
HP ENVIZEX Family of X Stations

Informix Wingz[®] Performance Brief

September 1993



The HP ENVIZEX stations provide an excellent low-cost graphical user interface for use with Informix Wingz.

This performance brief will help you understand the performance and system configuration issues related to running Informix Wingz in an HP ENVIZEX station workgroup. Conclusions and recommendations are based on tests done recalculating and graphing worksheets on varying numbers of HP ENVIZEX stations and using various amounts of host memory on an HP 9000 Model 715/50.

Informix Wingz is a graphical worksheet program with more than 140 functions for worksheet analysis ranging from simple math to statistical and financial analysis. Users can combine text, 2-D and 3-D charts, scanned images, freehand illustrations, and worksheet data. Users can create custom applications using HyperScript[®], the Wingz built-in programming environment. HyperScript's Learn mode allows novice users to record and replay commands, while expert developers can use HyperScript to develop sophisticated applications. Wingz also serves as a graphical, easy-to-use front end to Informix database products.

A complete family of RISC-based X stations

Number of HP ENVIZEX Stations Supported by Informix

Performance was rated good by an expert user during testing on an HP 9000 Model 715/50 when the combination of HP ENVIZEX stations and host memory was as shown in Table 1.

Table 1: No. of X Stations Supported by Informix

Mbytes of Host Memory	Number of Light Users	Number of Heavy Users
16	4	2
32	7	6
64	12	9

During testing light and heavy users were differentiated by the frequency of demands on the host resources. A light user made a demand every six seconds while a heavy user made a demand every three seconds. The same size and number of worksheets were used for light and heavy use.

HP ENVIZEX Station Functionality

The HP ENVIZEX stations provide the same functionality as a workstation and therefore are an excellent alternative to a workstations for Informix Wingz users.

Host System Requirements

Total host system RAM required is the sum of the Mbytes required for the operating system plus the first and additional users of Wingz and other X applications. In general, performance is excellent as long as host system RAM is available. Once host system RAM is exhausted, disk paging and then swapping will

will occur and cause performance to degrade. Table 2 shows the host resources used during the test

Table 2: Host Resources per User¹

Host Resource	User Type ²	Mbytes
Host System RAM	HP-UX Operating System	8 to 10
Host System RAM	First Wingz User	2.5
Host System RAM	First Other (mwm, hpterm, xload, xclock) User	1.5
Host System RAM	Each Additional Wingz User	1.2
Host System RAM	Each Additional Other User	1.5
Swap Space During Test	Each Wingz User	2.5

¹ Host resources are a function of the quantity and size of the worksheets. These values are for eight worksheets.

² The host resource values are the same for light and heavy users because the same worksheets were used for both simulations.

Table 2 gives the amount of host RAM required to yield excellent performance. Table 1 gives the number of HP ENVIZEX stations that can be supported with good performance. Performance dropped from excellent to good because unused portions of the operating system and application software were being paged out to disk. Performance declines from excellent to good when paging occurs, and from good to unacceptable when swapping occurs. Therefore performance is good with the number of HP ENVIZEX stations shown in Table 1; however, with additional memory performance would improve.

Description of the Test

Testing was done on an HP 9000 Model 715/50 with 16, 32, and 64 Mbytes of memory. HP ENVIZEX stations were added until host resources were strained and performance became unacceptable. Each HP ENVIZEX station ran mwm, hpterm, xload, and xclock. One X station was dedicated to interactive testing and the remaining HP ENVIZEX stations ran a HyperScript application to simulate light and heavy user environments.

Using real-life worksheets, the HyperScript application simulated the productions of a 3-D bar chart (from a 3 rows by 3 columns range of data), a 2-D pie chart (from a 12 rows by 2 columns range of data), as well as interactive recalculations of a worksheet (50 rows by 3 columns). At each point where operator input would normally be required, "think time" delays were inserted (three seconds for heavy users, six seconds for light). The HyperScript application continuously repeated the cycle of opening worksheet files, operating on the data, and then closing the files.

An expert user then rated the interactive response of mouse and keyboard inputs. The HP ENVIZEX station performance was compared to the performance of the HP 9000 Model 715/50 running standalone, then HP ENVIZEX stations were added until the performance became unacceptable. Performance was unacceptable when the display took longer than one second to respond to menu selections or text input.

HP ENVIZEX Station RAM Requirements

Local RAM requirements for the HP ENVIZEX station depend on the number and contents of the windows that are opened. The HP ENVIZEX station memory usage during testing with Informix Wingz was less than 2.5 Mbytes. The HP ENVIZEX station comes standard with 6 Mbytes of RAM and therefore additional memory is not required to use Informix Wingz.

Network Loading

For satisfactory performance with HP ENVIZEX stations, total network loading should be kept below an average 25% utilization. With Informix Wingz, network loading is not a limiting factor. During testing, network loading on a dedicated LAN segment averaged at 6% and peaked at 13% when up to 12 users were tested.

Test System Configuration

The server was an HP 9000 Model 715/50 with 16, 32, and 64 Mbytes of RAM and two 525 Mbyte disk drives configured with 270 Mbytes of swap space. The operating system was HP-UX 9.0. The application software was Informix Wingz version 1.1a. Motif Window Manager (mwm), hpterm, xload, and xclock were also running to simulate a typical user environment.

The HP ENVIZEX stations were model 19Ca (P/N C2731A option 191) with the standard 6 Mbytes of RAM, the B.05 X server software, and 19 inch color monitors with 1280x1024 resolution.

Disclaimer

The information contained in this report is simply meant to give you basic guidelines and recommendations for configuring a solution that consists of HP ENVIZEX stations and Informix Wingz. Test results are highly dependent on user profile and system configuration and have not been verified to the extent to guarantee accuracy.

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