

# Technical Bulletin

## Performance – Horsham BU Findings

*Issued: February 13, 2007*

**Summary:** The MedPlus Development team learned in late December that the Horsham BU has issues related to Portal slowness that seemed to be over and above the level normally reported by other BU's. While some performance issues were known and already being looked at, there were several reports that seemed specific to a more localized issue such as extremely slow load times for the order entry screens (i.e. 45 seconds to over 1 minute).

David Rapperport (Quest Tech Services) and John Koehl (MedPlus Development) traveled to Horsham recently to look into specific examples of the slowness issue. They met with Karen Rogan, Joe Agnew, Tom Wojciechowski, and Bill Abate, from the BU.

### ***Original Issues Reported***

- Slow load time for order entry screens (both Express and New Order)
- Slow login times
- Page to page slowness
- Stability issues on client side (lockup or browser crashes)

### **Findings/Actions:**

- **Quest 510 Images with Windows XP Image** - Some speed issues are tied to the Quest hardware and image combination sometimes deployed in the field. This combination will not work due to the extremely low memory in these models. Quest IT has made the newer XP images compatible with this older hardware but this is not a practical combination.
- **Quest 530 Image Compared to 7600** – One customer complained more about “stability” issues and not specifically slowness. They have both a newer 7600 and an older 530. The client stated the 7600 is fine but the 530 had issues with lockups and crashes. This seems to point to either an isolated hardware issue or another indicator that the more modest Quest hardware may not run optimally with the newer XP images.
- **Bandwidth to QDC vs. MPDC** – One surprise finding was a consistent difference between the bandwidth speed tests we ran to both the QDC (Quest Data Center) and the MPDC (MedPlus Data Center). It turns out this difference is seen all over the country and is not specific to access from the Horsham BU.
- **Verizon DSL Slowness** – This ISP appeared to have poor bandwidth compared to the AT&T DSL and Comcast Cable connections. This is not always an issue because even the slowest client visited seemed to not have issues related to bandwidth when we tested the applications but

- some screens in the applications can get larger and it isn't clear if this is the slowest of the DSL customers either.
- **Verizon DSL Filtering** – It isn't clear if this is an issue but it was noted that even after clearing all router filters (that normally block non-Quest sites) we were still not able to access non-Quest sites. Using the AT&T DSL we were able to get to non-Quest sites using a router that was cleared.
  - **Page Cannot Be Displayed After Restart** – After a restart the first attempt to get to the network is not successful and therefore the user gets a browser error. It is especially apparent for customers with the “auto logon” feature enabled since after a restart the first thing displayed is usually an error page and they have to know to hit F5 to get past it. This is a known issue but it is being seen in the field with the latest images.

Some of the slowness reports are likely to have been caused by one or all of the following issues:

- **Underpowered hardware** – Some hardware is not suitable for the newer XP images. The biggest constraint is most likely the memory which by default is 128MB on the 510 models. Some other models such as the 530 may not be optimal with 256MB but more testing is needed to verify. If physician portal was sometimes rolled out by imaging existing customers with the new XP image and leaving the original hardware it could explain why the complaints correlated to the new Portal customers.
- **Application performance issues** – Several system wide performance issues have been identified and addressed that would have been seen as intermittent slowness. There still some known slowness issues with logins related to the “Today” page counts and a few other screens such as find results.
- **Poor ISP Connectivity** – We did not witness “unusable” connections but saw a very large spectrum of speed between the Verizon, AT&T, and Comcast connection speeds. If the lower end speeds got much worse it would likely perform slowly enough for users to complain. We would generally not want to see download speeds from QDC or MPDC lower than 30K to be useable and would prefer them to be much higher on average.