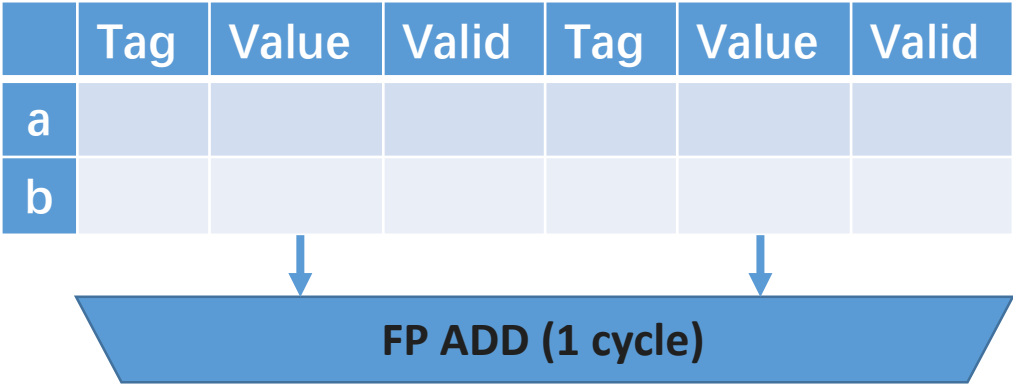
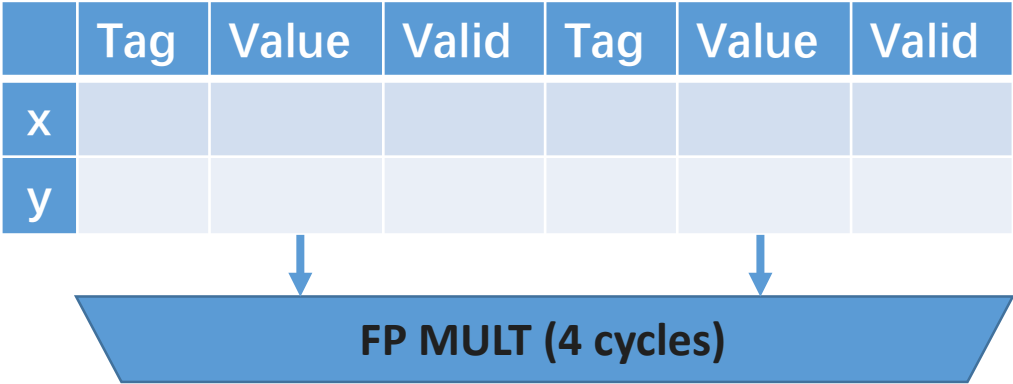


	Tag	Value	Valid
f0		0	1
f1		1	1
f2		2	1
f3		3	1
f4		4	1
f5		5	1

Instruction	Stage
muld <i>f0, f1, f2</i>	
addd <i>f0, f1, f5</i>	
addd <i>f2, f3, f3</i>	
addd <i>f2, f4, f4</i>	
addd <i>f4, f5, f5</i>	

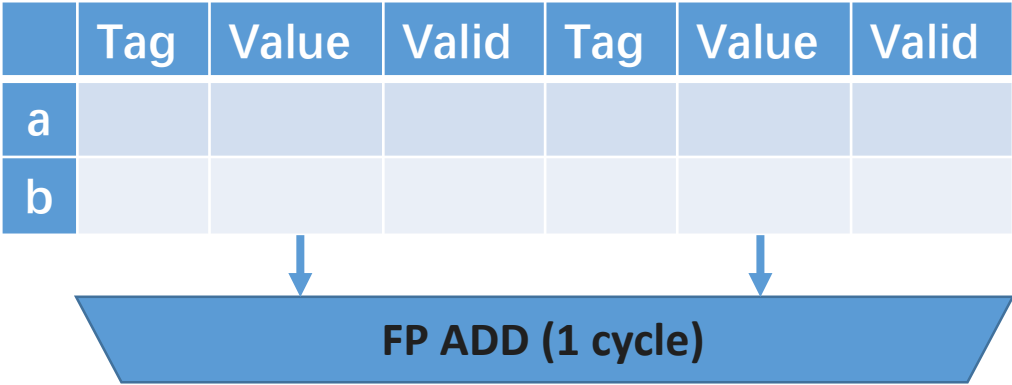
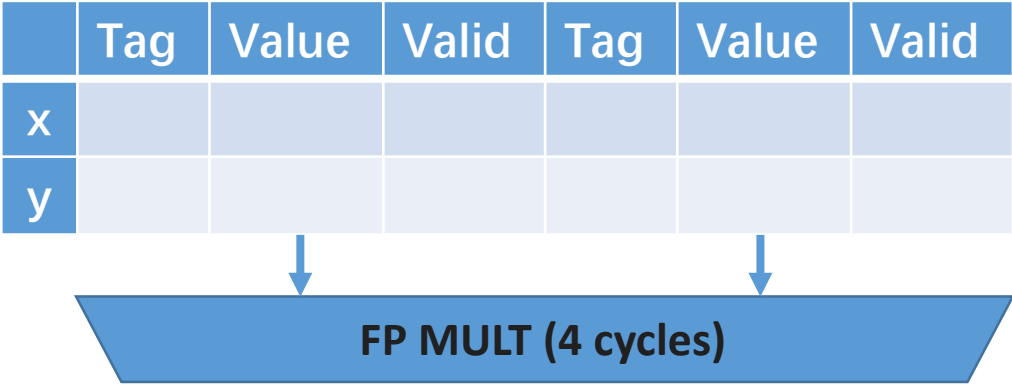
Cycle 0



Cycle 1

	Tag	Value	Valid
f0		0	1
f1		1	1
f2		2	1
f3		3	1
f4		4	1
f5		5	1

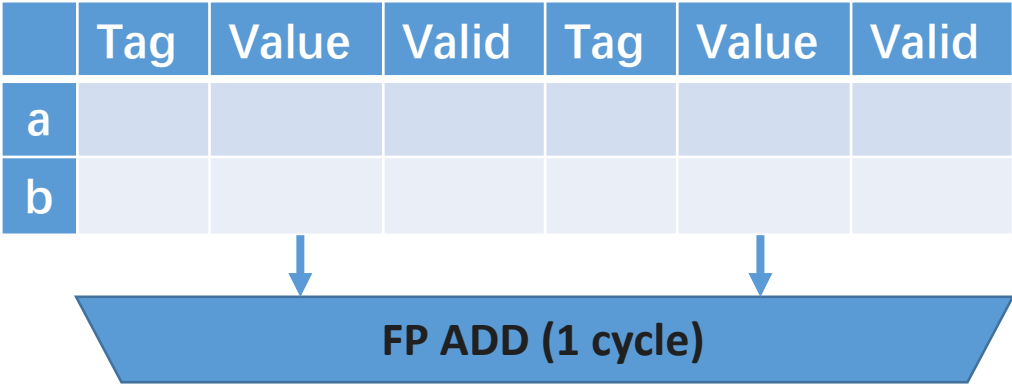
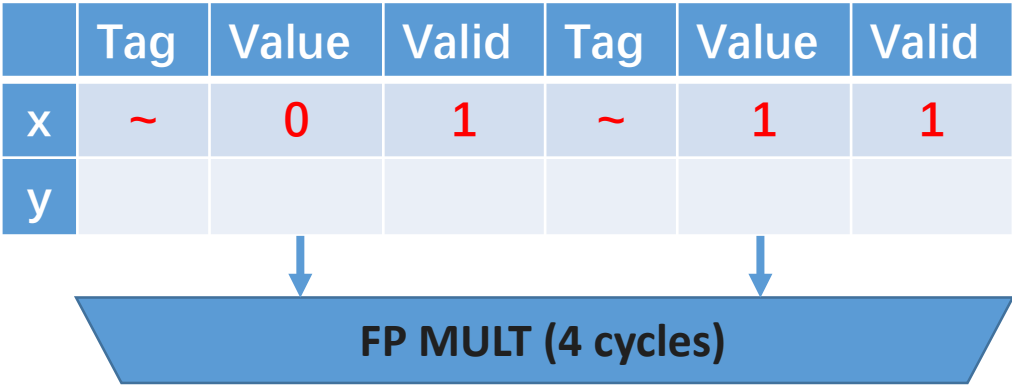
Instruction	Stage
muld <i>f0, f1, f2</i>	F
addd <i>f0, f1, f5</i>	
addd <i>f2, f3, f3</i>	
addd <i>f2, f4, f4</i>	
addd <i>f4, f5, f5</i>	



Cycle 2

	Tag	Value	Valid
f0		0	1
f1		1	1
f2	x	2	0
f3		3	1
f4		4	1
f5		5	1

Instruction	Stage
muld <i>f0, f1, f2</i>	D
addd <i>f0, f1, f5</i>	F
addd <i>f2, f3, f3</i>	
addd <i>f2, f4, f4</i>	
addd <i>f4, f5, f5</i>	

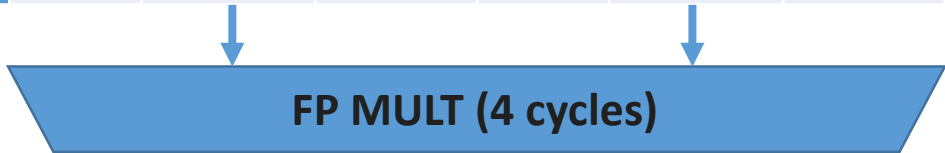


	Tag	Value	Valid
f0		0	1
f1		1	1
f2	x	2	0
f3		3	1
f4		4	1
f5	a	5	0

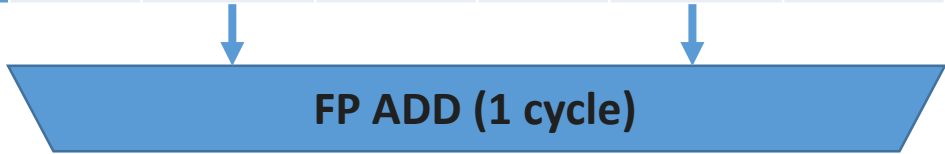
Instruction	Stage
muld $f0, f1, f2$	E1
addd $f0, f1, f5$	D
addd $f2, f3, f3$	F
addd $f2, f4, f4$	
addd $f4, f5, f5$	

Cycle 3

	Tag	Value	Valid	Tag	Value	Valid
x	~	0	1	~	1	1
y						



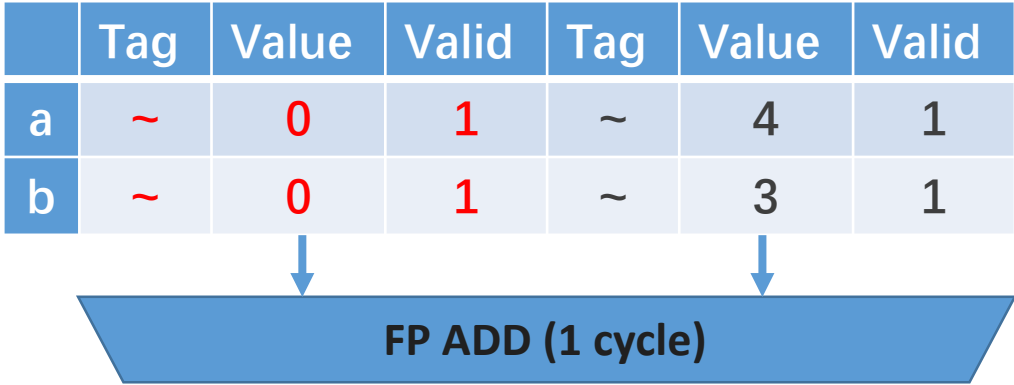
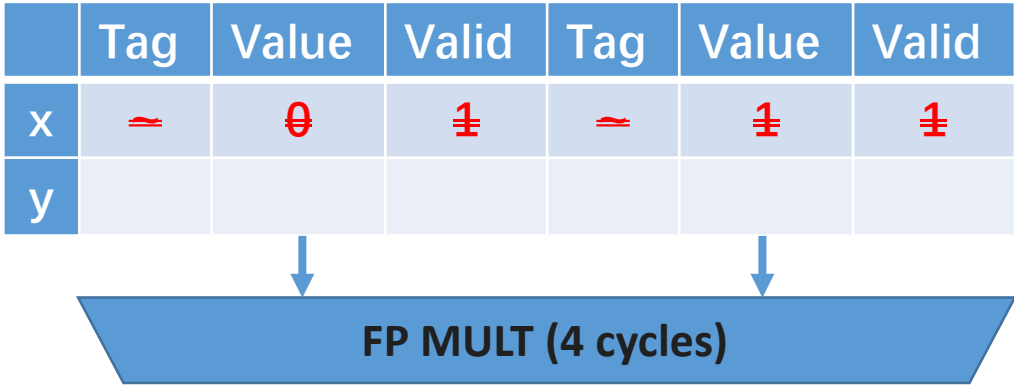
	Tag	Value	Valid	Tag	Value	Valid
a	~	0	1	~	1	1
b						



Cycle 7

	Tag	Value	Valid
f0		0	1
f1		1	1
f2		0	1
f3	b	3	0
f4	a	4	0
f5		1	1

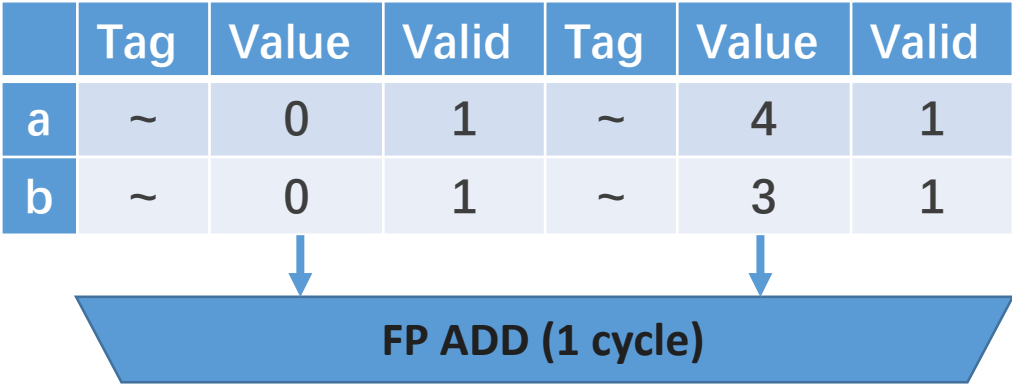
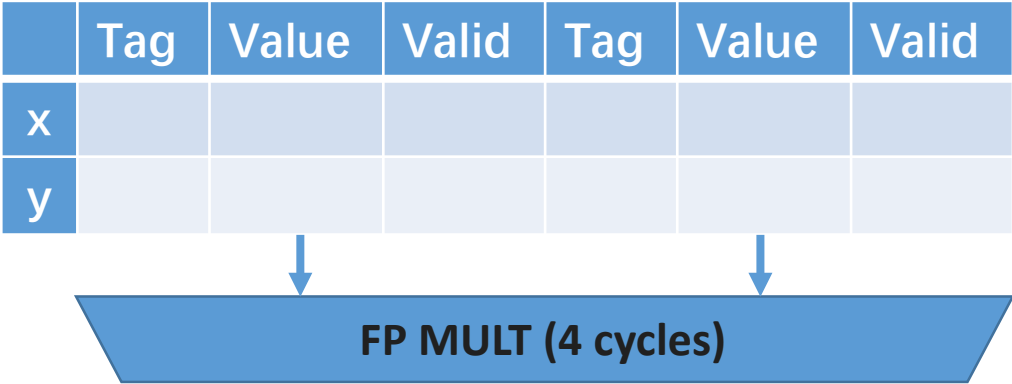
Instruction	Stage
muld <i>f0, f1, f2</i>	WB
addd <i>f0, f1, f5</i>	~
addd <i>f2, f3, f3</i>	wE
addd <i>f2, f4, f4</i>	wE
addd <i>f4, f5, f5</i>	wD



Cycle 8

	Tag	Value	Valid
f0		0	1
f1		1	1
f2		0	1
f3	b	3	0
f4	a	4	0
f5		1	1

Instruction	Stage
muld <i>f0, f1, f2</i>	~
addd <i>f0, f1, f5</i>	~
addd <i>f2, f3, f3</i>	E1
addd <i>f2, f4, f4</i>	wE
addd <i>f4, f5, f5</i>	wD



Cycle 9

	Tag	Value	Valid
f0		0	1
f1		1	1
f2		0	1
f3		3	1
f4	a	4	0
f5		1	1

Instruction	Stage
muld <i>f0, f1, f2</i>	~
addd <i>f0, f1, f5</i>	~
addd <i>f2, f3, f3</i>	WB
addd <i>f2, f4, f4</i>	E1
addd <i>f4, f5, f5</i>	wD

	Tag	Value	Valid	Tag	Value	Valid
x						
y						



	Tag	Value	Valid	Tag	Value	Valid
a	~	0	1	~	4	1
b	~	0	1	~	3	1



Cycle 10

	Tag	Value	Valid
f0		0	1
f1		1	1
f2		0	1
f3		3	1
f4		4	1
f5	b	1	0

	Tag	Value	Valid	Tag	Value	Valid
x						
y						



FP MULT (4 cycles)

	Tag	Value	Valid	Tag	Value	Valid
a	=	0	1	=	4	1
b	~	4	1	~	1	1

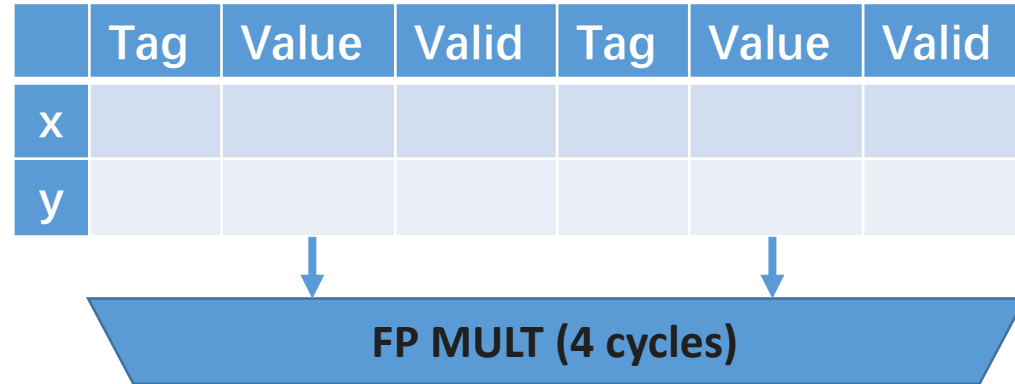


FP ADD (1 cycle)

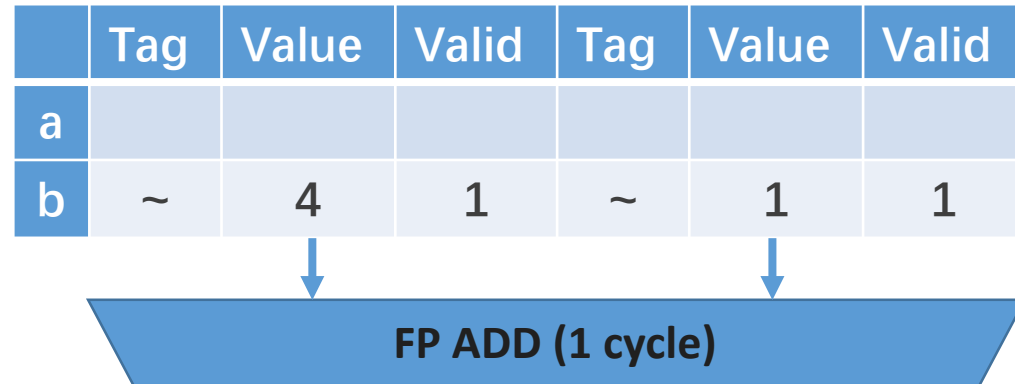
Instruction	Stage
muld <i>f0, f1, f2</i>	~
addd <i>f0, f1, f5</i>	~
addd <i>f2, f3, f3</i>	~
addd <i>f2, f4, f4</i>	WB
addd <i>f4, f5, f5</i>	D

Cycle 11

	Tag	Value	Valid
f0		0	1
f1		1	1
f2		0	1
f3		3	1
f4		4	1
f5	b	1	0



Instruction	Stage
muld <i>f0, f1, f2</i>	~
addd <i>f0, f1, f5</i>	~
addd <i>f2, f3, f3</i>	~
addd <i>f2, f4, f4</i>	~
addd <i>f4, f5, f5</i>	E1



Cycle 12

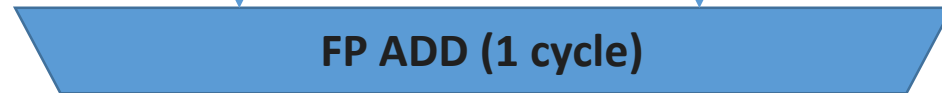
	Tag	Value	Valid
f0		0	1
f1		1	1
f2		0	1
f3		3	1
f4		4	1
f5		5	1

	Tag	Value	Valid	Tag	Value	Valid
x						
y						



Instruction	Stage
muld <i>f0, f1, f2</i>	~
addd <i>f0, f1, f5</i>	~
addd <i>f2, f3, f3</i>	~
addd <i>f2, f4, f4</i>	~
addd <i>f4, f5, f5</i>	WB

	Tag	Value	Valid	Tag	Value	Valid
a						
b	=	4	1	=	1	1



Cycle 13

	Tag	Value	Valid
f0		0	1
f1		1	1
f2		0	1
f3		3	1
f4		4	1
f5		5	1

	Tag	Value	Valid	Tag	Value	Valid
x						
y						



FP MULT (4 cycles)

	Tag	Value	Valid	Tag	Value	Valid
a						
b						



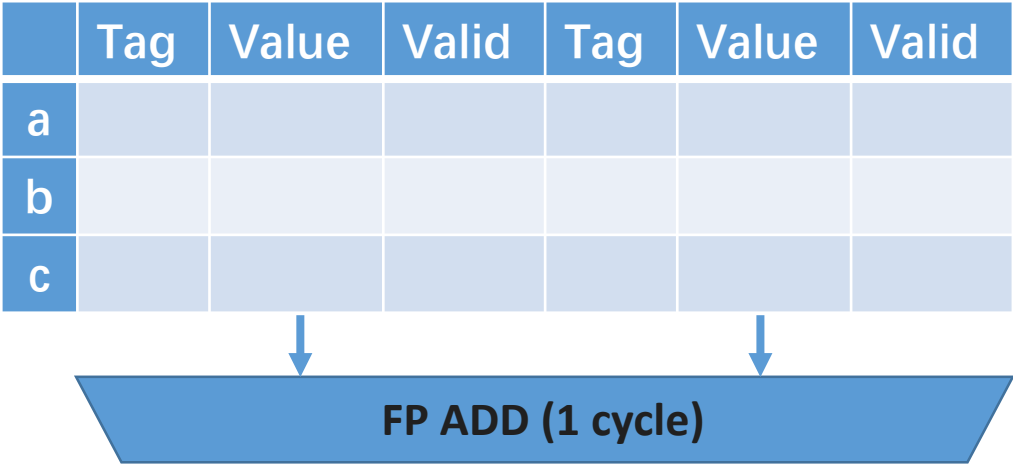
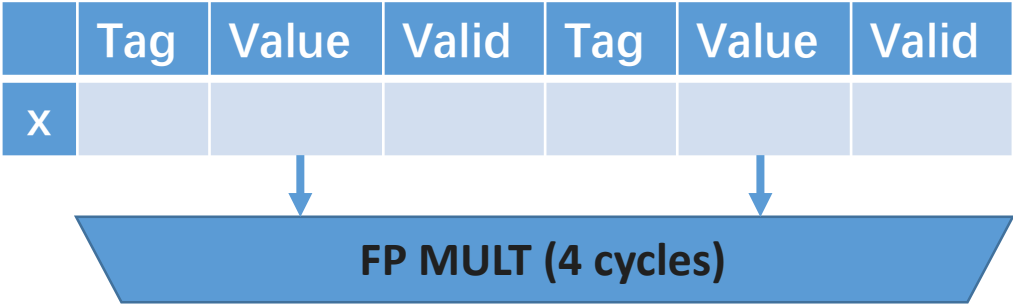
FP ADD (1 cycle)

Instruction	Stage
muld <i>f0, f1, f2</i>	~
addd <i>f0, f1, f5</i>	~
addd <i>f2, f3, f3</i>	~
addd <i>f2, f4, f4</i>	~
addd <i>f4, f5, f5</i>	~

	Tag	Value	Valid
f0		0	1
f1		1	1
f2		2	1
f3		3	1
f4		4	1
f5		5	1

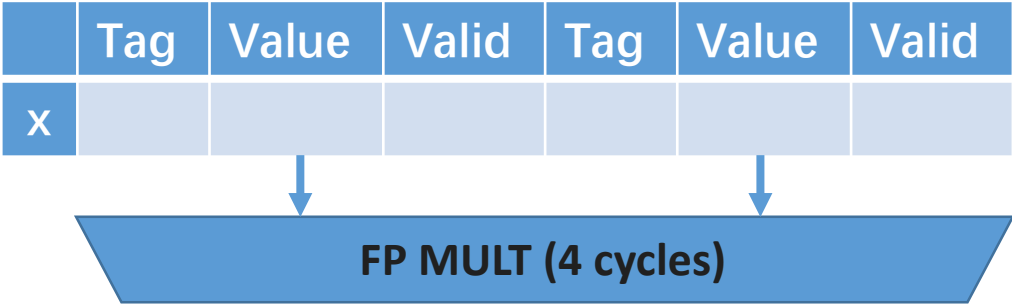
Instruction	Stage
muld <i>f0, f1, f2</i>	
addd <i>f0, f1, f5</i>	
addd <i>f2, f3, f3</i>	
addd <i>f2, f4, f4</i>	
addd <i>f4, f5, f5</i>	

Cycle 0

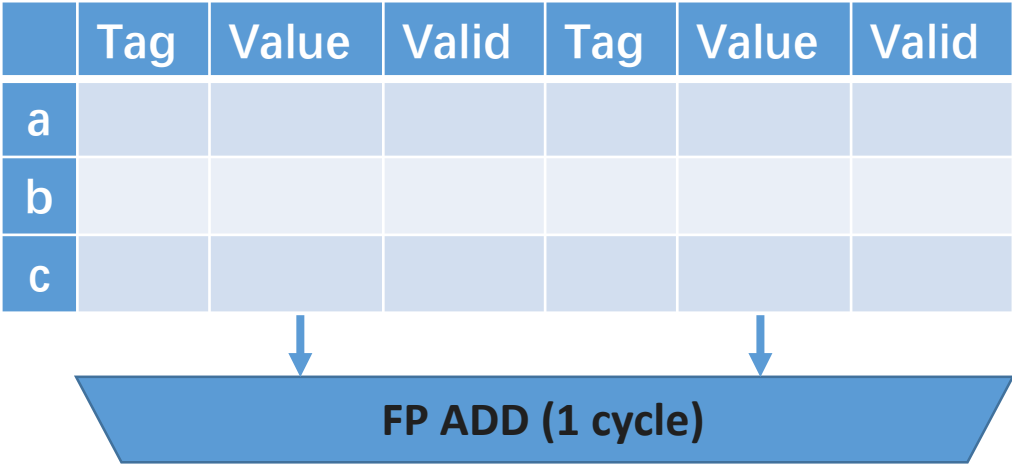


Cycle 1

	Tag	Value	Valid
f0		0	1
f1		1	1
f2		2	1
f3		3	1
f4		4	1
f5		5	1



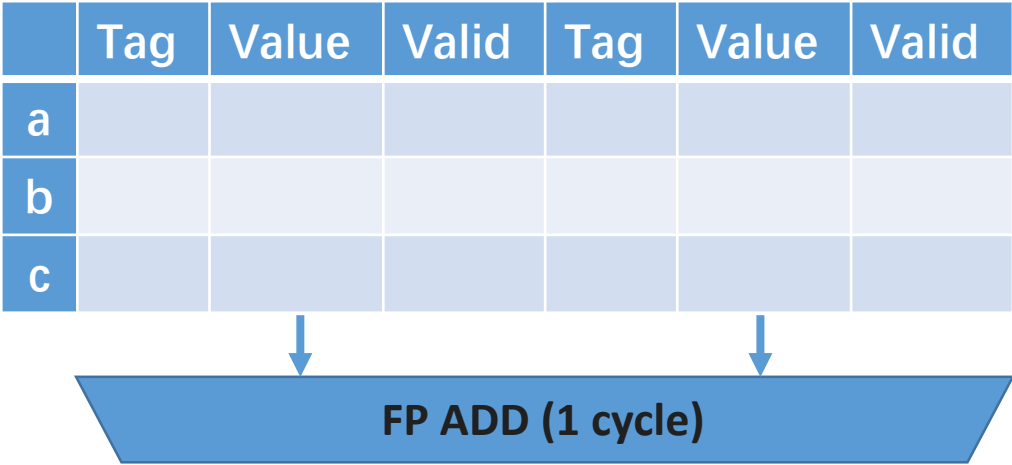
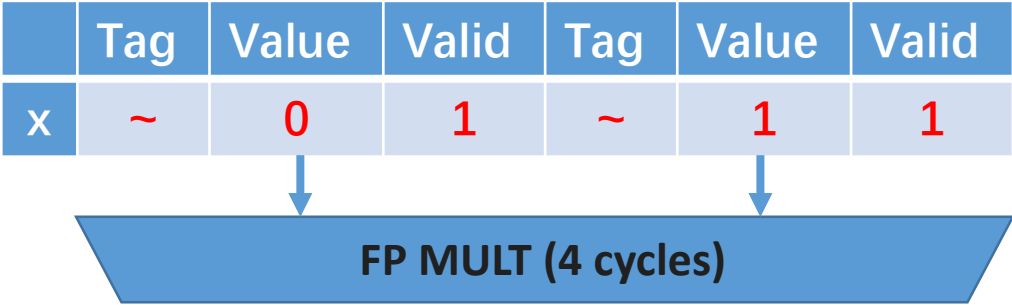
Instruction	Stage
muld <i>f0, f1, f2</i>	F
addd <i>f0, f1, f5</i>	
addd <i>f2, f3, f3</i>	
addd <i>f2, f4, f4</i>	
addd <i>f4, f5, f5</i>	



Cycle 2

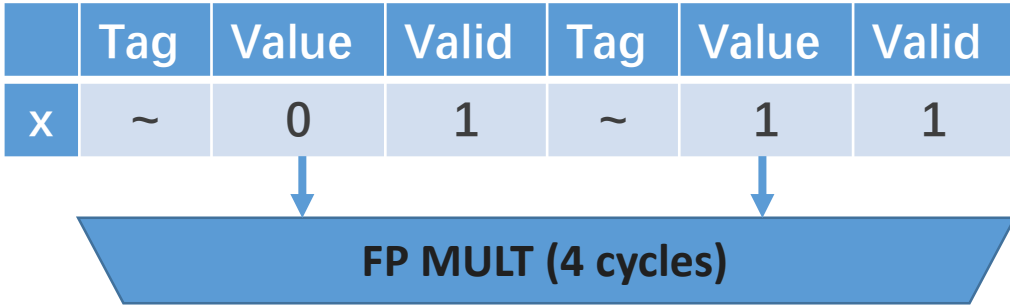
	Tag	Value	Valid
f0		0	1
f1		1	1
f2	x	2	0
f3		3	1
f4		4	1
f5		5	1

Instruction	Stage
muld <i>f0, f1, f2</i>	D
addd <i>f0, f1, f5</i>	F
addd <i>f2, f3, f3</i>	
addd <i>f2, f4, f4</i>	
addd <i>f4, f5, f5</i>	

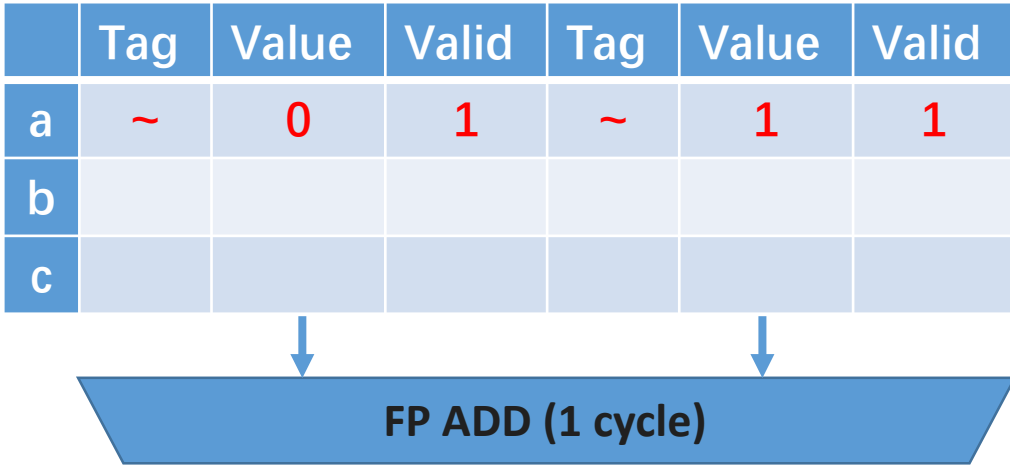


Cycle 3

	Tag	Value	Valid
f0		0	1
f1		1	1
f2	x	2	0
f3		3	1
f4		4	1
f5	a	5	0



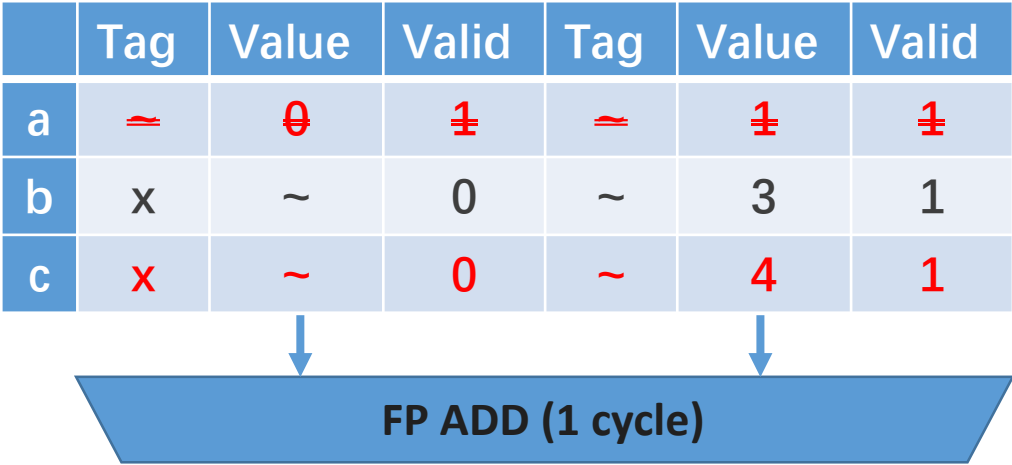
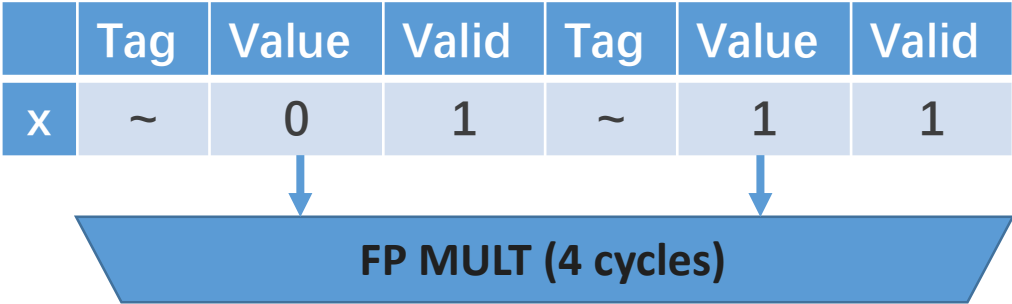
Instruction	Stage
muld <i>f0, f1, f2</i>	E1
addd <i>f0, f1, f5</i>	D
addd <i>f2, f3, f3</i>	F
addd <i>f2, f4, f4</i>	
addd <i>f4, f5, f5</i>	



Cycle 5

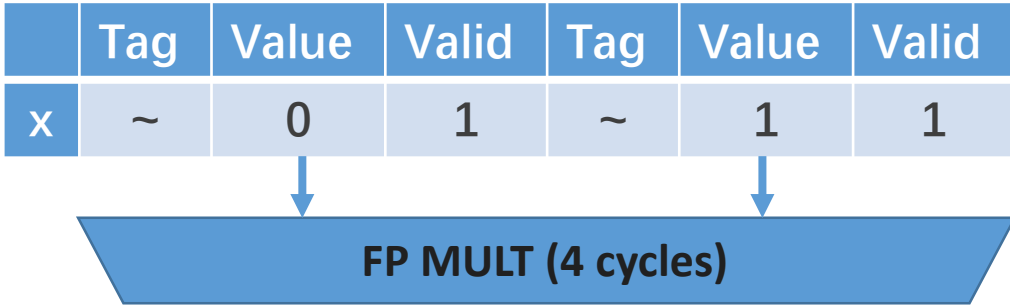
	Tag	Value	Valid
f0		0	1
f1		1	1
f2	x	2	0
f3	b	3	0
f4	c	4	0
f5		1	1

Instruction	Stage
muld <i>f0, f1, f2</i>	E3
addd <i>f0, f1, f5</i>	WB
addd <i>f2, f3, f3</i>	wE
addd <i>f2, f4, f4</i>	D
addd <i>f4, f5, f5</i>	F

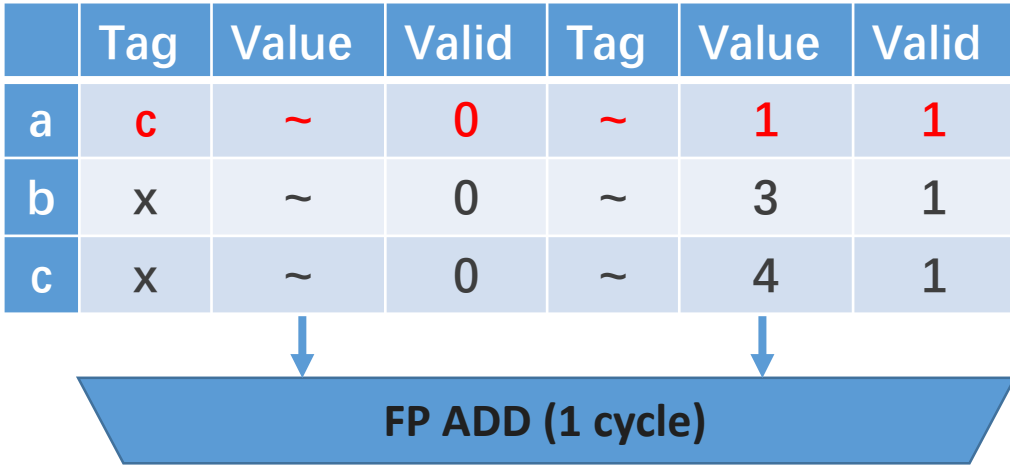


Cycle 6

	Tag	Value	Valid
f0		0	1
f1		1	1
f2	x	2	0
f3	b	3	0
f4	c	4	0
f5	a	1	0



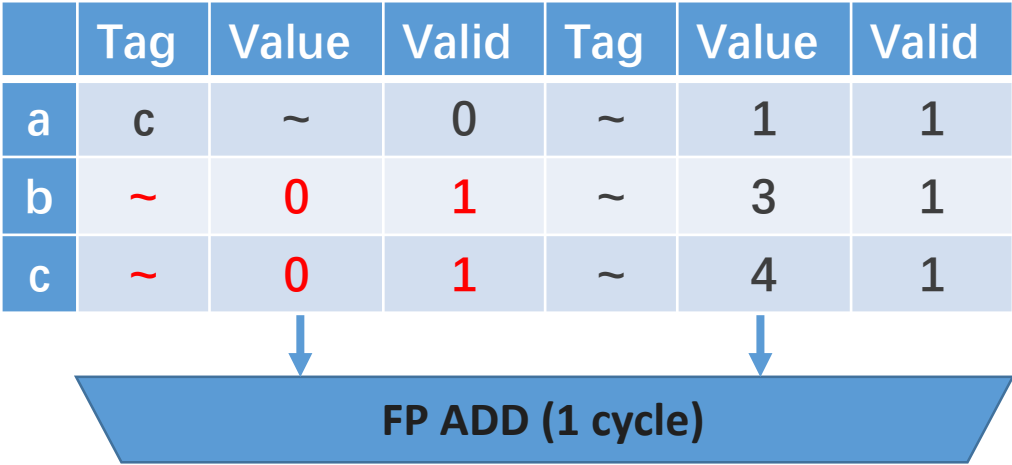
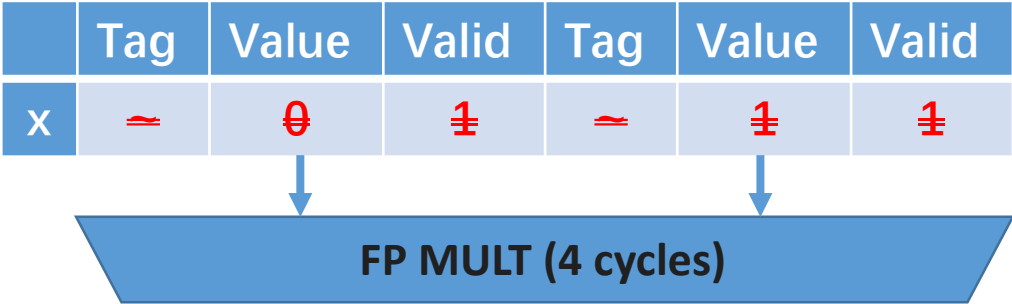
Instruction	Stage
muld <i>f0, f1, f2</i>	E4
addd <i>f0, f1, f5</i>	~
addd <i>f2, f3, f3</i>	wE
addd <i>f2, f4, f4</i>	wE
addd <i>f4, f5, f5</i>	D



Cycle 7

	Tag	Value	Valid
f0		0	1
f1		1	1
f2		0	1
f3	b	3	0
f4	c	4	0
f5	a	1	0

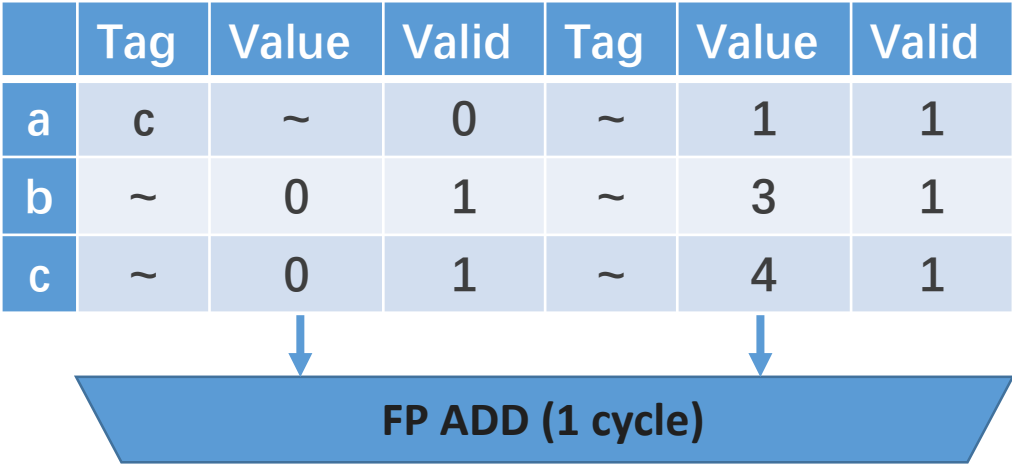
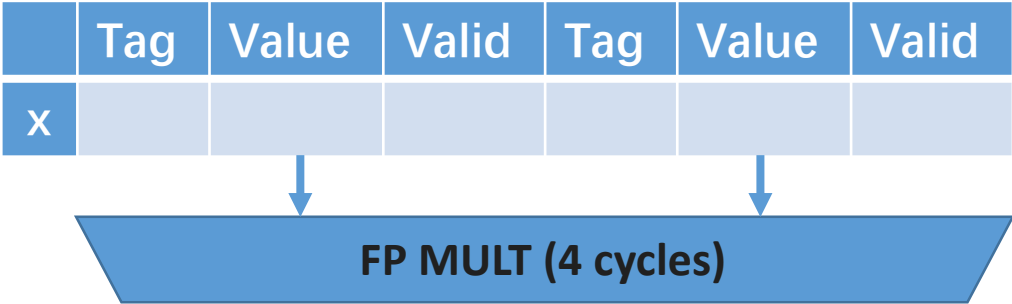
Instruction	Stage
muld <i>f0, f1, f2</i>	WB
addd <i>f0, f1, f5</i>	~
addd <i>f2, f3, f3</i>	wE
addd <i>f2, f4, f4</i>	wE
addd <i>f4, f5, f5</i>	wE



Cycle 8

	Tag	Value	Valid
f0		0	1
f1		1	1
f2		0	1
f3	b	3	0
f4	c	4	0
f5	a	1	0

Instruction	Stage
muld <i>f0, f1, f2</i>	~
addd <i>f0, f1, f5</i>	~
addd <i>f2, f3, f3</i>	E1
addd <i>f2, f4, f4</i>	wE
addd <i>f4, f5, f5</i>	wE



	Tag	Value	Valid
f0		0	1
f1		1	1
f2		0	1
f3		3	1
f4	c	4	0
f5	a	1	0

Instruction	Stage
muld $f0, f1, f2$	~
addd $f0, f1, f5$	~
addd $f2, f3, f3$	WB
addd $f2, f4, f4$	E1
addd $f4, f5, f5$	wE

Cycle 9

	Tag	Value	Valid	Tag	Value	Valid
x						

↓ ↓

FP MULT (4 cycles)

	Tag	Value	Valid	Tag	Value	Valid
a	c	~	0	~	1	1
b	c	0	1	c	3	1
c	~	0	1	~	4	1

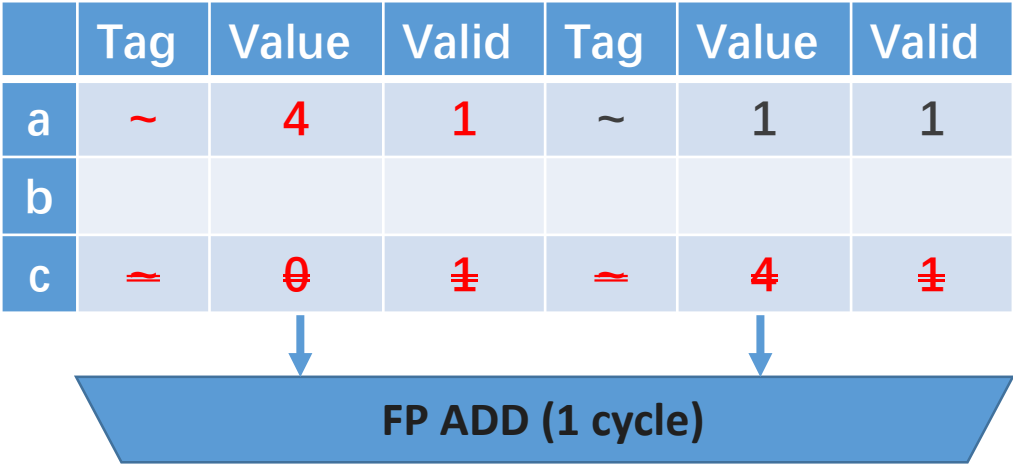
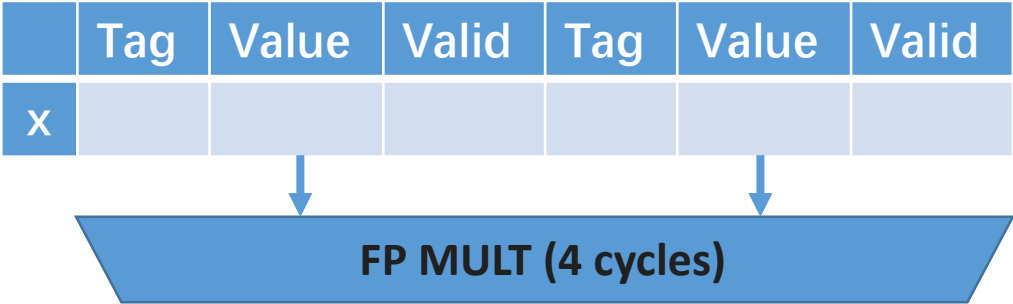
↓ ↓

FP ADD (1 cycle)

	Tag	Value	Valid
f0		0	1
f1		1	1
f2		0	1
f3		3	1
f4		4	1
f5	a	1	0

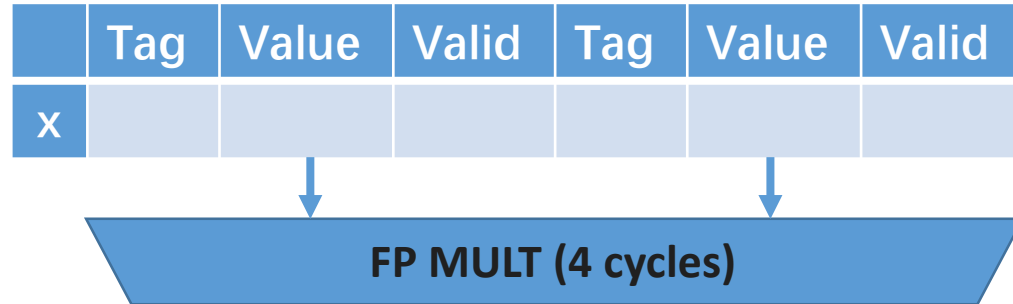
Instruction	Stage
muld <i>f0, f1, f2</i>	~
addd <i>f0, f1, f5</i>	~
addd <i>f2, f3, f3</i>	~
addd <i>f2, f4, f4</i>	WB
addd <i>f4, f5, f5</i>	wE

Cycle 10

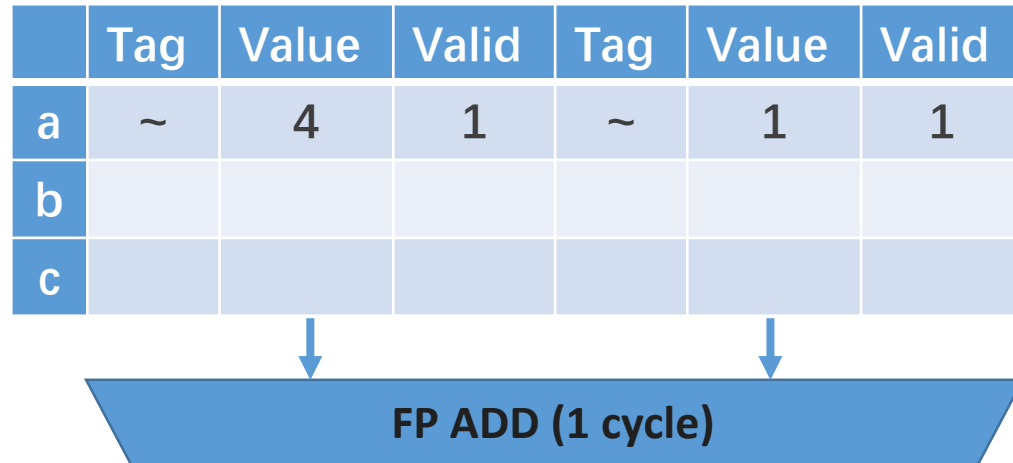


Cycle 11

	Tag	Value	Valid
f0		0	1
f1		1	1
f2		0	1
f3		3	1
f4		4	1
f5	a	1	0



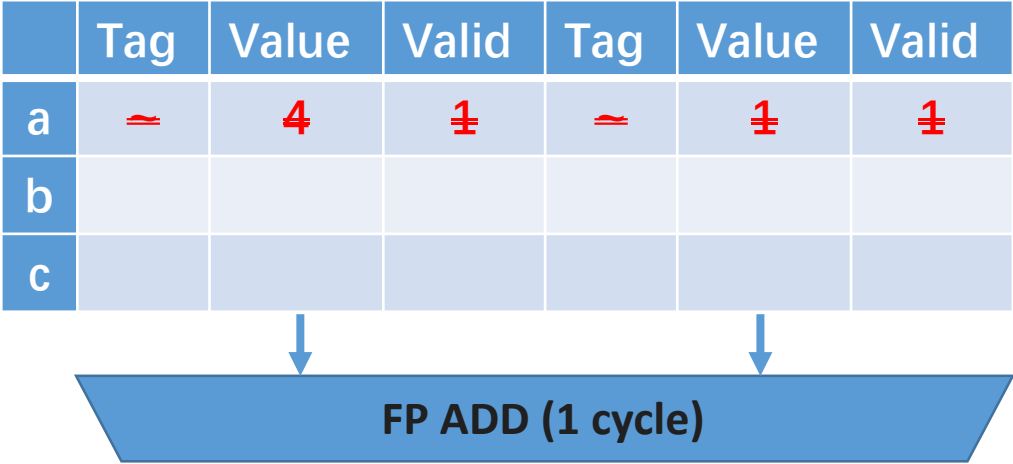
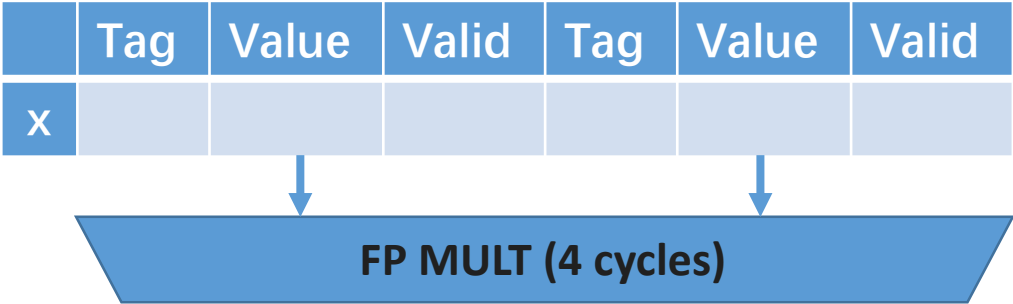
Instruction	Stage
muld <i>f0, f1, f2</i>	~
addd <i>f0, f1, f5</i>	~
addd <i>f2, f3, f3</i>	~
addd <i>f2, f4, f4</i>	~
addd <i>f4, f5, f5</i>	E1



	Tag	Value	Valid
f0		0	1
f1		1	1
f2		0	1
f3		3	1
f4		4	1
f5		5	1

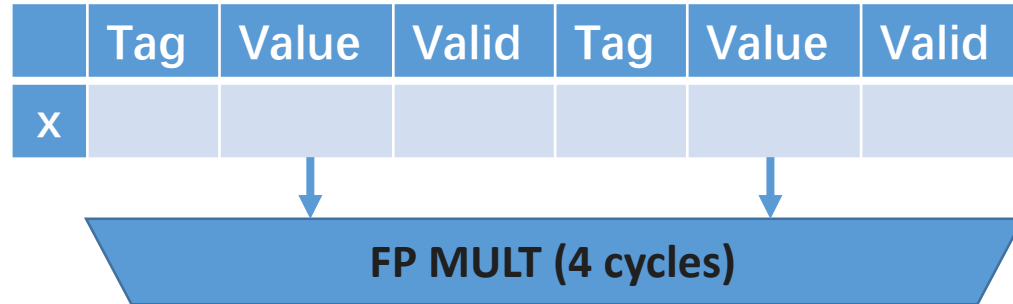
Instruction	Stage
muld <i>f0, f1, f2</i>	~
addd <i>f0, f1, f5</i>	~
addd <i>f2, f3, f3</i>	~
addd <i>f2, f4, f4</i>	~
addd <i>f4, f5, f5</i>	WB

Cycle 12

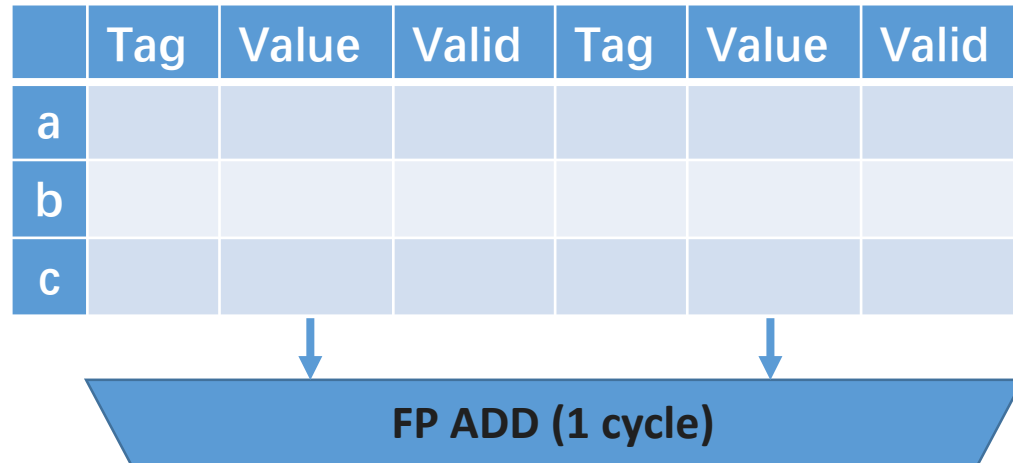


Cycle 13

	Tag	Value	Valid
f0		0	1
f1		1	1
f2		0	1
f3		3	1
f4		4	1
f5		5	1



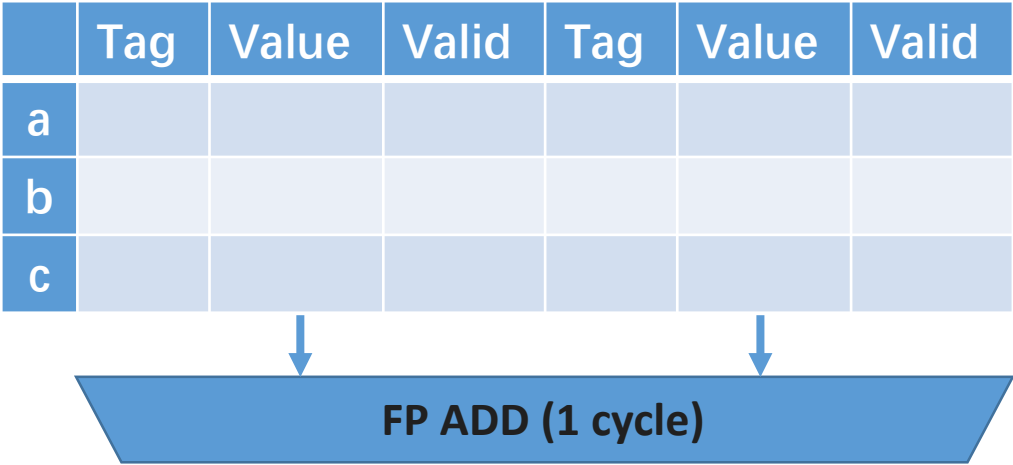
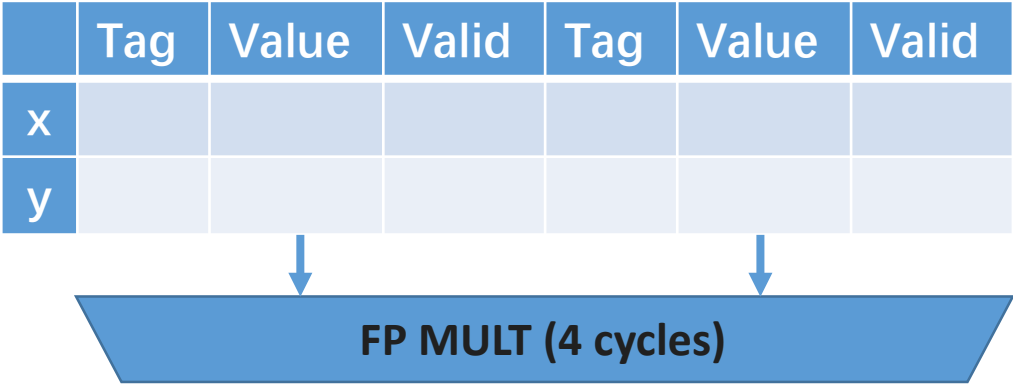
Instruction	Stage
muld <i>f0, f1, f2</i>	~
addd <i>f0, f1, f5</i>	~
addd <i>f2, f3, f3</i>	~
addd <i>f2, f4, f4</i>	~
addd <i>f4, f5, f5</i>	~



	Tag	Value	Valid
f0		0	1
f1		1	1
f2		2	1
f3		3	1
f4		4	1
f5		5	1

Instruction	Stage
muld <i>f0, f1, f2</i>	
addd <i>f0, f1, f5</i>	
addd <i>f2, f3, f3</i>	
addd <i>f2, f4, f4</i>	
addd <i>f4, f5, f5</i>	

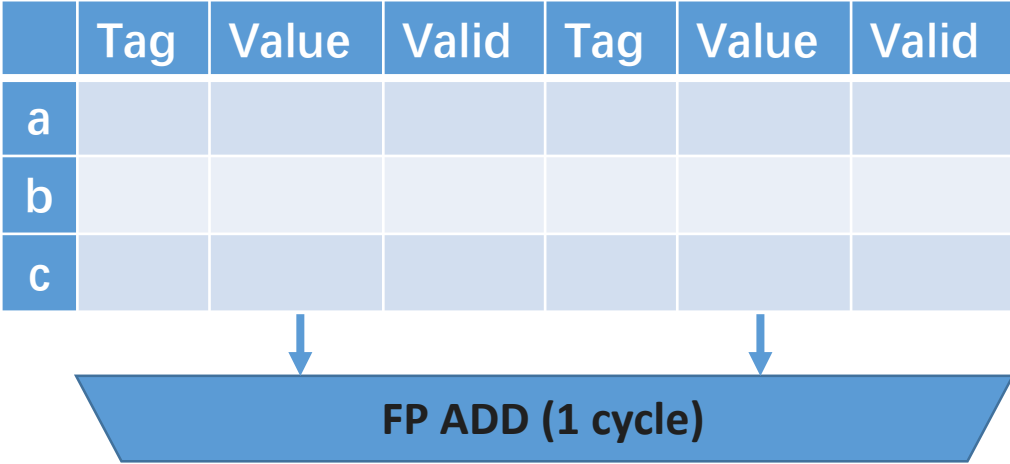
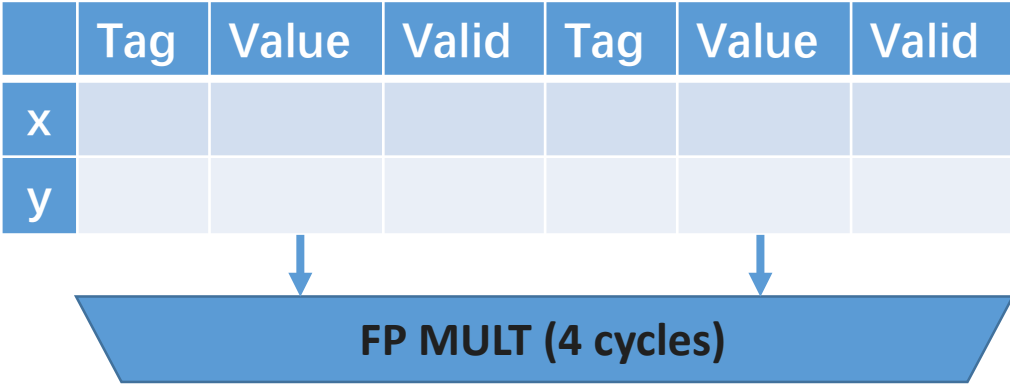
Cycle 0



	Tag	Value	Valid
f0		0	1
f1		1	1
f2		2	1
f3		3	1
f4		4	1
f5		5	1

Instruction	Stage
muld <i>f0, f1, f2</i>	F
addd <i>f0, f1, f5</i>	
addd <i>f2, f3, f3</i>	
addd <i>f2, f4, f4</i>	
addd <i>f4, f5, f5</i>	

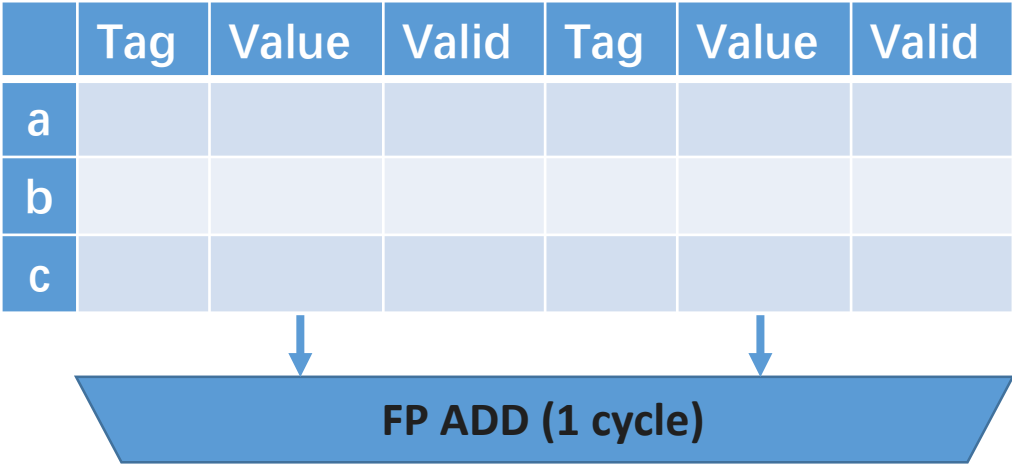
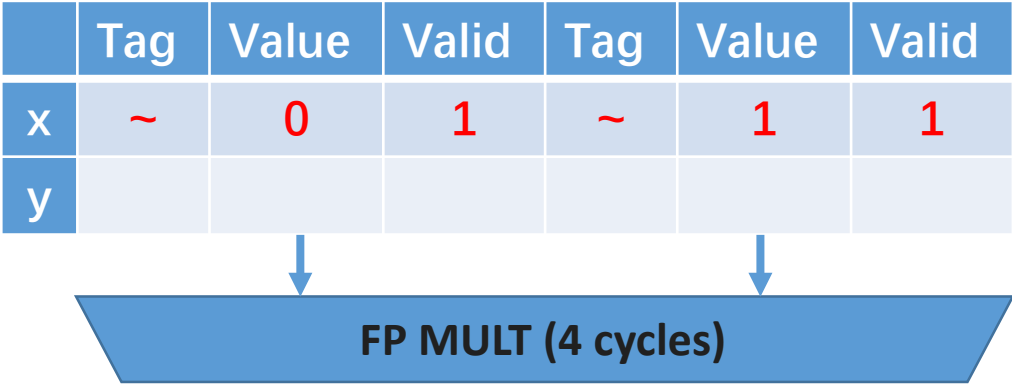
Cycle 1



Cycle 2

	Tag	Value	Valid
f0		0	1
f1		1	1
f2	x	2	0
f3		3	1
f4		4	1
f5		5	1

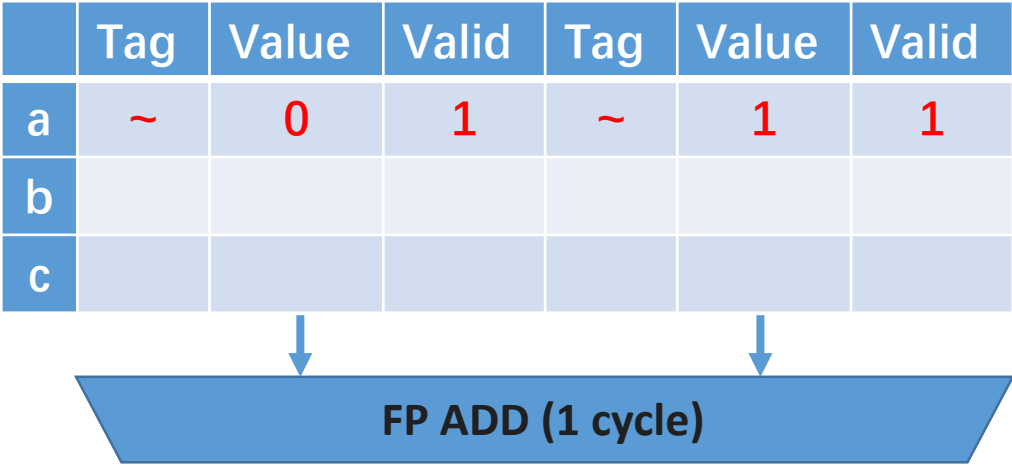
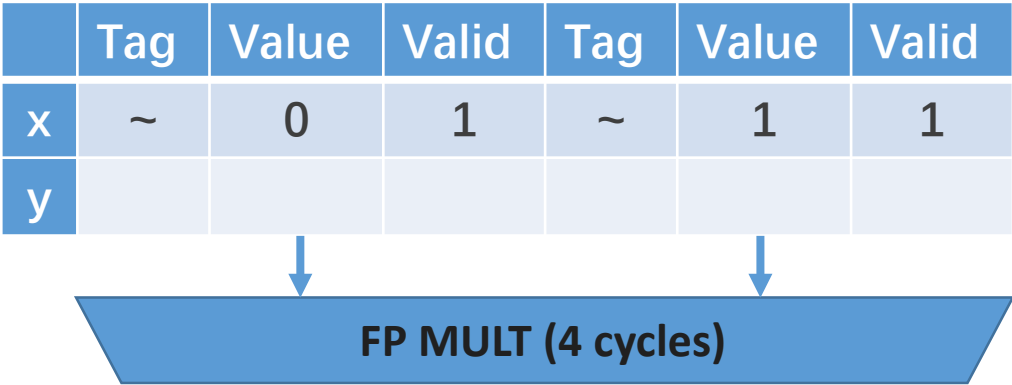
Instruction	Stage
muld <i>f0, f1, f2</i>	D
addd <i>f0, f1, f5</i>	F
addd <i>f2, f3, f3</i>	
addd <i>f2, f4, f4</i>	
addd <i>f4, f5, f5</i>	



Cycle 3

	Tag	Value	Valid
f0		0	1
f1		1	1
f2	x	2	0
f3		3	1
f4		4	1
f5	a	5	0

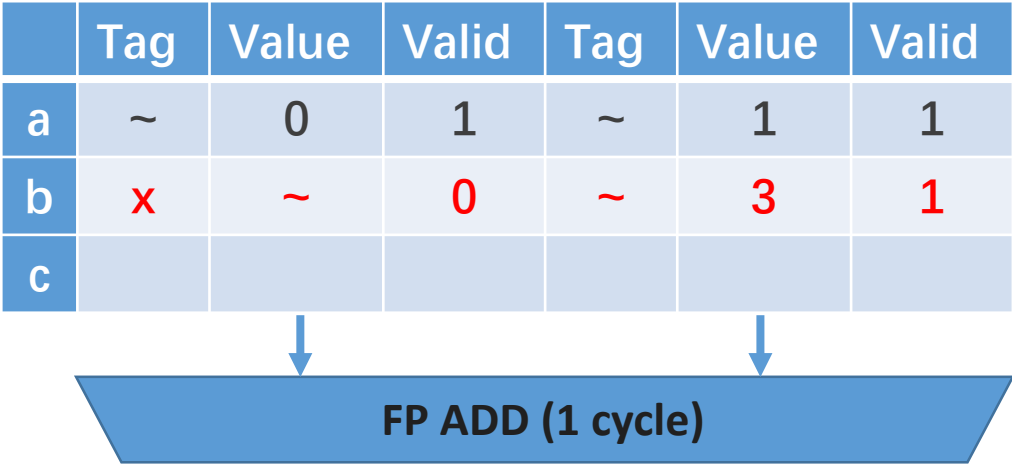
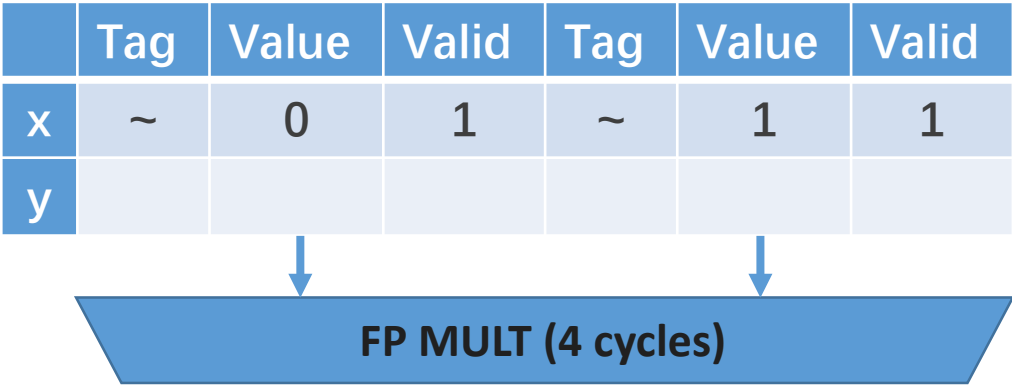
Instruction	Stage
muld <i>f0, f1, f2</i>	E1
addd <i>f0, f1, f5</i>	D
addd <i>f2, f3, f3</i>	F
addd <i>f2, f4, f4</i>	
addd <i>f4, f5, f5</i>	



Cycle 4

	Tag	Value	Valid
f0		0	1
f1		1	1
f2	x	2	0
f3	b	3	0
f4		4	1
f5	a	5	0

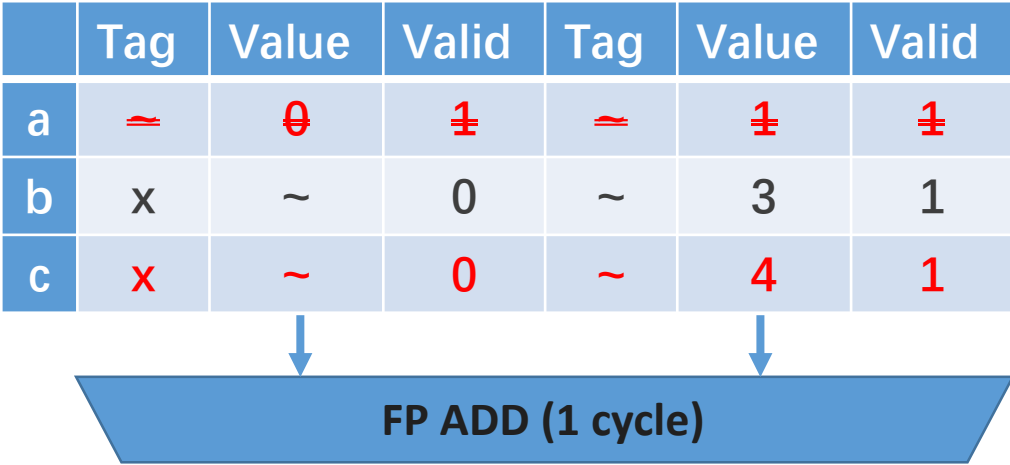
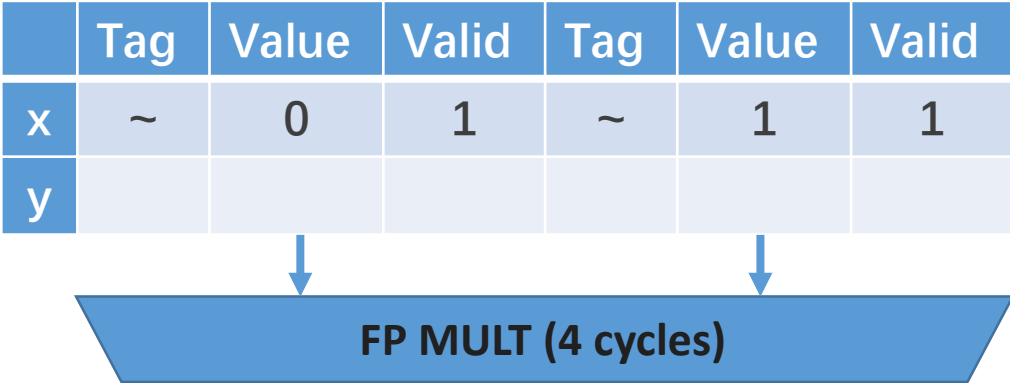
Instruction	Stage
muld <i>f0, f1, f2</i>	E2
addd <i>f0, f1, f5</i>	E1
addd <i>f2, f3, f3</i>	D
addd <i>f2, f4, f4</i>	F
addd <i>f4, f5, f5</i>	



	Tag	Value	Valid
f0		0	1
f1		1	1
f2	x	2	0
f3	b	3	0
f4	c	4	0
f5		1	1

Instruction	Stage
muld <i>f0, f1, f2</i>	E3
addd <i>f0, f1, f5</i>	WB
addd <i>f2, f3, f3</i>	wE
addd <i>f2, f4, f4</i>	D
addd <i>f4, f5, f5</i>	F

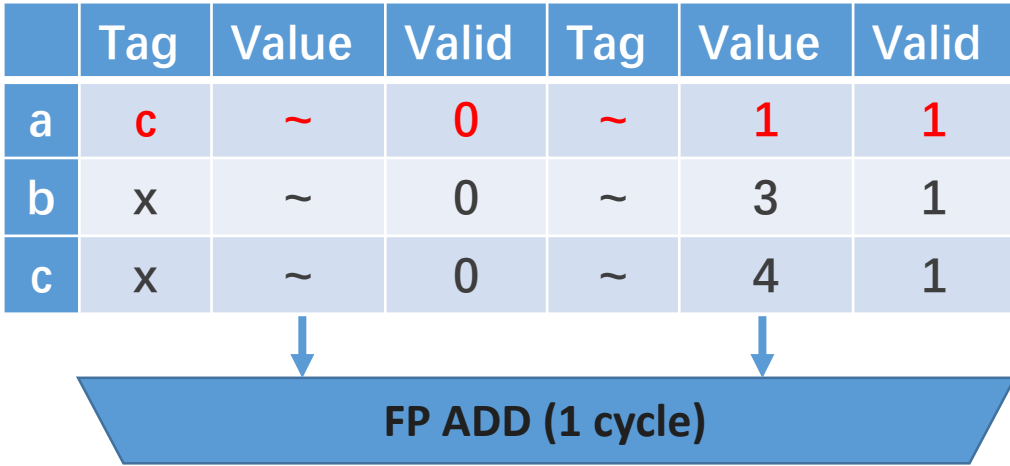
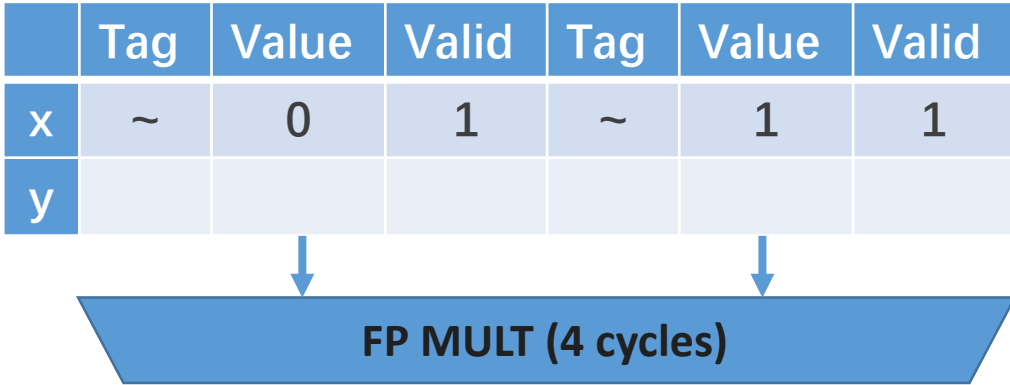
Cycle 5



Cycle 6

	Tag	Value	Valid
f0		0	1
f1		1	1
f2	x	2	0
f3	b	3	0
f4	c	4	0
f5	a	1	0

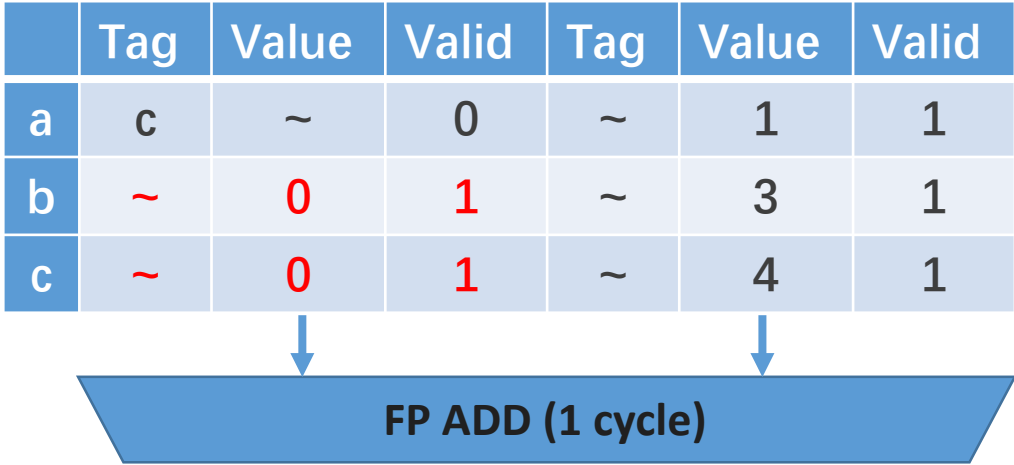
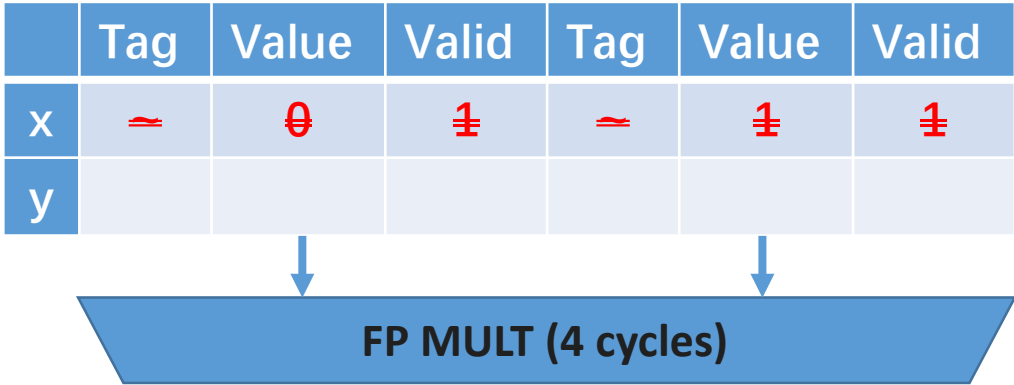
Instruction	Stage
muld <i>f0, f1, f2</i>	E4
addd <i>f0, f1, f5</i>	~
addd <i>f2, f3, f3</i>	wE
addd <i>f2, f4, f4</i>	wE
addd <i>f4, f5, f5</i>	D



Cycle 7

	Tag	Value	Valid
f0		0	1
f1		1	1
f2		0	1
f3	b	3	0
f4	c	4	0
f5	a	1	0

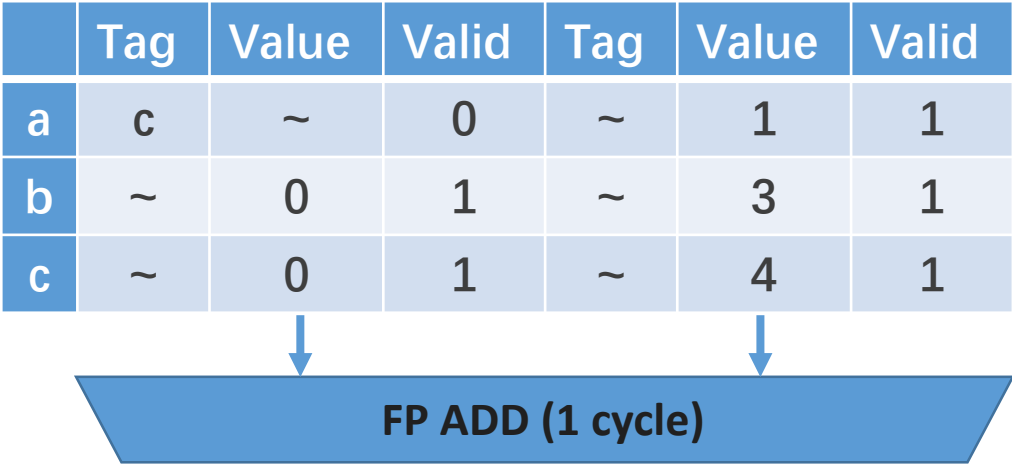
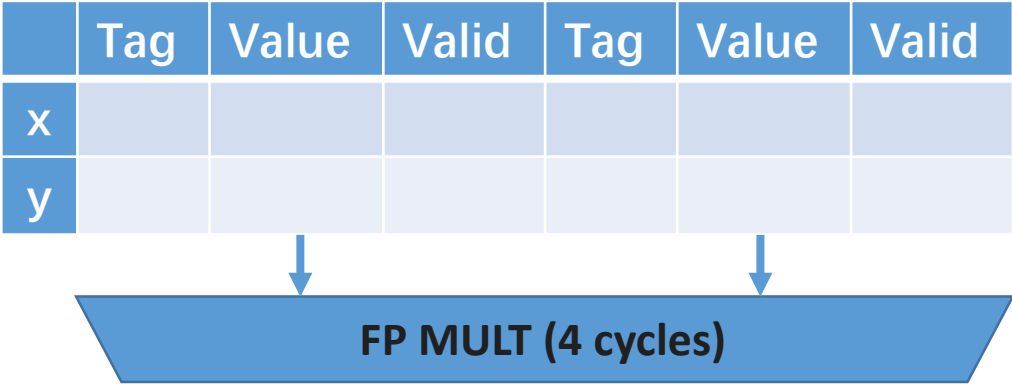
Instruction	Stage
muld <i>f0, f1, f2</i>	WB
addd <i>f0, f1, f5</i>	~
addd <i>f2, f3, f3</i>	wE
addd <i>f2, f4, f4</i>	wE
addd <i>f4, f5, f5</i>	wE



Cycle 8

	Tag	Value	Valid
f0		0	1
f1		1	1
f2		0	1
f3	b	3	0
f4	c	4	0
f5	a	1	0

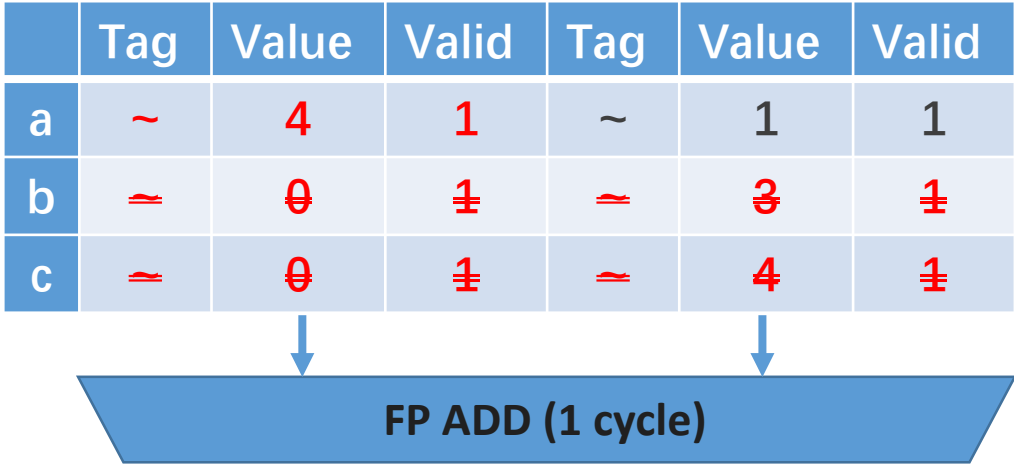
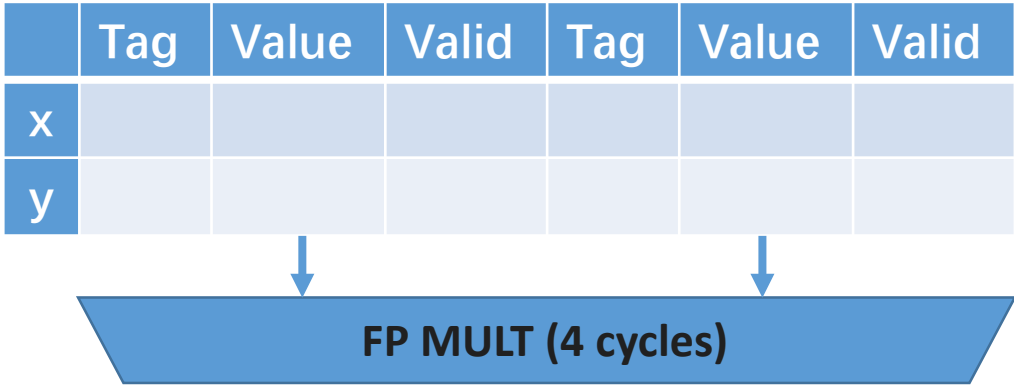
Instruction	Stage
muld <i>f0, f1, f2</i>	~
addd <i>f0, f1, f5</i>	~
addd <i>f2, f3, f3</i>	E1
addd <i>f2, f4, f4</i>	E1
addd <i>f4, f5, f5</i>	wE



Cycle 9

	Tag	Value	Valid
f0		0	1
f1		1	1
f2		0	1
f3		3	1
f4		4	1
f5	a	1	0

Instruction	Stage
muld <i>f0, f1, f2</i>	~
addd <i>f0, f1, f5</i>	~
addd <i>f2, f3, f3</i>	WB
addd <i>f2, f4, f4</i>	WB
addd <i>f4, f5, f5</i>	wE



Cycle 10

	Tag	Value	Valid
f0		0	1
f1		1	1
f2		0	1
f3		3	1
f4		4	1
f5	a	1	0

	Tag	Value	Valid	Tag	Value	Valid
x						
y						



FP MULT (4 cycles)

Instruction	Stage
muld <i>f0, f1, f2</i>	~
addd <i>f0, f1, f5</i>	~
addd <i>f2, f3, f3</i>	~
addd <i>f2, f4, f4</i>	~
addd <i>f4, f5, f5</i>	E1

	Tag	Value	Valid	Tag	Value	Valid
a	~	4	1	~	1	1
b						
c						



FP ADD (1 cycle)

Cycle 11

	Tag	Value	Valid
f0		0	1
f1		1	1
f2		0	1
f3		3	1
f4		4	1
f5		5	1

	Tag	Value	Valid	Tag	Value	Valid
x						
y						



FP MULT (4 cycles)

Instruction	Stage
muld <i>f0, f1, f2</i>	~
addd <i>f0, f1, f5</i>	~
addd <i>f2, f3, f3</i>	~
addd <i>f2, f4, f4</i>	~
addd <i>f4, f5, f5</i>	WB

	Tag	Value	Valid	Tag	Value	Valid
a	=	4	1	=	1	1
b						
c						



FP ADD (1 cycle)

Cycle 12

	Tag	Value	Valid
f0		0	1
f1		1	1
f2		0	1
f3		3	1
f4		4	1
f5		5	1

	Tag	Value	Valid	Tag	Value	Valid
x						
y						



FP MULT (4 cycles)

Instruction	Stage
muld <i>f0, f1, f2</i>	~
addd <i>f0, f1, f5</i>	~
addd <i>f2, f3, f3</i>	~
addd <i>f2, f4, f4</i>	~
addd <i>f4, f5, f5</i>	~

	Tag	Value	Valid	Tag	Value	Valid
a						
b						
c						



FP ADD (1 cycle)