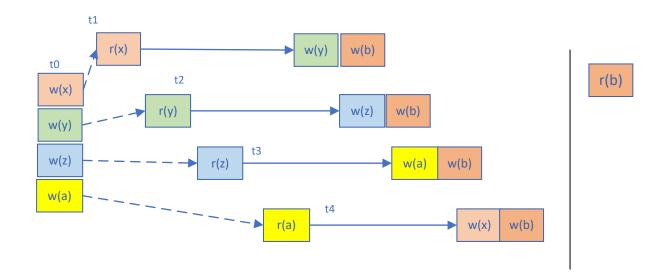
# c→commit a→abort+理由になったtx bd→boundary r→read flag対象のtx w→write flag対象のtx



#### write\_crown

#### cascading\_all\_4tx

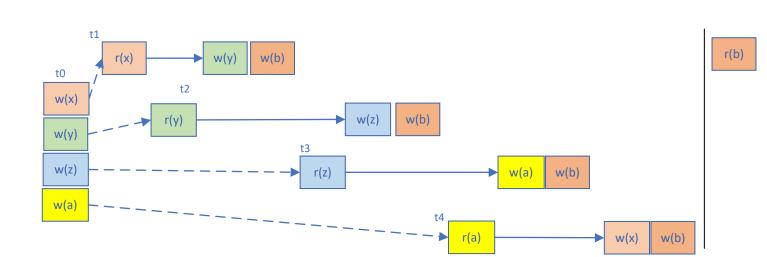
	occ4		occ3ltx1 occ2ltx1			occ1ltx1 occ2		ltx1occ3		occ2ltx2		occ1ltx1 occ1ltx1		ltx1occ2ltx1		
t1	occ	С	occ	a:t4	occ	С	occ	С	LTX	c bd1	occ	a:t4	occ	a:t4	LTX	c bd1
t2	occ	a:t1	occ	С	occ	a:t1	LTX	c bd2	occ	a:t1	occ	С	LTX	c bd2	occ	a:t1
t3	occ	С	occ	С	LTX	c bd3	occ	a:t2	occ	С	LTX	c bd3	occ	a:t2	occ	С
t4	occ	a:t3	LTX	c bd4	occ	a:t3	occ	С	occ	a:t3	LTX	c bd3 r:t3	LTX	c bd4	LTX	c bd4
read b	t4		t3		t1		t <b>4</b>		t3		t2		t4		t3	
	occ1ltx2		ltx1occ1 ltx1occ1		ltx2d	осс2	occi	Iltx3	ltx1oc	c1ltx2	ltx2oc	c1ltx1	ltx3d	occ1	lt:	×4
t1	occ	С	LTX	c bd1	LTX	c bd1	occ	a:t4	LTX	c bd1	LTX	c bd1	LTX	c bd1	LTX	c bd1
t2	LTX	c bd2	occ	a:t1	LTX	c bd1 r:t1	LTX	c bd2	occ	a:t1	LTX	c bd1 r:t1	LTX	c bd1 r:t1	LTX	c bd1 r:t1
t3	LTX	c bd2 r:t2	LTX	c bd3	occ	a:t2	LTX	c bd2 r:t2	LTX	c bd3	occ	a:t2	LTX	c bd1 r:t2	LTX	c bd1 r:t2
t4	occ	a:t3	occ	a:t3	occ	С	LTX	c bd2 r:t3	LTX	c bd3 r:t3	LTX	c bd4	occ	a:t3	LTX	a bd1 r:t2 w:t1
read b	t1		t	3	t	4	t	2	t	3	t	4	t	1	t	1

ex write\_crown.cascading\_all\_4tx.occ2ltx1occ1

#### write\_crown

## cascading\_all\_3tx

	occ4		occ3ltx1		occ2ltx1 occ1		occ1ltx1 occ2		ltx1occ3		occ2ltx2		occ1ltx1 occ1ltx1		ltx1occ2ltx1	
t1	occ	С	occ	a:t4	occ	С	occ	С	LTX	c bd1	occ	a:t4	occ	a:t4	LTX	c bd1
t2	occ	a:t1	occ	С	occ	a:t1	LTX	c bd2	occ	a:t1	occ	С	LTX	c bd2	occ	a:t1
t3	occ	С	occ	С	LTX	c bd3	occ	a:t2	occ	С	LTX	c bd3	occ	a:t2	occ	С
t4	occ	a:t3	LTX	c bd4	occ	a:t3	occ	С	occ	a:t3	LTX	c bd3 r:t3	LTX	c bd4	LTX	c bd4
read b	t4		t3		t1		t4		t3		t2		t4		t3	
					ļ		ļ		ļ							
	occ1		ltx1c		ltx2d	осс2	occ ·	Iltx3	ltx1oc	c1ltx2	ltx2oc	c1ltx1	ltx3d	occ1	lt	×4
t1					ltx2d	c bd1	occ occ	Iltx3 a:t4	ltx1oc	c1ltx2 c bd1	ltx2oc	c1ltx1 c bd1	ltx3d	c bd1	lt:	c bd1
t1 t2	ос	c1	ltx1d	c c		С				С		С		С		С
	OCC	c1 c	ltx1c	c bd1	LTX	c bd1 c bd1	occ	a:t4	LTX	c bd1	LTX	c bd1 c bd1	LTX	c bd1 c bd1	LTX	c bd1 c bd1
t2	OCC LTX	c c c bd2 c bd2	LTX OCC	c bd1	LTX	c bd1 c bd1 r:t1	OCC	a:t4  c bd2  c	LTX	c bd1 a:t1	LTX	c bd1 c bd1 r:t1	LTX	c bd1 c bd1 r:t1 c	LTX	c bd1 c bd1 r:t1



## 

write\_crown

## cascading\_all\_3tx\_1epoch\_per\_1ope

	occ4		occ3ltx1		occ2ltx1 occ1		occ1ltx1 occ2		ltx1occ3		occ2ltx2		occ1ltx1 occ1ltx1		ltx1occ2ltx1	
t1	occ	С	occ	a:t4	occ	С	occ	С	LTX	c bd1	occ	С	occ	С	LTX	c bd1
t2	occ	a:t1	occ	С	occ	a:t1	LTX	c bd2	occ	a:t1	occ	a:t1	LTX	c bd2	occ	a:t1
t3	occ	С	occ	С	LTX	c bd3	occ	a:t2	occ	С	LTX	c bd3	occ	a:t2	occ	С
t4	occ	a:t3	LTX	c bd4	occ	a:t3	occ	С	occ	a:t3	LTX	c bd3 r:t3	LTX	c bd4	LTX	c bd4
read b	t4		t3		t3		t4		t3		t3		t4		t3	
	occ1ltx2		ltx1occ1 ltx1occ1		ltx2occ2		occ1	lltx3	ltx1oc	c1ltx2	ltx2oc	c1ltx1	ltx3d	occ1	ltx	×4
t1	occ	С	LTX	c bd1	LTX	c bd1	occ	С	LTX	c <sub>c</sub> bd1	LTX	c bd1	LTX	c bd1	LTX	c bd1
t2	LTX	c bd2	осс	a:t1	LTX	c bd1 r:t1	LTX	c bd2	occ	a:t1	LTX	c bd1 r:t1	LTX	c bd1 r:t1	LTX	c bd1 r:t1
t3	LTX	c bd2 r:t2	LTX	c bd3	occ	a:t2	LTX	c bd2 r:t2	LTX	c bd3	occ	a:t2	LTX	c bd1 r:t2	LTX	c bd1 r:t2
t4	occ	a:t3	осс	a:t3	occ	С	LTX	a bd2 r:t3 w:t1	LTX	c bd3 r:t3	LTX	c bd4	occ	a:t3	LTX	a bd1 r:t2 w:t1
	t1		t1 t3		t4 t1			t3		t4		t1		t1		

ex write\_crown.cascading\_all\_3tx\_1epoch\_per\_1ope.occ2ltx1occ1