

KOM

Technical Info

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SUBJECT: **How to build a compressed romable binary image under VxWorks 5.5.1 for the VCE405.**
KEYWORDS: **VCE405, VxWorks**
Thema: **This FAQ describes the procedure for building a compressed romable binary image (vxWorks_romCompress.bin) for the VCE405 under Tornado 2.2.1/vxWorks 5.5.1**
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1 Source updates:

Start with a clean BSP (**ID 05144**) installation and add the latest patch (bsp05144-T2.2.1-5.zip). With this in place there are 4 files that must be modified:

../target/config/VCE405/config.h

../target/config/VCE405/sysLib.c

../target/config/VCE405/Makefile

../target/config/comps/src/romStart.c

For config.h:

- Change the #define for **USER_RESERVED_MEM** so that **USER_RESERVED_MEM** is set to 0.
- Remove the #define for **ROM_BASE_ADRS**.
- Change the #define for **ROM_TEXT_ADRS** so that **ROM_TEXT_ADRS** is set to **0xFF800100**.

For sysLib.c:

Change the lines:

```
#if USER_RESERVED_MEM > 0  
#define USER_RESERVED_MEM_INDEX (MEM_RAM_INDEX + 17)
```

To be:

```
#ifndef USER_RESERVED_MEM  
#define USER_RESERVED_MEM_INDEX (MEM_RAM_INDEX + 17)
```

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For the Makefile:

- Set **ROM_TEXT_ADRS** to be **FF800000**
- Add **ROM_WARM_ADRS** and make it be **FF800008**
- To the "**EXTRA_DEFINE**" add "**-DROM_BASE_ADRS=0xFF800100**"

Note that this will make the values of **ROM_BASE_ADRS** and **ROM_WARM_ADRS** different in the Makefile than in config.h. This is OK.

For romStart.c:

Under “/* handy macros */”, change the lines:

```
#define SYS_MEM_TOP \  
(LOCAL_MEM_LOCAL_ADRS + LOCAL_MEM_SIZE - USER_RESERVED_MEM)
```

To be:

```
ifdef VCE405  
#define SYS_MEM_TOP \  
(LOCAL_MEM_LOCAL_ADRS + LOCAL_MEM_SIZE)  
#else  
#define SYS_MEM_TOP \  
(LOCAL_MEM_LOCAL_ADRS + LOCAL_MEM_SIZE - USER_RESERVED_MEM)  
#endif
```

This change removes **USER_RESERVED_MEM** from the definition of **SYS_MEM_TOP** for the VCE405.

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Build Instructions:

With these changes made, build a new project based on this modified BSP and in the workspace of the Tornado tool do the following:

- Set "**default_romCompress**" as the active build
- Open "**default_romCompress**" and in the "rules" tab select "**vxWorks_romCompress.bin**", then click "apply"
- Set the value of `USER_RESERVED_MEM` as required. This must be done under Tornado and can not be done during the BSP modifications. In the BSP the value must be zero.
- Change any of the kernel parameters necessary for your build.
- Build `vxWorks_romCompress.bin`

The resulting image will boot from user flash at address **0xFF800100** if it is loaded into the flash at address **0xFF800000**.

