

Design challenge:  
 To ensure artifacts and their cache reservation are released properly in various cases introduced by corruption detection.  
 Especially for:  
 (1) hash entries info since mistakenly accumulated hash entries can lead to slow speed of FilterBitsBuilder::Finish(), high memory peak and filter capturing previous keys;  
 (2) partitioned filter due to "multiple-Finish-before-multiple-PostVerify" pattern

**Summary of artifact's release point under each case**

FullFilter	Hash Entries	Hash Entries Cache Rev	Checksum	Final Filter	Final Filter Cache Rev	Banding	Banding Cache Rev
<b>No Corruption</b>	PostVerify after BlockChecksum	PostVerify after BlockChecksum	PostVerify after BlockChecksum	Fall out of scope of the filter-writing loop	ResetFilterBitsBuilder after the filter-writing loop	FilterBitsBuilder::Finish	FilterBitsBuilder::Finish
<b>Corruption 1: Hash entries</b>	MaybeVerifyHashEntries Checksum	MaybeVerifyHashEntries Checksum	MaybeVerifyHashEntries Checksum	Bloom: Fall out of scope of FilterBitsBuilder::Finish and empty filter Ribbon: Haven't been created yet	Bloom: Fall out of scope of FilterBitsBuilder::Finish and no cache rev Ribbon: Haven't been created yet	Fall out of scope of FilterBitsBuilder::Finish earlier	Fall out of scope of FilterBitsBuilder::Finish earlier
<b>Corruption 2: Filter content</b>	PostVerify after BlockChecksum	PostVerify after BlockChecksum	PostVerify after BlockChecksum	Fall out of scope of the filter-writing loop earlier	ResetFilterBitsBuilder after the filter-writing loop earlier	FilterBitsBuilder::Finish	FilterBitsBuilder::Finish
<b>Extra cases between corruption 1 and 2: No corruption 1 but can't get to check for corruption 2 due to some early return of the code (e.g, early return before PostVerify in WriteRawBlock)</b>	ResetFilterBitsBuilder	ResetFilterBitsBuilder	ResetFilterBitsBuilder	Fall out of scope of the filter-writing loop earlier	ResetFilterBitsBuilder after the filter-writing loop earlier	FilterBitsBuilder::Finish	FilterBitsBuilder::Finish

PartitionedFilter	Partitioned Hash Entries	Partitioned Hash Entries Cache Rev	Partitioned Checksum	Partitioned Final Filter	Partitioned Final Filter Cache Rev	Partitioned Banding	Partitioned Banding Cache Rev
<b>No Corruption</b>	PostVerify in PartitionFilterBlock::Finish	PostVerify in PartitionFilterBlock::Finish	PostVerify in PartitionFilterBlock::Finish	Fall out of scope of the filter-writing loop	ResetFilterBitsBuilder after the filter-writing loop	FilterBitsBuilder::Finish	FilterBitsBuilder::Finish
<b>Corruption 1: Hash entries</b>	MaybeVerifyHashEntries Checksum	MaybeVerifyHashEntries Checksum	MaybeVerifyHashEntries Checksum	Bloom: Fall out of scope of FilterBitsBuilder::Finish and empty filter Ribbon: Haven't been created yet	Bloom: Fall out of scope of FilterBitsBuilder::Finish and no cache rev Ribbon: Haven't been created yet	Fall out of scope of FilterBitsBuilder::Finish earlier	Fall out of scope of FilterBitsBuilder::Finish earlier
<b>Corruption 2: Filter content</b>	PostVerify in PartitionFilterBlock::Finish	PostVerify in PartitionFilterBlock::Finish	PostVerify in PartitionFilterBlock::Finish	ResetFilterBuilder and filters all	ResetFilterBuilder and filters all	FilterBitsBuilder::Finish	FilterBitsBuilder::Finish
<b>Extra cases between corruption 1 and 2: No corruption 1 but can't get to check for corruption 2 due to some early return of the code (e.g, early return before PostVerify in WriteRawBlock)</b>	No such case	No such case	No such case	ResetFilterBuilder and filters all	ResetFilterBuilder and filters all	FilterBitsBuilder::Finish	FilterBitsBuilder::Finish