PANEL 3

Database Technology for Reliable Systems: Issues, Impact, and Approaches

M. Morgenstern, Xerox Corporation (Chair)
Other panelists to be announced.

Design decisions in data modeling, logic databases, distributed databases, locking algorithms, and query languages have significant impact on whether the resulting system will be trustworthy and reliable, or whether the system will be as weak as the least trustworthy user or application program.

Security research is concerned in large part with reliability and trustworthiness of systems. Such work helps protect against user errors that could corrupt or destroy data as well as protecting against malicious users. Security issues are no longer just in the domain of military systems. Commercial and financial systems as well as corporate information networks are increasingly concerned with the trustworthiness of the distributed database systems on which they rely.

Meanwhile, it is important to extend collaborative systems to include multiple organizations engaged in joint ventures. Collaboration often involves shared access to common data, and with this comes the need for access controls and authentication. Organizations also are concerned with protection of proprietary information; flexible controls are needed in order for such protection to not stifle mutually beneficial collaboration.

Some of the other controversial issues we will address include:

1. What changes in database design will increase the reliability of data?

2. Are the design and performance costs of a secure/trustworthy system worth the benefits?

3. Can database technology facilitate wide-area collaboration, and what are the tradeoffs between security and accessibility of data?

4. Which approaches and security models are appropriate for different applications, and how do these models support change and evolution?

5. What can we learn from those otherwise good systems which failed because of malicious or accidental intrusion?

The IFIP Working Group on Database Security has scheduled its technical meeting to immediately precede the VLDB conference this year in order to help foster increased technology flow between these two sister organizations. This panel is a primary vehicle to accomplish such technology interchange. The panelists will include database researchers who have published in VLDB or similar database conferences, designers/implementors of database systems, and practitioners having experience with secure and unsecured systems.