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Network infrastructure for CZ Tier-2 Center

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The Czech Tier-2 center hosted and operated by Institute of Physics of the Czech Academy of Sciences significantly upgraded external network connection in 2019. The older edge router Cisco 6509 provided several 10 Gbps connections via a 10 Gigabit Ethernet Fiber Module, from which 2 ports were used for external LHCONE connection, 1 port for generic internet traffic and 1 port to reach other Czech institutes hosting some servers of the distributed Tier-2. Three of these connections were realised via one single fiber leading to CESNET (the Czech NREN) routers using the DWDM (de)multiplexers.

A new router Cisco Catalyst 9500 with a 100 Gbps ports enabled an upgrade of the connection to 100 Gbps over the same optical fiber link. However a much lower performance of this router caused problems with NAT. Some of the supported projects were less affected because of usage of IPv6 protocol. To overcome the smaller NAT capacities of the new router, we moved some worker nodes (WNs) to public IPv4 addresses. Not all WNs can use public IPv4 addresses due to their limited availability. Additional server was installed to provide NAT for remaining WNs.

We will also present graphs with a typical traffic out and to the Tier-2 center to compare traffic via LHCONE and generic internet and size of transfers using IPv4 and IPv6 protocols.

Consider for promotion

No

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