CP3KEXTR -- Data Extraction Program

For zBNA, zCP3000, and zPCR

Quick Start Guide v4.39

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This paper summarizes the steps needed to run the CP3KEXTR program. If you need more detailed instructions, please refer to the full "User's Guide" (available via the links shown below).

Step 1 - Ensure you have the Latest Version of the Extract Program

Ensure your copy of CP3KEXTR is up to date. You can check one of the following web sites to see the most recent version.

a. Download a copy of **Cp3kExtr.Zip** (containing Cp3kExtr.Bin) from the following site:

https://ibm.biz/Bdmibu

b. Sign on to the TSO system you are installing to. Allocate a new data set <*hlq*..CP3KEXTR.UPLOAD as PS, FB80. This is the data set into which you will upload Cp3kExtr.Bin.

- In ISPF/PDF select Option 3.2
- Allocate NEW data set named <hlq>.**CP3KEXTR.UPLOAD**
- Set RECFM to FB, LRECL to 80, BLKSIZE of 0
- Primary extent of 3 CYLS with SEC of 1, No directory blocks

c. Use FTP in binary mode to upload the CP3KEXTR.bin program file and in TSO "Receive" the file to reformat it into the CPSTOOLS.JCL dataset.

- Via Windows command line or FTP client like FileZilla on Mac
- In binary FTP, **put CP3KEXTR.bin <*hlq*>.CP3KEXTR.upload**
- In ISPF/PDF 6 type: **RECEIVE INDSN(<hlq>.CP3KEXTR.UPLOAD**)
- The command will prompt you for the dataset name
- Type: **DA('HLQ.CPSTOOLS.JCL') SPACE(2,2) CYLINDERS**
  This creates the HLQ.CPSTOOLS.JCL dataset (change HLQ to desired high-level qualifier).

Step 2 - Adjust the JCL

Page 4 has example JCL for CP3KEXTR that will produce output for all CPS Tools. It is contained in the "JOB" member of CPSTOOLS.JCL. Make these adjustments to customize it:

- Change the **JOB** card to meet the requirements of your installation
- Adjust **HLQ** in the JCL to match the HLQ in step 1(c) above
- Adjust the **SMF** SET command to specify the input SMF data set
- Adjust **EDF**, **DAT**, and **TRS** SET commands.
- In the SYSIN parameters, specify the SYSID and ENTerprise name to use for the run.

Step 3 - Adjust the Input Parameters

The Extract procedure can support several variations in processing. These are selected using input parameters you provide via the **SYSIN001 DD**. Many of the parameters are optional and default to functional values if not specified.

These parameters are normally provided. The first 2 are always required.

ENT='xxxxxx'	The Enterprise name specified as a character string in single quotes (50 characters maximum). Imbedded blanks are permitted. Required.
SYSID=xxxx	The four-character JES SYSID of the system to be studied. Required.

	Note – do not use quotes with this item.
BCU=AUTO	Specified to generate a BCU Mapping file (requires SMF 74(1)). Normally you will include this.
PGN=GOAL	Used to generate the Workload Mapping (requires SMF 72(3)). Also normally included.
SORT=YES	Specifies that the Extract should sort the incoming SMF data before processing. Since SMF records must be in sequence this parameter is typically included. Job run may be significantly shorter if SMF records are already properly sorted and this parameter is omitted.
DURATION=1	Specifies the Extract reporting interval in hours (e.g., DURATION=1) or hours and minutes (e.g., DURATION=00:15). The minimum value is 5 minutes. This parameter defaults to 1 hour and often can be omitted.

Step 4 - Run the Extract

Use the JCL member you customized in step 2 and submit the job. This will generate the output EDF file and optionally the DAT file. A return code of 4 or 8 indicates that messages have been generated that should be reviewed but usable output data has been created.

A return code higher than 8 indicates that the run failed. If no SMF records were selected that met the specifications of your input parameters, you can do another run with XXXX specified for the SYSID parameter. The program will list the SYSIDs present in the input SMF data set and the count of each record type along with the range of dates & times present.

Step 5 - Download the Output EDF and DAT (or TRS) files

Download the EDF in ASCII mode and for zBNA processing also get the DAT file (also in ASCII mode). In cases where the DAT file is especially large, download the TRS (compressed) version (binary mode) instead. The included example JCL uses the following naming conventions:

File	*Mode*	*Usage*
XXXX.EDF	ASCII	The EDF output used by the CPS Tools.
XXXX.DAT	ASCII	The full uncompressed DAT file used by zBNA.
XXXX.TRS	BIN	The compressed DAT file. Download this instead when the uncompressed version is large. Note that zBNA can read the tersed file directly.

Step 6 – CP3KEXTR JCL Example

This example JCL is in the "**JOB**" member of CPSTOOLS.JCL and will produce output for all CPS Tools. If the Extract run is for zCP3000 or zPCR the DATA001 DD statement and TERS step can be omitted.

```
//#USERID  JOB  (????,????),MSGLEVEL=1,MSGCLASS=O,NOTIFY=????????
//*
//* THESE SET PARAMETERS MUST BE GIVEN VALUES
//*
//  SET SMF=XXXX.XXXX.XXXX           SMF INPUT FILE
//  SET EDF=XXXX.XXXX.EDF            EDF FILE OUTPUT FOR ANY CPS TOOL
//  SET DAT=XXXX.XXXX.DAT            DAT FILE OUTPUT FOR ZBNA OR ZMCAT
//  SET TRS=XXXX.XXXX.TRS            TERSED VERSION OF OUTPUT DAT FILE
//*
//*------------------------- REMOVE FILES THAT WILL BE REALLOCATED
//DELETE EXEC PGM=IEFBR14
//DD1     DD  DISP=(MOD,DELETE),UNIT=SYSDA,SPACE=(TRK,1),DSN=&EDF
//DD2     DD  DISP=(MOD,DELETE),UNIT=SYSDA,SPACE=(TRK,1),DSN=&DAT
//DD3     DD  DISP=(MOD,DELETE),UNIT=SYSDA,SPACE=(TRK,1),DSN=&TRS
//*
//*------------------------- RUN THE EXTRACT PROGRAM
//EXTR    EXEC PGM=LOADER
//SMFIN    DD  DISP=SHR,DSN=&SMF
//*        DD  DISP=SHR,DSN=XXXX.XXXX   ADDITIONAL DATA SETS AS NEEDED
//*
//EDF001   DD  SPACE=(CYL,(10,100),RLSE),DISP=(,CATLG),
//             UNIT=(SYSDA,2),DCB=(RECFM=FB,LRECL=80),DSN=&EDF
//*
//* PGN MAP REQUIRES 72(3) RECORDS, IF NONE PRESENT COMMENT OUT PGN001
//* BCU MAP REQUIRES 74(1) RECORDS, IF NONE PRESENT COMMENT OUT BCU001
//PGN001   DD  DISP=SHR,DSN=HLQ.CPSTOOLS.JCL(PGNMAP)
//BCU001   DD  DISP=SHR,DSN=HLQ.CPSTOOLS.JCL(BCUMAP)
//*
//* DATA FILE IS FOR ZBNA ONLY, MAY COMMENT OUT IF NOT A ZBNA RUN
//DATA001  DD  SPACE=(CYL,(200,500),RLSE),DISP=(,CATLG),
//             UNIT=SYSDA,DSNTYPE=LARGE,DSN=&DAT
//*
//PRINT001 DD  SYSOUT=*
//SYSOUT   DD  SYSOUT=*
//SYSLOUT  DD  SYSOUT=*                        MESSAGES FROM MVS LOADER
//SYSLIN   DD  DISP=SHR,DSN=HLQ.CPSTOOLS.JCL(ZOBJEXTR)
//*
//*------------------------- EXTRACT PROGRAM INPUT PARAMETERS
//SYSIN001 DD  *
ENT='YOUR ENTERPRISE'      YOUR ENTERPRISE NAME, SPACES OK, USE QUOTES
SYSID=XXXX                 SMF SYSID, 1-4 CHARS, NO QUOTES
PGN=GOAL                   GENERATE PGNMAP
BCU=AUTO                   GENERATE BCUMAP
SORT=YES
/*
//*---------------- TERSE THE DATA FILE TO MINIMIZE NETWORK BANDWIDTH,
//*                 MAY REMOVE THIS STEP IF NOT ZBNA RUN
//*                 RC=10 IF NO RECORDS PRESENT
//TERS    EXEC PGM=TRSMAIN,PARM=SPACK
//SYSPRINT DD  SYSOUT=*
//INFILE   DD  DISP=SHR,DSN=&DAT
//OUTFILE  DD  DISP=(,CATLG,DELETE),SPACE=(CYL,(50,500),RLSE),
//             UNIT=SYSDA,DSN=&TRS
```

Customize the JOB Card

Specify values for these 4 SET commands

Run the extract and create all necessary data sets

Add additional DD statements as needed for multiple SMF data sets

Temporary MAP files for Performance Group and BCU Map processing

Output **DAT** file for zBNA

SMF records for this SYSID will be processed

Step to compress the output DAT file