

Natural Global Buffer Pool under VSE/ESA

This document describes purpose and usage of a Natural Global Buffer Pool (GBP) under the operating system VSE/ESA.

It covers the following topics:

- Using a Natural Global Buffer Pool
- Operating the Natural Global Buffer Pool
- Sample NATGBPMG Execution Jobs
- Localization

Certain parts of the Natural global buffer pool are identical under VSE/ESA and OS/390.

These parts are concentrated in a separate section (see Common GBP Operating Functions under OS/390 and VSE/ESA) which covers the following topics:

- Global Buffer Pool Operating Functions
 - Global Buffer Pool Function Parameters
 - Examples of NATBUFFER Specifications
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Using a Natural Global Buffer Pool

Definition

The Natural global buffer pool is a segment of storage assigned from the VSE/ESA system GETVIS storage above 16 MB (or from storage below, if requested), used by Natural to load and execute Natural programs.

Benefits

Using a global buffer pool, multiple Natural sessions under different TP monitors (multiple copies of CICS, Com-plete, etc.) and/or in multiple batch sessions share the same area - thus requiring less storage than would be required for a local buffer pool in each environment.

Prerequisites

A Natural global buffer pool under VSE/ESA requires the subsystem storage protection facility of an ESA/390 or compatible processor. Consequently, it also requires a minimum operating system level of VSE/ESA Version 2 Release 4 for support of this hardware feature.

Operating the Natural Global Buffer Pool

Installing the Natural GBP Operating Program

No installation procedure required. The global buffer pool is operated by program NATGBPMG which is contained in and executed from the Natural load library.

Setting Up the Natural Global Buffer Pool

The functions available from NATGBPMG are activated in that they are

- provided by a parameter card (PARM=),
- read from a file (see below)
- or supplied by the operator (AR command MSG xx with xx being the VSE partition ID) unless NATGBPMG has not been terminated.

NATGBPMG expects the first command in the parameter field (PARM=) of the EXEC job control statement.

You may enter:

- one of the functions (described in the section Common GBP Operating Functions under OS/390 and VSE/ESA)
- or a reference to an input file with "CF=<dlbl-name>", where <dlbl-name> represents a DLBL name defined in the JCL or the VSE/ESA (partition) standard labels. Only "card image" files are supported, that is, RECFM=F,LRECL=80, and only the first 72 bytes of the input record are honoured. Every record included from the input file represents a command. Blank records or records prefixed with an asterisk "*" are ignored. An asterisk ("*") for <dlbl-name> indicates to NATGBPMG that input has to be read from SYSIPT. A file is processed until End-Of-File (EOF).

Example: PARM='CF=SYSINI'

If the parameter field is not supplied or is blank, the commands will be read from SYSIPT by default.

It is only possible to enter one function at a time at the console or one function per line using the command file, otherwise an error message will be returned.

Each command received from the parameter card, from file input or from operator console input is shown on the operator console and is logged to SYSLST.

Starting the Natural GBP Operating Program

To start program NATGBPMG submit a job that executes NATGBPMG.



Important:

To ensure that the global buffer pool is retained after a system failure, the global buffer pool should be started automatically during machine IPL.

Stopping the Natural GBP Operating Program

After all commands are processed, NATGBPMG terminates unless

- RESIDENT=Y was specified or
- a buffer pool with a cache was created.

NATGBPMG will return one of the following condition codes:

0	All functions executed successfully.
20	An error has occurred; see the message log for details.

Sample NATGBPMG Execution Jobs

The following examples show sample batch jobs for creating and terminating a global buffer pool.

Example 1:

```
// JOB GBPSTART
/*
/* Starts a global buffer pool with the name NAT31GBP, a size of 1 MB and
/* a text block size of 4 KB. The global buffer pool is allocated above 16 MB.
/* The subsystem used is NAT3.
/* After the allocation, the job GBPSTART terminates.
/*
// LIBDEF PHASE,SEARCH=SAGLIB.NATLIB
// EXEC NATGBPMG,SIZE=NATGBPMG,PARAM='BPN=NAT31GBP,N=(1000)' /*
// EXEC LISTLOG
/;&
```

Example 2:

```
// JOB GBPRES
/*
/* Starts a global buffer pool with the name GBP, a default size of
/* 100 KB and a text block size of 1 KB. The global buffer pool is allocated
/* below 16 MB. The subsystem used is SAGS.
/* After the allocation, the job GBPRES will wait for further commands.
/* Further commands may be entered using AR command MSG partition-id:
/* the job GBPRES will then prompt for console input.
/*
// LIBDEF PHASE,SEARCH=SAGLIB.NATLIB
// EXEC NATGBPMG,SIZE=NATGBPMG,PARAM='BPN=GBP,N=(,BL,1),S=SAGS,R=Y'
/*
// EXEC LISTLOG
/;&
```

Example 3:

```
// JOB GBPSTOP
/*
/* Stops the global buffer pool GPB if it contains no active objects. If it
/* does contain active objects, the operator console will prompt for a reply.
/* Depending on the reply, the shutdown will be forced (Y) or aborted (N).
/* The subsystem used is NAT3.
/*
// LIBDEF PHASE,SEARCH=SAGLIB.NATLIB
// EXEC NATGBPMG,SIZE=NATGBPMG,PARAM='FSHUT,BPN=GBP'
/*
// EXEC LISTLOG
/;&
```

Example 4:

```
// JOB GBPSTRT2
/* Read commands from SYSIPT:
/*
/* Start 3 global buffer pools (subsystem id N315) with name
/* NATGBP1 - size=1024KB and a cache with size 2048KB
/* (Initialized with implicit PLUGIN=BP due to specified BPC parm)
/* NATGBP2 - size=2048KB with standard V31 layout
/* NATGBP3 - size=1024KB without cache, but in new NatTurbo shape.
/* Display all buffer pools of subsystem id "N315".
/*
/* Note: The job does not terminate by itself, but stays resident and waits
/* for operator commands, because it owns the data space allocated for
/* buffer pool NATGBP1.
```

```
/*
/* If the buffer pools should shut down, wake up sleeping job by MSG partition-id
/* and enter parameter "CF=*" to execute the corresponding FSHUTs.
/*
// LIBDEF PHASE,SEARCH=SAGLIB.NATLIB
// EXEC NATGBPMG,SIZE=NATGBPMG
CREATE,BPN=NATGBP1,S=N315,N=(1024),BPC=2048
CREATE,BPN=NATGBP2,S=N315,N=(2048)
CREATE,BPN=NATGBP3,S=N315,N=(1024),PLUGIN=BP
SHOWBP S=N315
/*
FSHUT,BPN=NATGBP1,S=N315
FSHUT,BPN=NATGBP2,S=N315
FSHUT BPN=NATGBP3,S=N315
SHOWBP S=N315
/*
```

Localization

The module NATGBPTX (already included in NATGBPMG) is delivered in source form. It contains all error messages in English. The messages can be translated into other languages as required; in this case, the "new" NATGBPTX source module has to be assembled and linked into the Natural Load library with phase name NATGBPTX.