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# Crypt/MF®

(Encryption・Decryption Program)

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Crypt/MF® is a registered trade name of K.K. Paradox

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# Summary

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- Encryption/Decryption program for data run on IBM, Fujitsu, Hitachi mainframe.
- Internally using powerful encryption/decryption engine from C4 Technology, Inc.
- Execution in batch job like utility job.
- Encrypted data can be passed to/from other platform and decrypted. (\* 1)

**Note: \* 1 — It is prerequisite that a program using encryption&decryption engine from C4 Technology, Inc. is installed to AS/400,, UNIX, WINDOWS.**

# Features/Functions

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## Features of Crypt/MF are as follows:

- File Medium and Format to be handled:  
Sequential data set of DASD and TAPE, VSAM data set
- Record Format to be handled:  
F, FB, V, VB, U, FBS, VBS
- Encryption/Decryption Field  
Can select either every field on the record, or particular field
- Internal Processing of Encryption/Decryption  
As data are blocked internally to a size larger than BLKSIZE, processing is efficient.
- Processing Result  
Output of Analysis Report : number of records, total volume, CPU time, ELAPSE time, etc.

# Installation/Execution Environment

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**Crypt/MF does not need particular installation/execution environment**

- Can be installed to OS/390, z/OS, MSP, XSP, VOS3 and **executed.**
- Can be used immediately after installation, because system environment does not need to be changed  
(No need to register to APF or PA).
- Whole Crypt/MF program consumes DASD volume of 3 cylinders.
- Size of execution REGION is about 500KB or larger.  
(Larger REGION will be necessary for better performance of encryption/decryption)
- No need to specify REAL memory.

# Execution Chart

Crypt/MF is executed like general utilities.

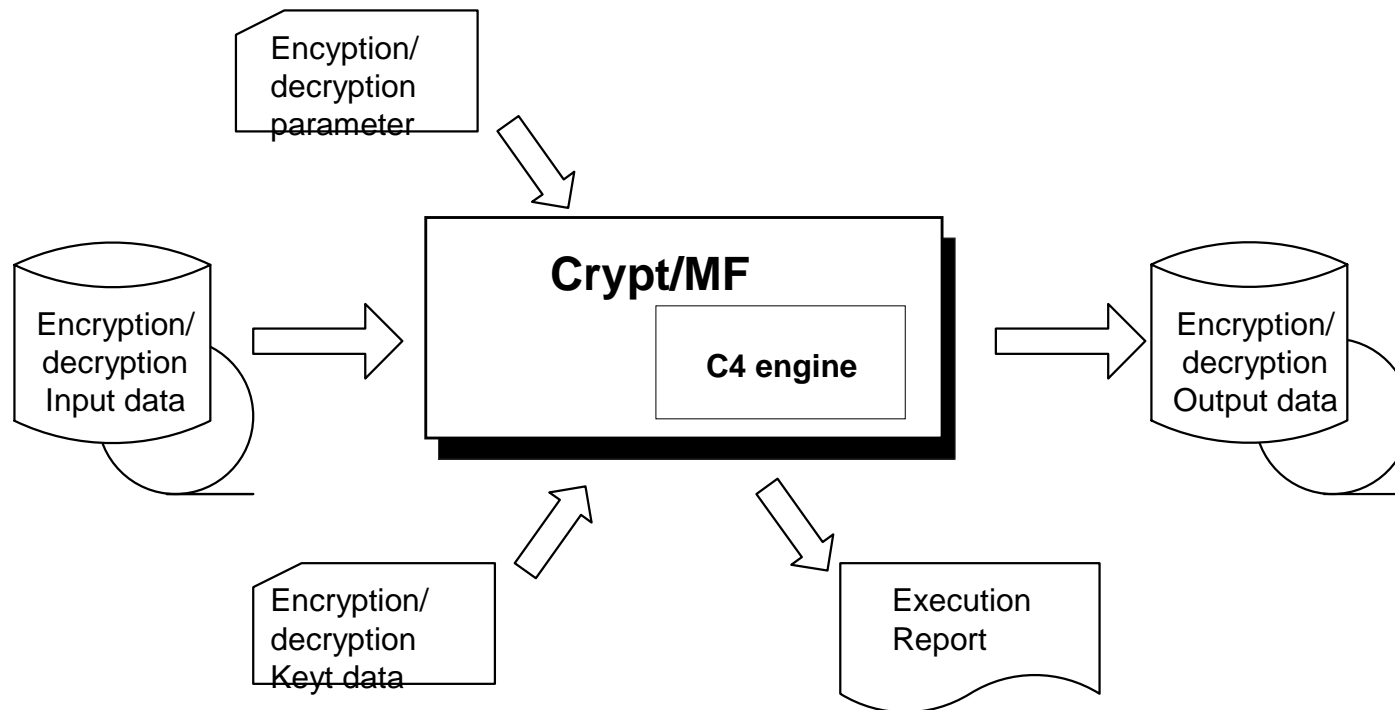


Fig.1 Crypt/MF Execution Chart

# Execution JCL Sample

Following is a sample of Crypt/MF execution JOB.

(IBM z/OS, OS/390, Fujitsu MSP, Hitachi VOS3)

```
//Job-Name JOB (Account),MSGLEVEL=1,,,,
//Step名 EXEC PGM=CRYPTMF,PARM='Encryption/Decryption parameter'
//STEPLIB DD DISP=SHR,DSN=xxxx.CRYPT390.V2M0.LOAD
//SYSPRINT DD SYSOYT=*
//C4PRINT DD SYSOUT=*
//C4PARM DD DISP=SHR,DSN=xxxx.CRYPT390.V2M0.PARM
//C4UT1 DD (Encryption/Decryption input data)
//C4UT2 DD (Encryption/Decryption output data)
//C4UT2XX DD (Encryption output data2)
//C4KEY DD *
(Encryption/Decryption key data)
/*
```

# Execution JCL Sample

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Following is a sample of Crypt/MF execution JOB.

(Fujitsu XSP)

```
$ JOB ENCSALES,LIST=(A,JS)
$ EX CRYPTMF,RSIZE=4096K
$ PARA ENC
$ FD PRGLIB=DA,FILE=KOAP.CRYPTMF.V241.LOAD
$ FD C4PRINT=DA,VOL=WORK,TRK=(10,1,SOUT=A
$ FD C4KEY=DA,FILE=KAOP.MARKET.KEY
$ FD C4UT1=DA,      (Encryption/Decryption input data )
$ FD C4UT2=DA,      (Encryption/Decryption output data)
$ FD C4UT2XX=DA,   (Encryption output data2)
$ JEND
```



# Execution Performance Sample

- Execution Environment

Result of test using a system of 25 MIPS.

- Execution Result

Case	RECFM	LRECL	BLKSIZE	BUFNO	number or records	Encryption/ decryption internal region	CPU time (second)	ELAPSE time (second)
1	FB	80	8,000	50	1,282,320	32KB	16.5	27
2	F	8,000	8,000	50	12,824	32KB	13.8	26
3	FB	4,200	24,960	50	24,660	32KB	13.3	21
4	VB	32,000	32,004	50	76,032	32KB	8.4	17

# Restrictions

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Following are functional/executing restrictions of Crypt/MF:

- Crypt/MF can be executed only in batch mode.
- As the coding is not re-entrant, cannot reside in link pack area (LPA).
- Encryption/decryption key has to be managed by user.



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