**10/6/21**

**Incident:** Website down after use of new WP plugin (ShortPixel Image Optimizer). Downtime = 30 hours. Temp site launched and up for half of total downtime.

**Steps:**
1. Attempted to access Lightsail instance. Could not SSH into instance via browser, SFTP, PuTTY, nor Linux command line. Hence, could not access logs nor remove plugin.
2. Reviewing network performance, the CPU was frequently in the burstable zone before the crash. High memory use suspected cause.
3. Online forums with AWS support offered variety of explanations - most prominent being that high CPU usage in an instance can cause the instance to "perform poorly", and identified SSH being unavailable as possibly related. Solution offered was to scale up the instance size.
4. Created a new instance with more memory and higher processing power from a backup snapshot of the instance.
5. After connecting static IP address and distribution to new instance, the site was still NOT working. I was unable to access this new instance via SSH.
6. Stopped/started/rebooted the instances several times through this process. At some point, the original failed instance moved to 'pending' status and remains there.
7. Reset the firewall settings on the instance to allow SSH through port 22. No change. I reset all firewall settings. No change.
8. Checked my machine's firewall settings. I attempted to access instance via a different IP address. I disabled my ubuntu firewall. No change.
9. ** At this point, I created a temporary WP site via the domain host (GoDaddy) and purchased a SSL certificate for the domain. The temporary site included an 'under construction' notice, contact information, and scheduling portal.
10. Created a snapshot of the root disk via the AWS command-line interface (CLI).
11. Created a new system disk from the root disk snapshot and added startup scripts to stop/start SSH.
12. Mounted the disk to a brand new instance. SSH works on this new instance!
13. While SSH works on the new instance, I did not have XML files of WP backed up to restore the site. I could not locate any WP files on the system disk
14. Returned to Lightsail. I created a new instance from the original Sept 16 instance snapshot (backup). I included startup scripts to start/stop SSH. New instance included more memory and more CPU than og.
15. It worked -- sort of. I could access SSH but the site was still down. I continued to receive 502 and time-out errors.
16. Recreated the Lightsail DNS zone and attached to instance.
17. Reset nameservers with domain host.
18. I could access cPanel and WHM, which made me suspect some sort of misconfiguration at this level.
19. Investigated cPanel and Lightsail misconfiguration issues -- found solution! When a new instance is created, even though the Public IP address is static and the same between

instances, the *private* IP address changes. cPanel sometimes does not automatically detect this change.

20. Changed cPanel config to include new private IP address, following WHM IP Config Wizard guide.
21. Waited for changes to propagate so I could delete the old private IP address.
22. Huzzah! Site configured and working properly.
23. Cleaned up unnecessary AWS instances and forced stop to 'pending' instance.

**Cost:**
- Temp Site during downtime: 1 month hosted WP with GoDaddy ($12)
- SSL certificate for domain with GoDaddy - valid 1 year ($39)
- AWS Tech Support request - *unanswered* - $29
- AWS charges for instance runtime during this repair process.
- Scale-up cost for larger instance.

**Result:**
- Site restored with 3-week old backup.
- WP temp site ready to go for any future downtime of primary site.
- Resources are scaled up.

**Lessons:**
- Back up instance more frequently, and especially before using any new plugins.
- Back up WP XML files locally or in alt location than Lightsail.
- Set alarm on Lightsail instance for high CPU usage to allow us to scale up before problems begin.

**Cause:**

I remain unsure of the exact cause of the instance failure. I suspect that the newly installed plug-in used a lot of memory and slowed the instance to a halt. I do not understand why this caused an error with SSL access, nor why the instance became completely unreachable ("pending"). The plugin settings may have been configured incorrectly, causing some sort of corruption.

**Next Steps:**
- Restore website functionality/content lost from last 3 weeks manually.
- Set alarm on new Instance for high CPU usage.
- Investigate any potential issues with cPanel/WHM or CDN configuration.