

WHAT IS XSP?

WHAT IS XSP? Extended set processing (XSP) is a formal means for manipulating data as a mathematical object instead of as a physical object.

HOW DOES XSP DIFFER FROM TRADITIONAL DATA PROCESSING? XSP implementations access and manipulate data in terms of the mathematical identity of the data representation. Traditional systems access and manipulate data in terms of artificially imposed data representations. It is the underlying mathematical foundation of XSP implementations that provides the ability to capture the intrinsic relationships within data, no matter what the data representation might be.

DO XSP IMPLEMENTATIONS USE INDEXES? XSP implementations may use indexes for unique record access, when appropriate. However, when multiple records are required for query processing XSP relies on informationally dense I/O transfers with minimal disk accesses. This has shown to greatly improve performance over indexed access when large volumes of data are being processed.

WHY ARE XSP IMPLEMENTATIONS SO FAST? XSP implementations can leverage CPU power for informationally dense data access and restructuring, while traditional systems must rely on I/O strategies for informationally sparse record-oriented data access. CPUs are fast, I/Os are slow.

IS XSP USER-FRIENDLY? XSP is user-friendly in that it is totally invisible to users of XSP based systems. All user interfaces can be used in conjunction with XSP implementations since XSP implementations rely only on the data relationships expressed by an interface and are not burdened by any specific choice of user's view of the data.

WHAT IS AN iXSP INFORMATION ACCESS ACCELERATOR? iXSP is a small software collection of mathematically based functions that extract information from data. iXSP requires no intervention with existing system implementations and requires no pre-structuring of data. Basically, an iXSP operation opens a file, streams data through the iXSP operation, distills and saves relevant information, then closes the file.

CAN XSP IMPROVE INFORMATION ACCESS FROM DISTRIBUTED DATA? Unlike 'Black Hole' technologies (where the more data that is concentrated in one place, the harder it is to extract information), XSP operations can be simultaneously broadcast to remote XSP installations allowing extreme parallel distributed processing. Resulting information can then be kept or sent to desired locations in informationally dense transmission packets.

WHAT IS MEANT BY AN XSP OPTIMAL SOLUTION? Since XSP solutions separate logical data access requirements from physical data representations and since the set-theoretic foundation of XSP implementations allows for severe exploitation of parallelism, any mix of available hardware capabilities can be chosen to match the intrinsic performance limit of a chosen application.

WHAT ARE SOME COMMERCIAL INSTANCES OF XSP SOLUTIONS? Multi-terabyte database for **Prudential Insurance**. Warranty Information Management for **General Motors**. Distributed data access for **Union Carbide**. Data analysis for **USDOT**. Radar data processing for **FAA**. Nation wide Clinical and Financial Information Service for **Arthur Anderson**. Equipment failure analysis for **DELCO**. Oil well productivity analysis for **Petroleum Information Systems**.