

**Chapter
1**

**XPEDITER
FACILITIES**

*Get on the
Fast Track!*



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**SYS-ED/
Computer
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Objectives

You will learn:

- Features and advantages associated with TSO/Xpediter.
- Immediate, delay, and continuous commands.
- Interactive mode versus batch mode.
- The role of the Batch Connect facility.

1 Debugging Tools

The debugging capabilities and tools available include:

- Debugging commands:
 - READY TRACE, EXHIBIT, etc.

- Compiler options:
 - STATE, FLOW, etc.

- Dumps.

- Formatted dump.

- Interactive debugging tools.

2 Xpediter: What it is

Xpediter:

- Is a family of testing and debugging products.
- Runs under z/OS/TSO, z/OS/ISPF, and VM/CMS.
- Supports databases: DB2, IMS, etc.
- Supports CICS code.

2.1 Xpediter: Advantages

Advantages associated with Xpediter include:

- Development speed.
- Easy to use - common interface.
- Easy to learn.
- Powerful options.
- Locate errors quickly.
- Stop programs in the middle of execution - breakpoint in order to look at variables, change the flow of control, and browse a program.
- Locate several errors in one execution.

3 Xpediter: Features

The Xpediter featureset:

- Intercepts abends.
- Tests any program or program segment.
- Executes interactively or batch.
- Stops and starts a program at any statement.
- Bypasses sections of code; restarts the program.
- Displays and modifies variables during execution.
- Bypasses CALLs to modules which are missing.
- Provides stand-alone testing of subroutines.
- Scripts of the commands can be saved.
- Counts the execution of statements and paragraphs.
- Offers easy to read data display.
- Provides a source level interface.
- A trace facility to highlight commands as they are being executed.
- Supports the COBOL and Assembler programming languages.
- Support programs with the CA-OPTIMIZER.

4 Compiler Options

- Xpediter permits the programmer to use variables and paragraph names instead of offsets and registers.
 - In order to use the symbolics, a Symbolic Data File - .DDIO must be created.
- The symbolic data comes from the compilation listings.
 - It is extracted and reformatted for Xpediter.
- Xpediter/TSO does not use the TEST option.
 - It does use the PMAP/DMAP or MAP/OFFSET options.
- No source code statement modifications are required to use Xpediter.
- Programs running above the 16Meg line are supported.
- Overlay structures are not supported.

5 Immediate, Delay, and Continuous Commands

The difference between an interactive and batch command is not the function of the command; but rather its execution and where the results are viewed.

In both modes the output goes to the log.

- In full screen interactive mode, the results are also visible on the screen and commands can be entered dynamically.

Any command entered from the terminal and directly executed while paused at a breakpoint is called an Immediate Command.

- In batch mode, most commands are executed before the first and last statement of the program.

With interactive and batch modes, there is the capability to INSERT a command for later execution.

Data items can be retained in a "window" for viewing under full screen interactive mode.

A conditional breakpoint can be requested; additional commands can than be entered.

6 Interactive Mode versus Batch Mode

6.1 Batch Mode

Input in the form of commands comes from an input dataset.

- Output goes to the log.
- Testing in batch requires fewer resources.
- Allows long running programs to be tested.
- Tape jobs can be run in batch.
- Useful for collecting performance/execution data.
- Does not tie up a terminal.

6.2 Interactive

- Provides the ability to start and stop the program at any point.
- Source code and memory can be viewed during execution.
- Facilitates the application of program fixes.

7 Batch Connect Facility

Through the Batch Connect facility, execution JCL is automatically submitted to z/OS and there is the capability to connect directly to the job as it executes in its native environment the batch initiator.

The Batch Connect facility automates the setup and files allocations, displays the job steps in the specified JCL, and provides for the selection of steps to be interactively connected and the steps that are to be run in unattended batch.

With the Batch Connect facility, there is the benefit of submitting the job in batch, which uses less processor resources.

Programs can be tested with multiple steps:

- Programs that require tape files and many I/O operations in background.
- Long running programs.

8 Xpediter / TSO Input and Output

The primary inputs to Xpediter / TSO are:

1. DDIO libraries containing the source listing members.
2. Load libraries containing the programs to be tested and debugged.
3. JCL, file list, or CLIST that can be processed to allocate the input files and databases needed by a program.
4. Optionally, a test script library.

The primary output of the debugging session is the following:

1. Data files generated by the execution of the program.
2. Session log.
3. Test script containing the commands that were entered during the test session.