The Java BACI properties (jbaci) implementation was done some time ago, but left some stuff without proper implementation. So far, only the implementation of on-change delta_percent was found to be left out.

- ✅ The implementation of monitoring time-based triggers is working
- ❓ The implementation of on-change monitors is apparently implemented but needs to be double checked
- ❌ The implementation of percentage on-change monitors seem to have been ignored
- ❓ The implementation of alarms on ranges is apparently implemented, but needs to be double checked
- ✅ Archival is done using the C++ MONITOR_COLLECTOR component in a non-collocated fashion

| Name | Default | Description |
|---|---|---|
| min_timer_trig | 0.001 | Maximum sampling rate |
| default_timer_trig | 1.0 | Default monitoring sampling rate (Only monitors, doesn't affect archival) |
| archive_min_int | 0.0 | Minimum time between archiving events. 0 means disabled; it will be archived any time needed by delta or delta percent. |
| archive_max_int | 0.0 | Maximum time between archiving events. 0 means disabled; it will not be archived unless triggered by delta or delta percent. |
| min_delta_trig | 0 \| false | Default monitoring on-change trigger (Only monitors, doesn't affect archival) |
| archive_delta | 0 \| false | Value change that triggers an archiving event. 0 means disabled; it will not be archived unless triggered by time or delta percent change. |
| archive_delta_percent | 0.0 | Value percentage change that triggers an archiving event. 0 means disabled; it will not be archived unless triggered by time or delta change. |

## Time Triggered Archival

This terminology is used to consider the need to publish a new value after some time has passed since the last publication.

## Archive Delta

This is a terminology describing the need to publish a new value the monitoring archival chain when the last monitored value has changed by more than an absolute value.

## Archive Delta Percent

This is a terminology describing the need to publish a new value the monitoring archival chain when the last monitored value has changed by more than an percentage value.

## Alarms

...

## Legend

- Events
  - A: Initial Value
  - T: Time
  - D: Delta
  - P: Percent

## #1: Monitor every 5 seconds

- min_timer_trig = 1
- archive_max_int = 5
- archive_min_int = 0
- archive_delta = 0
- archive_delta_percent = 0.0

```
Time:  0 1 2 3 4 5 6 7 8 9 10
Value: 1 2 3 4 5 6 5 6 5 4 2
Event: I         T         T
```

## #2: Monitor each time the value changes by 2 since last archival

- min_timer_trig = 1
- archive_max_int = 0
- archive_min_int = 0
- archive_delta = 2
- archive_delta_percent = 0.0

```
Time:  0 1 2 3 4 5 6 7 8 9 10
Value: 1 2 3 4 5 6 5 6 5 4 2
Event: I   D   D           D
```

## #3: Monitor each time the value changes by 50% since last archival

- min_timer_trig = 1
- archive_max_int = 0
- archive_min_int = 0
- archive_delta = 0
- archive_delta_percent = 0.5

```
Time:  0 1 2 3 4 5 6 7 8 9 10
Value: 1 2 3 4 5 6 5 6 5 4 2
Event: I P P   P           P
```

## #3: Monitor each time the value changes by 50% since last archival, but no more often than every 2 seconds

- min_timer_trig = 1
- archive_max_int = 0
- archive_min_int = 2
- archive_delta = 0
- archive_delta_percent = 0.5

```
Time:  0 1 2 3 4 5 6 7 8 9 10
Value: 1 2 3 4 5 6 5 6 5 4 2
Event: I   P   P           P
```

## #4: Monitor each time the value changes by 2 since last archival, or 3 seconds

- min_timer_trig = 1
- archive_max_int = 3
- archive_min_int = 0
- archive_delta = 2
- archive_delta_percent = 0

```
Time:  0 1 2 3 4 5 6 7 8 9 10
Value: 1 2 3 4 5 6 5 6 5 4 2
Event: I   D   D     T   D D
```