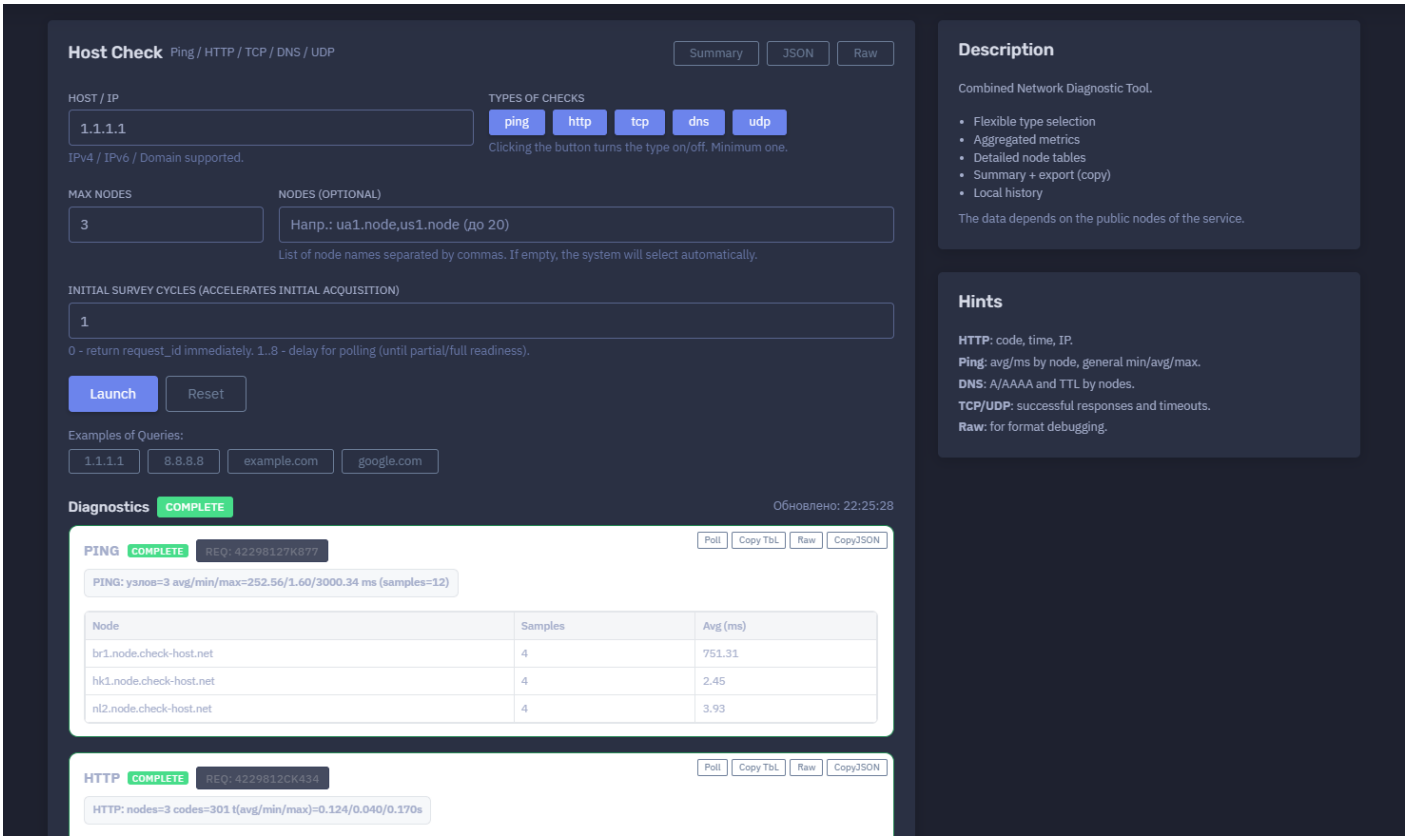
Host Diagnostics | Multi-Protocol Network Diagnostic Tool



The platform available at **https://dash.niamonx.io/host_diagnostics** — known as **Host Diagnostics** — is a combined network diagnostic tool within the NiamonX platform. It allows users to check a host, IP address, or domain across multiple network layers using Ping, HTTP, TCP, DNS, and UDP diagnostics from distributed public nodes.

Overview of the Service

Host Diagnostics is designed to provide a structured, multi-protocol view of host availability and network behavior.

Unlike a single ping or DNS lookup, this tool performs several types of checks in one workflow. It can verify whether a target responds to ICMP-style ping checks, whether HTTP is reachable, whether TCP connectivity works, whether DNS resolution is available, and whether UDP responses are received from selected diagnostic nodes.

The tool is useful for:

- Network troubleshooting
- Website availability checks
- Infrastructure diagnostics
- SOC and incident response workflows
- DevOps and uptime analysis
- DNS and routing validation
- Regional connectivity review
- Firewall and filtering checks
- Basic service reachability testing
- External monitoring from multiple nodes

The data depends on public diagnostic nodes used by the service. Results should be treated as network diagnostics and validated with additional tools for critical infrastructure decisions.

? How the Tool Works

The user enters a target host, IP address, or domain and selects one or more diagnostic check types.

Supported target types:

- IPv4 address
- IPv6 address
- Domain name
- Hostname

Supported check types:

- Ping
- HTTP
- TCP
- DNS
- UDP

At least one check type must be enabled. The user can also define how many diagnostic nodes should be used and optionally specify node names manually.

After the request is submitted, the backend starts one or more diagnostic jobs. Each selected check type receives its own request ID and progresses independently until it reaches a final state such as complete, partial, failed, or timeout.

The final result is displayed as a combined diagnostic report with aggregated metrics and detailed node tables.

? What Can Be Checked

Host Diagnostics supports three main categories of targets.

IPv4 Address

Example:

```
1.1.1.1
```

IPv6 Address

Example:

```
2606:4700:4700::1111
```

Domain or Hostname

Example:

```
niamonx.io
```

```
api.example.com
```

The tool should not be used with full URLs, paths, or query strings unless a specific check type supports that behavior. For best results, users should enter only the clean host, IP, or domain.

?? Diagnostic Interface

The interface includes several key controls.

Host / IP

The main input field where the user enters the target.

Example:

```
1.1.1.1
```

Supported formats:

- IPv4
- IPv6
- Domain
- Hostname

Types of Checks

Users can enable or disable diagnostic types by clicking the corresponding buttons.

Available checks:

- Ping
- HTTP
- TCP
- DNS
- UDP

At least one type must remain selected.

Max Nodes

Controls how many nodes should be used for each check.

Example:

```
Max nodes: 3
```

Using more nodes provides broader geographic visibility but may increase processing time.

Nodes Optional

Users can optionally specify node names manually.

Example format:

```
ua1.node,us1.node
```

Up to 20 node names may be entered as a comma-separated list, depending on backend limits.

If the field is empty, the system selects nodes automatically.

Initial Survey Cycles

Controls whether the request should return immediately with a request ID or wait briefly for partial or full readiness.

Example:

```
Initial survey cycles: 1
```

Interpretation:

Value	Meaning
0	Return request ID immediately
1–8	Wait for polling until partial or full readiness

This option can make the first response more useful by allowing the backend to collect initial data before returning results.

? Combined Diagnostics Status

The main diagnostics panel displays the global status of the selected checks.

Example:

```
Diagnostics
COMPLETE
Updated: 22:25:28
```

Possible status values may include:

Status	Meaning
COMPLETE	All selected checks reached a final completed state
PARTIAL	Some checks or nodes returned results, while others did not
RUNNING	Checks are still in progress
FAILED	The diagnostic job failed
TIMEOUT	The check did not complete within the expected time

Status	Meaning
ERROR	Backend or parsing error occurred

A complete status means the requested checks finished, not necessarily that every service responded successfully.

?? Node-Based Diagnostics

Host Diagnostics uses external nodes to test the target from different network locations.

Each node may return different results because of:

- Geographic routing
- Firewall rules
- DNS differences
- CDN behavior
- Anycast behavior
- Regional filtering
- Network congestion
- Provider outages
- IPv4 / IPv6 availability
- Target-side rate limiting

Node-based diagnostics are especially useful when a host works from one region but fails from another.

? Ping Check

The **Ping** check measures basic network reachability and latency.

Example summary:

```
PING: nodes=3 avg/min/max=252.56/1.60/3000.34 ms samples=12
```

The Ping section may include:

- Request ID
- Number of nodes
- Average RTT
- Minimum RTT

- Maximum RTT
- Number of samples
- Per-node average latency

Example table:

Node	Samples	Avg ms
br1.node.check-host.net	4	751.31
hk1.node.check-host.net	4	2.45
nl2.node.check-host.net	4	3.93

Ping Interpretation

Ping is useful for checking:

- Basic availability
- Network latency
- Packet-level reachability
- Regional routing differences
- Possible filtering or packet loss

High ping values may indicate long-distance routing, congestion, packet loss, or regional network problems.

A failed ping does not always mean the host is down. Some hosts block ICMP-style traffic while still serving HTTP, TCP, or DNS normally.

? HTTP Check

The **HTTP** check verifies whether the target responds over HTTP or HTTPS-style web checks, depending on backend behavior.

Example summary:

```
HTTP: nodes=3 codes=301 t(avg/min/max)=0.124/0.040/0.170s
```

The HTTP section may include:

- Request ID
- HTTP status codes
- Average response time

- Minimum response time
- Maximum response time
- Node-level status
- Resolved IP used by the node

Example table:

Node	Code	Status	Time s	IP
ir5.node.check-host.net	301	Moved Permanently	0.164	1.1.1.1
ir7.node.check-host.net	301	Moved Permanently	0.170	1.1.1.1
si1.node.check-host.net	301	Moved Permanently	0.040	1.1.1.1

HTTP Interpretation

HTTP diagnostics are useful for checking:

- Web availability
- HTTP status codes
- Redirect behavior
- Response time
- Regional web reachability
- Basic CDN or proxy behavior

Common HTTP codes:

Code	Meaning
200	OK
301	Moved Permanently
302	Found / temporary redirect
403	Forbidden
404	Not Found
500	Server error
502 / 503 / 504	Gateway or service availability problem

A successful HTTP response does not always mean the application is healthy. It only confirms that an HTTP-level response was returned.

? TCP Check

The **TCP** check tests whether a TCP connection can be established.

Example summary:

```
TCP: success=3/3 t=0.004/0.001/0.010s
```

The TCP section may include:

- Request ID
- Number of successful nodes
- Total nodes
- Average / minimum / maximum connection time
- Per-node result
- Per-node response time

Example table:

Node	Status	Time s
ae1.node.check-host.net	OK	0.010
es1.node.check-host.net	OK	0.002
in3.node.check-host.net	OK	0.001

TCP Interpretation

TCP checks are useful for verifying:

- Port-level reachability
- Firewall behavior
- Regional blocking
- Service availability
- Connection establishment time
- Basic network path health

A successful TCP check means the node could establish a connection. It does not necessarily validate the full application protocol.

? DNS Check

The **DNS** check verifies DNS resolution from selected diagnostic nodes.

Example summary:

```
DNS: nodes=3 A=0 AAAA=0 TTL(min/max)=1001/1523
```

The DNS section may include:

- Request ID
- Number of nodes
- A records
- AAAA records
- TTL values
- Per-node DNS results

Example table:

Node	A	AAAA	TTL
nl1.node.check-host.net	-	-	1523
nl2.node.check-host.net	-	-	1509
rs1.node.check-host.net	-	-	1001

DNS Interpretation

DNS diagnostics are useful for:

- Checking whether a domain resolves globally
- Comparing A / AAAA responses by node
- Identifying TTL differences
- Diagnosing DNS propagation
- Detecting resolver-specific failures
- Validating CDN or GeoDNS behavior

If the target is an IP address rather than a domain, DNS results may be limited or empty depending on backend behavior.

? UDP Check

The **UDP** check attempts UDP-level diagnostics from selected nodes.

Example summary:

```
UDP: answers=0/3 0.0% timeouts=3
```

The UDP section may include:

- Request ID
- Number of answers
- Total nodes
- Answer percentage
- Timeout count
- Per-node result

Example table:

Node	Result
bg1.node.check-host.net	Timeout
pt1.node.check-host.net	Timeout
rs1.node.check-host.net	Timeout

UDP Interpretation

UDP diagnostics are useful for checking:

- UDP responsiveness
- Firewall behavior
- Timeout patterns
- Regional UDP filtering
- Service exposure
- DNS, VPN, VoIP, gaming, or other UDP-based behavior

UDP is connectionless, so timeouts are common and may not always indicate failure. Many services do not respond to generic UDP probes.

? Aggregated Metrics

Host Diagnostics provides summaries for each check type.

Examples:

```
PING: avg/min/max
HTTP: status codes and response time
```

```
TCP: success rate and connection time
DNS: A/AAAA and TTL
UDP: answers and timeouts
```

Aggregated metrics help analysts quickly identify which layer is failing.

For example:

- Ping fails but HTTP works: ICMP may be blocked.
- DNS fails but TCP works by IP: DNS problem likely.
- HTTP fails but TCP works: application or web-layer issue.
- TCP fails from some nodes only: regional filtering or routing issue.
- UDP times out everywhere: UDP service may be closed, filtered, or non-responsive.

? Request IDs

Each check type may receive its own request ID.

Example:

```
Req: 42298127k877
```

Request IDs help track individual diagnostic jobs and are useful when polling, debugging, or comparing results.

? Initial Survey Cycles

The **Initial survey cycles** setting controls how quickly the initial response is returned.

0 Cycles

The tool returns the request ID immediately.

This is useful for asynchronous workflows where the user or interface will poll later.

1–8 Cycles

The tool waits briefly for partial or complete readiness before returning the result.

This can speed up the user experience because initial data may already be available when the result appears.

? Key Features

Combined Network Diagnostics

Runs Ping, HTTP, TCP, DNS, and UDP checks from one interface.

Flexible Type Selection

Users can enable or disable check types as needed.

Multi-Node Testing

Checks can run from several public diagnostic nodes.

Automatic Node Selection

If no nodes are specified, the system selects nodes automatically.

Manual Node Selection

Advanced users can specify node names manually.

Aggregated Metrics

Each check type includes summarized performance and availability data.

Detailed Node Tables

Per-node results show regional differences and diagnostic details.

Summary Copy

The tool can provide a copyable summary for reports or tickets.

Export Support

Diagnostic results can be copied or exported for documentation.

Local History

Previous checks are stored locally in the browser.

Raw Output

Raw data can be used for format debugging and deeper troubleshooting.

? Request History

The **Request History** section stores previous diagnostic checks locally in the browser.

History entries may include:

- Target host or IP
- Selected check types
- Result status
- Timestamp

Example history item:

```
1.1.1.1
dns,http,ping,tcp,udp
OK
17.06.2026, 22:25:28
```

Possible history statuses:

Status	Meaning
OK	Diagnostic completed successfully
PART	Partial result
FAIL	Failed result
ERROR	Error occurred

Local history helps repeat previous diagnostics and compare results over time.

Because it is stored in the browser, it may be cleared when users delete browser data or switch devices.

? Raw Output

The tool may provide raw output for format debugging.

Raw data can help developers and analysts understand:

- Backend response structure
- Node-level payloads
- Timing fields
- Status fields
- Partial responses
- Formatting issues
- Parsing behavior

Raw output is useful for technical troubleshooting but should not be necessary for normal users.

? Recommended Diagnostic Workflow

A practical host diagnostic workflow should follow these steps.

1. Enter the Target

Use an IPv4 address, IPv6 address, domain, or hostname.

2. Select Check Types

Enable Ping, HTTP, TCP, DNS, UDP, or only the checks relevant to the issue.

3. Set Max Nodes

Use 3 nodes for quick checks or more nodes for broader regional diagnostics.

4. Specify Nodes If Needed

Enter node names manually when testing from specific regions.

5. Choose Initial Survey Cycles

Use `1` for a balanced interactive result or `0` for immediate request ID return.

6. Review Global Status

Check whether the overall result is complete, partial, failed, or still running.

7. Analyze Each Layer

Review Ping, HTTP, TCP, DNS, and UDP independently.

8. Compare Nodes

Look for regions where one node fails while others succeed.

9. Identify the Failing Layer

Use differences between protocols to isolate DNS, web, TCP, UDP, or routing problems.

10. Copy or Export Results

Use summaries for incident tickets, reports, or support communication.

? Common Use Cases

Host Diagnostics can support many technical workflows.

Website Availability Check

Use HTTP and DNS checks to confirm whether a website is reachable.

Network Reachability Check

Use Ping and TCP checks to verify basic connectivity.

DNS Propagation Review

Use DNS checks across nodes to compare A, AAAA, and TTL values.

Firewall Troubleshooting

Compare TCP / UDP / Ping behavior to identify filtering.

Incident Response

Quickly determine whether a target is globally down or regionally affected.

DevOps Monitoring

Use repeated diagnostics to investigate deployment, DNS, or routing issues.

SOC Triage

Check suspicious hosts or infrastructure indicators from multiple layers.

Regional Connectivity Analysis

Use node-level results to identify geographic network problems.

?? Result Interpretation Notes

Host Diagnostics results should be interpreted carefully.

Important limitations:

- Public nodes may have their own outages or restrictions.
- A failed ping does not always mean the service is down.
- HTTP checks may follow redirects or return expected non-200 statuses.
- TCP success does not prove application health.
- DNS results may vary by resolver, cache, or geography.
- UDP timeouts are common and not always a failure.
- Some targets block diagnostic nodes.
- Results can be partial while some checks are still updating.
- Different nodes may see different network paths.
- Data depends on public nodes of the service.

For production incidents, combine Host Diagnostics with server logs, application monitoring, traceroute, firewall logs, DNS provider dashboards, and cloud provider status pages.

?? Security, Privacy & Responsible Use

Host Diagnostics is intended for lawful network diagnostics, troubleshooting, uptime checks, incident response, and infrastructure analysis.

Acceptable use cases include:

- Checking your own infrastructure
- Troubleshooting website downtime
- Validating DNS resolution
- Testing TCP connectivity
- Reviewing UDP reachability
- Supporting incident response
- Comparing regional network behavior
- Preparing support tickets
- SOC enrichment of network indicators
- DevOps and monitoring workflows

Users should follow responsible use principles:

- Do not use the tool to harass or overload third-party infrastructure.
- Do not repeatedly test systems without a legitimate reason.
- Do not interpret diagnostic failures as proof of malicious activity.
- Do not rely on one check type for critical conclusions.
- Validate important findings with additional sources.
- Treat local history as potentially sensitive on shared devices.
- Use the tool only for lawful and ethical diagnostics.

?? Technical Highlights

- Combined network diagnostic tool
- Available at `dash.niamonx.io/host_diagnostics`
- Supports IPv4
- Supports IPv6
- Supports domains and hostnames
- Check types: Ping, HTTP, TCP, DNS, UDP
- Minimum one check type required
- Flexible check type selection

- Max nodes control
- Optional manual node list
- Automatic node selection
- Initial survey cycles for faster initial acquisition
- Per-check request IDs
- Aggregated metrics
- Detailed node tables
- Ping avg / min / max and samples
- HTTP status code, status text, time, and IP
- TCP success rate and connection time
- DNS A / AAAA and TTL by node
- UDP answer rate and timeouts
- Combined diagnostics status
- Summary copy
- Export support
- Local browser request history
- Raw output for debugging
- Suitable for network diagnostics, SOC, DevOps, incident response, and infrastructure monitoring

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? Usage Hints

- Enter an IPv4 address, IPv6 address, domain, or hostname.
- Select at least one check type.
- Use Ping for latency and basic reachability.
- Use HTTP for web status, response time, and resolved IP.
- Use TCP for connection-level availability.
- Use DNS for A / AAAA and TTL comparison.
- Use UDP for UDP response and timeout checks.
- Use more nodes for broader regional visibility.
- Leave the node list empty for automatic selection.
- Use manual nodes when testing from specific regions.
- Set initial survey cycles to `0` if you need the request ID immediately.
- Use Raw output for format debugging.
- Remember that public node availability affects results.
- Store copied diagnostics securely when used in incident reports.

? Contact Information

For technical, legal, abuse, privacy, or support-related inquiries, users can contact the NiamonX team directly:

support@niamonx.io — Technical Support

other@niamonx.io — General Inquiries

takedown@niamonx.io — Privacy or Data Removal Requests

legal@niamonx.io — Legal and Compliance Matters

Alternative contact channel:

Helpdesk: https://support.niamonx.io/

Summary

NiamonX Host Diagnostics is a combined multi-protocol network diagnostic tool for checking IPv4 addresses, IPv6 addresses, domains, and hostnames across Ping, HTTP, TCP, DNS, and UDP layers.

It supports flexible check selection, multi-node testing, automatic or manual node selection, initial survey cycles, per-check request IDs, aggregated metrics, node-level tables, summary copy, export support, local browser history, and raw output for debugging.

The tool is designed for network troubleshooting, DevOps workflows, SOC triage, incident response, website availability checks, DNS diagnostics, firewall validation, and regional connectivity analysis. Results should be interpreted as diagnostic signals and validated with additional monitoring sources for critical decisions.

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