

Service Incident Report

Horizon Major Service Outage – Wednesday 14th November
2018

V 1.0

16/11/2018

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Version Control

| Version Number | Name | Date | Change |
|----------------|---------------|------------|----------|
| 1.0 | Adam Franklin | 16/11/2018 | Creation |

Purpose of Document

This document gives details provided to us by our supplier regarding the national major service outage to the Horizon cloud telephony platform.

Incident Summary

Loss of Horizon connectivity and audio related issues during the outage.

Incident Details

Horizon users will have experienced registration issues on their Horizon devices between 08:55 and 17:45 on Wednesday 14th November. Devices which were able to register may have experienced audio issues on connected calls until 17:45.

The incident occurred due to a bug being discovered on the platform in the early hours of Wednesday 14th November. This bug prevented a large proportion of Horizon phones from registering and sending subscription updates to the platform. Although the bug was resolved at 10:18, the impact of the volume of re-registration attempts, coupled with peak call traffic created instability on the wider platform. Our engineering teams were engaged with technology partners that support various part of the Horizon platform for the remainder of the day, introducing various measures to stabilise the platform.

Progress Details

Wednesday 14th November

02:00 – Gamma Engineers completed scheduled planned works which was to carry out a restart of the servers within the Horizon platform, this work completed successfully including all post change monitoring.

04:26 - Gamma NOC teams observe alerts related to one of the servers within the Horizon platform, this was passed onto the core engineers for investigation.

04:55 - Gamma engineers engage with Technology Partners and senior engineers to investigate the issue further.

05:26 - A restart of the affected server is completed and clears down any further alerts, dialogue remains ongoing between Partner and core engineers on the root cause.

08:55 – The NOC receive multiple alerts indicating connectivity issues to a specific Horizon server. These connectivity issues would have impacted a small subset of Horizon users.

09:40 – Due to the impact on internal systems and users reporting issues with ‘Busy Lamp Fields’, the MSO process is triggered, and an incident bridge is opened. Update issued to Partners acknowledging service impacting incident.

10:18 – Gamma’s Engineering team, in discussions with the technology partner, apply an emergency patch to resolve the connectivity issues for the impacted users this was in conjunction with the earlier root cause analysis and issue observed at 04:26am

10:58 - Following the application of this patch and subsequent reboot of the server, initial retests indicated that some services had started to recover. At this point we started to observe some high traffic utilisations across the platform Access SBC’s.

11:16 - Gamma identified the connectivity issues were occurring on other servers, this would have impacted a larger volume of customers than the original incident. Technology partners for both the platform and Access SBC’s were engaged to investigate the root cause with the focus being the high utilisations across the access SBC’s

11:30-14:30-Gamma and Partners work to alleviate the loading on the access SBC’s to restore services, the works involved failovers of the each of the four SBC’s and also implementing traffic controls at the IP layer and removing the secondary choice SBC’s from configuration to allow recovery to occur.

14:50 - After performing some changes on core equipment we identified a significant uplift in the number of handsets successfully registering from approximately 14:50. A number of these registered handsets were also reporting media issues.

16:25 – Following ongoing discussions between Gamma’s Engineering teams and our Technology Partners, a configuration change is applied on the access SBCs to reduce the handset registration refresh this further change improved the stability of registered handsets. The change was applied on one SBC at time and monitored.

17:00 – The configuration change has had a positive impact and is therefore rolled out across all impacted servers. Subsequent test calls and monitoring of active registrations confirms devices are registering and handling calls as expected.

17:48 – Change rolled out across all servers and traffic levels restore to expected levels across the Horizon platform.

22:00 – Gamma’s Engineers commence emergency planned works to apply the patch across all Horizon servers.

Thursday 15th November

01:00 – All patches applied, and subsequent tests confirms devices are registering successfully.

Corrective Action Taken

Gamma's Engineers applied a configuration change which allowed the successful registration on the Horizon platform across all impacted servers. This change was to allow unregistered devices to connect to and register with the platform in a timely manner.

Additional Comments

The initial incident occurred between 08:55 and 10:18 and impacted a subset of Horizon users on a specific server. This outage was caused by the restart of the server earlier that morning and a bug was then triggered causing a memory leak across the server. Working with the Technology Partner we applied a patch to resolve the memory leak however the subsequent restart of the server resulted in device registration and subscription issues across the Access SBCs.

The outage from 10:18 until 17:45 was due to the volume of devices attempting to register or send subscription messages (handset status updates) across the SBCs concurrently, a number of devices would have registered successfully however may have experienced media related issues throughout (one-way audio, no audio). Due to the increase in traffic volumes, the SBC went into a protective mode which enables them to continue to operate at a level that prevents them from becoming overloaded. The devices are designed to reattempt registrations on alternate servers if they can't connect to their primary and this behaviour therefore resulted in the increase in signalling traffic and a subsequent wider registration issue.

From our analysis, all pre-configured and active DR plans would have continued functioning as expected provided they were routing to off-net numbers (i.e. non-Gamma). Users may have experienced issues logging onto the Gamma Portal to activate or amend any of the following services throughout this outage.

- Call Diverts/Forwards
- Twinning
- Remote Office
- Sequential Ring

During this incident users will also have experienced issues logging onto and applying changes on the Horizon Portal. This was due to the volume of access requests and users attempting to make changes via the Portal. This will be reviewed as part of our major outage analysis and we will investigate how we can ensure that users can access the Portal during similar incidents.

Steps taken to stop reoccurrence

Gamma has implemented the following changes following the outage:

- We have normalised all changes made during the incident to aid recovery across both handsets and SBC's.

- We have applied the patch across all Application Clusters and Network Servers to mitigate a repeat of the issue.
- Analysis of platform and SBC logs are being analysed by our vendors to ensure the issue is fully understood.
- We have seen stability throughout Thursday 15th November.
- Investigation into the portal issues and capacity to deal with situations as per yesterday.

In addition to the above, we are conducting a full review of the server protection behaviours to ensure we can isolate and recover from any similar incidents without impacting the wider Horizon base. We will also review the bug with our Partner to identify how we can implement any service improvements around how we manage and deploy any patches on the network.

Comments from Eclipse

This has been an unprecedented outage for the Horizon platform which was further compounded by our inability to access the Horizon admin system to apply emergency diverts.

Eclipse have championed Horizon as a solution to the SME market since the product launched and still believe it to be the leading cloud telephony product available in the UK. We have been provided with detailed information on how the fault occurred and was resolved. Our supplier has also provided us with information on what they have done to stop a reoccurrence and we will continue to engage with them to ensure that those actions are adequate

Eclipse were part of a call with the CEO and COO of our supplier who said the incident highlighted that they could have been more forthcoming with updates and endeavour to look at their communications process for major service outages in future. This is welcome news to Eclipse as we believe sometimes the lack of updates can be perceived as a lack of urgency or work being done to rectify the problem which can damage our reputation with our customers.

How Eclipse Responded

Eclipse use Horizon internally and were also affected by the outage. We invoked our business continuity process and fell back onto our DR phone system which ensured we could still answer phone calls from customers and allow recorded announcements to keep customers informed.

Phone

As soon as we started to receive calls from multiple customers logging total loss of service faults we contacted our supplier to confirm if there was a major outage.

To ensure customers were kept up to date we added an introduction message to our main number to give details of the fault. Any updates we received from our supplier would be added to that message, so customers could stay up to date.

Eclipse have an overflow call centre, based in the UK, that handle our calls when our customer service team are all on a call. They were kept up to date with details of the fault so that they could inform any customers that came through to them.

Social Media

Both Eclipse Networks and Eclipse Wholesale twitter accounts were updated with details of the fault when they came through from our supplier.

Website

Our website “outage” status was invoked on our website and details of the fault could be found on our support page, found at <https://eclipsewholesale.co.uk/support/>

Going forward

We believe that Eclipse responded well to the incident, both in communicating available updates to customers and that our business continuity measures allowed us to still support the rest of our product stack and communicate with affected customers.

We did receive some feedback that we could have been more proactive in how we communicated the fault as customers had to either call us, check our website or social media. We are going to investigate implementing an email alert system to allow us to notify customers of an outage and updates, so customers don’t need to contact us for updates.

One thing highlighted by our supplier that any DR settings on the platform before the outage started would have still worked. If customers would like to nominate a number to add to their system that calls should go to when your phones are unreachable, please contact our customer service team who should be able to set this up for you.

Complaints

Eclipse are aware that many businesses rely on their telecoms to run their businesses and being without them can be stressful to staff and their customers. This is an unrepresented outage of the platform that has affected thousands of businesses across the UK.

If you wish to raise a formal complaint regarding this or any other matter, our complaints process can be found on our website:

<https://eclipsewholesale.co.uk/media/90734/complaints-procedure-2018.pdf>