

# Print Users Sorted

This chapter covers the following topics:

- Description
- Procedure
- Batch Example

## Description

### Program

B07331

### Function

Print a list of users sorted by content in the sequence specified. The printed list will contain the user ID, phone, extension, department and full name; it will not contain the search criteria you selected.

### Online Input Screen

```

9:40 AM          * * * C O N - N E C T 3 * * *          14.Feb.94
Cabinet LS      Print User Sorted                      B07331

Print from User _____ to User _____ ('*' for all users)

Define Sort Criteria
Content          Len  Pos From To    Content          Len  Pos From To
-----
User ID          8    1   8    Department number 10    1   10
Company         32    1  32    Phone             15    1   15
Title           32    1  32    Phone country     2     1   2
Location        32    1  32    Phone extension   10    1   10
Address (Line 1) 60    1  60    Postal Code       10    1   10
Address (Line 2) 60    1  60    Last name         32    1  32
Address (Line 3) 60    1  60    First name        32    1  32
City            32    1  32    Initial           1     1   1
Country         8     1   8    Transparent data  8     1   8
Department name 32    1  32

Define exit to verify user data _____ with parameter _____
Define exit to handle result _____

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10---PF11---PF12---
Menu Quit
Complete the information above and press ENTER to continue

```

## Utility Parameters

Parameter	Format	Description
From User	A8	
To User	A8	Optional
Position	N3	Priority of sorting criteria
From	N4	Byte on which sorting criteria begin
To	N4	Byte on which sorting criteria end
Verify User Data	A8	Optional
Parameter	A8	Optional
Handle Result	A8	Optional

## Procedure

### Sorting Criteria

Selected users can be sorted by nineteen sorting criteria; at least one sorting criterion must be specified. The contents of the first eighteen sorting criteria are user information which are internally stored within Con-nect (e.g. user's name, company, location and user ID). The remaining sorting criterion, transparent-data, can be filled by the user with any value.

The following rules must be adhered to when specifying sorting criteria:

- the "Pos" (position) field must be within the range of 1 through 19;
- a sorting criterion cannot be selected more than once;
- the value of the "From" field cannot be less than 1 (e.g. 1 equals the first byte of the information);
- the value of the "To" field cannot be greater the content's field length (as specified in the "Len" (length) field); and
- the value of "From" cannot be greater than the "To" field.

## Sorting

This utility begins sorting the users by the specified sorting criteria until either all users are sorted uniquely, or all sorting criteria have been met. For example, you want a printed list of users sorted by the following criteria:

1. department-name
2. title
3. last-name
4. country

You would specify the following:

<b>Content</b>	<b>Len</b>	<b>Pos</b>	<b>From</b>	<b>To</b>
Department name	32	1	1	32
Title	32	2	1	32
Last name	32	3	1	32
Country	8	4	1	8

The utility first begins sorting the users by department-name. If all users cannot be sorted uniquely, the remaining users are sorted by title. The utility continues to sort the users until they are all sorted uniquely, or all sorting criteria have been met.

Furthermore, suppose the last six bytes in the criterion department-name in all user records contain the letters "center". You can remove these six bytes from the sorting criteria to speed up the sorting process. To do so, you specify the following:

<b>Content</b>	<b>Len</b>	<b>Pos</b>	<b>From</b>	<b>To</b>
Department name	32	1	1	26
Title	32	2	1	32
Last name	32	3	1	32
Country	8	4	1	8

Removing the last six bytes decreases the total number of bytes which are sorted per user from 104 to 98. Thus the sorting process is completed quicker.

## User Exits

In addition to the sorting criteria, you can write your own user exits to verify user data before the sorting process, or to use the sorted data for other purposes.

The user exits are invoked during different phases of this utility:

### Phase I

The utility begins reading the specified user records. If a user exit is specified in the "Define exit to verify user data" field, it is invoked after each user record is read.

### Phase II

The utility begins sorting the user records. No user exit is invoked.

### Phase III

The utility begins printing the sorted user records. If a user exit is specified in the "Define exit to handle result" field, it is invoked after each user record is printed.

The following is an explanation of how to use the user exits.

## Verify User Data

You can write this type of user exit to:

- narrow the list of returned users by specifying additional requirements which must be met. For example, you want to print a list of only those users who are in department "appliances" and whose title is "clerk". You can reject all users that do not fulfil these conditions by writing the appropriate statement in the user exit and changing the value of the parameter Accept to false.
- produce different lists with the same user exit. For example, your company contains 100 different departments and you want to be able to create a separate telephone list with the same sorting criteria for each department. You can write the user exit to check the "parameter" field and depending upon the value specified in that field, fetch a particular department's user records. Thus, only one user exit is needed to produce the different lists.
- verify the integrity of the accepted information. For example, you have specified the phone-extension as your main sorting criterion, but the format of the telephone numbers on your database is left justified. If this information remains left justified, the telephone numbers may not be sorted in ascending order as intended. However, if you use the user exit to modify the format of the telephone numbers to right justified, you can be certain the user records will be sorted in ascending order.

**Note:**

These modifications are not applied to the database, but only to the information used during the execution of this user exit.

As a default, when the sorted user records are sent to the printer, the format modifications are not printed. However, if you change the parameter Return-modifications to true the modifications are printed and returned to the second user exit for other purposes.

- assign a value (e.g. internal personal number) to the sorting criterion "transparent data" field so that it can be used in the sorting criteria process.

When naming this type of user exit, it must begin with USR004.

When a user exit is specified in the "Define exit to verify user data" field, it is invoked for each user record with the following parameters:

<b>Parameters</b>	<b>Format</b>	<b>Description</b>
Accept	L	Default: true
Data-table	A1/1:476	Data in user record
User-id	A8	
Work-organization	A32	
Work-title	A32	
Work-location	A32	
Work-address	A60/1:3	
Work-city	A32	
Work-country	A8	
Work-dept-name	A32	
Work-dept-number	A10	
Work-phone	A15	
Work-phone-country	N2	
Work-phone-ext	A10	
Work-postal-code	A10	
Work-last-name	A32	
Work-first-name	A32	
Work-initial	A1	
Transparent-data	A8	
Return-modifications	L	Default: false
User-parameter	A8	The value specified in the "parameter" field.

## Use Sorted Data

The second type of user exit can be written to use the sorted information for other purposes such as creating documents, or filing the list.

When naming this type of user exit, it must begin with USR005.

When it is specified in the "Define exit to handle results" field, it is invoked each time a user record is printed with the following parameters:

Parameter	Format	Description
Current-user	P7	Invoked with AD=O. Counter used during the sorting process which is increased by one each time the exit is invoked.
Total-user	P7	Invoked with AD=O. Total number of users sorted.
Data-table	A1/1:476	Contains user data as stored in the Con-nect system file, or as manipulated with the user exit Verify User Data, if parameter Return-modification was set to true.
User-id	A8	
Work-organization	A32	
Work-title	A32	
Work-location	A32	
Work-address	A60/1:3	
Work-city	A32	
Work-country	A8	
Work-dept-name	A32	
Work-dept-number	A10	
Work-phone	A15	
Work-phone-country	N2	
Work-phone-ext	A10	
Work-postal-code	A10	
Work-last-name	A32	
Work-first-name	A32	
Work-initial	A1	
Transparent-data	A8	
User-buffer	A250/1:8	Work area for the user. This buffer is left unchanged by Con-nect. Users can use this as their own work area.

## Printing

Once all sorting is completed, this utility sends the sorted information to the printer which is specified in your user profile. The user ID, phone number, extension, department and full name is printed.

## Technical Information

If the length of the sorting criteria is less than 35 bytes, then this utility begins at once with a sorted printout.

This utility does not require JCL sort statements and does not use Natural sort; the sorting is based on Adabas (thus, there is no limit to the number of user records which can be sorted at one time). This utility checks the sort records and deletes all records which have been printed.

In addition, each time this utility is invoked, it checks for sorted records older than one day. If any are found they are deleted. This ensures that sorted records which are retained due to system crashes are always deleted.

## Batch Example

When this utility is run in batch mode, you replace the table containing the sort criteria with an alphanumeric input string. With this input string, you can specify up to 10 sorting criteria.

For each sorting criterion a 6 digit value must be specified, which consists of the following:

- A two digit number that determines the content that will be used as the sorting criterion. For example, if you want User ID as your sorting criterion, you would specify 01, while Company would be 02 and Phone would be 12. (The value corresponds to the order the contents are listed on the online screen for this utility.)
- A two digit "from value" for the sorting criterion.
- A two digit "to value" for this sorting criterion.

The sequence you specify the criteria in the input string determines the position and, thus, the sorting priority. Invalid specifications, such as the "from value" is greater than the "to value" are ignored.

Print all users, sorted by Country (with full length), City (from byte 1 to 12), Last Name (with full length) and First Name (with full length). Additionally, invoke user exit USR00501 to print the sorted information. This would be coded as follows:

```
LOGON SYSCNT2B
MENU
B07331 *, ,090108080112160132170132, , ,USR00501
FIN
```