

## art - Bug #8823

### art exit codes

05/15/2015 11:41 AM - Andrei Gaponenko

<b>Status:</b> Closed	<b>Start date:</b> 05/15/2015
<b>Priority:</b> High	<b>Due date:</b>
<b>Assignee:</b> Kyle Knoepfel	<b>% Done:</b> 100%
<b>Category:</b> Application	<b>Estimated time:</b> 2.00 hours
<b>Target version:</b> 1.16.00	<b>Spent time:</b> 2.00 hours
<b>Occurs In:</b>	<b>Experiment:</b> Mu2e
<b>Scope:</b> Internal	<b>SSI Package:</b> art
<b>Description</b>	
<p>Hello,</p> <p>Art attempts to use values outside of the legal range, such as 7002, as exit codes. "man 3 exit" specifies that only the 8 least significant bits of an integer are used, so the caller gets a stripped value:</p> <pre>#----- \$ mu2e -c /nofile; echo "The caller got exit code \$?" Failed to parse the configuration file '/nofile' with exception ---- Can't locate or can't open specified file: BEGIN   /nofile =&gt; /nofile ---- Can't locate or can't open specified file: END  Art has completed and will exit with status 7002. The caller got exit code 90 #-----</pre> <p>This may lead to unintended 0 exit codes seen by the caller after an art abnormal termination.</p> <p>Per our discussion one current "source" of exit code values is an enum mapping of exceptions. This approach does not allow for a reliable detection of abnormal program termination from a script, because enums can start at zero and can contain values outside of the allowed range.</p> <p>Please sanitize exit codes of art.</p> <p>Note that while return codes above 128 may be used with exit(), they have special meaning. Bash uses them to report process termination by signals. If art exits after catching a signal it should use 128+signal_number.</p> <p>Codes 126 and 127 also have special meaning in bash (see e.g. <a href="http://www.tldp.org/LDP/abs/html/exitcodes.html">http://www.tldp.org/LDP/abs/html/exitcodes.html</a>) therefore I propose to restrict possible non-signal exit codes of art to the 0-125 range. The file /usr/include/sysexits.h defines a possible set of "safe" exit code values.</p> <p>Andrei</p>	
<b>Related issues:</b>	
Related to art - Feature #8602: wrong exit status after a signal	<b>Closed</b> <b>05/05/2015</b>

### Associated revisions

**Revision 7c471168 - 07/17/2015 09:17 AM - Kyle Knoepfel**

Implement fix for issue #8823 - exit code modifications

## History

---

### #1 - 05/18/2015 12:44 PM - Christopher Green

- Category set to Application
- Status changed from New to Accepted
- Target version set to 1.18.00
- Estimated time set to 2.00 h
- SSI Package art added
- SSI Package deleted ()

### #2 - 07/17/2015 09:30 AM - Kyle Knoepfel

- Related to Feature #8602: wrong exit status after a signal added

### #3 - 07/17/2015 10:16 AM - Kyle Knoepfel

- Status changed from Accepted to Resolved
- Assignee set to Kyle Knoepfel
- % Done changed from 0 to 100

All non-SIGINT return codes are now in the range [0 (success), 125]. Any handled signals result in an art return code of 128+n. Implemented with commit [art:7c471168b2eb48fb8fab26be75c156339c03dbd4](https://github.com/7c471168b2eb48fb8fab26be75c156339c03dbd4).

### #4 - 10/01/2015 11:24 AM - Kyle Knoepfel

- Target version changed from 1.18.00 to 1.16.00

### #5 - 10/07/2015 11:53 AM - Christopher Green

- Status changed from Resolved to Closed