# Allocation Pages in SQL Server

| Page Name | 1st Page number in File | Page type | Description |
|---|---|---|---|
| **PFS (Page Free Space)** | 1 | 11 | A PFS interval is 8088 pages, or about 64MB. One byte for each page in the PFS interval (not including itself).<br>bits 0-2: how much free space is on the page<br>0x00 is empty<br>0x01 is 1 to 50% full  0x02 is 51 to 80% full<br>0x03 is 81 to 95% full  0x04 is 96 to 100% full<br>bit 3 (0x08): is there one or more ghost records on the page?<br>bit 4 (0x10): is the page an IAM page?  bit 5 (0x20): is the page a mixed-page?<br>bit 6 (0x40): is the page allocated?  bit 7 is unused |
| **GAM (Global Allocation Map)** | 2 | 8 | One page tracks one GAM interval—64k extent or almost 4Gb<br>bit = 1: the extent is available for allocation (you could think of it as currently allocated to the GAM page)<br>bit = 0: the extent is already allocated for use |
| **SGAM (Shared Global Allocation Map)** | 3 | 9 | Tracks same 4GB space as GAM but semantics of the bits are different:<br>bit = 1: the extent is a mixed extent and may have at least one unallocated page available for use (it's an optimistic update algorithm)<br>bit = 0: the extent is either dedicated or is a mixed extent with no unallocated pages (essentially the same situation given that the SGAM is used to find mixed extents with unallocated pages) |
| **IAM(Index Allocation Map)** | | 10 | Per entity.  Tracks approximately 4GB worth of space in a single file, aligned on a 4GB boundary. These 4GB chunks are called 'GAM intervals'. An IAM page tracks which extents within that specific GAM interval belongs to a single entity with in a single file. |
| **DIFF (Differential)** | 6 | 16 | bit = 1: the extent has been changed since the last full backup<br>bit = 0: the extent was not changed |
| **ML (Minimally Logged)** | 7 | 17 | bit = 1: the extent has been changed by a minimally logged operation since the last transaction log backup<br>bit = 0: the extent was not changed |

Reference:
http://www.sqlskills.com/blogs/paul/inside-the-storage-engine-gam-sgam-pfs-and-other-allocation-maps/
http://www.sqlskills.com/blogs/paul/inside-the-storage-engine-iam-pages-iam-chains-and-allocation-units/