net

Send us an email to info@netbeez.net to request access!
Get Trial

Request a free 15-day trial

http://netbeez.net/request-trial/