

System/3 Disk-drives

Normally the model 6 and model 10 Disk systems had a single 5444 disk drive with two 2.5 MB disk, one was fixed (F1) and one was removable (R1) as the minimum configuration. It was possible to have either an extra removable disk (R2) for 7.5 MB or two extra disks (R2 and F2) which were removable and fixed for 10 MB.

But not all installations needed that huge amount of online data!

So it was possible to have a lower-cost half-capacity version with two drives of 1.25 MB each! It was possible to upgrade from half-capacity to full-capacity. I have heard that it involved that the IBM CE unplugged a bolt that prevented the access-arm to move more than the half distance and moving a wire in the disk-control logic.

The \$INIT disk initialization utility had the option of initializing the “new” half without destroying the data on the “old” half:

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// UIN TYPE-SECONDARY,CAP-HALF
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On the model 10 and 15 it was also possible to have one or two 5445 disk-drives.

They were just like the 2319 from the System/360 and System/370 but with 20 MB instead of 30 MB due to System/3s sector-layout versus CKD (Count-Key-Data) of the bigger brothers. The sector-layout was later introduced in the smaller S/370 (43xx) as FBA (Fixed Block Architecture). It was possible to move the disk 2316 disk-pack between the System/3 and System/360 or System/370, but it was necessary to run the \$VTOC utility to convert the VTOC (Volume Table Of Content) to S/360-format or reverse.

Model 15B (plus C and D) used two, three or four 3340 disk-drive also known from the smaller S/370s (late came model 12 allowing two 3340-drives). When used on System/3 it emulated one 5445, but with a capacity of 40 MB designated as D1 (or D2, D3 or D4) and also had four 5444 “simulation-areas” (D1A, D1B, D1C and D1D) which could be ASSIGNED to F1, R1, F2 or R2. So combined 3340 had 50 MB on System/3 compared to 70 MB on S/370.

It was a little strange that IBM chose to simulate the 5444/5445 and not create “native” support for the 3440, but possible there was too much “hard-coded” about the physical layout of the devices spread around in the SCP and utilities. When coding in RPG you should code DISK for the 5444 and DISK45 for the 5445 as the device type.

I remember I read that you could attach a 3444 to model 15D (one or two drives). A little can be found about the 3444 but it appears that it looked like four 3440 to the software and had fixed disk compared to the removable disk (“curling stones”) of the 3340.

So the maximum configuration on a System/3 was two 3340 (each 50 MB) and two 3344 (each around 200 MB) totaling 500 MB. Today you can get a 500 GB 2,5 inch disk for less than 200 euros!

Around 1977 it was announced that you could get a “extra set of 5444” for model 8 (5448). It has not been possible to find any information on this on the web.

I don't remember the details but it was (up to) four 2.5 MB (fixed?) disks emulating 5445.

Maybe the drawers of the 5444 where just blocked? There was a special \$PCOPY utility to backup to 5444. It had been natural to just copy each of the four disks to a 5444-disk, but it was emulated as 5445.

This was another strange thing with System/3, there was several \$xCOPY utilities over the lifetime (\$COPY, \$DCOPY (dump/restore), \$KCOPY (3740), \$PCOPY (5448), \$SCOPY (simulation-area) and \$QCOPY (reader-, print- and punch-queue)

\$KCOPY was later integrated into the normal \$COPY.

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