

Table 13

User-based versus Hosted Database Management Systems (DBMSs): Breakdown by Installation and Support Activities

Feature or Requirement	User-based	Hosted
Hardware	At least 4 GB of RAM, 5 GB of hard drive space, and two cores.	Requires a server or virtual machine with at least 16 GB of RAM, 100 GB of hard drive space, and four cores. The supporting department may charge a fee.
Software licensing	None if a free DBMS or hosted DBMS is involved.	None unless using a commercial tool without available licenses; then it can be very expensive. The supporting department may charge.
Installation	The student is required to install the software.	The student installs only a client. The instructor must ensure that the DBMS is installed and configured correctly. The supporting department may charge.
Networking/firewall pass-through/VPN (virtual private network) access	None for a local installation.	The server must be accessible off-campus (especially with the growth of distance education in health informatics and health information management programs). This need requires collaborating with the information technology (IT) department to allow access to the machine, whether by direct firewall pass-through or VPN access. Also, if the network is down, students cannot access the system. The supporting department may charge.
Technical support	The instructor provides technical support because a university/college resource is not in use.	Generally, the hosting department, such as IT, will provide support, which frees the instructor from those responsibilities. However, the supporting department may charge.
Assignment setup	The student is responsible for properly importing files.	The instructor can preload data into student schemas.
Assignment assistance	Questions require emailing structured query language (SQL) files and ensuring that data files are correctly imported.	Questions are generally easier to deal with because a shared space is available (i.e., the instructor has access to the student's data), but SQL files are still emailed.
Database administration instruction	Simple because the student is the system administrator.	Difficult because a protected environment must be established for each individual student. This task requires extensive planning and configuration by the instructor and the supporting department, which, again, may charge.
DBMS security	Nothing additional because the installation is stand-alone.	Each student must be provided a fully encapsulated environment. Their privileges must constrain them to their space (e.g., they cannot be allowed to crosswalk into other students' schemas or databases), yet allow the functioning of Data Definition Language (DDL) and Data Control Language (DCL) commands.