Login failures due to gateway hardware upgrades

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Gateway hardware Upgrades

As Azure Infrastructure improves, we periodically refresh our server hardware to ensure we provide the best possible customer experience. In connection to this effort, Gateway engineering team, plan to add gateways built on newer hardware generations, migrate traffic to them, and eventually decommission gateways built on older hardware in some regions

Currently in the process of migrating servers in the following regions - 1. Japan East 2. West Europe 3. North Europe 4. South Central US 5. Canada Central

Who will be impacted

This change will not impact any in-flight transactions or availability for your database. We shall gradually move traffic away from decommissioned Gateway to one of the other Gateways for the region without impacting any existing connections that may still be using the decommissioned gateway. Any new connections will be serviced by one of the other Gateways.

Scenario & Errors

1. If customer has firewall rules on-premises that depend on IP address of a specific Gateway or if customer is using a custom DNS server that resolves to a specific Gateway, they can expect this error message to be returned when a connection is attempted.

   ```
   A network-related or instance-specific error occurred while establishing a connection to SQL Server. The server was not found or was not accessible. Verify that the instance name is correct and that SQL Server is configured to allow remote connections.
   ```

2. If customer using Microsoft JDBC driver lesser than V4.0, they can expect the following error

```
'A connection was successfully established with the server, but then an error occurred during the pre-lo
```

Start with ASC

We detect this issue thru Azure Support Center for the impacted resources. Please review the impacted timeframe for customers make use of the Insight and the Customer ready content to share recommended steps for Mitigation.

Follow the below troubleshooting if ASC failed to detect or down due to technical issues.

TroubleShoot

1. Do an nslookup for the customer's server to see where it is landing

```
nslookup ea7xmez689.database.windows.net
               Server:  UnKnown
                   Address:  2001:4898::1050:1050
                   Non-authoritative answer:
               Name:    cr3.japaneast1-a.control.database.windows.net
               Address:  40.79.184.8
               Aliases:  ea7xmez689.database.windows.net
                         dataslice5.japaneast.database.windows.net
                         dataslice5japaneast.trafficmanager.net

For JapanEast, the servers were migrated to dataslice5.
You can check the table - Data slices for Migration - to see what is the new dataslice for the region in your
```

2. Use the following MonLogin query to see if the connections to the old CR were successful or not.

```
let incidentReportedTime = datetime('<replace with incident reported time>');
MonLogin
| where originalEventTimestamp between ((incidentReportedTime - 2d) .. (incidentReportedTime))
| where logical_server_name =~ svr
| where event == 'process_login_finish'
                | where package =~ 'xdbgateway' and AppName =~ 'Gateway'
                | where is_success == 1
| summarize count(), min(originalEventTimestamp), max(originalEventTimestamp) by ClusterName

                Example.
                Execute: [Web] [Desktop] [Web (Lens)] [Desktop (SAW)] https://sqlazureja2.kustomfa.windows.net
                let svr = 'ea7xmez689';

MonLogin
| where logical_server_name =~ svr
| where event == 'process_login_finish'
                | where package =~ 'xdbgateway' and AppName =~ 'Gateway'
                | where is_success == 1
| summarize count(), min(originalEventTimestamp), max(originalEventTimestamp) by ClusterName

                ClusterName     count_  min_originalEventTimestamp      max_originalEventTimestamp
                cr2.japaneast1-a.control.database.windows.net   1       2020-09-08 18:30:53.8702356     2020-0
                tr776.japaneast1-a.worker.database.windows.net  2       2020-09-08 18:30:53.9831169     2020-0
```

3. Run the same MonLogin query to see if there is any telemetry for the past 1hr. If you see any incoming telemetry from the client side, then it implies that it is not issue related to Server Migration as they are able to connect to the DB.

```
let svr = '<replace with server name from ICM>';
MonLogin
| where originalEventTimestamp > ago(1h) // you might have to change the duration based on the Customer's Time
| where logical_server_name =~ svr
| where event == 'process_login_finish'
        | where package =~ 'xdbgateway' and AppName =~ 'Gateway'
        | summarize count(), min(originalEventTimestamp), max(originalEventTimestamp) by ClusterName
```

4. Run sqlcmd to see if the database is up and healthy and is able to accept connections

   sqlcmd -S ea7xmez689.database.windows.net -d master -U test -P test

```
Sqlcmd: Error: Microsoft SQL Server Native Client 11.0 : Cannot open server 'ea7xmez689' requested by the
On running sqlcmd, if you see either this firewall error  or login failed for user 'test'  It implies tha
```

5. If you notice error 40532 -> it implies customer likely using VNet and is connecting to the incorrect CR. verify and recommend customer to update their custom setup to use the new CR.

Mitigation

Ask the customer to allow_list the IP addresses present here for the region they are concerned with - https://docs.microsoft.com/azure/azure-sql/database/connectivity-architecture#gateway-ip-addresses

Classification

Root Cause: Azure SQL DB v2\Connectivity\Login Errors\Firewall errors and misconfigurations

How good have you found this content?