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STUDENT TRAINING MATERIAL

GENERAL OVERVIEW

FOR THE

COMMUNICATIONS SUPPORT PROCESSOR

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SECTION 1. STUDENT TRAINING MATERIAL GENERAL OVERVIEW. Section one of the Student Training Material General Overview provides information about the Communications Support Processor (CSP) training course.

1.1 Purpose. The Student Training Material General Overview for the CSP provides an introduction for technical operators, high-level managers, or any other interested individuals to the functions and capabilities of the CSP system. Course information for the Computer Operations, Message Clerk Functions, System Manager Functions, and Security Manager Functions in-house training program is provided within this document. In addition to providing general information about the capabilities of the CSP system, this document introduces the course information for the course that is conducted at the contractor's facility.

1.2 Course Objectives. The Student Training Material General Overview objectives are to provide an outline for each section of the in-house training course, and to introduce the basic and resource operations of the CSP system that are common to the training course. The general overview ends with specific information that introduces the student to the CSP system and window terminology, basic operations, and resource operations. The general overview provides the student with information about the CSP as an indoctrination to the training program. The general overview also provides high-level management personnel with an insight into the overall in-house training program.

1.3 Specific Course Information. Each student should possess at least a SECRET clearance to attend the in-house training course.

The in-house training program is conducted at the contractor's facility. The course is comprised of a General Overview, Computer Operations, Message Clerk Functions, System Manager Functions, and Security Manager Functions. There are no special evaluations or grades assigned to the students who attend the CSP in-house training course.

1.3.1 Required Publications. The following publications are required for the CSP training course:

CSPM-5.8-SUM, Software User's Manual for the Communications Support Processor

10-5.7-TCO, Student Training Material Computer Operations for the Communications Support Processor

CSPM-5.8-TGO, Student Training Material General Overview for the Communications Support Processor

10-5.7-TMC, Student Training Material Message Clerk Functions for the Communications Support Processor

CSPM-5.8-TSE, Student Training Material System and Security Manager Functions for the Communications Support Processor

CSPM-5.8-CIG, Configuration and Installation Guide for the Communications Support Processor

1.3.2 Reference Publications. The following Department of Defense (DoD) and CSP documents are considered general reference materials for the CSP training course:

1.3.2.1 DoD Reference Publications. The following documents are considered general reference materials for the CSP training course:

DOI-103, Defense Special Security Communications System (DSSCS) Operating Instructions (U), CONFIDENTIAL

JANAP 128 (J), Automatic Digital Network (AUTODIN) Operating Procedures JANAP 128 (J)

1.3.2.2 CSP Reference Publications. The following documents are considered general reference materials for the CSP training course:

CSPM-5.8-VDD, Version Description Document for the Communications Support Processor

CSPM-5.8-ICD, Interface Control Document for the Communications Support Processor

CMI-3.2-ICD, Interface Control Document for the Communications Support Processor Message Interface

1.4 Training Facilities. Sterling Software offers the CSP training course at its Bellevue facilities. The training facility is comprised of three separate areas: a classroom, a computer room, and a training room where the students receive an opportunity for hands-on experience.

When combined with classroom discussions, the slides provide the students with the information required to fully operate a CSP system. Each of the commands and functions discussed in the classroom can be executed to see how the system actually reacts. The students solve problems similar to those that may be encountered in the field.

1.5 Scope. The training course materials are developed from the Training Course Outline for Computer Operations and Message Clerk Functions and the Training Course Outline for System Manager and Security Manager Functions. These outlines represent the division of each of the major units of instruction into topics and subtopics. The topics and subtopics for the training course and the general overview are discussed in the following paragraphs.

1.5.1 General Overview. The following outline provides the topics and subtopics covered in this portion of the CSP training course:

- a. Introduction to CSP
 1. Mission, Functionality, and Subsystems
 2. Graphical User Interface (GUI)
 3. Hardware Configuration

- b. Basic Operations
 - 1. System Identification (ID) and Login
 - 2. Notice Window
 - 3. Help
 - 4. Password
 - 5. Session Exit

- c. Resource Operations
 - 1. Database Operations
 - 2. Parameter Operations
 - 3. Resource Contention

1.5.2 Computer Operations. The following outline provides the topics and subtopics covered in this portion of the CSP training course:

- a. Specifics of Computer Operations
 - 1. Acronyms and Terms
 - 2. Disk Utilization
 - 3. System Power-Up
 - 4. System Boot/Reboot

- b. Functions
 - 1. Status
 - 2. Control
 - 3. Report Generation

1.5.3 Message Clerk Functions. The following outline provides the topics and subtopics covered in this portion of the CSP training course:

- a. Specific Message Clerk Functions
 - 1. Acronyms and Terms

- b. Functions
 - 1. Message Review
 - 2. Message Recall
 - 3. Message Generation
 - 4. Message Section Processing

1.5.4 System Manager Functions. The following outline provides the topics and subtopics covered in this portion of the CSP training course:

- a. Specific System Manager Functions
 - 1. Acronyms and Terms
- b. Functions
 - 1. Databases
 - 2. Parameters
 - 3. System Utilities
 - 4. On-Line Testing (OLT)
- c. Software Release Procedures
 - 1. Release Information
 - 2. Site Configuration Options
 - 3. Installation Procedures
 - 4. Update Procedures
 - 5. Database Update/Configuration

1.5.5 Security Manager Functions. The following outline provides the topics and subtopics covered in this portion of the CSP training course:

- a. Specific Security Manager Functions
 - 1. Acronyms and Terms
- b. Functions
 - 1. User Access
 - 2. Security Dictionary
 - 3. Communication Lines
 - 4. Information Labels
 - 5. Audit Trail

SECTION 2. COMMON CSP INFORMATION

Section two of the Student Training Material General Overview provides introductory information for the CSP training course. This information details CSP acronyms, window terms, basic operations, and resource operations.

2.1 Acronyms and Terms.

2.1.1 Window Terms. The following are window terms used throughout this document:

active window	The window that is currently receiving keyboard input.
check box	An object that represents a true or false state for a data item.
classification bar	Located just below the title bar and around the perimeter of the window just inside the border. Denotes the security classification of the data displayed in a window through color and labeling.
context-sensitive help	Provides help for a specific pull-down menu name or pull-down menu option.
dialog	A rectangular region similar to a window, that allows a limited interaction to take place between the application and the user.
drag	Press and hold the select button on the mouse, move the pointer, and release.
focus	Determines which object receives keyboard input.
Help window	A separate window used to display help text.
icon	A small square containing a picture and an abbreviated label identifying the application.
Icons window	A special window at the bottom of the screen where icons are displayed in rows and columns.
keyboard	An input device allowing entry of text and an alternative to using a mouse.
list	An object that displays application-specific data items in a vertical format.
maximize button	A button located to the right of the minimize button at the upper right corner of the window that is used to maximize a window.
maximized	A window that has been enlarged to fill the entire screen.

menu bar	A rectangle that contains the names of one or more pull-down menus organized horizontally.
minimize button	A button located just to the right of the title bar used to minimize a window.
minimized	A window that is enclosed in an icon.
mouse	An input device whose movement on the work surface is reflected by the movement of the pointer on the screen.
pane	A single text area within a paned area.
pull-down menu	A menu that is "pulled down" from the menu bar.
push	The act of selecting a button with either the mouse or the keyboard.
push button	A rectangular object that appears raised through the use of three dimensional shadowing. The object contains a label that indicates the action to be taken when the button is pushed.
resize	Changes the size of a window in any direction.
radio box	A rectangular area that encloses two or more radio buttons.
sash	A small square positioned at the far right end of the horizontal lines separating a paned area. Moving the sash up or down adjusts the vertical size of the two adjacent panes.
scale	A rectangular object containing a slider in a trough. The scale is used to select a numeric value for a data item from a range of values.
scroll bar	A rectangular object located along the right edge of a list or text area. The object contains a slider in a trough, and is used to scroll through a list.
select button	The left button on the mouse.
select	Choose an object in a window using the mouse or keyboard.
slider	The lighter raised rectangle contained within the trough.
stepper	An object consisting of two arrow buttons and a rectangle. The stepper is used to set a numeric value for a data item from a limited set of possible values.
text	An object that allows free-format alphanumeric data to be displayed and/or edited.

title bar	A bar across the top of a window containing the name of the associated application.
window	A rectangular area that encloses the tools and data associated with each CSP application.
window menu button	A button located at the upper left corner of the window that is used to select the Window menu.

2.1.2 CSP Specific Acronyms. The following are CSP acronyms used throughout this document:

ACP	Allied Communications Publication
ACTP	Accreditation/Certification Test Plan and Procedures
AMPE	Automated Message Processing Exchange
AUTODIN	Automatic Digital Network
BCC	Base Communications Center
CAI	Communications Action Identifier
CIC	Content Indicator Code
CPU	Central Processing Unit
CRC	Cyclic Redundancy Check
CRITIC	Critical Intelligence
CSP	Communications Support Processor
DCA	Defense Communications Agency
DDCMP	Digital Data Communications Message Protocol
DEC	Digital Equipment Corporation (now Compaq)
DIA	Defense Intelligence Agency
DoD	Department of Defense
DOI	DSSCS Operating Instruction
DSSCS	Defense Special Security Communications System
DTG	Date-Time Group

EFTO	Encrypt for Transmission Only
GENSER	General Service
GUI	Graphical User Interface
HDLC	High-Level Data Link Control
ID	Identification
JANAP	Joint Army Navy Air Force Publication
LAN	Local Area Network
LMF	Language Media Format
MSP	Message Section Processor
OLT	On-Line Testing
OSF	Open Software Foundation
OSRI	Originating Station Routing Indicator
PLA	Plain Language Address
RI	Routing Indicator
RLS	Routing Line Segregation
SCI	Sensitive Compartmented Information
SHD	Special Handling Designator
SPECAT	Special Category
SSN	Station Serial Number
SSO	Special Security Office
SSTP	System Software Test Plan
SUM	Software User's Manual
TCC	(1) Telecommunications Center (2) Transmission Control Code
TCP/IP	Transmission Control Protocol/Internet Protocol

TRC	Transmission Release Code
VAX	Virtual Address Extension

2.2 Introduction to CSP. The introduction to CSP is designed to provide the student with a basic level of understanding about the CSP system. This understanding includes the CSP's mission, functionality, subsystems, hardware configuration, GUI, basic operations, resource operations, file menu, options menu, and parameter operations (Slide 2-1).

2.2.1 Mission, Functionality, and Subsystems. A description of the overall capabilities of the CSP is broken down into three main areas. These three areas are the mission, functionality, and subsystems.

2.2.1.1 Mission. The purpose of the CSP is to automate the activities of a fixed-base SSO Telecommunications Center (TCC) and/or Base Communications Center (BCC). Its goal is to reduce or eliminate labor-intensive activities that are normally associated with the TCC.

The CSP is capable of handling both Defense Special Security Communications System (DSSCS) and General Service (GENSER) message traffic simultaneously. In addition, the CSP is tailorable to satisfy tactical/mobile communications requirements. In the security arena, the CSP satisfies the requirements for an Automated Message Processing Exchange (AMPE) listed in Defense Intelligence Agency (DIA) Circular 5030.58-M. The CSP also satisfies Defense Communications Agency (DCA) Circulars 370-D195-1 and 370-D195-3 for its connection to the AUTODIN (Slide 2-2).

2.2.1.2 Functionality. The CSP is primarily a store and forward communications processor. Each message that enters the system is normally delivered to one or more destinations. The CSP is also capable of serving as a front-end to a variety of backside computer systems. In this mode, the CSP provides an interface to the AUTODIN network and also provides DD Form 173/ACP 126 format conversion. The succeeding paragraphs discuss the primary functions provided by the CSP (Slide 2-3):

- a. Communication circuit automation - The CSP provides the operator with the capability to turn each of the communication lines on or off. Once a line has been turned on, the line functions without further operator action. All message transfers and protocol handshaking is done automatically by the communications software. A line that is temporarily suspended resumes by itself when the distant end is back on-line.
- b. Message receipt - Each receive line within the CSP is responsible for receiving messages from its connected system and for redundantly storing these messages in their entirety on the message file. When selected, a Cyclic Redundancy Check (CRC) is performed on the messages as they are received to ensure message accuracy. Messages that fail CRC checking are rejected to the sender (with the exception of AUTODIN).
- c. DD Form 173/ACP 126 conversion - The CSP is capable of receiving DD Form 173 messages from backside systems. These messages are then converted to Joint Army Navy Air Force Publication (JANAP) 128, DSSCS Operating Instruction (DOI)-103, DOI-103 modified messages, or Allied Communications Publication (ACP) 126. The final message format is based on the Plain Language Addresses (PLAs), the message precedence within the original DD Form 173 message, and message processing parameters.

The CSP is also capable of converting ACP 126 messages to JANAP 128 messages. It is possible to designate up to four RIs, which initiate CSP's conversion from ACP 126 to JANAP 128 format.

- d. Message format validation - Each message that enters the system undergoes format validation to ensure that it conforms to all of the standards required by the given message format. The CSP supports the following formats:

- JANAP 128 narrative
- JANAP 128 data pattern (card and variable length formats)
- ACP 127 narrative
- ACP 127 state
- DOI-103 narrative
- DOI-103M narrative
- DOI-103 data pattern (card format)
- ACP 126

Some of the fields that are validated are precedence, Language Media Format (LMF), classification, Content Indicator Code (CIC)/Communications Action Identifier (CAI), Originating Station Routing Indicator (OSRI), Station Serial Number (SSN), file time, Transmission Release Code (TRC), Transmission Control Code (TCC), destination Routing Indicators (RIs), and Date-Time Group (DTG). All required format lines are also verified to be present. Messages with format errors are sent to a service position for operator action.

- e. Message security validation - Each message that enters or exits the system is checked to ensure the communication line passing the message is authorized to process the security words contained within the message. This includes classifications, compartments, codewords, caveats, handling instructions, TCCs, Special Categories (SPECATs)/Special Handling Designators (SHDs), LMFs, and special words/phrases. Each communication line has its own configurable set of criteria used for validation. Messages with security errors are sent to the service position for operator disposition.
- f. Automated message routing determination - Each message that passes through the system is processed by the automatic routing process. When the system is configured, an automatic routing database is built consisting of routing criteria. The automatic routing process scans the message and assigns organization(s) and office symbol(s) routing based on message text and the database. The message can be automatically routed to the destination(s) associated with the assigned office symbol(s) or forced to the message clerk position for final review.
- g. Manual dissemination - Manual routing is a function performed at a user terminal that allows the message clerk to assign routing distribution on a message. While reviewing a message on a distribution destination, the clerk may inspect the message for routing criteria, assign or remove organizations and office symbols, and assign the number of copies required for each office symbol. After assigning the desired dissemination, the clerk may release the message for distribution. This places the message on the output destination(s) associated with the assigned organization(s) and office symbol(s).

- h. Message generation - Message generation is a function performed at a user terminal that allows messages to be prepared from scratch or by selecting one of the templates and changing the appropriate fields. Generation capabilities may be used for generating service messages, fully formatted message traffic, or DD Form 173 messages for later conversion. A newly generated message that enters the system is subjected to the same format and security checks as if it were received from an external line.
- i. Message edit - Message edit allows messages contained on a review destination to be modified at a user terminal. Once editing is completed, the message may be reentered into the system as a modified message or as a completely new message with no history of the original. It may also be saved as a template for later use in the message generation function.
- j. Message transmission - Each transmit line within the CSP is responsible for transmitting all messages that are placed on its associated processing destination. Each message undergoes security validation before it is transmitted to ensure it is authorized to be transmitted on that line. When selected, CRC is performed on the message to ensure the message is accurately read from the message file and to provide a means of validation at the distant end. Messages failing the security check or CRC validation are sent to a service position for operator action as are those that are rejected by the distant end.
- k. Message recall - The CSP provides the operator with the capability to recover any message received into the system. Messages may be recalled individually or by a group defined by given parameters. Recalled messages may be placed on the recall destination or any destination that originally received the messages. Messages placed on the recall destination may be reviewed, deleted, saved as templates, or modified and sent into the CSP system as a new message.

In addition to the above primary functions, the CSP has a number of support functions used to configure and control the system as well as to provide status information. These functions are discussed in the following paragraphs:

- l. On-line system configuration control - The CSP System Manager is provided with the means to configure the system while it is on-line. This includes the ability to modify the following databases:
 - automatic routing
 - office assignments
 - PLA
 - RI
 - Routing Line Segregation (RLS)
 - Destinations
 - STU III

The System Manager is allowed to configure the automatic routing scanning parameters, the message file and archive disks, the report generation parameters, message processing parameters, font characteristics, CDAC parameters (if configured), and the precedence timers. The System Manager is also allowed to configure the communication lines in

regards to destination, channel identifier, channel number, maximum message size, format conversions, line characteristic options, supplemental data options, and line protocol information. Although considered to be support functions, these utilities are quite powerful and can have a major impact on the system.

- m. System control - This functionality is supported through a variety of utilities. The system disk utilities allow the system operator to mount, dismount, and initialize disks. The disk utility also provides the capability to make a complete backup of the system disk. The tape utilities allow the system operator to initialize tapes, backup CSP data files to tape, restore CSP data files from tape, and verify message traffic written to tape. The communication lines control application allows the operator to turn selected communication lines on or off. The operator is also allowed to establish or cancel alternate routing for each destination. Alternate routing may be selectively established by precedence, and may be further restricted by RI if desired. A message processing application allows the system operator to enable or disable system-wide message processing or message archiving. The system operator also has the ability to establish and cancel STU III connections. Another application allows the system operator to perform a controlled system shutdown or to reboot the entire system. The ability to perform each of these applications is controlled by each operator's privileges. Thus, only a select group of individuals is allowed to affect system performance.
- n. Status reporting - The CSP provides the current operations status in five windows accessible by the user. One window provides the communication lines status (on/off state, number of messages processed, et cetera). A second window provides the message routing status for each destination in the system. A third window provides message processing statistics such as what storage devices are configured, the system date and time, and the number of messages currently contained in the CSP system. The fourth window describes the AUTODIN interface in regards to what control sequences have been processed and the current line efficiency percentages. The fifth window reports the STU III Status (enabled or disabled). The CSP also provides a number of hard copy reports. These reports include PLA usage, group PLA usage, unknown PLA usage, hardware configuration, line message logs, line statistics, routing statistics, and intercept statistics. These reports can be previewed before printing.
- o. OLT support - An automated testing application is available to read in messages to the CSP. This application allows users to test various aspects of the system with baseline test messages. The test messages need to be set up with the proper site specific information (i.e., RIs, PLAs, et cetera) before the site uses the messages to test the CSP system. These messages are prepared at the user's discretion. The test procedures to be performed and the expected results for the Accreditation/Certification Test Plan and Procedures (ACTP) and System Software Test Plan (SSTP) are provided in order to verify that the system is operating properly. Testing is divided into three areas: accreditation/certification, system software, and free form. Free form testing does not have any set procedures or test messages. Its main purpose is to allow site-specific testing that may be used in problem solving.

- p. User Access Privileges - The CSP Security Manager is provided with the means to assign specific access privileges to each person that operates the CSP system. These privileges determine the menu options presented to each CSP operator. Each CSP application may or may not be assigned individually to each user. In addition, View or Modify access may be assigned when database privileges are assigned.

2.2.1.3 Subsystems. The overall CSP functionality is divided into five distinct subsystems (Slide 2-4). The communications subsystem is responsible for all message traffic being received or transmitted by the CSP system. It also controls access to all peripheral devices in regards to message traffic. The processing subsystem performs all of the message validation, ARM processing, DD Form 173 conversion, and ACP 126 to JANAP 128 conversion. The host subsystem is the main controller of the entire system. It maintains all of the message destinations and various system statuses. It controls access to the message files and the archives, as well as all processing dealing with sectioned messages. The fourth subsystem is the storage subsystem. It is ultimately responsible for all data stored on any of the disk media. Finally, the user interface subsystem is responsible for communications with the user terminals. Each window displayed on a user terminal is monitored and controlled by this software.

2.2.1.3.1 Communications. The communications subsystem controls all message traffic flow between CSP and non-CSP communication systems (Slide 2-5). Its main function is to exchange traffic with these external systems, via Communications Interface Devices, using one of the following protocols: Mode I, Mode II, Digital Data Communications Message Protocol (DDCMP), High-Level Data Link Control (HDLC), or Transmission Control Protocol/Internet Protocol (TCP/IP). In addition, this subsystem supports all message traffic on magnetic tape. These magnetic tapes may be from or for other computers systems outside of the TCC or for those who are not electronically connected to the CSP. Delivery of message traffic to printers is controlled by the communications subsystem as is the handling of intercept traffic. When a message's original destination is unreachable for any length of time, messages may be intercepted or stored to a temporary storage device. Once the destination is reachable again, all intercepted traffic is read from the temporary storage device and placed back on the original destination for delivery. The on-line testing software is also part of this subsystem and it controls the entry of test messages into the system.

The communications subsystem is heavily dependent on the storage subsystem. All message traffic received is stored on the message files and traffic to be transmitted is retrieved from the message files. All of the test messages for the OLT software are stored on the system disk. All of the databases that define the characteristics of each of the communication lines are also stored on the system disk. This includes the communication lines parameters database, the security dictionary, and the communication lines security database. The communications subsystem also communicates with the host subsystem in order to retrieve messages from the destinations and to accept line control commands.

2.2.1.3.2 Processing. The processing subsystem is responsible for all internal message processing (Slide 2-6). All messages received into the system undergo format validation and security validation. Messages with errors are sent to the service position for operator action.

Once a message has been validated, it is passed to the automatic routing process. Here, each message is scanned for key phrases used to route the message to designated destinations. Each phrase found results in a group of organization(s) and office symbol(s) being added to the message dissemination list. Once the message has completed the automatic routing process, it is delivered to the destination(s) associated with each of the office symbols in the dissemination list. If a message is unable to be successfully routed, it is delivered to a distribution position for message clerk action.

The processing subsystem is also responsible for converting all DD Form 173 messages. Depending on the PLAs used in the message, the DD Form 173 message is converted into a GENSER (JANAP 128 or ACP 126) message or into a DSSCS (DOI-103) message. If the message is a Critical Intelligence (CRITIC), then it is converted into a DOI-103 modified message. The PLA-to-RI associations are defined in the PLA database located on the system disk.

The processing subsystem accesses many of the databases stored on the system disk. These include the security dictionary, the communication lines security database, the PLA databases, the automatic routing database, and the office symbols database. It also records many of the system statistics used in the reports generated by the system operators. The message files are accessed to retrieve messages and to store message characteristics information. The destinations controlled by the host subsystem are accessed in order to retrieve messages to process or to route messages to their destinations.

2.2.1.3.3 Host. The host subsystem is responsible for controlling all message flow within the system (Slide 2-7). This includes all queuing and dequeuing of messages on the system destinations. It is also responsible for tracking all status information in the system in regards to destinations, communication lines, AUTODIN, and storage devices. It stores all message descriptors, supplemental data, and text on the message files and retrieves this information for other uses. Once a message has completed processing, the host subsystem prepares the message for storage on the archive disk. All auditable events are stored for historical purposes and may be retrieved for operator review.

The host subsystem acts as a utilities server for disks and tapes. It is responsible for initializing disks and tapes and for mounting and dismounting disks. It also allows the System Manager to make a complete backup of the system disk. This is effectively a disk-to-disk copy. The tape utility also provides a backup function; however, only a select group of the CSP data files are copied to tape. These files may later be restored from the tape back onto the system disk. Finally, the tape utility verifies message traffic on magnetic tape by checking the classification and format of each message on the tape and printing a header/trailer log report.

Another aspect of the host subsystem is the Message Section Processor (MSP). This software is responsible for processing all sectioned messages that require concatenation before final delivery to a destination. Sectioned messages are grouped together according to OSRI, DTG, precedence, classification, and expected section total. Each message section can be released individually or an entire group can be released. The sections may be reviewed, combined with other groups, or separated into new groups. The MSP may only be accessed by one user terminal at any one time.

2.2.1.3.4 Storage. The storage subsystem is responsible for writing and reading all storage devices (Slide 2-8). Each message that enters the system is redundantly stored on the message files. All processing information pertaining to the message is also stored on the message files. Once a message has been delivered to all of its intended destinations, it becomes inactive and is marked as requiring archiving. When archiving is enabled, all messages requiring archiving are transferred to an on-line archive disk. An audit trail of events is stored on the system disk and may also be moved to an archive disk. Each archive disk is capable of storing many days worth of traffic. In addition to the on-line message archive, all of the previous archive disks are maintained in a disk library and may be used in the off-line mode to recall older information. This disk library provides a history for months or years, depending on disk availability and site throughput.

2.2.1.3.5 User Interface. The user interface subsystem is composed of all software used to communicate with or operate the user terminals (Slide 2-9). The user interface to the system is accomplished using the X Window System and following Open Software Foundation (OSF)/Motif standards. The user terminals are color terminals interfaced to the CSP via an Ethernet Local Area Network (LAN). There are no disks on the user terminals. User terminal software is downloaded from the host. The user interface subsystem passes all requests for information and all commands to the host subsystem that performs the actual work.

2.2.2 Graphical User Interface. All access to the CSP is accomplished via the user terminal (Slide 2-10). The CSP window environment employs the OSF/Motif GUI (an extension to the X Window System). Color-coded classification bars are used to reflect the level of security of the information within each window. The following classification/color associations are used within the system:

Unclassified	- Green
Unclassified Encrypt for Transmission Only (EFTO)	- Green
Restricted	- Light Blue
Confidential	- Navy Blue
Secret	- Red
Top Secret	- Orange
Sensitive Compartmented Information (SCI)	- Yellow

Many of the windows have pull-down menus allowing the user to select options or functions to be performed. The CSP operator can make windows into icons to save the windows for future use without closing them. The icons are pictorial representations of the windows. Almost all of the functions may be performed using the standard three-button mouse with minimal reliance on a keyboard. The left button on the mouse is used to select whatever option or function is desired. The middle and right buttons are reserved for specialized actions on specific types of objects. A general use for the right button is to provide the classification of a selected window that may be underneath other windows.

The size and location of the windows on the screen may be modified by a user (Slide 2-11). The Size option for windows can be obtained by selecting the window menu button in the upper left corner of the window. The following options allow the CSP operator to manipulate the windows on the screen:

<u>R</u> estore	Changes an icon back to a window. The window is restored to its original size.
<u>M</u> ove	Allows the window to be repositioned on the screen without changing its size.
<u>S</u> ize	Allows the window to be resized by dragging the resize handles.
<u>M</u> inimize	Changes the window to an icon that is displayed in the icon window. This option is also selectable using the minimize button located in the upper right corner of the window.

<u>M</u> aximize	Expands the window to the size of the full screen. This option is also selectable using the maximize button located in the upper right corner of the window.
<u>L</u> ower	Moves the active window to the bottom of the window stack.
<u>C</u> lose	Removes a window from the display and terminates the application.

A subset of the sizing menu is available for dialogs and is obtained by positioning the pointer to the border of a dialog and pressing the right mouse button (Slide 2-12). Dialogs may be moved, sized, or lowered, but they cannot be minimized, maximized, or closed.

Upon exiting or closing a window, a dialog is frequently displayed requesting some type of operator response. A response is required to that dialog before performing any other action within the main window. There are four main types of dialogs used by the CSP (Slide 2-13). Each type is denoted by the symbol located in the upper left corner of the dialog. A question dialog allows the application to ask the user a question and is denoted by a human silhouette with a question mark. The normal responses are Yes, No, and Cancel. An error dialog, denoted by a small stripe through a stop sign, indicates that a software error has been encountered or that invalid data or an invalid command was entered. A warning dialog, denoted by an exclamation point, alerts the user to the fact that the user actions may result in the loss of data. The last type of message dialog is the information dialog. It is denoted by a large lower case 'i' and is used for messages of an informative nature. It normally contains a single OK push button.

Within the window environment, there are a wide variety of actions that may be used to input or review data. These include scroll bars, menu bars, text fields, check boxes, radio boxes, steppers, lists, and scales and are all explained in the Software User's Manual (SUM).

2.2.3 Hardware Configuration. The CSP is presently executing on the Digital Equipment Corporation (DEC) AXP and the SUN Microsystems Sparc and Ultra processors. These processors all use the off-the-shelf compatible peripheral equipment. Due to the portable nature of the CSP, other platforms may be added in the future.

2.2.3.1 Minimum Hardware Configuration. The minimum hardware configuration consists of a single processor unit, a boot console, three disk drives (system disk, primary message file, and secondary message file), two disks for archiving of messages, a cartridge tape drive for operating system and CSP software releases, a CD-ROM for the Operating System software and Operating System patches, a printer for messages and operational reports, a communication multiplexer appropriate to the host processor, and an X-Window System capable GUI terminal for message processing and system access (Slide 2-14).

2.2.3.2 Maximum Hardware Configuration. The maximum hardware configuration consists of a Central Processing Unit (CPU), a boot console, five disk drives (system disk, primary message file, secondary message file, Intercept disk, back-up pack), two disks for archiving of messages, a cartridge tape drive for operating system and CSP software releases, a CD-ROM for Operating System software and Operating System patches, one or more nine-track tape drives for over-the-counter tape processing, a printer for operational reports, three printers for message output, communication multiplexer(s) appropriate to the host processor, and X Window System capable GUI terminals for message processing and system access (Slide 2-15).

2.3 Basic Operations. The basic operations required to run the CSP system include system ID and login, Notices window, help, password, and session exit (Slide 2-16). The CSP operations are discussed in the following paragraphs.

2.3.1 System Identification and Login. User terminals that have been successfully started with the CSP system display the CSP ID dialog on the screen (Slide 2-17). When the CSP host is ready for user logins, an audit in the Operator Notices Window will beep and state "The CSP host is now ready for user logins". Pushing on the Log In push button or pressing <Return> on the keyboard causes the CSP System Login dialog to be displayed (Slide 2-18).

The Login dialog contains two single-line text fields labeled "Username" and "Password". The CSP operator enters a user ID in the Username field and password in the Password field to login to the CSP system. Characters entered into the password field are not visible. The Login dialog is automatically removed from the screen whenever the keyboard is not used for 30 seconds. The following push buttons are used to specify the action to be performed:

OK	(Default) Sends the username and password to the CSP system for verification.
Clear	Clears both the Username and Password fields.
Help	Displays help on the dialog.

If a valid username and password is entered, the Login dialog is removed from the screen and the CSP Main Menu is displayed (Slide 2-19). If an invalid username or password is entered, an error dialog is displayed (Slide 2-20). If three consecutive invalid passwords are entered, the user is locked out of the system (Slide 2-21). The user needs to consult the Security Manager to regain access to the CSP. The CSP system only allows a user access to one user terminal at a time (Slide 2-22). If a user needs to change user terminals, exit out of the current CSP session on the user terminal being used and login to a different user terminal. The Help push button displays help on the dialog to the user.

The CSP Login requires each user to have a unique username and password. The password is only valid for 90 days, at which time, the CSP forces a user to change their access password. Each user is granted a unique set of privileges by the CSP System Manager. These privileges either allow or disallow access to each CSP application (Slide 2-23).

2.3.2 Notice Window. The Operator Notices window is displayed on the System Console (SUN systems) and on the first user terminal listed in the system generated configuration file (AXP systems). The CSP does not operate without a fully operational auditing function. Consequently, the CSP system does not operate if the Operator Notices window fails to start-up (Slide 2-24).

The Operator Notices window presents significant audit events to the operator in a read-only multiple-line text area. Each new audit record is added to the top of the text area and the existing records are moved down. Approximately 600 audit records, depending on the size of each record, are maintained in the text area. Once the maximum number of audit records is reached, the oldest record is removed from the text area and replaced with the newest record. All of the audit records presented in the Operator Notices window are also written to the permanent Audit file.

Only three types of audit records are sent to the Operator Notices window. The following is a list of the three types of audit records and the results that are displayed:

Info	The Audit record is displayed in the text area.
Warning	The Audit record is displayed in the text area and is accompanied by an audible alarm signal.
Action	The Audit record is displayed in either a warning or an error dialog and is accompanied by two audible alarm signals.
Alert	The Audit record is displayed in a message dialog accompanied by a repeating audible alarm. Operator response is required to clear the audible alarm.

2.3.3 Help. The Help window is accessed by the use of the Help menu that appears at the far right end of every menu bar or by pushing the Help push button contained on dialogs. The following list shows what items the Help menu provides help for (Slide 2-25):

On <u>A</u> pplication	Allows the user to obtain help on the CSP application that owns the window from which this option is selected. The help text displayed is a general overview of the purpose of the application and how it is used.
On <u>W</u> indow	Allows the user to obtain help on how to use the common components of windows. For example, a description of the title bar and how to use it to move a window is included in the help text.
On <u>K</u> eys	Displays help on how to use the keyboard to edit text, change the keyboard focus, and simulate the use of a mouse.
On <u>H</u> elp	Allows the user to obtain help on using all the capabilities of the help facility. The Help message displayed includes a description of the <u>H</u> elp menu, context-sensitive help, and Help window.

When a user selects an option from the Help menu, the Help window is displayed (Slide 2-26). Although only one Help window is available for each application, up to five separate help messages can be displayed in one Help window. Each help message is displayed in its own multiple-line text area. Since the text areas are enclosed by a paned area, a user can vary the amount of data shown in each help message by moving the sashes. When the Help window is initially displayed, it contains only one pane. As additional help is requested, more panes are added to the paned area. The help text displayed cannot be edited.

The Help window contains a File menu, Edit menu, and Help menu. The only option on the File menu is Exit that simply closes the Help window. On the Edit menu, the only option normally available is Search. However, if a user has been given the system privilege to edit site-specific help, all of the standard Edit menu options are available.

Site-specific help is available for most help messages. It allows a particular CSP site to augment the contents of a help message according to its needs. If site help is provided for a help message, a button labeled "Site" is displayed above the help text area. Push the Site button to display a site-specific help

message in the bottom pane of the Help window. If a user has site help editing privileges, all the standard Edit menu options are available, and a push button labeled "Save" is displayed above the site-specific help text area. After editing the site-specific help, push the Save button to permanently save the new help message. A CSP operator may also obtain help on certain dialogs. This is accomplished by pushing the Help push button that is located in the bottom right corner of a dialog.

2.3.4 Password. The Password application is used to change a user password and may be initiated by a user or automatically by the system to change a password (Slide 2-27). A valid password must be between 8 and 16 characters in length to include at least one uppercase character, at least one lowercase character, at least one numeric character and at least one special character. Special characters are as follows: ! " # \$ % & , () * + ' - . / : ; < = > ? @ [\] ^ , ` _ { | } ~. The Set Password dialog is displayed after selecting the password application from the Security menu or is initiated automatically under the following circumstances:

- if it is the first login attempt for a new user account.
- if it immediately follows a password modification through the User Access application.
- when a user's password expires (every 90 days).

To change a user password, enter the current password in the Old Password field, enter the desired new password in the New Password field, reenter the desired new password in the Verify Password field, then push one of the following three push buttons at the bottom of the Set Password dialog (Slide 2-28):

OK	(Default) All data contained in the display is validated. If errors are encountered an error dialog is displayed and the password is not changed. If no errors are encountered, the Set Password dialog is removed and the user password is updated.
Cancel	All changes are discarded and the Set Password dialog is removed. If the Set Password application was automatically initiated by the system, the CSP Main Menu is removed and the CSP Login dialog is displayed. When the Set Password application is initiated by the system, the password has to be successfully changed before a user can continue.
Help	Displays help on the Set Password dialog.

2.3.5 Session Exit. The Session menu under the CSP Main Menu contains a single Exit option that allows a user to log off the CSP (Slide 2-29). After selecting the Exit option, a warning dialog is displayed that asks the user to verify their intention to exit the current CSP session. If the user responds Yes, the CSP Main Menu is removed from the screen, and the CSP ID dialog is displayed. If a user responds with No, the warning dialog is removed.

All applications on the user terminal need to be closed prior to exiting the CSP system. A warning dialog is displayed prohibiting the exit whenever an application is still active (Slide 2-30).

2.3.6 Exercises. The following are the exercises for section 2.3.1 through section 2.3.5:

- ___ 1. Attempt a login into CSP using a valid username and an invalid password. Acknowledge the dialog.
- ___ 2. Attempt a login into CSP using an invalid username and an invalid password. Acknowledge the dialog.
- ___ 3. Attempt a login into CSP using a valid username and password.
- ___ 4. Select Session/Exit from the CSP Main Menu. Acknowledge the dialog by selecting Yes.
- ___ 5. Login to CSP using a valid username and password.
- ___ 6. Select Help/On Applications from the CSP Main Menu.
- ___ 7. Select Help/On Help from the CSP Main Menu.
- ___ 8. Select Help/On Window from the CSP Main Menu.
- ___ 9. Select Help/On Keys from the CSP Main Menu.
- ___ 10. Select File/Exit from the Help window.
- ___ 11. Change the password from the CSP Main Menu. Respond to the dialog with appropriate information.
- ___ 12. Select Session/Exit from the CSP Main Menu. Respond to the dialog by selecting Yes.
- ___ 13. Login into CSP using a valid username and the new password.
- ___ 14. Select Session/Exit from the CSP Main Menu. Respond to the dialog by selecting No.
- ___ 15. Select Session/Exit from the CSP Main Menu. Respond to the dialog by selecting Yes.

2.4 Resource Operations. Resource Operations discusses database attributes, access, versions, file menus, options menus, edit menus, category menus, community menus, and resource contention (Slide 2-31). The CSP resource operations are discussed in the following paragraphs.

2.4.1 Database Operations. The CSP contains 11 databases. Seven of the 11 databases are system databases, and 4 of the 11 databases are security databases. The seven system databases are: Automatic Routing, Destinations, Office Assignments, Plain Language Address, Routing Indicators, Routing Line Segregation, and STU III. The 4 security databases are: Communication Lines, Information Labels, Security Dictionary, User Access. All 11 databases with the exception of the STU-III database (which does not support versioning) are similar in regards to database attributes, access, versions, File menu selections, and Options menu selections.

The four databases that include a Category menu selection are Plain Language Address, Routing Indicators, STU-III and Security Dictionary. Plain Language Address and Automatic Routing have the Edit menu selection and only Routing Indicators has the Community menu selection.

2.4.1.1 Attributes. The CSP databases are relational databases. All entries are stored in a fixed record structure and are accessed based upon keyed, sorted record fields. The databases may be modified while the system is on-line. All modifications are placed in effect as soon as the database is saved; five of the databases, two system and three security, may be scheduled for a Future update. One of the system databases, Plain Language Address, may be scheduled for a future update within 96 hours (four days) from the time of modification. The other four may be scheduled for a future update within 24 hours from the time of modification (Slide 2-32).

All databases are subject to a system resource check. This ensures that two operators are not modifying the same database and that a database has exclusive access to all related databases (e.g., the automatic routing database needs exclusive access to the Office Assignments database, therefore, both cannot be open at the same time for modification). All databases may be printed.

2.4.1.2 Access. The CSP databases may be opened for either View or Modify access. If a database is opened for View access, no modifications may be made to the contained information, however, all information may be viewed. If a database is opened for Modify access, information may be added, deleted, or modified (Slide 2-33).

2.4.1.3 Versions. The CSP system maintains Current, Future, Temporary, and Previous versions of each database with the exception of the STU-III database. The Current version is the database currently in use on the system. The Future version is the database scheduled to be updated to the Current version at a scheduled time requested by an operator. The Temporary version is a user controlled working copy of the database. The Previous version is the database that was the Current version prior to a database update.

A user may always open the Current, Temporary, or Previous version of a database for View or Modify access, providing the database resource is not locked by another user or task. The Future version is only applicable to 5 of the 11 databases in the CSP system. The 5 Future versions of the databases that may be opened are: Communication Lines, Information Labels, Plain Language Address, Routing Indicators, and Security Dictionary (Slide 2-34).

If a database is open for Modify access, it may always be closed to the Current or Temporary version. If the database supports a Future version, the operator may close the database to the Future version. The operator may also opt to discard all applied changes (Slide 2-35).

The ability to open any version of a database and close that database to a different version allows the database manager flexibility in database manipulation. A typical use would be to open the Temporary version of a database for modification, make the appropriate changes, and close the database to the Current version (Slide 2-36).

When a database is closed to the Current version, the CSP system handles all aspects of suspending message processing to ensure that no database is updated in the middle of processing a message. The following represents a simplified overview of the steps taken when a database is closed to the Current version (Slide 2-37):

- 1) Modified database is saved to the Future version
- 2) Message processing is suspended
- 3) Current version of the database is copied to the Previous version
- 4) Future version of the database is copied to the Current version
- 5) Message processing is restarted

The following represents a simplified overview of the steps taken when a database is closed to the Future version:

- 1) Modified database is saved to the Future version and starts a timer
- 2) Waits for the database timer to expire
- 3) Message processing is suspended
- 4) Current version of the database is copied to the Previous version
- 5) Future version of the database is copied to the Current version
- 6) Message processing is restarted

2.4.1.4 File Menu. All CSP database windows contain a File menu. This File menu contains four file handling functions. These file handling options are Open, Close, Print, and Exit.

2.4.1.4.1 Open. The Open option is the first selection within the File menu and is used to bring an existing version of a database into a window (Slide 2-38). This option may also be invoked by pressing <Ctrl+O> while a database window is the active window. Upon selection of the Open option, the Open dialog is displayed overlaying the main window (Slide 2-39). The Open dialog is displayed automatically when an application involving manipulation is initiated. This dialog allows the CSP operator to select the required access (e.g., View or Modify), and version (e.g., Current, Future, Temporary, or Previous) of the selected database. These selections are made using the appropriate radio boxes on the Open dialog. Make the appropriate selections on the Open dialog and then select one of the following push buttons:

- | | |
|--------|--|
| Open | (Default) Opens the requested version of the database with the specified access. The Open dialog is removed. |
| Cancel | Cancels the open request and closes the Open dialog. |
| Help | Displays the Help dialog for the Open dialog. |

When an operator requests to open a database, the system performs a series of resource checks to ensure that the database is allowed to be opened for the access requested. If a resource contention is discovered, an error dialog is displayed informing the operator which resource is unavailable (Slide 2-40). If no resource contention problems are encountered, the database is opened as requested.

If a database update is currently in progress, that database is not able to be opened for View or Modify access (Slide 2-41). If a database, other than the Plain Language Address, is scheduled for a Future update and a request is made to open the database, the operator is presented with a warning dialog informing the user of the update and the scheduled time for the update (Slide 2-42). This dialog contains the following two push buttons:

- OK Aborts the scheduled update, removes the warning dialog, and displays the Open dialog. The operator may now request access to a version of the database.
- Cancel (Default) Cancels the Open request and removes the warning dialog.

If the Plain Language Address Database is scheduled for a future update and a request is made to open the database for view, the operator is presented with a warning dialog informing the user of the update, the scheduled time for the update and the operator is asked whether the update should be postponed until after the Plain Language Address Database is exited (Slide 2-42). This dialog contains the following two push buttons.

- OK Postpones the scheduled update, removes the warning dialog and displays the Plain Language Address Database.
- Cancel (Default) Cancels the Open request and removes the warning dialog.

If an operator selects to cancel an update, and the update time is within one minute of the current time, the system disallows the cancel request. If an operator cancels a Future update, the database that was scheduled for update is located in the Future version for that database.

2.4.1.4.2 Close. The Close option is the second selection within the File menu (Slide 2-43). This option may also be invoked by pressing <Ctrl+C> while a database window is the active window. If the database was opened for Modify access, the Close dialog is displayed (Slide 2-44). This dialog allows the operator to select the version of the opened database to be written to (e.g., Current, Future, or Temporary) or to discard all changes made since the database was opened. If the database was opened for View access, the operator is returned to the database main window. Make the appropriate selections on the Close dialog and then select one of the following three push buttons:

- Close (Default) Closes the open database to the requested version and removes the Close dialog. If Discard Changes was selected, the Discard Changes dialog is displayed.
- Cancel Cancels the close request and removes the Close dialog.
- Help Displays help on the Close dialog.

When closing a database, the operator may select one of three possible database versions or opt to discard all changes made. The Current and Temporary options save the database to the requested version. The Future option requires the operator to enter a time for the update to commence. The Plain Language Address database requires the operator to also enter a date. This time is the system time that the update is to occur. This allows the operator to specify any time within a 24 hour period. If the date field is present, the operator may specify any date and time within a 96 hour (four day) period. The Discard Changes option allows the operator to discard all applied changes. The Discard Changes dialog is displayed where the appropriate action is requested (Slide 2-45 (1 of 2)). This dialog contains the following two push buttons:

- | | |
|--------|---|
| OK | (Default) Closes the current database without saving any applied changes. Both the Discard Changes and Close dialogs are removed. |
| Cancel | Cancels the Discard Changes selection and removes the Discard Changes dialog. |

When closing the STU-III database, the operator is immediately presented with the Save Modification dialog (Slide 2-45 (2 of 2)). This dialog contains the following three push buttons:

- | | |
|--------|--|
| Yes | (Default) Saves the database and closes the Save modifications dialog and the STU-III database display. |
| No | Removes the Save modifications dialog and the STU-III database display without saving the modifications. |
| Cancel | Removes the Save modifications dialog and cancels the Save selection, returning to the STU-III database display. |

NOTE: There is only one version of the STU-III database (i.e., no future, current, previous, or temporary).

2.4.1.4.3 Print. The Print Option is the third selection within the File Menu (Slide 2-46). This option may also be invoked by pressing <Ctrl+P> while a database window is the active window. Upon selection of the Print option, the Print dialog is displayed overlaying the database main window (Slide 2-47). This dialog allows the operator to obtain hard copies of the database.

The Print dialog contains a list of the available printer destinations and a scale to specify the number of copies to be printed. Make the appropriate selections and then select one of the following three push buttons:

- | | |
|--------|--|
| Print | (Default) Prints the number of copies of the active database to the specified printer device. The Print dialog is removed. |
| Cancel | Cancels the Print requests and removes the Print dialog. |
| Help | Displays help on the Print dialog. |

2.4.1.4.4 Exit. The Exit option is the fourth selection within the File Menu (Slide 2-48). This option may also be invoked by pressing <Ctrl+E> while a database window is the active window. If the database was opened for View access or no changes were applied to the database, the database and main

window are closed and the application is terminated. If the database was opened for Modify access and changes were applied to the database, the Save dialog is displayed (Slide 2-49). This dialog allows the operator to specify whether the applied changes are to be saved using the following three push buttons:

- | | |
|--------|---|
| Yes | (Default) Removes the Save Modifications dialog and displays the Close dialog. After making the desired selections on the Close dialog and pushing the Close button, the database and main window are closed and the application is terminated. |
| No | Closes the database and main window without saving modifications and terminates the application. |
| Cancel | Cancels the Exit request and removes the Save Modifications dialog. |

If the CSP operator has requested a save of the database changes by selecting Yes on the Save dialog, the Close dialog is displayed. The Close dialog allows the operator to select the version of the opened database to be written to (e.g., Current, Future, or Temporary) or to discard all changes made since the database was opened. Make the appropriate selections on the Close dialog and then select one of the following three push buttons:

- | | |
|--------|---|
| Close | (Default) Closes the open database to the requested version and removes the Close dialog. If Discard Changes was selected, the Discard Changes dialog is displayed. |
| Cancel | Cancels the close request and removes the Close dialog. |
| Help | Displays help on the Close dialog. |

NOTE: There is only one version of the STU-III database (i.e., no future, current, previous, or temporary). The close dialog is not presented if “Yes” is selected from the close dialog. In this case, the STU-III database is closed and the changes are saved immediately.

2.4.1.5 Options Menu. The Options menu provides functions to assist in maintaining files and performing operations on messages. Each application has its own specific set of options on the Options menu.

2.4.1.5.1 Expand. The Expand option is used to modify or view a record currently in a file (Slide 2-50). The Expand option is sensitized only when a single selection has been made from the application list. Each application has its own unique Expand dialog and the specific fields and restrictions are discussed with each application.

To modify or view a record, select the record from the list in the application main window, then select Expand from the Options menu and the Expand dialog is displayed (Slide 2-51). If the file is open for

Modify access, the push buttons are Modify, Cancel, and Help. If the file is open for View access, the push buttons are Close and Help. The expand dialog has the following four possible push buttons:

Modify	(Default for Modify) All data contained in the dialog is validated. If errors are encountered, an error dialog is displayed. Push the OK push button to acknowledge the error. The error dialog is removed and the errors may be corrected. If no errors are encountered, the Expand dialog is removed.
Cancel	Any changes are discarded, and the Expand dialog is removed.
Close	(Default for View) The Expand dialog is removed.
Help	Displays help on the dialog to the user.

2.4.1.5.2 Append. The Append option is used to append a new record to a file and is only sensitized when a file is open for Modify access (Slide 2-52). Any selections from the list are ignored when Append is chosen. Append is a valid option regardless of the number of items selected.

To append a new record to a file, select Append from the Options menu and the Append dialog is displayed (Slide 2-53). The fields in the Append dialog are blank except for any default values. Make all desired changes to the dialog and select one of the three following push buttons:

Append	(Default) All data contained in the dialog is validated. If errors are encountered, an error dialog is displayed. Push the OK push button to acknowledge the error. The error dialog is removed and the errors may be corrected. If no errors are encountered, the Append dialog is refreshed to its initial state and the new record is displayed at the end of the application main list. Another record may now be appended to the file.
Close	Any changes entered after the last Append are discarded, and the Append dialog is removed. If the list in the main window is a sorted list, the list is resorted at this time.
Help	Displays help on the dialog to the user.

2.4.1.5.3 Duplicate. The Duplicate option is used to make a duplicate of an existing record in a file. The Duplicate option is only sensitized when a file is open for Modify access and a single selection has been made from the application list (Slide 2-54).

To duplicate a record in a file, select the record to be duplicated from the list and select Duplicate from the Options menu, the Duplicate dialog is displayed (Slide 2-55). The fields in the Duplicate dialog contain the values associated with the record selected from the list. Make all desired changes to the dialog and then select one of the following three push buttons:

Duplicate	(Default) All data contained in the dialog is validated. If errors are encountered, an error dialog is displayed. Push the OK push button to acknowledge the error. The error dialog is removed and the errors may be corrected. If no errors are
-----------	---

encountered, the Duplicate dialog is refreshed to its initial state and the new record is displayed in the application list just preceding the selected record. The selected record may now be duplicated again.

- | | |
|-------|--|
| Close | Any changes entered after the last Duplicate are discarded, and the Duplicate dialog is removed. If the list in the main window is a sorted list, the list is resorted at this time. |
| Help | Displays help on the dialog to the user. |

2.4.1.5.4 Delete. The Ddelete option is used to remove one or more existing records from a file. The Ddelete option is only sensitized when a file is open for Modify access and one or more entries have been selected from the application list (Slide 2-56).

To delete a record from the file, select the record(s) to be deleted from the list and select Ddelete from the Options menu. The Delete dialog is displayed with the first record selected in the dialog (Slide 2-57). The delete dialog has the following four push buttons:

- | | |
|------------|--|
| Delete All | All records selected from the application list are deleted from the file and removed from the application list. If errors are encountered, an error dialog is displayed. Push the OK push button to acknowledge the error. The error dialog is removed and the processing continues. After all selected records are deleted, the Delete dialog is removed. |
| Delete | (Default) The record displayed in the Delete dialog is deleted from the file and removed from the application list. If an error is encountered, an error dialog is displayed. If more records remain to be deleted, the next selected record is displayed in the Delete dialog. If no records remain to be deleted, the Delete dialog is removed. |
| Keep | The record displayed in the Delete dialog is not deleted and is deselected from the application main list. If more records remain to be deleted, the next selected record is displayed in the Delete dialog. If no records remain to be deleted, the Delete dialog is removed. |
| Close | All remaining items selected from the main list are not deleted and are deselected from the application main list, and the Delete dialog is removed. |

2.4.1.6 Edit. The Edit menu is used to perform Search and Replace operations on the Plain Language Address Database as well as the Automatic Routing Database. The Replace option is not available if the database is opened with view-only access. Additionally, the Edit menu within the Automatic Routing Database includes Undo, Cut, Copy, Paste, Clear and Delete commands.

2.4.1.6.1 Search. The Search option is used to search the entire Plain Language Address Database for a specific substring. After selecting Search, a dialog is displayed containing a text field labeled “Search for:”, and three push buttons labeled “Search”, “Cancel”, and “Help” (Slide 2-61 (1 of 2)).

To use the Search dialog, enter the text to be searched for in the text field. Then click one of the buttons at the bottom of the dialog.

Search	(Default) Begins the search of the Plain Language Address Database. The search begins at the current location in the Plain Language Address Database, searches to the end, and continues from the beginning down to the current location. If the text is not found, a dialog with the message “No items were found” will appear. If the text is found, it will be highlighted within the appropriate PLA, AIG, or DAG dialog. You can keep searching for the same text string, or the search text field may be edited to search for something different.
Cancel	Removes the dialog.
Help	Displays help on the dialog.

The Search option found under the Edit menu within the Automatic Routing Database operates in a similar manner except that “Close” removes the dialog instead of “Cancel”.

2.4.1.6.2 Replace. The Replace option is used to search for a string in the Plain Language Address Database and replace it with another string. After selecting Replace, a dialog is displayed containing two text fields labeled “Search for:” and “Replace with:”, a toggle button labeled “Replace All”, and four push buttons labeled “Search,” “Replace,” “Cancel,” and “Help” (Slide 2-61 (2 of 2)).

To use the Replace dialog, enter the search and replacement text in the appropriate fields. If the Replace All toggle is selected, the Replace push button is labeled Replace All instead of Replace. To find all occurrences of the search text and automatically replace each one with the replacement text, click the Replace All button. Otherwise, click the Search button.

Search	(Default) Manually search for text and select each occurrence to replace.
Replace	Select each time you want to replace the selected text.
Cancel	Removes the dialog.

The Replace option, found under the Edit menu within the Automatic Routing Database, operates in a similar manner except that two additional checkboxes are found in the Replace dialog (Whole Word and Case Sensitive) and “Close” removes the dialog instead of “Cancel”.

2.4.1.7 Category. The Category menu is used to designate the type of list to be displayed in the window and is utilized within the following databases: Plain Language Address, Routing Indicator, STU-III and Security Dictionary.

2.4.1.7.1 Plain Language Address Category Menu. The Plain Language Address Category menu contains the options of PLAs, AIGs, and DAGs. The PLAs, AIGs, and DAGs are used by the PLA application to convert DD Form 173 input into appropriate GENSER or DSSCS messages (Slide 2-62).

2.4.1.7.1.1 PLA. The PLA option is used to provide the list of PLAs.

2.4.1.7.1.2 AIG. The AIG option is used to provide the list of Address Indicator Groups (AIGs).

2.4.1.7.1.3 DAG. The DAG option is used to provide the list of DSSCS Address Groups (DAGs).

2.4.1.7.2 Routing Indicators Category Menu. The Routing Indicator Category Menu contains the options of Local RIs, CARP RIs, Collective RIs, and Special RIs. Each of these options designates a level or type of RI classification (Slide 2-63).

2.4.1.7.2.1 Local RIs. The Local RI option is used to provide the list of Local RIs.

2.4.1.7.2.2 CARP RIs. The CARP RI option is used to provide the list of Contingency Alternate Routing Program (CARP) RIs.

2.4.1.7.2.3 Collective RIs. The Collective RI option is used to provide the list of Collective RIs.

2.4.1.7.2.4 Special RIs. The Special RI option is used to provide the list of Special RIs.

2.4.1.7.3 STU-III Menu. The STU-III Category menu is used to designate which portions of the database are to be viewed or modified. The Category menu contains the options of Device List and ACL Entries (Slide 2-64).

2.4.1.7.3.1 Device List. The Device List option is used to provide the list of defined STU-III devices. AT&T STU-III units and Motorola STU-III units cannot be mixed on a single CSP system. The list of STU-III's maps each phone to the CommServer port to which they are attached.

2.4.1.7.3.2 ACL Entries. The ACL Entries option is used to provide the list of defined ACLs. The Access Control List maps each ACL entry to an associated communications line.

2.4.1.7.4 Security Dictionary Category Menu. The Security Dictionary Category menu contains the options of Classifications, Classification Association, Compartment, Codewords, Caveats, TCCs, TCC Associations, TRC Associations, SPECATs, LMFs, Handling Instructions, CICs, and Words/Phrases. Ten of the categories define a particular type of security element while three provide associations for the security element (Slide 2-65).

2.4.1.7.4.1 Classifications. The Classifications option is used to provide the list of Classifications.

2.4.1.7.4.2 Classification Associations. The Classification Associations option is used to provide an empty list. Only Option /Expand is available.

2.4.1.7.4.3 Compartments. The Compartments option is used to provide the list of Compartments.

2.4.1.7.4.4 Codewords. The Codewords option is used to provide the list of Codewords.

2.4.1.7.4.5 Caveats. The Caveats option is used to provide the list of Caveats.

2.4.1.7.4.6 TCC. The TCC option is used to provide the list of Transmission Control Codes (TCCs).

2.4.1.7.4.7 TCC Associations. The TCC Associations option is used to provide the list of TCCs.

2.4.1.7.4.8 TRC Associations. The TRC Associations option is used to provide an empty Transmission Release Code (TRC) Associations list. Only Option /Expand is available.

2.4.1.7.4.9 SPECAT. The SPECAT option is used to provide the list of Special Categories (SPECAT).

2.4.1.7.4.10 LMF. The LMF option is used to provide the list of Language Media Formats (LMF).

2.4.1.7.4.11 Handling Instructions. The Handling Instructions option is used to provide the list of Handling Instructions.

2.4.1.7.4.12 CIC. The CIC option is used to provide the list of Content Indicator Codes (CIC).

2.4.1.7.4.13 Words/Phrases. The Words/Phrases option is used to provide the list of Words and Phrases.

2.4.1.8 Community. The Community option is used to designate from which community (GENSER or DSSCS) the displayed RI list will be derived from. The Community menu is utilized as an option for the Routing Indicator database (Slide 2-66).

2.4.1.8.1 GENSER. The GENSER option is used to provide the list of RIs associated with the GENSER community.

2.4.1.8.2 DSSCS. The DSSCS option is used to provide the list of RIs associated with the DSSCS community.

2.4.2 Parameter Operations. The CSP system contains 7 parameter files that contain information used to modify the system operating parameters. The 7 parameter files are: Automatic Routing, Communication Lines, Message Database, Message Processing, Precedence Timing, Report Scheduling, and Font Characteristics. All 7 of the parameter applications have a similar structure in regard to attributes and access and are updated immediately upon exit. With the exception of the report scheduler parameter application, no version handling is available. An eighth parameter file, CDAC, is available if the system is loaded with the optional software.

2.4.2.1 Attributes. Upon selecting one of the parameter applications, a user with the proper privileges is presented with a dialog requesting whether the user wants to modify the parameters or simply view the parameters. The one exception to this is the Reports Scheduling parameter application. This application requires the user to select the version of the parameters database (Current, Temporary, or Previous) and whether the database is to be opened for View or Modify access.

Once inside the appropriate application, the parameters may be changed using scales, push buttons, check boxes, radio boxes, list selection, or straight data input. Each application contains a Help option that can assist the user with useful information pertaining to the given application. All parameter applications contain a method to cancel or discard applied changes. This is either by the use of the Exit option contained on Parameter windows or the Cancel push button contained on Parameter dialogs. Selecting these options closes the active window/dialog without making any changes to the original parameters (Slide 2-58).

Both the Communication Lines parameter application and the Report Scheduling parameter application require the user to select the particular line or report for which the parameters are to be changed. Only one line or report schedule may be reconfigured at a time.

2.4.2.2 Access. The CSP parameters may be opened for either View or Modify access (Slide 2-59). With the exception of the Report Scheduling parameter application, that is prefaced with the Open dialog, access to any of the parameter dialogs is prefaced with a Select Access dialog. The Select Access dialog is only displayed to users who have Modify access privileges. The users may select the required access for each session. The Access dialog has the following three push buttons:

Modify	(Default) Opens the selected Parameter application file for Modify access.
View	Opens the selected Parameter application file for View access.
Cancel	Cancels the access request and removes the Select Access dialog.

2.4.3 Resource Contention. The CSP system uses resource management as the method to control multiple access to its system databases, parameter files, and devices while protecting against the corruption of these objects (Slide 2-60).

Within CSP, each system database, parameter file, and device is equated to a specific resource ID. The CSP system uses these resource IDs to monitor and control access to its resources. The two basic access rules that are followed for accessing the CSP resources are:

1. Many readers and no writers.
2. One writer and no readers.

For example, if user one has the RI database opened for View access, user two may also open the RI database for View access, but user two cannot open the RI database for modification. If user one has the RI database opened for Modify access, no other user may open the RI database for View or Modify access until user one closes the RI database.

Accessing certain resources has an impact on access to other resources because of the complexity of the CSP system. For example, if read or write access has been granted to any of the resources related to system databases or system parameter files, then write access to the resource related to the system disk is denied. Table 2.4.3-1 shows each of the CSP applications and the CSP resources and activities that are not allowed to occur simultaneously due to resource contentions.

2.4.4 Exercises. The following are exercises for section 2.4.1 through section 2.4.3:

- ___ 1. Login to the CSP system.
- ___ 2. Determine which of the system databases can be scheduled for future updates.
- ___ 3. Determine which of the security databases can be scheduled for future updates.

- ___ 4. Identify the six parameter files.
- ___ 5. Exit from the CSP Main Menu.

Table 2.4.3-1 Activities Not Allowed Simultaneously

CSP APPLICATION	CSP SYSTEM ACTIVITES AND RESOURCES
Msg Review	ARM DB (Modify) Office DB (Modify) Destination DB (Modify)
Msg Recall	Destination DB (Modify)
Msg Gen	Destination DB (Modify)
MSP	Destination DB (Modify)
CL Status	Destination DB (Modify)
MR Status	Destination DB (Modify)
MP Status	
AUTODIN Status	
Comm Line Control	Destination DB (Modify) Comm Line Sec (Modify)
Altroute Control	Destination DB (Modify)
Msg Proc Control	
System Shutdown	
Report Generation	
ARM DB (View)	ARM DB (Modify) Destination DB (Modify)
ARM DB (Modify)	Msg Review ARM DB (View) ARM DB (Modify) Office DB (Modify) Destination DB (Modify) ARM Parm (Modify)
Office DB (View)	Office DB (Modify) Destination DB (Modify)
Office DB (Modify)	Msg Review ARM DB (Modify) Office DB (View) Office DB (Modify) Destination DB (Modify)
PLA DB (View)	PLA DB (Modify)
PLA DB (Modify)	PLA DB (View) PLA DB (Modify) OLT
RI DB (View)	RI DB (Modify)

Table 2.4.3-1 Activities Not Allowed Simultaneously (Continued)

CSP APPLICATION	CSP SYSTEM ACTIVITIES AND RESOURCES
RI DB (Modify)	RI DB (View) RI DB (Modify) OLT
RLS DB (View)	RLS DB (Modify) Destination DB (Modify)
RLS DB (Modify)	RLS DB (View) RLS DB (Modify) Destination DB (Modify)
Dest DB (View)	Destination DB (Modify)
Dest DB (Modify)	Active Msgs Msg Proc Active Destination DB (View)
ARM Param (View)	ARM Param (Modify)
ARM Param (Modify)	ARM DB (Modify) Destination DB (Modify) ARM Param (View) ARM Param (Modify)
MSG DB Param (View)	Msg DB Param (Modify)
MSG DB Param (Modify)	Msg DB Param (View) Msg DB Param (Modify)
Comm Line Param (View)	Destination DB (Modify) Comm Line Param (Modify) Comm Line Sec (Modify)
Comm Line Param (Modify)	Destination DB (Modify) Comm Line Param (View) Comm Line Param (Modify) Comm Line Sec (Modify)
Report Param (View)	Destination DB (Modify) Report Param (Modify) Comm Line Sec (Modify)
Report Param (Modify)	Destination DB (Modify) Report Param (View) Report Param (Modify) Comm Line Sec (Modify)
Msg Proc Param (View)	Msg Proc Param (Modify)
Msg Proc Param (Modify)	Msg Proc Param (View) Msg Proc Param (Modify)
Prec Param (View)	Prec Param (Modify)
Prec Param (Modify)	Prec Param (View) Prec Param (Modify)
Disk Util	
Tape Util	

Table 2.4.3-1 Activities Not Allowed Simultaneously (Continued)

CSP APPLICATION	CSP SYSTEM ACTIVITES AND RESOURCES
OLT	PLA DB (Modify) RI DB (Modify)
Password	
User Access (View)	User Access (Modify)
User Access (Modify)	Logging In User Access (View) User Access (Modify)
Sec Dict (View)	Sec Dict (Modify) Comm Line Sec (Modify) Label Sec (Modify)
Sec Dict (Modify)	Msg Proc Active Msg Recall Sec Dict (View) Sec Dict (Modify) Comm Line Sec (View) Comm Line Sec (Modify) Label Sec (View) Label Sec (Modify)
Comm Line Sec (View)	Destination DB (Modify) Sec Dict (Modify) Comm Line (Modify) Label Sec (Modify)
Comm Line Sec (Modify)	Msg Proc Active Msg Recall Comm Line Control Destination DB (Modify) Comm Line Parm (View) Comm Line Parm (Modify) Report Parm (View) Report Parm (Modify) Sec Dict (View) Sec Dict (Modify) Comm Line Sec (View) Comm Line Sec (Modify) Label Sec (View) Label Sec (Modify)
Labels (View)	Sec Dict (Modify) Comm Line Sec (Modify) Label Sec (Modify)

Table 2.4.3-1 Activities Not Allowed Simultaneously (Continued)

CSP APPLICATION	CSP SYSTEM ACTIVITES AND RESOURCES
Labels (Modify)	Msg Proc Active Msg Recall Sec Dict (View) Sec Dict (Modify) Comm Line Sec (View) Comm Line Sec (Modify) Label Sec (View) Label Sec (Modify)
Audit Trail	
STU-III (View)	STU-III (Modify)
STU-III (Modify)	STU-III (View)

APPENDIX A STUDENT TRAINING MATERIAL GENERAL OVERVIEW SLIDES

Introduction

- CSP mission, functionality, and subsystems
- Hardware configuration
- Graphical User Interface
- CSP basic operations
- CSP resource operations
- File menu
- Options menu
- Parameter operations

CSP Mission

- Automate activities of a fixed-base SSO TCC and BCC
- Consolidated DSSCS and GENSER message handling
- Tailorable to satisfy Tactical/Mobile communication requirements
- Satisfy DIA Circular 5030.58-M security requirements for an AMPE
- Satisfy DCA Circulars 370-D195-1 and 370-D195-3 for connection to AUTODIN

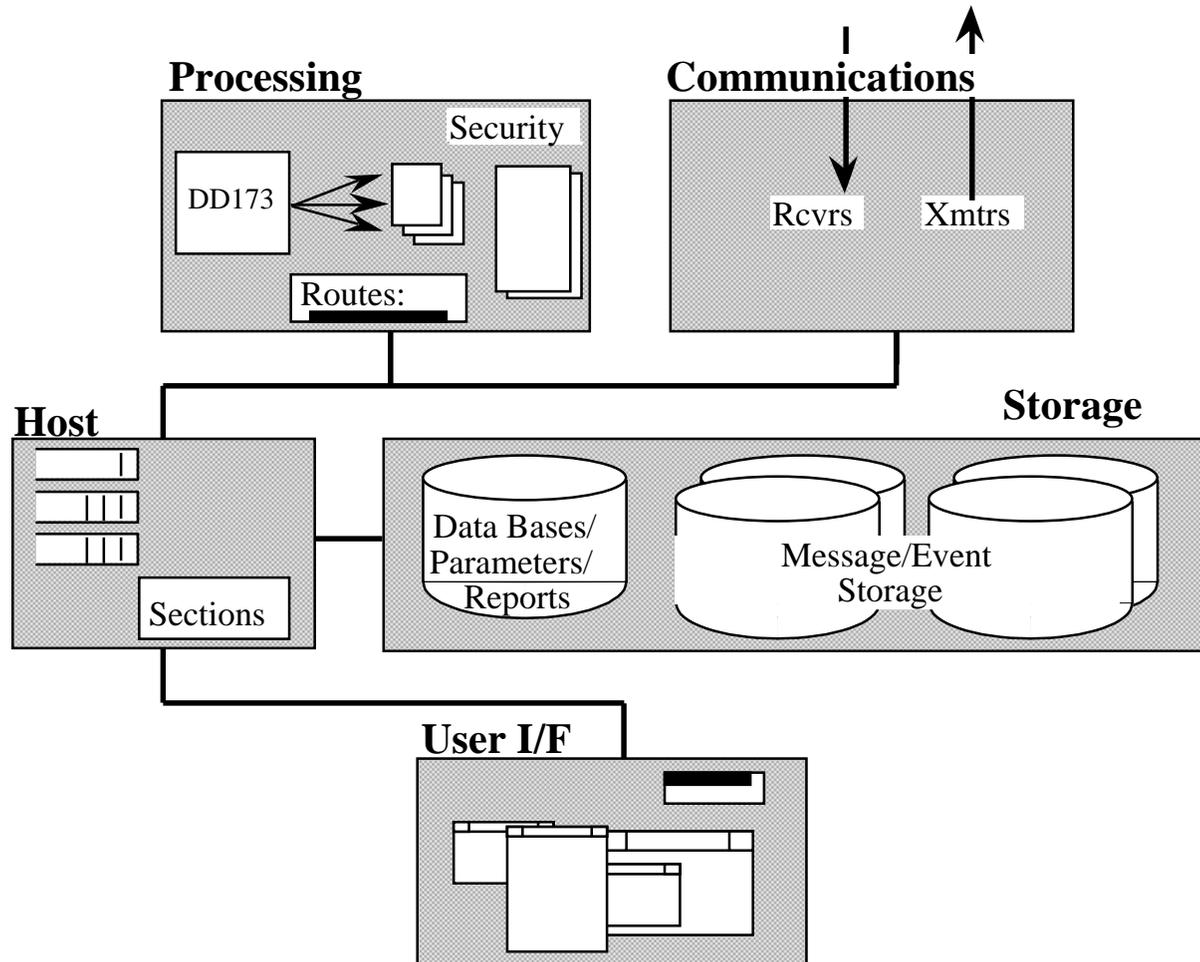
HOL CSP Functionality

- Primary functions:
 - Communications circuit automation
 - Message receipt
 - DD Form 173/ACP 126 conversion
 - Message format validation
 - Message security validation
 - Automated message routing determination
 - Manual dissemination
 - Message generation
 - Message edit
 - Message transmission
 - Message recall

HOL CSP Functionality

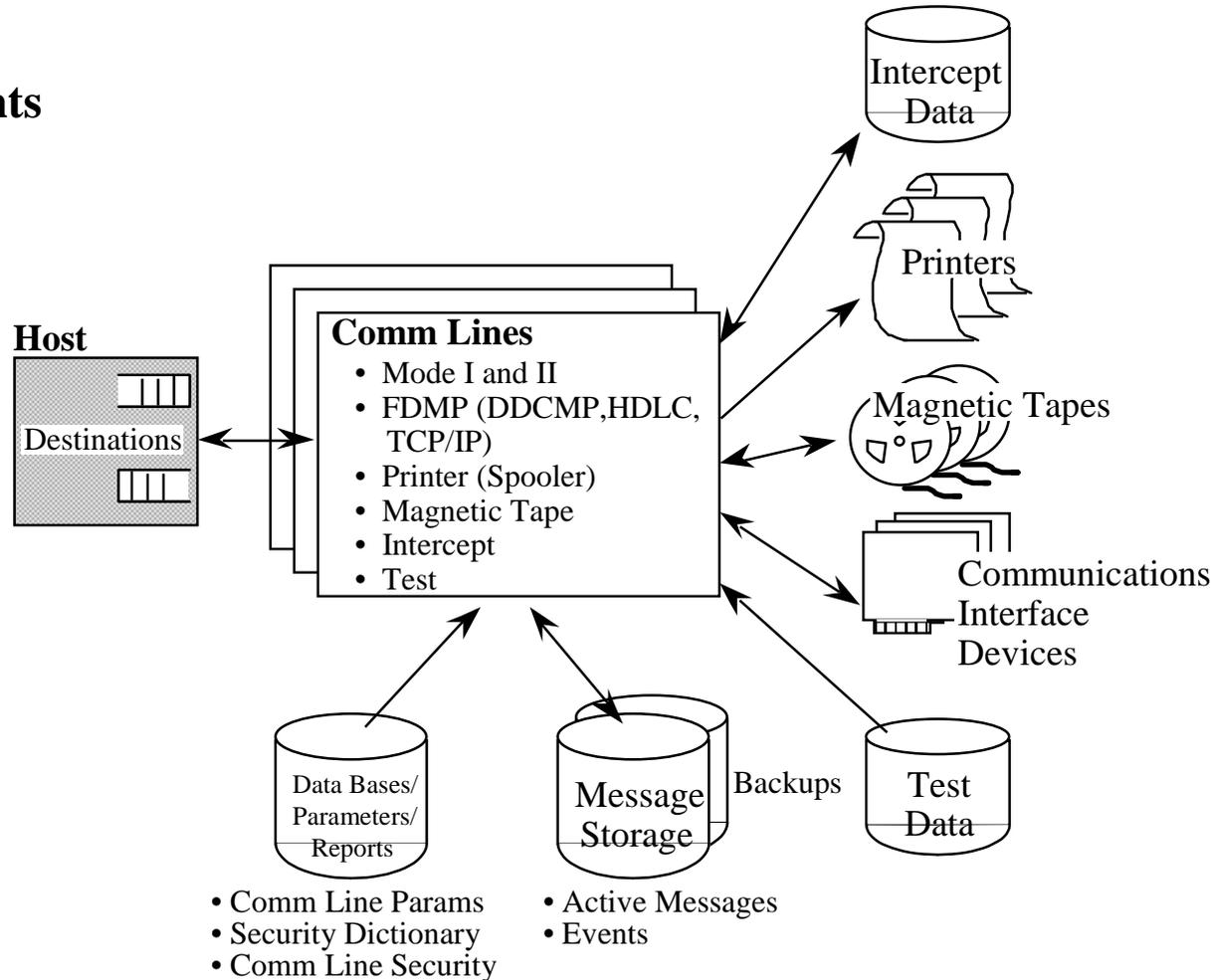
- Support functions:
 - On-line system configuration control
 - System control
 - Status reporting
 - On-Line Testing support
 - User access privileges

Subsystems



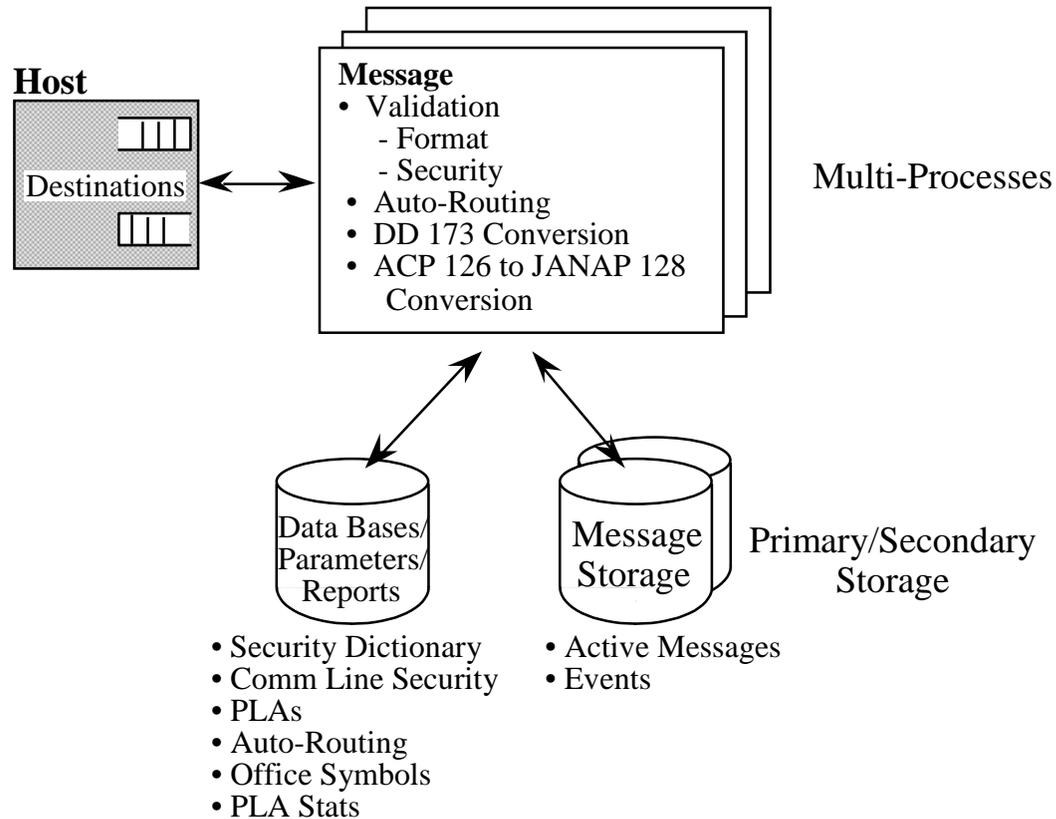
Communications Subsystem

Components



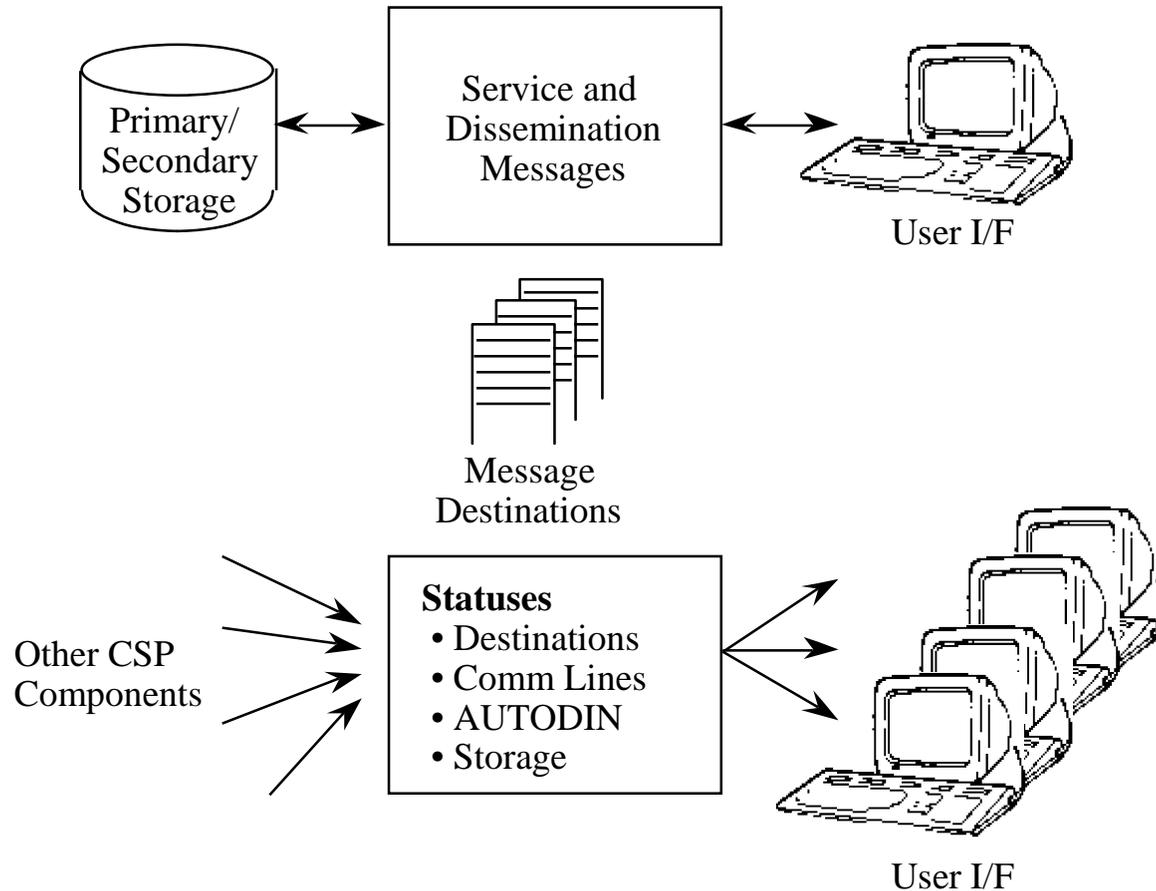
Processing Subsystem

Components



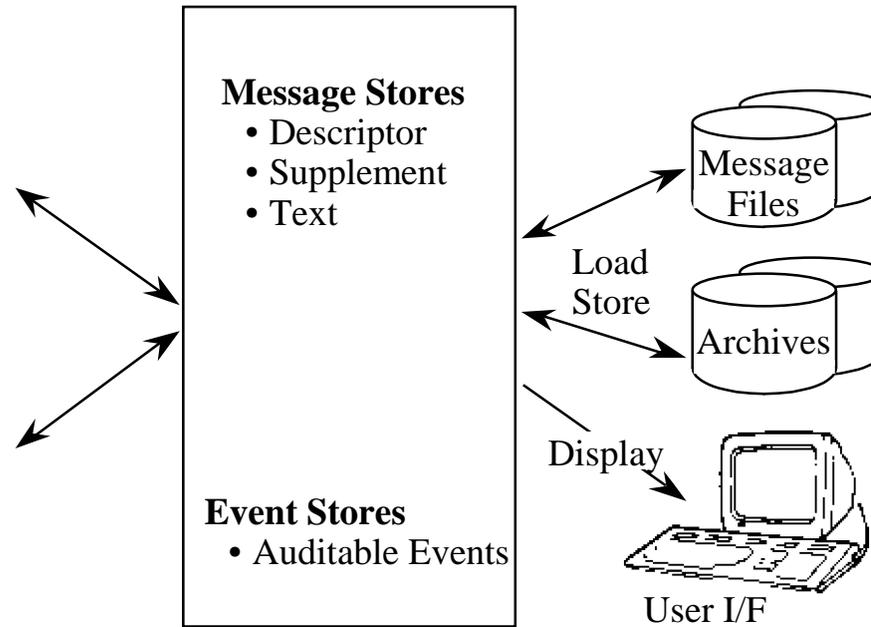
Host Subsystem

Components



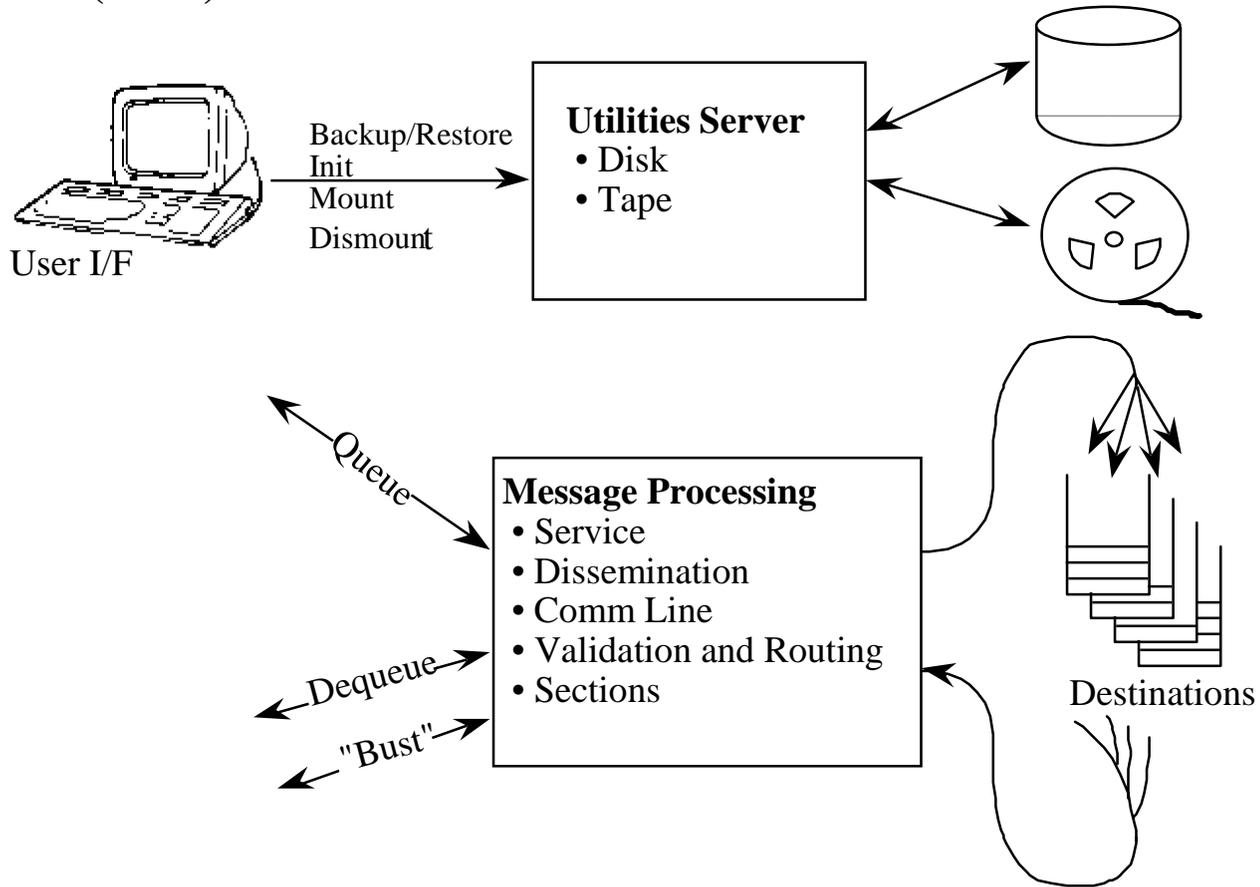
Host Subsystem

Components (cont.)



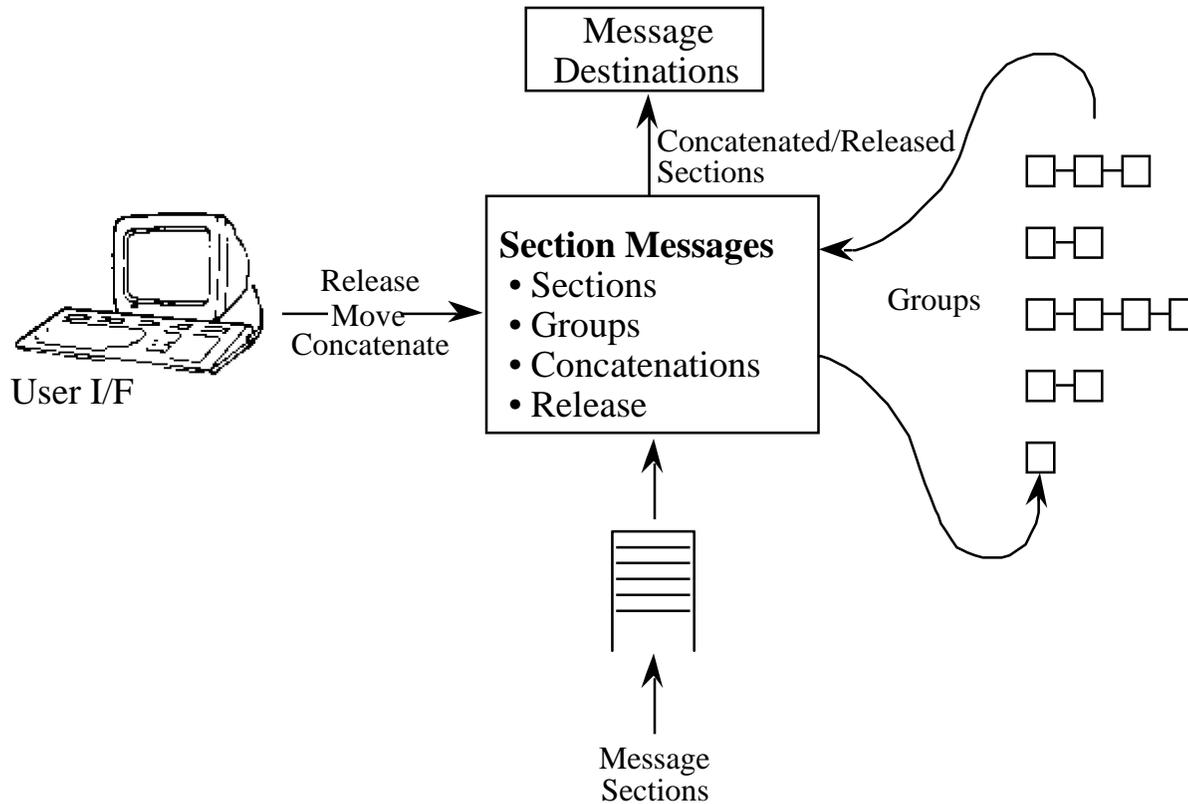
Host Subsystem

Components (cont.)



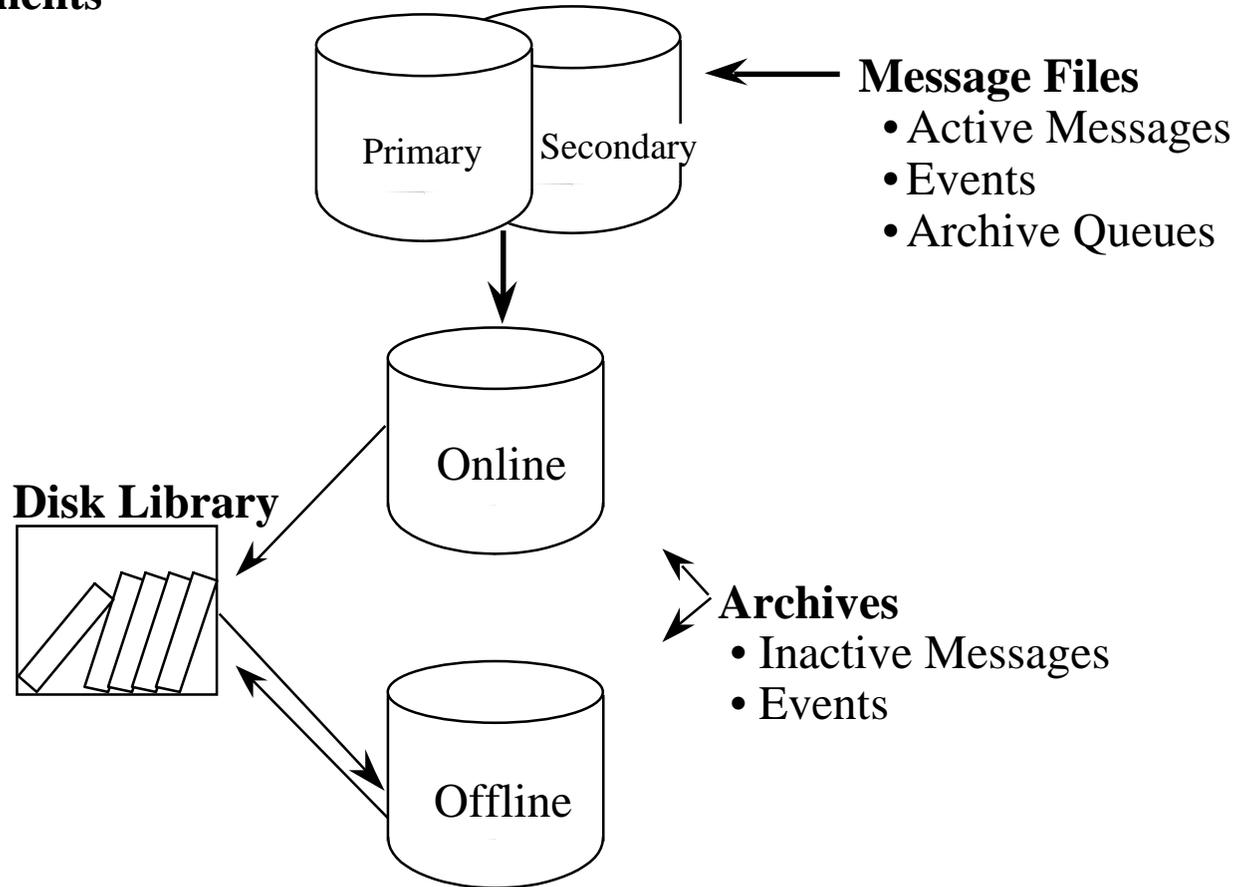
Host Subsystem

Components (cont.)



Storage Subsystem

Components

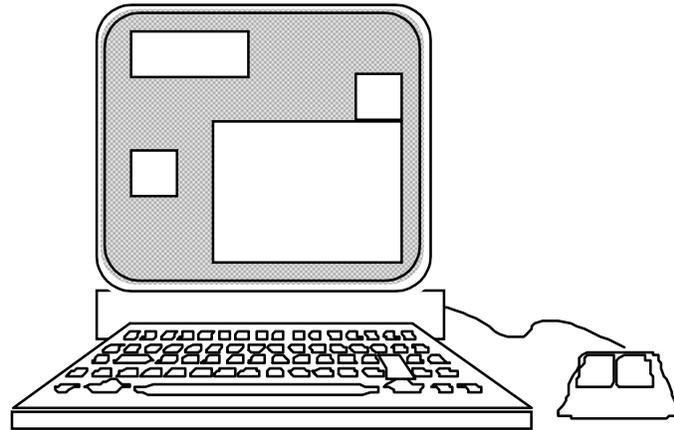


User Interface Subsystem

Components

User Terminals:

- X Window System
- OSF/Motif
- Color
- LAN I/F to host
- "Diskless"

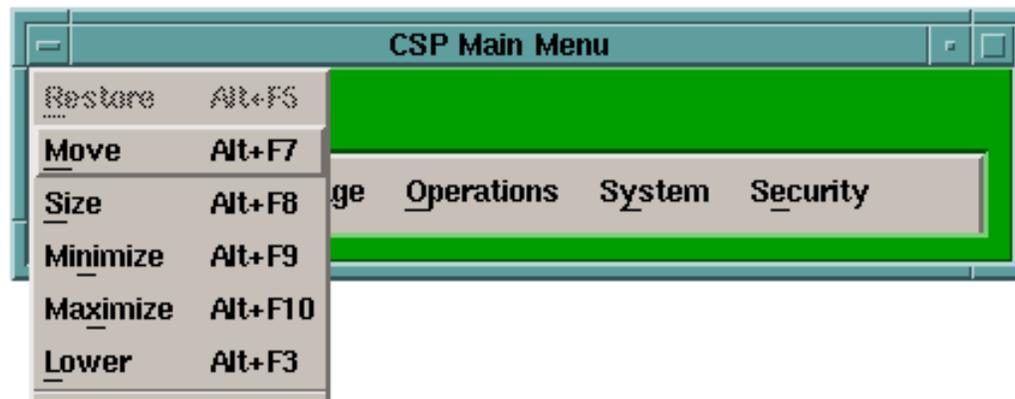


Graphical User Interface

- OSF/Motif standards
- X Window System
- Color coded window security labels
 - Unclassified Green
 - Unclassified EFTO Green
 - Restricted Aqua
 - Confidential Blue
 - Secret Red
 - Top Secret Orange
 - SCI Yellow

Graphical User Interface

- Windows, pull down menus, and icons
- 3-button mouse
- Minimum reliance on keyboard
- Keyboard "hot-keys"



UNCLAS

Automatic Routing Parameters

16

A horizontal slider control with a grey track and a white knob. The knob is positioned at approximately 16% of the track's length from the left.

Lines to scan into message text

5

A horizontal slider control with a grey track and a white knob. The knob is positioned at approximately 5% of the track's length from the left.

Lines to scan from top for SSO notes

5

A horizontal slider control with a grey track and a white knob. The knob is positioned at approximately 5% of the track's length from the left.

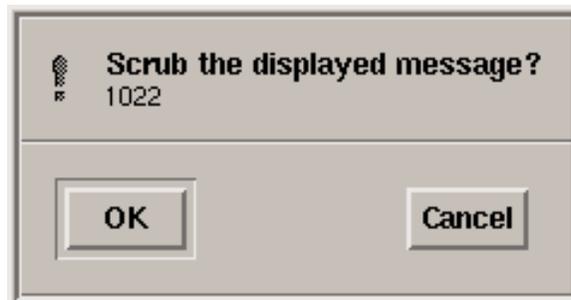
Lines to scan from bottom for SSO notes

- RI reconciliation**
- Force message to DISTRIBUTION**
- Reversible REMOVE action**

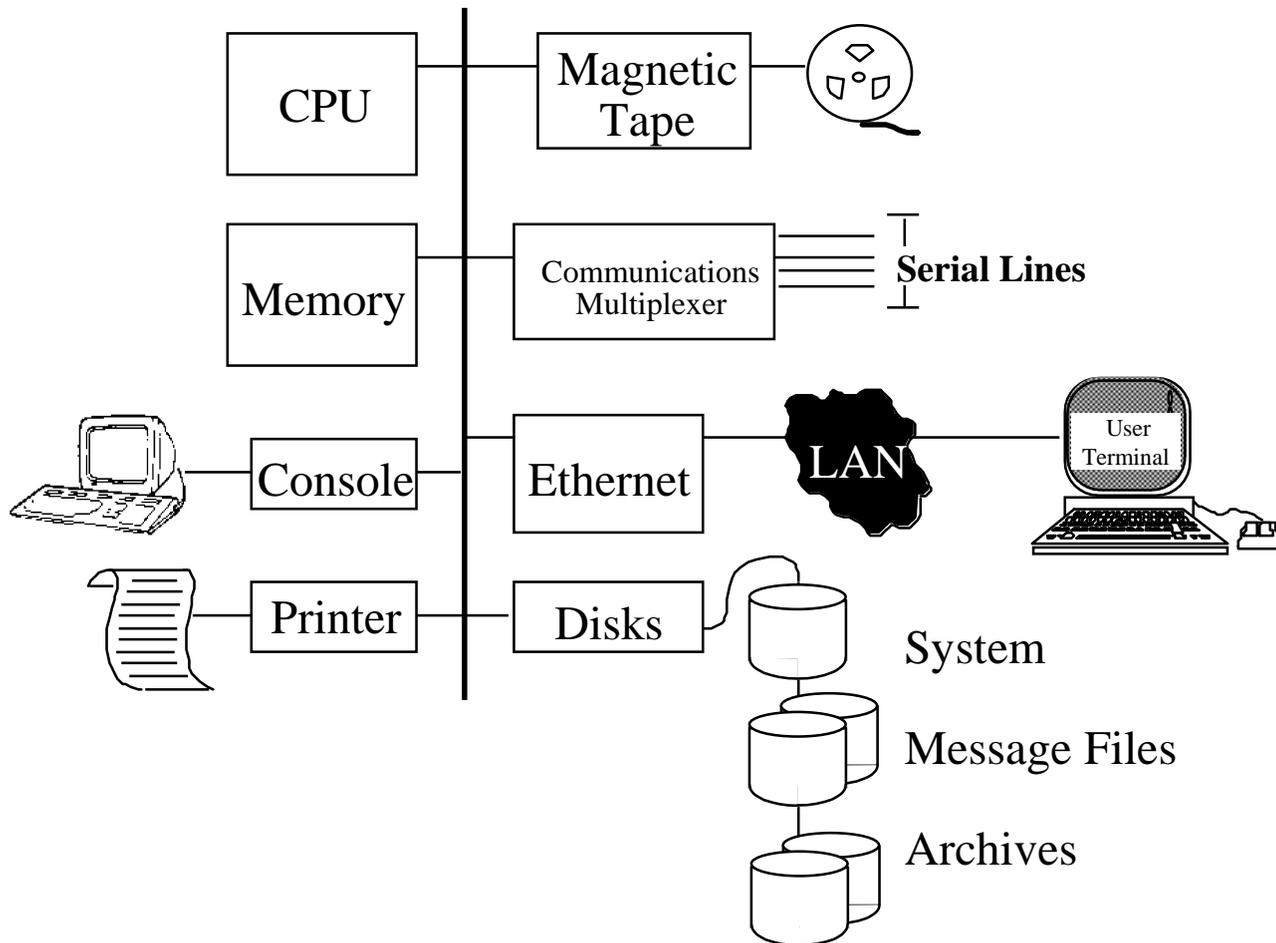
Modify

Cancel

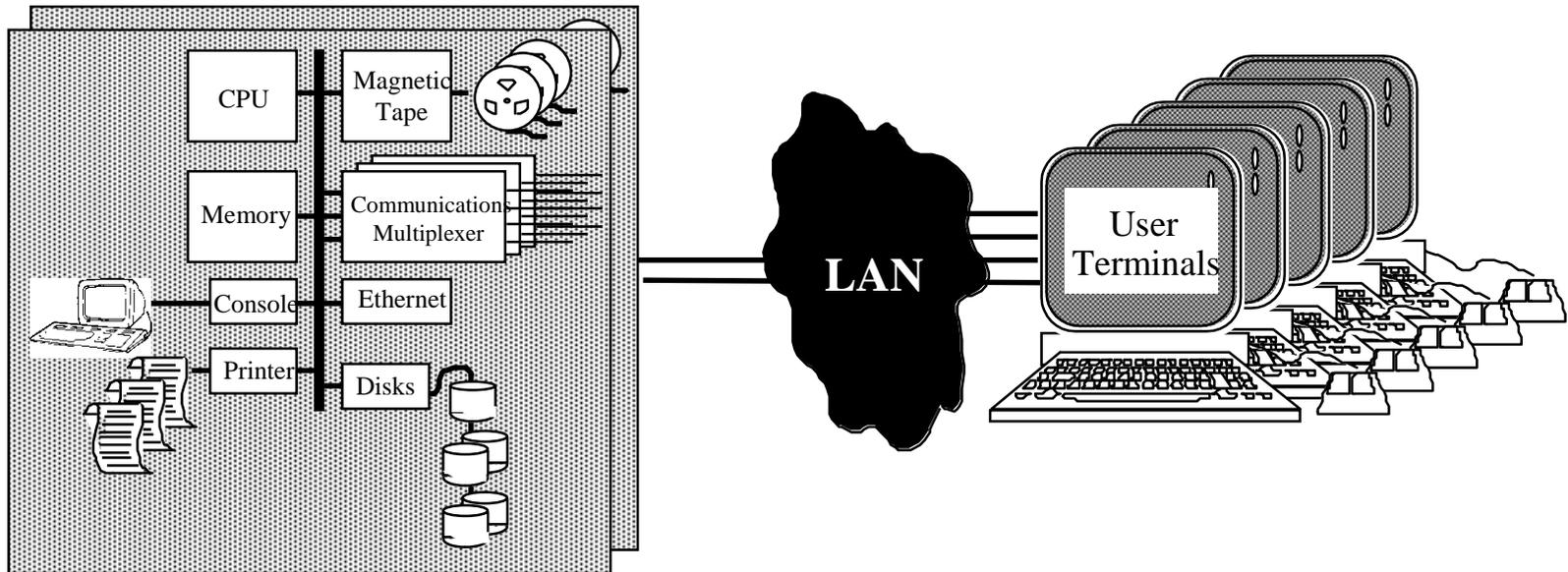
Help



Minimum Hardware Configuration



Maximum Hardware Configuration



CSP Basic Operations

- System ID and login
- Notices window
- Help
- Password
- Session exit

System ID

- Terminal powered on prior to booting the CSP system
- System ID automatically displayed

*Communications Support Processor
Secure Data Communications*

"The Bridge to the World"



Version 5.6

Log In

System Login

- Push the "Log In" push button or press <Return> on the keyboard
- Enter User ID in the username field
- Enter User Password in password field
- Push the OK button to enter username and password
- Push the Clear button to reenter username and password
- Push the Help button to display help on the dialog
- Read Notice and Consent Banner
- Press Accept to accept the banner and enter the system
- Press Decline to decline the banner and return to the login screen

CSP System Login

Username

Password

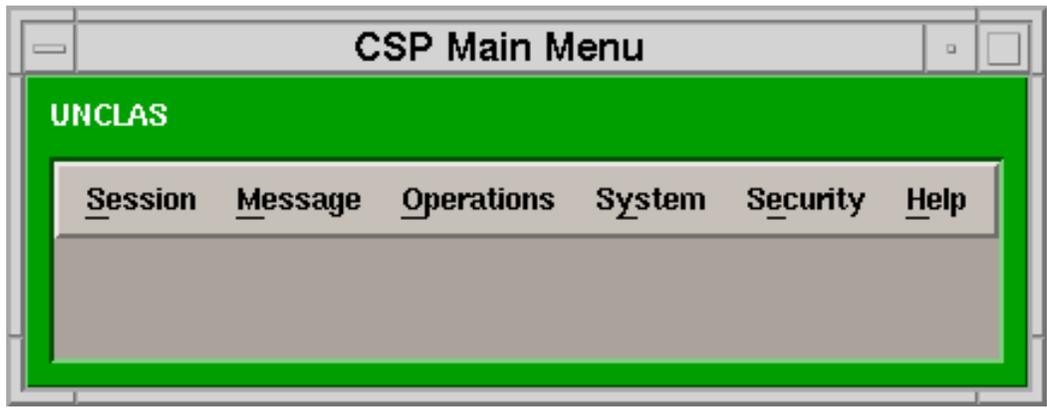
NOTICE AND CONSENT BANNER

THIS IS A DEPARTMENT OF DEFENSE (DOD) COMPUTER SYSTEM. THIS COMPUTER SYSTEM, INCLUDING ALL RELATED EQUIPMENT, NETWORKS AND NETWORK DEVICES (SPECIFICALLY INCLUDING INTERNET ACCESS), ARE PROVIDED ONLY FOR AUTHORIZED U.S. GOVERNMENT USE. DOD COMPUTER SYSTEMS MAY BE MONITORED FOR ALL LAWFUL PURPOSES, INCLUDING TO ENSURE THAT THEIR USE IS AUTHORIZED, FOR MANAGEMENT OF THE SYSTEM, TO FACILITATE PROTECTION AGAINST UNAUTHORIZED ACCESS, AND TO VERIFY SECURITY PROCEDURES, SURVIVABILITY AND OPERATIONAL SECURITY. MONITORING INCLUDES ACTIVE ATTACKS BY AUTHORIZED DOD ENTITIES TO TEST OR VERIFY THE SECURITY OF THIS SYSTEM. DURING MONITORING INFORMATION MAY BE EXAMINED, RECORDED, COPIED AND USED FOR AUTHORIZED PURPOSES. ALL INFORMATION, INCLUDING PERSONAL INFORMATION, PLACED ON OR SENT OVER THIS SYSTEM MAY BE MONITORED.

USE OF THIS DOD COMPUTER SYSTEM, AUTHORIZED OR UNAUTHORIZED, CONSTITUTES CONSENT TO MONITORING OF THIS SYSTEM. UNAUTHORIZED USE MAY SUBJECT YOU TO CRIMINAL PROSECUTION. EVIDENCE OF UNAUTHORIZED USE COLLECTED DURING MONITORING MAY BE USED FOR ADMINISTRATIVE, CRIMINAL, OR OTHER ADVERSE ACTION. USE OF THIS SYSTEM CONSTITUTES CONSENT TO MONITORING FOR THESE PURPOSES.

Accept

Decline









System ID and Login Characteristics

- 3 attempts prior to a successful login
- Single workstation access
- Unique username and password
- 90 day expiration on password
- Unique privileges

Notices Window

- Required for operational CSP
- Approximately 600 events displayed
- Displays significant audit events:
 - Info
 - Warning
 - Action
 - Alert

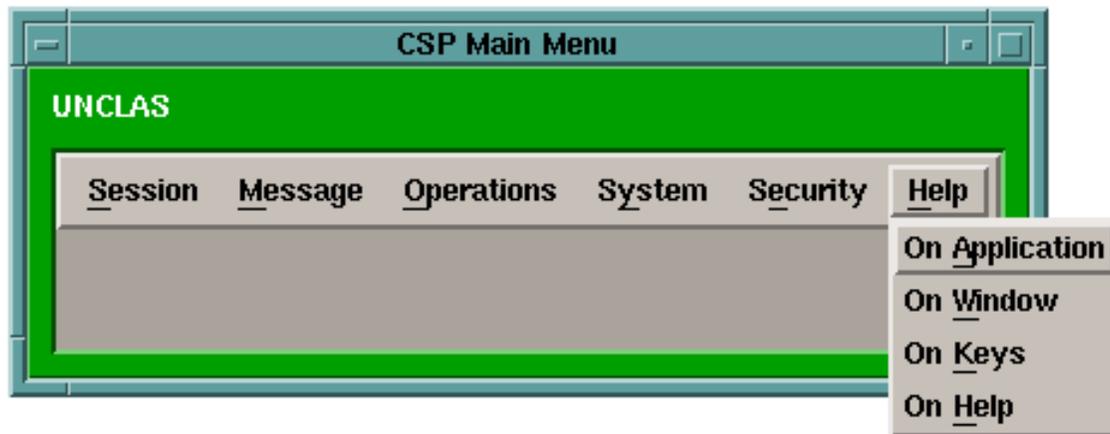
Operator Notices

UNCLAS

Date	Time	Severity	Category	Event
12 SEP 2001	21:06:10	WARNING	DATABASE	DATABASE MODIFIED CURRENT version of User Access modified by SUPERU .
12 SEP 2001	21:04:08	WARNING	TERMINAL	INVALID USER LOGIN DLF attempted login on CSPPRI.
12 SEP 2001	21:04:04	WARNING	TERMINAL	INVALID USER LOGIN DLF attempted login on CSPPRI.
12 SEP 2001	21:03:59	WARNING	TERMINAL	INVALID USER LOGIN DLF attempted login on CSPPRI.
12 SEP 2001	21:03:38	WARNING	TERMINAL	INVALID USER LOGIN FRED attempted login on CSPPRI.
12 SEP 2001	21:03:22	WARNING	TERMINAL	INVALID USER LOGIN FRED attempted login on CSPPRI.
12 SEP 2001	21:00:04	INFO	TERMINAL	REPORT PRINTED GROUP_PLAS Report printed.
12 SEP 2001	20:24:24	INFO	TERMINAL	REPORT INCOMPLETE INTERCEPT_STATS Report failed; see printout for more information.

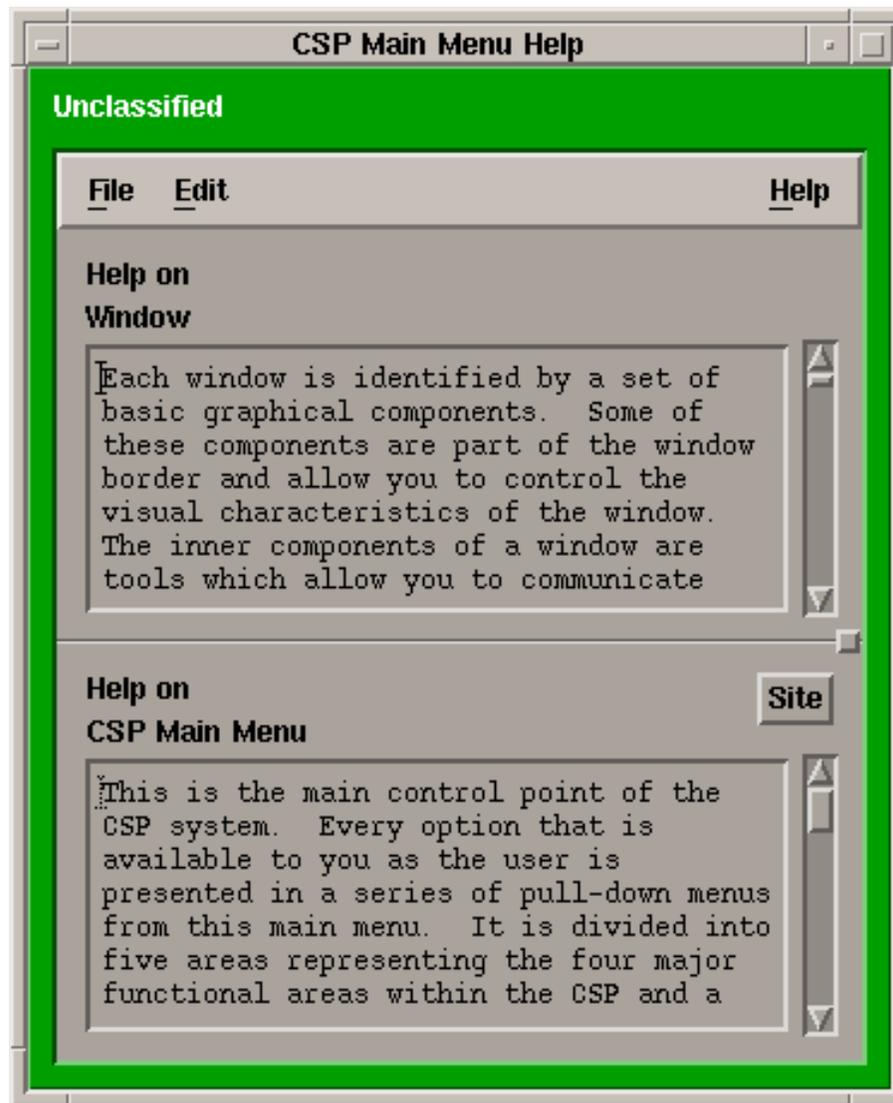
Help

- Accessed on main windows via the menu bar
- Accessed on dialogs via the Help push button
- Provides help on:
 - CSP application for the current window
 - Common components of windows
 - Use of the keyboard
 - Capabilities of help



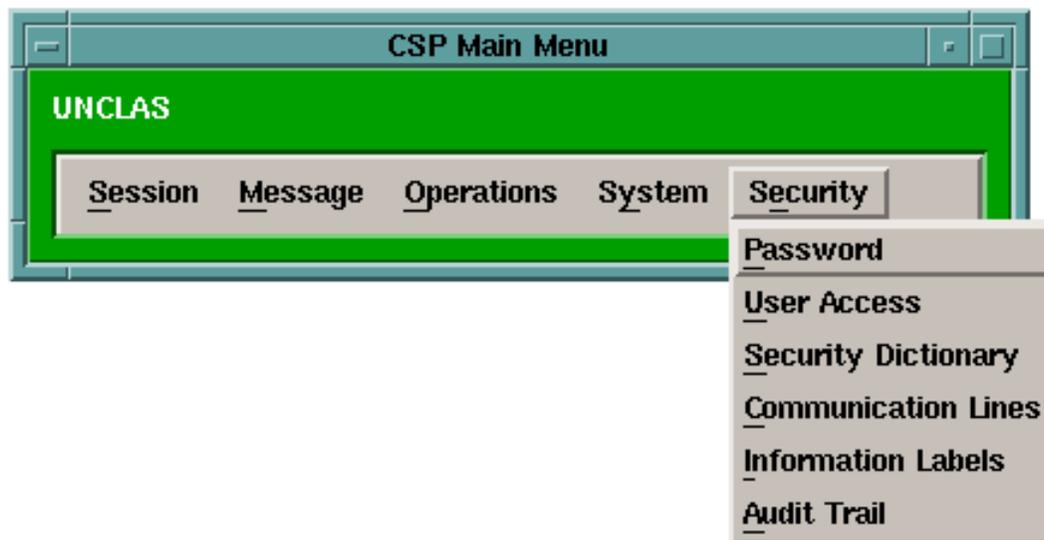
Help Window

- Displays up to 5 separate help messages
- The Help window contains:
 - File menu
 - Edit menu
 - Help menu
- Site help



Password

- User initiated
- System initiated:
 - First successful login to a new user account
 - First successful login after user password is updated by the Security Manager
 - Password expiration (90 days)



Password Modification

- Enter Old password
- Enter New password
- Verify New password
- Push the OK button to enter new password
- Push the Cancel button to cancel operation
- Push the Help button to display help on the dialog

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Set Password

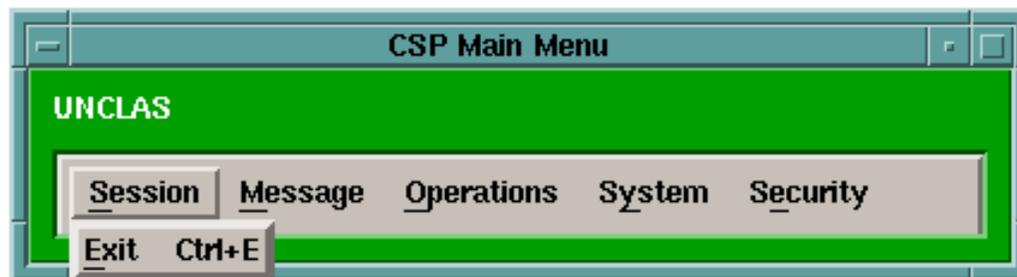
Old Password

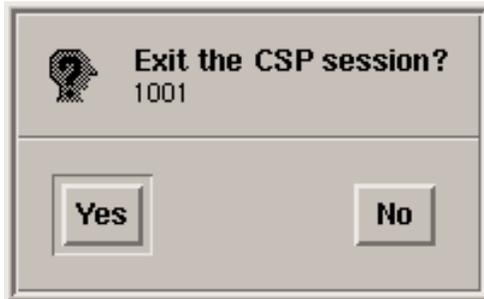
New Password

Verify Password

Session Exit

- Logs the current user off the user terminal
- All applications must be closed





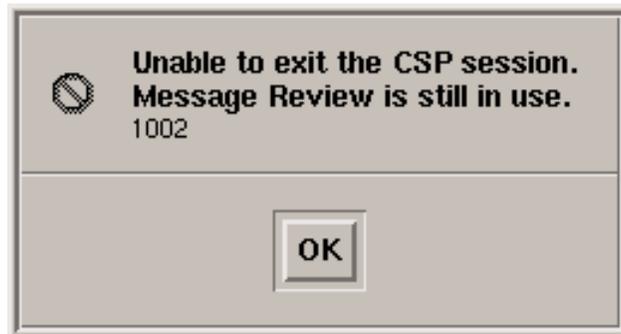
*Communications Support Processor
Secure Data Communications*

"The Bridge to the World"



Version 5.7

Log In



Data Base Operations

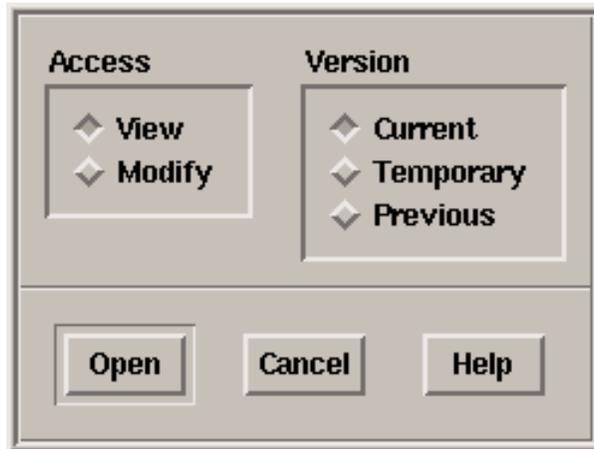
- Data base attributes
- Data base access
- Data base versions
- Data base file menu
- Data base options menu
- Resource contention

Data Base Attributes

- Relational data bases (keyed)
- Updated immediately or scheduled for update (5 data bases only)
- Subject to access and contention controls
- Printable

Data Base Access

- View
 - Requests View access
 - No modifications may be made
- Modify
 - Requests Modify access
 - Modifications may be made



Data Bases Versions - Open

A user can open 1 of 4 versions of a data base with View or Modify privileges:

- Currently in Use →

Current

- For Next Update →

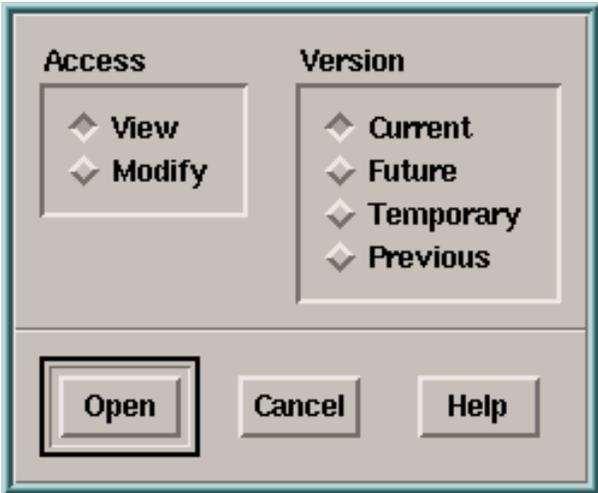
Future

- User Controlled →

Temporary

- Last One Used →

Previous



Data Bases Versions - Close

A user can close a data base to 1 of 3 versions:

- For immediate update →

Current

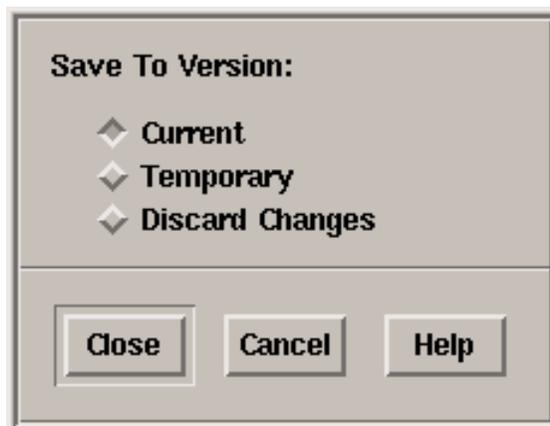
 - For next update →

Future

 - User controlled →

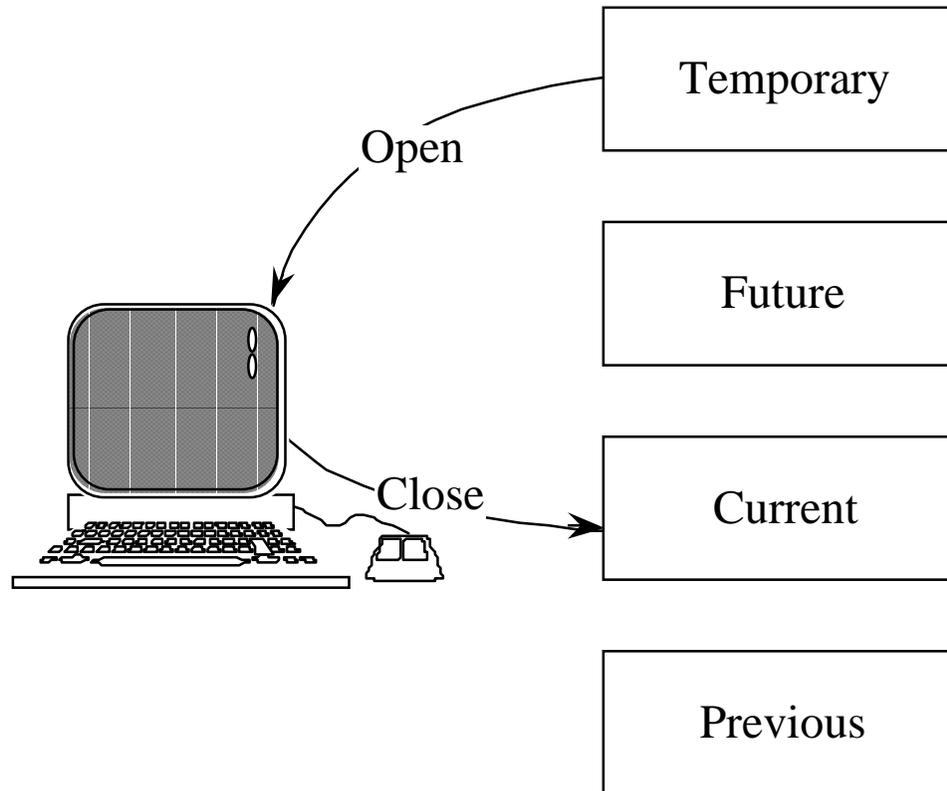
Temporary

- | |
|--------------------|
| Discard
Changes |
|--------------------|



Data Bases Versions - Usage

User "opens" from a version for modify and closes to a version



Data Bases Versions - Example

How CSP handles saving a data base to Current:

- 1) Saves the currently viewed data base to the Future version
- 2) Suspends message processing
- 3) Copies the Current version of the data base to the Previous version
- 4) Copies the Future version to the Current version
- 5) Restarts message processing

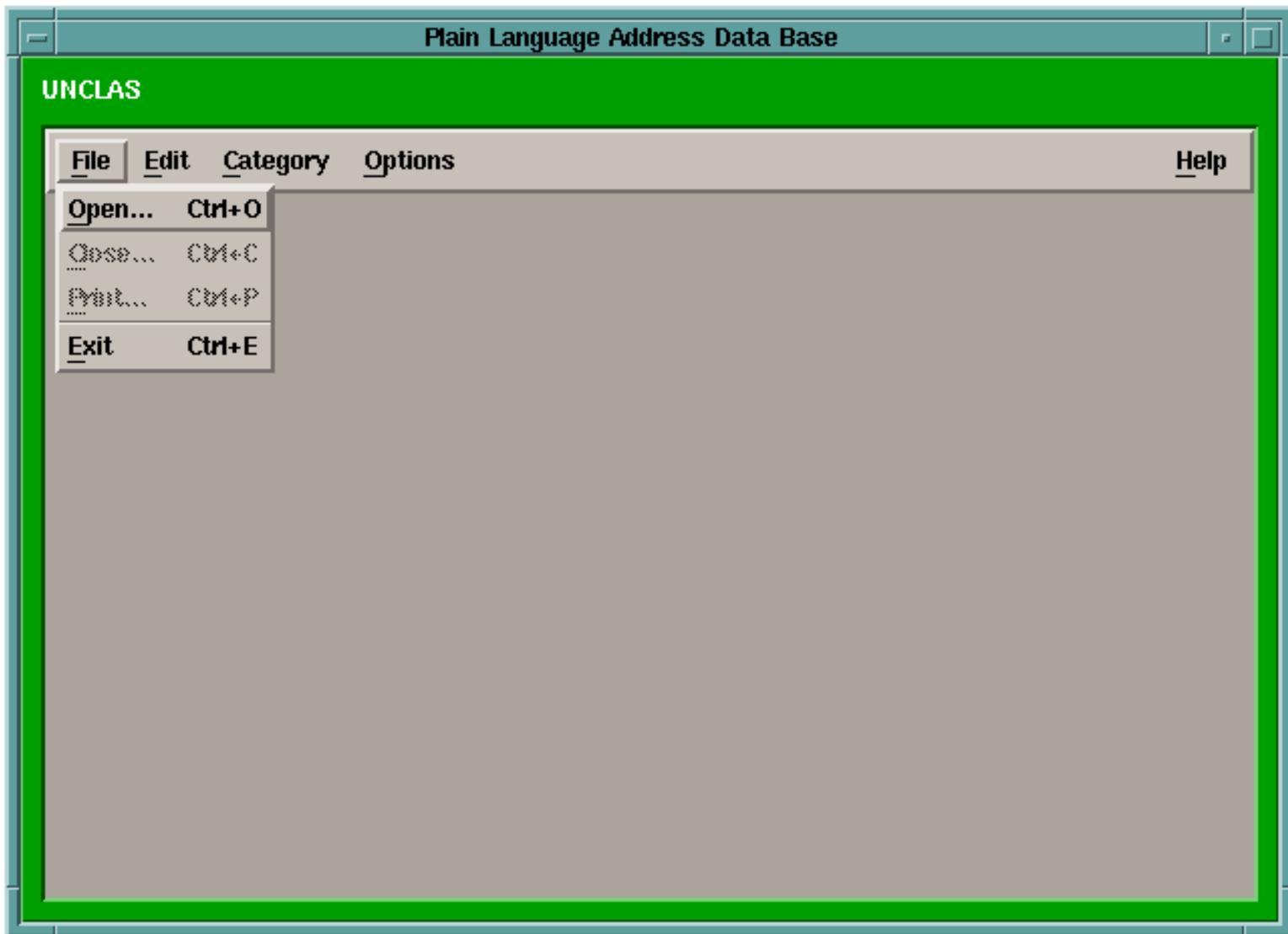
Data Bases Versions - Example

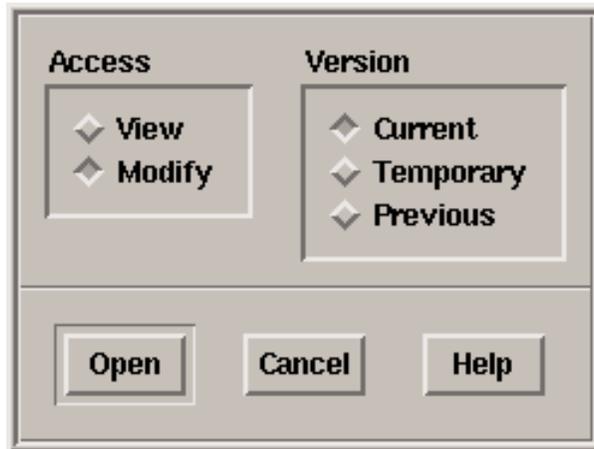
How CSP handles saving a data base to Future:

- 1) Saves the currently viewed data base to the Future version and starts a timer
- 2) Waits for the timer to expire
- 3) Suspends message processing
- 4) Copies the Current version of the data base to the Previous version
- 5) Copies the Future version to the Current version
- 6) Restarts message processing

Open

- Displays the Open dialog
- Access privileges
- Version
 - Current
 - Future (5 data bases only)
 - Temporary
 - Previous







**Unable to open Plain Language Address Data Base for modify access.
Currently opened elsewhere for view access.**

0106

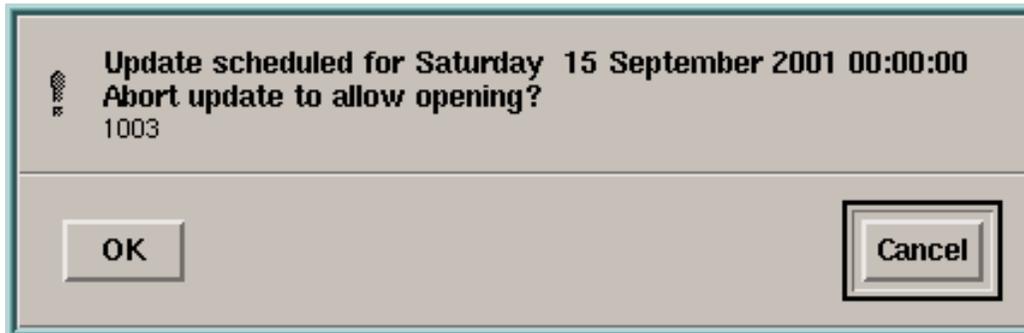


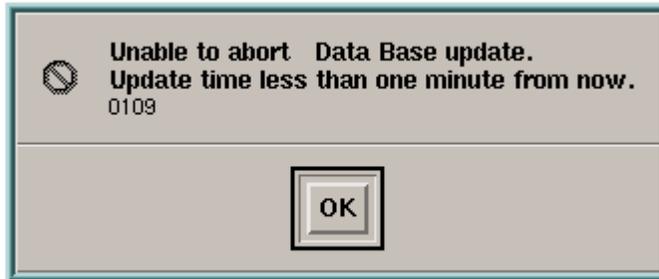


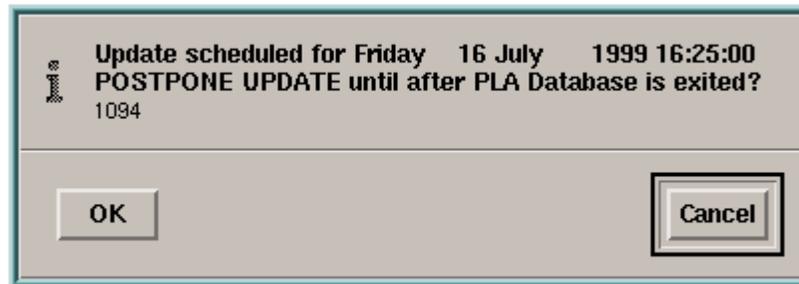
**Unable to open Plain Language Address Data Base for modify access.
Currently opened elsewhere for view access.**

0106



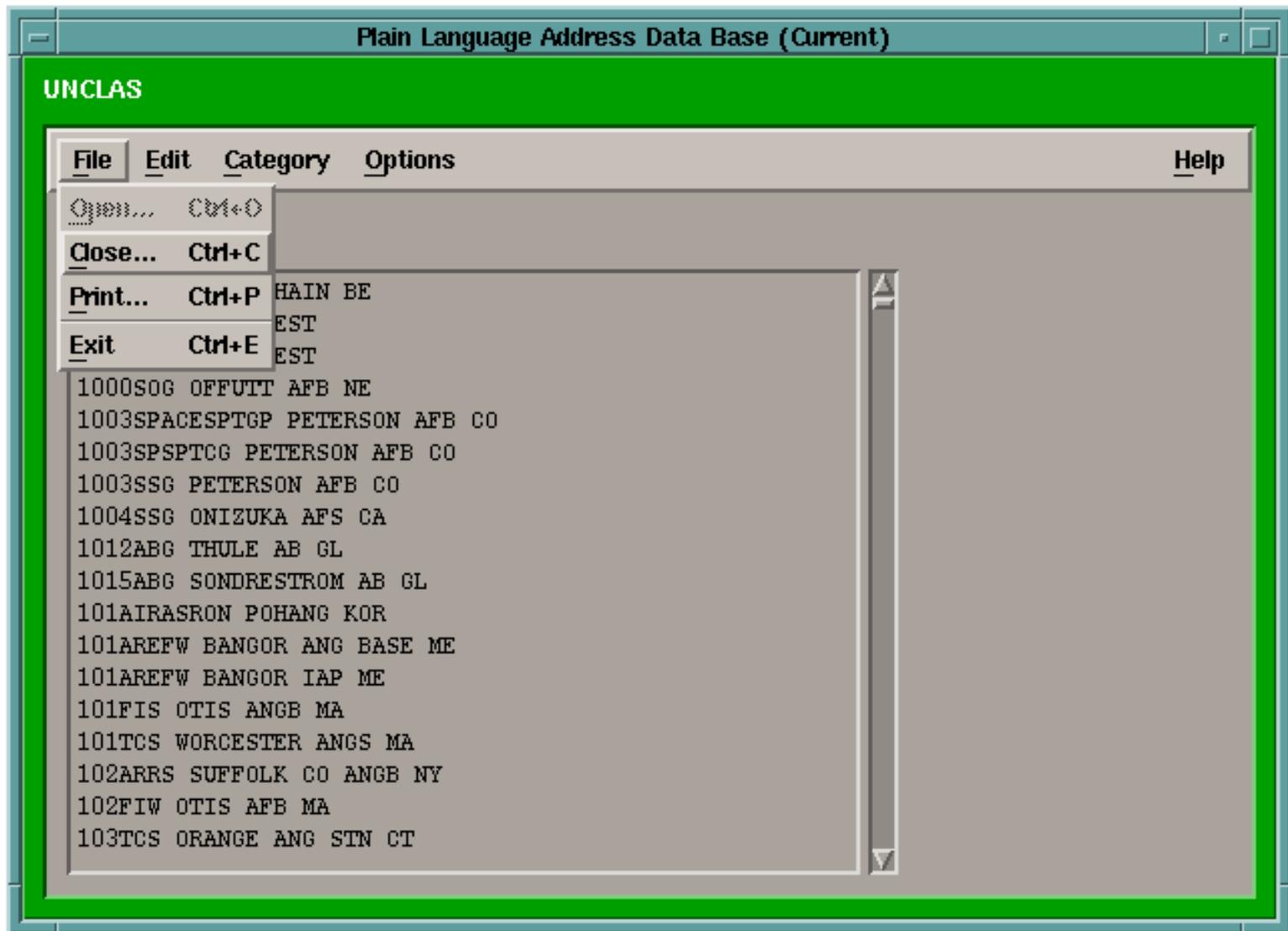






Close

- Displays Close dialog
- Version
 - Current
 - Future (5 data bases only)
 - »Enter the system time when update is to occur
 - Temporary
- Discard changes





Save To Version:

- ◆ Current
- ◆ Future
- ◆ Temporary
- ◆ Discard Changes

Time

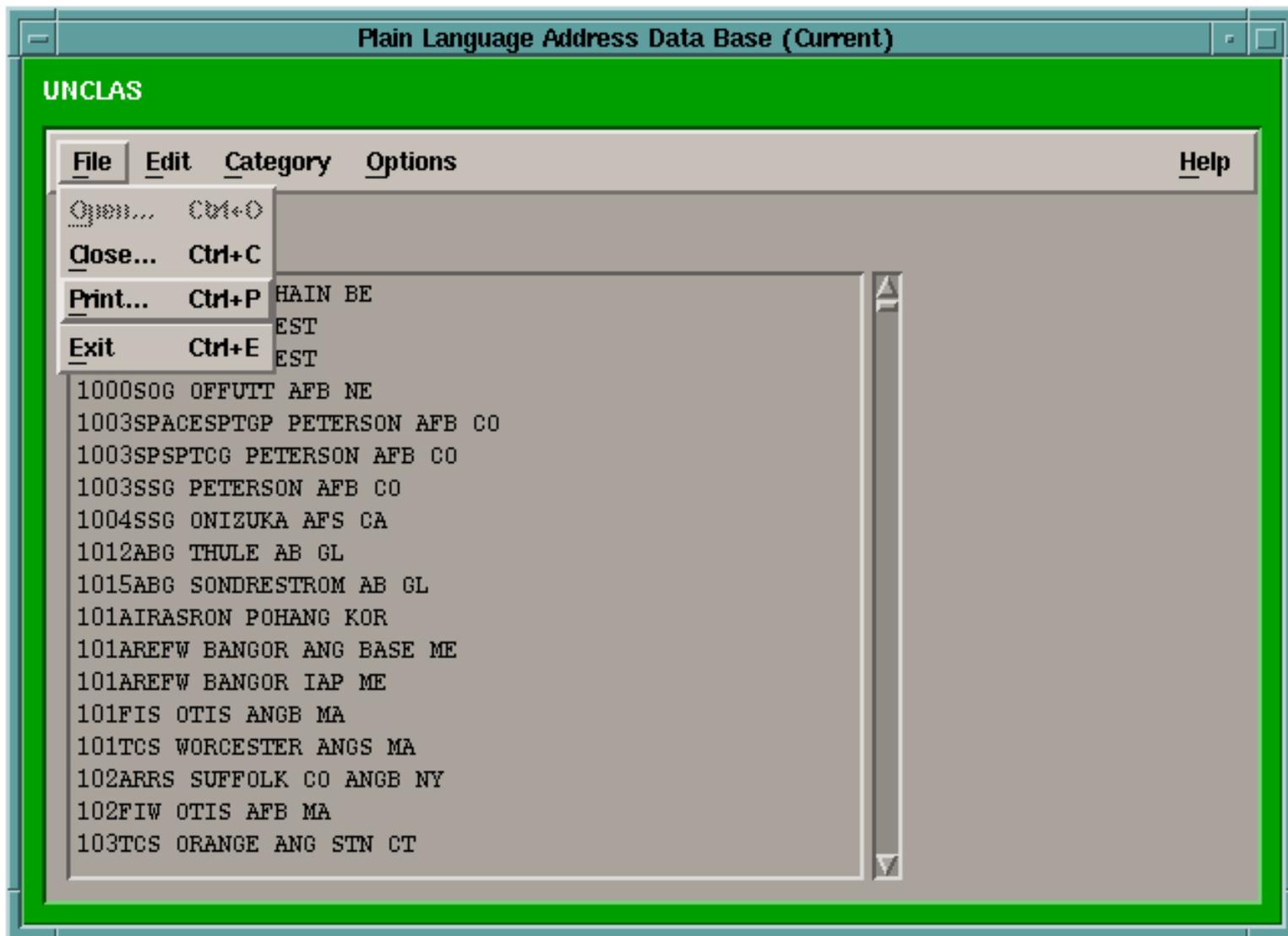
Date

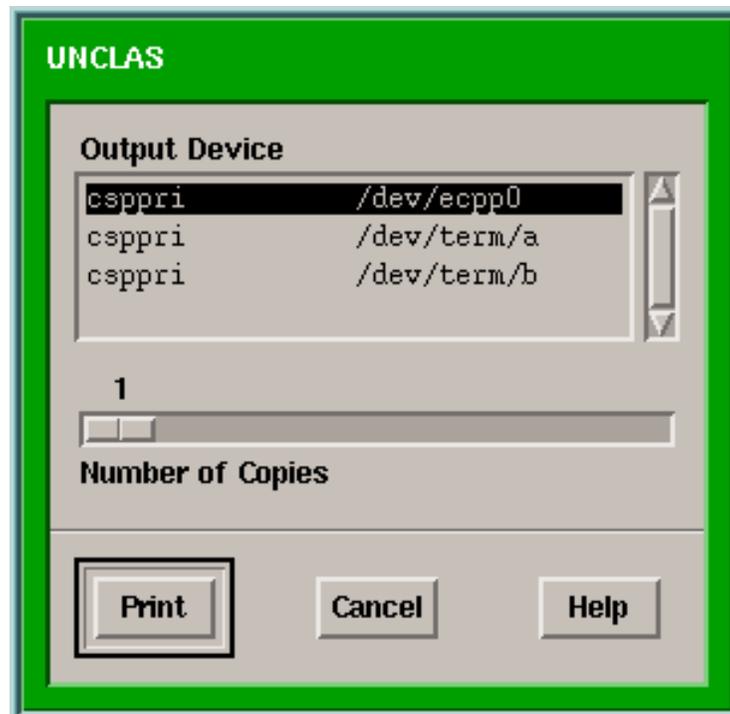




Print

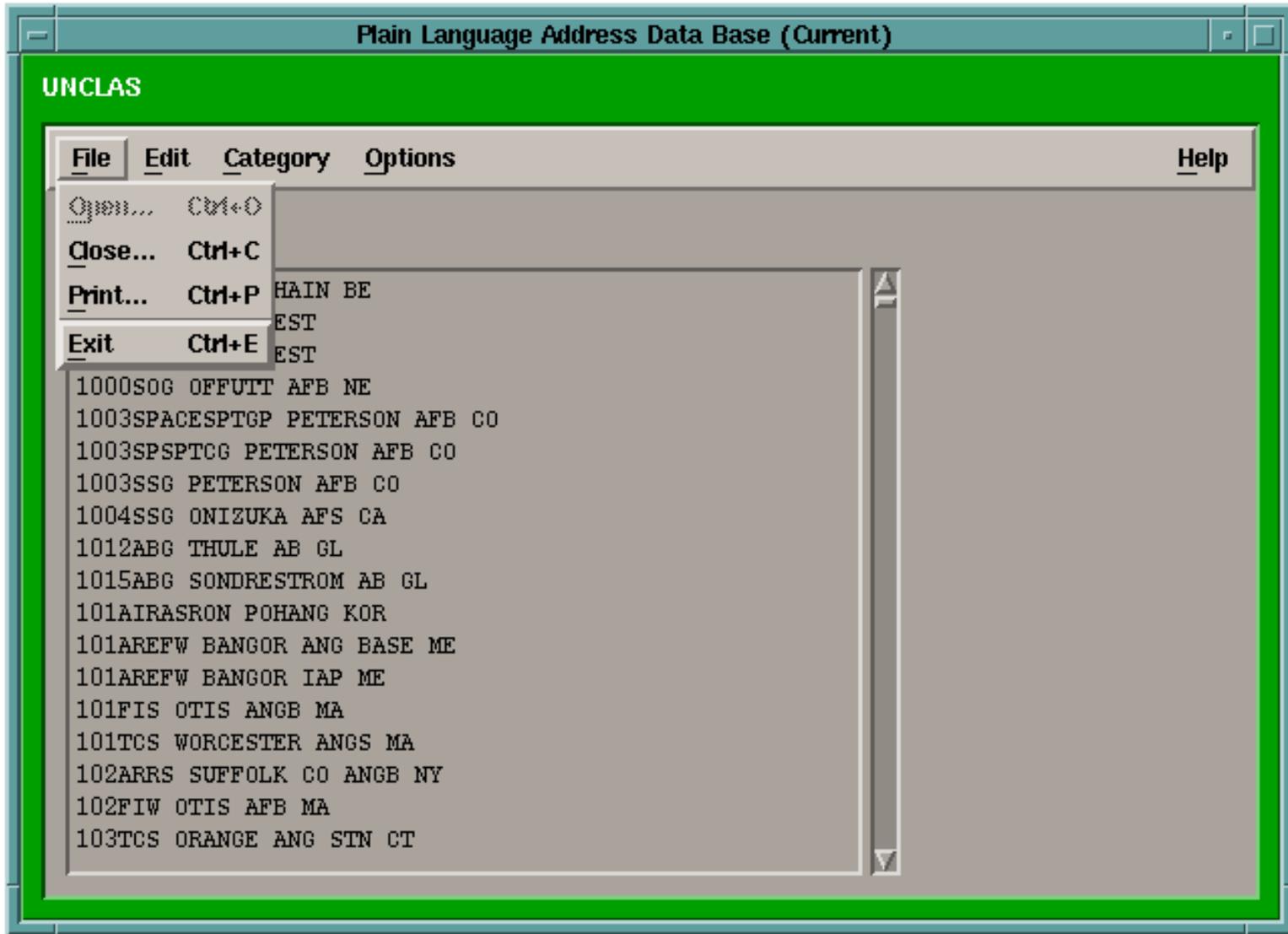
- Displays Print dialog
- Output device
- Number of copies





Exit

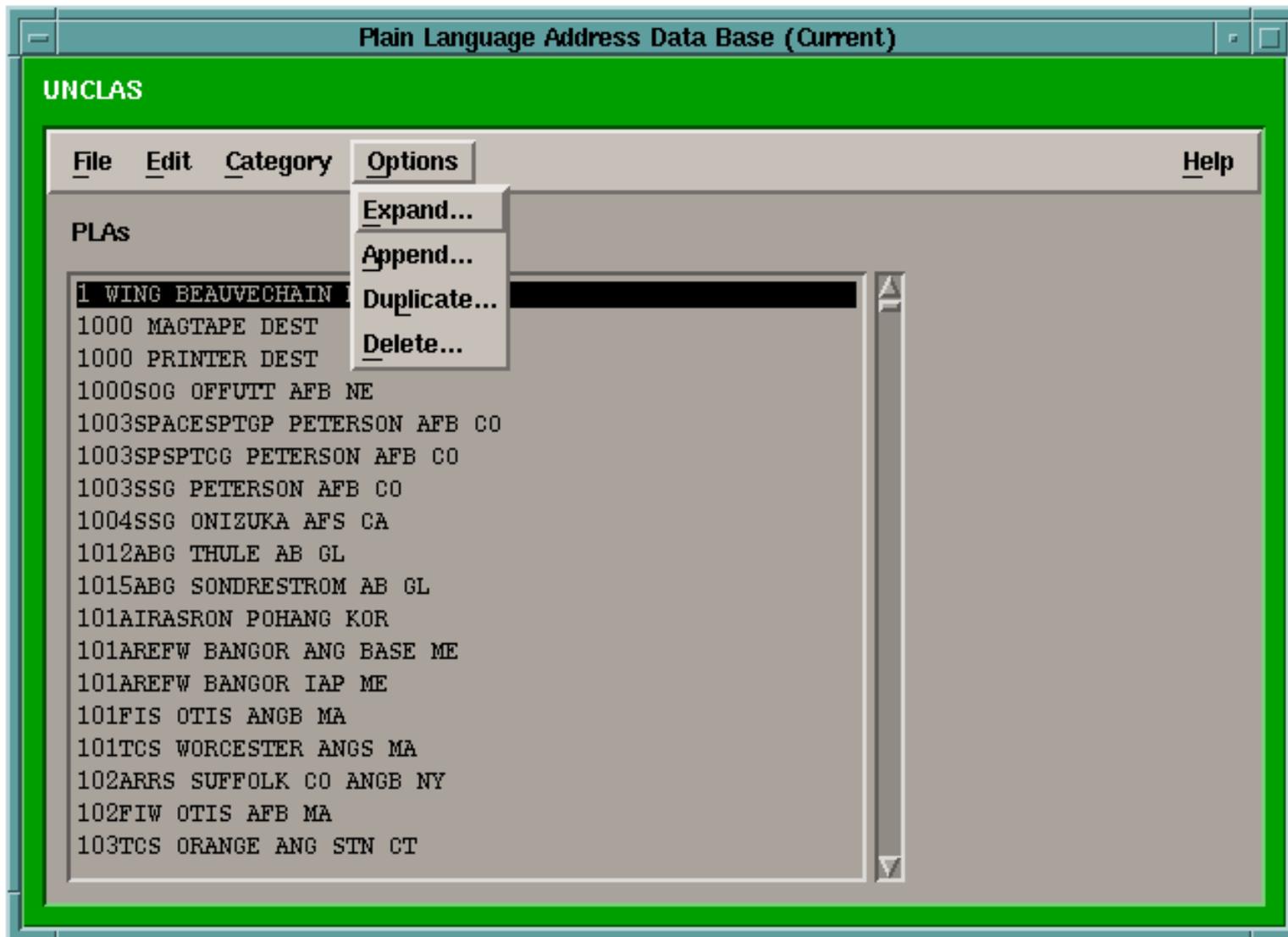
- If no changes were made, the window is closed without further action.
- If the changes made are not yet saved, the operator is asked if the changes are to be saved.





Expand

- Expands the currently selected item



Expand Dialog

- Expand options:
 - Modify (modify only)
 - Cancel (modify only)
 - Close (view only)
 - Help

UNCLAS

PLA

1 WING BEAUVECHAIN BE

GENSER

AUTO ZEN

Routing
Indicators

On - Line

RQFTAG

◇ From

◇ Unclas

I

DSSCS

AUTO ZEN

Routing
Indicators

To

.....

From

.....

Section Size
(in characters)

◇ 5,400

◇ 40,000

TCC

Assigned

Available

A
B
C
D
E

1
2
3
4
5

Modify

Cancel

Help

UNCLAS

PLA

1 WING BEAUVECHAIN BE

GENSER

AUTO ZEN

Routing Indicators

On - Line

RQFTAG

◇ From

◇ Uncles

I

DSSCS

AUTO ZEN

Routing Indicators

To

I

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I

Section Size
(in characters)

◇ 5,400

◇ 30,000

TCC

Assigned

Available

A
B
C
D
E

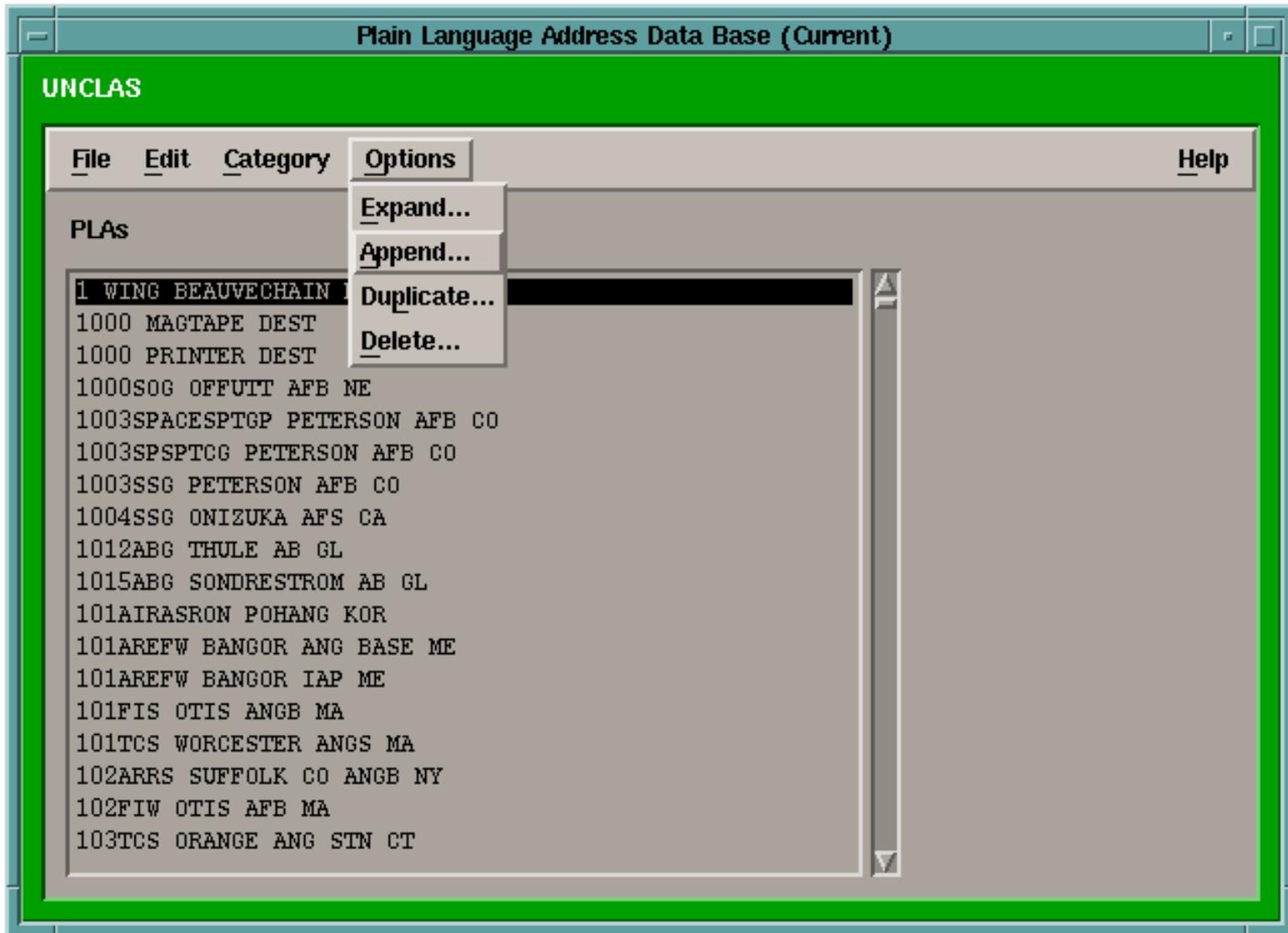
1
2
3
4
5

Close

Help

Append

- Appends new records
- Displays a blank record shell (default values are displayed)
- Multiple records may be appended to the data base



Append Dialog

- Append options:
 - Append
 - Close
 - Help

UNCLAS

PLA

GENSER

AUTO ZEN

Routing Indicators

On - Line

◇ From

◇ Unclas

DSSCS

AUTO ZEN

Routing Indicators

To

From

TCC

Assigned

- A
- B
- C
- D
- E

Available

- 1
- 2
- 3
- 4
- 5

Section Size
(in characters)

◇ 5,400

◇ 40,000

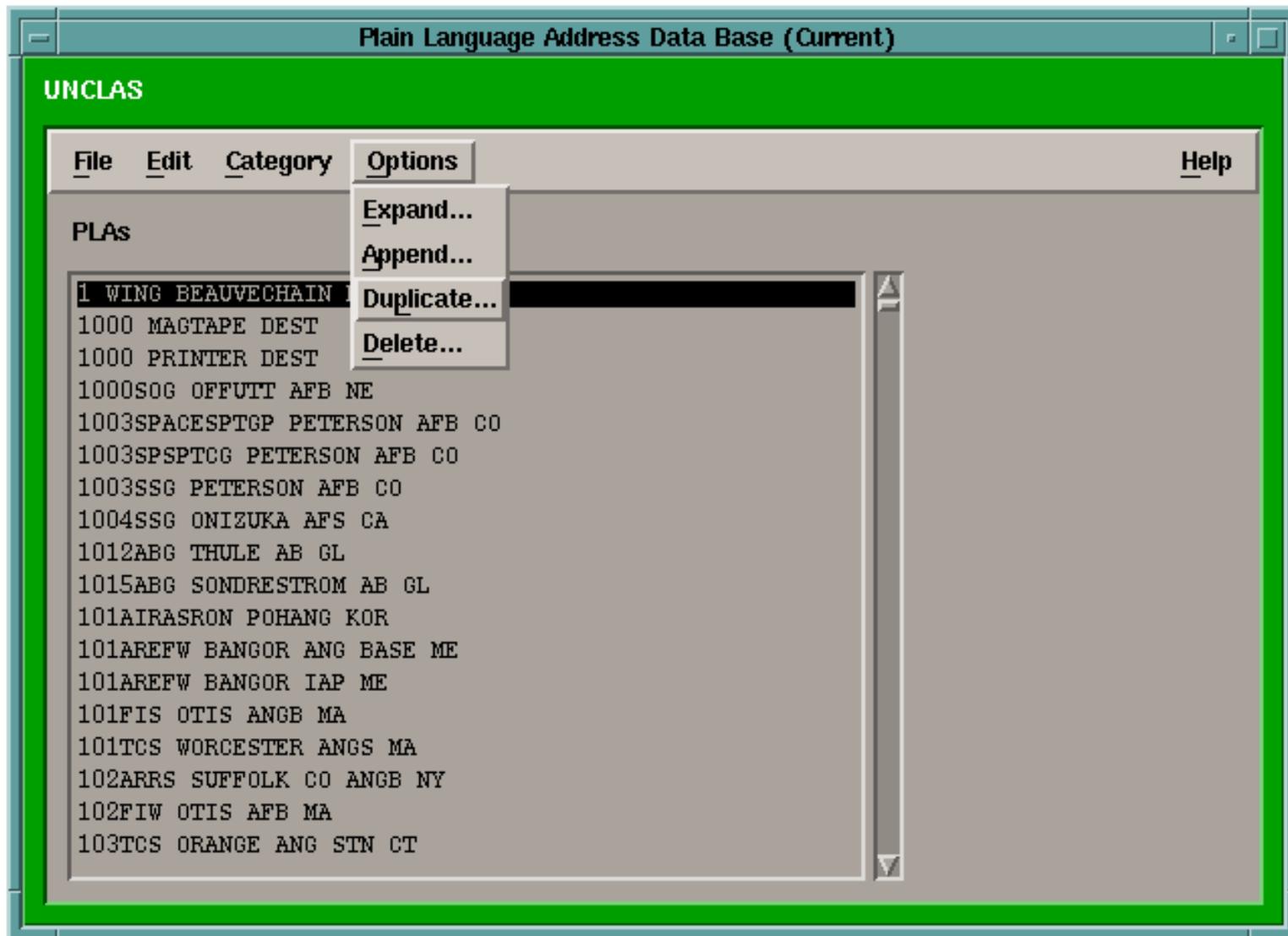
Append

Close

Help

Duplicate

- Duplicates selected record
- Displays the record structure of the selected record
- Same record may be duplicated multiple times



Duplicate Dialog

- Duplicates options:
 - Duplicate
 - Close
 - Help

UNCLAS

PLA

1 WING BEAUVECHAIN BE

GENSER

AUTO ZEN

Routing
Indicators

On - Line

RQFTAG

◇ From

◇ Unclas

I

DSSCS

AUTO ZEN

Routing
Indicators

To

.....

From

.....

Section Size
(in characters)

◇ 5,400

◇ 40,000

TCC

Assigned

Available

A
B
C
D
E

1
2
3
4
5

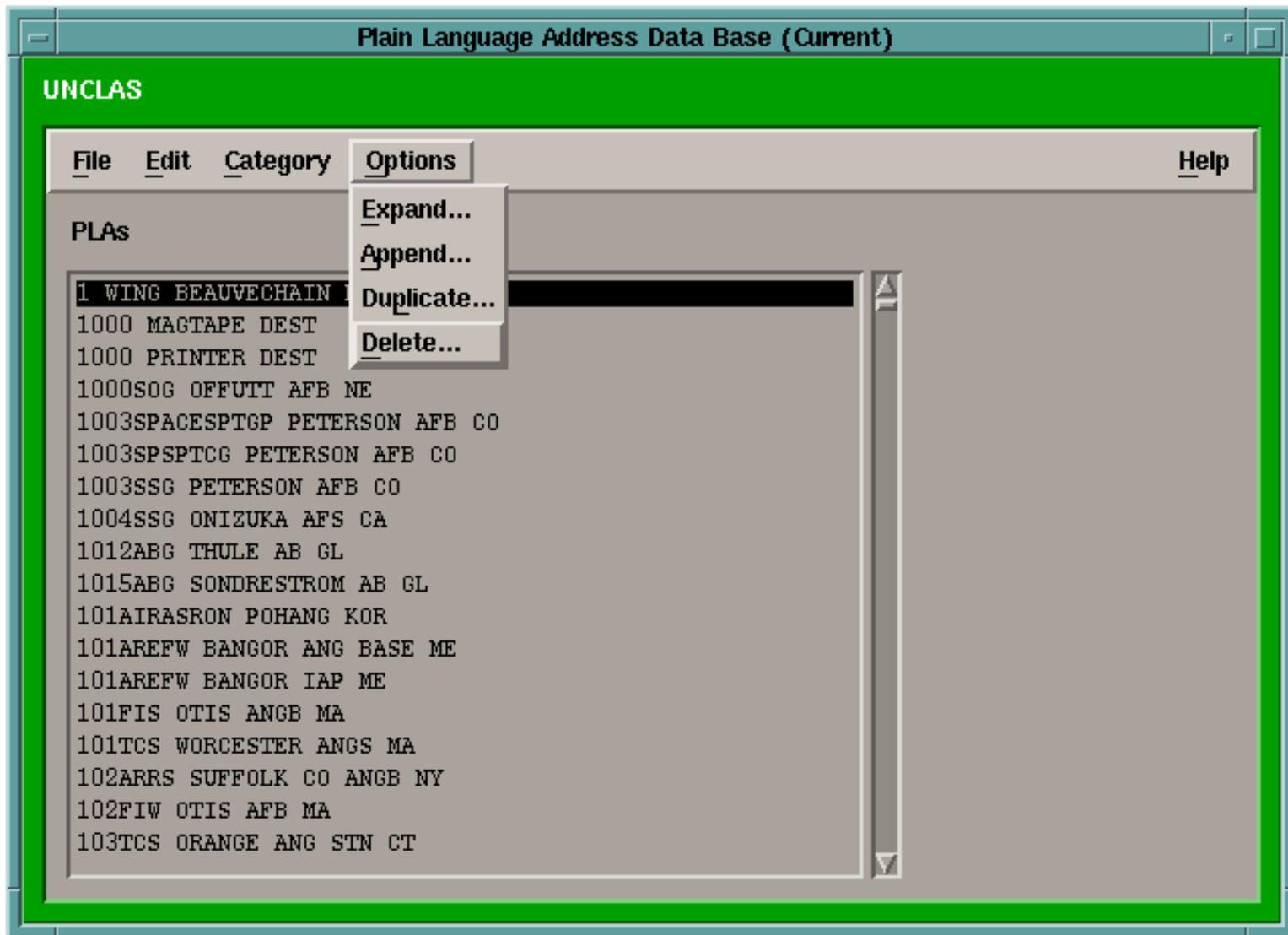
Duplicate

Close

Help

Delete

- Deletes one or more records



Delete Dialog

- Delete options:
 - Delete all
 - Delete
 - Keep
 - Close

Item to Delete

[1] WING BEAUVECHAIN BE

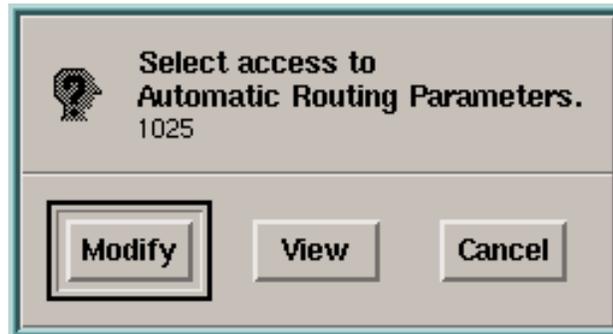
Delete All **Delete** **Keep** **Close**

Parameter Attributes

- Updated immediately
- No version handling
 - (exception: Report Scheduling)
- Application opens on a dialog
 - (exception: Communication Lines and Report Scheduling)

Parameter Access

- View
 - Request for View access
 - No modifications may be made
- Modify
 - Request for Modify access
 - Modifications may be made

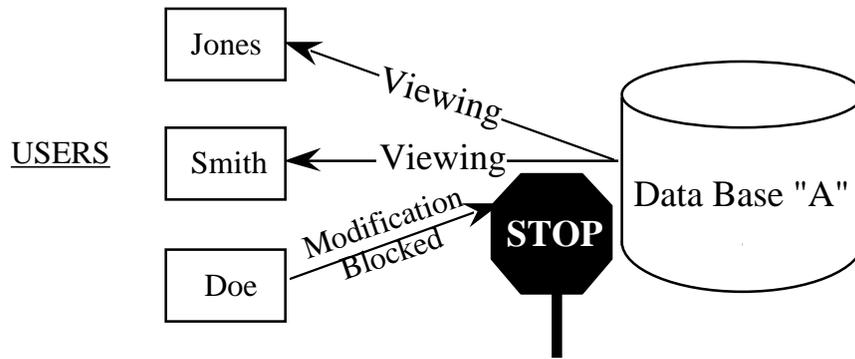


Resource Contention

- Provides required stability for on-line data base modifications
- Cannot update a data base that is currently being used
 - Directly
 - Indirectly

Resource Contention

EXAMPLE:

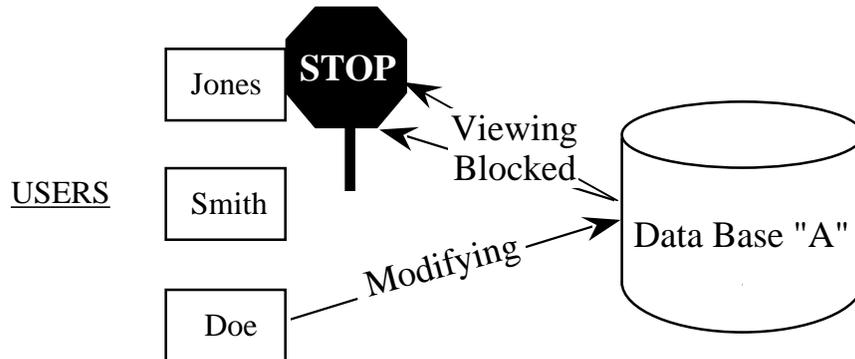


ACCESS RULE:

1 Writer

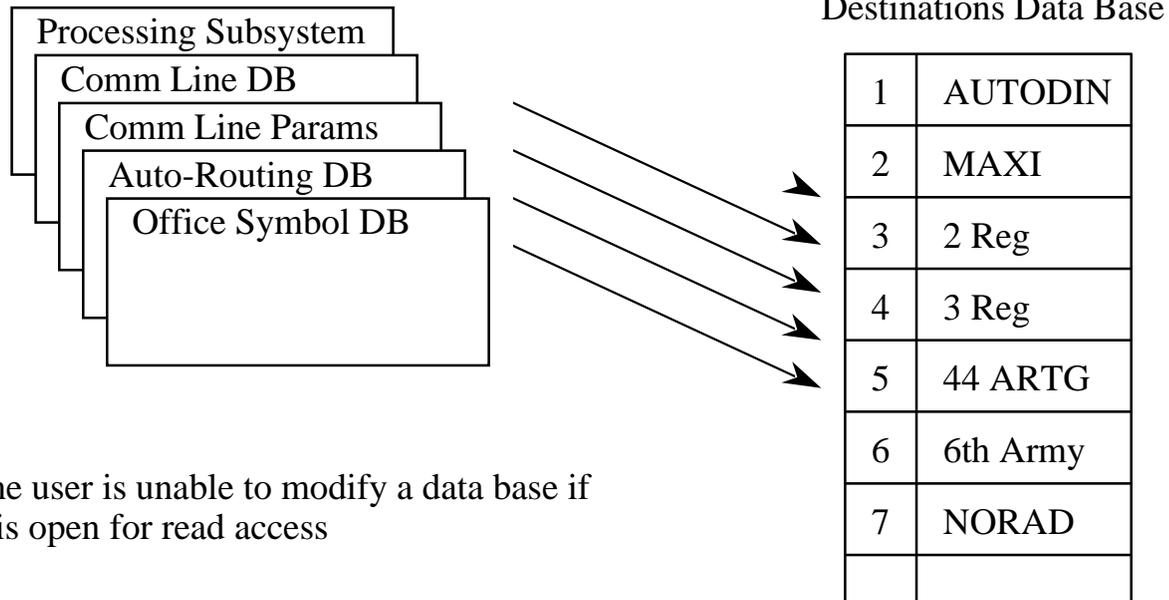
- OR -

N Readers



Resource Contention

Destinations DB has many "readers"...



The user is unable to modify a data base if it is open for read access

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Search for:

Whole Word
 Case Sensitive

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Search for:

Replace with:

Whole Word

Case Sensitive

Replace All

