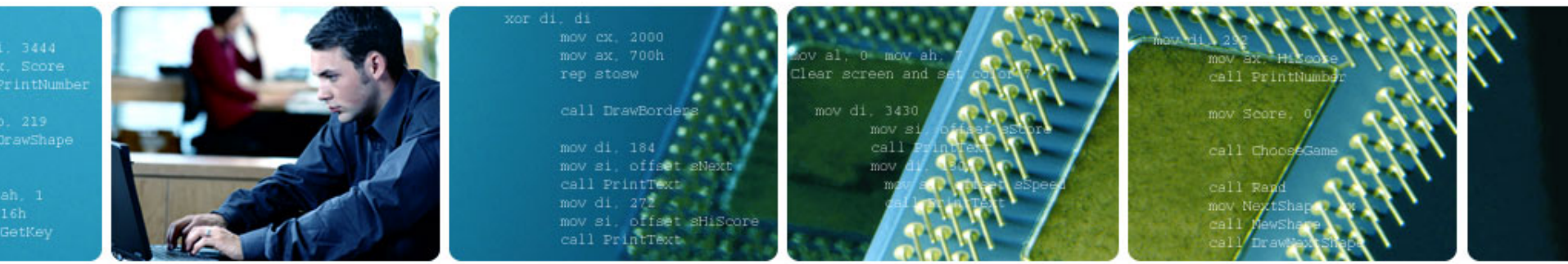
z/OS Basic Skills: Introduction to ISPF

Unit 3: Using the ISPF utilities
Module 5: Using ISPF compare and search utilities



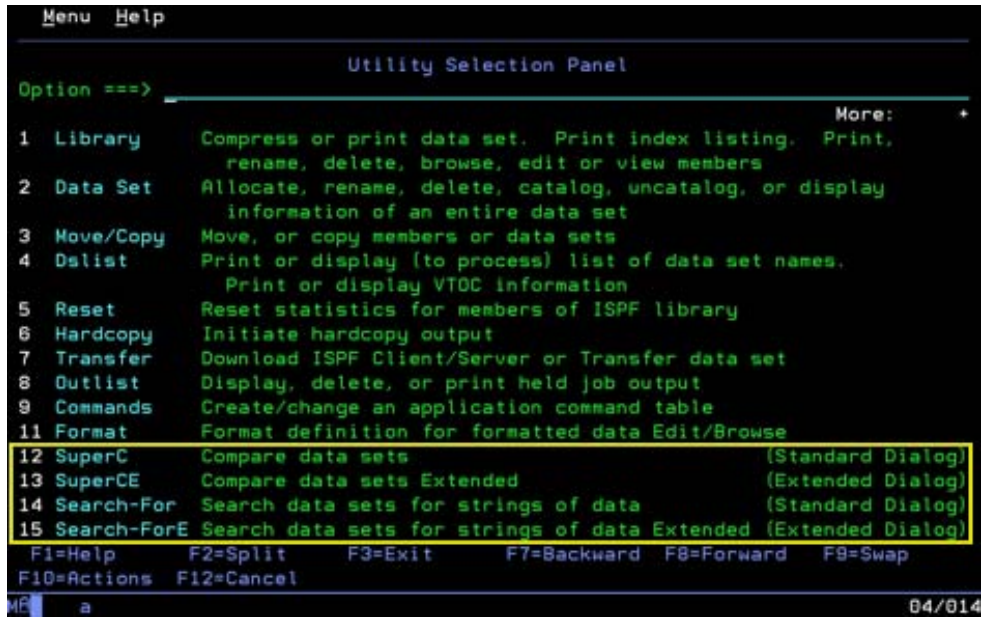
Using ISPF compare and search utilities – Introduction

In this module, *Using ISPF compare and search utilities*, we'll explore compare utilities that allow you to compare data sets to identify differences and to search data sets to help you locate information.

The compare utilities can compare two sequential or partitioned data sets (PDS) or members of a PDS to identify their differences. Comparison may be at the file, line, word, or byte level. The compare utilities are useful not only for comparing source members, but also for comparing text and data files.

The search utilities let you search a member, a group of members, or a group of libraries to locate all occurrences of a string.

Time to complete: 20 – 30 minutes



Using ISPF compare and search utilities – Objectives

Upon completion of this module, you should be able to:

- Access and use ISPF compare and search utilities
- Select compare and search utilities options
- Use compare and search utilities to search for data sets
- Use the data set list actions
- Use commands from the compare and search utilities.

Using ISPF compare and search utilities – Accessing the Utility Selection Panel

When you select option 3 on the Primary Option Menu the Utility Selection Panel appears. This panel typically gives you access to many different utility options.

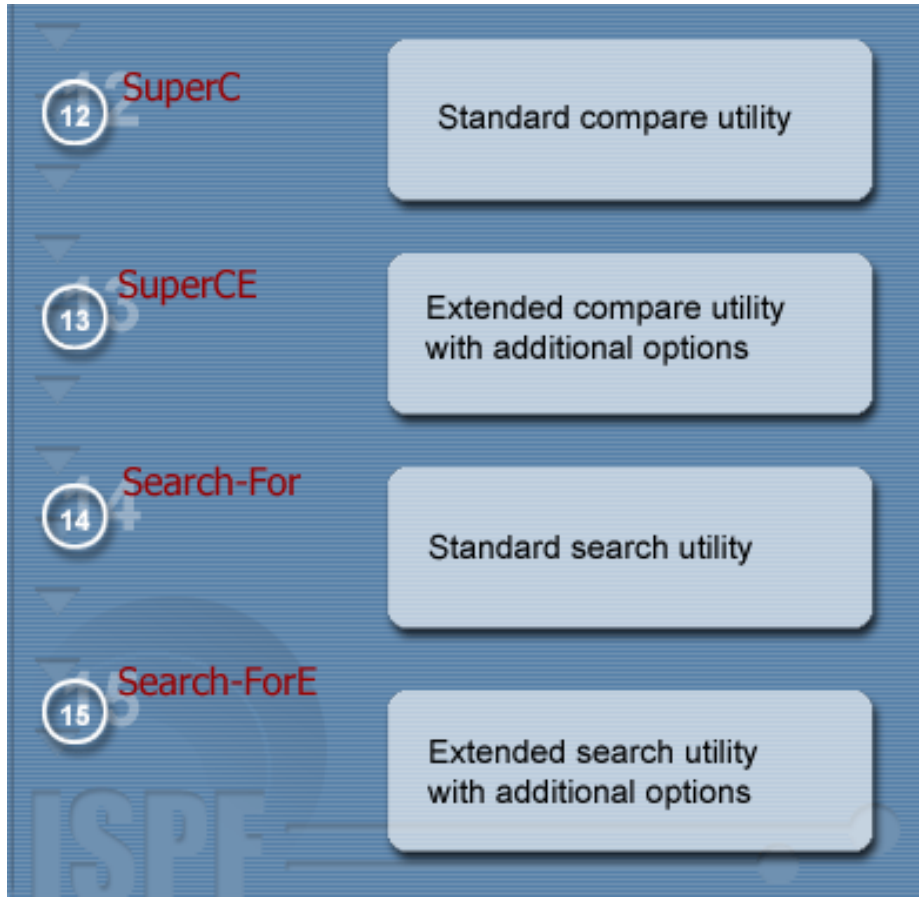
In the series of modules about ISPF utilities, we will explore some of the most commonly used utilities:

- The library utilities
- The data set utilities
- The move/copy utility
- The dslist utility
- The compare and search utilities

Using ISPF compare and search utilities – Starting the ISPF compare and search utilities

You can access the compare and search utility from the Utility Selection Panel using options 12,13,14, and 15. Although there are four selections, each of them represents a different interface to the same program, SuperC:

- SuperC (option 12) is the standard compare utility. It can perform a straight comparison of two data sets or members.
- SuperCE (option 13) is the extended compare with additional options possible.
- Search-For (option 14) is the standard search utility.
- Search-ForE (option 15) is the extended search utility that also provides additional options.



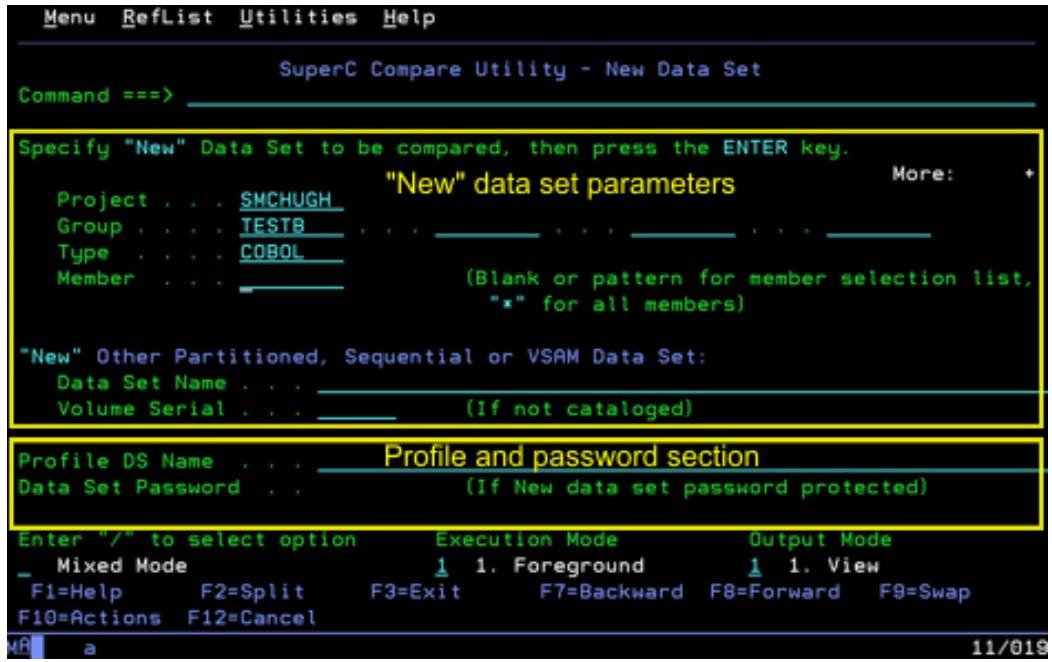
Using ISPF compare and search utilities – Exploring the first panel of the SuperC compare utility

The first panel of the SuperC utility is the New Data Set panel.

On this panel, you supply the new data set information. To keep track, SuperC refers to the two data sets as “new" and “old." In this context, a “new” data set is an updated version of a previously created data set.

You need only provide the name of the input data set and select either foreground or batch mode processing.

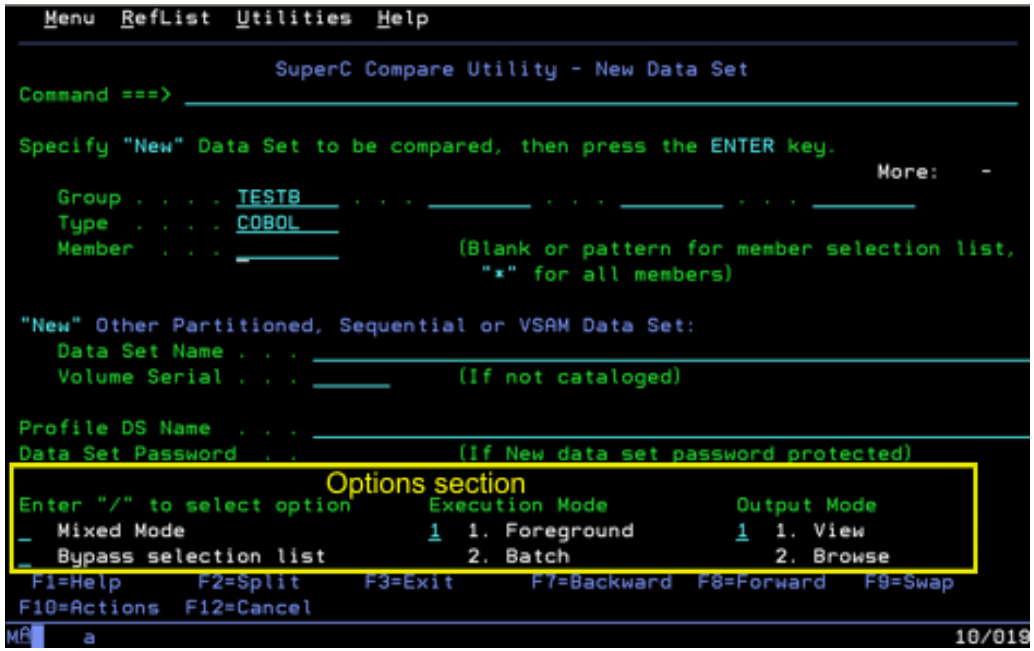
If you have a profile data set that contains various search options such as compare type and processing options, specify it in the Profile DS Name field. If the data set you are searching is password protected, you can enter the password here.



Using ISPF compare and search utilities – SuperC compare utility options

At the bottom of the New Data Set panel, you'll see the options section. You can select either of the following two options by typing a slash (the symbol /) in front of them:

- Mixed mode – in this mode, SuperC can scan and parse double-byte character set (DBCS) text strings.*
- Bypass selection list – if you enter a member pattern for the "New" data set and select this option, SuperC processes all members that match the pattern without displaying a member selection list.

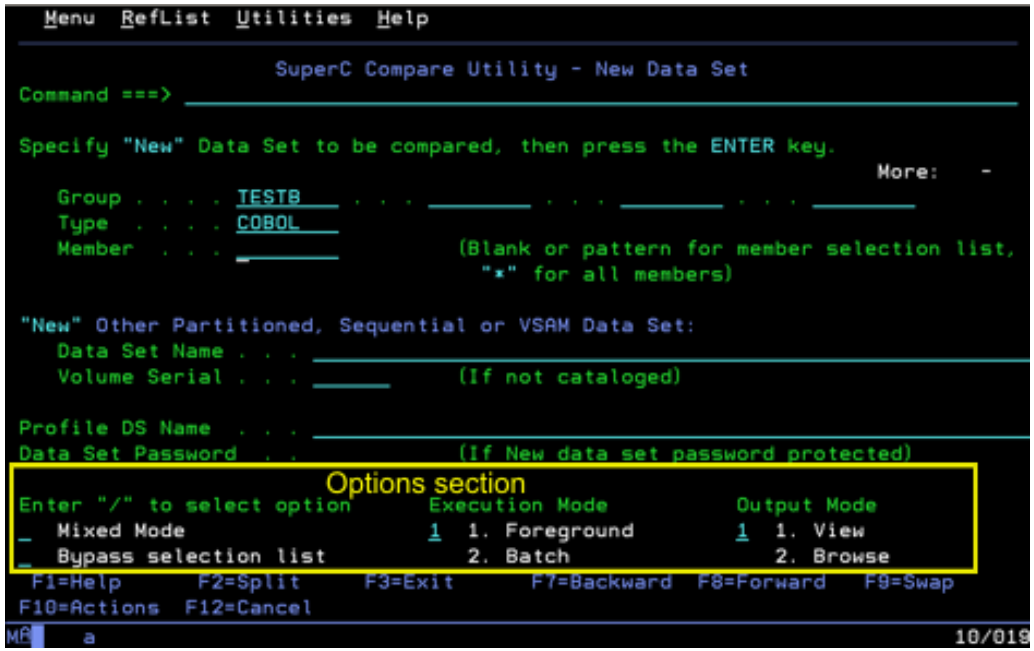


* To use mixed mode, ISPF must be started with the JAPANESE keyword on a terminal that supports DBCS.

Using ISPF compare and search utilities – SuperC compare utility options continued

The other options you can select on this panel include:

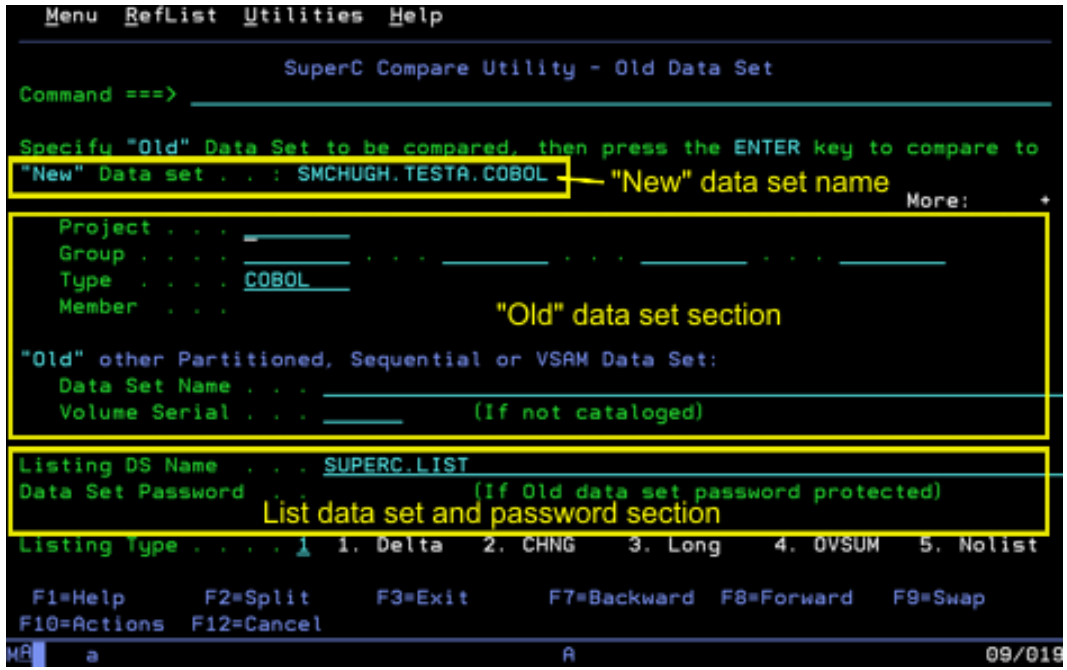
- Execution mode – type 1 to have SuperC run in foreground mode, or type 2 to have it run in background mode.
- Output mode – type 1 to have the comparison results presented in the view mode, or type 2 to select the browse mode.



Using ISPF compare and search utilities – Exploring the second panel of the SuperC compare utility

After you fill in the New Data Set panel and press the Enter key, the Old Data Set panel appears. The “new” data set you entered on the previous panel appears near the top. In the “old” data set section, enter the information about the second data set for the SuperC comparison.

The Listing DS Name is the name of the data set to which SuperC writes the results of the comparison. If you do not specify a name, the default data set name will be *prefix.userid*.SUPERC.LIST where *prefix* is your TSO prefix and *userid* is your user ID. If your prefix and user ID are identical, or if you do not have a prefix, then only the user ID is used.

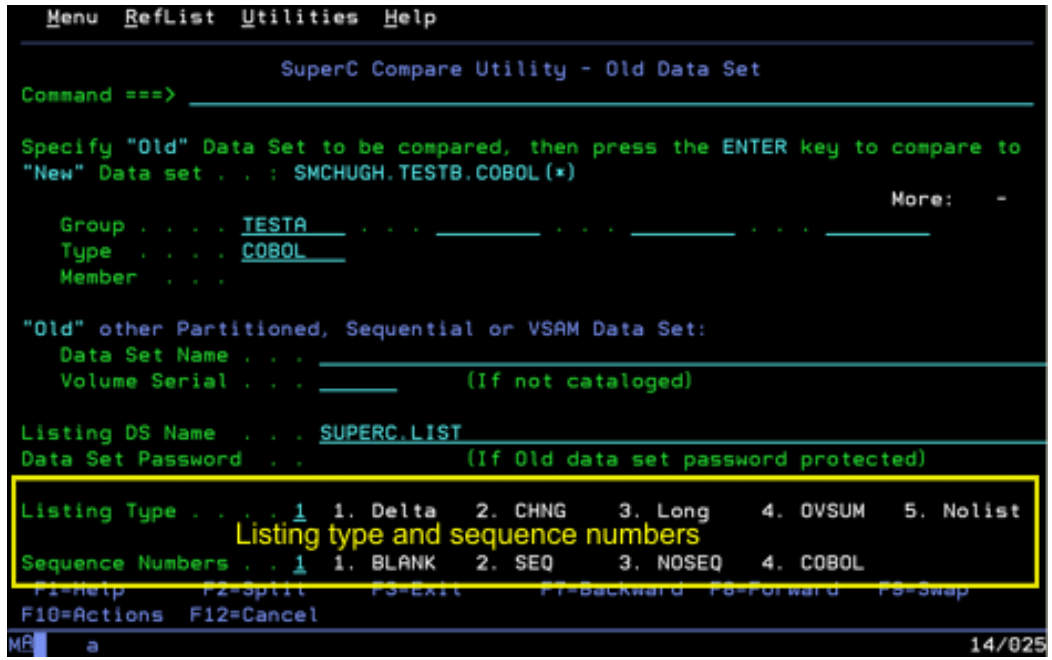


Using ISPF compare and search utilities – SuperC listing and sequence options

At the bottom of the Old Data Set panel, you can specify a listing type of:

- Delta – list the differences between the data sets and include an overall summary.
- CHNG – create a list similar to delta, but also include up to 10 unchanged lines before and after the changed lines to help you recognize changed areas in the source data sets.
- Long – list and flag all new data set source lines and old data set deleted lines.
- OVSUM – list only the overall summary.
- Nolist – do not create a list.

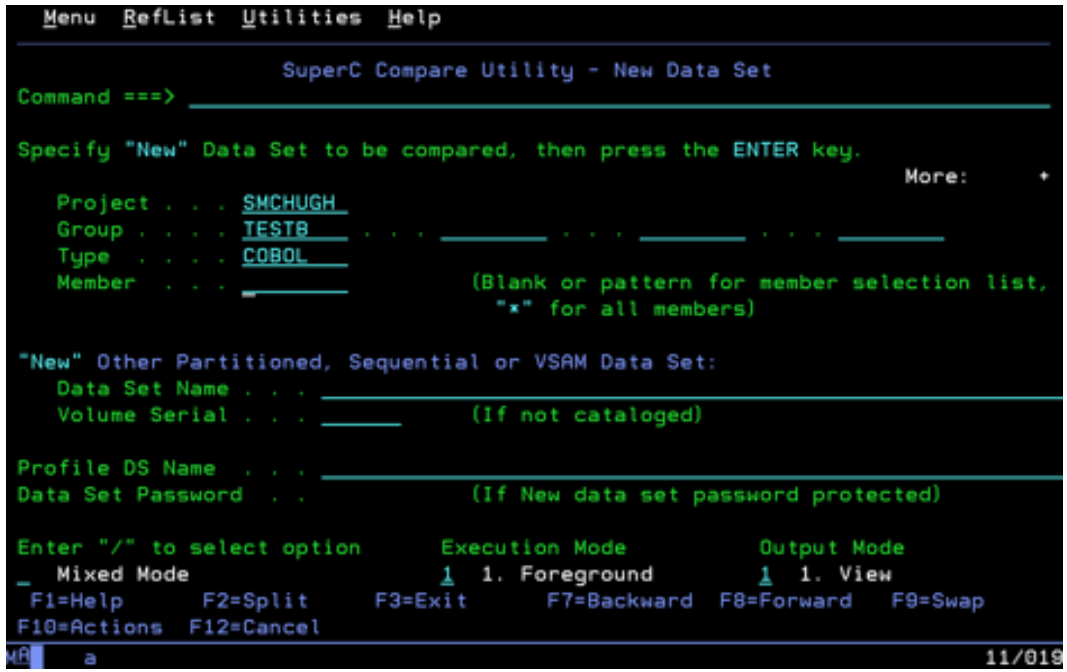
The sequence number options tells SuperC whether to compare sequence numbers and where they are located in the record.



Using ISPF compare and search utilities – Using the SuperC compare utility - simulation

Let’s try it. You have a PDS named SMCHUGH.TESTA.COBOL. You used it to create a new data set named SMCHUGH.TESTB.COBOL. You have edited some of the members of the new data set and even created a new member. Now you want to compare the two data sets.

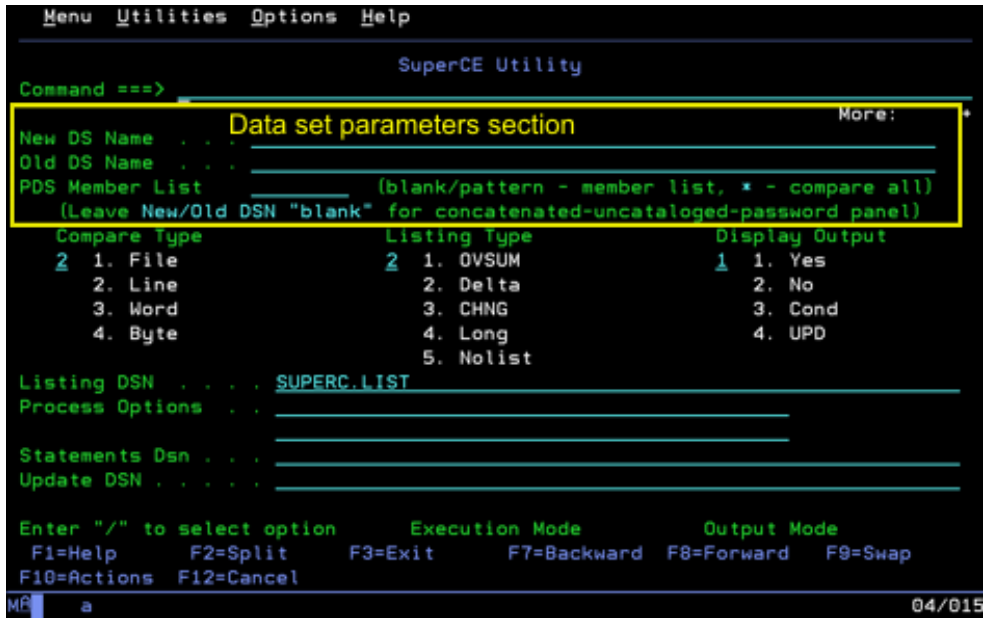
To try this simulation, click the Launch button.



Using ISPF compare and search utilities – Exploring the SuperCE compare utility panel

Select option 13 from the Utility Selection Panel to access the SuperC Expanded (SuperCE) compare utility. SuperCE allows you to compare data sets or members. Additionally, it includes a variety of options that affect the way the data is compared.

In the data set parameters section, you can specify both the new and old data sets. To compare all members of the data set, type an asterisk (the symbol *) in parenthesis after the data set name. To open a member selection list do not enter the asterisk symbol in parenthesis.



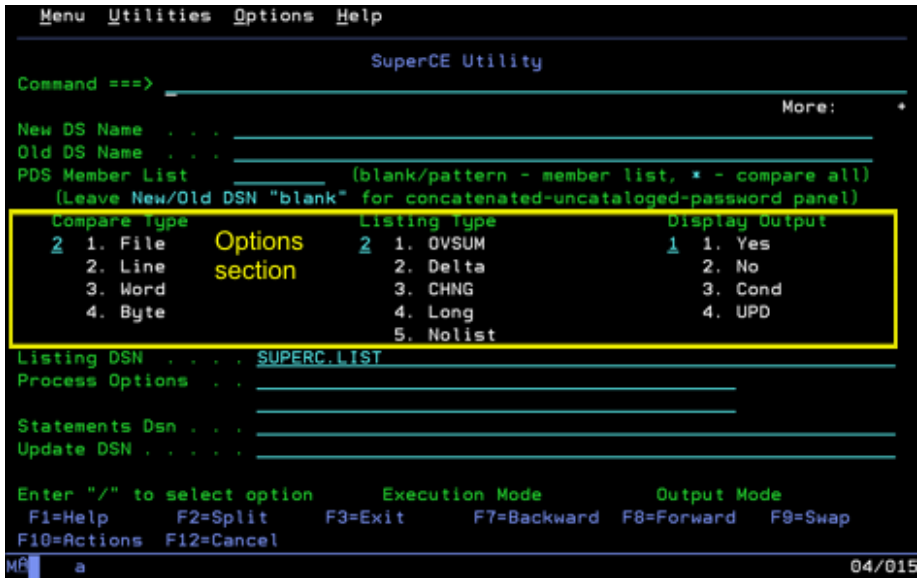
Using ISPF compare and search utilities – Options on the SuperCE compare utility panel

In the options section, you can select:

- Compare type
- Listing type
- Output display type

While SuperC only allows you to run a line by line comparison (unless you are using a profile), SuperCE lets you specify a file, line, word, or byte comparison.

With SuperCE, you can also create a profile that you can run on SuperC. The listing types and display output types are the same as they are for SuperC.

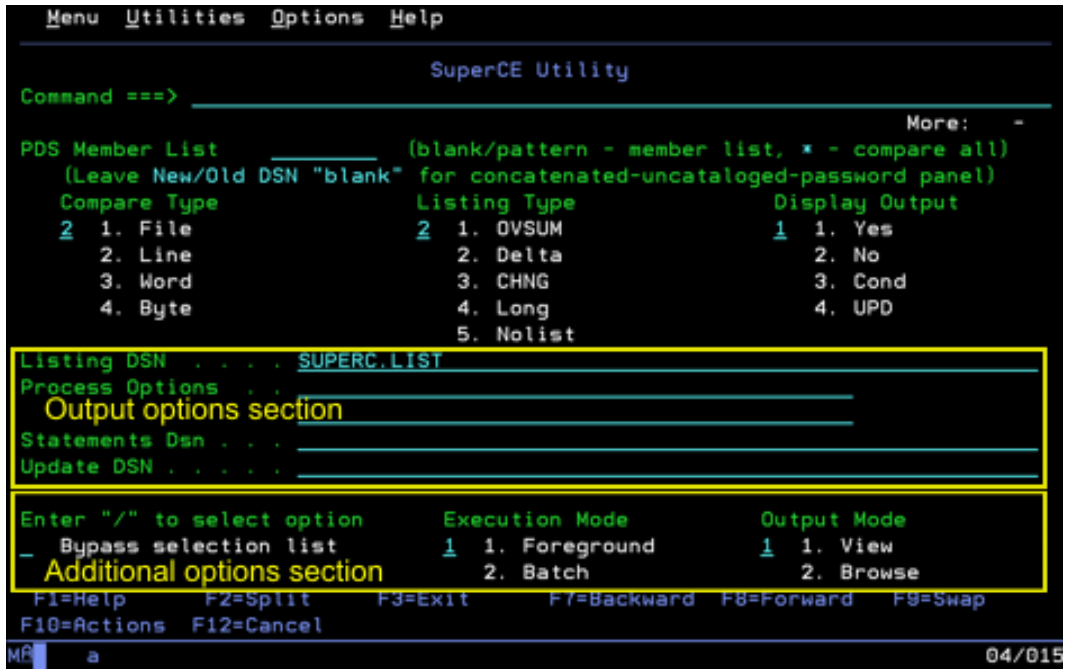


Using ISPF compare and search utilities – SuperCE output and additional options

In the output options section, you can specify:

- Listing data set name - the data set to which SuperC writes the results of the comparison.
- Process options – type or select keywords that tell SuperC how to process the compare operation.
- Statements DSN - the data set that contains process statements.
- Update DSN - the data set that you want SuperC to update. This data set can contain column-oriented results and is normally used as input to post processing programs.

In the additional options section you can bypass the selection list and set both the execution mode and the output mode as you can with the SuperC interface.



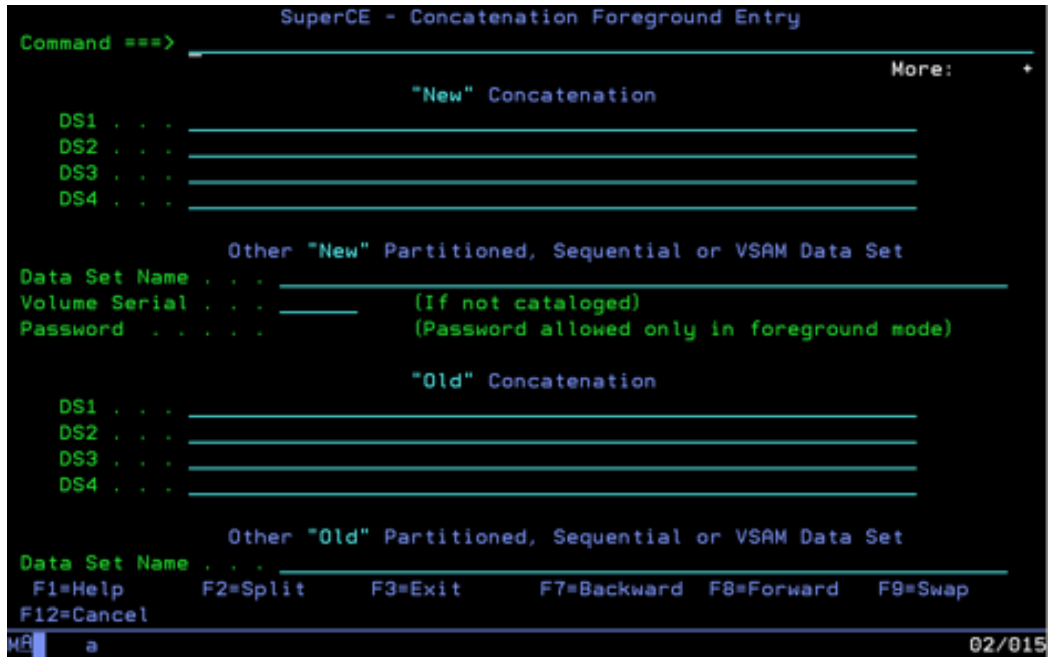
Using ISPF compare and search utilities – Using the SuperCE compare utility

To compare two data sets or data set members, type the two data set names using standard TSO conventions, including quotes for fully qualified names, as shown here. You can select from four different compare types:

- File - calculates a hash value for each data set. Two files which are identical have identical hash values.
- Line - compares two data sets line by line.
- Word - compares two data sets word by word, which is useful for text files.
- Byte - compares data sets byte by byte, which is useful for data sets that contain unreadable characters.

Using ISPF compare and search utilities – Expanding a SuperCE compare

With SuperCE you can concatenate up to four new and old input data sets. To navigate to the panel where you can specify multiple data sets, leave the New DS Name and Old DS Name fields on the SuperCE Utility panel blank. Select all of the other options you want to use for the comparison and press the Enter key. The SuperCE – Concatenation Foreground Entry panel appears. If you select batch execution, you access a similar concatenation panel for batch data set entry.



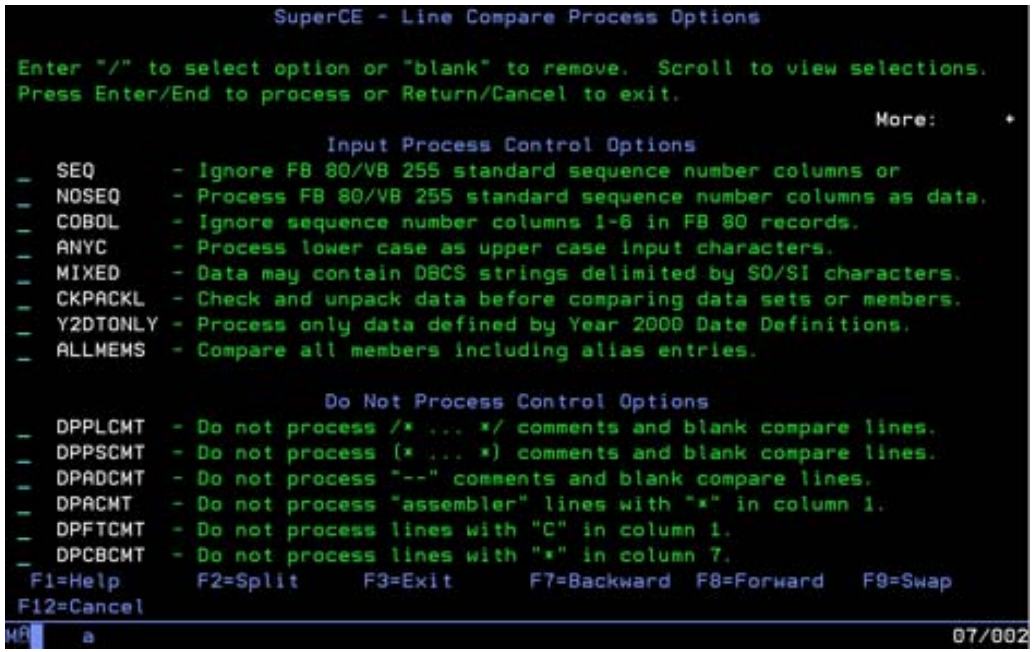
Specify the new and old input data sets using standard TSO conventions, including quotes for fully qualified names.

Then press the Enter key to begin the comparison. If you run the comparison in foreground mode, your keyboard is locked until SuperC processing is complete. If you run it in batch mode, you can continue to use your keyboard while processing continues in the background.

Using ISPF compare and search utilities – Requesting SuperCE processing options

Depending on the comparison type, you can use processing options to customize your comparison. Enter the option keywords in the Process Options field on the SuperCE Utility panel, or select your options from a list. Some of the options (SEQ, NOSEQ, COBOL, and ANYC) specify where the sequence numbers appear in the record and whether or not to include them. Others control processing of comment lines and blank lines.

To display the list, type P on the command line, select the comparison type, and press the Enter key. The panel shown here includes the process options for a line comparison.



To select an option, type a slash (the symbol /) next to it. When you have selected all the options you want to include, press the Enter key. The option keywords appear in the Process Options field on the SuperCE Utility panel.

Using ISPF compare and search utilities – Exploring the Search-For Utility panel

To access the Search-For Utility panel, select option 14 on the Utility Selection Panel. You can use this utility to search for one or more characters in a data set.

Enter the search string in the search string field. If the string contains spaces or special characters, you must use quotes around the string. In this basic search utility, search strings are not case-sensitive, so you can enter them in either uppercase or lowercase.

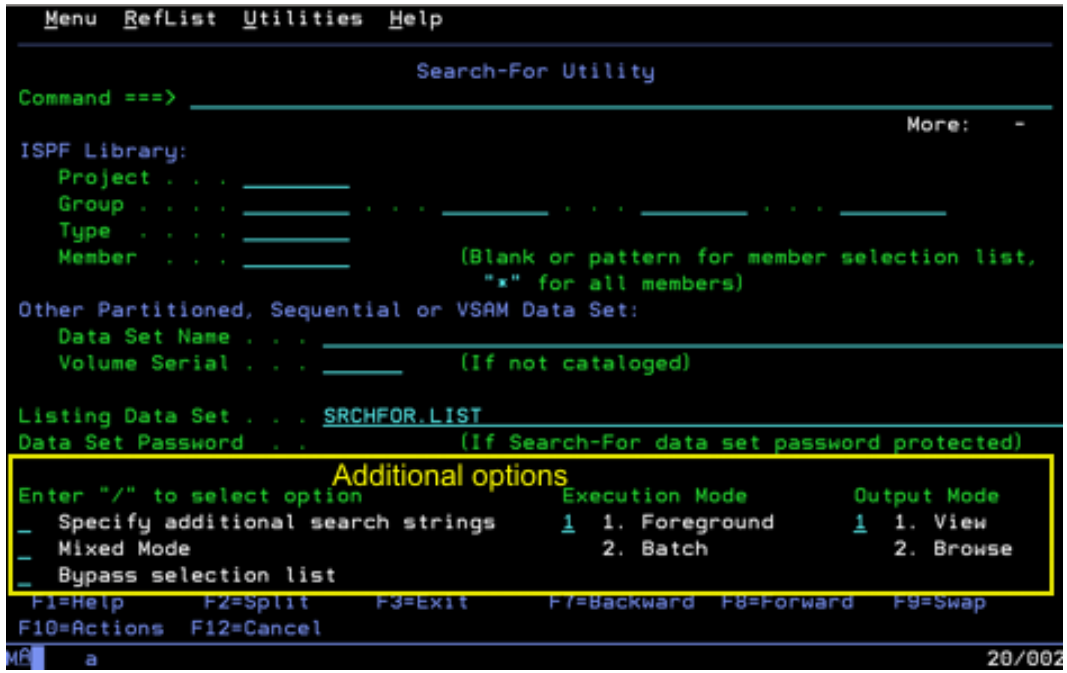
The listing data set is the data set to which the search utility writes the results of the search. If the data set you are searching is password protected, enter the password in the field provided.

Using ISPF compare and search utilities – Options on the Search-For Utility panel

At the bottom of the Search-For Utility panel, you can select the following options by typing a slash (the symbol /) next to them:

- Specify additional search string option – allows you to search for additional strings
- Mixed Mode – allows you to scan and parse input data set lines for DBCS text strings
- Bypass selection list – if you entered a member pattern above, and you select this field, ISPF bypasses the member selection panel and processes all the members that match the pattern.

You can elect to run the search in the foreground (1) or batch (2) modes, and specify that the output be displayed in either the view (1) or browse (2) modes.



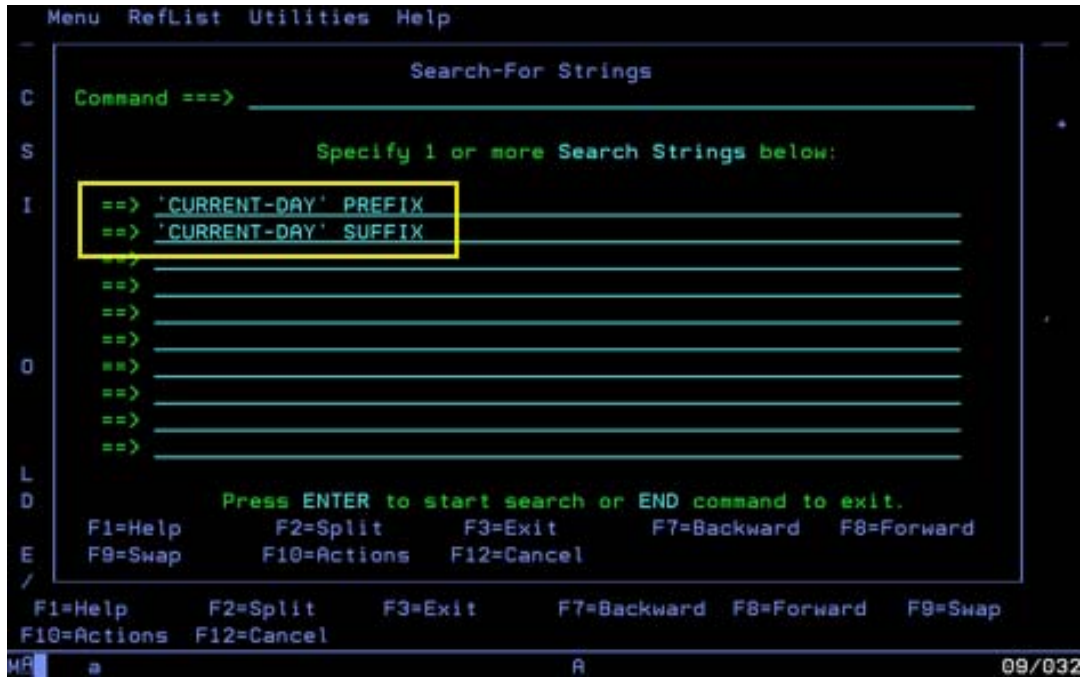
Using ISPF compare and search utilities – Specifying search strings and keywords

When you enter the search string in the Search string field, you can also include one of the following keywords after it:

- PREFIX – look for a match at the beginning of words
- SUFFIX – look for a match at the end of words
- WORD – look only for a complete match

You cannot include multiple keywords on one line, however, so if you want to search for the same string at the beginning or end of a word, place the same search string on two different lines, one with PREFIX and one with SUFFIX, as shown here.

When you specify multiple search strings, you may also supply the keyword C, which stands for continuation. In this case, ISPF will only search for lines that contain all the search strings.

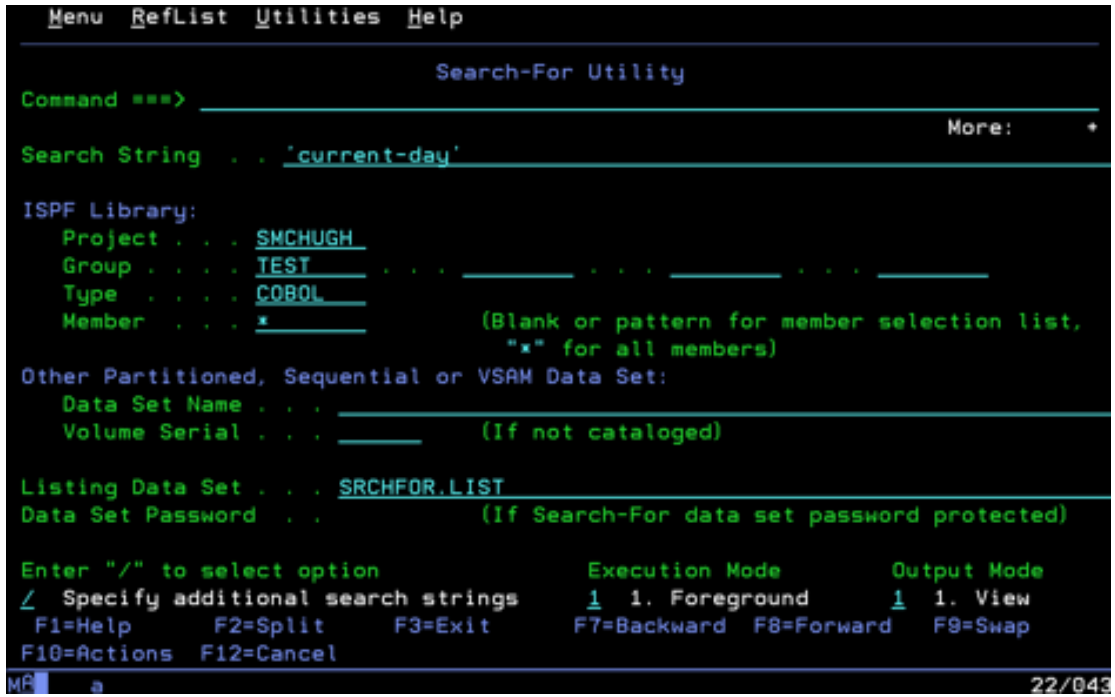


Using ISPF compare and search utilities – Using the Search-For utility - simulation

Let’s try it. You have a PDS named SMCHUGH.TEST.COBOL and you want to search all its members for the following two strings:

- current-day
- current-month

When you are ready to try the simulation, click the Launch button.

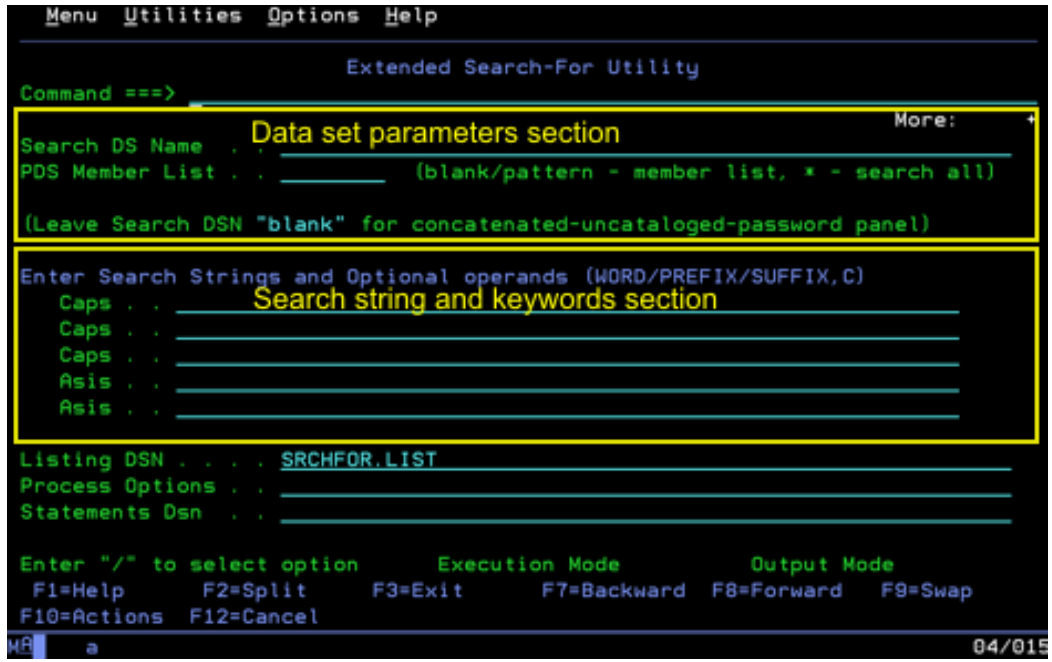


Using ISPF compare and search utilities – Exploring the Extended Search-For Utility panel

Select Option 15 on the Utility Selection Panel to use the Extended Search-For (Search-ForE) utility, which provides far more flexibility than the Search-For utility.

In the Search DS Name field, type the data set name using the standard TSO conventions, including quotes for fully qualified names. For a PDS you can enter a single member, an asterisk to search all members, or a blank or pattern to see a member list for selection.

You can specify your search strings in the same format as the Search-For facility with a small difference. If you want the search to match only uppercase characters, enter the search strings on one or more of the Caps lines. If you want the search to find only an exact case match, enter the string in one of the Asis fields exactly as you want it.



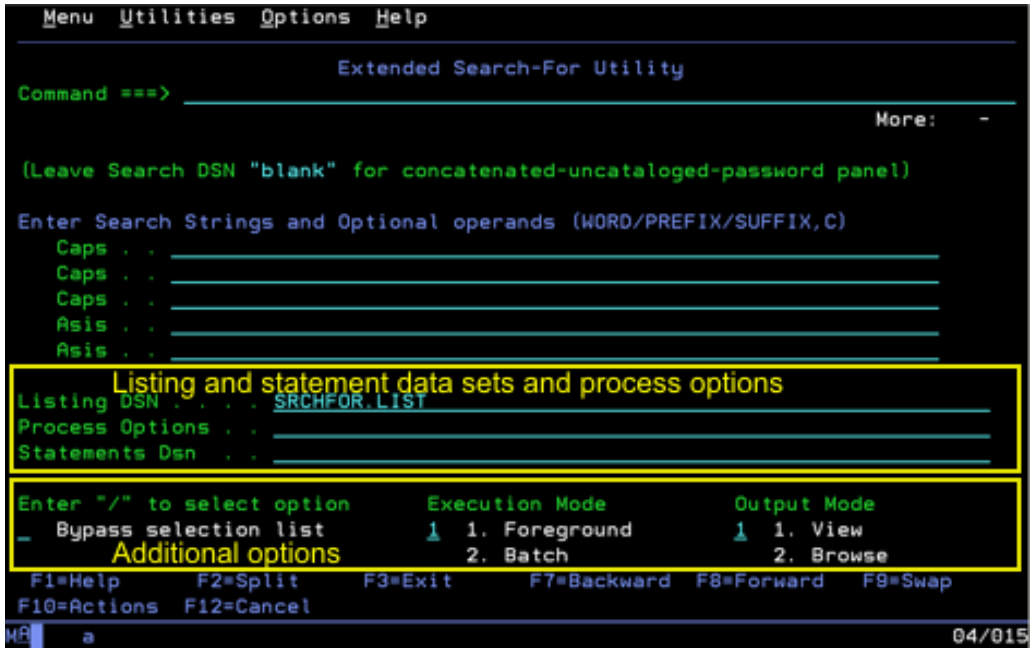
Using ISPF compare and search utilities – Exploring the Extended Search-For Utility panel continued

The Listing DSN is the name of the data set in which you want ISPF to save the results of the search. The default data set name is *prefix.userid*.SRCHFOR.LIST.

The Process Options tell Search-ForE how to process the Search-For operation.

The additional options section gives you the option of bypassing the selection list. If you use a pattern in the member field, selecting this option will bypass the selection list and search all members that contain the pattern.

You can also select to process in either the foreground or batch mode and to display the output in either the view or browse mode.



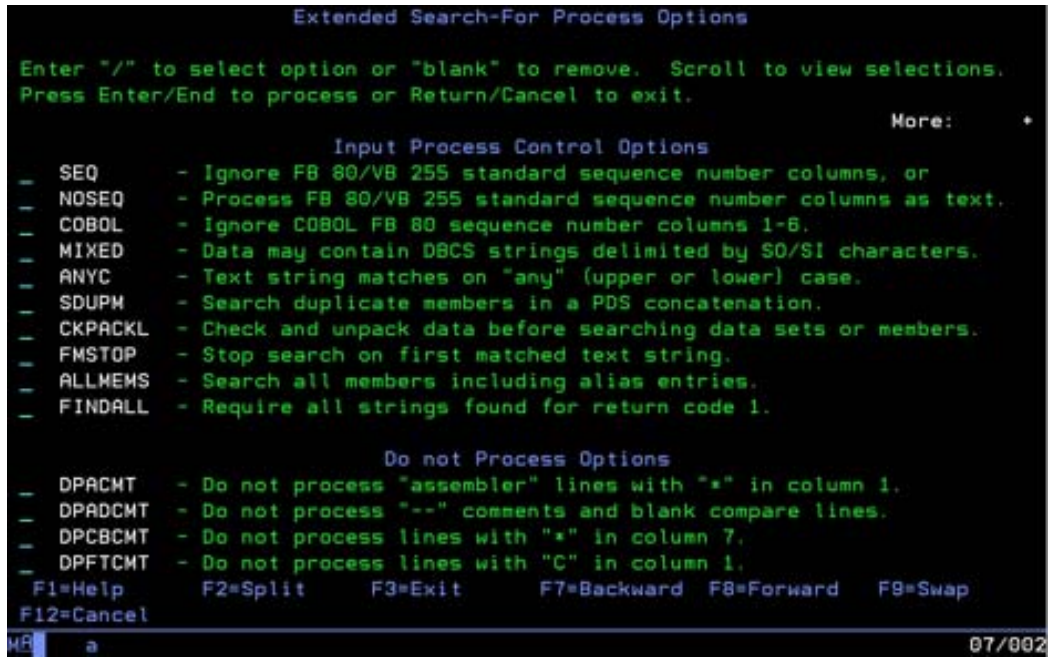
Using ISPF compare and search utilities – Specifying processing options for Search-ForE

The Process Options tell Search-ForE how to process the Search-For operation. You can type these keywords in the Process Options field, or enter a P on the command line and press the Enter key to select them from a panel.

To select an option, type a slash (the symbol /) next to it.

Three options (SEQ, NOSEQ, and COBOL) deal with how to process sequence numbers in the file. The ANYC option causes your search strings to match on "any" case, either upper or lower. If you select this option, it does not matter if you type the search strings on the Caps lines or Asis lines.

When you have selected all the options you want to include, press the Enter key. The option keywords appear in the Process Options field on the Search-ForE Utility panel.

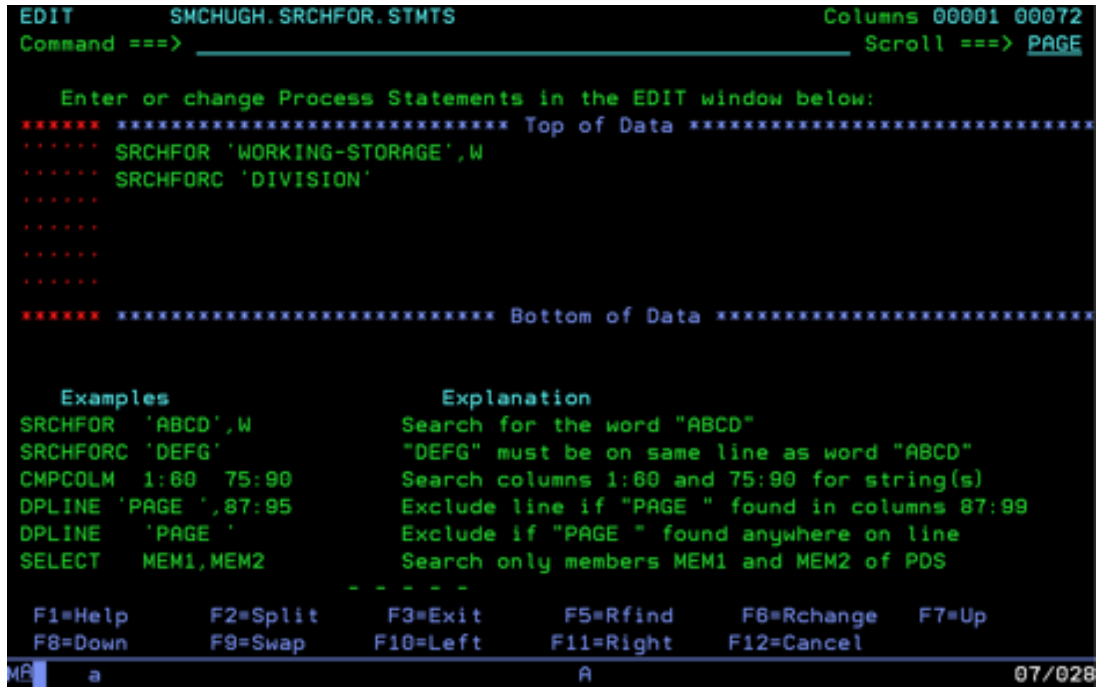


Using ISPF compare and search utilities – Refining your search

You can use process statements to complement and refine your search. If you have a data set containing process statements, enter its name in the Statements Dsn field.

You can create a statement data set by typing an E at the command prompt and pressing the Enter key. If your statement data set does not exist, ISPF allocates it, then displays the panel shown here. You can enter process statements like the examples given at the bottom of the panel.

Two important process statements are SRCHFOR and SRCHFORC. These statements allow you to build search strings into the process statement data set for use over and over again through different searches.



Using ISPF compare and search utilities – Summary

In this module, *Using the ISPF compare and search utilities*, you have learned:

- **How to access the ISPF compare and search utilities**
- **That the four compare and search utilities are actually just different interfaces to the same SuperC utility**
- **How to use SuperC, the basic compare utility, to find line-by-line differences between data sets**
- **How to use SuperCE, the extended compare utility, to perform more complex comparisons**
- **How to use Search-For, the basic search utility, to find character strings in data set members**
- **How to use Search-ForE, the extended search utility, to perform more advanced searches and to create process statement data sets.**