

DNS Behavior with Mediatrix Gateways

All Mediatrix Products

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DNS Behavior with Mediatrix Gateways

If the configuration of the DNS used with a Mediatrix Gateway is not done properly, it may cause delays. Therefore, understanding how DNS servers are used by the system will help to properly configure your DNS..

Up to four DNS servers can be used to resolve network names. The DNS servers can be specified statically or obtained automatically (for example through DHCP or PPP). DNS query results are cached on the system to optimise name resolution time. When the SOA record is processed, the Primary DNS server is never blacklisted when the authority server times out or fails, so the device will continue with SRV/A/AAA requests using the primary DNS server. By default, the device starts first with an NAPTR request and continues with SRV and A-Record requests. This behavior can be configured for the resolution of SIP server addresses via the **SipEp.SupportedDnsQueries** parameter (SIP/Misc/ DNS/Supported DNS Queries in the DGW Web interface).

DNS Server Blacklisting

In the eventuality of a DNS query timing out because of a server going down or an invalid server address provided by the user, the faulty server is marked as down. It will no longer be used to issue queries for a specified period of time. The amount of time increases depending on the number of valid DNS servers which is by default: 30 seconds times the total number of valid servers. Before sending a query, the downtime for each server is checked and the blacklisting flag is removed if the time interval has been reached, making it available to send the query.

When the device is restarted, several services start before the SIP service (e.g. NTP and CWMP) which may result in the blacklisting of one more DNS servers. A blacklisted DNS server might have records for the SIP service, which are not available (for any reason) on the other listed DNS servers. In this case, the blacklisted DNS server will not be requested for SIP URLs and therefore the SIP registration might not work, until the server is removed from the blacklist. Refer to [DNS Server Configuration Best Practices](#) (p.5).

DNS Server Configuration Best Practices

To avoid delays when using DNS servers with a Mediatrix gateway, follow these simple best practices:

Best Practice	Reason
Make sure all SIP related URLs are available on the secondary DNS servers as well.	When the device is restarted, several services start before the SIP service (eg. NTP, CWMP). A blacklisted DNS server might have records for the SIP service, which are not available (for any reason) on the other listed DNS servers. In this case, the blacklisted DNS server will be requested for SIP URLs and therefore the SIP registration might not work, until the server is unlisted.
If handling SIP in IPv4 only, configure the SipEp.DnsIpVersion parameter (not in the Web page). For more details, refer to the DGW Configuration Guide - Reference Guide published on the Media5 Documentation Portal .	Even if we set the DNS request to Address (A) only, delays can occur because the device also does, by default, an AAAA request (IPv6).
If your DNS server does NOT use NAPTR or DNS SRV, you should consider using SipEP.SupportedDnsQueries=Address in your configuration.	Each NAPTR and SRV request can take up to a few seconds on busy networks. This delay can be doubled if using registration with authentication.
If you maintain your own DNS infrastructure, avoid CNAME records.	- Some applications, such as the SBC service (Session Border Controller) have limitations on CNAME records. - See RFC 1912 section 2.4, RFC 1034 section 3.6.2 and RFC 974 for known pitfalls with CNAMEs.

Configuring DNS Servers - Manually

Steps

- 1) Go to **Network/Host**.
- 2) In the **DNS Configuration** table, from the **Configuration Source** selection list, choose **Static**.
- 3) For each DNS server, enter the IP address.

Note:

The best practice is to use the servers supplied by your Internet Service Provider (usually the primary and secondary DNS), then complement with publicly accessible DNS servers from a different network.

For example, when using IPv4: Google (8.8.8.8 and 8.8.4.4), CloudFlare (1.1.1.1 and 1.0.0.1), OpenDNS (208.67.222.222 and 208.67.220.220), Level3 (209.244.0.3 and 208.244.0.4), etc.

Or when Using IPv6: Google (2001:4860:4860::8888 and 2001:4860:4860::8844), CloudFlare (2606:4700:4700::1111 and 2606:4700:4700::1001), etc.

4) Click **Apply**.

Result

DNS Configuration		
Configuration Source:	Static ▼	
Primary DNS:	Example (Google): 8.8.8.8	
Secondary DNS:	Example (Cloudflare): 1.1.1.1	
Third DNS:	Example (OpenDNS): 208.67.222.222	
Fourth DNS:	Example (Level3): 209.244.0.3	

Configuring DNS Servers - Automatically

Steps

- 1) Go to **Network/Host**.
- 2) In the **DNS Configuration** table, from the **Configuration Source** selection list, choose **Automatic IPv4** or **Automatic IPv6**.
- 3) Click **Apply**.

Result

DNS Configuration		
Configuration Source:	Automatic IPv4 ▼	
Primary DNS:		
Secondary DNS:		
Third DNS:		
Fourth DNS:		

Online Help

If you are not familiar with the meaning of the fields and buttons, click **Show Help**, located at the upper right corner of the Web page. When activated, the fields and buttons that offer online help will change to green and if you hover over them, the description will be displayed.

DGW Documentation

Mediatrix devices are supplied with an exhaustive set of documentation.

Mediatrix user documentation is available on the [Media5 Documentation Portal](#).

Several types of documents were created to clearly present the information you are looking for. Our documentation includes:

- **Release notes:** Generated at each GA release, this document includes the known and solved issues of the software. It also outlines the changes and the new features the release includes.
- **Configuration notes:** These documents are created to facilitate the configuration of a specific use case. They address a configuration aspect we consider that most users will need to perform. However, in some cases, a configuration note is created after receiving a question from a customer. They provide standard step-by-step procedures detailing the values of the parameters to use. They provide a means of validation and present some conceptual information. The configuration notes are specifically created to guide the user through an aspect of the configuration.
- **Technical bulletins:** These documents are created to facilitate the configuration of a specific technical action, such as performing a firmware upgrade.
- **Hardware installation guide:** They provide the detailed procedure on how to safely and adequately install the unit. It provides information on card installation, cable connections, and how to access for the first time the Management interface.
- **User guide:** The user guide explains how to customise to your needs the configuration of the unit. Although this document is task oriented, it provides conceptual information to help the user understand the purpose and impact of each task. The User Guide will provide information such as where and how TR-069 can be configured in the Management Interface, how to set firewalls, or how to use the CLI to configure parameters that are not available in the Management Interface.
- **Reference guide:** This exhaustive document has been created for advanced users. It includes a description of all the parameters used by all the services of the Mediatrix units. You will find, for example, scripts to configure a specific parameter, notification messages sent by a service, or an action description used to create Rulesets. This document includes reference information such as a dictionary, and it does not include any step-by-step procedures.

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