

Incident Report

VoIP disruption

Report Date: 15th January 2016

Introduction:

The report below outlines the issues experienced on the VoIP platform between Thursday 14th January and Friday 15th January 2016.

Breakdown of the events:

At approximately 08:50 on Thursday 14th January, we started to receive calls regarding users being unable to place calls using the VoIP Enrich platform. By around 09:25 call levels had become too frequent for these to be treated as individual issues and we raised this to our system engineers for investigation.

Whilst our system engineer's first test was unsuccessful, thereby replicating the reported problem, consecutive tests, which immediately followed, all resulted in successful calls being made, suggesting the problem was of an intermittent nature

Incoming calls reporting the problem were still being received and our system engineers started to investigate the media server logs. In the investigation, it was identified that various AGI scripts that the media servers were running, were not closing off correctly, therefore causing the database to reach its maximum amount of allowed connections. With this in mind, the media servers were rebooted in sequence in an attempt to resolve the build up of open connections. Initial indications following the reboots were that services were behaving as expected. Further testing within the NOC team was also successful and this led to our NOC update at 10:27 advising that we believed service had been restored.

During the next couple of hours it became apparent that issues were still present and our engineers continued to investigate. The maximum connection limit had been reached again and our system engineers believed they had now isolated the problem between the databases and AGI scripts. At this stage the MySQL process for the databases were restarted in addition to the max connection limit being increased. Again, the immediate impact of these actions appeared positive with services again temporarily functioning correctly.

A brief period passed before further incoming calls were received still reporting issues. Our systems engineers at this stage added debugging commands into the AGI scripts in an attempt to ascertain further information such as where the failures were occurring. In addition to this, the Technical Support Team continued to take specific examples from customers who were reporting the issue. This aided the NOC team in the investigation. As further debugging continued it became clear that the connections from the media servers to the databases were failing to complete and therefore some outbound calls were still failing.

The next step in the resolution path was to increase the open file handle limit on the media servers in order to alleviate what was being seen on the server logs and also correct some coding practices, relating

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to database connections and cleanly dealing with error conditions. We were able to apply these changes to the outbound media servers almost instantly on the Thursday afternoon, as we were able to remove each server from the pool individually whilst the changes were applied. For the Enrich media servers, we had to wait until approximately 23:00 that evening to apply the changes in order to minimise disruption to any potential calls in progress.

In the early business hours of the January 15th, further reports were still being received relating to the placement of outbound calls. It was apparent that the failure rate was more infrequent than the previous day due to the actions taken, however further exploration was still necessary and upon further testing we were again able to replicate the problem on our side. With the databases and media servers having been investigated the previous day, focus changed to the proxy server. During examination, we could see that the proxy process was intermittently getting into an abnormal state and therefore a restart of the process was performed.

Following this, users of the service started to retest and at approximately 09:00 we received confirmation from multiple customers that the services was now stable, which reinforced the testing already carried out by NOC engineers. There were however still a small amount of users who were still unable to place calls through the platform.

Our system engineers looked into any common elements between the users who were still unable to place calls and were able to trace a further issue to one of the Enrich media servers. Investigation showed a syntax error had been made during the debug process the previous day. This was corrected at 09:43.

Following the change, monitoring of the service showed no further issues and no further reports were received from users.

It is acknowledged that the incident took longer to resolve than we would expect and following a postmortem on the incident, Entanet have increased the logging capability on both the Enrich media and proxy servers. This will help us both isolate and identify issues in the future in a more efficient manner.

We apologise for any inconvenience caused by this incident.