Connections from VPN keep dropping

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Issue

Customer was testing the MI by running a loop in a batch from SQLCMD on an VM. If the VM is in the same VNET as the MI, there is no problem. If connecting from a windows client at customer office running through our VPN gateway connection to Azure while the MI is in another Subscription VNET which is peered to the subscription / VNET where the gateway is, customer discovered that very frequently, the connection would be terminated after 40 seconds with error:

TCP Provider:

The connection attempt failed because the connected computer did not respond within a certain time or because the established connection to the host computer is no longer working.

Communication link failure

Investigation/Analysis

https://icm.ad.msft.net/imp/v3/incidents/details/94468849/home

The Azure SQL MI engineering team investigated the issue and confirmed the database itself is healthy and up running. We do have timeouts for idle sessions, but not as short as 40sec.

Since the tests on an VM in the same Vnet does not experience the issue, it appears that Managed Instance is sending Keep Alive response that is somehow lost on some network routing/filtering. The focus should be on VPN

According to https://docs.microsoft.com/en-us/azure/vpn-gateway/vpn-gateway-about-vpn-devices you must clamp TCP MSS at 1350.

Or if your VPN devices do not support MSS clamping, you can alternatively set the MTU on the tunnel interface to 1400 bytes instead.

Mitigation

- Customer tested that setting up a SQL Express instance on a VM on Azure and the connections from this VM work fine

- Customer also identified that the firewall has it´s tunnel interface configured to 1400 bytes. The tunnel pass 1400 bytes packet correct, but 1401 bytes packet needs to be fragmented. Therefore, they workaround it as:
  -- to set the TDS packet size to 1100-bytes
  -- change the SSMS network packet size from the default of 4096 to 1100 on the client side

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