

Klever - Feature #10551

Feature # 8119 (Closed): Develop preset tags

Develop preset tags for CPALockator

10/21/2020 12:42 PM - Evgeny Novikov

Status:	Closed	Start date:	10/21/2020
Priority:	Urgent	Due date:	
Assignee:	Pavel Andrianov	% Done:	0%
Category:	Preset jobs, marks and tags	Estimated time:	0.00 hour
Target version:	3.0		
Published in build:			
Description			
CPALockator is involved by Klever users more and more. It has rather specific false alarm reasons. As a result of this feature request I expect a subtree of corresponding tags with appropriate descriptions in any suitable form.			

History

#1 - 10/21/2020 01:37 PM - Pavel Andrianov

Tags are combined from different marking bases:

- Predicate Analysis (Problems with PredicateCPA)
 - Memory model (Problems with simple memory model)
 - Different structures (Two different instances of the same structure type is considered to be the same object)
 - List operations (Operations with list elements usually should considered as operations with the whole list)
 - Shared data (Shared data may be considered to have arbitrary values to guarantee soundness of analysis without effects)
 - Global infeasibility (Two racy paths are feasible one by one, but contradicts each other in parallel)
- Lock Analysis (Problems with LockCPA)
 - Ad-hoc synchronization (Custom synchronization via variables)
 - Missed synchronization (The locking function is absent in configuration)
 - Interrupts (Specifics of interrupts is not considered)
 - Signals (Specifics of signals is not considered)
 - Conditional locking (Lock/Unlock operations are conditional, it leads to a set of infeasible paths)
 - Protected get (Atomic extraction of a data from shared container, and access to it without locking as to a local one)
- BAM (Problems with BAM CPA)
- Thread Analysis (Problems with ThreadCPA)
- Shared Analysis (Problems with LocalCPA)
 - Missed allocation (The allocation function is absent in configuration)
 - Shared merge (Shared analysis is path insensitive, it may miss precise information about locality)
- Lightweight mode (Predicate analysis is absent in lightweight mode)
- Auxiliary variables (The race is found for auxiliary variable in non-target code)
- RCU analysis (Problems with RCU analysis)
 - Alias analysis (Alias analysis is not precise enough)
 - RCU lists (RCU operations over lists are not completely supported)

#2 - 12/16/2020 08:24 PM - Evgeny Novikov

- Status changed from New to Resolved

I added these tags to preset ones in branch `bridge_9396`.

#3 - 12/16/2020 08:32 PM - Evgeny Novikov

- Status changed from Resolved to Closed

I merged this branch to master in [2625e7311](#) after CI passed test cases. This change is not backward compatible. Moreover, you should migrate your marks manually using preset tags as most as possible.