

Diverse Approaches to Diverse Needs

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ABSTRACT: *This paper outlines many of the educational opportunities that Cray Research offers to our customers. The following options will be discussed:*

- *Instructor led, live presentation*
- *Customized classes for special customer needs*
- *Computer-based training*
- *Class videotape production*
- *Teleconferencing*
- *Tutorial*

Because new courses are emerging frequently, this paper describes some of the latest designs and ideas, so that we can obtain your feedback.

Software Education Services

The Software Education Services (SES) department is responsible for designing course curriculum and for teaching classes to educate students about specific topics that relate to Cray Research systems, and the underlying concepts that will allow them to continue their learning. SES teaches classes in the U.S.A. and selected other countries. Some countries (for example, Japan, France, and Germany) also operate training centers. They combine SES course curriculum with their own, and deliver most classes in their local native language.

In the U.S.A., a SES customer education coordinator is assigned to each customer, which provides a single point of contact for the customers' training and education needs. In other locations, this service is provided in various ways. Directions for locating the appropriate training coordinator are included in the "Sources of Information" subsection.

General Training Overview

Cray Research recognizes the importance of trained system administrators, system analysts, programmers, end users, and computer operators. To meet these needs, a well-established software training program is provided for each of the above-mentioned target audiences. A complete software training curriculum is regularly scheduled at the corporate training center in Eagan, Minnesota, U.S.A. Selected courses are offered at various other Cray Research training centers. Upon request, standard and customized courses also are available at customer locations.

SES publishes the Cray Research Software Training Catalog for Customers on a yearly basis, and class schedules for U.S.A. training centers on a semiannual basis. This catalog contains

descriptions of all software training courses and products that are currently offered by SES, as well as information about who to contact concerning training needs in your area, and registration information. To help students determine the curriculum that will best meet their needs, recommended and elective course sequences also are provided for each target audience.

Delivery Methods

Instructor led, live presentation is the primary means by which Cray Research delivers educational information to students. However, we are currently using several alternate delivery methods to better meet our customers' needs. As they arise, new methods are evaluated.

Instructor Led, Live Presentation

Currently, Cray Research offers approximately 40 courses that are designed for instructor led, live presentation. These courses range from 1 to 10 days in length and cover topics from basic UNICOS to in-depth internals.

Benefits:

- Students have direct access to knowledgeable instructors with practical experience in their areas of expertise, who not only lecture on a subject, but are available to answer questions and assist with lab exercises.
- At a customer's request, most training courses can be offered either on-site or at other locations of their choosing, when a homogeneous group of students exists. Offering courses at locations near the student base saves considerable travel time and expense.

Courses can be tailored, by mutual agreement between the customer and Cray Research, to meet specific customer needs, as follows:

- Multiple classes or topics can be combined into one offering.
- Topics can be added or deleted from a standard offering.
- Specific customer configurations can be addressed.
- Course lengths can be modified.
- Additional days can be added to extend lectures, labs, or to add workshops where students can work on their own codes with instructor assistance.

Under development:

Several new instructor led, live presentation courses are under development and will be available later this year. They are as follows:

- TotalView Workshop (TVW)
- CF90 and C++ Optimization for Cray PVP Systems (VOPT)
- UNICOS Tape and Data Migration Facility (DMF) Workshop (TAPEDMF)
- CRAY T3D PVM Optimization (T3DPO)
- CRAY T3D Optimization (T3DO)

Computer-based Training (CBT)

Cray Research currently offers four computer based training (CBT) courses. One additional course, UNICOS Basic Operations – Computer-based Training, (UBO-CBT), is under development and scheduled for release second quarter, 1995. Each course is designed to provide information, examples, and hands-on learning experiences. All CBT courses are licensed products.

Cray CBT products are delivered through one of two authoring and development tools. Courseview, developed by Cray Research, is a text-based product. CrayTutor, based on IconAuthor, is a feature-rich tool that runs on UNIX workstations and uses, color, graphics, animation, and sound.

Benefits:

- Computer-based training provides a training method by which students can access information from their own workstation, at their convenience, or at the time of need.
- Because courses are organized by activities, and skill levels, students advance at their own speed, repeating activities as needed, moving forward or backward to different levels and skills, and choosing only those parts of a course that are needed.

Newly released course:

- UNICOS System Administration for CRAY J90 and CRAY EL Series - Basic Operations - Computer-based Training (USAJELBO-CBT)

This course addresses the skills needed to perform basic operations tasks on the CRAY J90 and CRAY EL series.

The contents of this course support the UNICOS 8.0 release. The course is delivered through CrayTutor and

operates on a color (or gray scale) Sun Workstation that runs SunOS 4.1.x or Solaris 2.3. Selected other UNIX workstations will be supported in the future.

Under development - (target release is second quarter, 1995):

- UNICOS Basic Operations – Computer-based Training (UBO-CBT)

This course addresses the skills needed to perform basic operations on CRAY Y-MP, CRAY C90, and CRAY T90 systems that are attached to an IOS-E. It uses a graphic interface to provide information, demonstrations, lab exercises, and quizzes.

This course will be delivered by CrayTutor and will operate on a color Sun Workstation that runs SunOS 4.1.x, SunOS 5.3, Solaris 2.3, or an SGI workstation that runs IRIX 4.0.5H or IRIX 5.2. The course content will support the UNICOS 8.0 release.

Videotapes

Cray Research has used videotape presentations to provide update training following a major UNICOS release. Because these classes are taught by several instructors, subject matter experts, and developers, they are not well-suited for delivery outside of our corporate training center. Typically, these classes are lecture only and lend themselves well to videotape presentation. Other appropriately suited training sessions may be delivered using videotape presentation in the future.

Benefits:

- Students can experience Cray Research course lectures at a convenient time without traveling to a Cray Research training center.
- An unlimited number of students can view videotape presentations.
- Useful for training students at remote locations.

Newly released:

- Overview of the `opi` operator interface (TROPI)

This 11-minute videotape was developed to provide an overview of `opi` for system operators and administrators. Although it is not intended to be a complete training tool, it does provide a visual representation of `opi`'s capabilities.

Planned (following the UNICOS 9.0 release):

- A videotape presentation to address new features included in the UNICOS 9.0 release

Teletraining

Cray Research plans to modify several existing courses for delivery by interactive video sessions beginning third quarter, 1995. Interactive video sessions allow students from various locations to be connected through audio/visual links to a Cray instructor in another area. As this medium is evaluated, additional topics will be added to the teletraining curriculum.

In anticipation of using this technology, video conference equipment was installed in the Cray Research corporate training center in Eagan, Minnesota, U.S.A., and in several other Cray Research training centers.

Benefits:

- Student travel is reduced or eliminated, while they still receive most of the benefit of a instructor led, live presentation.
- Students participate in class from any suitably equipped Cray Research office.
- Customers who have a Sprint certified connection to the Sprint Bridge meeting channel can link directly to Cray interactive video training sessions. Many of the Kinko's Copy Centers also rent rooms that are equipped for connection to the Sprint meeting channel.

Under development:

- NQS Protocols and Troubleshooting (NQS) UNICOS Accounting Customizing and Troubleshooting (UACC)

Cray Research is also experimenting with the multi-broadcast backbone (MBONE) to see if this medium has a place in our teletraining program. The large bandwidth requirements for this medium and possible security considerations are several issues of concern right now.

Tutorial

Currently, Cray Research plans to offer one course in a tutorial format. Other classes may be considered for this delivery method, if appropriate. Students who enroll in tutorial classes will receive course materials by mail and will be provided access (for a limited time) to a Cray Research system on which to run lab exercises. Customer students will be required to access lab exercise from a Cray Research training center or optionally purchase the exercises to be installed on their own Cray Research system. Instructor assistance will be provided by telephone or through email.

Under development:

- UNICOS Dump Analysis - Tutorial (UDAT) is the first tutorial course in late 1995. This course will provide a larger variety of examples and exercises than could be examined in a traditional instructor led, restricted length course.

Benefits:

- Students can work at their own pace.
- Travel to Cray Research facilities is reduced or eliminated, saving travel time and expense.
- Unlike CBT, videotape presentations, and self-study courses, the assistance of an experienced instructor is available.

Self-study

All of the Cray Research self-study course materials can be ordered from the Cray Research Distribution Center.

Some of the training materials could be used in a self-study mode to learn or review the topics presented in class. Students who want to self-study a course can purchase the course materials and study them at their own pace. Tuition is not charged for these classes, machine access is not provided, and an instructor is not assigned to the student.

Benefits:

- Students work at their own pace
- Students work from their own location
- No tuition fees, only the cost of the materials

Sources of Information

Several sources of information are available to help customers keep up-to-date on what software training and products are available, and to provide information on who to contact to order these services and products.

Cray Research Software Training Catalog for Customers, publication TR-CUSTCAT

The hard-copy catalog is published annually, and the corresponding course schedules are published semiannually.

The catalog contains the following information:

- Who to contact
- Registration information
- Target audience definitions
- Recommended and elective course sequences
- Skills maps
- Course descriptions

If you do not currently receive this catalog, you can request a copy from your training coordinator, who can add you to the distribution list, or order publication TR-CUSTCAT from the Cray Research Distribution Center.

CRInform

CRInform is an online menu-driven information and problem reporting service for Cray Research customers. The Software Training Catalog for Customers is available online through CRInform. The online catalog also offers the following information:

- General information, course descriptions, and course schedules for the training center located in the United Kingdom and Japan
- Email access to a software training coordinator, who will forward customer messages to the appropriate training coordinator

Cray Research customers can receive a CRInform account by signing a CRInform Program Agreement, available from their Cray Research service representative.

Cray Research Service Bulletin (CRSB)

The monthly CRSB publication contains the following:

- A listing of course schedules for all Cray Research training centers worldwide
- A section on who to contact for more information
- The CRSB does not include course descriptions; they are available through the hard-copy catalog or CRInform

Worldwide Web (WWW)

Although not currently available, Cray Research is planning to make the Software Training Catalog for Customers available on the Worldwide Web in HTML format for viewing by browsers such as NCSA Mosaic and Netscape. We also plan to provide information about things to do and places to see in each

of the local training center areas. Ultimately, we hope to allow class registration directly from the WWW.

The Uniform Resource Locator (URL) for the Cray Research Worldwide Web home page is:

<http://www.cray.com/>

Summary

The overall objective of Software Education Services is to ensure that users have the appropriate software training available to make the best use of their Cray Research system. To meet this goal, we offer a complete curriculum that covers all Cray Research product lines and uses a variety of delivery methods to accommodate various learning styles.

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