IBM

VA PAC 2.5 – UNIX
OPERATIONS MANUAL VOLUME I : ENVIRONMENT & INSTALLATION

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TABLE OF CONTENTS

VisualAge Pacbase - Operations Manual
VA Pac ENVIRONMENT & INSTALLATION
FOREWORD   1

1. FOREWORD

VisualAge Pacbase - Operations Manual
VA Pac ENVIRONMENT & INSTALLATION
FOREWORD

FOREWORD

HOW TO USE THIS MANUAL

This manual is intended for the person in charge of installing the VisualAge
Pacbase system.

It describes the system's COMPONENTS and its ENVIRONMENT, lays out
recommendations for the INSTALLATION of the new release, and explains the
operations that must be performed for a standard RE-INSTALLATION of
correction versions.

USERS OF PREVIOUS SYSTEM RELEASES

It is generally recommended to install the new release in an environment distinct
from that of any earlier release, particularly as far as the installation parameters
are concerned. To complete the new installation, the set of tests provided on the
installation media must be run.

VisualAge Pacbase releases older than 8.02v02

Contact your Help Desk.

VisualAge Pacbase 8.02v02, 1.2, 1.5, 1.6, 2.0

In this case, the new release may be installed in the same environment as the
older release. In this case, refer to chapter 'Releases 8.02v02 to 1.6 Retrieval'.
Chapter "RETRIEVAL FROM VA Pac 2.0".

2. COMPONENTS

2.1. INTRODUCTION

<u>INTRODUCTION</u>

One of the goals of the VisualAge Pacbase system is to manage permanent data in either batch or on-line mode, by using two types of resources:

LIBRARIES which store the system programs, and the parameters needed to run them:

 - One On-Line Program library,
 - One Batch Program library,
 - One VisualAge Pacbase System Parameter library,
 - One Parameter library for each VisualAge Pacbase Database
 - One library for the batch procedure's JCLs.

PERMANENT FILES, containing the data handled by the system programs. These files can be classified into two categories:

 . 'System' files, which are not linked to a particuliar VisualAge Pacbase database and remain relatively unchanged,

 . 'Evolving' files, which are associated to a VisualAge Pacbase Database, and whose volumes vary according to the updates performed.

<u>NOTES:</u>

The WorkStation, DSMS, revamped DSMS, Pacbase Web Connection, and Pactables Functions are installed independently of the other VisualAge Pacbase functions.

The VisualAge Pacbase-ENDEVOR Interface must also be installed independently of all other functions.

The installation and operation of these Functions and Facilities are described in the operations manuals specific to each one.

2.2. CODES FOR FUNCTIONS, UTILITIES AND EXTENSIONS

CODES OF FUNCTIONS, EXTENSIONS AND UTILITIES

The following lists provide abbreviated codes for system functions, extensions, and optional utilities:

```
.Specifications Dictionary            = DIC

.Extensions:

   -Personalized Documentation Manager   = PDM
   -Security Systems Interface            = SEC

.Optional Utilities:

   -Sub-Network Comparison Utility        = LCU
   -Rename/Move Entity Utility            = RME
   -Journal Statistics Utility            = ACT

.Functions/Facilities:

   -Structured Code                       = SC
   -Batch Systems Development             = BSD
   -COBOL Generator                       = COB
   -On-Line Systems Development           = OSD
   -Client/Server Facility                = OCS
   -DBD                                   = DBD
   -DBD/ Relational SQL                   = SQL
   -Pactables                             = TAB
   -Development & Support Management System
    (DSMS)                                = DSM
   -Production Environment Interface      = PEI
   -Dictionary Extensibility              = DEX
   -Pac/Transfer                          = TRF
   -VA Smalltalk / VA Pac Bridge          = VIS
   -VA Pac / TeamConnection Bridge        = PTC
   -Impact Analysis                       = S2K
   -Pacbench Quality Control              = PQC
   -The WorkStation                       = WST
   -Pacbase Access Facility               = PAF
   -PacReverse                            = REV
   -Pacbase Web Connection                = PAW
```

2.3. ON-LINE PROGRAMS

```
---------------------------------------------------------
! PROGRAM    !FUNCTION! CORRESPONDING CHOICE         !
! CODE       ! OPTION ! COMMENTS                     !
!-------------------------------------------------------!
!----------!-------! PARM transaction               !
! D8PA00    ! DIC   ! .Connection screen            !
! D8PA01    !  -    ! H                             !
! D8PA10    !  -    ! HP .                          !
! D8PA11    !  -    ! LCPC..                        !
! D8PA12    !  -    ! PC..                          !
! D8PA13    !  -    ! PT.                           !
! D8PA14    !  -    ! PE.                           !
! D8PA15    !  -    ! PU........                    !
! D8PA16    !  -    ! PK                            !
! D8PA17    !  -    ! PD                            !
! D8PA18    !  -    ! LCPU........                  !
! D8PA19    !  -    ! PW                            !
! D8PA20    !  -    ! PB                            !
! D8PA21    !  -    ! PM                            !
! D8PA22    !  -    ! LCPM                          !
! D8PA30    ! PEI   ! Prod. Env. Interface menu     !
! D8PA31    !  -    ! EE.....                       !
! D8PA32    !  -    ! EG...........                 !
! D8PA33    !  -    ! ES....                        !
! D8PA34    !  -    ! LSEP.............             !
! D8PA35    !  -    ! ED........                    !
! D8PBND    ! DIC   ! Abend map                     !
! D8PPHP    !  -    ! Help                          !
!----------!-------! VA Pacbase transaction         !
! D8QA00    ! DIC   ! D..                           !
! D8QB00    ! BSD   ! R...                          !
! D8QC00    ! DIC   ! E......                       !
! D8QC01    !  -    ! LUE                           !
! D8QC50    ! WST   ! ++5 Up/Dw mapping             !
! D8QD00    ! SC    ! P......B  et O......B         !
! D8QE00    ! DIC   ! E......D                      !
! D8QF00    ! COB   ! P......SC                     !
! D8QF10    !  -    ! P......STR                    !
! D8QG00    ! DIC   ! K......                       !
! D8QH00    ! OSD   ! O......                       !
! D8QH01    ! DIC   ! LA LC LE LF LM LN LP LS       !
!           !       ! LT LX                         !
! D8QH20    ! OSD   ! O......CS                     !
! D8QH30    !  -    ! O......O                      !
! D8QI00    !  -    ! O......L                      !
---------------------------------------------------------
```

DELIX001251A

COMPONENTS   2
ON-LINE PROGRAMS   3

```
-----------------------------------------------------------
! PROGRAM    !FUNCTION! CORRESPONDING CHOICE            !
! CODE       ! OPTION ! COMMENTS                        !
!----------------------------------------------------------!
! D8QI01     !  OSD   ! O......CE (C1)                  !
! D8QI02     !   -    ! O......CE (C2)                  !
! D8QI03     !   -    ! O......SIM                      !
! D8QI04     !   -    ! O......ADR                      !
! D8QI05     !   -    ! O......CE (C3)                  !
! D8QI20     !   -    ! O......M                        !
! D8QI21     !   -    !                                 !
! D8QI50     !  WST   ! ++4 Up/Dw screen data element   !
! D8QK10     !  DIC   ! M......                         !
! D8QK20     !   -    ! M......CM                       !
! D8QK30     !   -    ! M......CE                       !
! D8QL10     !   -    ! B......                         !
! D8QL20     !   -    ! B......DH                       !
! D8QL21     !   -    ! B......DT                       !
! D8QL30     !   -    ! B......DC                       !
! D8QL40     !  SQL   ! B......DR...                    !
! D8QL41     !   -    ! B......DR...K                   !
! D8QL45     !   -    ! B......GEN                      !
! D8QL46     !   -    !                                 !
! D8QM00     !  SC    ! P......CP et O......CP          !
! D8QP00     !   -    ! P......P  et O......P           !
! D8QP01     !   -    ! Display   P......TC             !
! D8QP02     !   -    ! Display   O......TC             !
! D8QP03     !   -    ! P......TC et O......TC          !
! D8QP04     !   -    ! P......TO                       !
! D8QP05     !   -    ! O......TO                       !
! D8QP06     !   -    ! P......PG et O......PG          !
! D8QP07     !   -    ! O......PG                       !
! D8QP08     !   -    ! P......PG                       !
! D8QP50     !  WST   ! ++6 Up/Dw specific codes        !
! D8QR00     !  DIC   ! LL........L_......              !
! D8QS02     !   -    ! -XP                             !
! D8QS03     !   -    ! -ACT                            !
! D8QS04     !   -    ! WS                              !
! D8QS05     !   -    ! ?                               !
! D8QS06     !   -    ! Menus                           !
! D8QS08     !  DEX   ! -XQ                             !
! D8QT00     !  DIC   ! T......D                        !
! D8QT10     !   -    ! T......                         !
! D8QT20     !  PDM   ! T......SIM                      !
! D8QT50     !  WST   ! ++2 Up/down textes              !
-----------------------------------------------------------
```

DELIX001251A

COMPONENTS   2
ON-LINE PROGRAMS   3

```
-----------------------------------------------------------
! PROGRAM    !FUNCTION! CORRESPONDING CHOICE              !
! CODE       ! OPTION ! COMMENTS                          !
!----------------------------------------------------------!
! D8QU00     ! DIC    ! U..                               !
! D8QU01     !  -     ! U......D                          !
! D8QU10     ! PDM    ! V......                           !
! D8QU20     !  -     ! V......D                          !
! D8QV10     ! DIC    ! I......                           !
! D8QV20     !  -     ! I......D                          !
! D8QV30     !  -     ! -G                                !
! D8QX00     !  -     ! *                                 !
! D8QX01     !  -     ! LH                                !
! D8QY01     ! DEX    ! F......                           !
! D8QY02     !  -     ! F......CE                         !
! D8QY03     !  -     ! $ ........                        !
! D8QY04     !  -     ! $ ........D                       !
! D8QY05     !  -     ! Q......                           !
! D8QY10     ! WST    ! ++1 Design entities Upload        !
! D8QY11     !  -     ! ++3 Design entities Download      !
! D8QY20     ! DIC    ! GP                                !
! D8QY30     !  -     ! JO                                !
! D8QZ00     !  -     ! VA Pac initial screen             !
! D8Q000     ! SC     ! P......                           !
! D8Q100     !  -     ! P......CD                         !
! D8Q101     !  -     ! P......HCD                        !
! D8Q102     !  -     !                                   !
! D8Q103     !  -     !                                   !
! D8Q104     !  -     !                                   !
! D8Q200     ! DIC    ! S....                             !
! D8Q210     ! TAB    ! S....SS                           !
! D8Q300     ! DIC    ! S....CE                           !
! D8Q400     ! BSD    ! R...L                             !
! D8Q500     !  -     ! R...D                             !
! D8Q600     !  -     ! R...CE                            !
! D8Q700     ! SC     ! P......W  et O......W             !
! D8Q800     !  -     ! P......8                          !
! D8Q900     !  -     ! P......9                          !
! D8R000     ! DIC    ! VA Pacbase monitor                !
! D8R005     !  -     ! Return to CICS                    !
! D8R100     !  -     ! Choice processing                 !
! D8R200     !  -     ! Format conversion                 !
! D8R400     !  -     ! N*... ou NH....                   !
! D8R500     !  -     ! Abend map                         !
!-----------!--------! VA Pacbase transaction            !
! D8R600     ! DIC    ! Text editing                      !
! D8R980     !  -     ! Screen formatting                 !
! D8R990     !  -     ! WEB formatting                    !
! D8SECT     ! SEC    ! Security system interface         !
!----------------------------------------------------------!
```

```
Size:   approximately 24 megabytes on HP9000
        approximately 14 megabytes on DPX/20
        approximately 14 megabytes on RS6000
        approximately 28 megabytes on OSF1
        approximately 18 megabytes on SUN
        approximately 16 megabytes on TANDEM
```

2.4. BATCH PROGRAMS

```
----------------------------------------------------------------
! CODE    ! PROCEDURES ! OPTION ! COMMENTS                     !
!---------!------------!--------!------------------------------!
! PACA05  ! UPDT       ! DIC    !                              !
! PACA15  ! UPDT REST  !  -     !                              !
! PACA10  ! GPRT       !  -     !                              !
! PACA20  !  -         !  -     !                              !
! PACB    !  -         !  -     ! GPRT monitor                 !
! PACB30  !  -         !  -     !                              !
! PACB31  !  -         ! SQL    !                              !
! PACB40  !  -         ! DBD    !                              !
! PACB80  !  -         !  -     !                              !
! PACCTL  ! PACX       ! DIC    !                              !
! PACC30  ! GPRT       ! COB    !                              !
! PACC40  !  -         !  -     !                              !
! PACC80  !  -         !  -     !                              !
! PACDTP  ! INSL       ! DIC    !                              !
! PACD30  !  -         !  -     !                              !
! PACD40  !  -         !  -     !                              !
! PACD80  !  -         !  -     !                              !
! PACD90  !  -         !  -     !                              !
! PACE30  !  -         ! OSD    !                              !
! PACE40  !  -         !  -     !                              !
! PACE80  !  -         !  -     !                              !
! PACFGY  ! PACX       ! DIC    !                              !
! PACFMB  !  -         !  -     !                              !
! PACFTD  !  -         !  -     !                              !
! PACG3C  ! GPRT       ! OCS    !                              !
! PACG3S  !  -         !  -     !                              !
! PACG4S  !  -         !  -     !                              !
! PACG8C  !  -         !  -     !                              !
! PACG8S  !  -         !  -     !                              !
! PACHOI  ! PACX       ! DIC    !                              !
! PACINS  ! VINS       !  -     !                              !
! PACK30  ! GPRT       ! OCS    !                              !
! PACK80  !  -         !  -     !                              !
! PACK90  !  -         !  -     !                              !
! PACL30  !  -         ! SC     !                              !
! PACL80  !  -         !  -     !                              !
! PACL90  !  -         !  -     !                              !
! PACL92  ! EMUP       !  -     !                              !
! PACL93  ! EMLD       !  -     !                              !
----------------------------------------------------------------
```

DELIX001251A

COMPONENTS   2
BATCH PROGRAMS   4

```
-----------------------------------------------------------
! CODE    ! PROCEDURES ! OPTION ! COMMENTS                 !
!-----------------------------------------------------------!
! PACL95  ! GPRT       ! PAW    !                          !
! PACM30  ! -          ! DIC    !                          !
! PACM80  ! -          ! -      !                          !
! PACN30  ! -          ! PDM    !                          !
! PACN35  ! -          ! -      !                          !
! PACN40  ! -          ! -      !                          !
! PACN50  ! -          ! -      !                          !
! PACN80  ! -          ! -      !                          !
! PACP30  ! -          ! SC     !                          !
! PACP40  ! -          ! -      !                          !
! PACP80  ! -          ! -      !                          !
! PACP82  ! -          ! -      !                          !
! PACQ    ! PQCA       ! PQC    ! PQCA Monitor             !
! PACR01  ! INPE       ! PEI    !                          !
! PACR10  ! PRPE       ! -      !                          !
! PACR20  ! GPRT       ! -      !                          !
! PACR22  ! SIPE       ! PEI    !                          !
! PACR30  ! HIPE       ! -      !                          !
! PACR40  ! GRPE       ! -      !                          !
! PACR60  ! SVPE       ! -      !                          !
! PACR61  ! RSPE       ! -      !                          !
! PACSJO  ! PACX       ! DIC    !                          !
! PACSMD  ! -          ! -      !                          !
! PACSPU  ! -          ! -      !                          !
! PACSRM  ! -          ! -      !                          !
! PACS30  ! -          ! -      !                          !
! PACS40  ! -          ! -      !                          !
! PACS50  ! -          ! -      !                          !
! PACS60  ! -          ! -      !                          !
! PACS75  ! -          ! -      !                          !
! PACS80  ! -          ! -      !                          !
! PACTIN  ! GETI       ! TAB    !                          !
! PACTI1  ! GET0       ! -      !                          !
! PACT40  ! GETA GETD  ! -      !                          !
! PACT41  ! GET1 GET2  ! -      !                          !
! PACT45  ! GETA GETD  ! -      !                          !
! PACT50  ! GETD       ! -      !                          !
! PACT51  ! GET2       ! -      !                          !
! PACU15  ! PARM       ! DIC    !                          !
! PACU80  ! -          ! -      !                          !
! PACU99  ! CRYP       ! -      !                          !
! PACX    ! PACX       ! -      !                          !
! PADM10  ! SADM       ! WST    ! SSADM integrity check    !
! PAFP10  ! PPAF GPRP  ! PAF    ! PAF pre-processor        !
! PAF900  ! UPDP       ! -      ! PAF update input         !
-----------------------------------------------------------
```

DELIX001251A

COMPONENTS   **2**
BATCH PROGRAMS   **4**

```
-------------------------------------------------------------
! CODE    ! PROCEDURES ! OPTION ! COMMENTS                   !
!---------!------------!--------!----------------------------!
! PAN200  ! INFQ       ! S2K    !                            !
! PAN205  ! INFP       !  -     !                            !
! PAN210  ! ISEP       !  -     !                            !
! PAN212  ! ISOS       !  -     !                            !
! PAN215  ! ISEP IANA  !  -     !                            !
! PAN220  ! IPFQ IANA  !  -     !                            !
!         ! IPEP       !  -     !                            !
! PAN230  ! IANA       !  -     !                            !
! PAN240  ! IPFQ       !  -     !                            !
! PAN250  ! IANA       !  -     !                            !
! PAN255  ! IGRA       !  -     !                            !
! PAN260  ! IANA       !  -     !                            !
! PAN270  ! IPIA       !  -     !                            !
! PAN280  ! IPIA       !  -     !                            !
! PDS600  ! DEXP       ! DSM    ! DEXP before 2.0            !
! PDS610  !  -         !  -     !   -          -             !
! PREI00  ! RVDE       ! REV    ! PACREVERSE Interface       !
! PREI40  ! RVKE       !  -     !   -          -             !
! PREI50  !  -         !  -     !   -          -             !
! PRE986  ! RVDE       !  -     !   -          -             !
! PTARSD  ! RMTD       ! TAB    ! Migration: rest. TD        !
! PTAR20  ! RPTD       !  -     ! Migration: retrieval TD    !
! PTASVD  ! SMTD       !  -     ! Migration: saves TD        !
! PTC010  ! TCLS       ! PTC    ! VA Pac-TeamConnection      !
! PTC030  !  -         !  -     !   -          -             !
! PTC100  ! TCGP       !  -     !   -          -             !
! PTC200  ! TCME       !  -     !   -          -             !
! PTC220  ! TCCI TCME  !  -     !   -          -             !
! PTC400  ! TCCI       !  -     !   -          -             !
! PTC440  !  -         !  -     !   -          -             !
! PTED30  ! XPDM       ! PDM    ! PDM Extension              !
! PTED60  !  -         !  -     !   -          -             !
! PTEP90  ! PRGS       !  -     !   -          -             !
! PTEXD0  ! XPAF       ! PAF    ! PAF Extension              !
! PTEX30  !  -         !  -     !   -          -             !
! PTEX80  !  -         !  -     !   -          -             !
! PTUBAS  ! SAVE UPDT  ! DIC    ! Database integrity check   !
! PTUCSS  ! CSES       !  -     ! Compression Session No.    !
! PTUESS  ! ESES       !  -     ! Extraction Session No.     !
-------------------------------------------------------------
```

COMPONENTS   **2**
BATCH PROGRAMS   **4**

```
----------------------------------------------------------------
! CODE    ! PROCEDURES ! OPTION ! COMMENTS                      !
!---------!------------!--------!-------------------------------!
! PTUG05  ! TRJC       ! TRF    ! Pac/Transfer Facility         !
! PTUG06  ! -          ! -      ! -          -                  !
! PTUG07  ! -          ! -      ! -          -                  !
! PTUG10  ! TRUP       ! -      ! -          -                  !
! PTUG11  ! -          ! -      ! -          -                  !
! PTUG12  ! -          ! -      ! -          -                  !
! PTUG42  ! TRDU       ! -      ! -          -                  !
! PTUG44  ! -          ! -      ! -          -                  !
! PTUG46  ! -          ! -      ! -          -                  !
! PTUG50  ! TRPF       ! -      ! -          -                  !
! PTUG60  ! TRRP       ! -      ! -          -                  !
! PTUG61  ! -          ! -      ! -          -                  !
! PTUG90  ! TRRT       ! -      ! -          -                  !
! PTULOI  ! RTLO       ! DIC    ! Locks retrieval               !
! PTULVB  ! LVBL       ! -      ! Repl. low-values with         !
!         !            !        !  blanks                       !
! PTUQ10  ! PQCE       ! PQC    !                               !
! PTUQ15  ! -          ! -      !                               !
! PTUQ20  ! PQCA       ! -      !                               !
! PTUQ24  ! -          ! -      !                               !
! PTUQ25  ! -          ! -      !                               !
! PTUQ30  ! -          ! -      !                               !
! PTUR00  ! STOP       ! -      !                               !
! PTU004  ! REST REAG  ! -      ! User code check               !
! PTU100  ! MLIB       ! DIC    !                               !
! PTU120  ! -          ! -      !                               !
! PTU130  ! SASN       ! LCU    !                               !
! PTU140  ! -          ! -      !                               !
! PTU2CL  ! REOR       ! DIC    !                               !
! PTU200  ! -          ! -      !                               !
! PTU208  ! -          ! -      !                               !
! PTU210  ! -          ! -      !                               !
! PTU220  ! -          ! -      !                               !
! PTU240  ! -          ! -      !                               !
! PTU300  ! ARCH       ! DIC    !                               !
! PTU320  ! -          ! -      !                               !
! PTU380  ! REST       ! -      !                               !
! PTU400  ! -          ! -      !                               !
! PTU402  ! RESY       ! -      !                               !
! PTU420  ! REST       ! -      !                               !
! PTU500  ! SAVE       ! -      !                               !
! PTU502  ! SASY       ! -      !                               !
----------------------------------------------------------------
```

```
 ----------------------------------------------------------------
 ! CODE     ! PROCEDURES ! OPTION ! COMMENTS                     !
 !--------- !------------!--------!------------------------------!
 ! PTU550   ! SVAG       ! DIC    !                              !
 ! PTU560   ! REAG       !  -     !                              !
 ! PTU630   ! ACTI       ! ACT    !                              !
 ! PTU640   !  -         !  -     !                              !
 ! PTU810   ! EMSN       ! LCU    !                              !
 ! PTU815   ! MESN       !  -     !                              !
 ! PTU850   ! CPSN       !  -     !                              !
 ! PTU855   !  -         !  -     !                              !
 ! PVA100   ! VDWN       ! VIS    !                              !
 ! PVA110   !  -         !  -     !                              !
 ! PVA300   ! VUP1       !  -     !                              !
 ! PVA310   !  -         !  -     !                              !
 ! PVA320   ! VUP2       !  -     !                              !
 ! PVA400   ! VPUR       !  -     !                              !
 ! PYSMCC   ! YSMC       ! WST    ! YSM consistency check        !
 ! PYSMC2   !  -         !  -     !                              !
 ! PYSMC3   !  -         !  -     !                              !
 ! UTIXSR   ! UXSR       ! DIC    !                              !
 !--------- !------------!--------!------------------------------!
 ! PACSECB  ! SUB-PROG   ! SEC    ! Called by VA Pac programs!
 ! PACN25   ! GPRT       ! PDM    !  -        -       -      !
 ! PACN90   !  -         !  -     !  -        -       -      !
 ! PACSEP   ! GPRT UPDT  ! DIC    ! Banner print sub-program !
 !          ! REST       !        ! (to separate reports)    !
 ! PACA90   ! GPRT UPDT  !  -     ! Data Element format       !
 !          ! REST       !        ! Analysis sub-program      !
 !--------- !------------!--------!------------------------------!
 ! Retrieval from Pacbase 802.02, 1.2, 1.5, 1.6          !
 !--------- !------------!--------!------------------------------!
 ! PACR90   ! PP16       ! PEI    ! PEI backup               !
 ! REP2PJ   ! PJ16       ! DIC    ! Archive                  !
 !--------- !------------!--------!------------------------------!
 ! Retrieval from VA Pacbase 2.0                         !
 !--------- !------------!--------!------------------------------!
 ! PTU908   ! RPPG       ! DIC    ! Generation-printing req. !
 ----------------------------------------------------------------
```

```
---------------------------------------------------------
! PROGRAM   !FUNCTION! CORRESPONDING CHOICE            !
! CODE      ! OPTION ! COMMENTS                        !
!---------------------------------------------------------!
! PAF-PUF Sub-programs                                    !
!-----------!-------!-----------------------------------!
! PBFANM    ! DIC   !                                   !
! PBFBIB    ! -     !                                   !
! PBFCTL    ! -     !                                   !
! PBFDBD    ! -     !                                   !
! PBFECR    ! -     !                                   !
! PBFENU    ! -     !                                   !
! PBFFOG    ! -     !                                   !
! PBFMCL    ! -     !                                   !
! PBFPGM    ! -     !                                   !
! PBFRUB    ! -     !                                   !
! PBFSDO    ! -     !                                   !
! PBFTXT    ! -     !                                   !
! PBFVER    ! -     !                                   !
! PBF000    ! -     !                                   !
!---------------------------------------------------------!
! Sub-programs called in the generated programs :        !
! PBBTST    ! PAF   ! Batch PAF                         !
! PBBTWS    ! -     ! Keywords batch PAF                !
! PBBT98    ! -     ! Batch & online PAF / PUF          !
! PBTPST    ! PAF   ! Online PAF                        !
! PBTPWS    ! -     ! Keywords on-line PAF              !
! (must be inserted into the application program library)!
---------------------------------------------------------


    Size:  approximately 30 megabytes on HP9000
           approximately 19 megabytes on DPX/20
           approximately 19 megabytes on RS6000
           approximately 30 megabytes on OSF1
           approximately 22 megabytes on SUN
           approximately 22 megabytes on TANDEM.
```

2.5. EXECUTABLE PROGRAMS

                    <u>EXECUTABLE PROGRAMS</u>

```
+----------+------------------------------------+
! CODE     ! Comments                           !
!----------+------------------------------------!
! pactp    ! VA PAC  ON-LINE SERVER monitor     !
! pacserver !   -                               !
! paclaunch !   -                               !
! pacparm  ! USER PARAMETERS monitor            !
! pacwst   ! LOCAL WORKSTATION                  !
! pacmono  ! Internal program                   !
! pacwstsock! Internal program                  !
!----------+------------------------------------!
! pacbatch ! BATCH SERVER monitor               !
! pacbatsrv !   -                               !
!----------+------------------------------------!
! rtscgi   ! Run-time for EXLI, HIPE, REST,     !
!          !            RESY, SASY, SAVE,       !
!          !                 UPDP, and UPDT     !
! cgitrans ! Character conversion utility       !
! cgidos2ux ! Format conversion utility         !
! cgiux2dos ! Format conversion utility         !
! cgitransgp! Format conversion utility         !
! pacsplit ! Batch generation splitting utility!
! pacdate  ! List of system programs and files !
! cgiasc2ebc! Internal program                  !
! cgiebc2asc!   -         -                     !
! cgisize  !   -         -                      !
!----------+------------------------------------!
```

```
Size:  approximately  2 megabytes on HP9000
       approximately  2 megabytes on DPX/20
       approximately  2 megabytes on RS6000
       approximately  2 megabytes on OSF1
       approximately  4 megabytes on SUN
       approximately  4 megabytes on TANDEM.
```

DELIX001251A

2.6. BATCH PROCEDURES

<u>THE BATCH PROCEDURES</u>

Procedures associated with batch processing are described in Parts II and III of
the Operations Manual (Batch Procedures: Administrator's Guide --for those
procedures involving only the Database Administrator-- and User's Guide --for
those available to the user). Administrator's Guide - for those procedures
involving only the Database Administrator - and User's Guide - for those

The documentation of each procedure includes the following:

  . General presentation

  - Introduction
  - Execution conditions
  - Corrections in case of an ABEND

  . Description of user input, processing and results, as well as recommendations
   for use.

  . Description of steps
  - List of permanent and temporary files in use,
  - Return codes (if any) produced by each step.

  . Command file (JCL lines)

DELIX001251A

PROCEDURE CLASSIFICATION

Batch procedures are documented in the following manuals:

Batch procedures - Administrator's guide:

1) Database Management utilities.

2) Versioning utilities (PEI and Pac/Transfer).

3) Manager's utilities.

4) Migrations.

Batch procedures : User's Guide:

1) Standard procedures.

2) Personalized extraction and automated documentation.

3) Quality analysis and control.

4) Methodology integrity check.

5) Pactables.

6) Pac/Impact.

7) VisualAge Smalltalk/Java - VisualAge Pacbase Interface.

Environment and installation

1) Procedures for the retrieval of earlier releases:

These procedures perform the retrieval of

.Rel. 802v02 into 1.6

- Retrieval of archived Journal (PJ16)

- Retrieval of PEI sequential backup (PP16)

.Rel. 2.0

- Retrieval of generation-print command file (RPPG)

2) Monitor start-up procedures

These procedures activate the on-line and batch servers.

3) Procedures for database migration

The following procedures are associated to the migration of mainframe Pacbase
databases onto OS/2, Unix, or Windows/NT. They are

- LVBL: Processing of low-values in the PC file

- CRYP: Encryption/decryption of passwords in the PE file

DELIX001251A

2.7. SYSTEM FILES

<u>THE 'SYSTEM' FILES</u>

These files make up the actual system. They are not affected by daily operations and must be reloaded whenever the system is reinstalled.

These files include the following:

. Batch and on-line executable modules installed in the $PACDIR/bin directory.

. A file containing the VisualAge Pacbase ERROR MESSAGES and AUTOMATIC DOCUMENTATION: AE0.

```
.Size          :  Approximately 35,000 records
               :  Approximately 2 MB
.Organization :  Sequential
.Length        :  80
.Use           :  Batch
.Location      :  Directory save
.Internal name:  PAC7LE
```

This file is not directly used by the system. It is merged with the USER PARAMETERS, which are required for the on-line operations (*), in order to make up the system file: AE.

```
.Size          :  AE0 + user parameters
               :  Approximately 3.5 MB
               :  (without the user parameters)
.Organization :  Indexed
.Length        :  80
.Key           :  12 (position 1) for AE
.Use           :  Batch and on-line
.Location      :  Directory bases
.Internal name:  PAC7AE
```

. A file containing the USER PARAMETERS which are required for the
system batch operations (*): AP.

```
.Organization :  Indexed
.Length       :  80
.Key          :  7 (position 1)
.Use          :  Batch
.Location     :  Directory bases
.Internal name: PAC7AP
```

(*) The USER PARAMETERS managed in the AE file are: the user codes, the
VA Pac "access key", the activation of the control on the batch procedures, on
the blank passwords, the text types, the management of accented characters,
the parameterizing of the WorkStation methodologies, the DSMS connection.

The USER PARAMETERS managed in the AP file are: the
modification of the fixed parts of the standard error messages and the
control cards required for the program generation.

All user parameters are managed by a specific transaction and a
specific batch procedure. (See the 'Batch Procedures, Administrator's
Guide', Chapter PARM: UPDATE OF USER PARAMETERS for
details on this procedure.) The PARM update procedure manages the
AE and AP files, as well as:

The USER PARAMETERS backup file: PE.
```
.Organization :  Sequential
.Length       :  80
.Use          :  Batch
.Location     :  Directory save
.Internal name:  PAC7PE
```

This file is the backup of ALL the user parameters located in the AE
and AP files.

. A skeleton file for generation, SC, used by the Structured Code and Batch
Systems Development functions:

```
.Size         : approximately 45 records (125 KB)
.Organization : Indexed
.Length       : 3204
.Key          : 4 (position 1)
.Use          : Batch only
.Location     : Directory bases
.Internal name: PAC7SC
```

. A skeleton file for generation, SG, used by the On-line Systems
Development, Database Description, and Specifications Dictionary:

```
.Size         : approximately 400 records (1.7 MB)
.Organization : Indexed
.Length       : 4605
.Key          : 5 (position 1)
.Use          : Batch only
.Location     : Directory bases
.Internal name: PAC7SG
```

. A skeleton file for generation, SR, used by the COBOL Generator function:

```
.Size         : approximately 25 records (100 KB)
.Organization : Indexed
.Length       : 4605
.Key          : 5 (position 1)
.Use          : Batch only
.Location     : Directory bases
.Internal name: PAC7SR
```

. A skeleton file for generation, SP, used by the PAF function extension:

```
.Size          : approximately 5 records (26 KB)
.Organization : Indexed
.Length        : 4605
.Key           : 5 (position 1)
.Use           : Batch only
.Location      : Directory bases
.Internal name: PAC7SP
```

. A skeleton file SF, used by the PAF function extension:

```
.Size          : approximately 3,000 records (210 KB)
.Organization : Sequential
.Length        : 119
.Key           : 5 (position 1)
.Use           : Batch only
.Location      : Directory bases
.Internal name: PAC7SF
```

. A skeleton file for generation, SS, used by PACBENCH C/S:

```
.Size          : approximately 500 records (1.5 MB)
.Organization : Indexed
.Length        : 4605
.Key           : 5 (position 1)
.Use           : Batch only
.Location      : Directory bases
.Internal name: PAC7SS
```

PACBASE ACCESS FACILITY (PAF) FUNCTION

An indexed workfile is required, so that the PAF function can be used for all on-line and batch user programs accessing a given VisualAge Pacbase Database.

```
.Organization : Indexed
.Key          : 12 (position 1)
.Length       : Average 170, max. 468
.Use          : Updated by sub-program PBBT98
                called by PBBTST/PBBTWS/PBTPST and
                PBTPWS (PAF sub-programs called via
                programs)
.Location     : User assigned
.Internal name: SYSPAF
```

PAF EXTENSION

A skeleton file GS, which contains the user extractors and its macro-commands.

```
. Organization : Indexed
. Length       : 203
. Key          : 25 (position 1)
. Use          : Batch and on-line
. Location     : Directory bases/'db_name'
. Internal name: PAC7GS
```

NOTE:

'db_name' (db = database) is an installation parameter.

2.8. EVOLVING FILES

THE DATABASE FILES

These files contain user information and are managed by the VisualAge Pacbase system in on-line or batch mode.

The first four files make up the actual VA Pac Database. They contain all the data related to application development as follows:

THE DATA FILE (AR)

```
.Organization : Relative
.Length       : 140
.Use          : Batch and on-line
.Location     : Directory bases/'db_name'
.Internal name: PAC7AR
```

Each VisualAge Pacbase line is stored in the Data file under a fixed internal number.

The successive states of a given line from the various archived sessions form a chain; at the top of this chain is the most recent state of the line, and at the end is the oldest state of the line. Programs never access a VA Pac line directly in this file, but first obtain the number of the top of the chain by consulting the Index file (AN).

THE INDEX FILE (AN)

```
.Organization :  Relative (Internally managed as an
                          indexed file)
.Length        :  1,040 (19 54-byte records)
.Internal key :  43 (position 1)
.Use          :  Batch and On-line
.Location     :  Directory bases/'db_name'
.Internal name:  PAC7AN
```

The Index file describes the various views available to the user and identifies the VisualAge Pacbase line according to its position in the Database, and to the sub-network to which the selected library belongs and to which the user has access. It also provides all additional technical functions.

DELIX001251A

The main piece of information provided here is the internal number of the VA
Pac line to which the index points.

THE GENERATION-PRINT REQUEST FILE (AG)
```
    .Organization :  Indexed
    .Length       :  150
    .Key          :  27 (position 1)
    .Use          :  Batch and On-line
    .Location     :  Directory bases/'db_name'
    .Internal name:  PAC7AG
```

This file stores the generation-printing requests entered by users on the 'GP'
screen. Despite its limited size, it is subject to a great deal of update activity on
a daily basis.
It is saved by the SVAG procedure. It is initialized, restored and can be
reorganized by the REAG procedure.

THE JOURNAL FILE (AJ)
```
    .Organization :  Relative
    .Length       :  165
    .Use          :  Batch and on-line
    .Location     :  Directory journal¥'db_name'
    .Internal name:  PAC7AJ
```

All transactions that have been entered into the database in batch or on-line, are
saved to allow database restoration should the standard security system ever fail.
This information may also be used for statistical purposes.

These transactions are generally stored in the Journal back-up file (PJ). The
Journal file is only used as a transition point between the time the transactions
are processed and the time the ARCH procedure stores them in the PJ file.

NOTE

The transactions contained in the Generation-Printing Request file (AG) are not
saved in the Journal file (AJ).

VisualAge Pacbase also uses so-called 'work' files (or temporary files) in order
to back up screens or to transfer information from one screen to another.

The HE file receives the information transferred between the programs which
manage the screen mapping facility.

The ZS file stores and transfers information among the programs which manage
the Relational Database Description function.

The HELP file stores the physical screen when documentation is requested on-
line in the VisualAge Pacbase User Parameter Management transaction.

THE HE FILE
        .Organization : Indexed
        .Rec. length : 1,930
        .Key   : 10 (position 1)
        .Use   : On-line
        .Location   : Directory bases/'db_name'
        .Internal name: PAC7HE

THE HELP FILE
        .Organization : Indexed
        .Rec. length : 1,930
        .Key   : 10 (position 1)
        .Use   : On-line
        .Location   : Directory bases/'db_name'
        .Internal name: SAVESCR

THE ZS FILE
        .Organization : Indexed
        .Rec. length : 86
        .Key   : 06 (position 1)
        .Use   : On-line
        .Location   : Directory bases/'db_name'
        .Internal name: PAC7ZS

                                                           DELIX001251A

SEQUENTIAL BACKUP FILES

The Database backup is made up of three sequential files:

1) BACKUP FILE OF THE DATABASE (PC)
```
    .Organization :  Sequential
    .Length       :  149 bytes per data item
                     55 bytes per index
    .Use          :  Batch
    .Location     :  Directory save/'db_name'
    .Internal name:  PAC7PC
```

This is a standard backup file of the VA Pac Database components, which
includes all the indexes (AN) and data (AR).

You can optionnally manage this backup on two sequential files. In this case, the
PC file contains the data (AR) and another file, PCI, contains the indexes (AN).
PCI is located in the same directory as PC and its internal name is PAC7PD.
This option is implemented by the user input of the restoration procedure
(REST).

2) BACKUP FILE OF THE JOURNAL (PJ)
```
    .Organization :  Sequential
    .Length       :  167 bytes
    .Use          :  Batch
    .Location     :  Directory save/'db_name'
    .Internal name:  PAC7PJ
```

The purpose of this file is to store all update transactions that have affected the
VA Pac Database since installation and that have passed through the Journal file
(AJ). If its size becomes incompatible with operations requirements, the ARCH
procedure can be used to desactivate obsolete archives in a PQ sequential file,
whose characteristics are identical to those of the PJ file.

3) BACKUP OF THE GENERATION-PRINTING REQUEST FILE (PG)
```
.Organization :  Sequential
.Length       :  150 bytes
.Use          :  Batch
.Location     :  Directory save/'db_name'
.Internal name:  PAC7PG
```

The purpose of this file is to back up the generation-print requests and to reorganize them through the REAG procedure.

NOTES:

. 'db_name' (db = database) is an installation parameter.

. Sequential backups may be used in input and in output of some batch procedures. In this case, these files are created and used under two different names: Px in input and Px.NEW in output of the procedure (PC and PC.NEW for example).

Then at the end of the procedure (no errors), the file PxBACKUP.CMD is called which ensures a rotation of the two backup copies: Px is renamed to Px-1, Px.NEW to Px and Px.NEW is distroyed.

The user can modify these files (placed with the backups) in order to change this standard management.

'PEI' FUNCTION (PRODUCTION ENVIRONMENT INTERFACE)

Three additional evolving files are managed by the system either on-line or in batch mode when the PEI function is available (refer to the corresponding Sub-chapter in Chapter VERSIONING UTILITIES of the Batch Procedures: Administrator's Guide).

These files contain all data necessary for management of the production environment.

BATCH PRODUCTION ENVIRONMENT FILE (AB)
```
        .Organization :  Indexed
        .Length       :  110
        .Key          :  26 (position 1)
        .Use          :  Batch, and on-line reads
        .Location     :  Directory bases/'db_name'
        .Internal name:  PAC7AB
```

ON-LINE PRODUCTION ENVIRONMENT FILE (AC)

```
        .Organization :  Indexed
        .Length       :  110
        .Key          :  26 (position 1)
        .Use          :  Batch and on-line
        .Location     :  Directory bases/'db_name'
        .Internal name:  PAC7AC
```

PEI BACK-UP FILE (PP)

```
        .Organization :  Sequential
        .Length       :  110
        .Use          :  Batch
        .Location     :  Directory bases/'db_name'
        .Internal name:  PAC7PP
```

DELIX001251A

DSMS module (DSM)

For users who have access to the DSMS module (see also the Operations manual for this module), an additional evolving file is consulted in batch and on-line by VA Pac.

This file contains a list of VA Pac   entities affected by each CHANGE. The user enters the CHANGE number when he/she accesses the database.

DSMS file for VisualAge Pacbase elements (DC)
```
          .Organization :  Indexed
          .Length        :  Min. 50, max. 168
          .Key           :  31 (position 3)
          .Use           :  Read during on-line and batch
                            updates
          .Location      :  Directory bases
                            (may control several VisualAge
                            Pacbase databases)
          .Internal name:  PAC7DC
```

This file is initialized during the installation of the DSMS Function.

VISUALAGE PACBASE - PACTABLES INTERFACE

When Pactables is available on a user machine, the table-description file must be
present at the time of table generation in VisualAge Pacbase.

TABLE-DESCRIPTION FILE (TD)
```
        .Organization :   Indexed
        .Length       :   240
        .Key          :   19 (position 1)
        .Use          :   Batch
        .Location     :   Directory bases/'db_name'
        .Internal name:   PAC7TD
```

```
TABLE DESCRIPTION BACKUP FILE (PD)


        .Organization :   Sequential
        .Length       :   244 bytes
        .Use          :   Batch
        .Location     :   Directory save/'db_name'
        .Internal name:   PAC7TC
```

This file is used for the backup of the TD table-description file.

IMPACT ANALYSIS

. File of already-impacted criteria (FQ)

```
.Organization: Sequential with generation
.Use          : Store those impact search criteria
                already processed
.Location     : Directory bases/'db_name'
```

. Search criteria or entry point file (FH)

```
.Organization: Sequential with generation
.Use          : Store the impact search criteria for the
                next IANA execution
.Location     : Directory bases/'db_name'
```

. Reduced criteria file for purge (FR)

```
.Organization: Sequential with generation
.Use          : Purge the impact search criteria in a
                text editor
.Location     : Directory bases/'db_name'
```

. Impact-result file (FO)

```
.Organization: Sequential with generation
.Use          : Store all the results of the impact
                analysis
.Location     : Directory bases/'db_name'
```

. File of entities to be analyzed (FP)

```
.Organization: Indexed
.Recsize    : 9
.Key        : 9 (position 0)
.Use        : Restrict the impact analysis to those
              entities specified in this file
.Location   : Directory bases/'db_name'
```

PAC/TRANSFER FACILITY

Parameter file (UV):

This file is used to control the various Pac/Transfer processes.

The creation or update of this file --via the TRUP procedure-- stores the Transaction Sets, which define the various transfer processes envisionned for the site. (Each SET corresponds to a specific parameterization.)

The processes of the Pac/Transfer facility can thus process a unique SET, a list of SETS, or all the SETS, depending on current requirements.

A number of checks against the VisualAge Pacbase database are performed by the TRUP procedure.

For further details, see the description of the TRUP procedure in the Batch Procedures: Administrator's Guide.

VISUALAGE SMALLTALK - VISUALAGE PACBASE BRIDGE

Character-correspondence table

This table lists all the characters used in VisualAge Smalltalk identifiers that are not valid for VisualAge Pacbase codes, as well as their replacement characters.

It is shipped as an empty file, which should be filled by the user as described in the description of the VUP1 procedure, in the Batch Procedures: User's Guide.

```
.Organization:  Sequential
.Recsize    :  80
```

VISUALAGE PACBASE - TEAMCONNECTION BRIDGE

. Target sessions and libraries file (TS)

```
.Organization :  Indexed
.Length       :  80
.Key          :  14 (position 1)
.Utilization  :  Batch
.Location     :  Directory bases/'db_name"
.Internal name:  PAC7TS
```

2.9. ADDITIONAL FILES

<u>COMPLEMENTARY FILES</u>

<u>DICTIONARY COMPLEMENTS</u>

These files are located in the 'method' directory and are related to the use of some Functions or Extensions.
The Subchapters COMPLEMENT... of the Chapter INSTALLATION describe where and how these files should be used.

. PAF FUNCTION: the MBUPDT.PAF file contains the batch transactions of entities necessary to the description of the PAF tables, which are to be integrated in a Dictionary.

. PAF FUNCTION EXTENSION: THE MBUPDT.PTE file contains the batch transactions of the .PPTEX entities ("Extraction Master Path"), which are to be integrated in a Dictionary.

. PQC FUNCTION: the MBRULE.PQC file contains the standard quality rules.

. CUSTOMIZATION OF THE PQC FUNCTION: the MBUPDT.PQC file contains the batch transactions of the .QPAQC entities, which are to be integrated in a Dictionary.

. UTILITIES FOR ERROR-MESSAGE UPDATING (USER APPLICATIONS): the MBUPDT.UTI file contains the batch transactions of the UTEMLD and UTEMUP Program entities, which are to be integrated in a Dictionary to create programs for the loading and the updating of the application's error messages. These programs are then to be adapted to the specific needs of the site.

INPUT TO THE VINS PROCEDURE

The 'method' directory also contains the input to the VINS procedure (refer to the relevant chapter in the 'Batch Procedures: Administrator's Guide' manual).

MVINS.VGE: Definitions of the VisualAge Smalltalk Dictionary entities to be inserted in the VisualAge Pacbase Dictionary.
This integration is necessary for the VisualAge Pacbase - VisualAge Smalltalk bridge operations.

MVVINS.PTC: Definitions of the 'TeamConnection' Dictionary entities.
This integration is necessary for the VisualAge Pacbase - VisualAge Smalltalk bridge operations.

WORKSTATION METHODOLOGIES

To be operational, the WorkStation needs two types of integrations in the VisualAge Pacbase system:

- in the Dictionary, integration of the transactions related to the entities which support the methodology (MBUPDT.met files),

- in the system, integration of the transactions which define the methodology choices (MBPARM.met files).

The 'method' directory stores the MBUPDT.met and MBPARM.met files for the following methodologies:

```
-----------------------------------------
! File        ! Contents        ! Proc.!
-----------------------------------------
! MBUPDT.MER ! Batch transact.  ! UPDT !
!            ! MERISE method    !      !
! MBPARM.MER ! Parameterization ! PARM !
!            ! MERISE method    !      !
! MBUPDT.ADM ! Batch transact.  ! UPDT !
!            ! SSADM method     !      !
! MBPARM.ADM ! Parameterization ! PARM !
!            ! SSADM method     !      !
-----------------------------------------
```

```
----------------------------------------
! File       ! Contents        ! Proc.!
----------------------------------------
! MBUPDT.YSM ! Batch transact. ! UPDT !
!            ! YSM method      !      !
! MBPARM.YSM ! Parameterization ! PARM !
!            ! YSM method      !      !
! MBUPDT.IFW ! Batch transact. ! UPDT !
!            ! IFW method      !      !
! MBUPDT.IFP ! Pre-loading     ! UPDT !
!            ! IFW method      !      !
! MBPARM.IFP ! Parameterization ! PARM !
!            ! IFW method      !      !
! MBUPDT.OMT ! Batch transact. ! UPDT !
!            ! OMT method      !      !
! MBPARM.OMT ! Parameterization ! PARM !
!            ! OMT method      !      !
----------------------------------------

  DO NOT MODIFY THE CONTENTS OF THESE FILES
```

Refer to Chapter INSTALLATION, Subchapter 'Complement: WorkStation Installation'.

3. ENVIRONMENT

3.1. INTRODUCTION

<u>INTRODUCTION</u>

The VisualAge Pacbase system manages a specifications dictionary on a local area network made up of a UNIX server and DOS or OS/2 work stations.

In addition to all the VisualAge Pacbase features, VA Pac offers the benefits of micro-computing, and the scope of a LAN.

This chapter defines the environment and the resources required for PACBASE operation. It presents each part of VA Pacbase (on-line server, batch server, and workstations) with its components, its structure and its operation mode.

It also helps the user access the disk space requirements.

3.2. ARCHITECTURE

ARCHITECTURE

To access a VisualAge Pacbase database each workstation communicates with
one on-line server. An on-line server can theoretically manage up to 99
workstations. However, for the sake of performance considerations, it is
advisable to limit the total number of workstations to the maximum actually
needed.

UNIX computers support several on-line servers working simultaneously.

To execute generation-print requests submitted on-line, each workstation
communicates with one or more batch servers. Batch servers have no limit on
the number of workstations they can manage.

Resource sharing

The following diagram illustrates the way a local area shares programs, files and
connections.

```
+--------+-------+--------+-------+       +--------+-------+
!        ! ON-LINE!       !       !       +--------+-------+
! BATCH  ! /BATCH ! ON-LINE! PACWST !     !        !       !
!        ! COMM.  !       !       !       !  WORK- ! PAC-  !
! SERVER +-------+ SERVER !  WORK- !      ! STATION ! LINK  !
!        ! VA Pac !       ! STATION!      !        !       !
!        !DATABASE!       !       !       !        !       !
+--------+-------+--------+-------+       +--------+-------+
!            UNIX SYSTEM          !       ! MS-DOS  WINDOWS !
+-------------+-----------+-------+       +-----------------+
! W-STATION/ON-LINE COMMUNICATION !       ! W-STATION/ON-LINE!
!                                 !       !  COMMUNICATION   !
+-------------+-----------+-------+       +-----------------+
!         NETWORK INTERFACE       !       ! NETWORK INTERFACE!
+------------------+--------------+       +-----------------+
                   !                                !
                   !                                !
-------------------+----------------------------+---------
                LOCAL AREA NETWORK (LAN)
```
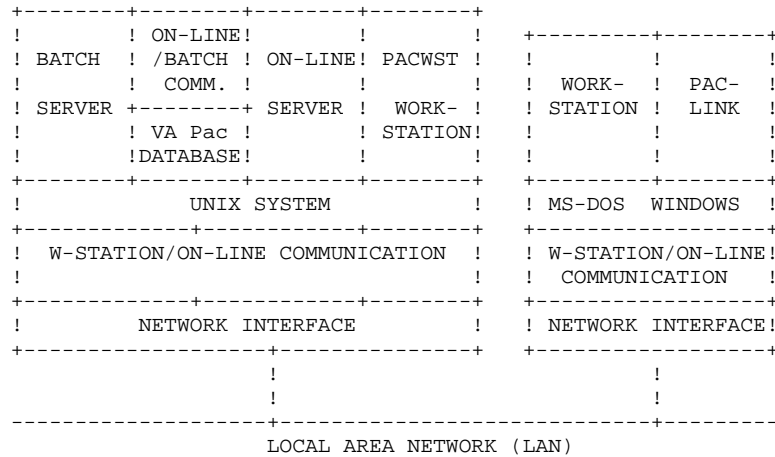
OPERATING PRINCIPLES

Using the DOS/WINDOWS workstations requires the opening of a communication with the on-line server. At the moment, there are two communication modes:

  . One which works according to the "mailbox" principle, i.e. data exchanges are carried out by a pair of shared files,

  . And one described as a "process-to-process dialog" i.e. data exchanges are carried out via the 'socket' interface of the TCP/IP network protocol.

The choice of a communication mode depends on the network architecture facilities available. An on-line server accepts both communication modes at the same time.

Using the UNIX workstations (PACWST) requires the opening of a UNIX session on the machine which hosts the on-line server. Exchanges between the on-line server and the PACWST workstations are carried out in a synchronous way via a pair of shared files.

Each time a DOS or UNIX workstation sends a generation request, the on-line server communicates with the station in its usual way, and forwards generation-print requests to the batch server, via the pair of communication files. The files ensuring communication between the on-line server and the batch server do not need to be shared on the local network.

3.3. ON-LINE SERVERS

<u>ON-LINE SERVERS</u>

Each on-line server is in charge of executing interactive programs that modify the VA Pacbase Database.

1. SHARED FILES WITH DOS/WINDOWS WORKSTATIONS

In the case of communication with DOS/WINDOWS workstations via shared files, communication between the server and the stations uses two files, which contain the messages for the synchronization of the on-line server and its clients, and the VisualAge Pacbase screens.

Client/Server communication principle:
Communication with workstations is performed via the "server_name".cm and "server_name".cd files. Each on-line server must have its own CM and CD pair of files.

For more information, refer to the BATCH PROCEDURES: Administrator's Guide, Chapter 'MONITOR START-UP', subchapter 'ON-LINE SERVER START-UP'.

2. SHARED FILES WITH PACWST WORK STATIONS

In the case of PACWST work stations, communication is also ensured by two files, CD and CM. However, it is carried out in a synchronous way, i.e. the stations do not constantly read the CM file, waiting for the on-line server answer. Rather, they wait for the on-line server to send them a signal when the answer is available.

3. SOCKET INTERFACE WITH DOS/WINDOWS WORKSTATIONS

In the case of use of the "socket" interface with the DOS/WINDOWS workstations, the communication is carried out in a synchronous way, but without the CD and CM files. In order to set up a "socket" connection, the stations need to know the name of the UNIX machine hosting the on-line server, and the "socket" number the on-line server was assigned at the time of creation.

<u>CM AND CD COMMUNICATION FILES</u>

The on-line server reads the CM communication file in cycles, waiting for a

request from a work station. The CM file appears in the form of a table that contains one record per workstation.

For each workstation, the table reads the following information:

  - Workstation number

  - Status:

            0: Unconnected workstation
            1: Connected workstation
            2: Saved conversation

  - Coded workstation request

            C: Connection request
            D: Transmit

  - Response from the server

            R: Server answer
            S: Save
            F: End

In a similar way, each work station reads the CM file in cycles to find out whether the on-line monitor answered its request.

The CD file contains the messages exchanged between the work stations and the on-line server.

DELIX001251A

3.4. BATCH SERVERS

<u>BATCH SERVERS</u>

A batch server processes generation-print requests made in the VisualAge
Pacbase GP screen. The execution of these requests is performed by a batch
monitor which automatically runs the GPRT procedure.

Communication between the batch server and the on-line server(s) is carried out
by files defined in the BATCH server configuration file, and named
"db_name".lb and "db_name".bd.

Batch server display mode (view option of pacbatch) displays the list of requests
already processed and of those being run. Each request is serialized and
processed sequentially by the batch monitor.

It is possible to install more than one batch server to process generation-print
requests for one VA Pac Database. In this case communication between batch
servers with different names and the on-line server(s) is still carried out by the
LB and BD files. Generation-print requests are shared by the batch servers. For
more information, refer to the description of the 'pacbatch' procedure, in the
BATCH PROCEDURES : Administrator's Guide, Chapter "Monitor Start-up",
Sub-chapter "Batch Server Start-up".

BATCH OPERATION

The operation principle for the batch mode is similar to that for the on-line mode.It is also a system based on the exchange of messages, this time between batch and on-line servers.

The LB file contains the list of requests coming from the generation-print screen (choice GP) from a workstation. The batch monitor reads the LB file in cycles.

For each request, the LB file contains the following:

- date and time submitted,

- job number,

- user code,

- database code,

- address of the request start in the BD file,

- address of the request end in the BD file.

LB points to the BD file, which contains the generation-print requests.

The result of GPRT is a file for each type of generation-print requests. These files are created in the user directory (see Chapter "INSTALLATION", Sub-chapter "Description of Directories".)

3.5. PARM-PEI TRANSACTION

<u>PARM-PEI TRANSACTION</u>

The PARM transaction enables the VA Pac system administrator to update user parameters. For users of the PEI function, the PARM transaction also manages the production environments.

The pacparm program runs the PARM-PEI transaction. This program is mono-user and cannot be accessed from a workstation. It must be run on a UNIX machine and from a UNIX terminal.

For more information, see the BATCH PROCEDURES - Administrator's Guide, Chapter "MONITOR START-UP", Subchapter "Running the PARM-PEI Transaction".

3.6. DISK SPACE REQUIREMENTS

<u>DISK SPACE REQUIREMENTS</u>

<u>VisualAge Pacbase System</u>

All parts of the VisualAge Pacbase System, i.e. all batch and on-line programs
and procedures, as well as system files take up a variable disk space according to
the UNIX system in use:

```
Vendor           System      Hardware       Disk space
BULL             A.I.X.      DPX/20          80 Mo
IBM              A.I.X.      RS/6000         80 Mo
Hewlett-Packard  HP-UX       HP9000 s800     90 Mo
DEC              OSF1        DEC4000        110 Mo
SUN              SunOS       SPARC           90 Mo
TANDEM           IRIX        NR/4001         90 Mo

The size of VisualAge Pacbase system files remains fixed.
```

<u>Specifications Database</u>

An explanation of how to calculate the size of user files (database files) is given
below. To estimate the total amount of space needed for a VA Pac
specifications database, allow 400 bytes for each VA Pac record, for all the files
involved.

Allow additional space for storing all the database back-up files (PC, PJ, PE,
etc.), as well as work space needed for running batch procedures (cf. the
following point).

THE CALCULATION OF THE SIZE OF USER FILES, after installation
should be based on the following considerations:

If NPAC represents the number of VA Pac records for all libraries and sessions,
then the following rules apply:

(AR) Data File: NPAC 140-byte records

(AN) Index File: Approximately 3 * NPAC 54-byte records (a record is used an
       average of three times).

(AJ) Journal File: This file must be able to hold all of the update transactions, batch or on-line, that have been run between two reinitializations of this journal file. A VA Pac transaction corresponds to a 165-byte record in the journal file.

(AG) Generation/Print Request File: This is usually a low-volume file. It should be able to hold about 100 requests for each user that can access the system (150 bytes).

(AP) User Parameter File: This is a low-volume file. It contains control cards as well as possible changes in standard error messages (80 bytes/record).

Back-up Files and Work Space

Proper management of a VA Pacbase Database requires standard management procedures (for example SAVE, ARCH, REOR, REST ...). These procedures, especially REOR, can eat up a lot of work disk space. Therefore, this space should be considered when calculating space needs.

All of the procedures that work on database back-up files (PC, PJ, PE, ...) require these files to be present on disk even if the back-up files are subsequently archived on tape or on other devices.

For instance, the SAVE procedure, which is used to do a logical back-up of the database, consults the AN and AR files and produces the PC file as output. It must be possible to create PC, which is equal in size to the sum of AN and AR, on disk.

Some procedures additionally use temporary files, which are deleted at the end of the procedure, but which must be taken into account. See the BATCH PROCEDURES - Administrator's Guide for descriptions of all temporary files.

TO SUMMARIZE: Once the size of the database (AN plus AR) has been estimated, you need to have available a total disk size equivalent to four to five times the size of the database.

This estimate allows some extra, so that any batch procedure can be run without having to resort to juggling the disk space.

Special considerations for sort programs

Particular attention should be paid to programs and procedures which include a
sort. For example, in the REOR procedure, the programs PTU205 and PTU225
sort the sequential back-up (PC) of the database.

Apart from temporary files created by the user, sorts use temporary files created
by the operating system in the current directory. To change this default
temporary file directory, set the TMPDIR variable to a different value. When
you modifiy the temporary file directory, check that it has sufficient disk space.

For further details on sorts, refer to the Manual 'Batch PROCEDURES manuals,
Chapter "THE BATCH PROCEDURES", Subchapter
'RECOMMENDATIONS'. Guide', chapter 'General Introduction to Batch
Procedures', subchapter 'Advice on Use'.

4. INSTALLATION

4.1. INTRODUCTION

<u>INTRODUCTION</u>

The VA Pac version under UNIX is made up of two distinct packages:

. The first one, delivered on a magnetic support (tape, DAT, VDAT) or on CDROM, allows you to install the VA Pac server part under UNIX as well as the 'dumb terminal'-type workstations which run under UNIX or WINDOWS.

The installation of these elements is described in this chapter.

. A CD-ROM is provided for the installation of the VA Pac WorkStation.

For its installation and its use, refer to the WorkStation's Operations and Reference manuals.

<u>DATA SUPPORT</u>

The data support contains the following files:
```
-    PACINST.Vnn,

-    PACBASE.3PC, PACBASE.3IS, PACBASE.4PC and PACBASE.4IS
     for AIX, PACBASE.750, PACBASE.815 and PACBASE.875
     for HPUX, PACBASE.ISO for the other platforms,

-    README_E.Vnn and README_F.Vnn,

-    AMELIO.Vnn and CHANGES.Vnn,
```

and possibly the "PACPATCH" directory, which contains the files related to the patch(es) which might be taken into account at the time of a re-installation.

("Vnn" represents the number of the installed version).

WARNING: depending on the data support and the UNIX system, the name of the installation files might be in upper case letters or in lower case letters.

Description of PACINST.Vnn :

The PACINST.Vnn file contains the VA Pac installation or re-installation commands.

These commands are written in shell language.

Description of PACBASE.xxx:

The PACBASE.xxx files are tar files which contain the Va Pac execution and operations files written in English and French.

On RS6000 or DPX20, the operating system allows you to choose between two character sets: "pc850" (character set used on OS/2) and "iso8859" (character set used on WINDOWS).
For compatibility reasons, you benefit from these installation options at the time of installation or re-installation.

On HP9000, the software can run either with a Micro Focus 3.0 (HP 7.50), 3.1 (HP 8.15) or 3.2 (HP 8.75 or HP 9.xx) COBOL run-time.
On RS6000 or DPX20, the software can run either with Micro Focus 3.2 or 4.0 COBOL run-time.
When installing or re-installing, you can choose the run-time and then install files which are compatible with the run-time in use.

Description of README_F.Vnn and README_E.Vnn:

The README file contains information on the evolutions of the software.

You should read it before before carrying out any installation or reinstallation operation.

The README_F.Vnn file is in French, and the README_E.Vnn file is in English.

Description of AMELIO.Vnn and CHANGES.Vnn

These files list all the changes of the version.

The AMELIO.Vnn file is in French, and the CHANGES.Vnn file is in English.

Description of the "PACPATCH" directory:

The PACPATCH directory may contain files. Each filename is a patch number.
Each file contains:

  - the list of changes brought the patch,

  - the name and path of the programs affected by the patch,

  - all the versions that can use the patch.

These files will be used when a reinstallation is done via PACINST.Vnn.

INSTALLATION PROCESS

Before installing VA Pac, you should first perform a general backup of the
system. Carefully follow the various installation steps:

  - Creation of a Va Pac-specific login,

  - Creation or modification of the environment variables,

  - Unloading of the data support in the "$HOME" login directory, if VA
    Pacbase is supplied on a magnetic support,

  - Mounting of the CDROM and positioning in the
    "version_code"."hardware_code" sub-directory of the mounting directory, if
    VA Pacbase is delivered as a CDROM.

  - Execution of the PACINST.Vnn procedure,

  - Execution of any operation required by the site's specific functions,

  - Creation of the on-line and batch servers,

  - If necessary: creation of the users on the LAN,

  - Installation of the workstations,

  - Test of the installation.

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<u>**WARNING**</u>

VisualAge Pacbase must be installed on disks which are physically inside the
UNIX machines, and not on NFS-mounted disks.

4.2. VISUALAGE PACBASE SERVER INSTALLATION

<u>VisualAge Pacbase SERVER INSTALLATION</u>

<u>Creation of a specific UNIX user:</u>

Most UNIX software must be installed in a specific user home directory. This is necessary for security reasons, in order to isolate the various software programs installed on one machine.

NEVER INSTALL UNDER THE "ROOT" UNIX ACCOUNT!

The UNIX administrator (root), must therefore create a UNIX login under which the VA Pac directories will be copied.
This login will be the VA Pac administrator's.

<u>Modification of configuration files:</u>

Log in with the VA Pac administrator login, and update the shell configuration files (.profile, .kshrc or .login).

The environment variables COBDIR, PACDIR, COBPATH, and PATH will be created or modified:

```
COBDIR=<path to COBOL Run-Time directory>
export COBDIR

PACDIR="$HOME/paclanx"
export PACDIR

COBPATH="$PACDIR/tp/gnt:$PACDIR/batch/gnt"
export COBPATH

PATH="$PACDIR/bin:$PACDIR/batch/proc:$COBDIR/bin:$PATH"
export PATH
```

If TMPDIR variable (COBOL run-time temporary directory) is assigned, the indicated directory must exist.

For a DEC, SUN or TANDEM computer, create or modify the
LD_LIBRARY_PATH variable:
```
LD_LIBRARY_PATH="$COBDIR/coblib
export LD_LIBRARY_PATH
```

For the RS6000 version, create or modify the LIBPATH variable:
```
LIBPATH = $COBDIR/coblib
export LIBPATH
```

The COBOL Run-time directory is the one which contain the executable files
and libraries required by COBOL programs.

Generally, COBDIR is set to the /usr/lib/cobol value. (For further details on the
COBDIR environment variable, refer to the installation documentation of your
COBOL compiler and to your COBOL manuals.)

Once you have performed these updates, restart the configuration initialization
by typing ". .profile", and, using the UNIX command "set", check that the
modifications were taken into account in the configuration files.

If the environment variables are not correctly initialized, log out and then log in
again, in the VisualAge Pacbase administrator account.

Unloading the magnetic support:

When VA Pac is delivered on a magnetic support, you must unload its contents
in the UNIX machine, in the VA Pac administrator's $HOME directory:
To do so, use the following commands:
```
cd $HOME
tar xvf /dev/...
```
("/dev/..." is the path of the support read unit)

CDROM Mounting

If necessary, mount the CDROM driver on a system directory.

Log in to the CDROM "mounting" directory, in sub-directory:
```
..."version_code"."hardware_code"
```
Example on RS6000:

```
cd /cdrom/PB200V00.AIX
```

Description of installation procedure steps:

WARNING

To ensure a correct installation of the software, check that the disk space is equal to five times the PACBASE.xxx file in the installation directory.

After unloading in the VA Pac administrator's login directory, or the CDROM mounting, type the following command:

"sh PACINST* -f" for French installation and operations,

"sh PACINST* -e" for English installation and operations.

The installation is made up of the following steps:

  . Consistency check on the environment variables (.profile, .kshrc, .login)

  . Display of 'readme' file contents

  . Display of the installation menu

  . Selection of a character set in use (on RS6000 or DPX20)

  . Selection of a COBOL run-time in use (on HP9000, RS6000 or DPX20),

  . Creation of the installation directory

  . Distribution of files issued from PACBASE.xxx

  . Test-database name choice and creation

  . Selection of the VA Pac access key

  . Execution of the test-database initialization batch procedures

  . Creation of the 'journal_pacinstall' file

Consistency check of environment variables

Before running PACINST.Vnn, the VA Pac administrator must check the
modifications done in the configuration file, even though the installation process
performs some consistency checks.

Display of readme contents

To scroll through the readme file, use the space bar.

At the end of the display, you can:

  . either re-run this step,

  . quit the PACINST.Vnn procedure,

  . or go to the next step.

Display of the installation menu

The installation menu looks like this:

```
************************************************************

                    VisualAge Pacbase

************************************************************

 readme          :  display of the readme file
 inst            :  installation of this version

************************************************************

Type the command name, or 'x' to quit PACINST.Vnn:
```

description of commands:

  - The 'readme' command edits the readme file for reading.

  - The 'inst' command starts the installation process.

Enter the command and follow the instructions given by PACINST.Vnn.

Choice of a character set (RS6000 or DPX20):

Depending on the machine's configuration, type 'pc850' or 'iso8859'. If you do not know what configuration your machine is in, ask your UNIX administrator.

Choice of the COBOL run-time in use (HP9000, RS6000 or DPX20):

On HP9000, the COBOL run-time can be "750" if you use a Micro Focus 3.0 (HP 7.50 version), "815" if you use a Micro Focus 3.1 (HP 8.15 version) or "875" if you use a Micro Focus 3.2 (HP 8.75 or 9.xx) COBOL run-time.

On RS6000 or DPX20, COBOL run-time can be "3.2" if you use a Micro Focus 3.2 run-time or "4" if you use a Micro Focus 4.0 run-time.
Ask your UNIX administrator to know the run-time.

Creation of the installation directory:

PACINST.Vnn requires the creation of an installation directory (paclanx) for the following reasons:

  . to isolate the VA Pac software from any other software installed on the computer, and to control changes to it,

  . to allow PACINST.Vnn to control the type of processing (installation or re-installation) to be done.

Distribution of files:

During this step, PACINST.Vnn creates the directories described thereafter in this manual (paragraph "Description of created Directories") and extracts all the PACBASE.xxx files according to the selected language.

The -e or -f installation option allows you to benefit from the following features in English or in French when running VisualAge Pacbase:

  . Error messages
  . Batch procedures
  . Generation skeleton files.

Test database creation and naming

The test database must be given a name at the time of installation. You enter this
name in an interactive manner, by answering questions about the database.
The test database name must be made up of 4 alphanumeric character at most.
It will allow you to create the database's specific sub-directories:
```
      . $PACDIR/assign/"db_name"
      . $PACDIR/bases/"db_name"
      . $PACDIR/input/"db_name"
      . $PACDIR/journal/"db_name"
      . $PACDIR/save/"db_name"
      . $PACDIR/tmp/"db_name"
```

Input of VisualAge Pacbase access key

Before running the PARM batch procedure, PACINST.Vnn requires the input of
VisualAge Pacbase access key.

To facilitate key input, the installation procedure displays a map to help you
visually control the length of the key.
The length of the key is 60 characters.

It sends the following messages:

Type your access key according to this map:

```
          1         2         3         4         5         6
123456789012345678901234567890123456789012345678901234567890
<----------------   access key   ------------------------>
```

                                              DELIX001251A

Execution of the batch initialization procedures

The following batch procedures initialize the test database:

  . LDAP for the AP file
  . LDHE for the HE file
  . LDZS for the ZS file
  . LDGS for the GS file
  . HELP for the HELP file
  . PARM for the AE file (loading from its sequential image AEO, and from
    MBPARM transactions)
  . REST for the test database loading
  . REAG for the AG file.

NOTE: The Microfocus COBOL run-time is necessary in order to run the batch
procedures, as well to start the batch and on-line servers.

Update of the journal_pacinstall file
The journal_pacinstall file contains certain information resulting from the use of
PACINST.Vnn. After an installation, it reads the following:

  . Installation date,
  . Release number
  . Version number
  . Name of the character set used
  . Test database creation date

DELIX001251A

4.3. COMPLEMENT: INITIALIZING THE PEI FUNCTION

<u>COMPLEMENT: PEI FUNCTION INITIALIZATION</u>

Initialization of the PEI Function is necessary only at sites for which this Function has been purchased.

This initialization is performed in two steps via the following batch procedures:

  . INPE: File Initialization,
  . RSPE: File Restoration.

These procedures require some transactions files which are found in the $PACDIR/input/"db_name" directory, with the TEST user code.

DELIX001251A

4.4. COMPLEMENT: INITIALIZING THE VISUAL DICTIONARY

COMPLEMENT: VISUALAGE DICTIONARY INITIALIZATION   ON

The initialization of the VISUALAGE Dictionary requires the loading of
VISUALAGE objects in the form of user entities in the VA Pac Dictionary.

Transactions files MBVINS and MVVINS, expected by this procedure are
generated in the $PACDIR/method directory and must be copied in the
$PACDIR/input/"database name" directory. MBVINS file contains an "*" line
with TEST as user code, VINS procedure can therefore be run as it is after VA
Pac installation.

For further details to implement this procedure, refer to the BATCH
PROCEDURES - Administrator's Guide, chapter INSTALLATION OF THE
VISUALAGE DICTIONARY (VINS).

4.5. COMPLEMENT: INSTALLING THE PAF ENVIRONMENT

<u>COMPLEMENT: PAF ENVIRONMENT INSTALLATION</u>

The PAF Function processes SQL requests to access VA Pac Databases. PAF transforms these requests as they are written in user programs by generating data and sub-program calls in the generated COBOL source code.

The Pre-processor prepares the generated programs for this transformation.

The Pre-processor is one program, PAFP10.gnt, which is installed in the batch programs directory, '$PACDIR/batch/gnt'.

The PPAF procedure processes programs generated using PAF (see the subchapter dedicated to the PPAF procedure in chapter "GPRT: Generation and / or Printing" in the BATCH PROCEDURES: USER'S GUIDE.

The workfile required by the PAF operations is described in the PAF Function section of Sub-chapter "System files", in Chapter "VisualAge Pacbase Components".

<u>THE EXTRACTION SUB-PROGRAMS</u>

For user programs generated with TYPE OF COBOL TO GENERATE '3' variant (for PC/Microfocus COBOL), the same extraction sub-programs are used for batch and on-line programs. These 'extractors' are compiled and linked (.gnt files) and shipped in a COBOL-source form (.cbl files).

The extraction sub-programs are the following ones:

  . PBBTST for standard extractions and PBBTWS for keyword extractions are
    called by the PAF user programs.

  . PBBT98 is called by the PBBTST and PBBTWS extractors to access the VA
    Pacbase Database and the PAF workfile.

The extractors' compiled files are shipped in the server batch programs ($PACDIR/batch/gnt) directory.

The extractors' COBOL source files are shipped in the $PACDIR/pafcgi directory. The sub-programs must be compiled on site if the MicroFocus compiler's version used on site is different from that used for the compilation of VA Pac.

The MicroFocus compiler versions used for this version of VA Pac on UNIX are:

. 3.0 or 3.1 for HP9000 platform, depending on the installation,

. 3.1 for TANDEM, SUN, OSF1 and NCR platforms,

. 3.2.50 for DPX/20, and RS6000 platforms.

THE PAF DICTIONARY

Occurrences of Data Structures, Segments, and Data Elements used with the PAF Function are supplied as batch update transactions in the MBUPDT.PAF file, copied in the '$PACDIR/method' directory at the time of installation.

The introduction of this "PAF dictionary" into the database via the UPDT batch update procedure is the responsibility of the VA Pac Database Administrator who must:

. Check that these occurrences do not conflict with occurrences existing in the VA Pac network (identical codes),

. Copy the MBUPDT.PAF file from $PACDIR/method/MBUPDT.PAF to the $PACDIR/input/"db_name" directory, and remove the PAF extension.

. in the $PACDIR/input/"db_name" directory, modify the "*" line of the MBUPDT file.

To avoid compatibility problems between the site's dictionary and the entities supplied for the PAF function, it is advised to create a network independent of the libraries used for the writing of the PAF utilities of the site.

DELIX001251A

COMPILATION AND EXECUTION OF THE PAF PROGRAMS

The $PACDIR/pafcgi directory contains a sample script for the compilation and
another one for the execution of PAF programs. They are called "pafcomp" and
"pafrun". It is advised to copy the entire directory onto another, working
directory, such as "pafuser", using the following command:

```
cp -r $PACDIR/pafcgi /pafuser
```

and to copy the PAF generated programs in this working directory.

Then, from this directory, edit and run the compilation and execution script.

The PAF system sub-programs can be compiled using the compilation script.

CAUTION: Do not modify the generated PAF programs' sources once you have
used the pre-processor, because the editor deletes the low-values generated by
the pre-processor.

EXECUTION OF A PAF EXTRACTOR

Before executing the PAF extractor, the following file assignments should be
done:

  . Permanent input files:

      - VA Pac data file : PAC7AR
      - VA Pac index file : PAC7AN
      - Error message file: PAC7AE

  . PAF workfile   : SYSPAF

  . User files (when necessary).

DELIX001251A

4.6. COMPLEMENT: INSTALLING THE PAF+ EXTENSION

<u>COMPLEMENT: PAF+ EXTENSION INSTALLATION</u>

PAF+ requires the following components:

. A user entity: .PPTEX

. Skeleton files: SP and SF

. A user file: GS, which contains the Extraction Master Paths (PTEx).

The user can define an Extraction Master Path by creating an occurrence of the above User Entity.

The MBUPDT.PTE file, standardly installed in the $PACDIR/method directory, contains the batch transactions necessary for the definition of the user entity. This file must be used in input of the UPDT database update batch procedure.

Copy $PACDIR/method/MBUPDT.PTE into the MBUPDT file located in the $PACDIR/input/"db_name" directory. After choosing the network library that will contain the entity, change the "*" line at the heading of the transactions of the MBUPDT file and run the UPDT procedure.

The SP skeleton allows the interpretation of the User Entity occurrence in terms of PAF queries.

The SF skeleton allows the generation of a COBOL program which, once translated by the PAFP10 program (XPAF procedure) then compiled and linked, will make up a User Extractor or a Macro Command called during the Volume printing (PTEd).

The GS file contains the User Extraction Master Paths.

COMPILATION AND EXECUTION OF THE PAF+ PROGRAMS

The compilation procedure is the same as for the PAF programs (see Sub-chapter "Complement: PAF Environment Installation").

For the execution procedure, use the sample execution script of a PAF+ program ("pafprun"), provided in the $PAFDIR/pafcgi directory.

EXECUTION OF A PAF+ EXTRACTOR

The following files must be assigned before running the User Extractor (E-type entity $7E):

```
. Permanent input files:

  - VA Pac data file:          PAC7AR
  - VA Pac index file:         PAC7AN
  - Error message file:        PAC7AE

. Input transaction file:      PAC7MB

. PAF work file:               SYSPAF

. Output files:

  - Extraction result (unformatted): PAC7SO
  - Extraction result:         PAC7SQ

. Output:
  - Report:                    PAC7DB
```

NOTE: The user input is described in the PAF Reference manual, Chapter "EXECUTION OF A PTEx E-TYPE USER EXTRACTOR".

4.7. COMPLEMENT: INSTALLING THE WORKSTATION

<u>COMPLEMENT: WORKSTATION INSTALLATION</u>

For the WorkStation to operate properly, two types of integrations must be carried out in the VA Pac Database and system:

. In the VA Pac database: integration of the methodology-specific User Entities and their occurrences

. In the VA Pac system: integration of the methodology choices

<u>Integration of methodology-related entities in the database</u>

These entities are installed in the methodology file directory ($PACDIR/method) in the following files:

- MBUPDT.MER for the Merise methodology,

- MBUPDT.ADM for the SSADM methodology,

- MBUPDT.YSM for the YSM methodology,

- MBUPDT.OMT for the OMT methodology,

- MBUPDT.IFW and MBUPDT.IFP for the IFW methodology.

These are batch transactions to be used in the batch PROCUPDT update procedure to update the VA Pac Database.

The PROCUPDT procedure will look for these transactions in the MBUPDT file, in the $PACDIR/input/"db_name" directory.

Depending on the methodology being used, copy the relevant file from the METHOD directory to the $PACDIR/input/"db_name" directory, under the name MBUPDT. Then, after choosing the library where these entities will be stored, edit the appropriate MBUPDT file by adding the '*' line at the beginning of the transactions, and execute the UPDT procedure.

NOTE: Although it is technically possible, you should not have more than one method in one library sub-network.

WARNING: If you use the WorkStation with an earlier release of VA Pac such as 8.0.1, you must perform this update after retrieving your database.

Integration of the methodology choices in the system

These choices are provided in the methodology file directory
($PACDIR/method) in the form of the following files:

  - MBPARM.MER for the Merise methodology,

  - MBPARM.YSM for the YSM methodology,

  - MBPARM.ADM for the SSADM methodology,

  - MBPARM.OMT for the OMT methodology,

  - MBPARM.IFW for the IFW methodology.

These are batch transactions to be used by the batch PROCPARM user
parameter update procedure, to update the AE file.

This integration should normally be done when installing the first VA Pac
server, but you may perform it at any time. You can also install choices related
to several methodologies by concatenating several of the MBPARM files.

The PROCPARM procedure will look for input transactions in an MBPARM
file, in the $PACDIR/input/"db_name" directory. Depending on the
methodology being used, copy the relevant file from the METHOD directory to
the $PACDIR/input/"db_name" directory, under the name MBUPDT. Then, edit
the appropriate MBPARM file by adding the '*' line at the beginning of the
transactions, and execute the PARM procedure.

4.8. COMPLEMENT: INSTALLING PACBENCH QUALITY CONTROL

COMPLEMENT: PACBENCH QUALITY CONTROL INSTALLATION

The PERSONALIZATION option of the PACBENCH QUALITY CONTROL function requires the presence of a User Entity in the VA Pac database.

This entity is delivered at installation in the '$PACDIR/method' directory in the file MBUPDT.PQC.

This file contains the batch transactions that will be put into the database by the PROCUPDT batch update procedure.

The PROCUPDT procedure uses as input the transactions of the MBUPDT file. It is necessary to duplicate the '$PACDIR/method/MBUPDT.PQC' file in MBUPDT in the '$PACDIR/input/"db_name"' directory.

After choosing the library in which this entity will be located, modify the MBUPDT file by filling in the '*' line, then submit the UPDT procedure.

4.9. COMPLEMENT: THE OLSD MULTI-SCREEN VARIANT

<u>COMPLEMENT: MULTI-SCREEN DIALOG FUNCTION</u>

This installation complement is to be performed only in cases where the multi-screen dialog option is used.

It applies to all the source files (COBOL or C) of the ZAR980 screen message management sub-program, for all dedicated generators for which this variant exists.

<u>MICROFOCUS COBOL "ZAR980" FOR DOS OR OS/2</u>

The "ZAR980" files for the Microfocus COBOL variant on DOS, OS/2 or Windows/NT are found in the $PACDIR/zardlg directory. These files are the following:

```
    ZARMF1.cbl  : Microfocus
    SCRCODIF.cbl: Microfocus (sub-program)
    SCRIOPAR.cbl: Microfocus (sub-program)
    SCRPEINT.cbl: Microfocus (sub-program)
    SCRSAISI.cbl: Microfocus (sub-program)
    ZARMFO.cbl  : VisualAge Pacbase only
    SCRMFO.cbl  : VisualAge Pacbase only
    ZAR980.fra  : readme in French
    ZAR980.ang  : readme in English
```

COBOL "ZAR980" FOR THE OTHER VARIANTS

These files are also found in the $PACDIR/zardlg directory:

```
ZARCVS.cbl:  MVS/CICS VS and VSE/CICS Cobol II
ZARCII.cbl:  MVS/CICS COBOL II
ZARG7.cbl :  GCOS7/TDS
ZARG8.cbl :  GCOS8/DMIV and TP8
ZARICL.cbl:  ICL
ZARBUR.cbl:  Unisys A
ZARDEC.cbl:  DEC (characters)
ZARDE2.cbl:  DEC (fields)
ZARTRM.cbl:  DEC (assembler)
SCRDEC.cbl:  DEC (sub-program)
HPFORM.cbl:  HP3000 screen message processing
PACVMSS.cbl: Digital VMS
VMSUTIL.cbl: Digital VMS
WEBCVS.cbl:  MVS/CICS (WEB)
```

"ZAR980" C SOURCES FOR UNIX MICROFOCUS:

The OLSD complement is made up of two executable utilities in a UNIX environment and in the framework of applications generated by the OLSD function in Microfocus COBOL.

One of them allows the communication of an OLSD application revamped by PAW, and the other handles the screen and the keyboard of a UNIX terminal.

The "ZAR980" C souces for the UNIX cross-generator are found in the $PACDIR/zardlg/mF-unix directory.

The "PAW" part is found in the ZARPAW sub-directory:

```
zarpaw.doc  : operating documentation
zarpaw.c    : source in C language
pactypes.h  : header for zarpaw
scrstruc.h  :    "      "     "
zarpaw.h    :    "      "     "
comp_zarpaw : compilation script
```

The "Screen management" part is found in the ZARTERM sub-directory:
```
zarterm.doc  : operating documentation
zarterm.c    : source in C language
pacparam.h   : header for zar980
pactypes.h   :     "      "      "
scrstruc.h   :     "      "      "
zarterm.h    :     "      "      "
comp_zarterm : normal-operating mode compilation
               script
touche       : keyboard tests (executable file)
touche.c     :     "      "    (C source)
video        : screen tests   (executable file)
video.c      :     "    "     (C source)
```

The ZARPAWTERM sub-directory contains the elements which makes it
possible for a dialog to use both "PAW" and the "screen manager".
```
zarpawterm.doc : documentation
link_zar980    : link script for "zar980" elements
```

The $PACDIR/zardlg/mF-unix directory also contains the test desk of a Dialog:
```
MBUPDT.ZAR    : Transactions for UPDT
comp_cobol    : COBOL compilation script
testma        : Dialog start-up script
fparam        : zar980 parameter file
LE et LE.IDX  : Error messages and documentation.
```

(NB: the use of the test deck is described in the zarterm.doc file).

DELIX001251A

4.10. CREATION AND DELETION OF ON-LINE AND BATCH SERVERS

CREATION AND DELETION OF ON-LINE AND BATCH SERVERS

The "pacadmin" procedure offers a menu for the creation and deletion of on-line and batch servers.

Creation of an on-line server

To create an on-line server, you must update the UNIX system files first. Perform this update BEFORE executing the pacadmin procedure.

Update of the system files:

 1- Even if you do not actually use it, you must declare the socket interface to the system. For this, you need to assign a communication port number in the UNIX "/etc/services" file.

 2- Choose a communication port number for each on-line server, among the ports available.

> Some port numbers are reserved for standard Internet network applications or for future applications. Others are dynamically allocated. The list of reserved port numbers is found in the "/etc/services" file.

Implementation example:

Let 1500 be the port number chosen for an on-line server.

 - The 1500/tcp port number must not be declared in the "/etc/services" file.

 - It must not be currently used (i.e. dynamically allocated). To check this, type the following UNIX command:

```
netstat -a \ grep 1500
```

 - If both conditions are met, the UNIX administrator (root) must update the "/etc/services" file, by typing the following UNIX command:

```
paclanx 1500 tcp
```

Make a note of the chosen port number since it will be required by the pacadmin procedure when creating the on-line server.

                                                    DELIX001251A

Execution of the pacadmin procedure

Go to the $PACDIR/install directory by typing the following command:
```
cd $PACDIR/install
```

Then, type one of the following commands:
```
sh pacinstall -e  for an English-language installation

sh pacinstall -f  for an French-language installation
```

followed by a carriage-return or an Enter.

Description of steps

The server creation procedure includes the following steps:

. Display of the menu (see below)

. Typing the command

. Typing the Database name (if creating)

. Specifying the number of work stations (if creating an on-line server)

. Specifying the communication port number (if creating an on-line server)

. Updating the journal_pacinstall file

Menu display:

The server creation or deletion menu looks like this:

```
************************************************************

                      VA Pac

************************************************************

     .
 cresertp       :  creation of an on-line server
 creserbatch    :  creation of a batch server
 delsertp       :  deletion of an on-line server
 delserbatch    :  deletion of a batch server
     .
     .

************************************************************

 Type the command name or 'x' to exit pacadmin.
```

To execute these commands, follow the instructions given by the pacadmin
procedure itself.

Update of the journal_pacinstall file

The following information is added to the journal_pacinstall file:

  - Server name

  - Creation/deletion date

4.11. CREATION OF NETWORK RESOURCES

<u>CREATION OF USERS ON THE LOCAL AREA NETWORK</u>

<u>COMMUNICATION THROUGH SHARED FILES</u>

Files used for communication between the work stations and the VA Pac
servers, as well as GPRT output files, should always be accessible for update by
workstations and VisualAge Pacbase servers.

These files must be physically installed on the UNIX system where VA Pacbase
is installed, and must be declared as shareable resources on the LAN.

It is recommended to define two virtual disk drives on workstations:

   . One in the $PACDIR/commun directory (used to access and update the
     communication files by the on-line and batch servers and the workstations),

   . One in the $PACDIR/users directory (used by the BATCH servers to write
     the results of generation-print requests and by the workstations to read these
     files).

The installation of these virtual disk drives depends on the network software in
use. For more information refer to the product's documentation on the
distribution of the resources (UNIX tree) on the server and how to use these
resources on the DOS and OS/2 workstations.

Example (LAN MANAGER-type network software)

1- Under username 'pacuser', access the $PACDIR/users directory on the VA Pac server, whose name is 'SERVER'.

2- Create a resource for this directory on the UNIX machine (login = root or login of the network administrator):

$ net share PACUSER=$PACDIR/users/pacuser

3- Access this resource from a DOS or OS/2 work station, and create a new logical disk unit, "I:" for example:

> NET USE I:¥SERVER¥PACUSER

4- You can then directly access the generation-print output from a DOS or OS/2 workstation under the 'I:¥pacuser' directory.

5- You must also share the database communication file directory. Enter the following command on the server:

net share COMMUN=$PACDIR/commun

and the following command on the workstation(s):

net use J:¥SERVER¥COMMUN

DELIX001251A

COMMUNICATION VIA THE SOCKET INTERFACE

The socket communication interface is based on the TCP/IP network protocol. Besides the installation itself, the implementation of TCP/IP requires some essential files to be configured.

Each machine's "/etc/hosts" file must contain the IP addresses of the machines with which communication is established.

The 'ping' command allows you to check whether the TCP/IP network is in operating order. If it is, the PC workstations and the VA Pac on-line server are enabled to communicate via the socket interface.

For users to be able to access the generation-print files, you must define some specific NFS resources or use FTP.

NFS and FTP are standard products under TCP/IP in the UNIX world, and are generally available on the TCP/IP products for PC.

If you use NFS, you should declare the $PACDIR/users directory as a resource which can be 'exported' by the NFS server (UNIX machine), and 'mount' this resource as a read-write network resource on the client NSF work station (Windows PC).

For FTP, you should transfer the generated files from the UNIX machine to the workstation via the FTP commands. These commands are integrated into the PACAGP procedure.
Refer to the TP/IP documentation for explanations on the operating mode.

4.12. INSTALLATION OF USER WORKSTATIONS

INSTALLATION OF A WINDOWS "DUMB" TERMINAL (PACLINK)

Once the VA Pac servers are installed, you may start installing the "dumb terminal" Windows work stations.

1 COPYING THE PACLINK FILES

All the PACLINK specific files are found in the $PACDIR/paclink directory. (These files are described in Sub-chapter "Description of directories".)

They must be copied on the MS-DOS workstation's hard disk, via the LAN, in an installation directory chosen by the user.

2 UPDATING THE PARAMETER FILES

This update depends on the communication mode used by the PC work stations and the UNIX server, i.e.:

- communication via shared files
- or communication via the socket interface

2.1 Communication via shared files

Two parameter files should be modified according to the installation characteristics: GSPACXxx.PRM (depending on the

- GSPACXxx.PRM (depending on the operating system, xx=20, HP, RS, IR, SU or OF) for the GSPACLAN.EXE communication manager,

- PACLINK.PRM for the PACLINK.EXE workstation monitor.

GSPACXxx.PRM

Replace the examples with the exact location features (disk drive, directory, name of file) for the following files:

. Communication file: SM and SD lines

DELIX001251A

. File used when exiting VA Pac while saving the conversation: SA line

. Write file for the Trace function (used when the function is activated on GSPACLAN.EXE): D0 line

```
Example:    D0 0 1 0 1 0 0 0 C:¥PACBASE¥GSPACLAN.DEB
            SM J:¥PACBASE¥paclanx¥commun¥sertp1.cm
            SD J:¥PACBASE¥paclanx¥commun¥sertp1.cd
            SA C:¥PACBASE¥SAVE.TXT
```

The other lines are not to be modified.

PACLINK.PRM

Specify the disk drive and directory where GSPACLAN.EXE (G line) and
GSPACXxx.PRM (E line) are installed.
```
Example:    G C:¥PACBASE¥GSPACLAN.EXE
            E C:¥PACBASE¥GSPACXxx.PRM
```

2.2 Communication via the socket interface

Two parameter files should be modified according to the installation
characteristics: GSTCPXxx.PRM (depending on the operating system, xx=20,
HP, RS, IR, SU or OF) for the GSTCPIP.EXE communication manager, and
PACLINK.PRM for the PACLINK.EXE workstation parameter settings.

GSTCPXxx.PRM

Specify the following elements :

. The name (UNIX command 'hostname') of the UNIX machine on which VA
  Pac is installed (P0 line).

. The socket number assigned to the VA Pac on-line server (P2 line).

. The file used when exiting VA Pac while saving the conversation: SA line

. Write file for the Trace function (used when the function is activated on
  GSPACBASE.EXE): D0 line

DELIX001251A

Example:

On a UNIX system with the BRUTUS network name, and with the on-line
server "listening" on socket #1500, the conversation backup file
C:¥PACBASE¥SAVE.TXT and the trace file C:¥VA Pac¥GSPACLAN.DEB,
the modified lines are:

```
P0 BRUTUS
P2 1500
SA C:¥PACBASE¥SAVE.TXT
D0 0 1 0 1 0 0 0 C:¥PACBASE¥GSPACLAN.DEB
```

The other lines are not to be updated.

PACLINK.PRM

Specify the disk unit and the directory under which GSTCPIP.EXE (G line), and
GSTCPxx.PRM (E line) were installed.

```
Example:    G C:¥PACBASE¥GSTCPIP.EXE
            E C:¥PACBASE¥GSTCPXxx.PRM
```

3 CREATION OF A WINDOWS ICON

Create a program: 'File' menu, 'New...' command, in a group of your choice. The
'command line' must read the complete access path to the PACLINK.EXE file,
separated by a blank from the PACLINK.PRM file access path.

Example: C:¥PACBASE¥PACLINK.EXE C:¥PACBASE¥PACLINK.PRM

4.13. INSTALLATION OF UNIX DUMB WORKSTATIONS

INSTALLATION OF A UNIX 'DUMB' STATION (PACWST -
PACWSTSOCK)

Two executable files, installad in $PACDIR/bin, allow you to start up the UNIX
'dumb' workstation:

 - "pacwst", which communicates with the on-line server via communication
   files,

 - "pacwstsock", which communicates with the on-line server via the socket
   interface.

CONDITION FOR USING A UNIX 'DUMB' WORK STATION

To use a 'dumb' workstation, you must:

 - Create a user account an a specific UNIX login on the on-line/batch server,

 - Check that the user ID bit of the "pacwst" and "pacwstsock" executable files
   is activated by the commands:

```
    cd $PACDIR/bin
  ls -l pacwst pacwstsock
```

   The system displays two lines, whose first four characters are "-rws".
   If such is not the case, the VA Pac administrator must input the
   following command, under his/her login:
```
   chmod u+s pacwst pacwstsock
```

 - Under the user's login, modify the shell configuration files (.profile, .kshrc or
   .login according to the case) to create or modify the PACDIR and PATH
   environment variables:

```
 PACDIR=<access path to the VA Pac directory>
 export PACDIR

 PATH=$PACDIR/bin:$PATH
 export PATH
```

   After this operation restart the configuration initialization by typing ".
   .profile", and, using the UNIX command "set", check that the
   modifications were taken into account in the configuration files.

   If the environment variables are not correctly initialized, log out and
   then log in again, this time on the user account.

4.14. COMPLEMENT: VA PAC / TEAMCONNECTION BRIDGE

ALLOCATION OF SESSION FILE

This loading step is made of the '$PRFJ.I40' job, which includes the following steps:

STEP1: IDCAMS: This step executes a DELETE/DEFINE of the session file (TS).

STEP2: IDCAMS: Initialization of the session file (TS).

This process creates in the session file a special record without which the file would be impossible to use.

INSTALLATION OF THE TEAMCONNECTION DICTIONARY

This loading step is made of the '$PRFJ.I41' job, which includes a call to the VINS procedure.

4.15. DESCRIPTION OF DIRECTORIES

DESCRIPTION OF DIRECTORIES

VisualAge Pacbase installation creates a tree structure under the "$PACDIR"
root.

```
"$PACDIR"
    !                   +---- batch_server
    !                   !
    !                   +---- "Base1"
    !                   !
    +---assign   ---+---- "Base2"
    !                   !
    !                   +----  ...
    !                   !
    !                   +---- "monitors"
    !                   !
    !                   +---- "tp_server"
    !
    !
    !                   +---- "Base1"
    !                   !
    +---bases    ---+---- "Base2"
    !                   !
    !                   +----  ...
    !
    !
    !                   +----  gnt
    !                   !
    +---batch    ---+----  int
    !                   !
    !                   +----  proc
    +---bin
    !
    !
    +---commun
    !
    !                   +---- "Base1"
    !                   !
    +---input    ---+---- "Base2"
    !                   !
    !                   +----  ...
    !
    +---install
    !
```

```
        !                  +---- "Base1"
        !            !
        +---journal  ---+---- "Base2"
        !            !
        !                  +----  ...
        !
        +---log
        !
        !
        +---method
        !
        !
        +---paclink
        !
        !
        +---pafcgi
        !
        !                  +---- "Base1"
        !            !
        +---save     ---+---- "Base2"
        !            !
        !                  +----  ...
        !
        !
        !                  +---- "Base1"
        !            !
        +---tmp      ---+---- "Base2"
        !            !
        !                  +----  ...
        !
        !
        !                  +----  gnt
        !            !
        +---tp       ---+----  int
        !            !
        !                  +----  save
        !
        !
        !                  +---- "User1"
        !            !
        +---users    ---+---- "User2"
        !            !
        !                  +----  ...
        !
        !
        !---util
        !
        !
        !---zardlg
```

SYSTEM DIRECTORIES

The $PACDIR/bin directory

The 'bin' directory contains all C executable files: on-line monitors (pactp),
batch monitors (pacbatch), PARM-PEI (pacparm), the UNIX workstation
(pacwst), and the conversion utilities.

DELIX001251A

The $PACDIR/tp directory

The 'tp' directory contains the group of COBOL executables ('int' and 'gnt' directories) as well as the transaction backup files ('save' directory), which allow for the operation of the on-line server(s) and of the PARM-PEI monitor.

```
tp-----+--- gnt   - on-line programs (compiled code)
       !
       +--- int   - on-line programs (interpreted code)
       !
       +--- save  - "server1".ts (transaction back-up)
       !           - "server2".ts (transaction back-up)
```

The $PACDIR/batch directory

The batch directory contains the COBOL executable programs ('int' and 'gnt' directories) and the shell operation commands of a VisualAge Pacbase database ('proc' directory).

```
batch -+--- gnt   - Batch programs (compiled code)
       !
       !
       !--- int   - Batch programs (interpreted code)
       !
       !
       +--- proc - batch procedures
```

All of the BATCH procedures are described in the BATCH PROCEDURES Administrator's Guide and User's Guide manuals.

The $PACDIR/install directory

The 'install' directory contains the pacadmin procedure, which is used for the creation of new databases and the creation or deletion of servers, the files used for initializing a new database or a new server, and the journal_pacinstall file logging all the installation operations.

<u>SPECIFICATION DICTIONARY DIRECTORIES</u>

The $PACDIR/method directory

This directory contains additional transactions files:

  - Methodology files for the WorkStation (MBUPDT.MER, .YSM or .ADM);

  - Files used by the PQC function (MBUPDT.PQC, MBRULE.PQC),

  - File used with the PAF function (MBUPDT.PAF),

  - Files used with the PAF+ extension (MBUPDT.PTE),

  - File used for the loading of the generated error messages (MBUPDT.UTI).

When they are used, these files will be copied in the
'$PACDIR/input/"db_name"' directory.

The $PACDIR/assign/"db_name" directory

The 'assign' directory contains a subdirectory for each installed database. This
subdirectory includes the command files containing the assignment of the files
standardly installed in the $PACDIR/bases and $PACDIR/bases/"db_name"
directories. These command files are called PAC7AE.ini, PAC7AN.ini, ... for
the database files and SQUEL.ini for the skeletons.
These files are created via the PACINST.Vnn installation procedure or via the
"pacadmin" administration procedure.

The 'assign' directory contains three subdirectories:

  - batch_server,
  - tp_server,
  - monitors.

The batch_server and tp_server directories contain the server(s) initialization files.   The monitor initialization files are found in the 'monitors' directory.

The $PACDIR/bases directory

The 'bases' directory contains the files that can be used by the various installed databases: the generation skeletons (SC, SG, SR, SF, and SP) the AE and AP files and possibly the DC file (DSMS function).

The $PACDIR/bases/"db_name" directory

The 'bases' directory contains subdirectories for each installed database. In these subdirectories are the indexed and relative files that make up the database (AN, AR, AG, AB, AC, ...) except the journal file (AJ).

The $PACDIR/journal/"db_name" directory

The 'journal' directory contains a subdirectory for each installed database. In each of these subdirectories is the AJ journal file of the VisualAge Pacbase database.

The $PACDIR/save directory

The 'save' directory contains the AEO and PE files, sequential images of AE AND AP files stored in the ($PACDIR/bases) directory.

The $PACDIR/save/"db_name" directory

The 'save' directory contains a subdirectory per installed database. Each subdirectory contains all sequential backups of the database (PC, PJ, PG, PP, ...).

Also in this directory are the command files that ensure a shift of the two sequential backup versions of the database (PCBACKUP.ini, PEBACKUP.ini, ...).

The $PACDIR/input/"db_name" directory

The 'input' directory contains a subdirectory per installed database. Each subdirectory contains all output transaction files of the batch procedures MBxxxx (MBREST, MBPARM, MBEXTR, ...) as well as the transaction files created by the extraction utilities coded MVXxxxx (MVEXTR, MVEXLI, ...).

The $PACDIR/log directory

The 'log' directory contains one "trace" file per server if the Trace function has been activated on the on-line monitor.

The $PACDIR/pafcgi directory

The 'pafcgi' directory contains compilation and execution sample scripts for the PAF and PAF+ programs.

The $PACDIR/tmp/"db_name" directory

The tmp directory contains one subdirectory per installed database. It contains the temporary files, as well as the batch procedures' execution reports.

SHARED DIRECTORIES

These directories are unique for the VisualAge Pacbase installation and are created by the pacadmin procedure.

The $PACDIR/commun directory

The 'commun' directory contains communication files: .lb and .bd for batch; .cd and .cm for on-line.

The .lb file memorizes the contents of the batch requests, the .bd file shows the status of these requests.

Each on-line server uses its own pair of .cd and .cm files to communicate with its n work stations.

.cd contains n messages, each one containing:

  . the workstation number,
  . the VisualAge Pacbase screen to display.

.cm is the status of the network and contains, for each workstation, the following information:

  . the workstation number,
  . its status: connected, disconnected, conversation exit-saving,
  . action requested: connection request, transmit, other requests,
  . monitor response.

```
        Example:     commun   --- test.lb
                                   test.bd
                                   sertp1.cd
                                   sertp1.cm
```

The name of the on-line communication files (.cm and .cd) have the prefix of the name of the on-line server (sertp1 in the above example).

The names of the batch communication files (.lb and .bd) have the prefix of the database to which the server is connected (test in the above example).

The $PACDIR/users directory

The 'users' directory groups the results of generation-print requests submitted
on-line (GP screen). This information is distributed among the various (n) sub-
directories, each corresponding to a different user.

```
        example:   users  +---  JOHN  ---  nnnnn.id
                          !                 nnnnn.ge
                          !                 etc.
                          !---  PAUL  ---  ppppp.id
                                            ppppp.ge
                                            etc.
```

where nnnnn and ppppp are the job numbers (see batch monitor screen) and "id"
and "ge" are examples of files created by the GPRT procedure (see the BATCH
PROCEDURES : User's Guide)

THE "DUMB" WINDOWS WORKSTATIONS DIRECTORY

The $PACDIR/paclink installation directory contains the following files:

. PACLINK.EXE: user workstation monitor

. GSPACLAN.EXE: communications manager (shared files)

. GSTCPIP.EXE: communications manager (Windows socket interface)

. PACLINK.PRM: parameter file for the workstation monitor.

. GSPACXxx.PRM: parameter file of the communications manager for a
communication via shared files

```
            xx = 20 for DPX/20   (AIX)
            xx = HP for HP9000   (HP-UX)
            xx = RS for RS6000   (AIX)
            xx = OF for DEC4000  (OSF1)
            xx = SU for SUN      (SunOs)
            xx = IR for TANDEM   (IRIX)
```

. GSTCPXxx.PRM: parameter file of the communications manager for a
communication via the "Windows Socket" interface

```
            xx = 20 for DPX/20   (AIX)
            xx = HP for HP9000   (HP-UX)
            xx = RS for RS6000   (AIX)
            xx = OF for DEC4000  (OSF1)
            xx = SU for SUN      (SunOs)
            xx = IR for TANDEM   (IRIX)
```

. GSHPUNIX.TAB (for HP9000), or GSAS850.TAB (for RS6000), or
GSANSI.TAB (all computers except HP9000 and RS6000): character
transcoding table

. CGIPAC.FON: character font used when the screen trace is activated in
GSPACLAN.EXE.

DELIX001251A

4.16. INSTALLATION TESTS

<u>VisualAge Pacbase INSTALLATION TESTS</u>

These tests comprise three main parts:

1. VA Pac database use tests,

2. VA Pac database management tests,

3. Extraction utilities tests.

For these tests, the user might go through the BATCH PROCEDURES Administrator's Guide for a complete description on the start-up of the different servers and the submission of the batch procedures.

<u>1. VisualAge Pacbase DATABASE USE TESTS</u>

These tests consist of:

. PARM transaction on-line tests,
. on-line tests from a workstation,
. batch update tests,
. program generation-print tests.

<u>PARM transaction on-line use tests</u>

Start the PARM transaction with the command:
```
pacparm "db_name"
```

Enter the transaction with user name 'TEST' (no password) defined during installation, access various screens and create new users.

<u>On-line tests</u>

Start the on-line server with the command:
```
pactp start on_line_server_name
```

Using a predefined user name, connect a workstation to this server.
Move through the branched screens and perform some updates.

<u>Batch update tests</u>

Shut down the on-line server.
In the $PACDIR/input/"db_name" directory, create update transactions
in the MBUPDT file (see the batch forms for the format of these
transactions).

To retrieve batch update transactions, it is also possible to run an
extraction utility (see paragraph 3), to copy the resulting output
transaction file under the name MBUPDT, and, if necessary, to modify
this file within an editor.

Run the PROCUPDT procedure twice: first with the on-line server
turned off, then with it on.

<u>Generation-print tests</u>

Start the on-line server with the command:
```
pactp start on_line_server_name
```

Start the batch server by the command:
```
pacbatch start batch_server_name
```

Connect a workstation to the on-line server.
Access the generation-print screen with the GP choice, and ask for the
generation of a program or screen.

DELIX001251A

2. VisualAge Pacbase DATABASE MANAGEMENT TESTS

The purpose of these tests is to run the VA Pac database management
procedures. Before running each one of these procedure, go through the
corresponding chapter in BATCH PROCEDURES manuals.

These procedures consist of the following steps which must be performed in this
order:

  . Archive of the journal created during the use tests: ARCH procedure, PJ
   output file.

  . Direct backup of the database: SAVE procedure, PC.NEW output file; call of
   PCBACKUP.ini, at the end of the procedure, renames the existing PC to PC-1,
   the PC.NEW to PC, then destroys the PC.NEW file.

  . Generation-print command backup: SVAG procedure, PG output file after
   the PGBACKUP.ini call.

  . Library manager: add/delete of libraries in the database: MLIB procedure,
   PC.NEW output file, then rotation on PC and PC-1.

  . Reorganization of the sequential backup of the VA Pac database, PC, issued
   from MLIB: REOR procedure, PC.NEW ouput file, and call of
   PCBACKUP.ini for rotation on PC and PC-1.

  . Reorganization of the PG sequential backup of the generation-print command
   file, and restoration of the AG file: REAG procedure.

  . Restoration of the database from the PJ archive and from the PC backup
   issued from the previous REOR: REST procedure.

For all these tests, the on-line servers must be turned off. After restoration of the
database, go through some on-line database use tests once again.

<u>3. EXTRACTION UTILITIES TESTS</u>

The purpose of these tests is to run the VA Pac extraction procedures.

These tests consist of:

  . Extraction of a database library in the form of transactions: PACX procedure.

  . Extraction of entities from a library: PACX procedure.

  . Extraction of selected transactions and/or list of selected transactions from the
   PJ archive journal: PACX procedure.

For all these tests the on-line servers may remain on.

Each one of these procedures can be followed by a UPDT update, allowing a
check on the extracted transactions.

4.17. INSTALLATION OF A NEW PACBASE DATABASE

MANAGEMENT OF SEVERAL VisualAge Pacbase DATABASES

Standard locations of a database's files

In a standard installation, one of the pacadmin procedure's parameters represents the database name (for instance: test).
This parameter will be used for creating the database's specific subdirectories:

    $PACDIR/assign/test
    $PACDIR/bases/test
    $PACDIR/journal/test
    $PACDIR/save/test
    $PACDIR/input/test

The test database's files will be copied in these directories.

The generation skeleton files, the AE error message file, the AP user parameter file, and, if relevant, the DC DSMS-control file are copied directly under $PACDIR/bases because they may be used by several VA Pac databases.

Servers and batch procedures carry out the assignment of the files located under the bases directory and under bases/"db_name", via command files created at installation time under the assign/"db_name" directory. This should make it easier to modify the standard installation.

The standard VA Pac architecture is designed to manage a multi-database environment.

<u>Creation of a new database</u>

Go to the $PACDIR/install directory by typing the following command:

cd $PACDIR/install

Then, type one of the following commands:

  - sh pacadmin -e (for an English-language installation)

  - sh pacadmin -f (for an French-language installation)

followed by a carriage-return or an Enter.

<u>Description of steps</u>

The database creation procedure involves the following steps:

  - Menu display (see below)

  - Typing the crebase command

  - Typing the database name

  - Creating the database's specific directories

  - Updating the journal_pacinstall file with information about the new database.

Menu display

The pacadmin menu looks like this:

```
**************************************************************

                    VisualAge Pacbase

**************************************************************
      .
      .
 crebase        :   creation of a new database
      .
      .
**************************************************************

 Type the command name or 'x' to exit pacadmin.
```

To execute the command, follow the instructions given by the pacadmin
procedure itself.

Updating the journal_pacinstall file

The following information is added to the journal_pacinstall file:

  - Database name

  - Creation date

Database initialization

The pacadmin procedure initializes the new database with the PC file of the test
database.

DELIX001251A

4.18. PARALLEL MANAGEMENT OF DIFFERENT RELEASES

PARALLEL MANAGEMENT OF DIFFERENT RELEASES

Since the installation of a VA Pac version is linked to a specific Unix user account, the previous VA Pac release may be kept for a while before switching to the new version for good.

DELIX001251A

5. RE-INSTALLATION OF A SUB-RELEASE

5.1. STANDARD RE-INSTALLATION

RE-INSTALLING A RELEASE

VA Pac must be re-installed when you receive a new release with corrections of bugs or with new developments.

The new sub-release, identified by a number, comprises:

   . a support containing the software,

   . a list of corrected bugs,

   . information on what to do.

Generally, only the system files (AE0, the transactions files in $PACDIR/method and the generation skeletons) and the programs (batch and on-line) are affected by a new sub-release.

GENERAL COMMENTS:

   . The re-installation procedure does not create directories which are assumed to be identical to those created during the initial installation of the release.

   . It does not copy the batch procedures ($PACDIR/batch/proc directory) so as not to delete possible adaptations to the site, except if the new sub-release cannot run with the old procedures.

   . It does not copy the database assignment files ($PACDIR/assign/"database name" directory) so as not to delete possible adaptations to the site, except if the sub-release cannot run with the old files.

START-UP OF THE RE-INSTALLATION PROCEDURE:

After downloading, in the administrator's connection directory, or setting up the CDROM as for installation (see subchapter VA Pac INSTALLATION), type the command:

"sh PACINST* -f" for re-installing in French,

"sh PACINST* -e" for re-installing in English,

followed by hitting the Enter key.

Description of steps:

The steps of the re-installation procedure are as follows:

  - consistency check on the environment variables (.profile, .kshrc or .login file),

  - display the readme file information,

  - display of the re-installation menu,

  - choice of the character sequence (on RS6000 or DPX20),

  - choice of COBOL run-time used (on HP9000, RS6000 or DPX20),

  - distribution of the files from PACBASE.xxx,

  - update of the journal_pacinstall file.

Consistency check on the environment variables:

See subchapter "INSTALLATION".

Display the readme file information:

See the subchapter "INSTALLATION".

DELIX001251A

<u>Display the re-installation menu:</u>

The re-installation menu is displayed as follows:

```
*************************************************************

              VisualAge Pacbase

*************************************************************

 readme        : display the readme file
 patch         : selective re-installation of patches
 reinst        : release re-installation

*************************************************************
```

Type the command name or 'x' to quit PACINST.Vnn.

Description of commands:

  - The 'readme' command is used to consult the readme file.
  - The 'patch' command is used to selectively re-install the changes of the new
    release:

        the PACINST.Vnn procedure displays on the screen the list of patches
        for the release and for each patch the list of changes concerned. The
        user types the patch or patches, separated by a space.
        For more details on the changes, the user can consult the lists supplied
        with the release.
        This command is not always delivered.
  - The 'reinst' command is used for a complete installation of the new release.

Type the command and follow the instructions supplied by PACINST.Vnn.

<u>Choice of the character sequence (RS6000 or DPX20):</u>

See the subchapter "VA Pac INSTALLATION".

Choice of COBOL run-time used (HP9000, RS6000 or DPX20):

See the sub-chapter "INSTALLATION"

Update the journal_pacinstall file:

Add to the journal_pacinstall file information concerning the re-installation:

  - re-installation date,
  - release number,
  - version number,
  - sequence name of the character used.

The following steps are to be carried out by the administrator.

Execute the PARM procedure:

The error messages and documentation file copied is the AEO sequential file
which is indexed by the PARM procedure (AE file).

NOTE, there are two possible cases, translated by two types of input in the
MBPARM transactions file:

  . No extra user parameter can be added (no new VA Pac users, no new access
    key, ..) and the parameters' backup (PE file in the $PACDIR/save directory) is
    full (no parameter has been added in on-line mode since the last backup was
    made): put the only NRREST command as input of PARM.

  . The extra user parameters must be added or the parameters will not be fully
    backed up: put the the NRCHAR command as input of PARM.

6. RELEASES 8.02 02 TO 1.6 RETRIEVAL

6.1. FOREWORD

<u>RETRIEVAL OF VA Pac 8.02v02, 1.5, 1.6, AND 2.0</u>

<u>FOREWORD</u>

Users of the WorkStation, DSMS and Pactables functions should ensure the operating compatibility of these functions with VisualAge Pacbase, according to the versions/releases in use.

The current VisualAge Pacbase release is compatible with:

  - WorkStation new release

  - DSMS from release 8.0.2 compatible with VA Pac 8.0.2

  - Pactables all releases

<u>NOTE:</u>

Users of Pactables 7.3 or 8.0, need a special program, PTA250, for the GETT Pactables procedure. This program is available on request.

6.2. OPERATIONS TO CARRY OUT
RETRIEVAL OF VA PAC 2.0

6.2.1. OPERATIONS TO CARRY OUT

<u>VISUALAGE PACBASE 2.0 RETRIEVAL OPERATIONS</u>

<u>OPERATIONS TO BE PERFORMED</u>

The installation of the new VA Pac release does not require any particular retrieval of the database files and associated user files, except for the generation-print command file.

Once the new VA Pac release is installed, you must back up the databases and associated user files via the standard procedures of THE RELEASE TO BE RETRIEVED, and restore these databases and files via the standard procedures of THE NEW VA PAC RELEASE. To benefit from the new choices, you should include the reorganization procedure in the retrieval process.

For users of the WorkStation:

The WorkStation's dedicated User Entities must be uploaded into the Database via the UPDT procedure, after the Database has been restored in the new release.

<u>CASE 1: YOUR 2.5 RELEASE IS IN A NEW ENVIRONMENT</u>

<u>1. Reinstallation of user parameters</u>

. Backup of the user parameters, producing a PE file, old release (PARM procedure R 2.0).

. Execution of the new LOAE procedure using as input backup file, the PE file produced by the preceding backup, and the '********' user code and NRREST command as input parameters.

. Execution of the PARM procedure with, as input, the MBPARM file containing the new key supplied with the product.

. For users of the VA Pac WorkStation, execution of the new PARM procedure, including in the input the transactions associated to the methodolgy used on the site. (See Chapter INSTALLATION, Subchapter 'INSTALLATION PROCESS', Section 'Loading of Error Messages, Documentation, and User Parameters'.) Use the NRCHAR command.

RESULT: AE and AP files, containing the old release user parameters as operational under the new VA Pac release, and the methodology parameters.

DELIX001251A

2. Reinstallation of a VA Pac Database

. Backup of the database, producing a PC file (old release).

. Journal file initialization (new ARCH procedure).

. Database restoration from the backup resulting from the backup procedure
 (new REST procedure).

. Backup of generation-print commands, producing a PG file (old release).

. Retrieval of the generation-print commands (RPPG) producing a PG file (new
 release).

. Restoration of generation-print commands resulting from the backup of the
 previous step (new REAG procedure).

RESULT: AJ, AN, AR, and AG files operational under the new VisualAge
Pacbase Release.

3. Reinstallation of the Production Environment Interface

. PEI backup, producing a PP file (old release).

. PEI restoration (new RSPE procedure) using in input the backup produced by
 the previous step.

RESULT: AB and AC files, operational under the new VA Pac Release.

PAGE   118

RELEASES 8.02 02 TO 1.6 RETRIEVAL   **6**
OPERATIONS TO CARRY OUT   **2**
RPPG: RETRIEVAL OF THE PRINT COMMAND FILE (AG)   **2**

6.2.2. RPPG: RETRIEVAL OF THE PRINT COMMAND FILE (AG)

```
#!/bin/sh
#@(#)
#@(#)--   Release xxx Version xxx   --
#@(#)
#@(#)VA Pac (R) RPPG BATCH Procedure
#@(#)
clear
echo ""
echo "----------------------------------------------------------"
echo "                        RPPG PROCEDURE"
echo "                        =============="
echo "  Please note the specific parameters:"
echo ""
echo "  PG input  : complete directory and filename of PG file"
echo "            : $1"
echo "  PG output : complete directory and filename of PG file"
echo "            : $2"
echo ""
echo "  Example"
echo "  PROCRPPG $PACDIR/save/B0/PG160 $PACDIR/save/B0/PG"
echo "----------------------------------------------------------"
echo ""
if [ "$#" != 2 ]
then
   echo "Incorrect number of parameters"
   exit 20
fi
sh $PACDIR/batch/proc/MSGPAUSE.ini
# ************************************************************
# * VA Pac : RETRIEVAL OF THE PG FILE
# ************************************************************
PAC7IN=$1
export PAC7IN
PAC7OU=$2
export PAC7OU
echo "Execution : PTU908"
cobrun PTU908
RETURN=$?
case $RETURN in
0)
 ;;
*)
 echo "Error in executing PTU908"
 echo "Error $RETURN"
 sh $PACDIR/batch/proc/ERRPAUSE.ini
 exit $RETURN
 ;;
esac
# ************************************************************
echo "End of procedure"
exit $RETURN
```

6.3. RETRIEVAL OF VA PAC 802.02, ..., 1.6
OPERATIONS TO CARRY OUT

<u>RETRIEVAL OF PACBASE 802v02, ..., 1.6: OPERATIONS</u>

<u>OPERATIONS TO BE PERFORMED</u>

The installation of the new VA Pac release does not require any particular retrieval of the database files and associated user files.

Once the new VA Pac release is installed, you must back up the databases and associated user files via the standard procedures of the release to be retrieved, and restore these databases and files via the standard procedures of the new VA Pac release. To benefit from the new choices, you should include the reorganization procedure in the retrieval process.

For users of the WorkStation:

. The WorkStation's dedicated User Entities must be uploaded into the Database via the UPDT procedure, after the Database has been restored in the new release.

1. Reinstallation of the User parameters

. Backup of the user parameters, producing a PE file, old release (PARM
procedure R 8.02 to 1.6)

. Execution of the new LOAE procedure using as input backup file the PE file
produced by the preceding backup, and the '********' user code and
NRREST command as input parameters.

. Execution of the PARM procedure with, as input, the MBPARM file
containing the new key supplied with the product.

. For users of the VA Pac WorkStation, execution of the new PARM
procedure, including in the input the transactions associated to the methodolgy
used on the site. (See Chapter INSTALLATION, Subchapter
'INSTALLATION PROCESS', Section 'Loading of Error Messages,
Documentation, and User Parameters'.) Use the NRCHAR command.

RESULT: AE and AP files, containing the old release user parameters as
operational under the new VA Pac release, and the methodology parameters.

2. Reinstallation of a VA Pac Database

. Backup of the database, producing a PC file (old release);

. Journal file initialization (new ARCH procedure).

. Database restoration from the backup resulting from the backup procedure
(new REST procedure).

. Backup of generation-print commands, producing a PG file (old release).

. Retrieval of the generation-print commands (RPPG), producing a PG file
(new release).

. Restoration of generation-print commands resulting from the backup of the
previous step (new REAG procedure).

DELIX001251A

. Retrieval of sequential archive file (PJ16 procedure). This procedure is
optional. It extracts Journal transactions from older archives, using new
programs that handle the century in dates.

RESULT: AJ, AN, AR, and AG files operational under the new VisualAge
Pacbase Release.

3. Reinstallation of the Production Environment Interface

. PEI backup, producing a PP file (old release).

. Retrieval of sequential backup (PP16 procedure). The retrieval adds the
century digits to all dates handled by the PEI Function.

. PEI restoration (new RSPE procedure) using in input the backup produced by
the previous step.

RESULT: AB and AC files, operational under the new VA Pac Release.

6.4. PJ16: RETRIEVAL OF THE ARCHIVED JOURNAL

<u>RETRIEVAL OF ARCHIVED JOURNAL, REL. 8.02v02 TO 1.6 (PJ16)</u>

This procedure retrieves a Journal archived in a former release of VA Pac (8.02v02 to 1.6) in order to convert it in a Journal archived in the new release.

<u>EXECUTION CONDITION</u>

None.

<u>DESCRIPTION OF STEPS</u>

This procedure includes the following step:

     .Retrieval of archived journal: REP2PJ

<u>RETRIEVAL OF ARCHIVED JOURNAL: REP2PJ</u>

.Permanent input file:
 -Journal backup, old format: PAC7PJ

.Permanent output file:
 -Journal backup, new format: PAC7JP

```
#!/bin/sh
#@(#)
#@(#)--   Release xxx Version xxx   --
#@(#)
#@(#)VA Pac (R) PJ16 BATCH Procedure
#@(#)
clear
echo ""
echo "-----------------------------------------------------------"
echo "                       PJ16 PROCEDURE"
echo "                       =============="
echo "  Please note the specific parameters:"
echo ""
echo "  PJ input  : complete directory and filename of PJ file"
echo "            : $1"
echo "  PJ output : complete directory and filename of PJ file"
echo "            : $2"
echo ""
echo "  Example"
echo "  PROCPJ16  $PACDIR/save/B0/PJ160 $PACDIR/save/B0/PJ"
echo "-----------------------------------------------------------"
echo ""
if [ "$#" != 2 ]
then
   echo "Incorrect number of parameters"
   exit 20
fi
. $PACDIR/batch/proc/MSGPAUSE.ini
# *************************************************************
# * VA Pac : RETRIEVAL PJ 2.0 WITH CENTURY
# *************************************************************
PAC7PJ=$1
export PAC7PJ
PAC7JP=$2
export PAC7JP
echo "Execution : REP2PJ"
cobrun REP2PJ
RETURN=$?
case $RETURN in
0)
 ;;
*)
 echo "Error in executing REP2PJ"
 echo "Error $RETURN"
 sh $PACDIR/batch/proc/ERRPAUSE.ini
 exit $RETURN
 ;;
esac
# *************************************************************
echo "End of procedure"
exit $RETURN
```

6.5. PP16: RETRIEVAL OF PRODUCTION ENVIRONMENT

RETRIEVAL OF PRODUCTION ENVIRONMENT 8.02v02 to 1.6 (PP16)

This procedure retrieves a Production Environment backup (PP, in 8.02 02 to 1.6 format), to convert it in a PEI backup in the new release format.

EXECUTION CONDITION

None.

DESCRIPTION OF STEPS

This procedure includes the following step:

    .Conversion of the backup: PACR90

CONVERSION OF THE BACKUP: PACR90

.Permanent input file:
 -PEI backup, old format: PAC7PE

.Permanent output file:
 -PEI backup, new format: PAC7PS

```
#!/bin/sh
#@(#)
#@(#)--   Release xxx Version xxx   --
#@(#)
#@(#)VA Pac (R) PP16 BATCH Procedure
#@(#)
clear
echo ""
echo "----------------------------------------------------------"
echo "                          PP16 PROCEDURE"
echo "                          =============="
echo "  Please note the specific parameters:"
echo ""
echo "  PP input  : complete directory and filename of PP file"
echo "            : $1"
echo "  PP output : complete directory and filename of PP file"
echo "            : $2"
echo ""
echo "  Example"
echo "  PROCPP16 $PACDIR/save/B0/PP160 $PACDIR/save/B0/PP"
echo "----------------------------------------------------------"
echo ""
if [ "$#" != 2 ]
then
   echo "Incorrect number of parameters"
   exit 20
fi
sh $PACDIR/batch/proc/MSGPAUSE.ini
# ************************************************************
# * VA Pac : RETRIEVAL AND SAVE WITH ADD CENTURY
# ************************************************************
PAC7PE=$1
export PAC7PE
PAC7PS=$2
export PAC7PS
echo "Execution : PACR90"
cobrun PACR90
RETURN=$?
case $RETURN in
0)
 ;;
*)
 echo "Error in executing PACR90"
 echo "Error $RETURN"
 sh $PACDIR/batch/proc/ERRPAUSE.ini
 exit $RETURN
 ;;
esac
# ************************************************************
echo "End of procedure"
exit $RETURN
```

                                                          DELIX001251A

6.5.1. TRRT (PAC/TRANSFER FACILITY)
6.5.1.1. TRRT: INTRODUCTION

TRRT: RETRIEVAL OF PARAMETERS FILE - OPERATIONS TO PERFORM

PRESENTATION OF TRRT

In releases earlier than 1.6, only one set of parameters could be stored in the UV
Parameters file.
To define another Transaction Set, the duplication of the parameters was
necessary. According to needs, the procedures' execution JCL had to be adapted
to use different Parameters files.

It is now possible to store several Sets of parameters in a single file.

>>>> In any case, the format of UV Parameters files earlier than Rel. 1.6 is not
       compatible with Pac/Transfer 2.0. This is why the TRRT procedure must be
       executed on all 'old' UV files.

OPERATING MODE

You may use the TRUP procedure which creates the 1.6 UV Parameters file,
defining all Transactions Sets. In this case, you will have to reenter information
already entered in your older file(s).

If the number of files to process is high, the operation may imply a substantial
workload. This is when the TRRT utility comes in handy.
For each former UV file, TRRT generates parameters in the adequate format,
under a Transaction Set code you have specified in input.

NOTE: One TRRT execution can process one former UV file only. You must run
       TRRT as many times as there are 'old' UV files.

Once all former UV files are processed, use these generated parameters in input
to the TRUP procedure.

NOTE: If you run a single TRUP execution including all Transaction Sets, make sure
       that each Set comes in with a distinct code.

As a result, you have an up-to-date UV Parameters file including all your
Transaction Sets.

DELIX001251A

6.5.1.2. TRRT: USER INPUT

<u>USER INPUT</u>

. User identification line (required)

```
-------------------------------------------------------------
!Pos.! Len.! Value    ! Significance                        !
!-----------------------------------------------------------!
! 2 !  1 ! '*'      ! Line code                           !
! 3 !  8 ! uuuuuuuu ! User code                           !
! 11 !  8 ! pppppppp ! Password                            !
-------------------------------------------------------------
```

. Definition of Transaction Set (required)

```
-------------------------------------------------------------
!Pos. ! Len.! Value    ! Significance                      !
!-----------------------------------------------------------!
! 2 !  2 ! 'LT'     ! Line code                           !
!-----------------------------------------------------------!
! 3 !  5 ! lllll    ! Transaction Set code                !
-------------------------------------------------------------
```

DELIX001251A

6.5.1.3. TRRT: DESCRIPTION OF STEPS

<u>TRRT: DESCRIPTION OF STEPS</u>

<u>TRANSACTION RECOGNITION: PTU001</u>

<u>SEQUENTIAL COPY OF OLDER UV FILE: IDCAMS</u>

.Input file:
 -Former-release UV file

.Output file:
 -Former-release UV file, sequential format

<u>CREATION OF TRANSACTIONS FOR TRUP: PTUG90</u>

This step generates transactions associated to the creation
of the UV file, rel. 2.0.

.Permanent input files:
 -Data file
  PAC7AR
 -Error messages
  PAC7AE
 -2.0 parameter file
  PAC7UV
 -Older, sequential, UV file
  PAC7UA

.Transaction file:
 -User input
  PAC7MB

.Output file:
 -Transactions associated to the update of the UV 2.0
  file for TRUP
  PAC7MU

.Output reports:
 -List of input
  PAC7ET
 -User check
  PAC7DD

                                                 DELIX001251A

PAGE   129

VisualAge Pacbase - Operations Manual
VA Pac ENVIRONMENT & INSTALLATION
MIGRATION OF A MAINFRAME DATABASE ONTO A L.A.N.   7

7. MIGRATION OF A MAINFRAME DATABASE ONTO A L.A.N.

7.1. INTRODUCTION

MIGRATING A VA PAC REPOSITORY TO A LOCAL NETWORK

This chapter describes the operations which are specific to the migration of a VA Pac database onto another platform.

Examples:

 - Migration of an IBM/MVS platform onto an OS/2, Unix or Windows/NT platform,

 - Migration of an OS/2 platform onto a Unix or Windows/NT platform.

These operations include three steps:

 - On the source platform, constitution of all the sequential backups which make up the database, plus possible processing of these files to ensure their correct transfer and retrieval on the target platform.

 - Transfer of the sequential files onto the target platform.

 - On the target platform, retrieval of all the sequential files to adapt them to the new installation technical characteristics, and then restoration of the files which make up the VA Pac database on the target platform.

Refer to Chapter RESTORING FILES ON THE TARGET PLATFORM in the Operations Manual - Environment & Installation for each of these platforms.

7.2. CONSTITUTION OF FILES ON A SOURCE PLATFORM

<u>CONSTITUTION OF BACKUPS ON THE SOURCE PLATFORM</u>

The user may refer to the BATCH PROCEDURES Operations manuals corresponding to the source platform for the description of the procedures presented below.

<u>User Parameter Backup</u>

. Execution of the PARM procedure, whose output is a user parameter PE backup file.

. Decryption of user passwords by the execution of the CRYP procedure, using the 'DECODE' parameter in input.

<u>Database Backup</u>

. Execution of the ARCH procedure, whose output is a PJ archived transaction file.

. Execution of the SAVE procedure, whose output is a PC database backup file.

. For a correct transfer of the backup, replacement of low-value by blanks in the PC file by the execution of the LVBL procedure.

<u>Generation-Print Request Backup</u>

. Execution of the SVAG procedure, whose output is a PG backup file of generation-print requests.

<u>Production Environment Backup</u>

. For users equipped with a PEI function, execution of the SVPE procedure, whose output is a production environment PP backup file.

Pactables backup

For users equipped with a Pactables function, two cases are possible:

. Pactables migrates onto the target platform: execution of the SVTA
procedure, whose output is a TC backup file of table content and descriptions,
as well as user parameters.

. Pactables remains on the source platform: in this case only the TD table
description file must be present on the new development platform. Execution
of the SMTD procedure, whose output is a PD backup file of table
descriptions, and retrieval of this file, if necessary, to adapt it to the format of
the new release.

The user may refer to the Pactables Function Operations manual to see
if it is necessary to retrieve the TD file.

7.3. TRANSFER OF FILES TO THE LOCAL AREA NETWORK

TRANSFER OF FILES TO THE LOCAL NETWORK

The transfer software to be used varies according to the platform. The sequential files to be transferred are output by the previous steps, i.e.:

  . PE user parameter backup,
  . PC database backup,
  . PG generation-print request backup.

And possibly:

  . PJ archived journal, if the user wants to retrieve it on the target platform,
  . PP production environment backup,
  . backup of TD table descriptions.

OS/2 OR WINDOWS/NT DATABASE MIGRATION

It may be necessary to modify (character conversion) these files.

For example, in the case of the PC file:

The PC file will most likely be in the the OS2 file format (the lines end with Control_M Control_J). In order to check this, print the beginning of the file with the following commands:

```
head PC > PC.beg
vi PC.beg
```

If Control_M appears at the end of lines, this means that it is an OS/2 formatted file. It is necessary to delete the Control_M characters with the following commands:

```
cgidos2ux PC > PC.new
mv PC.new PC
```

If the PC file contains accents or special characters, convert the file from the "pc850" character format to the UNIX character format ("hp" for HP9000, "iso8859" for DPX/2, DPX/20, DEC) via the following command:

```
cgitrans PC PC.new pc850 hp (on HP9000)
mv PC.new PC
```

NOTE: This conversion is irrelevant for the RS6000 since the character format of this machine is "pc850".

DELIX001251A

MAINFRAME DATABASE MIGRATION:

It is possible to perform transfers with the software supplied on the UNIX computer:

The transfer features are:

   . the files to transfer are the data files (DATA),

   . the files must be converted to ASCII format,

   . the files must contain the characters that detect the end of records.

It is also possible to transfer via the work station, using a mainframe communication software. In this case the file retrieved on the UNIX machine is in the OS/2 or DOS format and it is necessary to perform the same character conversion as for the VA Pac migration.

NOTE: the commands cgidos2ux and cgitrans are utilities supplied with the product with PACBASE 8.0.2 and are located in the $PACDIR/bin directory.

7.4. RESTORATION OF FILES ON THE TARGET PLATFORM

RESTORING FILES ON THE TARGET PLATFORM

PHYSICAL ORGANIZATION OF FILES

All the VA Pac indexed sequential files on OS/2, UNIX and Windows/NT releases are physically managed according to the ASCII sequence. These are the AE, AP and AG, AB, AC files for the PEI function and TD for the Pactables interface. The sequential backups of all these files will then be sorted according to an ASCII sequence during the database migration onto VA Pac.

RELEASE OF THE SOURCE PLATFORM

If the source platform release is identical to that of the target platform, the retrieval of the sequential backups will essentially consist in the conversion of these files into the OS/2 ASCII format of the target platform.

If the source platform release is older than the target platform release, but newer or equal to the 8.02v02 release, the PJ16 and PP16 procedures should be applied before the above mentioned steps. (See Chapter RETRIEVAL OF PACBASE 802.02, 1.2, 1.5, 1.6 for details on these procedures.)

If the source platform release is earlier than 8.02v02, contact VisualAge Pacbase Support Center to work out the best solution.

The procedures presented below are described in Chapter MIGRATIONS of the Batch Procedures: Administrator's Guide.

OPERATIONS TO CARRY OUT

1. User Parameter Restoration

. Retrieval of the PE backup in ASCII format: PEAS procedure.

. Encryption of user passwords (these were decrypted before the transfer of PE
 file) by the CRYP procedure with 'CODE' parameter.

. Restoration of the AE and AP files via the running of the LOAE procedure,
 which uses in input:

- The backup (PE file) output from the CRYP procedure,

- The AE0 file supplied for the installation,

- The MBLOAE transaction file containing the NRREST command.

RESULT: The AE and AP files containing the source installation user
parameters which are operational on the new platform.

2. Database Restoration

. Reorganization (REOR procedure) of the PC backup, output from the PC73
  or PC80 retrieval, or directly output from the file transfer.

. Initialization of journal file (ARCH procedure) if the AJ file already exists in
  the 'JOURNAL' directory of the database to be installed.

. Restoration of the database (REST procedure) using the PC backup output
  produced by the reorganization. Before executing the restoration, make sure
  that the input transaction (MBREST) is correct.

RESULT: The AR, AN and AJ files are operational on the new platform.

3. Restoration of generation-print requests

. Sort of the PG backup in ASCII format: PGAS procedure (all releases of the
  source site).

. Reorganization-restoration of generation-print requests (REAG) using the PG
  backup obtained in the previous step as input. Before executing this
  restoration, make sure that the input transaction (MBREAG) includes 'AG'.

> If libraries, sessions, and/or user codes have been deleted via the
> database reorganization, the corresponding transactions must be
> entered for the reorganization of the AG file. Obsolete generation-print
> requests related to deleted sessions or libraries will be purged.

RESULT: The AG file is operational on the new platform.

4. PEI: Production Environment Restoration

. Retrieval of PP backup in the ASCII format: PPAS.

. Restoration of the production environment (RSPE) using the PP backup
  obtained in the previous step as input.

RESULT: The AB and AC files are operational on the new platform.

5. Pactables: Restoration of Table Descriptions

Only the migration of the table descriptions file (TD) is explained here. Besides,
the retrieval of this file in the format of the new release may be performed on the
site where Pactables operates. The transferred PD backup file is then already in
the format of the new release:

. Retrieval of PD backup in the ASCII format: TD80 procedure.

. Restoration of table descriptions (RMTD) using the backup obtained in the
  previous step as input.

RESULT: The TD file is operational on the new platform.

7.5. CRYP: ENCRYPTION-DECRYPTION OF PASSWORDS

CRYP: INTRODUCTION

The CRYP procedure performs the encryption and decryption of user passwords in the PE user-parameter backup file.

The objective of this procedure is to transfer the PE file onto platforms with different codings.

EXECUTION CONDITION

Authorization level '4' for the update of user parameters (PARM).

CRYP: USER INPUT

A '*' line with the user code and the password must be entered.

The user code specified on the '*' line must exist in the PE file to be processed.

The procedure's specific user input allows for the selection of either Encryption or Decryption.

```
---------------------------------------------------------
!Pos. ! Len. ! Value   ! Meaning                         !
!-----+------+---------+---------------------------------!
! 3   ! 6    ! 'CODE'  ! Password encryption             !
! !   !      !'DECODE' ! Password decryption             !
---------------------------------------------------------
```

NOTE: When decrypting, the backup obtained must not be reloaded via the 'PARM' procedure. If it were, user passwords would no longer be recognized.

DELIX001251A

DESCRIPTION OF STEPS

This procedure includes one step:

    .Password encryption and decryption : PACU99

PASSWORD ENCRYPTION AND DECRYPTION: PACU99

.Input files:
  -User parameter backup   : PAC7CE
   (Dir. and filename described by parameter 1)
  -User input   : PAC7MB
   (NBCRYP file in the INPUT dir.)

.Output file
  -User parameter backup   : PAC7EC
   (Dir. and filename described by parameter 2)

.Output result:
  -Report   : PAC7DD
   (CRYPDD.U99 file in temp. dir.)

.Return codes:
  0: OK.
  8: User input error.

```
#!/bin/sh
#@(#)
#@(#)--   Release xxx Version xxx   --
#@(#)
#@(#)VA Pac (R) CRYP BATCH Procedure
#@(#)
clear
echo""
echo "----------------------------------------------------------"
echo "                        CRYP PROCEDURE"
echo "                        =============="
echo "  Please note the specific parameters:"
echo ""
echo "    Input PE : complete directory and filename of"
echo "             : PE input file (to be coded or uncoded)"
echo "             : $1"
echo "  Output PE : complete directory and filename of"
echo "             : PE output file"
echo "             : $2"
echo "Transaction : sequential file directory"
echo "             : $3"
echo "     Report : temporary file directory"
echo "             : $4"
echo ""
echo "  Example"
echo "  PROCCRYP  $PACDIR/save/PE.MVS  $PACDIR/save/PE"
echo "            $PACDIR/input/B0  $PACDIR/tmp/B0"
echo "----------------------------------------------------------"
echo""
if [ "$#" != 4 ]
then
   echo "Incorrect number of parameters"
   exit 20
fi
sh $PACDIR/batch/proc/MSGPAUSE.ini
# ************************************************************
# * VA Pac : CRYPTAGE - DECRYPTAGE OF USER PASSWORDS
# ************************************************************
# * INPUT TRANSACTION FORMAT :
# * .BATCH PROCEDURE ACCESS AUTHORIZATION OPTION
# *  '*' LINE WITH USER CODE AND PASSWORD
# * .ENCRYPTION OR DECRYPTION OF USER PASSWORDS
# *  COL  3-8 : 'DECODE' FOR DECRYPTION
# *           : 'CODE'   FOR ENCRYPTION
# ************************************************************
PAC7CE=$1
export PAC7CE
PAC7EC=$2
export PAC7EC
PAC7MB=$3/MBCRYP
export PAC7MB
PAC7DD=$4/CRYPDD.U99
export PAC7DD
echo "Execution : PACU99"
cobrun PACU99
RETURN=$?
case $RETURN in
0)
 echo "----------------------------------------------------------"
 echo "End of procedure"
 echo ""
 echo "Output PE ($2) will be input file of procedures:"
 echo "PROCPE80 if the file is in 8.0.1 format"
 echo "PROCPARM or PROCLOAE if the file is in the right format"
 echo "----------------------------------------------------------"
 ;;
*)
 echo "Error in executing PACU99"
 ;;
esac
if [ "$RETURN" != '0' ]
then
   sh $PACDIR/batch/proc/ERRPAUSE.ini
```

```
    fi
    exit $RETURN
```

7.6. LVBL: REPLACEMENT OF LOW-VALUES BY BLANKS

LVBL: INTRODUCTION

The LVBL procedure inserts a blank wherever a low-value is present in the PC Database backup file.

The purpose of this procedure is to transfer the PC file onto different platforms while avoiding problems due to the presence of low-values at the time of transfer.

UTILIZATION OPTION

The LVBL procedure allows you to keep only records of the 'data' type. See the 'Description of Steps' section for further details on the implementation of this option.

EXECUTION CONDITION

None

DESCRIPTION OF STEPS

This procedure includes one step: PTULVB

UTILIZATION OPTION

When starting up the program, you must:

  - Enter DATA then press the Entry key to transfer only the 'data' records onto the output PC file.

  - Press the Entry key to transfer the 'data' and 'index' records onto the output PC file.

DELIX001251A

REPLACEMENT OF LOW-VALUES BY BLANKS: PTULVB
```
.Input file:
  -Database backup                    :  PAC7MC
   (Dir. and filename described by parameter 1)

.Output file:
  -Database backup                    :  PAC7PC
   (Dir. and filename described by parameter 2)
```

```sh
#!/bin/sh
#@(#)
#@(#)--   Release xxx Version xxx   --
#@(#)
#@(#)VA Pac (R) LVBL BATCH Procedure
#@(#)
clear
echo ""
echo "----------------------------------------------------------"
echo "                          LVBL PROCEDURE"
echo "                          =============="
echo "  Please note the specific parameters:"
echo ""
echo "  PC input : complete directory and filename of PC file"
echo "           : $1"
echo "  PC output: complete directory and filename of PC file"
echo "           : $2"
echo ""
echo "  Example"
echo "       PROCLVBL  $PACDIR/save/B0/PC.LOW $PACDIR/save/B0/PC"
echo "----------------------------------------------------------"
echo ""
if [ "$#" != 2 ]
then
   echo "Incorrect number of parameters"
   exit 20
fi
sh $PACDIR/batch/proc/MSGPAUSE.ini
# *************************************************************
# * VA Pac : REPLACING LOW-VALUES BY SPACE IN A PC FILE
# *
# *************************************************************
PAC7MC=$1
export PAC7MC
PAC7PC=$2
export PAC7PC
echo "Execution : PTULVB"
cobrun PTULVB
RETURN=$?
case $RETURN in
0)
 echo "End of procedure"
 ;;
*)
 echo "Error in executing PTULVB"
 ;;
esac
if [ "$RETURN" != '0' ]
then
   sh $PACDIR/batch/proc/ERRPAUSE.ini
   fi
exit $RETURN
```

8. INITIAL LOADING OF FILES

8.1. LDAP: INITIAL LOADING OF AP FILE

GENERAL NOTES

The procedures described below are the file initializations started up by the installation procedure. Refer to Chapter INSTALLATION, Subchapters 'Installation of the first VA Pac server', and 'Creation of a new Database'.

LDAP: INITIAL LOADING OF THE AP FILE

This procedure physically creates and initializes the user parameter indexed file (AP).

It must be executed when the AP file does not exist (in particular for the first installation), or when it is not logically organized.

EXECUTION CONDITION

On-line servers must be closed to on-line use.

USER INPUT

None

DESCRIPTION OF STEPS

This procedure includes the following step:

        .AP file initialization   : PTLDAP

INITIALIZATION : PTLDAP

This step writes a record to the AP file in order to
initialize it.

.Output file:
 -User parameters file   : PAC7AP

```sh
#!/bin/sh
#@(#)
#@(#)--   Release xxx Version xxx   --
#@(#)
#@(#)VA Pac (R) LDAP BATCH Procedure
#@(#)
# Parameter control
. $PACDIR/batch/proc/USAGE.ini
clear
echo ""
echo "---------------------------------------------------------"
echo "                        LDAP PROCEDURE"
echo "                        =============="
. $PACDIR/assign/$1/PAC7AP.ini
echo "  AP file directory : $PAC7AP"
echo "---------------------------------------------------------"
echo ""
sh $PACDIR/batch/proc/PAUSE.ini
echo ""
# ************************************************************
# * VA Pac : INITIALIZATION OF THE AP FILE
# ************************************************************
echo "Execution : PTLDAP"
cobrun PTLDAP
RETURN=$?
case $RETURN in
0)
 echo "End of procedure"
 ;;
*)
 echo "Error in executing PTLDAP"
 ;;
esac
if [ "$RETURN" != '0' ]
then
    sh $PACDIR/batch/proc/ERRPAUSE.ini
fi
exit $RETURN
```

8.2. LDHE: INITIAL LOADING OF HE FILE

<u>LDHE: INITIAL LOADING OF THE HE FILE</u>

This procedure physically creates and initializes the HE indexed file.

It must be executed when the HE file does not exist (in particular for the first installation), or when it is not logically organized.

<u>EXECUTION CONDITION</u>

On-line servers must be closed to on-line use.

<u>USER INPUT</u>

None

<u>DESCRIPTION OF STEPS</u>

This procedure includes the following step:

       .HE file initialization   : PTLDHE

<u>INITIALIZATION : PTLDHE</u>

This step writes a record to the HE file in order to
initialize it.

.Output file:
 -Layout backup file   : PAC7HE

```
#!/bin/sh
#@(#)
#@(#)--   Release xxx Version xxx   --
#@(#)
#@(#)VA Pac (R) LDHE BATCH Procedure
#@(#)
# Parameter control
. $PACDIR/batch/proc/USAGE.ini
clear
echo ""
echo "---------------------------------------------------------"
echo "                         LDHE PROCEDURE"
echo "                         =============="
. $PACDIR/assign/$1/PAC7HE.ini
echo "  HE file directory : $PAC7HE"
echo "---------------------------------------------------------"
echo ""
sh $PACDIR/batch/proc/PAUSE.ini
echo ""
# ************************************************************
# * VA Pac : INITIALIZATION OF THE HE FILE
# ************************************************************
echo "Execution : PTLDHE"
cobrun PTLDHE
RETURN=$?
case $RETURN in
0)
 echo "End of procedure"
 ;;
*)
 echo "Error in executing PTLDHE"
 ;;
esac
if [ "$RETURN" != '0' ]
then
   sh $PACDIR/batch/proc/ERRPAUSE.ini
fi
exit $RETURN
```

8.3. LDZS: INITIAL LOADING OF ZS FILE

LDZS: INITIAL LOADING OF THE ZS FILE

This procedure creates and initializes the ZS indexed file.

It must be executed when the ZS file does not exist (in particular for the first installation), or when it is not consistent.

EXECUTION CONDITION

On-line servers must be closed to on-line use.

USER INPUT

None

DESCRIPTION OF STEPS

This procedure includes the following step:

      .ZS file initialization   : PTLDTS

INITIALIZATION : PTLDTS

This step writes a record to the ZS file in order to
initialize it.

.Output file:
 -DBD function workfile   : PAC7ZS

```sh
#!/bin/sh
#@(#)
#@(#)--   Release xxx Version xxx   --
#@(#)
#@(#)VA Pac (R) LDZS BATCH Procedure
#@(#)
# Parameter control
. $PACDIR/batch/proc/USAGE.ini
clear
echo ""
echo "---------------------------------------------------------"
echo "                         LDZS PROCEDURE"
echo "                         =============="
. $PACDIR/assign/$1/PAC7ZS.ini
echo "  ZS file directory : $PAC7ZS"
echo "---------------------------------------------------------"
echo ""
sh $PACDIR/batch/proc/PAUSE.ini
echo ""
# *************************************************************
# * VA Pac : INITIALIZATION OF THE ZS FILE
# *************************************************************
echo "Execution : PTLDTS"
cobrun PTLDTS
RETURN=$?
case $RETURN in
0)
 echo "End of procedure"
 ;;
*)
 echo "Error in executing PTLDTS"
 ;;
esac
if [ "$RETURN" != '0' ]
then
    sh $PACDIR/batch/proc/ERRPAUSE.ini
fi
exit $RETURN
```

8.4. LDGS: INITIAL LOADING OF GS FILE

<u>LDGS: INITIAL LOADING OF GS FILE</u>

This procedure physically creates and initializes the GS indexed file.

It must be executed when the GS file does not exist (in particular for the first installation), or when it is not logically organized.

<u>EXECUTION CONDITION</u>

On-line servers must be closed to on-line use.

<u>USER INPUT</u>

None

<u>DESCRIPTION OF STEPS</u>

This procedure includes the following step:

      .GS file initialization   : PTLDGS

<u>INITIALIZATION : PTLDGS</u>

This step writes a record to the GS file in order to
initialize it.

.Output file:
 -DBD function workfile   : PAC7GS

```sh
#!/bin/sh
#@(#)
#@(#)--   Release xxx Version xxx   --
#@(#)
#@(#)VA Pac (R) LDGS BATCH Procedure
#@(#)
# Parameter control
. $PACDIR/batch/proc/USAGE.ini
clear
echo ""
echo "----------------------------------------------------------"
echo "                         LDGS PROCEDURE"
echo "                         =============="
. $PACDIR/assign/$1/PAC7GS.ini
echo "  GS file directory : $PAC7GS"
echo "----------------------------------------------------------"
echo ""
sh $PACDIR/batch/proc/PAUSE.ini
echo ""
# ************************************************************
# * VA Pac : INITIALIZATION OF THE GS FILE
# ************************************************************
echo "Execution : PTLDGS"
cobrun PTLDGS
RETURN=$?
case $RETURN in
0)
 echo "End of procedure"
 ;;
*)
 echo "Error in executing PTLDGS"
 ;;
esac
if [ "$RETURN" != '0' ]
then
    sh $PACDIR/batch/proc/ERRPAUSE.ini
fi
exit $RETURN
```

8.5. HELP: INITIAL LOADING OF HELP FILE

<u>INITIAL LOADING OF HELP FILE</u>

This procedure creates and initializes the HELP indexed file.

It must be executed when the HELP file does not exist (in particular for the first installation), or when it is not logically organized.

<u>EXECUTION CONDITION</u>

On-line servers must be closed to on-line use.

<u>USER INPUT</u>

None

<u>DESCRIPTION OF STEPS</u>

This procedure includes the following step:

       .HELP file initialization   : PTLDHE

<u>INITIALIZATION : PTLDHE</u>

This step writes a record in the HELP file in order to
initialize it.

.Output file:
 -Back-up before Help documentation   : PAC7HE
  display

DELIX001251A

```
#!/bin/sh
#@(#)
#@(#)--   Release xxx Version xxx   --
#@(#)
#@(#)VA Pac (R) HELP BATCH Procedure
#@(#)
# Parameter control
. $PACDIR/batch/proc/USAGE.ini
clear
echo ""
echo "----------------------------------------------------------"
echo "                         HELP PROCEDURE"
echo "                         =============="
. $PACDIR/assign/$1/PAC7HELP.ini
echo "  HELP file directory : $PAC7HE"
echo "----------------------------------------------------------"
echo ""
sh $PACDIR/batch/proc/PAUSE.ini
echo ""
# ***********************************************************
# * VA Pac : INITIALIZATION OF THE HELP FILE
# ***********************************************************
echo "Execution : PTLDHE"
cobrun PTLDHE
RETURN=$?
case $RETURN in
0)
   echo "End of procedure"
   ;;
*)
   echo "Error in executing PTLDHE"
   ;;
esac
if [ "$RETURN" != '0' ]
then
   sh $PACDIR/batch/proc/ERRPAUSE.ini
fi
exit $RETURN
```

9. UTILITY PROGRAMS

9.1. INTRODUCTION

UTILITY PROGRAMS

Conversion utilities:
```
      cgiux2dos  : converts a UNIX file into a DOS file
      cgidos2ux  : converts a DOS file into a UNIX file
      cgitrans   : converts hp, iso8859 and pc850 characters
      cgitransgp : replaces the sequence CR+FF with the
                   sequence CR+LF+FF in a file.
```

System utilities:
```
      pacdate    : gives the date of system and program files
      pacsplit   : divides a generation file into n files.
```

The utility programs are installed in the '$PACDIR/bin' directory.

To find out about how it works type:
```
      <utility name> -h
```

Example :
```
      cgitrans –h
```

DELIX001251A