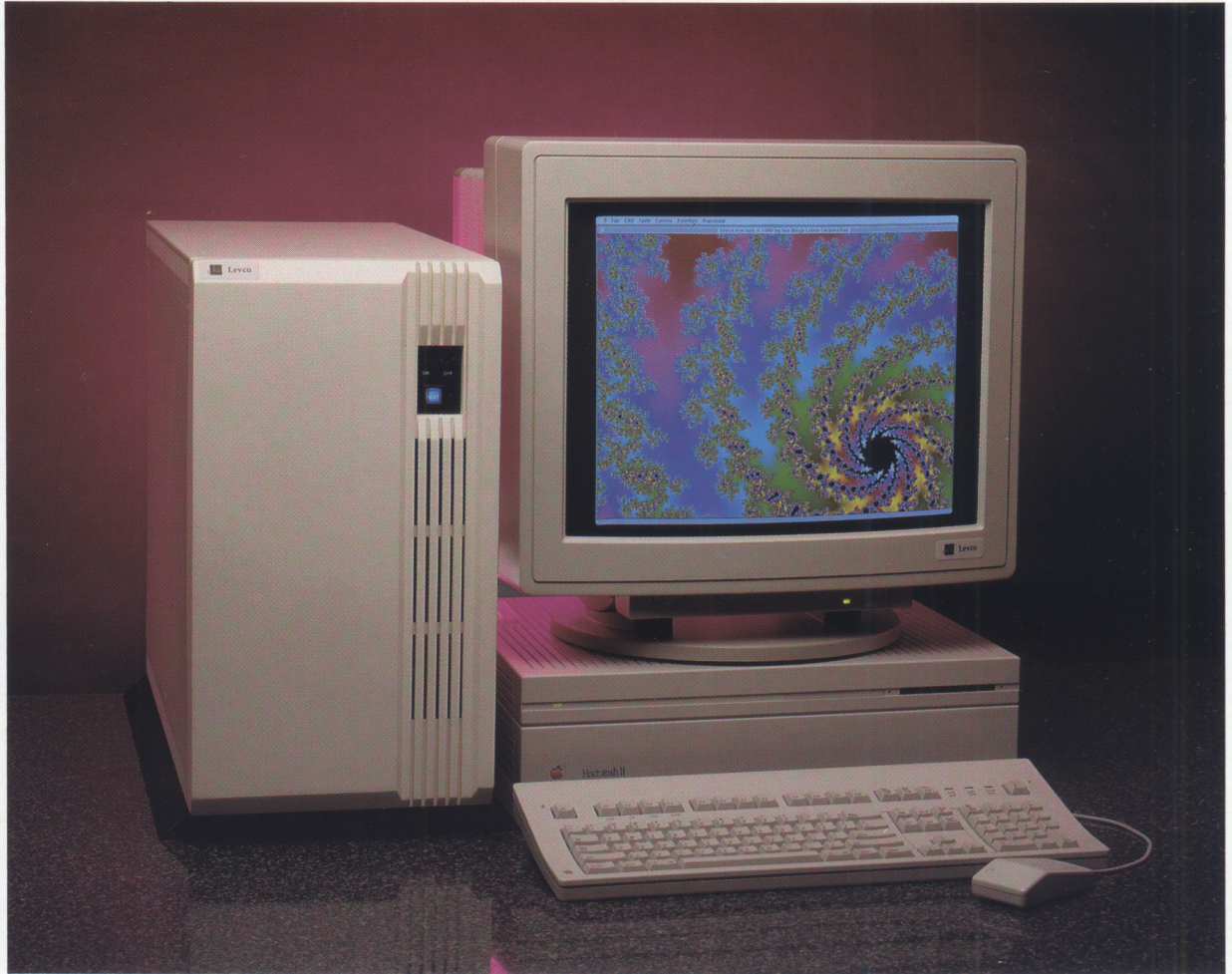


- High Performance: Up to 1280 MIPS, 192 MFlops, 256 MB RAM
- Parallel Architecture – Modular Construction
- Parallel Programming Tools for C, FORTRAN, Pascal, and occam<sup>®</sup>2

**SuperServer<sup>™</sup>**  
**Multi-processor Parallel Compute Server  
for Multiple Host Systems.**



# SuperServer™

## Description

The LEVCO SuperServer is a high-performance parallel processing server platform based on the INMOS™ Transputer family of RISC processors. It complements the original TransLink™ product line, available since early 1988, that supports up to 20 transputers on Nu-Bus cards inside the Macintosh™ II or IIx. The SuperServer is intended to extend the available support for up to 128 transputers in a convenient plug-and-play external package that integrates with LEVCO's existing transputer-based hardware and software development environment. The SuperServer is modular in design, supporting from 1 to 128 processors.

Each transputer node in the SuperServer is a powerful RISC processor, delivering 10 MIPS and 1.5 MFlops, and addressing up to 4 Megabytes of RAM per processor. The transputer is ideal for use as a node in a large array of processors since it was originally designed with this purpose in mind. The primary feature of this design is high-speed bi-directional interprocessor communication via 4 serial links on each transputer. These operate in the background under DMA control while processing goes on. This means that each node can communicate with neighboring nodes at up to 9.2 Megabytes per second.

SuperServer is compatible with RISC-link™ IBM®.



Authorized Value Added Reseller

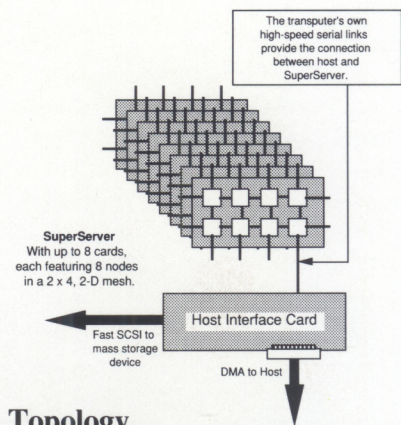
## Host System

- Macintosh II, IIx, SE, or SE30. As an Apple® VAR, fully-configured workstations including host systems are available from LEVCO.
- IBM-compatible PC's and IBM PS/2 with Micro Channel architecture (MCA) bus.
- SUN Workstations

## Parallel Programming Tools

- ANSI-standard C, FORTRAN 77, and Pascal compilers run under the Macintosh Programmer's Workshop (MPW)
- occam®2 compiler runs under INMOS® Transputer Development System (TDS) with host server under Macintosh OS
- Express™ message passing environment handles routing between processors, network configuration and loading, and automatic load balancing over entire processor array. Also supports:
  - NDB™: Source-level parallel break-point debuggers for the C and FORTRAN compilers
  - PPM™: Parallel performance monitor allowing sequential monitoring of individual node performance and parallel communication monitoring
- MacApp™ is an object-oriented programming library that implements the standard features common to most

Macintosh applications: menus, scrolling and resizing windows, printing, etc. Parallel scheduling primitives for the transputers have been added to MacApp under the name UPOOL™, along with other libraries that simplify the task of communicating with any number of attached transputers.



## Topology

There are 8 slots in the SuperServer, each of which accommodates 8 nodes (1 or 2 processors each) in a 2 x 4, 2-dimensional mesh (see diagram). It is possible to connect the boards to create surfaces, pipelines, toroids, rings, and spheres. Reliable jumper wires are used to create the connections between boards. Link connections are also made to a TransLink interface card in the Nu-Bus slot of the Macintosh host which is capable of fast DMA access to host memory and fast SCSI device support.



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