

Fix the bug when inheriting SegmentBase, SegmentTemplate and SegmentList from upper layer.

Please refer to the MPD attached. Also, please refer to Figure 1 to get an overview of this issue.

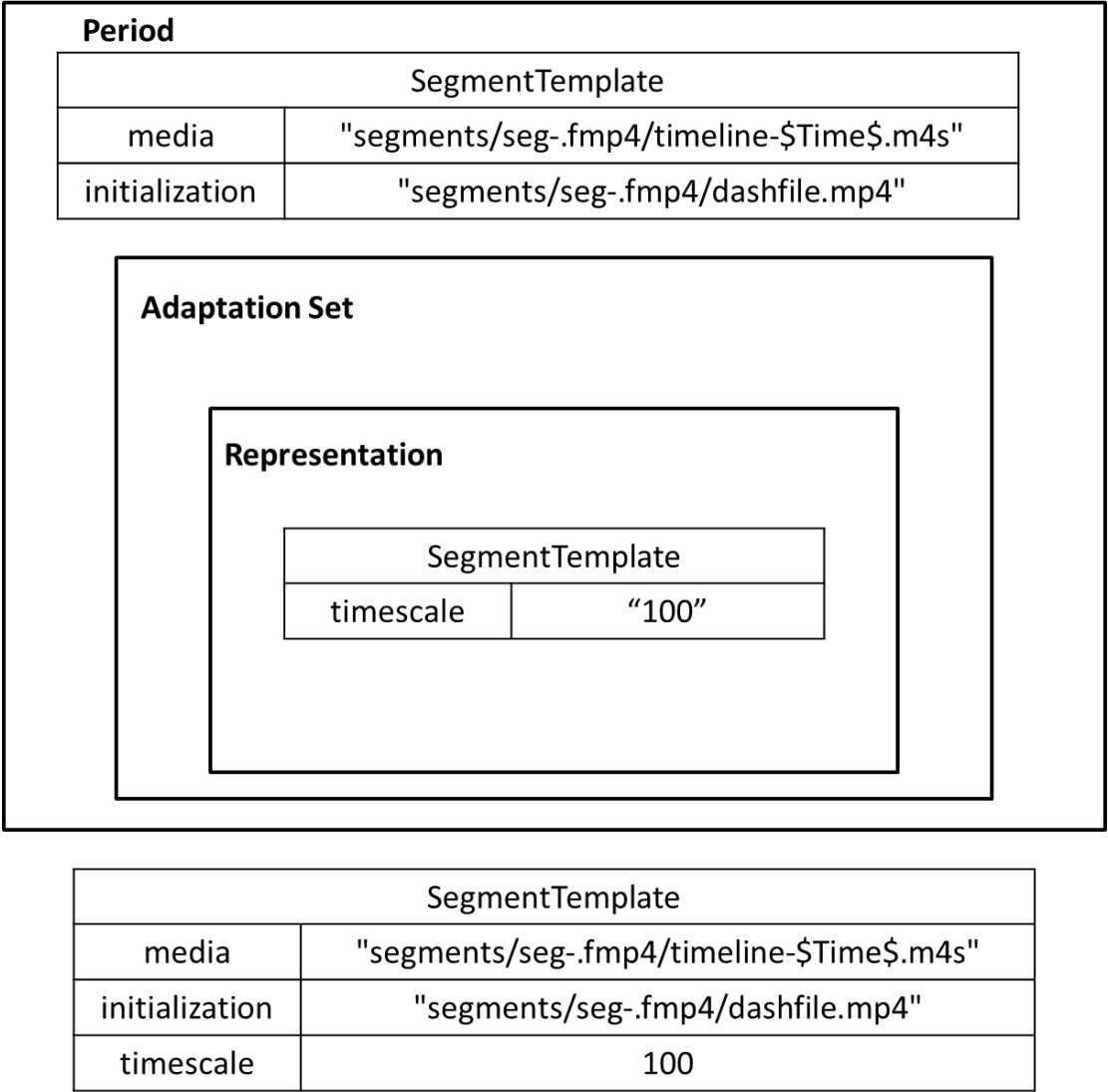


Figure 1

From the attached MPD, it is expected to generate resource URLs by the SegmentTemplate table below. Unfortunately, it is not so now. For current Gstmpdparser we will get illegal address & make playback fail.

The root cause is as figure 2 below.
Firstly We call `gst_mpdparser_parse_period_node()` and store the result in struct `GstSegmentTemplateNode` by calling `gst_mpdparser_parse_segment_template_node()`.

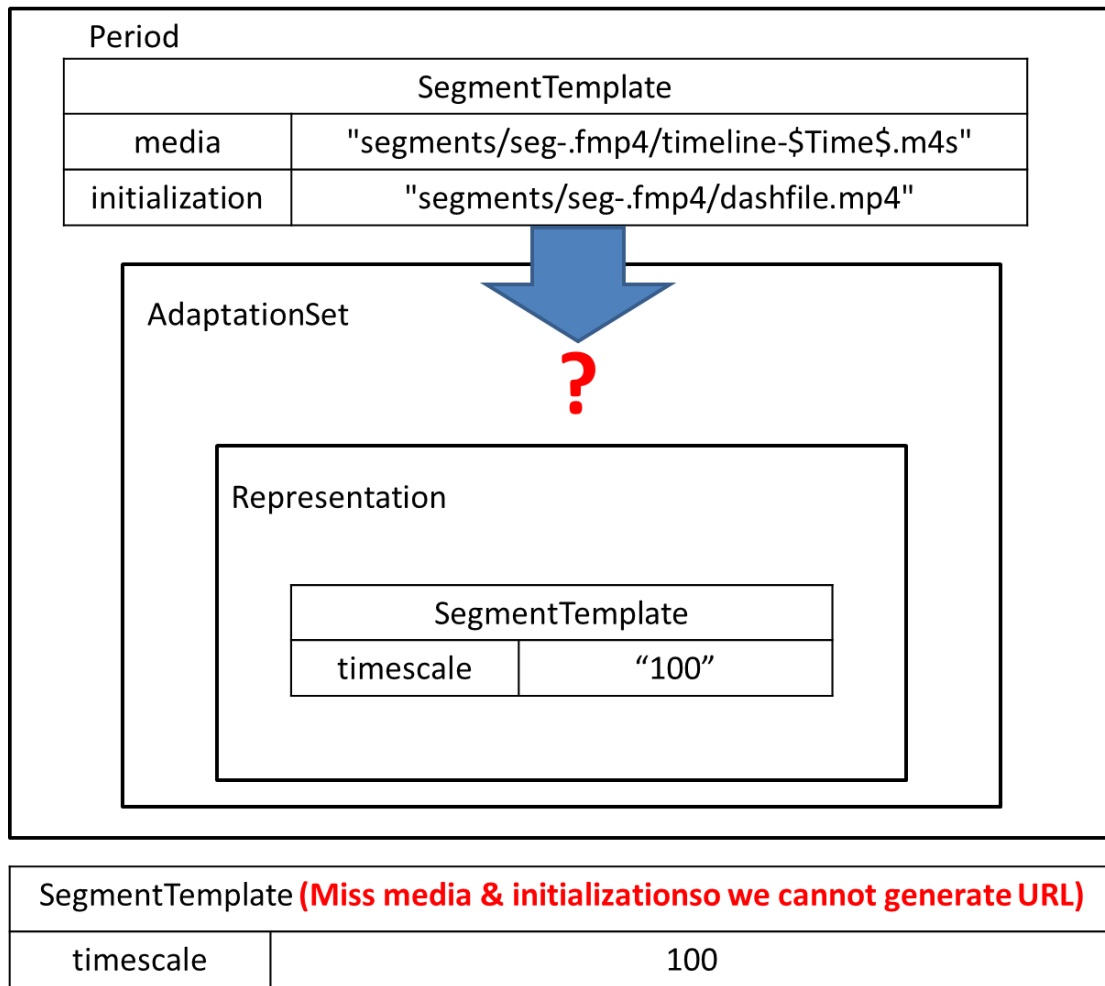
Then we parse the children node and call `gst_mpdparser_parse_adaptation_set_node()`. At this time "SegmentTemplate" **DOES NOT** appear. So we have no chance to call `gst_mpdparser_parse_segment_template_node()`. As the question mark indicates, the adaption set carries no info about "SegmentTemplate".

Finally, we parse the representation node but `parent->SegmentTemplate` is NULL (parent = adaption set) as the function prototype below. So representation node's SegmentTemplate inherits nothing and only with timescale from itself.

```
gst_mpdparser_parse_segment_template_node
    (&new_representation->SegmentTemplate, cur_node,
     parent->SegmentTemplate)
```

As the result, the generated `stream->cur_seg_template` will only have timescale as the logic below. It misses the attribute of @index and @ initialization so **we CANNOT generate a legal URL address.**

```
if (representation->SegmentTemplate != NULL) {
    stream->cur_seg_template = representation->SegmentTemplate;
} else if (stream->cur_adapt_set->SegmentTemplate != NULL) {
    stream->cur_seg_template = stream->cur_adapt_set->SegmentTemplate;
} else if (stream_period->period->SegmentTemplate != NULL) {
    stream->cur_seg_template = stream_period->period->SegmentTemplate;
}
```



[Proposed solution]

From the description above, the root cause is that we only do inherit from "parent". However, if the desired attribute exists at the grandparent (as period's role to representation), we will get miss.

The spec says:

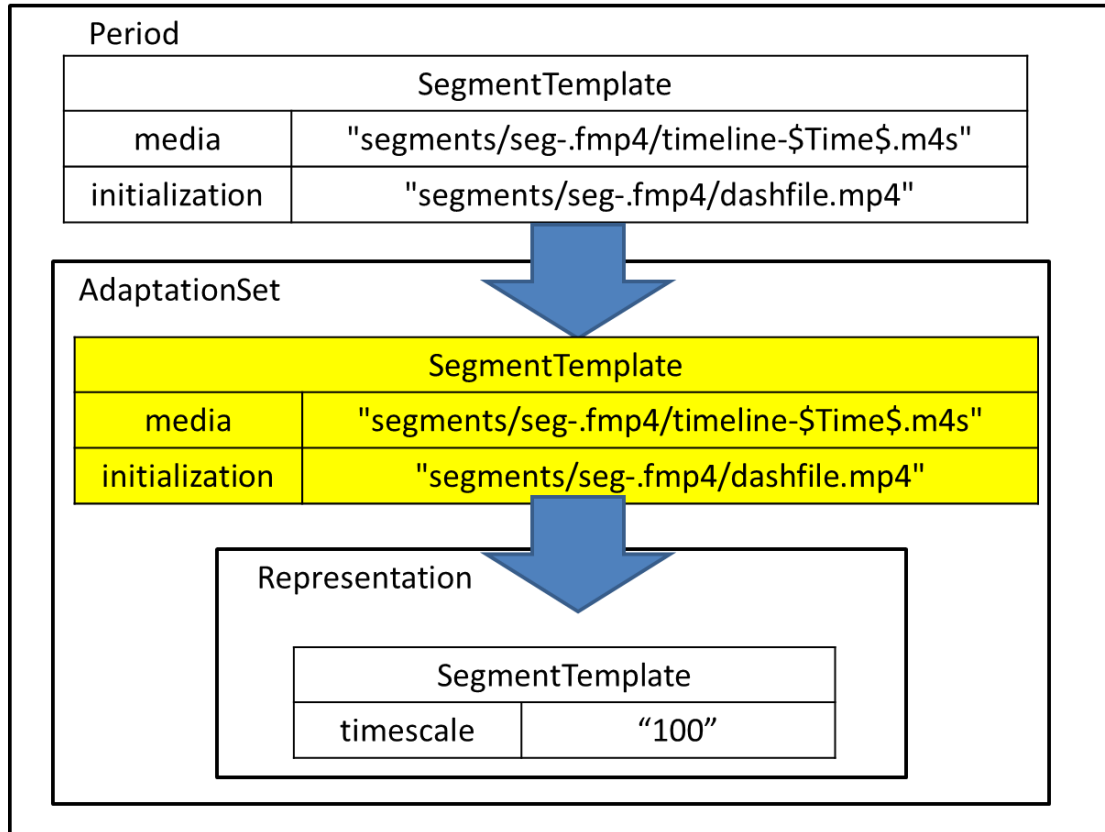
"...SegmentBase, SegmentTemplate and SegmentList shall inherit attributes and elements from the same element on a higher level. If the same attribute or element is present on both levels, the one on the lower level shall take precedence over the one on the higher level. ..."

According to the spec, the proposed solution is:

When we parse an adaption set and find that either one of the three elements = [SegmentBase, SegmentTemplate and SegmentList] **DOES NOT** exist but the parent (period node) holds one, we **FORCE** to inherit the element from period node.

As the result, figure 3 shows how the proposed patch resolves this issue.

The adaption set will inherit SegmentTemplate since it does not have this element but its parent (adaption set) has. So representation will see its parent (adaption set) has such element (in fact, inherit from period node) so it can assemble to a correct SegmentTemplate element and playback well.



SegmentTemplate	
media	"segments/seg-.fmp4/timeline-\$Time\$.m4s"
initialization	"segments/seg-.fmp4/dashfile.mp4"
timescale	100