



## ORION<sup>†</sup> SUPERMINICOMPUTER SOFTWARE

### Fortran 77 for ORION

The ORION Fortran compiler implements the ANSI X3.9 - 1978 standard. In addition, it implements all the extensions present in the Berkeley 4.2 BSD Fortran compiler.

Availability: ORION  
Contact: Sales Office, High Level Hardware Limited

### Fortran 77 for ORION 1/05

The ORION 1/05 Fortran 77 compiler implements the ANSI Fortran 77 (full language) Standard ANSI X3.9 - 1978. It also implements Military Standard Fortran, Fortran DOD Supplement to American National Standard X.39 1978, MIL-STD-1753. In addition, all the extensions available in the Berkeley 4.2 BSD Fortran 77 compiler are provided.

Availability: ORION 1/05  
Contact: Sales Office, High Level Hardware Limited

### Pascal for ORION

The ORION Pascal compiler is similar to the Berkeley Pascal compiler in that it supports the standard language as defined in Niklaus Wirth's Pascal Report, together with a small number of extensions. Extensive error messages make it particularly suitable for instructional use. Features include separate compilation and the ability to link to object modules produced from other languages.

Availability: ORION  
Contact: Sales Office, High Level Hardware Limited

### Orion 1/05 Pascal compiler

The ORION 1/05 Pascal compiler implements the ANSI/IEEE and BSI/ISO level 0 standards, and in the future will implement BSI/ISO level 1. In addition, ORION 1/05 Pascal implements some of the extensions present in the Berkeley 4.2 BSD Pascal compiler.

Availability: ORION 1/05  
Contact: Sales Office, High Level Hardware Limited

### **C-Prolog 1.5**

C-Prolog is a Prolog interpreter written in C and developed at EdCAAD, the Department of Architecture, University of Edinburgh. It was designed for machines with a large uniform address space such as the ORION range.

Availability: ORION , ORION 1/05  
Contact: Sales Office, High Level Hardware Limited

### **ORION Prolog**

ORION Prolog is based on a Prolog developed at the University of Cambridge and follows the DECsystem-10 syntax, compiling Prolog into compact code for a virtual machine. High Level Hardware has developed a microcoded implementation of this machine, giving a performance gain of a factor of 10 over existing versions.

Availability: ORION  
Contact: Sales Office, High Level Hardware Limited

### **Reduce Version 3.3**

Reduce is a powerful system for algebraic mathematics, used worldwide in scientific and engineering calculations. Reduce is an embedded system for algebraic rather than numerical mathematics. LISP is required in order to run Reduce. (ORION requires Cambridge LISP, ORION 1/05 requires Kyoto Common LISP).

Availability: ORION, ORION 1/05  
Contact: Sales Office, High Level Hardware Limited

### **Kyoto Common LISP (KCL)**

KCL is a complete implementation of Common LISP, a powerful artificial intelligence programming language.

Availability: ORION, ORION 1/05  
Contact: Sales Office, High Level Hardware Limited

### **Cambridge LISP**

This powerful artificial intelligence programming language offers a highly cost effective and flexible system which meets the requirements of universities, research institutes and research and development departments for the development of expert systems. The microcodable ORION implementation gains performance by making extensive use of the special purpose microcode.

Availability: ORION, ORION 1/05  
Contact: Sales Office, High Level Hardware Limited

### **ACECOBOL**

ACECOBOL is a 32 bit, multi-user high level COBOL compiler implementation written in C. ACECOBOL offers a rich language set, with syntax extensions providing source compatibility with other popular COBOL dialects.

Availability: ORION  
Contact: Sales Office, High Level Hardware Limited

### **ACEMENU**

ACEMENU is a combined menu and security system for COBOL. Menu hierarchies can be created and maintained on the screen and optional password controls are available at all menu levels.

Availability: ORION  
Contact: Sales Office, High Level Hardware Limited

### **ACEGEN**

ACEGEN is a COBOL source code generator - a computer programming tool for the rapid production of complete business systems via the generation of COBOL program suites.

Availability: ORION  
Contact: Sales Office, High Level Hardware Limited

### **ACEBRIDGE**

ACEBRIDGE is a comprehensive record-orientated I/O system for UNIX<sup>†</sup> which implements the ANSI standard for file systems on all host technologies.

Availability: ORION  
Contact: Sales Office, High Level Hardware Limited

### **RM/MASER COBOL**

RM/MASTER COBOL gives you a complete set of menu-selectable programming tools together with a sophisticated compiler in the same integrated package.

RM/MASTER COBOL is more than a compiler - it is the optimum development environment. Along with convenience features and utilities, RM/MASTER COBOL includes automatic screen, report, and program generators; compiler and bridge runtime and networking capability for portability; and a data dictionary manager that guarantees data name integrity and program consistency. So you can develop complex applications or maintain existing programs, quickly, consistently, and according to the high level ANSI 74 standard.

The RM/MASTER COBOL compiler features fast compile and execution speeds. Its rich language set includes syntax extensions for source compatibility with other popular

COBOLs. RM/MASTER COBOL produces machine-independent object code for both application program and data portability.

In multi-machine and multi-user environments, RM/MASTER COBOL works with ACENET, the networking COBOL applications manager. RM/MASTER COBOL's unique runtime bridge ensures identical program execution on different hardware and under different operating systems. Menu functions provide multi-level security for object code, spooling, logging and other conveniences.

Availability: ORION 1/05  
Contact: Sales Office, High Level Hardware Limited

### **INGRES**

The INGRES relational database system for the ORION superminicomputer provides a modern database management facility for research, medium scale commercial use or teaching.

Availability: ORION, ORION 1/05  
Contact: Sales Office, High Level Hardware Limited

### **Db++**

Db++ is a full relational DBMS designed specifically for the UNIX operating system. It includes a query processor, a relational editor and two C interface libraries. Written in C, db++ is extremely portable on all UNIX based hardware. Db++ interfaces with any other package capable of reading or writing ASCII to files or pipes.

Key product features: Full relational DBMS; query language (extended implementation of Codd's relational algebra) permits easier formulation of complex queries than with SQL powerful procedural report generator similar to the language awk. Relational editor permits global operations in a syntax similar to ex/vi.

Interface to application programs written in C at two levels; a low-level interface used by all the modules of the DBMS and a high-level interface for rapid design of masks, menus, and DBMS applications. Automatic rollback after crash. A transaction is either successful or the database is in the same state as it was at the commencement of the transaction.

Designed to run with UNIX rather than under UNIX; eg each relation containing data and indices is one UNIX file. Db++ is the only commercial DBMS that permits full integration with other UNIX tools at command (pipeline) level.

Key product benefits: rapid prototyping permitting full use of other standard UNIX tools. Secure and extremely fast B+ tree organisation of data.

Availability: ORION, ORION 1/05  
Contact: Non Standard Logics, 57-59 Rue Lhomond, 75005, Paris, France  
(Tel. 33 1 43 36 77 50)

## **EMPRESS**

The advanced relational database EMPRESS is now available for the ORION 1/05. It includes an active data dictionary, a report writer and a powerful application generator. EMPRESS databases are accessed using SQL. This industry standard language provides commands to create and maintain the format of the database, manipulate the data content and administer access privileges. Interactive data entry modes, on-line help screen, and a command editor with a history list, simplify operations. EMPRESS supports full multi-user operation with a choice of table, group or record level locking.

Also included is M-BUILDER a fourth generation tool (4GL) which makes program development more productive.

Availability: ORION 1/05  
Contact: CARE Business Solutions Limited, 6 Park Terrace, Worcester Park,  
Surrey KT4 7JZ (Tel. 01-337-7070)

## **NETWORK FILE SYSTEM (NFS†)**

NFS is implemented as a client-server architecture. An NFS client can achieve transparent access of file systems held by an NFS server. The NFS related protocols, external data representation (XDR) and remote procedure call (RPC) are defined by Sun Microsystems Inc. The ORION NFS conforms fully to these definitions allowing compatibility with other systems supporting NFS.

Availability: ORION, ORION 1/05  
Contact: Sales Office, High Level Hardware Limited

## **MCD**

MCD is an interactive screen orientated simulator for ORION microcode. It allows microcode to be developed and debugged in a time shared environment.

Availability: ORION  
Contact: Sales Office, High Level Hardware Limited

## **TranScript**

The TranScript package is a suite of UNIX programs that enable ORION systems to access state-of-the-art PostScript printers. The TranScript package transforms UNIX documents and graphics files into PostScript format. The PostScript language is a device-independent programming language and print file format for describing the appearance of printed pages. PostScript documents can combine text, graphics, line art and scanned images for printing on raster devices. PostScript files will print without modification on any PostScript printer.

Availability: ORION, ORION 1/05  
Contact: Sales Office, High Level Hardware Limited

## StarPoint Graphics Toolkit

The StarPoint Graphics Toolkit combines the functionality of a window manager running under UNIX with a bit mapped graphics support library. It enables conventional UNIX programs such as the Bourne and C Shells to run in a multiwindow "desktop" environment and in addition provides the high level library support necessary for the rapid development of highly interactive screen based programs, a number of which are included with the toolkit in source form as examples.

Availability: ORION, ORION 1/05(StarPoint hardware required)  
Contact: Sales Office, High Level Hardware Limited

## X Window† System

X Window system servers run on computers with bitmap displays. The server distributes user input to, and accepts output requests from, various client programs through a variety of different interprocess communication channels. Although the most common case is for the client programs to be running on the same machine as the server, clients can be run transparently from other machines (including machines with different architectures and operating systems) as well.

X supports overlapping hierarchical subwindows and text and graphics operations, on both monochrome and colour displays.

When you first log in on a display running X, you are usually using the *xterm* terminal emulator program. You need not learn anything extra to use a display running X as a terminal beyond moving the mouse cursor into the login window to log in normally.

The core X protocol provides mechanism, not policy. Windows are manipulated (including moving, resizing and iconifying) not by the server itself, but by a separate program called a "window manager" of your choosing. This program is simply another client and requires no special privileges. If you do not like the ones that are supplied you can write your own.

The number of programs that use X is growing rapidly. Of particular interest are: a terminal emulator (*xterm*), window managers (*wm* and *uwm*), a mailer reader (*xmh*), a bitmap editor (*bitmap*), an access control program (*xhost*), user preference setting programs, (*xset*, *xsetroot* and *xmodmap*), a load monitor (*xload*), clock (*xclock*), a font displayer (*xfd*), and various demos.

Availability: ORION 1/05  
Contact : Sales Office, High Level Hardware Limited

# ORION 1/05 X Window System Version 11

## Order Form

Name ..... Order no. ....

Address ..... Date .....

..... Tel. ....

ORION Serial no. ....

\_\_\_\_\_ copies of ORION 1/05 X Windows Version 11 at £400.00  
(includes manuals, tape, installation notes and delivery, but not VAT  
(currently 15%))

*ORION 1/05 X.11 is suitable for all ORION 1/05 systems including older ORIONs that have  
the 1/05 CPU upgrade*

\_\_\_\_\_ 0.25 inch cartridge tape

\_\_\_\_\_ 0.50 inch magnetic tape drive

*(please tick)*

Signed .....

Please return to: High Level Hardware Limited,  
PO Box 170, Windmill Road,  
Headington  
Oxford OX3 7BN  
Tel. 0865 750494  
Fax. 0865 60271

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### **GHOST-80**

GHOST-80 is a comprehensive Fortran subroutine suite enabling the user to create graphics files in a host compiler and write them out either instantly or after a delay to a chosen graphics device.

Availability: ORION, ORION 1/05  
Contact: Computer Graphics Systems, Culham Laboratory, Abingdon, Oxon,  
OX14 3DB

### **UW**

UW is a server program running on ORION together with a program to run on an Apple Macintosh which provides up to seven UNIX shell windows on the Macintosh. Each window can emulate a Lear Siegler ADM31 terminal, a Tektronix 4010 or a DEC VT52.

Availability: ORION, ORION 1/05  
Contact: Sales Office, High Level Hardware Limited

### **SCCS (Source Code Control System)**

SCCS is a source code management system which maintains multiple versions of large software systems. A record is kept with each set of changes of what the changes are, why they were made, who made them, and when. Old versions can be recovered, and different versions can be maintained simultaneously. In projects involving more than one person, SCCS will ensure that two people are not editing the same file at the same time.

Availability: ORION, ORION 1/05  
Contact: Sales Office, High Level Hardware Limited

### **NAG Fortran Libraries**

A Fortran subroutine library, containing over 680 numerical and statistical algorithms.

Availability: ORION, ORION 1/05  
Contact: NAG Limited, Wilkinson House, Jordan Hill Road, Oxford OX2 8DR

### **NAG Graphical Supplement**

The NAG Graphical Supplement is a library of Fortran 77 graphics subroutines designed to complement the numerical and statistical algorithms of the NAG Fortran Library.

Availability: ORION, ORION 1/05  
Contact: NAG Limited, Wilkinson House, Jordan Hill Road, Oxford OX2 8DR

## **ATTACH**

ATTACH allows you to link a PC to another computer (mainframe, mini or PC). It provides terminal emulation and file transfer facilities, and allows the other system (the host) to access a number of services provided by the operating system on your PC.

Availability: ORION  
Contact: Mara Limited, 284 Gilmerton Road, Gilmerton, Edinburgh, EH17 7PR

## **REPLAY**

REPLAY is a flexible data management environment that allows you to quickly and easily collate and consolidate material in disparate formats from diverse sources, and to extract and use their data in standard or one-off reports.

Availability: ORION  
Contact: Mara Limited, 284 Gilmerton Road, Gilmerton, Edinburgh, EH17 7PR

## **Standard ML Functional Programming Language**

Standard ML gives the full range of facilities of a functional and list processing language with the benefit of strong typing and implicit polymorphism. The system as currently implemented is an incremental compiler, thus giving the benefit of rapid interactive working with the performance of a compiler.

Availability: ORION, ORION 1/05  
Contact: LFCS, Department of Computer Science, University of Edinburgh,  
Kings Buildings, Edinburgh, EH9 3JZ

## **LCF**

A theorem prover. The sources of LCF are basically unchanged from the Version 5.2 distribution from Cambridge, with minor changes under conditional inclusion, a few bugs mended, and a compatibility package for the dialect differences between Cambridge and Franz LISPs. Cambridge LISP is required in order to run LCF. Distribution is subject to the usual conditions for LCF (available from Larry Paulson at Cambridge).

Availability: ORION  
Contact:

## **Kermit (C-Kermit Version 4C(057))**

The widely available communications and file transfer protocol, implemented for BSD 4.2.

Availability: ORION, ORION 1/05  
Contact: ORION Users' Group

### **Miranda†**

An advanced functional programming system. The Miranda system has been developed to provide a modern functional programming system. The language draws its features from the earlier languages, SASL, KRC and ML and is embedded in an interactive system providing the tools needed to build large applications.

Availability: ORION, ORION 1/05  
Contact: Research Software Limited, 23 St Augustine's Road, Canterbury, Kent

### **SHEEP, CLASSI and STENSOR**

A computer algebra package. SHEEP is mainly for tensor manipulation used in relativity, quantum gravity, solid mechanics etc. CLASSI is an extension of SHEEP for special problems in relativity. STENSOR is a powerful system with advanced facilities for anti-commuting objects, sum substitution, handling of large problems etc. (Cambridge LISP is required to run SHEEP)

Availability: ORION  
Contact: ORION Users' Group

### **OTISS, Operator Training Industrial Systems Simulator**

OTISS is a Chemical Engineering Dynamic Simulation package that can be used for operator training or for engineering studies into the dynamic behaviour of process plant.

OTISS provides extensive interactive facilities for controlling and monitoring process conditions during a simulation session. These facilities are accessed via a simple mouse-driven drop-down menu interface which enables complex tasks to be initiated without a large amount of tedious keyboard input.

OTISS uses a physical basis for modelling each item of plant, ie full dynamic mass, energy and molar balances are used throughout, and the resulting differential equations are integrated with respect to time to obtain the solution trajectories. This approach ensures that the model has high fidelity which cannot be guaranteed with a purely transfer function model due to the highly non-linear nature of process dynamics. The individual models are interconnected by multicomponent streams and physical property information is obtained from the OTISS physical property database PPS.

For operator training, OTISS can drive specialist graphics hardware which can be either a duplication or emulation of the actual control system equipment used on the real plant.

Availability: ORION 1/05  
Contact: Sales Office, Simulation Technology Limited, Baltic Centre, Great West Road, Brentford, Middlesex TW8 9BU (Tel. 01-847-3760)

### **Brainstorm**

The Brainstorm Integrated Suite Software has been developed to provide a modular and flexible range of products creating a comprehensive information system.

The kind of problems overcome by the Brainstorm software include, different terminal standards, incompatible interfaces between communications networks, different service and applications standards and inconsistent user interfaces.

The Brainstorm system co-ordinates all of these parts into a coherent and transparent tool for the user.

## Brainstorm Software Summary of Products

### Information Hosts

- Public/Private Videotex/Non Videotex
- Terminal Independence
- X.25 or dialup access
- Compatible with emerging standards
- Flexibility in applications building away from simple hierarchy, eg use of free-text or relational databases.
- EMAIL, Gateways, Home Banking/Shopping
- Tax and Mortgage calculations
- Simulations, Distance Learning and Games

### Intelligent Comms Server

- Public network
- DATA CENTREX services and applications switching
- Intelligent value added netMux
- Private networks
- Basis for departmental MIS
- Means for multisite Wide Area Network
- Comms Administration and System Management
- Rationalisation of internal, corporate and External information flow
- Security

### Telecommunications Administration

- Major Account Fault Reporting
- Field Maintenance
- Remote Site Management

### Mixed Media

- Teletext, Videodisc, Cable, Satellite, database

### Multiple Feeds

- Advanced multiple feed handling with data extraction and manipulation
- "INTELLIGENT MONITORING"
- Advanced windows
- Financial/Dealing Room applications

### Multidimensional Models

- Advanced techniques using basic comms and MIS products with multiple feed data handling

Availability: ORION 1/05  
Contact: Mr J Stiles, Brainstorm Computer Solutions, 103A Seven Sisters Road,  
London N7 (Tel. 01-281-4411)

## POPLOG

The Poplog multi-language development system has been ported to the ORION 1/05 computer with the Clipper Processor, making available Common LISP, Prolog, POP-11 and (as an optional extra) Standard ML, in addition to an integrated screen editor, compiler development tools, masses of online documentation, utility libraries, etc.

The ORION version of Poplog is not yet fully supported so for the time being it is being made available to UK academic institutions only.

Availability: ORION 1/05  
Contact: Miss Alison Mudd, School of Cognitive Sciences, University of Sussex,  
Brighton, BN1 9QN (Tel. 0273 606755)

## WI

WI is a general-purpose, full-screen, multiple-window programmable text editor. It supports arbitrarily many windows of any size, covering each other like sheets of paper on a desk. Graphic attributes allow the selective display of windows or even regions in different colours or graphic modes.

Numerous user-friendly features (e.g. menus, learning modes, etc) are provided. All the standard functions available in editors like Emacs are available. The editor is programmable in C, Lisp, or any other language whose modules can be linked with object modules.

There are various specialised editing modes, in particular modes adapted to editing programs in C, Pascal, Fortran and LISP (soon COBOL and Ada). A specialised package adapted to the use of text formatters like Troff or TeX is available. The modes feature named marks, named marks, alias and abbreviation expansion, quote expansion, region coating, macro definition, etc. Process mode runs as many as sixteen terminals in WI windows.

WI is extremely efficient. Special efforts have been made to optimize and reduce the size of the code. It is frequently used by as many as twenty users on moderately powerful minis. A very detailed manual in English and French is available with complete information on usage and programming.

Widb is an extension of the wi editor for editing relations of the db++ DBMS system. Widb has two modes : a mode for creating masks and a mode for editing relations.

Masks contain fields with a variety of attributes. Values can be inserted in a variety of different ways and checked for consistency. Textual fields can be edited in windows of the editor.

Availability: ORION, ORION 1/05  
Contact: Non Standard Logics, 57-59 Rue Lhomond, 75005 Paris, France.  
(Tel. 31 1 43 36 77 50)

### **SPSS-X†**

The SPSS-X software package for data access and analysis contains flexible data management facilities and a complete set of statistical routines. SPSS-X runs on a wide variety of machines and operating systems and it reads and writes a portable file that can be carried from one machine to another and can be down loaded to run on a microcomputer.

### **SPSS-X Tables†**

Tables is a program that allows you to communicate results in a tabular format quickly and automatically. Using the user's guide you are easily able to combine all the facts you need to any level of complexity into a single table. Tables allows you full control of layout, spacing, boxing, framing, titles and footnotes.

Availability: ORION 1/05  
Contact: Sales Office, High Level Hardware Limited

### **C++ Translator**

C++ is a superset of the C programming language that retains the efficiency and notational convenience of C while providing (improved) facilities for type checking, data abstraction, operator overloading and object-orientated programming. The released implementation consists of a C++ to C translator, a cc command, and the standard C++ libraries and header files. The libraries provide support for stream input/output, complex arithmetic, event-driven simulations and generic user-defined data types.

Availability: ORION 1/05  
Contact: AT & T

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