

User Exit 1 (General Processing)

This user exit is given control by Adabas immediately after a command is received by the Adabas nucleus. The command itself has yet to be processed except for the determination of the type of command (simple access, complex access, update).

One of the most common applications of this user exit is to insert a security password and/or a cipher code into the Adabas control block.

The call to the user exit is made using a standard BALR 14,15 assembler instruction. Register 1 contains the address of a parameter list. All registers must be saved when control is received and restored immediately prior to returning control to Adabas.

Notes:

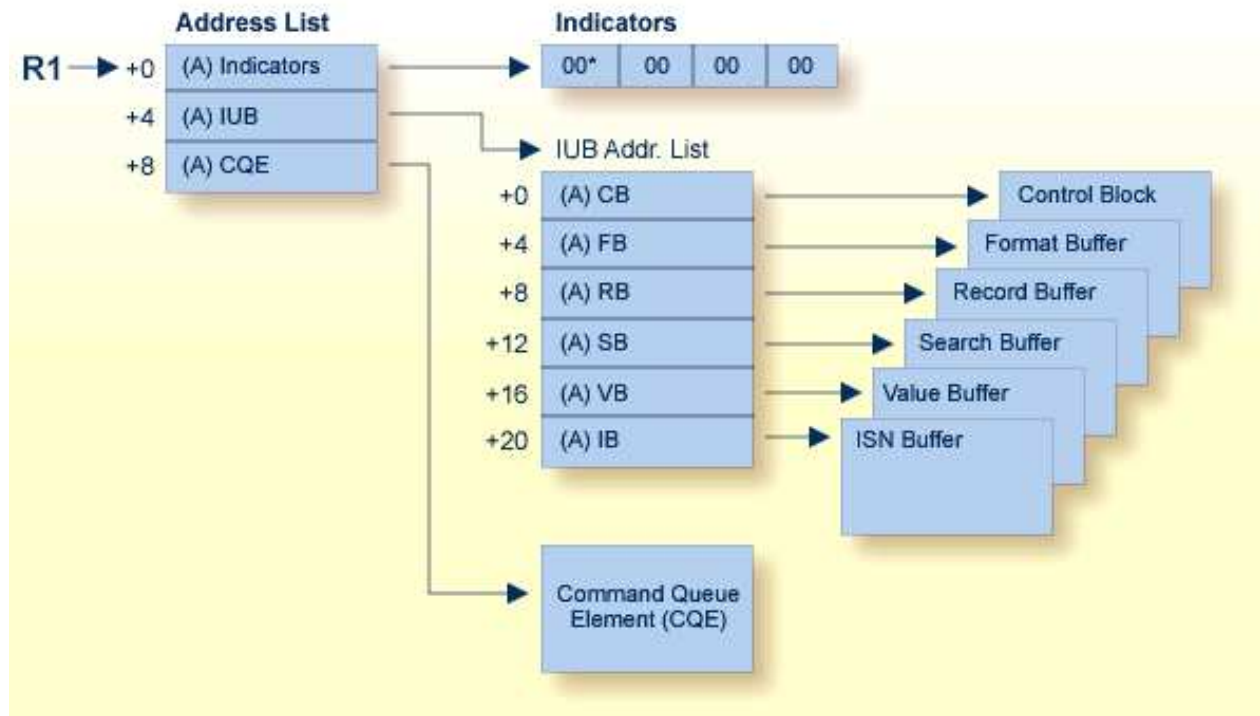
1. All user exits must return the same program status word (PSW) fields to the calling program that were active when the user exit was called. This applies in particular to the addressing mode (AMODE), program mask, problem state flag, PSW key, and address space control setting. The condition code need not be preserved. If any of these PSW fields is changed by the user exit, one way to ensure that their previous values are returned is to envelope the code where the change is in effect with a pair of the BAKR ... PR instructions.
2. The file number specified in the Adabas control block cannot be changed. If it is necessary to change a file number with the user exit, change the field CQEFNR in the command queue element (CQE), offset X'A6' (see the figure in *Input and Output Parameters* and the example in *Command Queue Header DSECT*).
3. The command code field in the Adabas control block cannot be changed; a response code is returned if you attempt to do so.
4. The length of an Adabas buffer in the Adabas control block cannot be changed.

If a buffer is not supplied by the caller, the associated address field in the IUB address list is set to zero. Depending on the command type, if a buffer is not needed the corresponding address is disregarded. Do not change important buffer addresses.

This chapter covers the following topics:

- Input and Output Parameters
 - Command Queue (CQ) Layout
 - Command Queue Header DSECT
 - Command Queue Element (CQE) DSECT
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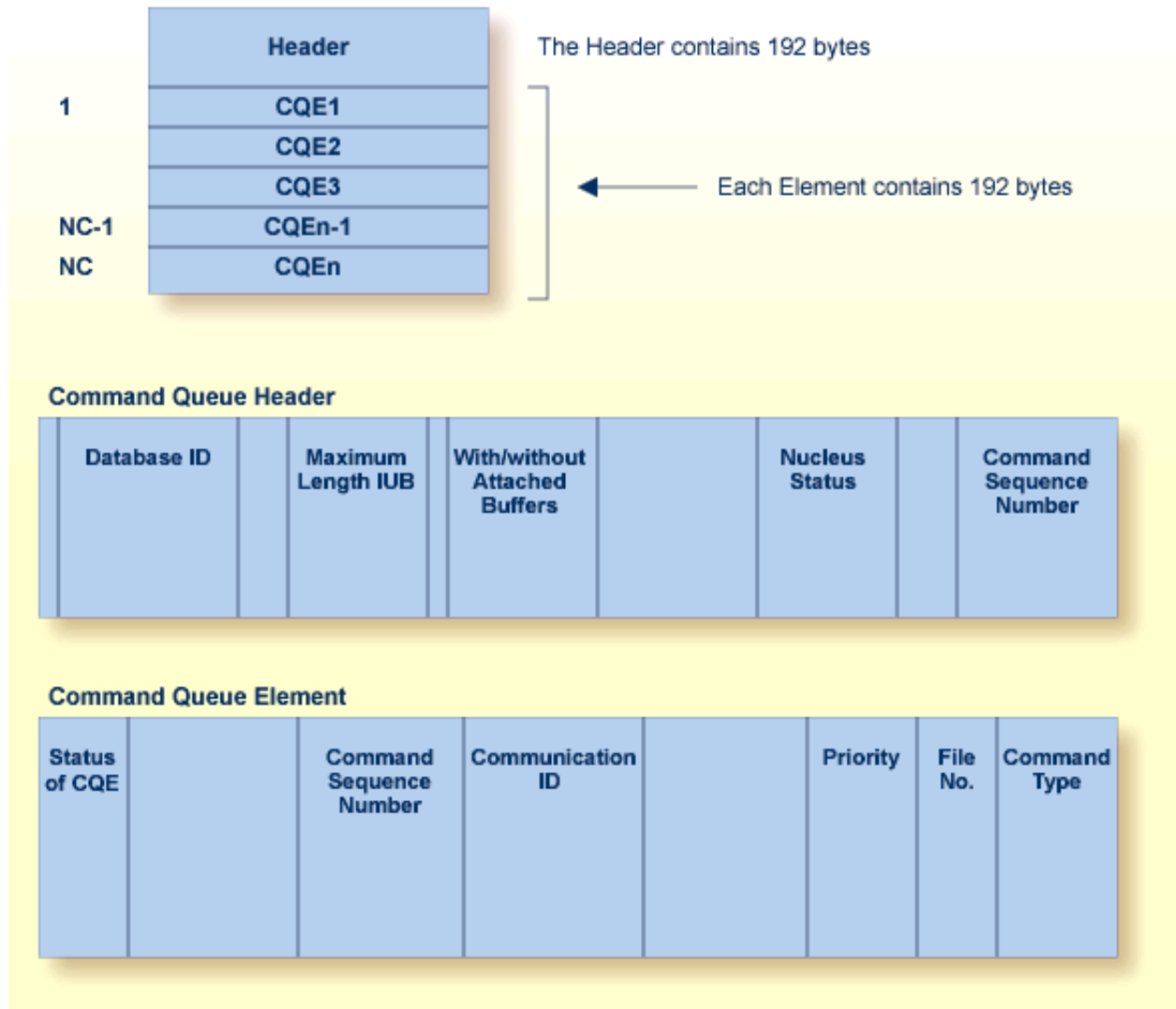
Input and Output Parameters



General Processing User Exit (1) Parameters

* *Indicator*: Before calling user exit 1, the fullword indicator area are set to zero. As output from the user exit 1 call, 00 in the first Indicator byte means that the command can be executed; a non-zero value in the first byte means that the command should not be executed, and returns response code 22.

Command Queue (CQ) Layout



User Exit 1 Command Queue

Command Queue Header DSECT

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000000    CQH      DSECT          COMMAND QUEUE HEADER
000000    CQHAI DTE DS      A          ADDR(IDTE) (SET BY 0-CALL)
          * THE FOLLOWING 2 LABELS MUST REMAIN CONTIGUOUS IN THE SAME ORDER
000004    CQHPI D DS      H          PHYSICAL ID (SET BY SERVICE)
000006    CQHFLA G DS      X          FLAGS
          CQHFTRAN EQU    X'80'    TRANSLATOR (SET BY SERVICE)
          CQHFCOMM EQU    X'40'    COMMUNICATOR (SET BY SERVICE)
          CQHFND BT EQU    X'20'    NOT DATABASE TARGET (SET BY
          *                               SERVICE)
          CQHFISO EQU    X'10'    ISOLATED ID (SET BY SERVICE)
          CQHFABR EQU    X'08'    ATTACHED BUFFERS REQUIRED (SET
          *                               BY SERVICE)
          CQHFORCE EQU    X'04'    FORCE NEW IDTE (SET BY MPM)
          CQHFANCH EQU    X'02'    ANCHOR SERVICE (SET BY SERVICE)
000007    CQHFLA G1 DS      X          FLAGS
          CQH1NMC EQU    X'80'    NO MORE COMMANDS (SET BY
          *                               SERVICE)
    
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CQH1UPG EQU X'40'          USER PROBABLY GONE (SET BY
*                          8/12/20-CALLS)
* 8/12-CALL PARMS (THE FOLLOWING 5 LABELS MUST REMAIN CONTIGUOUS IN
* THE SAME ORDER)
000008 CQHPARMS DS 0A      PARMS (SET BY MPM)
000008 CQHPARM1 DS 0A     PARM 1
000008 CQHAIUB DS A       ADDR(CURRENT IUB)
00000C CQHPARM2 DS 0A     PARM 2
00000C CQHACQE DS A       ADDR(CURRENT CQE)
* MPM PARMS
000010 CQHNCQES DS F      NUM(CQES) (SET BY MPM)
000014 CQHIUBL DS F      MAX LEN(IUB) (SET BY MPM)
* SERVICE POST PARMS (THE FOLLOWING 4 LABELS MUST REMAIN CONTIGUOUS
* IN THE SAME ORDER)
000018 CQHAECB DS A       ADDR(SERVICE ECB) (SET BY
* SERVICE)
00001C CQHTSN DS 0F      ADDR(SERVICE TSN) (BS2000) (SET
* BY 0-CALL)
00001C CQHTID DS 0F      SERVICE TID (DOS) (SET BY 0-CALL)
00001C CQHAASCB DS A     ADDR(SERVICE ASCB) (MVS) (SET BY
* 0-CALL)
* ATTACHED BUFFERS
000020 CQHAABST DS A     ADDR(ATTACHED BUFFER SEGMENT
* TABLE (SET BY MPM)
000024 CQHLABST DS F     LEN(ATTACHED BUFFER SEGMENT
* TABLE (SET BY MPM)
000028 CQHAABA DS A     ADDR(ATTACHED BUFFER AREA) (SET
* BY MPM)
00002C CQHLABP DS F     LEN(ATTACHED BUFFER PREFIX) (SET
* BY SERVICE)
000030 CQHABHWM DS F     ATTACHED BUFFER SEGMENT TABLE
* HIGH WATER MARK
CQHABSTS EQU 4          ATTACHED BUFFER SEGMENT TABLE
* SHIFT
CQHABAS EQU 8           ATTACHED BUFFER AREA SHIFT
CQHLABS EQU 256         LEN(ATTACHED BUFFER SEGMENT)
CQHABSEG EQU X'EE'     ATTACHED BUFFER SEGMENT TABLE
* SEGMENT ALLOCATED BYTE(MUST
* BE <0)
CQHABBAR EQU X'77'     ATTACHED BUFFER SEGMENT TABLE
* BARRIER (MUST BE >=0)
000034 CQHAECQ DS A     ADDR(END OF CQ) (SET BY MPM)
* SYSTEM DEPENDENT OVERLAY AREA
000038 CQHOVLAY DS XL105
* DOS
0000A1          ORG CQHOVLAY
000038 CQHACOMR DS A     ADDR(SERVICE COMREG) (SET BY
* 0-CALL)
* VS1
00003C          ORG CQHOVLAY
000038 CQHAJTCB DS A     ADDR(SERVICE JOB STEP TCB) (SET
* BY 0-CALL)
* MVS
00003C          ORG CQHOVLAY
* THE FOLLOWING 3 LABELS MUST REMAIN CONTIGUOUS IN THE SAME ORDER
000038 CQHLXL DS 0F      LX LIST
000038 CQHLXLN DS F'1'   NUM(LXS)
00003C CQHLXLLX DS F     LX VALUE
000040 CQHET DS XL44     ENTRY TABLE (LENGTH MUST BE AT
* LEAST ETDLEN+2*ETDELEN)
00006C CQHTSECB DS F     TRANSWAP ECB
000070 CQHSAVE2 DS F     R2 SAVE AREA

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* THE FOLLOWING 2 LABELS MUST REMAIN CONTIGUOUS IN THE SAME ORDER
000074 CQHSAVEC DS F RC SAVE AREA
000078 CQHSAVED DS F RD SAVE AREA
00007C CQHLXRES DS 2F LXRES PARM LIST
000084 CQHETCON DS 3F ETCON PARM LIST
* THE FOLLOWING 2 LABELS MUST REMAIN CONTIGUOUS IN THE SAME ORDER
000090 CQHCPUID DS CL8 CPU ID (SET BY 0-CALL)
000098 CQHVMID DS CL8 VM ID (SET BY 0-CALL)
0000A0 CQHKEY DS X SERVICE PSW-KEY (SET BY 0-CALL)
*
0000A1 ORG
0000A1 DS XL19 RESERVED
*
0000B4 CQHANCHR DS F ANCHOR (CQHFANCH SET) (SET BY
* SERVICE)
*
* THE FOLLOWING 2 WORDS MUST BE THE LAST 2 WORDS IN THE CQH AND
* REMAIN CONTIGUOUS IN THE SAME ORDER
0000B8 CQHWI DS F SERVICE WAIT INDICATOR
0000BC CQHSEQNR DS F COMMAND SEQUENCE NUMBER (SET BY
* 4-CALL)
CQHLEN EQU *-CQH CQH LENGTH (MUST BE GE CQELEN)
CQHCQE EQU * FIRST CQE

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Command Queue Element (CQE) DSECT

and Queue Element (CQE) DSECT

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000000 CQE DSECT
000000 CQECNTL DS X TS CONTROL BYTE
000001 CQEUBF DS X UB FLAGS (UBFLAG)
*
000002 CQEBIN DS X BUFFERS IN (UBBIN)
000003 CQEBOUO DS X BUFFERS OUT (UBBOUO)
000004 CQEID DS H ID (UBID) (UBFPID SET IN
* CQEUBF IF PHYSICAL)
*
000006 CQEFLAG DS X G E N E R A L P U R P O S E F L A G S
CQEFBUF EQU X'80' USER BUFFERS IN SERVICE
* PARTITION, REGION, ADDR
* SPACE (MUTUALLY EXCLUSIVE
* WITH CQEFAB)
CQEFETW EQU X'40' ET COMMAND WAITING FOR 12-CALL
CQEFW16 EQU X'20' WAITING FOR 16-CALL (MUTUALLY
* EXCLUSIVE WITH CQEF16R)
CQEF16R EQU X'10' 16-CALL REQUIRED (MUTUALLY
* EXCLUSIVE WITH CQEFW16)
CQEFAB EQU X'08' ATTACHED BUFFER (MUTUALLY
* EXCLUSIVE WITH CQEFBUF)
CQEFABR EQU X'04' ATTACHED BUFFER REQUIRED
* (MUTUALLY EXCLUSIVE WITH
* CQEFBUF)
CQECML EQU X'02' CML LOCK HELD (MVS)
CQEHELD EQU CQEFLAG
*
000007 CQESFLAG DS X S E L E C T I O N F L A G S
CQSFPROC EQU X'80' IN PROCESS
CQSFRDYS EQU X'40' READY TO BE SELECTED
CQSFSUQD EQU X'20' SEARCH FOR UQE DONE
CQSFUQEF EQU X'10' UQE FOUND
CQSFA9 EQU X'08' NOT SELECTABLE DURING

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*                               BSS=X'80' STATUS
*
CQSFETSY EQU   X'04'           NOT SELECTABLE DURING ET-SYNC
CQSFWSPC EQU   X'02'           WAITING FOR SPACE
CQSFWISN EQU   X'01'           WAITING FOR ISN IN HQ
*
*                               P O S T
000008      CQEAECB DS    A      ADDR(USER ECB) (UBECB/UBAECB)
00000C      CQETID  DS    0F     USER TID (VSE)
00000C      CQETSN  DS    0F     USER TSN (BS2000)
00000C      CQEAASCB DS    A      ADDR(USER ASCB) (MVS)
*
*                               U S E R   I N T E R F A C E
000010      CQEAAB  DS    A      ADDR(ATTACHED BUFFER) (CQEFAB
*                               SET)
000014      CQEAFABS DS    A      ADDR(FIRST ATTACHED BUFFER
*                               SEGMENT TABLE BYTE) (CQEFAB
*                               SET)
000018      CQENABS DS    F      NUM(ATTACHED BUFFER SEGMENT
*                               TABLE BYTES) (CQEFAB SET)
00001C      CQEAUI  DS    A      ADDR(USER INFO) (UBAUIFO IF
*                               UBFINUB SET)
000020      CQEJNAME DS    CL8    USER JOB NAME (UBJNAME IF
*                               UBFINUB SET)
000028      CQECKSUM DS    D      CHECKSUM (TOD-CLOCK)
000030      CQESEQNR DS    F      COMMAND SEQUENCE NUMBER
*                               (CQHSEQNR)
000034      CQELSB  DS    F      LEN(REQUIRED IUB) (UBLSB)
000038      CQEAUPL DS    A      ADDR(USER PARAMETER LIST)
*                               (UBAUPL)
00003C      CQEAUB  DS    A      ADDR(UB)
*                               W O R K A R E A   FOR SVC AND PC
*                               ROUTINES (LENGTH MUST BE AT
*                               LEAST MAX(UBLEN,64))
000040      CQEWORK DS    XL64
000080      ORG    CQEWORK
000040      CQESAVE DS    16F     SAVE AREA
000080      ORG    CQEWORK
000040      CQEUB   DS    XL64    UB (MVS)
000080      ORG    CQEWORK
000040      CQEAPL  DS    5A      APL WITHOUT ADDR(ACB) (MVS)
000054      ORG
*
*                               U S E R   I D   (COMMUNICATION)
000080      CQEUSID DS    0XL28   USER ID (UBAUID IF UBFINUB SET)
000080      CQECPUID DS    D      CPU ID (IDCPUID) (THE USER WILL
*                               BE IDENTIFIED EXTERNALLY BY THE
*                               CONTENTS OF CQEJNAME IF THE
*                               LOW-ORDER BIT OF CQECPUID IS 0,
*                               AND BY THE CONTENTS OF CQEUID
*                               IF THE BIT IS 1)
000088      CQEVMIID DS    CL8    VM ID (IDVMID)
000090      CQEOSID DS    F      OPSYS ID
000094      CQEUID  DS    XL8     ID (UBUID/ACBADD2)
*
00009C      CQERBIBL DS    0F     ACTUAL RB/IB LENS
00009C      CQERBL  DS    H      ACTUAL RB LEN
00009E      CQEIBL  DS    H      ACTUAL IB LEN
0000A0      CQEPASID DS    H      CALLER'S PASID (MVS)
0000A2      CQE16CTL DS    X      16-CALL TS CONTROL BYTE (CQEW16
*                               SET)
0000A3      CQEKEY  DS    X      CALLER'S PSW-KEY

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0000A4  CQEPRTY  DS    X          PRIORITY OF USER (UBPRTY IF
*                               UBFINUB SET)
0000A5  CQECMDT  DS    X          COMMAND TYPE (UBCMDT)
*                               EQU    X'20'    RESERVED
*                               EQU    X'10'    RESERVED
CQETET  EQU    X'08'    ET COMMAND
CQETUC  EQU    X'04'    UPDATE COMMAND
CQETCC  EQU    X'02'    COMPLEX COMMAND
CQETSC  EQU    X'01'    SIMPLE COMMAND
0000A6  CQEFNR   DS    H          FILNR (ACBFNR)
*
* TARGET AND SYSTEM DEPENDENT OVERLAY AREA, WHICH CAN BE USED AS
* FOLLOWS:
* - BY THE ROUTER 04-CALL PRIOR TO SETTING 'CQSFRDYS' IN
*   'CQESFLAG';
* - BY THE TARGET FROM THE TIME 'CQSFRDYS' IS SET UNTIL EITHER A
*   ROUTER 12-CALL FOR WHICH NO 16-CALL IS REQUIRED ('CQEF16R' IN
*   'CQEFLAG' IS NOT SET) OR UNTIL THE ROUTER 16-CALL OR COMMAND
*   TIMEOUT OCCURS ('CQE16CTL' CONTAINS X'FF' INSTEAD OF X'00');
* - BY THE ROUTER 16-CALL FROM THE TIME IS ACQUIRES THE CQE
*   (SUCCESSFULLY SETS 'CQE16CTL' TO X'FF') UNTIL IT FREES THE
*   CQE (SETS 'CQECNTL' TO X'00').
0000A8  CQEOVLAY DS    XL20
*
0000BC  ORG     CQEOVLAY          M V S
* THE FOLLOWING 2 LABELS MUST REMAIN CONTIGUOUS IN THE SAME ORDER
0000A8  CQESAVED DS    A          RD SAVE AREA
0000AC  CQESAVEE DS    A          RE SAVE AREA
* THE FOLLOWING 3 LABELS MUST REMAIN CONTIGUOUS IN THE SAME ORDER
0000B0  CQESAVE3 DS    0F        R3 SAVE AREA
*
0000B0  CQEARB   DS    A          ADDR(RB)
0000B4  CQEAIIB  DS    A          ADDR(IB)
0000B8  ORG     CQEOVLAY          N U C L E U S
0000A8  CQEAUQE  DS    A          ADDR(UQE)
0000AC  CQEACA  DS    A          ADDR(WORK-AREA) FOR CONTINUATION
0000B0  CQERQST DS    F          REQUESTED RESOURCE (SPACE/FNR/
*                               ISN)
0000B4  CQETHROB DS    F          TIME OF LAST THROWBACK
0000B8  CQECTHR  DS    0F        CMD COUNT OF LAST THROWBACK
0000B8  CQEAIUB  DS    0A        ADDR(IUB)
0000B8  CQET12C DS    F          TIME OF MPM 12-CALL
0000BC  ORG
0000BC  CQECMD  DS    XL2      COMMAND
*
0000BE  CQEX     DS    H          CQE INDEX
CQELEN  EQU    *-CQE      CQE LENGTH
*
*
AQUQE   EQU    CQEAUQE-CQE

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