

## DNS configuration

This White Paper addresses customers operating their proprietary Netviewer server infrastructure and describes the required DNS (Domain Name System) configuration to ensure its correct functioning.

### General system overview

Figure 1 shows the structure of a Netviewer server system within a customer's network. For internal and external access the Netviewer server should be installed within the DMZ (Demilitarized Zone).

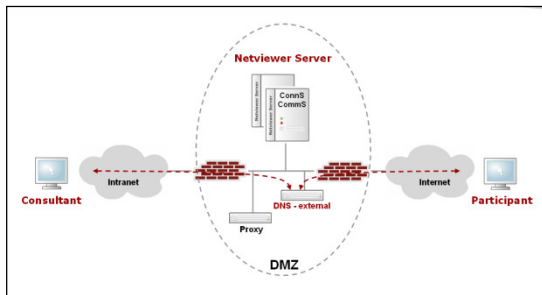


Figure 1

In general, the Netviewer server is separated into two components: The Netviewer Connection Server (ConnS) and the Netviewer Communication Server (CommS). The Connection Server is responsible for authentication, license and functionality check. The Communication Server transfers the data traffic during a running Netviewer session.

The two components can either be installed on the same server or, for redundancy or scalability reasons, on several coupled servers.

### Communication between the components

Figure 2 shows the general communication flow between a Netviewer client, a DNS server, the Connection Server and the Communication Server.

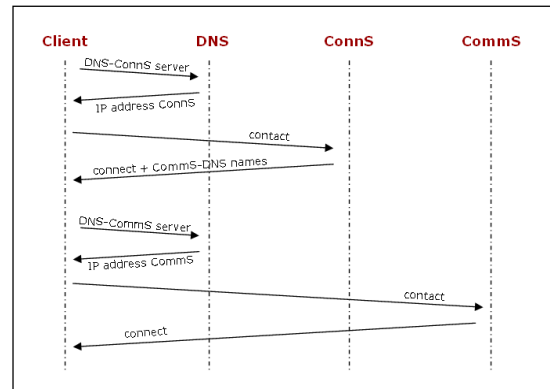


Figure 2

- Within each Netviewer client at least one and up to 12 Connection Server DNS names are hard-coded.
- If a Connection Server cannot be accessed, the Netviewer client switches to the next Connection Server in the list.
- The Connection Server knows the DNS names of the Communication Servers. After the connection has been established it transfers the DNS name of a suitable Communication Server to the client.
- The client then contacts the Communication Server on the transferred DNS name.
- This procedure takes place on each client (consultant/moderator and participant).

### Server selection

This chapter describes the procedure how the clients select the correct Netviewer Connection Server and Communication Server.

#### Connection Server selection

As already mentioned, the DNS names of the Connection Servers are hard-coded within the Netviewer clients.

For systems that may grow in the future the Netviewer clients can initially be provided with up to 12 DNS names. In the first project phase, when only one Connection Server is available, all DNS names are mapped to the same IP address. When expanding the server infrastructure, only the entries in the DNS server have to be changed. This avoids exchanging the clients when expanding the server infrastructure. Figure 3 shows the general communication flow in a scenario with multiple Connection Servers.

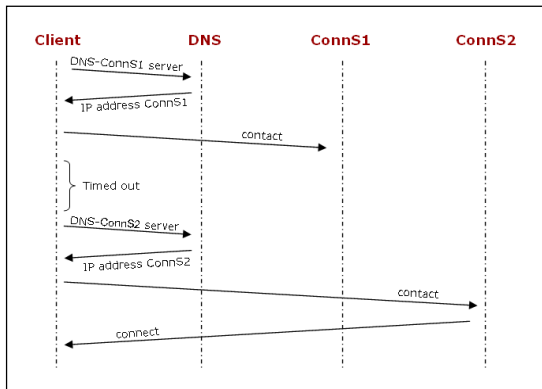


Figure 3

- The Netviewer client tries to connect to the first Connection Server by using the DNS name of ConnS1.
- If there is no response from ConnS1, the Netviewer client runs in a time-out and tries to connect to the second Connection Server by using the DNS name of ConnS2.
- This procedure will be continued until a Connection Server answers the client's request.

**Communication Server selection**

The Connection Server which the Netviewer client is connected to transfers the DNS name of a suitable Communication Server to the client. The choice is made depending on availability and server load.

**Split DNS**

In general, if different top level domains (internal and external) are in use, clients from the Internet and the Intranet should both access the Netviewer servers on the external DNS names.

If a specific network environment is preventing this, the method Split DNS can be applied. Split DNS means that a DNS infrastructure is composed of two zones for the same domain. One is used by the internal network; the other is used by the external network.

In the Netviewer infrastructure, internal users will be directed to the internal DNS server and external users to the external DNS server. A DNS name (e.g. nv1.example.com) is mapped on both DNS servers to the internal and the external IP address. The NAT (Network Address Translation) protocol maps the external IP address to the internal, so each user will access the same Netviewer server (see figure 4).

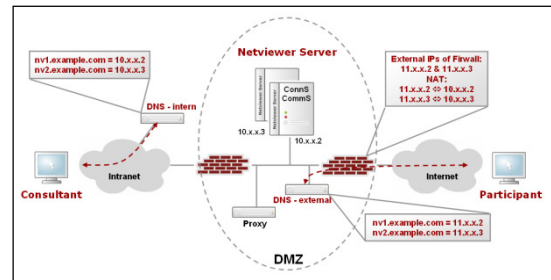


Figure 4

**Server configuration concepts**

If more than one Netviewer server is in use there are two options of configuration:

- Redundant server infrastructure: At least two server computers with Connection Server and Communication Server installed on both.
- Separated server infrastructure: Connection Server and Communication Server are running on separated server computers.

**Redundant server infrastructure**

Setting up a redundant server infrastructure requires a DNS sub domain name for each Communication Server instance. For the Connection Servers a regular DNS name is sufficient.

**Example**

To run a Netviewer server infrastructure with two servers (Connection Server and Communication Server running on both) the following DNS entries are required:

- 2 DNS entries for the two servers:
  - nv1.example.com > IP #1
  - nv2.example.com > IP #2

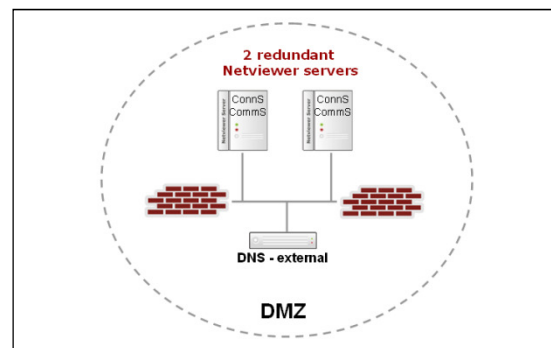


Figure 5

**Separated server infrastructure**

As in a separated server infrastructure the Connection Servers and the Communication Servers are installed on different servers, each service must have its own DNS name.

**Example**

To run a Netviewer server infrastructure with four Connection Servers and ten Communication Servers, the following DNS entries are required:

- 4 DNS entries for the Connection Servers:  
 ConnS1.nv.example.com > IP #1  
 ....  
 ConnS4.nv.example.com > IP #4
- 10 DNS entries for the Communication Servers:  
 \*.CommS1.nv.example.com > IP #10  
 ....  
 \*.CommS10.nv.example.com > IP #20

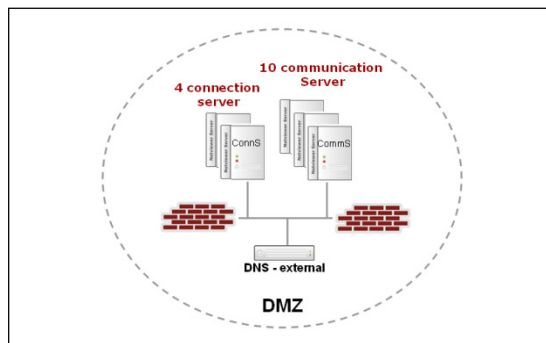


Figure 6

**The Netviewer wildcard method**

During a Netviewer session short TCP network interruptions may cause a session breakup. For technical reasons an immediate reconnection to the same DNS name will be blocked.

To avoid session breakups, Netviewer offers the so-called Netviewer wildcard method. In case of a short interruption, the Netviewer client initiates an additional communication session by using another DNS name directing to the same IP address (of the Communication Server).

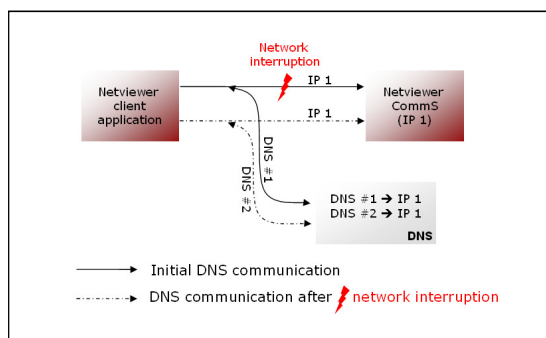


Figure 7

Initially, the Netviewer client connects to the Netviewer server by the DNS name 'DNS #1'.

This DNS name is mapped to IP address 'IP1'. After a network interruption the client reconnects to the server by using 'DNS h1.#1' which is also mapped to IP address 'IP1'. The Netviewer wildcard method is only used for the Communication Server. A short network interruption during authentication or user logon on the Connection Server is not critical.

**Example**

The DNS server entry when using the Netviewer wildcard method should be done as followed:

- \*.nv.example.com > IP #1

Alternatively, the DNS server entries can be defined with 'h1' to 'hgg' which all refer to 'nv.example.com':

- h1.nv.example.com
- ...
- hgg.nv.example.com

**Summary**

For internal and external access the Netviewer server should be installed within the DMZ. If Connection and Communication Server are installed on the same machine, both services can be addressed by the same DNS name. In a redundant server infrastructure at least one DNS name is required for each Netviewer server.

In a separated server infrastructure the Connection and Communication Servers must have their own DNS names. In case that a customer has several DNS top level domains (internal and external) the external DNS names should be used. If this is not possible for some reasons the internal users will get their DNS information from the internal DNS server and external users from the external DNS server. The DNS name must be identical for both DNS servers but can refer to different IP addresses.

The Netviewer wildcard method ensures a performing and stable Netviewer service if a short network interruption happens.

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 Reference to Server- and Client Version: G3 & G3.1

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