Memory Initialization File (.mif)

An ASCII text file (with the extension **.mif**) that specifies the initial content of a memory block (CAM, RAM, or ROM), that is, the initial values for each address. This file is used during project compilation and/or simulation.

A MIF is used as an input file for memory initialization in the Compiler and Simulator. You can also use a Hexadecimal (Intel-Format) File (**.hex**) to provide memory initialization data.

A MIF contains the initial values for each address in the memory. A separate file is required for each memory block. In a MIF, you are also required to specify the memory depth and width values. In addition, you can specify the radixes used to display and interpret addresses and data values.

Following is a sample MIF:

```
DEPTH = 32;           % Memory depth and width are required   %
                      % DEPTH is the number of addresses      %
WIDTH = 14;           % WIDTH is the number of bits of data per word %
%  DEPTH and WIDTH should be entered as decimal numbers        %

ADDRESS_RADIX = HEX;  % Address and value radixes are required  %
DATA_RADIX = HEX;     % Enter BIN, DEC, HEX, OCT, or UNS; unless  %
                      % otherwise specified, radixes = HEX    %

-- Specify values for addresses, which can be single address or range
CONTENT
BEGIN
[0..F]:   3FFF;   % Range--Every address from 0 to F = 3FFF  %
6     :   F;      % Single address--Address 6 = F %
8     :   F E 5;  % Range starting from specific address %
--                % Addr[8] = F, Addr[9] = E, Addr[A] = 5 %
END;
```

- If multiple values are specified for the same address, only the last value is used.
- You can create a MIF by using the Memory Editor or the In-System Memory Content Editor.

For more information, use Quartus Help and search for topic “Memory Initialization File.”