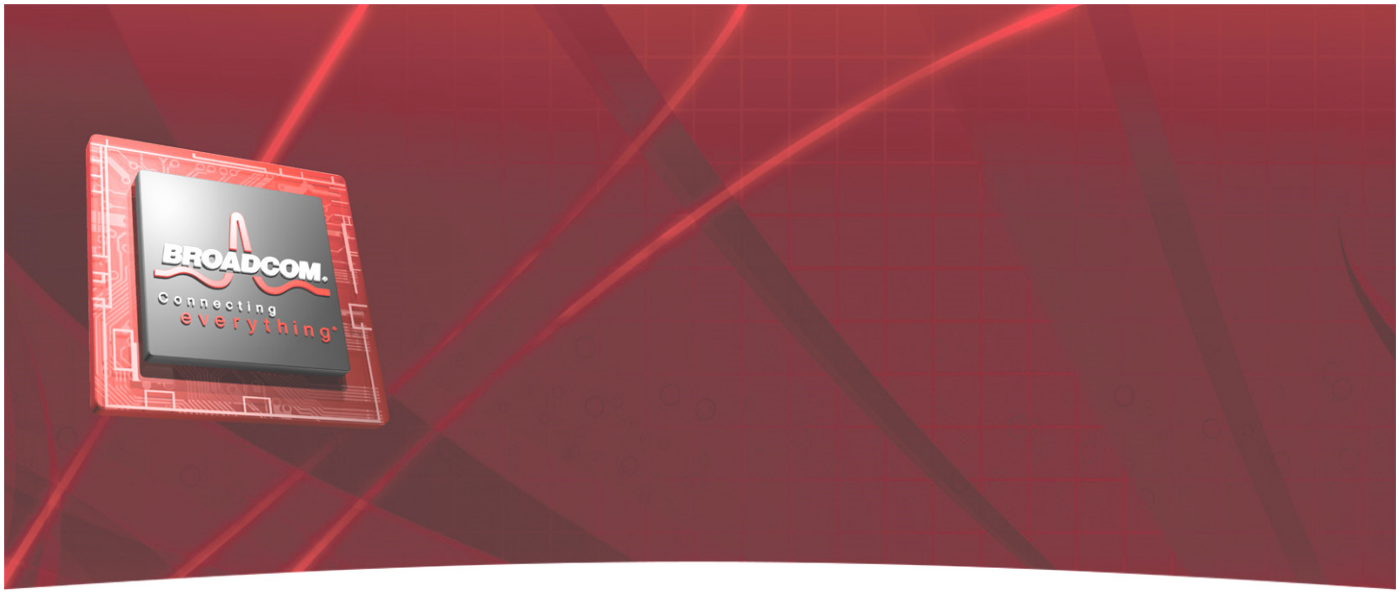

Bmemconfig

User Guide

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Revision History

Revision	Date	Change Description	Editor
1.0	08/31/2015	Initial version	C. Detrick

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Why bmemconfig?

In the past, the Broadcom Reference Software team has provided a memory spreadsheet that allowed customers to estimate the total memory consumed based on the features used. The spreadsheet provided good defaults for each platform and customers could optimize it by eliminating the features not used. Customer would then take these numbers and feed them to the Nexus Platform code to create the heaps.

One of the major issues this model possesses is that if the spreadsheet documentation is not maintained and kept in sync with real code, you would either run time out of memory or memory was wasted.

There are other drawbacks for the memory spreadsheet:

1. Problems with maintenance.
    a. The system memory spreadsheet is the integration of several different individual spreadsheets. Spreadsheets use a combination of Excel functions and VB scripts. It is not easy to merge the spreadsheets when the one of the spreadsheets changes.
    b. Excel relies on cells. If the location of the cell changes, the spreadsheet needs an update
2. Coordination and Integration: Module specific spreadsheets are maintained by different teams. Integration and coordination is a constantly ongoing process.
3. Memory spreadsheet did not accurately account for the box modes and RTS/feature limitations.

Recently Nexus has moved to the model where, before allocating the heaps, Nexus probes the Magnum modules for their memory requirements for certain usage modes. The bmemconfig tool intends to use this feature in Nexus to create memory configuration documentation directly from the source code.

What is bmemconfig?

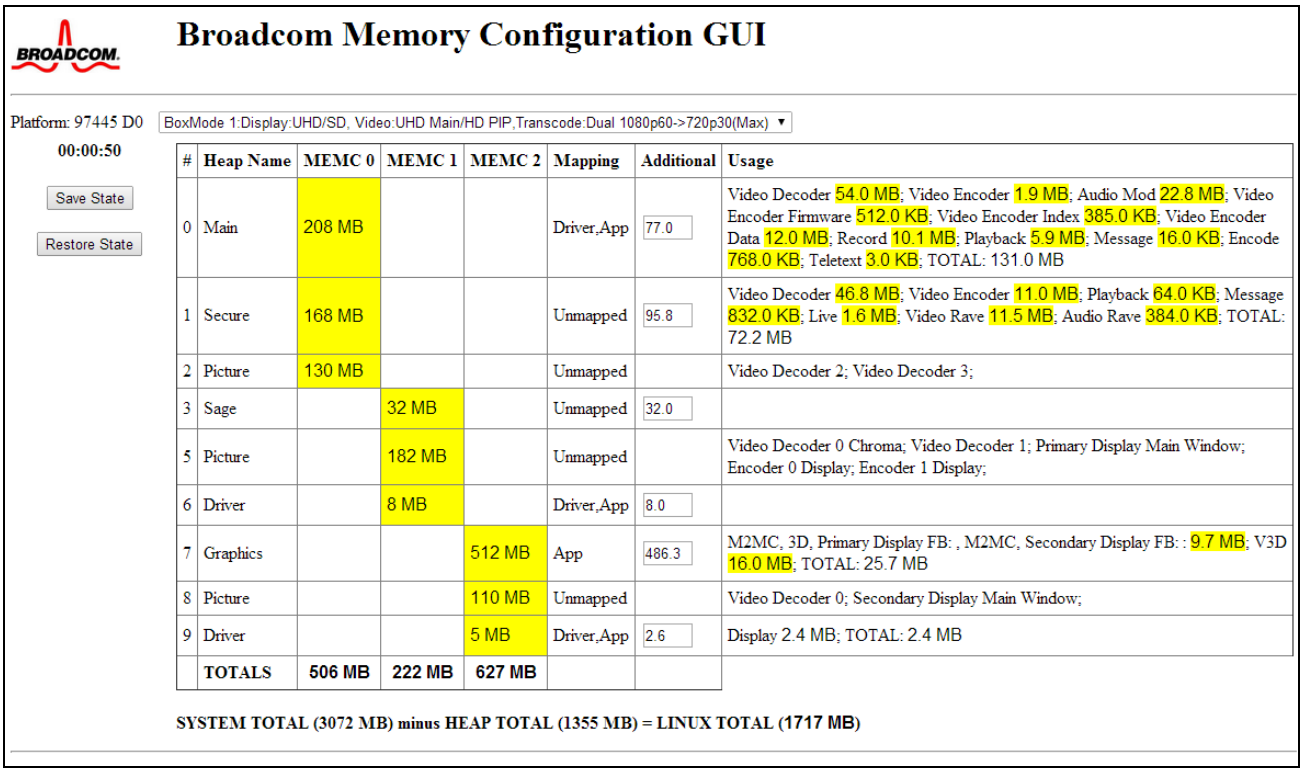
bmemconfig is a tool which provides refsw memory estimates by pulling the memory estimates by actually running the code. It is built on top of Nexus Platform memconfig facility. bmemconfig provides a graphical user interface that can be pulled from any browser on the same network.

1. Memory numbers are generated from the code that will run on real world applications. Memory documentation is generated by the real code
2. Uses standard web technologies like HTML, Javascript and CGI. Easy to understand and maintain.

3. Developers do not need to maintain memory documentation separately as memory usage documentation is generated directly from the source code.

Example Screen Capture

The following is an example of a typical screen capture:



Broadcom Memory Configuration GUI

Platform: 97445 D0 BoxMode 1:Display:UHD/SD, Video:UHD Main/HD PIP,Transcode:Dual 1080p60->720p30(Max)

00:00:50

Save State

Restore State

#	Heap Name	MEMC 0	MEMC 1	MEMC 2	Mapping	Additional	Usage
0	Main	208 MB			Driver,App	77.0	Video Decoder 54.0 MB; Video Encoder 1.9 MB; Audio Mod 22.8 MB; Video Encoder Firmware 512.0 KB; Video Encoder Index 385.0 KB; Video Encoder Data 12.0 MB; Record 10.1 MB; Playback 5.9 MB; Message 16.0 KB; Encode 768.0 KB; Teletext 3.0 KB; TOTAL: 131.0 MB
1	Secure	168 MB			Unmapped	95.8	Video Decoder 46.8 MB; Video Encoder 11.0 MB; Playback 64.0 KB; Message 832.0 KB; Live 1.6 MB; Video Rave 11.5 MB; Audio Rave 384.0 KB; TOTAL: 72.2 MB
2	Picture	130 MB			Unmapped		Video Decoder 2; Video Decoder 3;
3	Sage		32 MB		Unmapped	32.0	
5	Picture		182 MB		Unmapped		Video Decoder 0 Chroma; Video Decoder 1; Primary Display Main Window; Encoder 0 Display; Encoder 1 Display;
6	Driver		8 MB		Driver,App	8.0	
7	Graphics			512 MB	App	486.3	M2MC, 3D, Primary Display FB: , M2MC, Secondary Display FB: : 9.7 MB; V3D 16.0 MB; TOTAL: 25.7 MB
8	Picture			110 MB	Unmapped		Video Decoder 0; Secondary Display Main Window;
9	Driver			5 MB	Driver,App	2.6	Display 2.4 MB; TOTAL: 2.4 MB
	TOTALS	**506 MB**	**222 MB**	**627 MB**			

SYSTEM TOTAL (3072 MB) minus HEAP TOTAL (1355 MB) = LINUX TOTAL (1717 MB)

How to Build and Run

The bmemconfig tool requires a Webserver, an html (Javascript) file and a CGI application written in C.

Source Location:

BSEAV/tools/bmemconfig

BSEAV/lib/boa

How to Build:

```
plat 97445 D0 SV
cd BSEAV/tools/bmemconfig
make (this builds both bmemconfig and boa web server)
```

How to Run:

1) On the stb:
   a) **# cd ../nexus/bin**
   b) **# boa**
   c) Make note of IP address printed by the script
2) On a PC or laptop on the same network as the STB, open a browser (Chrome, Firefox, Safari, etc.) and enter the STB's IP address that was displayed in step 1 above.
   a) Click on the b**memconfig.html** hot link