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Assessing the Impact a Citrix Upgrade has on Essential Services in a Healthcare Setting

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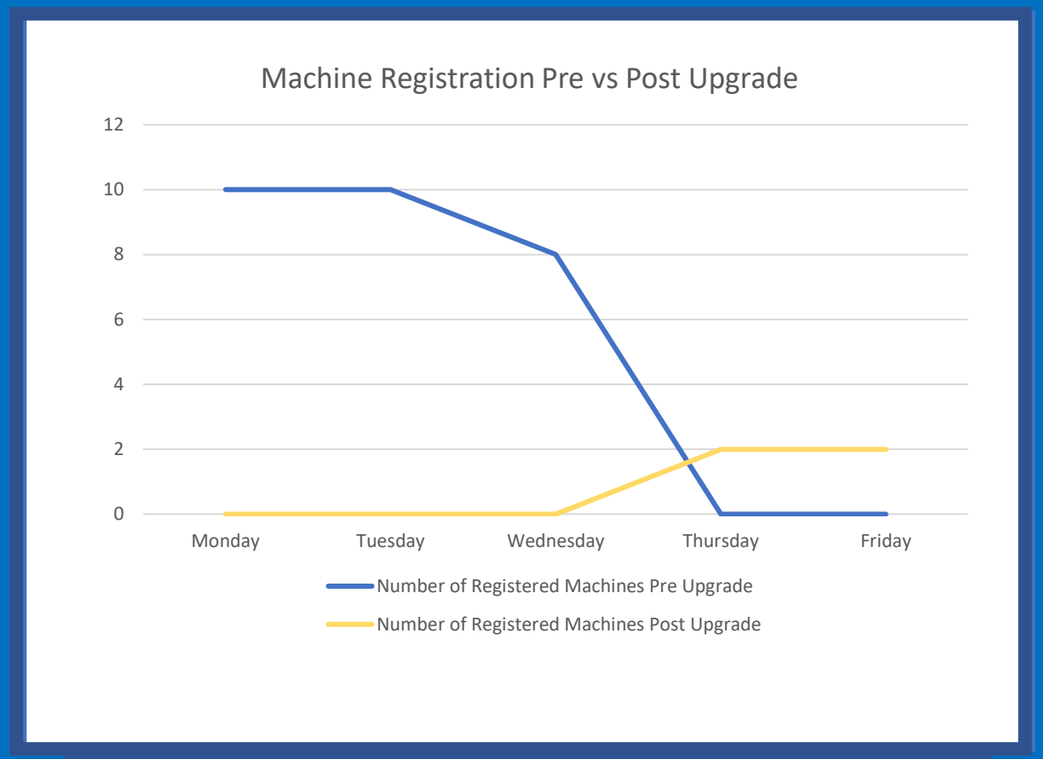
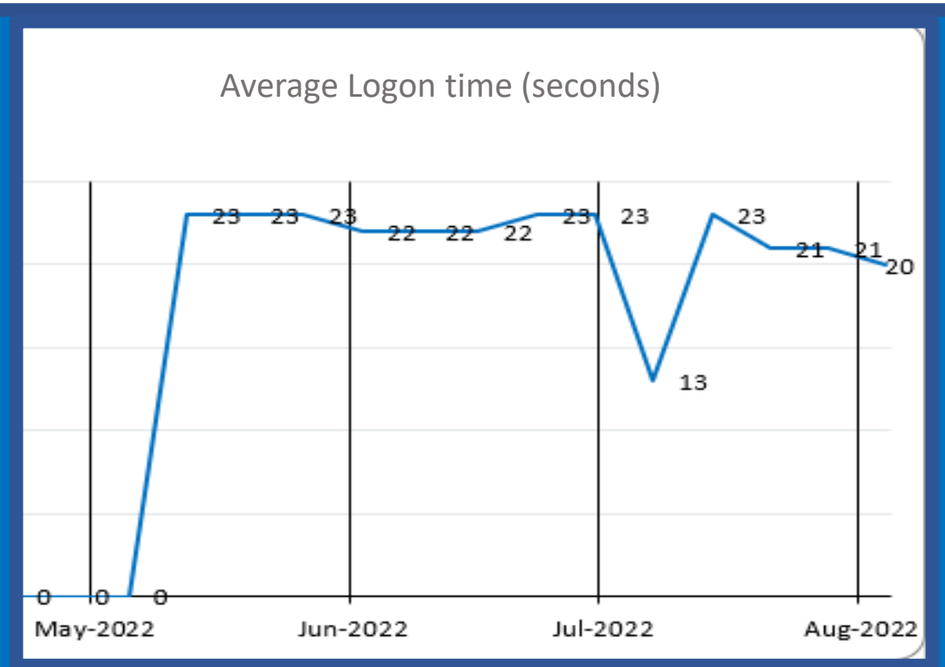
1. This project aims to establish whether essential services provided by Digital Health and Care Wales (DHCW) would benefit from upgrading to the latest version of Citrix (1912). DHCW provides technological solutions to sites across NHS Wales, aiming to improve the staff and patient experience. One of the services provided is called Canisc, a database application for Cancer patients in Wales. Canisc is delivered to staff using Citrix, meaning they can access the application on any device. However, the version of Citrix is outdated and is causing poor performance within Canisc.

2. The Canisc application is delivered to NHS Wales users using a virtualization solution called Citrix, more specifically, a Citrix product called Citrix Virtual Apps and Desktops (CVAD). CVAD delivers applications and desktops through a dedicated storefront, giving users the ability to work anywhere and on any device, so long as they have the Citrix workspace application installed.

3. The Citrix team must establish if upgrading the Canisc Citrix environment to the latest version will improve the performance and devise a plan to carry out the upgrade in a way that will not affect the service performance. To do this, the following objectives have been established:

- Assess the viability of upgrading Canisc
- Review current literature around the topic of upgrading Citrix, particularly looking at case studies
- Work with the Canisc support team to establish whether the upgrade must be carried out during working hours or out of hours
- Establish a step-by-step plan on carrying out the upgrade, including backout plans in the event of errors
- Document the upgrade, carrying lessons learned to future Citrix upgrades
- Obtain feedback from users to assess the impact the upgrade has had on end user experience





4. The upgrade was carried out successfully with minimal issues encountered. Several metrics were used to understand the impact the upgrade had on the delivery of Canisc to end users. Two of these metrics are represented in the graphs to the left. The first graph covers machines that were booting up in an unregistered state pre upgrade vs post upgrade. Before the upgrade, it was a common occurrence for machines to boot up inregsitered, meaning end users were unable to access them and the service was offline. It was hoped that the upgrade would resolve this issue. The graph shows that, following the upgrade, machines were still showing as unregistered following a reboot, although the number of unregistered machines appears to be less. This will be continually monitored by the Citrix team but at the time the data was recorded, it appears to have not resolved the issue. The second graph represents the number of seconds taken for end users to log on to the Canisc environment. The data before the upgrade shows the average log on time was 23 seconds. Following the upgrade, the time taken to log on appears to be on a downward trend. Though the time taken has only decreased lightly, this can be considered a success and it will be hoped the downward trend continues.

5. Based on the success of the upgrade, although not as successful as initially hoped, it can be recommended that the Citrix team upgrade all Citrix environments to a minimum of Citrix 1912. The patching of known security issues is enough of a reason to recommend this, however, to have all environments on the same Citrix version allows of consistency across all Citrix sites. This is a goal the Citrix team have wanted for some time as it is recommended by Citrix to have consistent Citrix versions. the improvements that have been noticed immediately following the upgrade, like faster logon time and the security fix, ensure the Citrix team know that the upgrade was worth carrying out and can be considered a successful and essential task.