



CCAPRINT

A Newsletter Excerpt for Model 204 Users

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Loading the Model 204 Nucleus Above the Line

By James Damon

The Online load module, or the Model 204 nucleus, is loaded by the operating system as a result of the JCL EXEC statement:

```
//M204V610 EXEC PGM=ONLINE,...
```

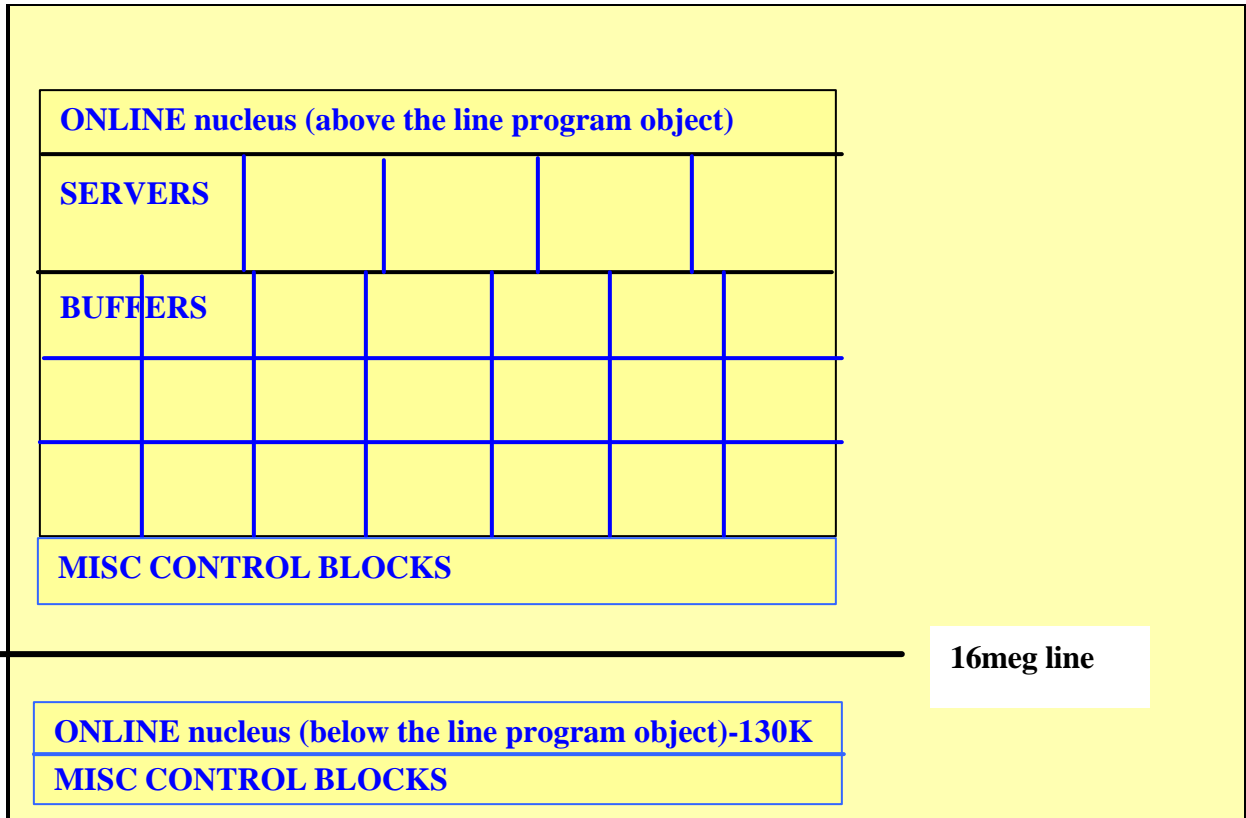
If you have linked in RSQL, the total size of the nucleus is approximately 3 megabytes. With EVCP the size is approximately 2 megabytes. Prior to V6R1.0, the Model 204 nucleus was loaded below the 16-megabyte line, as required. Although below the line storage is generally severely limited, usually this is not a problem. Most customers have at most 8 to 10 megabytes and can accommodate the Model 204 nucleus which can consume 25-35% of that storage. However, some software packages that run in conjunction with Model 204 may require large amounts of below the line virtual storage, which may not be available.

In V6R1.0, you can optionally load most of the nucleus above the line. This can free 2 to 3 megabytes of below the line virtual storage and provide substantial virtual storage relief in this limited area, which might be important for your site.

Implementing Split Load Modules

A small part of the four Model 204 load modules must still be loaded below the line during execution. This requires producing a split load module and, that in turn, leads to the IBM requirement of storing the load modules in a partitioned dataset extended (PDSE). If you select the SPLIT option, then the Model 204 nucleus will be divided into two program objects: one that must be loaded below the line and the other which may be loaded above the line. The below the line program object consists of nine control sections that deal with BSAM I/O, VTAM, LU6.2 and others. The size of the below the line program object is about 130K. Your Online address space will resemble Figure 1.

Figure 1. Model 204 address space with nucleus above-the line



These PDSEs, which this optional feature requires, have a number of advantages:

1. The directory expands automatically
2. The directory cannot be destroyed by opening a PDSE as output sequential
3. Dataset compression is no longer required and unused space is automatically reused
4. They may take up to 123 extents
5. They may use more than 65,535 tracks
6. They may be shared for concurrent read and update across different z/OS systems

An overview of PDSEs can be found in an IBM redbook at this URL:

<http://www.redbooks.ibm.com/redbooks/pdfs/sq246106.pdf>

Creating a PDSE for Model 204

The V6R1.0 installation process includes a job, PDSELIB, that allocates a PDSE and, using the Program Management binder, processes the four Model 204 load modules ONLINE, BATCH204, IFAM1, and IFAM4 and saves them into your PDSE. The Program Management binder (which replaces the linkage editor) statements shown in Figure 2 are used to process the ONLINE load module and save it as one load module, consisting of two program objects, in your PDSE.

Figure 2. PDSELIB job with binder control statements

```
//LNKONL EXEC PGM=IEWL,REGION=8M,  
// PARM='LIST,LET,MAP,NCAL,SIZE=(700K,200K)',COND=(4,LT)  
//SYSPRINT DD SYSOUT=A  
//SYSUT1 DD UNIT=SYSDA,SPACE=(TRK,120,,CONTIG)  
//OLDLOAD DD DSN=YOUR.PDS.LOADLIB,DISP=SHR  
//SYSLMOD DD DSN=YOUR.AUTH.PDSE.LOADLIB,DISP=SHR  
//SYSLIN DD *  
PAGE KOMM$,SBNU$  
INCLUDE OLDLOAD(ONLINE)  
MODE AMODE(31),RMODE(SPLIT)  
SETCODE AC(1)  
ENTRY MAINTASK  
NAME ONLINE(R)
```

The OLDLOAD DD, referenced in the Figure 2 control statements, refers to a regular PDS dataset, YOUR.PDS.LOADLIB, where all Model 204 load modules are initially stored by the M204LINK job. Those load modules are then copied by the binder program into YOUR.AUTH.PDSE.LOADLIB using this PDSELIB job. This step splits the load module into the two program objects mentioned earlier.

Applying Zaps and Early Warnings

All maintenance applied to Model 204 load modules must be applied against the regular PDS. To accommodate a restriction in the IBM update utility, AMASPZAP or superzap, which cannot process PDSEs, follow the AMASPZAP application, by running the Model 204 PDSELIB job again to copy the now updated load modules from the regular PDS to the PDSE.

In Conclusion

If you need additional virtual storage below the line for whatever reason, saving the Model 204 Online load module in a PDSE and running from that load library may provide the virtual storage you require.

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