Reference Manual

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VersaLogic

System Utility

Installation and usage of the VersaLogic System Utility

VersaLogic
C O R P O R A T I O N

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Product Release Notes

Rev 1.0 Release

Initial commercial release.

Customer Support

If you are unable to solve a problem after reading this manual or searching the KnowledgeBase, contact VersaLogic Technical Support at (503) 747-2261. VersaLogic support engineers are also available via e-mail at Support@VersaLogic.com.

Contents

Introduction 1

The VersaLogic System Utility enables you to perform various standard and VersaLogic-specific system or BIOS configuration and modification tasks.

The utility – a DOS command line application – consists of the following main function modules:

- BIOS Update Module – provides functions to update the system BIOS of a VersaLogic board.
- BIOS/Board Information Module – provides functions to easily gather VersaLogic-specific BIOS and hardware information.

The following operating modes or targets are supported:

- Board mode – in this mode, the utility must be executed on a VersaLogic target system. Functions that perform BIOS modifications directly access and modify the contents of the onboard BIOS Flash Memory chip.
- ROM File mode – in this mode, all operations are performed on a BIOS ROM file only that can later be flashed onto the respective target boards. In ROM File mode, the VersaLogic System Utility can also be executed on a standard host PC; however, functionality is limited to BIOS module modifications.

This utility supports the following VersaLogic board products:

- VL-EPU-3310 (Hawk) – Embedded Processing Unit
- VL-COMm-33 – COM Express Mini CPU module

Installation 2

The VersaLogic System Utility package includes a Linux command line version in a single ZIP file. This package also contains the VLOS drivers.

DOS Command Line

The file VLUTLCMD.EXE in the VLUTIL\DOSX folder of the Zip package is the DOS command line version of the VersaLogic System Utility. This version does not require any additional software or special installation.

The DOS version of the utility can only be run on a real DOS system (not in a Windows command shell).

The file 'Creating a DOS bootable USB stick for BIOS upgrades.docx' in the VLUTIL\DOSX folder of the ZIP package gives a general overview of how to create a DOS bootable USB stick that can be used for updating the BIOS.

Usage 3

This chapter describes the functions offered by the VersaLogic System Utility. The descriptions are organized by function modules with subsections.

The single function module sections may also include a short overview of the related VersaLogic BIOS features; however, this is only done as far as required, or helpful, to understand the functions offered by the respective utility module. A detailed description of the VersaLogic BIOS features is beyond the scope of this document. Refer to further VersaLogic documentation or contact the VersaLogic technical support team for detailed information if required.

As previously mentioned, the VersaLogic System Utility supports two different main operating modes, or targets, and consists of several function modules. Certain sub functions or whole function modules are only available in Board mode on a target system because they require a real system to operate on; they are not available in ROM File mode.

When using the command line of the VersaLogic System Utility (VLUTLCMD), the desired function module must be selected by passing a module selection parameter. If a module can be used in Board and ROM File' mode, the operating target also must be selected by passing the respective parameter.

Calling VLUTLCMD without any parameters provides an overview of the available function module selection parameters. Invoking VLUTLCMD with a function module selector as the only parameter causes the module's usage description to be displayed. All parameters are accepted in lower or upper case letters, although all descriptions use upper case.

To support batch file operations, VLUTLCMD sets an error level of one, or higher, to indicate an execution error or error level zero to indicate success.

Example 1:

```
c:\> VLUTLCMD
```

Output:

BFLASH	System BIOS Update Module
VLINFO	Board/BIOS Information Module

Example 2:

```
c:\> VLUTLCMD BFLASH
```

Output: Usage description for the BIOS update module.

BIOS Update Module

DESCRIPTION

This module allows you to update, or save, the BIOS of a VersaLogic board. An optional switch can be used to control bootblock programming. The respective BIOS ROM file is checked for consistency and compatibility (whether or not it can be used with the respective target board). The BIOS is not programmed if the ROM file is not a valid BIOS or it has not been created for the target system.

> **Note:**
>
> The BIOS Update Module is supported in Board mode only; it is not supported in ROM File mode.

COMMAND LINE VERSION

Function module selector: BFLASH

Syntax: VLUTLCMD BFLASH <BIOS file> [options]

BIOS File	Name of the BIOS ROM file to be programmed, or name of the file the current BIOS will be saved to.

Options:

/C	Invalidate the contents of the CMOS RAM in the Real Time Clock after BIOS programming.
/NOC	Do not invalidate the contents of the CMOS RAM.
/NOBB	Do not update the BIOS bootblock; by default the bootblock will be updated as well.
/E	Perform extended/full flash update instead of BIOS content only (standard) flash update.
/EF	Force extended/full flash update instead of BIOS content only (standard) flash update.
/EM	Perform extended/full flash update instead of BIOS content only (standard) flash update. Manufacturing mode. No auto reboot after BIOS update.
/EFM	Force extended/full flash update instead of BIOS content only (standard) flash update. Manufacturing mode. No auto reboot after BIOS update.
/S	Save current BIOS to file specified in the 'BIOS File' parameter.
/D	Defer BIOS update or save. If this parameter is passed, the BIOS update or save process will stop after preprocessing and allow you to switch to a different Flash Memory chip.
/EIL	Check if extended BIOS area is locked.
/EU	Unlock extended BIOS area for update and execute automatic off-on cycle to make unlock effective.
/EUM	Unlock extended BIOS area for update without automatic off-on. Requires manual off-on cycle to make unlock effective.
/EL	Lock extended BIOS area and execute automatic off-on cycle to make lock effective.
/ELM	Lock extended BIOS area without automatic off-on cycle.
/BP: xxx	Specify password to deactivate the 'BIOS Update And Write Protection'. This option can also be used without the 'BIOS File' parameter (that is, VLUTLCMD BFLASH /BP:password) to deactivate the 'BIOS Update & Write Protection' without updating the BIOS. This is required to allow other functions of the utility to perform necessary flash write accesses.

Recommended Usage: VLUTLCMD BFLASH ROMFILE.ROM

PROGRAMMING A FLASH MEMORY CHIP THAT IS NOT USED FOR SYSTEM STARTUP

In some circumstances, it may be necessary to program a BIOS to another Flash Memory chip other than the one used to boot the system. This might be the case when creating a backup copy of the BIOS on an external Flash Memory chip, or after booting from the external Flash Memory chip to restore the BIOS of the onboard Flash Memory chip. In order to do this a few things must be considered:

1. Before switching to another flash part, the utility must be launched with the following parameters:

```
VLUTLCMD BFLASH ROMFILE.ROM /D
```

The utility starts as usual, performs the required preprocessing, and then stops to inform you that it is safe to switch to another flash part. After doing this and pressing a key to confirm, the BIOS update process will be performed as usual.

Keep in mind that programming the bootblock is mandatory when writing a BIOS to a Flash Memory chip that has not been programmed before with a BIOS valid for the board in use.

BIOS Update and Write Protection

Supported VersaLogic boards include the 'BIOS Update And Write Protection' feature. If this feature is enabled in the BIOS setup menu, all write and erase accesses to the target system's Flash Memory chip are blocked. This also blocks all functions of the VersaLogic System Utility that require flash write or erase accesses (for example, BIOS update or any BIOS modifications in Board mode). To allow BIOS updates or BIOS modifications in Board mode, even if the protection is enabled, the utility includes functions to temporarily deactivate the 'BIOS Update and Write Protection' by passing the correct deactivation password to the system.

BIOS/Board Information Module

DESCRIPTION

This module offers a simpler method of gathering relevant information about a certain VersaLogic board and its BIOS. The information is intended for use by customers during their own setup or manufacturing process to identify a VersaLogic board or BIOS, or to be passed to VersaLogic when contacting the support team.

The following information can be derived from a VersaLogic board:

- System BIOS Version
- OEM BIOS Version
- Board Controller Firmware Version
- Serial Number
- Manufacturing Date
- Last Repair Date
- Boot Counter
- Running Time
- BIOS Update And Write Protection State

The information module can also be used in 'ROM File' mode to analyze a VersaLogic BIOS file. From this BIOS file, however, only the system and OEM BIOS version can be derived.

COMMAND LINE VERSION

Function Module Selector: VLINFO

Syntax: `VLUTLCMD VLINFO /OT:[target] /[command] [parm] [options]`

/OT	Specify the operating target. BOARD: All actions result in direct hardware accesses to the respective VersaLogic board. All other strings are interpreted as name of the BIOS ROM file to be analyzed.
Parm	Command parameter, if required (for example, input or output file name).
Options	Information selection option(s). One or more options to select the information that should be returned by the DUMP or SAVE commands (described below).

Commands:

/SAVE	Save selected information to file
/DUMP	Display selected information on screen.
/BFCHK	Check whether the operating target system and OEM BIOS versions match the versions of the specified BIOS file.

Information Selection Options:

/SILENT	Information is displayed or saved without description text (for example, 'X945R111' instead of 'System BIOS Version: X945R111')
/BIOS	Return system and OEM BIOS version
/BCFW	Return board controller firmware version
/VLOS	Return VLOS interface and driver version
/BCNT	Return boot counter
/RTIM	Return running time
/MANU	Return CPU board manufacturing data
/BUP	Return state of the 'BIOS Update And Write Protection'

If no selection options are passed, the complete information list will be displayed or saved.

Example 1

Display BIOS versions and boot counter with description text.

```
VLUTLCMD VLINFO /OT:BOARD /DUMP /BIOS /BCNT
```

Possible output:

```
System BIOS Version:  MA31R901
OEM BIOS Version:
Boot Counter:         26
```

Example 2

Display board manufacturing information with description text.

```
VLUTLCMD VLINFO /OT:BOARD /DUMP /MANU
```

Possible output:

```
Board Name:        P915
Board Sub Name:    P915
Product Revision:  E.0 (0x4530)
Serial Number:     0425018610568
Manufacturing Date: 2006.08.14
Last Repair Date   0000.00.00
```