

Skewed Associative Cache

There goes an inherent trade-off between direct mapped cache and N-way set associative cache in terms of hit rate and time required to access a given memory address. Direct mapped cache has a fast access to a given address but at the same time, due to allocation of only a single block to a given address in the whole cache, it has a low hit rate. On the other hand, set associative cache has to search in at most N-blocks while searching for a given address which makes it a little bit slow, but since a given memory address can now be put into N different blocks, it has a high hit rate.

Now here comes yet another type of cache, the Skewed associative cache. It has almost the same hardware implementation as that of a set associative cache but is twice as faster than a set associative cache.