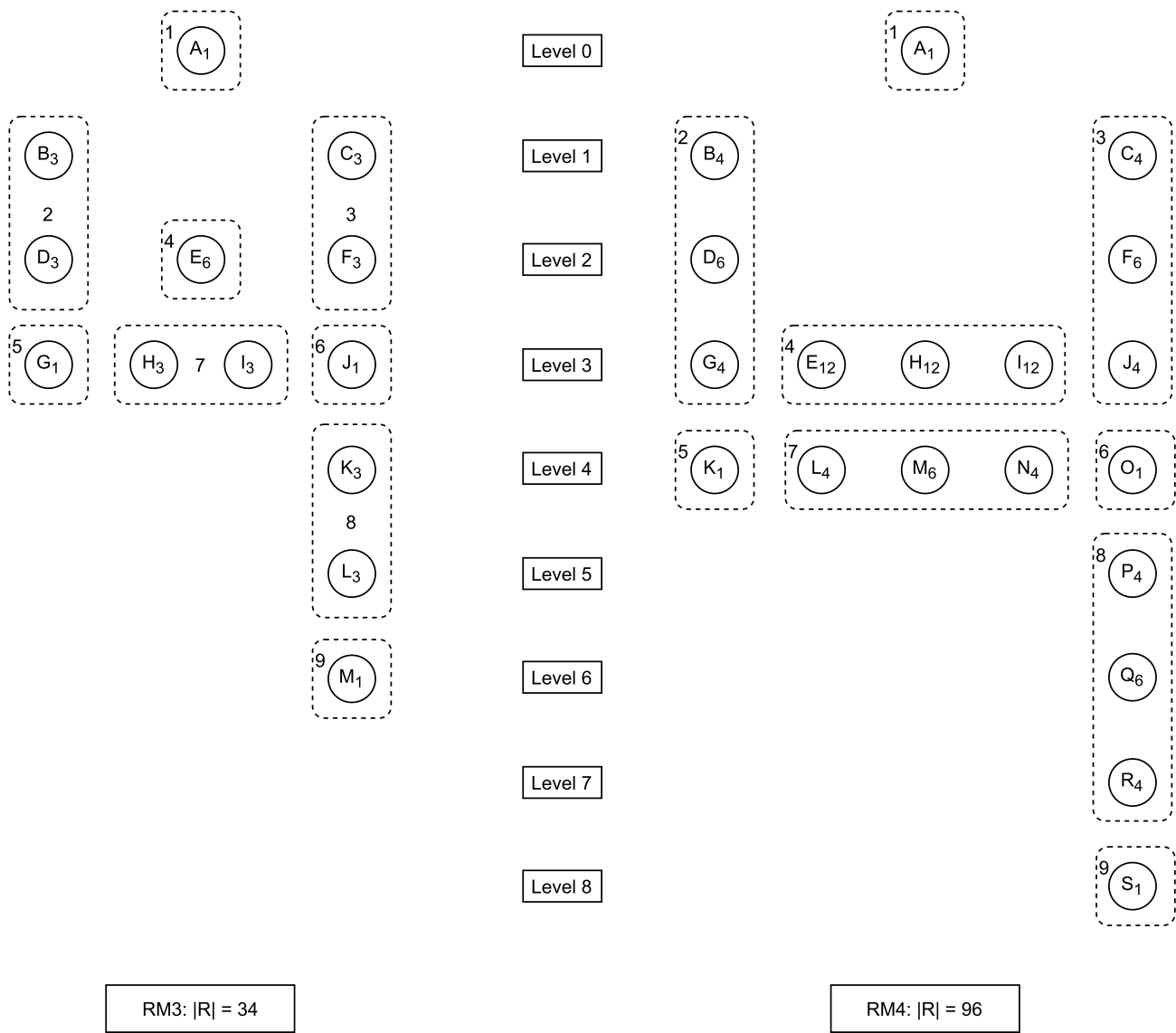


Transaction-Commit Classes and Configurations

Classes are circles annotated with alphabetic labels indexed by class size.
Configurations are disjoint sets of classes and are numbered from 1 to 9.



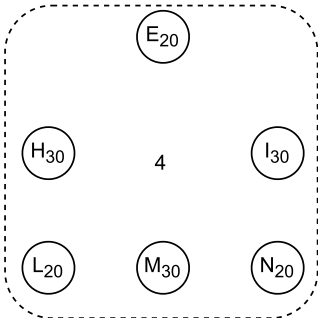
Level 0



Level 1



Level 2



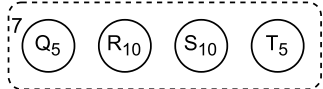
Level 3



Level 4



Level 5



Level 6



Level 7



Level 8



Level 9



Level 10



RM5: $|R| = 274$

Configurations Predicates Based on RM4

$$\text{Config1} = \forall R. \text{working}(R) \wedge \neg \text{aborted}(R) \wedge \neg \text{committed}(R) \wedge \neg \text{pending}(R)$$

$$\text{Config2} = \exists R. \text{working}(R) \wedge \exists R. \neg \text{working}(R)$$

$$\forall R. \text{aborted}(R) \oplus \text{working}(R)$$

$$\forall R. \neg \text{committed}(R) \wedge \neg \text{pending}(R)$$

$$\text{Config3} = \exists R. \text{working}(R) \wedge \exists R. \neg \text{working}(R)$$

$$\forall R. \text{pending}(R) \oplus \text{working}(R)$$

$$\forall R. \text{pending}(R) \oplus \text{working}(R)$$

$$\forall R. \neg \text{aborted}(R) \wedge \neg \text{committed}(R)$$

$$\text{Config4} = \exists R. \text{working}(R) \wedge \exists R. \text{pending}(R) \wedge \exists R. \text{aborted}(R)$$

$$\forall R. \text{aborted}(R) \rightarrow \neg \text{working}(R)$$

$$\forall R. \text{working}(R) \rightarrow \neg \text{pending}(R)$$

$$\forall R. \text{pending}(R) \rightarrow \neg \text{aborted}(R)$$

$$\forall R. \neg \text{committed}(R)$$

$$\text{Config5} = \forall R. \text{aborted}(R) \wedge \neg \text{committed}(R) \wedge \neg \text{pending}(R) \wedge \neg \text{working}(R)$$

$$\text{Config6} = \forall R. \text{pending}(R) \wedge \neg \text{aborted}(R) \wedge \neg \text{committed}(R) \wedge \neg \text{working}(R)$$

$$\text{Config7} = \exists R. \text{pending}(R) \wedge \exists R. \neg \text{pending}(R)$$

$$\forall R. \neg \text{committed}(R) \wedge \neg \text{working}(R)$$

$$\text{Config8} = \exists R. \text{pending}(R) \wedge \exists R. \neg \text{pending}(R)$$

$$\forall R. \text{committed}(R) \oplus \text{pending}(R)$$

$$\forall R. \neg \text{aborted}(R) \wedge \neg \text{working}(R)$$

$$\text{Config9} = \forall R. \text{committed}(R) \wedge \neg \text{aborted}(R) \wedge \neg \text{pending}(R) \wedge \neg \text{working}(R)$$

Configuration 2

	<i>RM2</i>	<i>RM3</i>	<i>RM4</i>	<i>RM5</i>
	<i>A W</i>	<i>A W</i>	<i>A W</i>	<i>A W</i>
<i>B</i>	1 1	1 2	1 3	1 4
<i>D</i>		2 1	2 2	2 3
<i>G</i>			3 1	3 2
<i>K</i>				4 1

$A + W = n$
$A \geq 1$
$W \geq 1$

Configuration 4

	<i>RM2</i>	<i>RM3</i>	<i>RM4</i>	<i>RM5</i>
	<i>A P W</i>	<i>A P W</i>	<i>A P W</i>	<i>A P W</i>
<i>E</i>		1 1 0	1 1 1	1 1 2
<i>H</i>			2 1 0	2 1 1
<i>I</i>			1 2 0	1 2 1
<i>L</i>				3 1 0
<i>M</i>				2 2 0
<i>N</i>				1 3 0

$A + P + W = n$
$A \geq 1$
$P \geq 1$
$W \geq 0$