

Troubleshooting guide: How to proceed when a device cannot be reached in the LMC

Description:

If one of your devices being managed by the LANCOM Management Cloud (LMC) is shown as “offline”, but is otherwise working normally, communication with the LMC is disrupted.

This article describes what steps for troubleshooting can be taken.

Requirements:

- LANconfig as of version 10.12 ([download latest version](#))
- LANmonitor as of version 10.12 ([download latest version](#))
- SSH client for command-line access (e.g. PuTTY)

Procedure:

1) Checking whether DNS can resolve the LANCOM Management Cloud:

1.1) Connect to the router's CLI and enter the following sequence of commands:

- Enter the command `tr # dns` to start a DNS trace.
- Enter the command `ping cloud.lancom.de` to send a ping from the router to `cloud.lancom.de`.



The # character serves as a toggle. The command `tr # dns` will either start or stop the trace, depending.

In this example `cloud.lancom.de` cannot be resolved.

```
root@Filiale1:/
> tr # dns
DNS ON

root@Filiale1:/
> ping cloud.lancom.de

[DNS] 2020/03/17 09:33:21,810
DNS Rx (intern): Src-IP 127.0.0.1, RtgTag 0
Transaction ID: 0x1e95
Flags: 0x0100 (Standard query, No error)
Queries
  cloud.lancom.de: type A, class IN

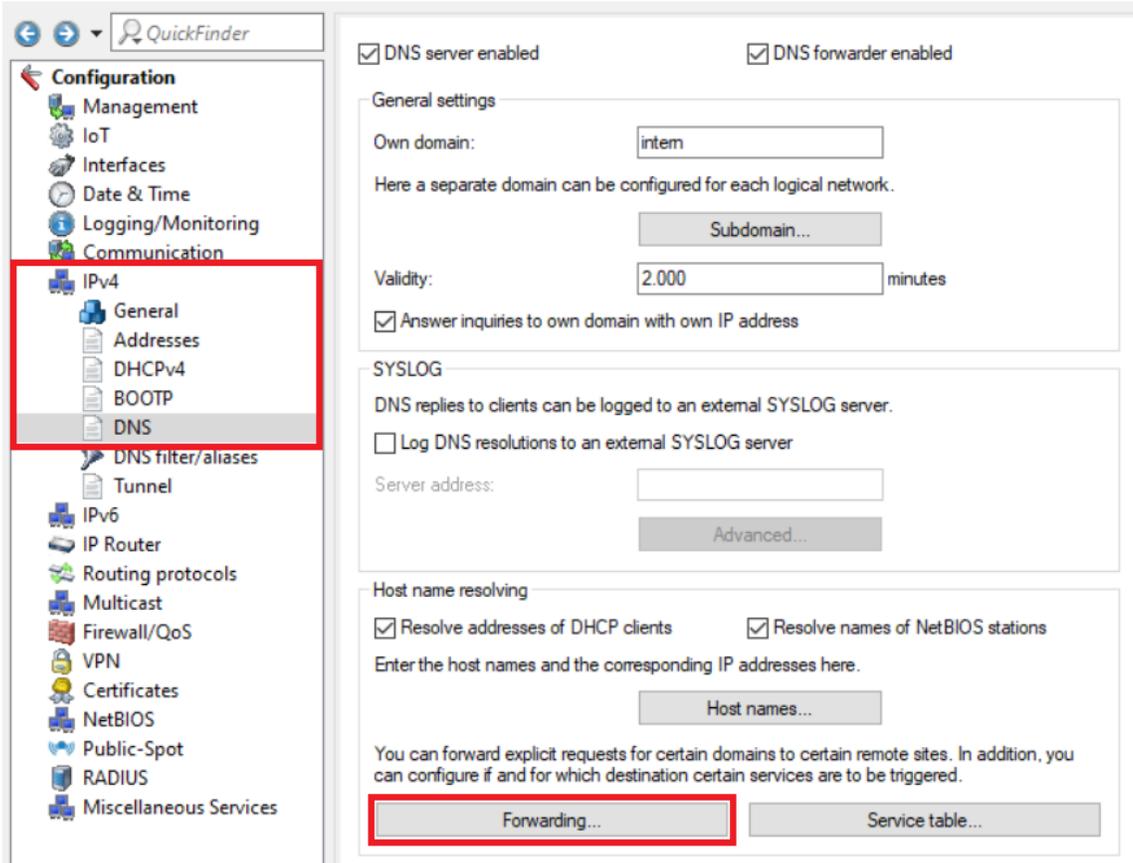
STD A for cloud.lancom.de
Not found in local DNS database => forward to next server

[DNS] 2020/03/17 09:33:21,810 [info] :
create new destination map entry for default route with routing tag 0
DestinationMapEntry for default route with routing tag 0 created
IPv4 destination: INTERNET
IPv4 DNS servers: 82.82.82.1
create new source map entry for 127.0.0.1
using IPv4 DNS server 82.82.82.1 on INTERNET
```

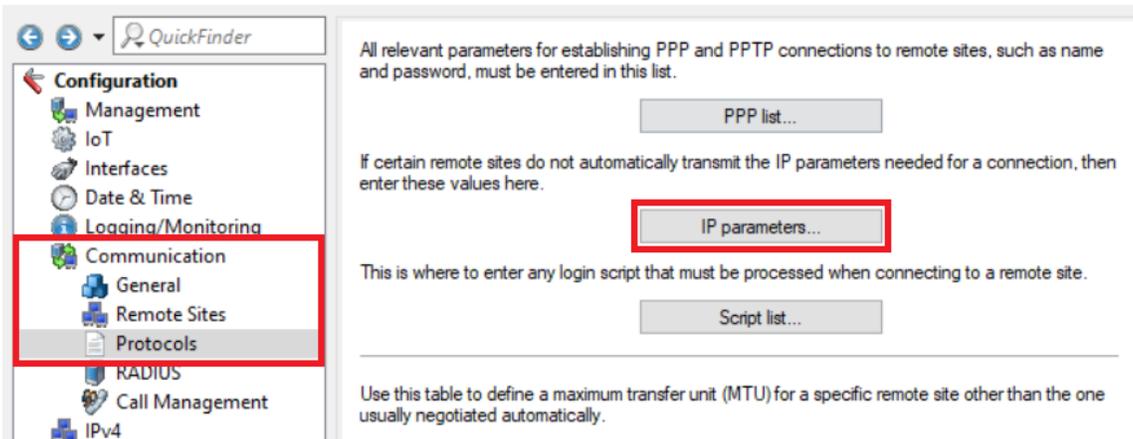
1.2) If the DNS cannot resolve `cloud.lancom.de`, you have to check whether the correct DNS server is being used:

1.2.1 Check under **IPv4 DNS Forwarding** to see whether a non-existent or malfunctioning DNS server has been specified.

 DNS forwarding takes precedence over all other DNS servers stored in the device and should be checked first.

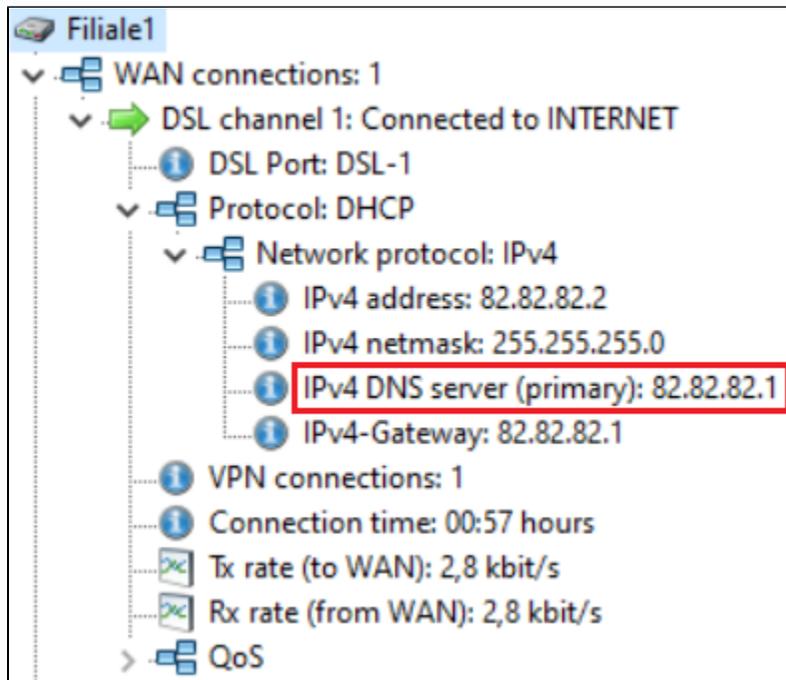


1.2.2 In the case of a plain Ethernet connection with **static IP parameters**, check whether the correct DNS server has been entered under **Communication Protocols IP parameters <name of the Internet connection>**.



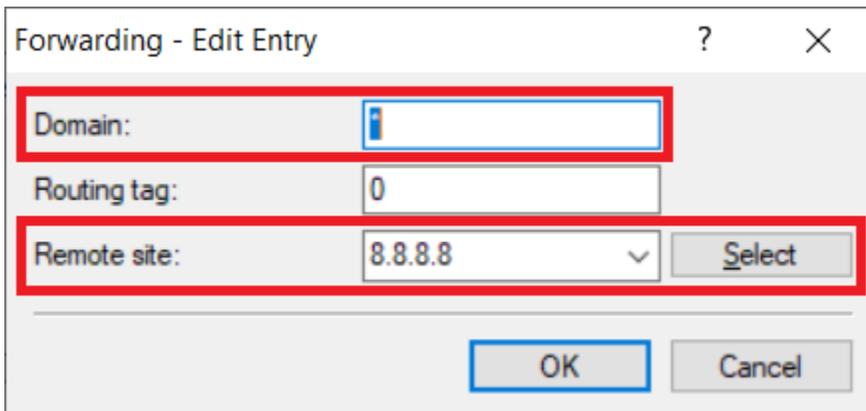
1.2.3 In the case of a plain Ethernet connection with **dynamic IP address assignment via DHCP from an upstream router**, use LANmonitor to check whether the correct DNS server has been assigned. If the DNS server is not correct, contact the administrator of the upstream router or adjust the configuration yourself if you have access to it.

i Alternatively, you can read out the IP parameters received from the DHCP server by means of the CLI command **Is Status/DHCP-Client/WAN-IP-List/**.



1.2.4 Occasionally it can happen that the DNS servers assigned by the provider (statically or dynamically assigned) cannot be reached. In this case, enter a DNS forwarding under **IPv4 DNS Forwarding** to a DNS server of your choice.

- Enter the wildcard * for the Domain. This represents any number of characters. This enables the forwarding of all DNS queries.
- Set the **Remote site** to an **IP address of a DNS server** (in this example the Google DNS server).



2) Changing the MTU on the Internet gateway (LANCOM router):

Connection problems with the LMC can also arise from an MTU which is too big. In this case the MTU has to be changed on the Internet gateway.

i Please contact the manufacturer of your router regarding documentation for changing the MTU if you are using a router of another manufacturer as the Internet gateway.

2.1) Check via a ping from a computer on the affected site to which size a packet doesn't have to be fragmented. on a Windows computer the command is **ping -l <Packet size> <IP address/DNS name> -f**.

In this example (regular DSL connection) a ping with an MTU of 1470 Bytes cannot be sent by the router because it would have to be fragmented. A ping with an MTU of 1464 Bytes doesn't have to be fragmented.

```
U:\>ping -l 1470 8.8.8.8 -f

Ping wird ausgeführt für 8.8.8.8 mit 1470 Bytes Daten:
Paket müsste fragmentiert werden, DF-Flag ist jedoch gesetzt.

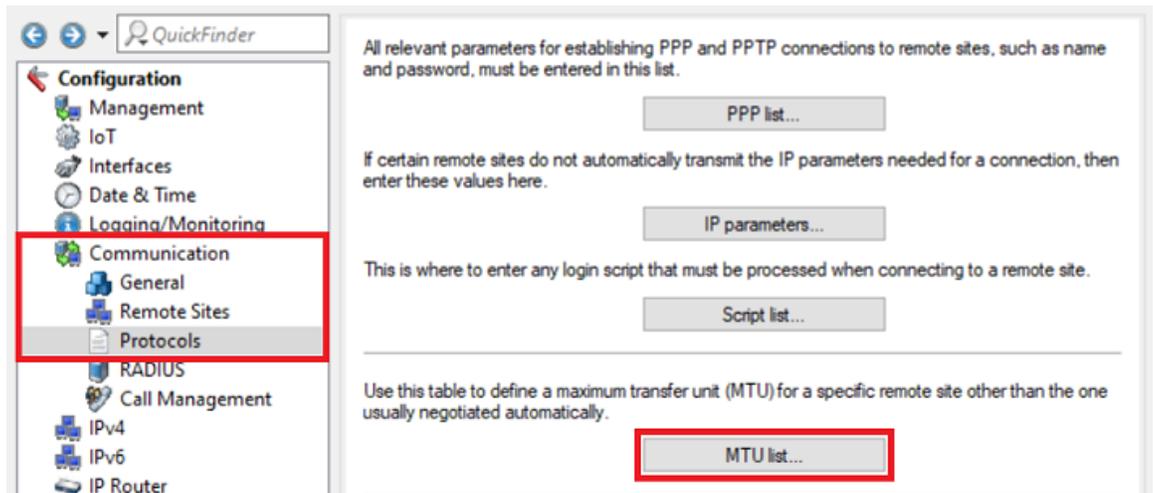
Ping-Statistik für 8.8.8.8:
    Pakete: Gesendet = 4, Empfangen = 0, Verloren = 4
    (100% Verlust),

U:\>ping -l 1464 8.8.8.8 -f

Ping wird ausgeführt für 8.8.8.8 mit 1464 Bytes Daten:
Antwort von 8.8.8.8: Bytes=68 (gesendet 1464) Zeit=27ms TTL=114
Antwort von 8.8.8.8: Bytes=68 (gesendet 1464) Zeit=27ms TTL=114
Antwort von 8.8.8.8: Bytes=68 (gesendet 1464) Zeit=27ms TTL=114
Antwort von 8.8.8.8: Bytes=68 (gesendet 1464) Zeit=28ms TTL=114

Ping-Statistik für 8.8.8.8:
    Pakete: Gesendet = 4, Empfangen = 4, Verloren = 0
    (0% Verlust),
Ca. Zeitangaben in Millisek.:
    Minimum = 27ms, Maximum = 28ms, Mittelwert = 27ms
```

2.2) Open the router configuration in LANconfig and go to the menu **Communication Protocols MTU list**.



2.3) Create a new entry and change the following parameters:

- **Remote site:** In the dropdown-menu select the **Internet connection**.
- **MTU:** Enter the **maximum packet size** discovered in **step 2.1**), where no fragmentation is needed (in this example **1464**).

MTU list - New Entry

Remote site: INTERNET Select

MTU: 1.464

OK Cancel

2.4) Write the configuration back into the router.

2.5) In order for the MTU to be used, the Internet connection has to be severed once.

Establish a connection with the CLI of the router and enter the command **do Other/Manual-Dialing/Disconnect <Name of the Internet connection>** (in this example **do Other/Manual-Dialing/Disconnect INTERNET**).

 As an alternative you can also sever the Internet connection in the LANmonitor by rightclicking on the Internet connection and clicking on **Disconnect** in the context menu.

3) Further steps:

If the device in the LMC appears as “offline” even though the DNS name `cloud.lancom.de` is being resolved and the MTU has been changed, there are two ways to reconnect the device to the LMC.

 With the two procedures described below, the device retains its current configuration!

2.1) The affected device is “Cloud ready” and was connected to the LMC using the “Cloud PIN” shipped with the device:

Restart the device. The device will then reconnect to the LMC.

2.2) The affected device was connected to the LMC using an activation code generated in the LMC (for “Cloud ready” and “not Cloud ready” devices):

Generate a new activation code as described in the techpaper [LANCOM Management Cloud \(LMC\) Rollout](#) in the section “Assignment by activation code”, and use this code to connect the device to the LMC. The device will then reconnect to the LMC.

 The activation code used to connect the device to the LMC must be sourced from the project where the device is currently shown as “offline”.