

# Adabas Device Types and Block Sizes

The standard characteristics of the device types supported by Adabas in environments under the z/OS, z/VSE, and BS2000 operating systems are summarized here.

- Supported z/OS and z/VM Device Types
  - Supported z/VSE Device Types
  - BS2000 Device Types and Block Sizes
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## Supported z/OS and z/VM Device Types

The standard characteristics of the device types supported by Adabas on z/OS and z/VM are summarized in the following table. Adabas block sizes and RABNs per track are provided for each Adabas component for each device type.

Device	Trks/Cyl	ASSO	DATA	WORK	PLOG/RLOG	CLOG	TEMP/SORT/DSIM	Notes
0512	16	2044:8	4092:4	8192:2	8192:2	8192:2	8192:2	
3310	11	2044:8	4092:4	4096:4	4096:4	4096:4	8192:2	
3330	19	1510:8	3140:4	4252:3	4252:3	3156:4	3140:4	
3340	12	1255:6	2678:3	3516:2	3516:2	3516:2	3500:2	
3350	30	1564:11	3008:6	4628:4	4628:4	3024:6	3008:6	
3370	12	2044:15	3068:10	5120:6	5120:6	3072:10	7680:4	
3375	12	2016:15	4092:8	4096:8	4096:8	4096:8	8608:4	
3380	15	2004:19	4820:9	5492:8	5492:8	4820:9	7476:6	3
3390	15	2544:18	5064:10	5724:9	5724:9	5064:10	8904:6	3
8345	15	4092:10	22780:2	22920:2	22920:2	22920:2	22920:2	
8350	30	3008:6	6232:3	9442:2	9442:2	9442:2	9442:2	1
8380	15	3476:12	6356:7	9076:5	9076:5	9076:5	9076:5	1
8381	15	3476:12	9076:5	11476:4	11476:4	9076:5	9076:5	1
8385	15	4092:10	23292:2	23468:2	23468:2	23468:2	23468:2	1
8390	15	3440:14	6518:8	10706:5	10706:5	8904:6	8904:6	1
8391	15	4136:12	10796:5	13682:4	13682:4	8904:6	18452:3	1
8392	15	4092:12	12796:4	18452:3	18452:3	18452:3	18452:3	1
8393	15	4092:12	27644:2	27990:2	27990:2	27990:2	27990:2	1
9332	6	2044:10	4092:5	5120:4	5120:4	10240:2	10240:2	2
9335	6	2556:14	3580:10	5120:7	5120:7	7168:5	7168:5	
9345	15	4092:10	7164:6	11148:4	11148:4	22920:2	22920:2	3

**Notes:**

1. The 8350, 838*n*, and 839*n* are pseudo-device types physically contained on a 3350, 3380, and 3390 device, respectively, but for which some or all of the standard block sizes are larger.
2. The number of tracks per cylinder listed here is artificial.
3. The IBM RAMAC 9394 emulates devices 3390 Model 3, 3380 Model K, or 9345 Model 2.

**Supported z/VSE Device Types**

The standard characteristics of the device types supported by Adabas are summarized in the following table. The Adabas block sizes and RABNs per track are provided for each component for each device type.

Device	Trks/Cyl	ASSO	DATA	WORK	PLOG/RLOG	CLOG	TEMP/SORT/DSIM	Notes
1512	7	1536:37	18944:37	18944:37	18944:37	18944:37	18944:37	
3375	12	2016:15	4092:8	4096:8	4096:8	4096:8	8608:4	
3380	15	2004:19	4820:9	5492:8	5492:8	4820:9	7476:6	2
3390	15	2544:18	5064:10	5724:9	5724:9	5064:10	8904:6	2
5121	15	2048:16	4096:8	4096:8	4096:8	4096:8	4096:8	
5122	15	4096:8	8192:4	8192:4	8192:4	8192:4	8192:4	
5123	15	4096:8	16384:2	16384:2	16384:2	16384:2	16384:2	
8345	15	4092:10	22780:2	22920:2	22920:2	22920:2	22920:2	
8380	15	3476:12	6356:7	9076:5	9076:5	9076:5	9076:5	1
8381	15	3476:12	9076:5	11476:4	11476:4	9076:5	9076:5	1
8385	15	4092:10	23292:2	23468:2	23468:2	23468:2	23468:2	1
8390	15	3440:14	6518:8	10706:5	10706:5	8904:6	8904:6	1
8391	15	4136:12	10796:5	13682:4	13682:4	8904:6	18452:3	1
8392	15	4092:12	12796:4	18452:3	18452:3	18452:3	18452:3	1
8393	15	4092:12	27644:2	27990:2	27990:2	27990:2	27990:2	1
9345	15	4092:10	7164:6	11148:4	11148:4	22920:2	22920:2	2

**Notes:**

1. The 8350, 838*n*, and 839*n* are pseudo-device types physically contained on a 3350, 3380, and 3390 device, respectively, but for which some or all of the standard block sizes are larger.
2. The IBM RAMAC 9394 emulates devices 3390 Model 3, 3380 Model K, or 9345 Model 2.

**BS2000 Device Types and Block Sizes**

The primary access method for direct access data sets used by Adabas under BS2000 is PAM (primary access method). The device types defined by Adabas establish a logical structure on a PAM data set in order to process a fixed number of consecutive PAM blocks (e.g., one Adabas block consisting of two PAM blocks or one logical track consisting of four PAM blocks).

These device types are “artificial”; there is no relation to the physical devices being used. A maximum of 16 PAM blocks per track can be combined into one I/O call. For more than 16 PAM blocks per track, parameter chaining is used.

The artificial device types defined by Software AG for BS2000 systems are summarized in the following table. The ASSO, DATA, WORK, PLOG, CLOG, and TEMP/SORT/DSIM block sizes are given in RABNs per track.

Device	RABNs/Cyl <sup>1</sup>	ASSO	DATA	WORK	PLOG	CLOG	TEMP/SORT/DSIM	NK4 Compatible <sup>2</sup>	4K Rounded <sup>3</sup>
2000	80	1/2048:4	2/4080:2	2/4096:2	2/4096:2	2/4096:2	2/4080:2	No	No
2001	152	1/2044:8	2/4092:4	2/4096:4	2/4096:4	4/8192:2	4/8192:2	No	No
2002	152	2/4092:4	4/8188:2	4/8192:2	4/8192:2	8/16384:1	8/16384:1	Yes	No
2003	255	1/2044:15	3/6140:5	3/6144:5	3/6144:5	5/10240:3	5/10240:3	No	No
2004	255	3/6140:5	5/10236:3	5/10240:3	5/10240:3	15/30720:1	15/30720:1	No	No
2005	220	1/2044:20	2/4092:10	4/8192:5	4/8192:5	5/10240:4	5/10240:4	No	No
2006	220	2/4092:10	4/8188:5	5/10240:4	5/10240:4	5/10240:4	5/10240:4	No	No
2007 <sup>4</sup>	255	5/10236:3	15/30716:3	15/30720:3	15/30720:3	16/30720:3	16/30720:3	No	No
2008	272	2/4092:8	16/32656:1	16/32760:1	16/32760:1	16/32760:1	16/32760:1	Yes	No
2009	272	2/4092:8	16/32656:1	16/32740:1	16/32740:1	16/32740:1	16/32740:1	Yes	No
2010	240	2/4092:8	4/8188:4	8/16380:2	8/16380:2	8/16380:2	8/16380:2	Yes	No
2200	240	2/4092:8	4/8088:4	8/16380:2	8/16380:2	8/16380:2	8/16380:2	Yes	No
2201	180	2/4092:6	6/12184:2	6/12288:2	6/12288:2	6/12288:2	6/12288:2	Yes	No
2202	240	2/4092:8	8/16280:2	8/16380:2	8/16380:2	8/16380:2	8/16380:2	Yes	No
2300	152	2/4096:4	4/8192:2	4/8192:2	4/8192:2	8/16384:1	8/16384:1	Yes	Yes
2301	240	2/4096:8	8/16384:2	8/16384:2	8/16384:2	8/16384:2	8/16384:2	Yes	Yes
2302	272	2/4096:8	16/32768:1	16/32768:1	16/32768:1	16/32768:1	16/32768:1	Yes	Yes

#### Notes:

1. The RABNs/Cyl (RABNs per cylinder) column shows how many RABNs are allocated per cylinder (for example, in an ADAFRM utility where the size does not have the suffix "B").
2. Generally, NK4-compatible containers should have an even number in the RABN STD block size.
3. 4K-rounded devices need RABN block sizes to be an exact multiple of 4K bytes. These are used with D3475-8F devices.
4. Although supported, the 2007 device is not recommended for use with Adabas. Support for the 2007 will be removed in the next Adabas release.

If the current database device is not of a compatible type for NK4 disks and it is necessary to migrate it to those disks, you must use the ADAORD RESTRUCTUREDDB utility as described in *Adabas Utilities*.

#### Container Size Calculation

To calculate the size of a container in PAM pages, take the number of RABNs for the container and multiply it by the RABN STD block size.

To check your container file, multiply the highest RABN from the ADAREP utility by the RABN STD block size, and compare it with the HIGH-US-PA field of the SHOW-FILE-ATTRIBUTES *file-name*, ALL command output. If the HIGH-US-PA field is less than the highest PAM page calculated from the ADAREP, you will receive a DMS0922 error from the operating system when accessing this.

## Splitting Data Sets Across Volumes

For private volumes, splitting is possible under every LOGON user ID:

In ISP format:

```
/FILE data-set,DEVICE=D3480,VOLUME=PRIV01,SPACE=60000
/FILE data-set,DEVICE=D3480,VOLUME=PRIV02,SPACE=60000
```

In SDF format:

```
/CREATE-FILE data-set,PRIV-DISK(SPACE=(60000),VOLUME=PRIV01)
/MOD-FILE-ATTR data-set,PROT=(USER-ACC=*ALL)
/MOD-FILE-ATTR data-set,SUP=PRIV-DISK(SPACE=(60000),VOLUME=PRIV02)
```

For public volumes, the splitting is possible under every LOGON user ID if the master catalog entry of the pubset has the attribute:

```
PHYSICAL-ALLOCATION=USER-ALLOWED
```

This attribute is set by issuing the following command under TSOS:

```
/MOD-MASTER-CAT CAT-ID=ABC,PHYSICAL-ALLOCATION=USER-ALLOWED
```

Once this attribute is set, it is possible to split a data set across two or more public volumes under any LOGON user ID that has the right of space allocation on that particular pubset.

In ISP format:

```
/FILE data-set,VOLUME=ABC.00,DEVICE=D3480,SPACE=60000
/FILE data-set,VOLUME=ABC.01,DEVICE=D3480,SPACE=60000
```

In SDF format:

```
/CREATE-FILE data-set,PUB(SPACE=(60000),VOLUME=ABC.00)
/MOD-FILE-ATTR data-set,PROT=(USER-ACC=*ALL)
/MOD-FILE-ATTR data-set,SUP=PUB(SPACE=(60000),VOLUME=ABC.01)
```

At this point, even a particular physical allocation can be made.

In ISP format:

```
/FILE data-set,VOLUME=ABC.02,DEVICE=D3480,SPACE=(20002,60000,ABS)
```

In SDF format (following the CREATE-FILE and MOD-FILE\_ATTR...PROT specifications listed earlier):

```
/MOD-FILE-ATTR data-set,SUP=PUB(SPACE=ABSOLUTE(20002,60000),VOLUME=ABC.02)
```

The example extent covers physical PAM pages 20002 through 80001 on volume ABC.02. The required disk space must, of course, be available. If you are unsure of the available disk space, consult your system administrator.

## **Saving the Extent List of Data Sets**

The utility ADAR2E converts the extent list of given data sets into a JOB containing /CREATE-FILE commands. For more information, see the section on the ADAR2E utility in the *Adabas Utilities* documentation.