METHOD AND APPARATUS FOR VIRTUAL LOAD REGIONS IN STORAGE SYSTEM CONTROLLERS

Abstract: Methods and apparatus for facilitating the management of multiple controller code versions for implementing operational aspects of storage system controllers are provided. In particular, multiple versions of storage controller code are loaded into the physical memory of a storage controller. The logical region in which a particular controller code version is loaded may be designated in metadata as a primary, secondary or other region. The controller code that is associated with a logical version designated as the primary region is selected by the storage controller for execution upon a storage controller reboot. Accordingly, time consuming copy operations are not required in order to switch between different versions of storage controller code.
### INTERNATIONAL SEARCH REPORT

**International application No**

PCT/US 06/62615

**A CLASSIFICATION OF SUBJECT MATTER**

- **IPC(8) - G06F 9/00 (2008 04)**
- **USPC - 7 13/1**

According to International Patent Classification (IPC) or to both national classification and IPC

**B FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

- **USPC 713/1**

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

- **USPC - 713/1,300,310 1711/1 14,135,162**

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

- **USPTO WEST (PGPB, USPT, EPAB, JPAB), Google Scholar, Update, upgrade, new, code, firmware, software, program, region, memory, RAID, storage, controller, memory, section, version, input, output, operations, control, execute, management, data, information, stop, halt, detect, failure, reboot, restart, remove, delete**

**C DOCUMENTS CONSIDERED TO BE RELEVANT**

<table>
<thead>
<tr>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No</th>
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<tr>
<td>US 2003/0088735 A1 (BUSSER et al) 08 May 2003 (08 05 2003) entire document</td>
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Further documents are listed in the continuation of Box C

- **X“T”** later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- **X“X”** document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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**Date of the actual completion of the international search**

31 August 2008 (31 08 2008)

**Date of mailing of the International search report**

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