

## IV. GIS AND THE TIBER VALLEY

### THE TIBER VALLEY PROJECT AND INTERNET MAPPING

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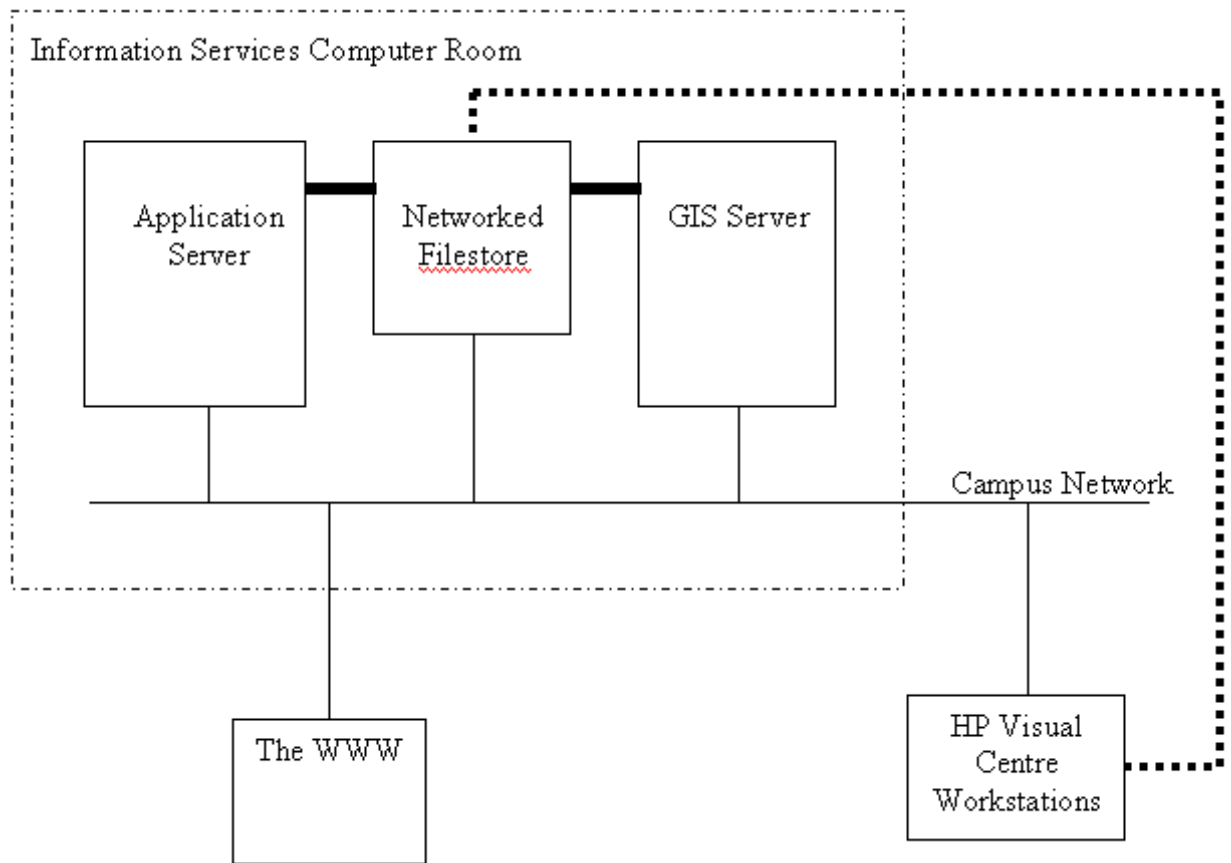
Digital mapping systems lie at the heart of the Tiber Valley Project and the output, either as conventional GIS or remote sensing imagery, undoubtedly provides some of the most dramatic imagery associated with the project. Of course, the utility of digital imagery goes far beyond the production of alluring images. It is difficult to imagine how the massive temporal and geographic databases that form the primary data resource of the project could be managed without such systems. For instance, the massive remote sensed data sets from Forum Novum or Falerii Novi could never have been either collected or processed without powerful computers and software whose primary aims are to capture, store, manipulate and display digital geographic data. Given the importance of technology to the project there has also been a significant investment in experimental applications. These have included extensive time-sliced GPR survey as well as the beta testing of mobile computing as part of the work at Forum Novum. Within this context the significance of digital mapping systems to the academic aims of the project and the extent of the geographic databases available to researchers should be clear to any researcher. As a consequence considerable investment has been made in the development of the project digital database and it is now an impressive testament to the project and its participants.

Given the acknowledged need to innovate within the project it is unfortunate that so far one area in which the project has remained relatively conservative is in the application of core GIS technologies, undoubtedly due to constraints upon time. Currently the project has invested essentially in basic GIS or imaging products – essentially ESRI Arcview, ERDAS IMAGINE and, more recently, ARCGIS. The characteristic of these softwares is that they are relatively complex softwares with a significant learning curve and that whilst filestores may be shared the database is essentially a minimal user environment. As a consequence it is often difficult for many people to use the entire database efficiently. Experts may be frustratingly reliant upon data managers to provide important information and data managers may often be hard pressed to service the relatively (computationally) trivial, but potentially time consuming, needs of experts.

A collaboration between staff of the British School in Rome, the Institute of Archaeology and Antiquity at the University of Birmingham and the HP Visual and Spatial Technology Centre is now seeking to implement a web-based solution to these particular problems. The HP Visual and Spatial Technology Centre is an extremely recent addition to the Institute and was, in fact, formally opened by Professor Andrew Wallace-Hadrill on March 12<sup>th</sup> 2003. Sponsored by HP, and supported by a range of industrial partners including FAKESPACE, REACHIN Technologies, AVS, ESRI, LEICA, CFX, INFOTERRA, and GSSI, the Centre is equipped with computationally intensive devices including a scaleable SV6 visualisation centre but also an internet mapping service.

Using ESRI ARCIMS software the research group is beginning to implement high-end geographic information systems and mapping services via the Internet for the project. Internet mapping software enables users as well as data managers to integrate local data sources with Internet data sources for display, query, and basic analysis in an easy-to-use Web browser. With base data made available in a relatively easy manner

and direct to any machine with a web browser, project staff can carry out primary interrogation of project data and basic GIS procedures directly, freeing data managers to carry out system maintenance or enhancement and freeing expert staff from the requirement of extensive GIS training to access essential data.



- (Real or virtual) private network link between servers and storage
- ..... (Real or virtual) private network link between visualization centre workstations and storage. Gigabit enabled.

**Figure 1: Conceptual overview of server configuration in the HP Centre**