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R.F.O. Unstable networking February/March 2026

A detailed description of the intermittent network interruptions Tuxis and her customers experienced in the end of February and the beginning of March of 2026.

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Introduction

Tuxis has been implementing a VXLAN-based network since the beginning of 2024. VXLAN enables us to combine the multiple datacentre locations that we offer, in conjunction with the high-available virtualization clusters.

We have selected high performance EdgeCore switches, running IPInfusions OCNOS to achieve our networking goals. In the last two years, we have seen a few issues that needed fixing, and thus upgrading of the switches.

We executed the first maintenance on February the 26th 2026. Even though the maintenance was successful, at some point we started experiencing connectivity issues. We managed to limit the impact of the issues, and were in close contact with our vendor to resolve them.

We want to use this document to inform you about what the issue exactly was, and which steps we took.

Relevant links:

- https://support.tuxis.nl/en/announcements/article/27-02-2026-1afternoon-network-interruptions-site-tuxis-1_update
- https://support.tuxis.nl/en/announcements/article/26-02-2026-planned-outage-for-dadup-platform-pbs001-edt-tuxis-nl-pbsfl001-edt-tuxis-nl_closed
- <https://www.ipinfusion.com/solutions/data-center/>

What was the issue

The Tuxis network is based on VXLAN and OSPF. VXLAN stands for Virtual eXtended Local Area Network, and works by encapsulating ethernet frames into IP packets. Ethernet has limitations in terms of redundancy, and by encapsulating the frames into IP packets, the switch effectively becomes a router. IP is far easier to make redundant.

After an IP packet is created, the switch must know where to route that packet. There are multiple methods to create the routing table that is required. You can use IS-IS, BGP, or OSPF. Tuxis chose to use OSPF.

OSPF is a protocol that exchanges routes between devices in various segments of the network. It does so by sending specific packets every X seconds, and as long as the peers in that segment see each other, the session is up.

A switch consist of various pieces of hardware; the network interfaces, ASICS and CPU's. Where ASICS allow the switch to do certain operations 'at wire speed', without much intelligence, for some operations the CPU is required. To prevent the CPU from getting overloaded, vendors often implement rate limits. Those rate limits allow the software to drop packets if there are too many packets going to the CPU. One of the operations that is being handled by the CPU, is the OSPF logic.

The version of the switch software that we installed on the 26th contained a bug, where the specific OSPF packets where incorrectly rate limited towards the CPU. This caused the situation that at most moments, all the OSPF packets were successfully processed by the CPU. But at times that the rate limit was too strict, enough packets were dropped to drop the OSPF session.

When the OSPF session was broken down, the switch lost the routes to all other switches, VXLAN had no way of knowing where to go, and connected devices lost connectivity. This is the issue that we experienced.

The workaround

On Friday the 27th, we implemented a fix that we expected to work. To limit impact at the moment the OSPF session was down, we created static IP routes between the affected switches. One for each leaf-switch, and a static default route back to the spine-switch. This workaround did not help, because VXLAN does not consider default routes to find its peers, a limitation unknown to Tuxis engineers. On Tuesday the 3rd we created more specific routes, finalizing the workaround.

The fix

Directly after noticing the issue on the 27th, we created an issue with our vendor. They assisted us in debugging the issue and on Tuesday 3rd, they announced that they have found the bug responsible for our issues.

We could not update the rate-limit with configuration changes, as it is part of the static configuration of the software. So we had to upgrade the switches to a new version of OCNOS, 7.0.

On Wednesday 4th, we upgraded the first batch of switches in location Tuxis-1. The other three locations are planned to be upgraded in the upcoming three weeks.

Timeline

Below is a timeline of events. Not every OSPF Flap caused downtime, but we feel it is important to mention them so that you may be able to correlate them on issues you may have experienced.

- February 26th
 - 0.00: Starting the upgrades of leaf switches on Tuxis-1
 - 2.00: Finalizing the upgrades with the upgrade of the Tuxis-1 spine
- February 27th
 - 10.01: The first series of OSPF flaps occur
 - 10.07: Debugging by Tuxis engineers starts
 - 10.55: A TAC issue is opened at the vendor
 - 13.18: The second series of OSPF flaps occur until 13.40
 - 13.48: Static routes are created as a workaround
 - 13.49: OSPF Flap
 - 13.53: OSPF Flap
 - 14.01: OSPF Flap
 - 14.03: Tuxis engineers start suspecting rate limits and report back to TAC
 - 14.04: OSPF Flap
 - 14.31: OSPF Flap
 - 15.00: OSPF Flap

- 15.35: OSPF Flap
- 21.11: OSPF Flap
- February 28th
 - 12.29: Logging level is being increased on request of TAC
- March 1st
 - 04.10: OSPF Flap
- March 2nd
 - 09.28: OSPF Flap
 - 09.39: A rate limit is being changed as it might be affecting the issue
 - 09.41: TAC Is being supplied with a fresh set of debugging info after the log level change of the 28th
 - 11.12: OSPF Flap
 - 11.38: A series of OSPF Flaps
 - 15.15: OSPF Flap
 - 15.35: A series of OSPF Flaps
 - 15.51: OSPF Flap
- March 3rd
 - 11.07: OSPF Flap
 - 11.54: TAC Reports that they have located the issue and can reproduce it
 - 12.16: A series of OSPF Flaps
 - 14.11: A series of OSPF Flaps
 - 16.00: A meeting between TAC and Tuxis engineers to determine the root cause and discuss if there may be other issues that might be overlooked
 - 16.40: Tuxis engineers improve the static routes to limit the impact of OSPF Flaps
- March 4th
 - 10.28: OSPF Flap (Unnoticed)
 - 10.54: OSPF Flap (Unnoticed)
 - 13.14: OSPF Flap (Unnoticed)
 - 13.19: OSPF Flap (Unnoticed)
 - 13.27: OSPF Flap (Unnoticed)

