CICS Storage 101
A Look into CICS Dynamic Storage Areas

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Agenda

- What is a Dynamic Storage Area?
- What does a typical CICS address space look like?
- SIT parameters and their effect on storage.
- Break down of DSA and what are they used for?
- How is the DSA managed by CICS?
- Storage manager domain summary in a dump.
- Storage manager control blocks.
- Leveraging CPSM to view Storage in real time.

Introduction

- What is DSA (Dynamic Storage Area)?

  ▶ A storage area acquired at initialization which is used and managed by CICS to run user applications.

  ▶ CICS getmains 3 different areas:

    • Below the 16MB line – DSA

    • Above the 16MB line – EDSA

    • Above the 2GB bar – GDSA

   − Also referred to as 64-bit storage.

Typical z/OS address space

- What does a typical CICS address space look like?

  ▶ Each virtual address space contains:

    - The common area below 16mb

    - The private area below 16mb

    - The extended common area above 16mb

    - The extended private area above 16mb

  ▶ Each address space has access to the same MVS common areas but has a separate copy of the private areas.

  ▶ Within the private areas are the user regions, and within the user regions, the DSA is located.

Typical z/OS address space
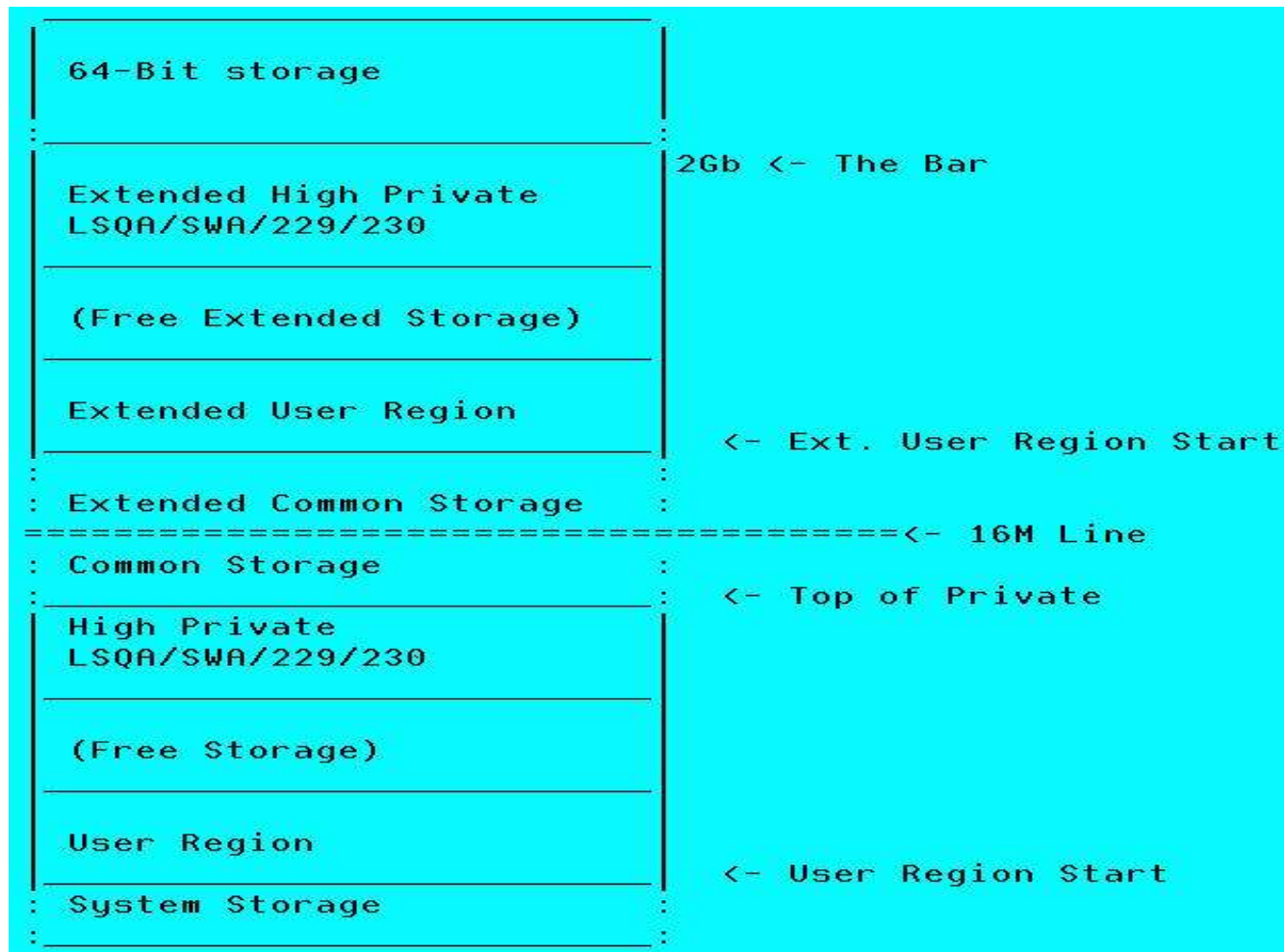
What parameters effect CICS storage?

- DSALIM - specifies the overall limit of the total amount of storage which CICS can allocate below the 16 MB boundary.

- EDSALIM - specifies the overall limit of the total amount of storage which CICS can allocate above the 16 MB boundary.

- RENTPGM - specifies whether you want CICS to allocate the read-only DSAs, RDSA and ERDSA, from read-only key-0 protected storage.

- STGPROT - specifies whether you want storage protection in the CICS region.

- STGRCVY -specifies whether CICS should try to recover from a storage violation.

- TRANISO - specifies, together with the STGPROT system initialization parameter, whether you want transaction isolation in the CICS region.

GDSA Storage Limit

- GDSA limit is different from DSA limit and EDSA limit. There are no SIT parms for it.
- The limit for above-the-bar storage is controlled by the **MEMLIMIT** value assigned to the address space by the operating system.
- MEMLIMIT can be set 3 different ways:

  ▸ The SYS1.PARMLIB

  ▸ The MEMLIMIT in JCL

    • //CICS EXEC PGM=DFHSIP,PARM='SI',REGION=0M,MEMLIMIT=4G

  ▸ An IEFUSI global user exit.

Break down of the DSA

- ## The CICS DSA - CDSA

  - ▸ The CICS-key storage area for all non-reentrant CICS-key RMODE(24) programs, all CICS-key task-lifetime storage below the 16 MB boundary, and for CICS control blocks that reside below the 16 MB boundary.

- ## The user DSA - UDSA

  - ▸ The user-key storage area for all user-key task-lifetime storage below the 16 MB boundary

- ## The shared DSA - SDSA

  - ▸ The user-key storage area for any non-reentrant user-key RMODE(24) programs, and also for any storage obtained by programs issuing CICS GETMAIN commands for storage below the 16 MB boundary with the SHARED option.

- ## The read-only DSA - RDSA

  - ▸ The key-0 storage area for all reentrant programs and tables below the 16 MB boundary.

Break down of the EDSA

- ## The extended CICS DSA - ECDSA

  - ▸ The CICS-key storage area for all non-reentrant CICS-key RMODE(ANY) programs, all CICS-key task-lifetime storage above the 16 MB boundary, and CICS control blocks that reside above the 16 MB boundary.

- ## The extended user DSA - EUDSA

  - ▸ The user-key storage area for all user-key task-lifetime storage above the 16 MB boundary.

- ## The extended shared DSA - ESDSA

  - ▸ The user-key storage area for any non-reentrant user-key RMODE(ANY) programs, and also for any storage obtained by programs issuing CICS GETMAIN commands for storage above the 16 MB boundary with the SHARED option.

- ## The extended read-only DSA - ERDSA

  - ▸ The key-0 storage area for all reentrant programs and tables above the 16 MB boundary.

Break down of the GDSA

- The above the bar CICS DSA – GCDSA

    ▶ The CICS-key storage area for all storage above the 2GB boundary (above the bar).

    ▶ The GCDSA is only used internally by CICS mainly for channels and containers.

Subpools

- CICS assigns unique subpool names to represent the storage areas within the DSAs.

- CICS uses about 180 different subpools.

- Some examples are:

  ▸ SMSHRU24: It belongs to the SDSA. It is used for shared storage control blocks below the line.

  ▸ TSMAIN: It belongs to the ECDSA. It contains storage for temporary storage main storage.

  ▸ LDPGMRO: It belongs to the RDSA. It contains re-entrant programs below the line.

UDSA and EUDSA

- The UDSA and EUDSA is used for USER task storage that reside BELOW and ABOVE the line. Some examples are:

  - ▶ The below the line user task subpool is **B00xxxxx**: where xxxxx is the task number.

  - ▶ The above the line user task subpool is **U00xxxxx**: where xxxxx is the task number.

- These subpool names are referred to as storage check zones.

- Each element will start and end with the subpool name.

How is the DSA managed by CICS?

- CICS manages DSA in units of allocation referred to as **extents**.

  ▶ Below the line, the unit of allocation is 256kb extents.

  ▶ Above the line, the unit of allocation is 1MB extents.

- An allocated extent can only be used by the owning DSA.
- If there is not enough space within the allocated extent to satisfy a request, additional extents are acquired as necessary until the limit is reached.
- If one of the DSAs attempts to acquire an additional extent and none are available, empty extents belonging to other DSAs can be stolen to satisfy the request.
- CICS uses "first fit" rather than a "best fit" when selecting which extent to use to satisfy the request.
- Once an extent has been allocated it will not be unallocated.

How is the DSA managed by CICS? *notes*

- CICS allocates extents to the requesting DSA/EDSA.
- If a request is greater than the initial extent size of 256KB/1MB, CICS will combine multiple extents creating a larger extent to satisfy the request.

  ▸ For example, Task requests 300KB below the line (greater than a 256KB extent), so CICS will find 2 contiguous UDSA 256KB extents and make 1 512KB UDSA extent.

  ▸ Now, for the life time of this CICS run, this 512KB extent will never be split back into 2 256KB extents and belong to the UDSA unless it is totally empty and is stolen by another DSA.

Dynamic Storage Areas in a system dump

Storage Manager Domain Summary

```
SM Domain status:                 INITIALISED
Storage recovery:                 YES
Storage protection requested:     YES
Storage protection active:        YES
Reentrant program option:         PROTECT
Transaction isolation requested:  NO
Transaction isolation active:     NO

Current DSA limit:                     6144K
Current DSA total:                     2304K
Currently SOS below 16M:                  NO

Current EDSA limit:                     100M
Current EDSA total:                      65M
Currently SOS above 16M:                  NO

Current GDSA limit:                    2048M
Current GDSA total:                       3M
Currently SOS above 2G:                   NO

MEMLIMIT:                              2048M
MEMLIMIT Source:                  IEFUSI
```

Storage Manager summary *notes*

- To look at the storage manager domain in a dump, we issue the command: **verbx dfhpd660 'SM'**
- The storage manager summary shows the status of the SIT options.
- The DSA/EDSA limit, correspond to the DSALIM/EDSALIM SIT PARM.
- The GDSA Limit comes from the MEMLIMIT.

  - ▸ The source of the MEMLIMIT tells you what it is set by. It can be set by the SYS1.PARMLIB, the MEMLIMIT in JCL, or by an IEFUSI global user exit.

- The current DSA/EDSA/GDSA total represents the total amount of storage that has been allocated/used, up till that point in time.
- Extents are allocated in 256kb chunks below the line and 1MB chunks above the line.

UDSA Summary

```
==SM: UDSA Summary

  Size:                              1024K
  Cushion size:                        64K
  Current free space:                 184K  (17%)
* Lwm free space:                     184K  (17%)
* Hwm free space:                    1024K (100%)
  Largest free area:                  116K
* Times nostg returned:                 0
* Times request suspended:              0
  Current suspended:                    0
* Hwm suspended:                        0
* Times cushion released:               0
  Currently SOS:                       NO
* Times went SOS:                       0
* Time at SOS:            00:00:00.000
* Storage violations:                   0
  Access:                            USER
* Extents added:                        0
* Extents released:                     0

  Number of extents:                    3

  Extent list:      Start       End          Size      Free
                    00140000    0017FFFF     256K      16K
                    001C0000    001FFFFF     256K      52K
                    00200000    0027FFFF     512K      116K
```

UDSA Summary *notes*

- This is a sample of just the UDSA. RDSA, CDSA, and SDSA will each have their own summaries.
- The summary will tell you the total size of the particular DSA along with its current free space. It will also give you the largest free area.
- The summary also gives you statistical information about that particular subpool.
- The * indicates that these values were reset at the last statistics interval collection time. This time is controlled by the STATINT SIT parm.
- It also displays the number of extents and their starting and ending addresses. Notice that 1 of the extents has a size of 512kb, which indicates that there must have been a request that was greater than 256kb therefore requiring 2 contiguous extents. This will now be treated as 1 extent.

ERDSA Summary

```
==SM: ERDSA Summary

    Size:                         31744K
    Cushion size:                   256K
    Current free space:            1104K  ( 3%)
  * Lwm free space:                1104K  ( 3%)
  * Hwm free space:                1104K  ( 3%)
    Largest free area:              400K
  * Times nostg returned:              0
  * Times request suspended:           0
    Current suspended:                 0
  * Hwm suspended:                     0
  * Times cushion released:            0
    Currently SOS:                    NO
  * Times went SOS:                    0
  * Time at SOS:           00:00:00.000
  * Storage violations:                0
    Access:                     READONLY
  * Extents added:                     0
  * Extents released:                  0
```

ERDSA Summary Continued...

```
Number of extents:                      19

Extent list:        Start        End          Size         Free

                    14100000     141FFFFF     1024K          0K
                    14200000     142FFFFF     1024K          0K
                    14300000     143FFFFF     1024K          0K
                    14400000     145FFFFF     2048K          4K
                    14600000     146FFFFF     1024K          0K
                    14700000     148FFFFF     2048K          0K
                    14900000     149FFFFF     1024K          0K
                    14A00000     14AFFFFF     1024K          0K
                    14B00000     14BFFFFF     1024K          0K
                    14C00000     14CFFFFF     1024K         12K
                    15200000     152FFFFF     1024K          8K
                    15500000     157FFFFF     3072K          4K
                    15800000     15DFFFFF     6144K          8K
                    15E00000     15FFFFFF     2048K         20K
                    16000000     161FFFFF     2048K         44K
                    16200000     162FFFFF     1024K         68K
                    16300000     163FFFFF     1024K        296K
                    16400000     165FFFFF     2048K        400K
                    16600000     166FFFFF     1024K        240K
```

ERDSA Summary *notes*

- Again, this is showing a sample from the ERDSA. The same summary will also exist for the EUDSA, ESDSA, and ECDSA.
- A key difference here is that the extent sizes are 1MB. As you can see, we have various extent sizes, such as 2MB, 3MB and even a 6MB extent.
- Also, you can see that the ERDSA has an access method of READONLY. The UDSA has an access of User. If the CICS region did not have rentpgm=Protect then the ERDSA would have access CICS.

DSA Extent Summary (below 16M)

```
==SM: DSA Extent summary (below 16M)

    Start       End          Size    PPX_addr    Acc      DSA

    00040000    0007FFFF     256K    1362E780    C        CDSA
    00080000    000BFFFF     256K    13F07400    R        RDSA
    000C0000    000FFFFF     256K    13F08870    U        SDSA
    00100000    0013FFFF     256K    13F087A0    C        CDSA
    00140000    0017FFFF     256K    13FF3050    U        UDSA
    00180000    001BFFFF     256K    13FF6050    C        CDSA
    001C0000    001FFFFF     256K    13FBAD20    U        UDSA
    00200000    0027FFFF     512K    13FBA6D0    U        UDSA
```

DSA Extent Summary (above 16Mb)

```
==SM: DSA Extent summary (above 16M)

   Start          End          Size    PPX_addr     Acc        DSA

   14000000      140FFFFF      1024K    13F07870      C        ECDSA
   14100000      141FFFFF      1024K    13F08B90      R        ERDSA
   14200000      142FFFFF      1024K    13F08940      R        ERDSA
   14300000      143FFFFF      1024K    13F0D310      R        ERDSA
   14400000      145FFFFF      2048K    1A461BB0      R        ERDSA
   14600000      146FFFFF      1024K    13F0D0C0      R        ERDSA
   14700000      148FFFFF      2048K    13FFC810      R        ERDSA
   14900000      149FFFFF      1024K    13FFC5C0      R        ERDSA
   14A00000      14AFFFFF      1024K    13FFC370      R        ERDSA
   14B00000      14BFFFFF      1024K    13FFC120      R        ERDSA
   14C00000      14CFFFFF      1024K    1A46BDB0      R        ERDSA
   14D00000      14DFFFFF      1024K    1A46BB60      C        ECDSA
   14E00000      14EFFFFF      1024K    1A46B570      C        ECDSA
   14F00000      14FFFFFF      1024K    13FF3120      C        ECDSA
   ...
   ...
   17500000      177FFFFF      3072K    13FBAC70      U        EUDSA
   17800000      17AFFFFF      3072K    13FBABC0      U        EUDSA
   17B00000      17DFFFFF      3072K    13FBA620      U        EUDSA
   17E00000      180FFFFF      3072K    13FBA570      U        EUDSA
```

Extent Summary *notes*

- The extent summary lists the allocated extents in ascending order by starting address.
- It also tells you what DSA it belongs to and the access type
  - ▸ Access type will be **U**ser, **C**ics or **R**ead-only

Task subpool summary

```
==SM: Task subpool summary

   Current number of tasks:        31


   SMX Addr  Name       Id   Loc Acc     Gets    Frees    Elems    Elemstg Pagestg Tran
   1A412064  M0000004  0001  B   C        0        0        0         0         0K  CSOL
             C0000004  0003  A   C        0        0        2       2000        4K
             B0000004  0002  B   U        0        0        0         0         0K
             U0000004  0004  A   U        0        0        0         0         0K
   ...
   ...
   1A412790  M0000217  0001  B   C        0        0        0         0         0K  WBCA
             C0000217  0003  A   C        0        0        0         0         0K
             B0000217  0002  B   U        2        0        2      67136       72K
             U0000217  0004  A   U        2        0        2    2884528     2944K
   1A412570  M0000218  0001  B   C        1        0        1       1584        4K  CEMT
             C0000218  0003  A   C        3        0        3      23632       28K
             B0000218  0002  B   U        0        0        0         0         0K
             U0000218  0004  A   U        0        0        0         0         0K
```

Task subpool summary *notes*

- Current number of tasks includes both user and system tasks.
- This summary shows you the 4 user task subpools associated with every task and their corresponding subpool ID.

  - ▶ **M00**00218   -   ID: 0001   -   Located in CDSA

  - ▶ **C00**00218   -   ID: 0003   -   Located in ECDSA

  - ▶ **B00**00218   -   ID: 0002   -   Located in UDSA

  - ▶ **U00**00218   -   ID: 0004   -   Located in EUDSA

- Transaction is listed along with the task number

  - ▶ New in CICS TS v4.1.

- Typically more interested in the B00 and U00 subpools as it will show us how much user storage each task is using.

Domain subpool summary (ECDSA)

```
==SM: Domain subpool summary (ECDSA)
```

Name	Id Chn	Initf	Bndry	Fxlen	Q-c	Gets	Frees	Elems	Elemstg	Pagestg
>LGJMC	012C	4K	4	124	Y	3	0	3	372	4K
AITM_TAB	018E	4K	8	584	Y	21	0	21	12264	16K
AP_TCA31	009A	128K	256	1792	Y	54	54	18	32256	128K
AP_TXDEX	009C	4K	8	72	Y	201	5	196	14112	16K
...										
KEANCHOR	0007		256			0	0	7	7168	8K
KESTK31	0020		256			230	231	63	1806336	1764K
KESTK31E	0022		16			0	0	5	40960	40K
KETASK	0023	4K	256	1536	Y	230	231	63	96768	132K
...										
LD_APES	0025	4K	8	152	Y	1	0	509	77368	80K
LD_CDE	0028	4K	16	80	Y	1	0	508	40640	44K
LD_CNTRL	0024		16			0	0	3	15648	16K
LD_CPES	0027	4K	8	208	Y	2827	1	2826	587808	596K
LD_CSECT	0026	4K	8	176	Y	1	0	985	173360	176K
...										
XMTCLASS	0015	4K	8	192	Y	15	0	15	2880	4K
XMTRANSN	0011	8K	256	512	Y	68	58	31	15872	20K
XMTXDINS	0012	4K	8	272	Y	201	5	196	53312	60K
XMTXDSTA	0013	4K	8	176	Y	199	3	196	34496	36K
...										
ZCRAIA	013F	4K	8	256	Y	50	0	50	12800	16K
ZCRPL	014D	8K	8	152	Y	55	45	10	1520	8K

Domain subpool summary (ECDSA) *notes*

- The domain subpool summary shows us storage usage by subpool for each DSA (in this sample, the ECDSA).
- It shows the subpool name and its associated subpool ID that we will use in a few slides.

  ▶ The Subpool ID is assigned randomly and may not be the same after a recycle of CICS.

- It will also show you the number of getmains and freemains done for each subpool and the amount of storage being used for that particular subpool.

Storage Manager Control Blocks

- Highlighting a few of the control blocks used to manage DSA:
- SMA – Storage Manage Anchor Block

  ▶ Contains the global Storage for the SM domain. All other storage control blocks are chained from it.

- PPA – Page Pool Control Area

  ▶ There is 1 PPA for each of the 8 individual DSAs.

- PPX – Page Pool Extent Area

  ▶ 1 PPX per extent.

  ▶ Contains the size of the extent, starting address, and ending address..

- PAM – Page Allocation Map

  ▶ 1 PAM per extent.

  ▶ Each halfword represents 1 page of storage in the extent.

Managing an extent

- Once an extent is allocated to a particular DSA, pages of storage within the extent are assigned to the requesting subpool.

  ▸ The size of this page is found in the PPA control block at offset x'28'

  ▸ Typically, the page size is x'1000' for all DSAs except for the EUDSA which is x'10000'. To verify this, you should look at the PPA for the DSA you are interested in.

- The offset into the PAM that represents the allocated page is then updated with the subpool ID that corresponds to the requesting subpool.

  ▸ Unallocated pages in the extent are represented by x'0000' in the PAM.

  ▸ Note: You can get the subpool name the subpool ID corresponds to by going to the domain subpool summary.

PPA Example

```
PPA.ECDSA 13F07D60 Pagepool Control Area

    0000   00E06EC4 C6C8E2D4 D7D7C140 40404040   C5C3C4E2 C1404040 13F07C80 13F07E40
    0020   13F07870 1A46C270 00001000 FFFFF000   00000000 00100000 FFF00000 00100000
    0040   00083000 00020000 00000000 0007A000   00000000 00000000 00000000 00000000
    0060   00000000 00000000 20010500 00000000   00000000 00000191 00000191 00064000
    0080   0005D000 00000044 0000003A 00000000   00000000 00000000 00000000 00000000
    00A0   00096000 00000000 00000000 00000000   00000000 00800000 13F9A338 00800000
    00C0   00800000 00000008 00000000 00000000   00020000 0000000C 00000000 00000000
```

- **Offset x'10' is the DSA name**
  - ▸ ECDSA
- **Offset x'20' is the first PPX address.**
- **Offset x'28' is x'1000' indicating page size**

PPX Example

```
PPX.ECDSA 13FF6120 Pagepool Extent Control Area

0000   00506EC4 C6C8E2D4 D7D7E740 40404040   C5C3C4E2 C1404040 1A456670 13FF3120
0020   00100000 14F00000 14FFFFFF 13F09A80   00000000 13FF6170 00000200 13F07D60
0040   00001000 00000000 00000000 00000000
```

- **Offset x'20' is the size of the extent**
- Offset x'24' is the start of the extent
- Offset x'28' is the last byte of the extent

PAM Example

```
PAM.ECDSA 13FF6170 Page Allocation Map

   0000    00250137 01100110 00030139 01390139   013A0027 001B0020 00200020 00200020
   0020    00200020 0061002E 00230011 00030003   001D00BB 00FB0003 001D0020 00200020
   0040    00200020 00200020 00230003 009D0146   00930026 00250136 00030181 01820070
   0060    00080008 018D0026 00030003 001D013B   01840187 01540025 01400008 014D014D
   0080    014E014E 016B0023 01720174 01760177   01790008 017B0026 016C002E 013C0000
```

- ■ Page of storage at offset X'08' is allocated to subpool ID 0003
- ■ Page of storage at offset X'34' is allocated to subpool ID 00FB
- ■ Page of storage at offset X'9E' is unallocated.

What virtual storage address does an offset into the PAM correspond to?

- For example, You are looking at a PPX for a 1M extent in the ECDSA that starts at address 14F00000. In the associated PAM you see a subpool ID 00FB at offset x'34' and would like to determine the address of the storage this corresponds to. You verified the page size to be x'1000' by looking at the PPA.ECDSA.

- Utilize the following formula:

  - Offset into PAM / 2 * Pagesize + start of the extent = page address.

    - 34 / 2 * 1000 + 14F00000 = 14F1A000

  - For our example, offset x'34' into the PAM represents virtual storage address 14F1A000 for x'1000' bytes.

What offset into the PAM does a virtual storage address correspond to?

- Gather the following information:

  ▸ Address you are interested in.

  ▸ Find the starting address of the extent in which your address falls within.

  ▸ Verify the page size by looking at the PPA for that DSA.

- Utilize the following formula to determine the offset into the PAM.

  ▸ (Address – Extent start) / Page Size * 2 = Offset into PAM.

Example

- You are interested in knowing if address 14F057D0 is allocated and if so, what subpool ID it belongs to?
  Address 14F057D0 falls in the ECDSA extent starting at 14F00000.
- (Address – Extent start) / Page Size * 2 = Offset into PAM.

  ‣ (14F057D0 – 14F00000) = 57D0

  ‣ 57D0 / 1000 = 5

  ‣ 5*2 = A

- Address 14F057D0 is represented by offset x'A' into the PAM.

```
PAM.ECDSA 13FF6170 Page Allocation Map

0000    00250137 01100110 00030139 01390139   013A0027 001B0020 00200020 00200020
0020    00200020 0061002E 00230011 00030003   001D00BB 00FB0003 001D0020 00200020
0040    00200020 00200020 00230003 009D0146   00930026 00250136 00030181 01820070
0060    00080008 018D0026 00030003 001D013B   01840187 01540025 01400008 014D014D
0080    014E014E 016B0023 01720174 01760177   01790008 017B0026 016C002E 013C013D
```

Example Continued...

- The PAM at offset x'A' contains 0139.
- To determine what subpool name corresponds to subpool ID 0139:

  - Look in the Domain subpool summary for ECDSA.

  - Look under the ID column for 0139.

```
==SM: Domain subpool summary (ECDSA)

   Name        Id Chn   Initf Bndry Fxlen Q-c   Gets   Frees   Elems   Elemstg Pagestg

   >LGJMC      012C       4K     4   124  Y       3       0       3       372      4K
   AITM_TAB    018E       4K     8   584  Y      21       0      21     12264     16K
   ...
   ...
   TSBRB       0120              8    56  Y       0       0       0         0      0K
   TSBUFFRS    0139             64                0       0       3     12288     12K
   TSDTN       0118       4K     8    88  Y       1       0       1        88      4K
```

- So address 14F057D0 belongs to the TSBUFFRS subpool.

Utilizing CPSM and a WUI to view Storage

Using CPSM to view storage

- If you have CPSM installed and a WUI (Web User Interface) running, you can leverage them to view information about storage usage.
- The CICS region operations views in the WUI provides you with the links to view various storage information, such as Dynamic Storage Areas, Domain subpools and Task subpools.

CICS region operations views

- CICS regions
- Dynamic storage areas
- Dynamic storage area global
- MVS storage areas
- Domain subpool
- Task subpool

Using CPSM to view storage *notes*

- ■ To get to the CICS Regions Operations View click:
  - ▶ CICS operation views under View Menus
  - ▶ CICS Regions operations Views

Dynamic Storage Area Global

Dynamic storage area global

EYUVC1280I 1 records collected at 10/25/10 20:20:59.

Context: CICSL2

Scope: IYNX34

Short on storage status: = ▼

Automatic refresh: ☐ 60 seconds.

Refresh

1 records on 1 pages.

Record	CICS system name	Short on storage status	Current DSA limit	Total storage currently allocated to DSAs	Current EDSA limit	Total storage currently allocated to EDSAs
1 ☐	IYNX34	Notsos	6.0MB	2.3MB	100.0MB	65.0MB

1 records on 1 pages.

Set attributes...

Resource name: CICSSTOR. View name: EYUSTARTCICSSTOR.TABULAR

Dynamic Storage Area Global *notes*

- Dynamic Storage Area Global view provides a real time look at your DSA and EDSA limits and total storage.
- Allows you filter by context and scope.
  - ▶ Context is the CICSPlex name
  - ▶ Scope is a subset of the context and limits the results from the commands to particular CICS Systems.

Dynamic Storage Areas View

Dynamic storage areas

EYUVC1280I 9 records collected at 10/25/10 19:49:57.

Context: CICSL2
Scope: IYNX34
Dynamic storage area (DSA): = [▾] [   ]

Automatic refresh: ☐ 60 seconds.

[Refresh]

9 records on 1 pages.

Record	CICS system name	Dynamic storage area (DSA)	Storage key	Subpool size	Cushion size	Short on storage count	Free storage size
1 ☐	IYNX34	CDSA	Cics	786432	65536	0	356352
2 ☐	IYNX34	ECDSA	Cics	8388608	131072	0	520192
3 ☐	IYNX34	ERDSA	Readonly	32505856	262144	0	274432
4 ☐	IYNX34	ESDSA	User	1048576	131072	0	974848
5 ☐	IYNX34	EUDSA	User	26214400	0	0	26017792
6 ☐	IYNX34	GCDSA	Cics	2097152	0	0	0
7 ☐	IYNX34	RDSA	Readonly	262144	65536	0	40960
8 ☐	IYNX34	SDSA	User	262144	65536	0	253952
9 ☐	IYNX34	UDSA	User	1048576	65536	0	1048576

9 records on 1 pages.

[Set attributes...]

Resource name: CICSDSA. View name: EYUSTARTCICSDSA.TABULAR

Dynamic Storage Areas View *notes*

- The CPSM Dynamic Storage Areas Views gives you a real time look into your systems showing you the current storage usage totals for each individual DSA .
- From the Dynamic Storage Areas view, you can click on each particular DSA to get more information on it.
- The information provided with this view is similar to the Storage Manager Domain summary in the dump view.
- In addition to scope and context, you can also filter results by DSA.
- Note: The size for GCDSA is in KB while all the others are in bytes.

Domain Subpool

Domain Subpool

EYUVC1280I 408 records collected at 10/25/10 20:30:49.

Context: CICSL2

Scope: IYNX34

Domain subpool name: = Aa

Name of dynamic storage area (DSA): =

Automatic refresh: ☐ 60 seconds.

Refresh

408 records on 17 pages. Page: 9 Go to page Previous Next

Record	CICS system name	Domain subpool name	Name of dynamic storage area (DSA)	Number of GETMAIN requests	Number of FREEMAIN requests	Current number of elements	Current page storage
201	IYNX34	KESTK24	CDSA	0	0	0	0.0
202	IYNX34	KESTK24E	CDSA	53	53	24	96.0KB
203	IYNX34	KESTK31	ECDSA	235	234	64	1.8MB
204	IYNX34	KESTK31E	ECDSA	0	0	5	40.0KB
205	IYNX34	KETASK	ECDSA	235	234	64	132.0KB
206	IYNX34	LD_APES	ECDSA	5	0	534	84.0KB
207	IYNX34	LD_CDE	ECDSA	5	0	533	44.0KB
208	IYNX34	LD_CNTRL	ECDSA	1	1	3	16.0KB
209	IYNX34	LD_CPES	ECDSA	4	0	2,851	604.0KB
210	IYNX34	LD_CSECT	ECDSA	7	0	1,012	180.0KB
211	IYNX34	LD_JFCB	CDSA	0	0	0	0.0
212	IYNX34	LD_PLIBE	ECDSA	0	0	2	4.0KB
213	IYNX34	LD_PSCHT	ECDSA	0	0	0	0.0
214	IYNX34	LDENRS	ECDSA	0	0	7	52.0KB
215	IYNX34	LDENRSRO	ERDSA	0	0	348	8.9MB

Domain Subpool *notes*

- You can filter down to the subpool names that you are interested in.

  ▸ You can use * character as a wildcard at the end of a string or a + as a placeholder.

  ▸ Note: Case sensitive!

Task Subpool

Task subpool

← ❓ ✦ 🖨 📚

EYUVC1280I 4 records collected at 10/25/10 21:04:55.

Context: CICSL2

Scope: IYNX34

Automatic refresh: ☐ 60 seconds.

Refresh

4 records on 1 pages.

Record	CICS system name	Name of dynamic storage area (DSA)	Number of GETMAIN requests	Number of FREEMAIN requests	Current page storage	Peak page storage
	▼▲⟋	▼▲⟋	▼▲⟋	▼▲⟋	▼▲⟋	▼▲⟋
1	IYNX34	CDSA	61	61	16KB	24KB
2	IYNX34	ECDSA	542	542	348KB	484KB
3	IYNX34	EUDSA	11	11	192KB	256KB
4	IYNX34	UDSA	233	233	0	80KB

4 records on 1 pages.

Resource name: TSKSPOOL. View name: EYUSTARTTSKSPOOL.TABULAR

Summary

- What is a Dynamic Storage Area.
- What does a typical CICS address space look like.
- SIT parameters and their effect on storage.
- Break down of DSA and what are they used for.
- How is the DSA managed by CICS.
- Storage manager domain summary in a dump.
- Storage manager control blocks.
- Leveraging CPSM to view Storage in real time.

Additional Product Resources

- **WebSphere and CICS Support blog**
  http://www.ibm.com/developerworks/mydeveloperworks/blogs/aimsupport/

- **IBM_CICS support news on Twitter**
  http://www.ibm.com/support/docview.wss?uid=swg21384915

- **Track specific CICS APARs or CICS APARs by component id**
  http://www.ibm.com/support/docview.wss?uid=swg21422149

- **Sign up to receive technical support e-mails**
  http://www.ibm.com/software/support/einfo.html

- **CICS Featured documents**
  http://www.ibm.com/support/docview.wss?uid=swg27006900

- **Webcasts for CICS and OMEGAMON**
  http://www.ibm.com/support/docview.wss?uid=swg27007244

- **CICS Transaction Server Support Web page**
  http://www.ibm.com/support/entry/portal/Overview/Software/Other_Software/CICS_Transaction_Server

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