Seminar Report: Muty

April 3, 2019

Carles Tornel Jesus Alfaro Ricard Abril

1 Introduction

2 Experiments

Basic Multicast

- 1. Set up the basic multicast system, and use the following test program to experiment with different values for Sleep and Jitter. Sleep stands for up to how many milliseconds the workers should wait until the next message is sent. Jitter stands for up to how many milliseconds the messages are delayed in the network. Duration stands for the duration of the experiment in milliseconds. Note that we are using the name of the multicast module (i.e. basic) as a parameter to the start procedure. We will easily be able to test different multicast implementations. Note also that processes are spawned in different nodes, hence you need to start an Erlang runtime for each process and name it accordingly.
- 2. Make tests with different Sleep and Work parameters to analyze how this lock implementation responds to different contention degrees.

Test 1: Sleep time major que Jitter time

La probabilitat de que un missatge sigui enviat metres estem fent multicast, serà més baixa, ja que és més probable que la resta de nodes es trobin en Sleep time.

Com podem observar a la figura, hi ha diversos missatges, en el que si que es respecta l'ordre FIFI, però també es pot observar com en alguna ocasió els missatges no arriben en ordre.

Test 2: Sleep time inferior a Jitter time

En aquet cas, és més probable que l'ordre dels missatges es vegi alterat, ja que en el moment en que estem fent multicast, es més probable que hi hagin missatges a ser enviats, de forma que la probabilitat de que un missatge arribi en desordre és major

Com podem veure, ara és més fàcil observar desordres en els missatges, degut a que en el període en el que fem multicast, s'estan enviant més missatges.

Causal order multicast

1. Set up the causal order multicast system, and repeat the previous tests.

Test 1: Sleep time inferior a Jitter time

Amb el Causal order, haurien de arribar els missatges en l'ordre correcte, ja que comprova que el missatge que s'està rebent és el esperat i que s'han rebut tots els anteriors del procés que l'ha enviat.

Com podem veure, el ordre s'ha mantes, es a dir no hem rebut ningun missatge no esperat, es a dir que el missatges del emissor arriben en ordre i que no hi ha cap missatge de resposta enviat abans del primer, però el ordre total no s'ha mantes.

Test 2: Sleep time superior a Jitter time

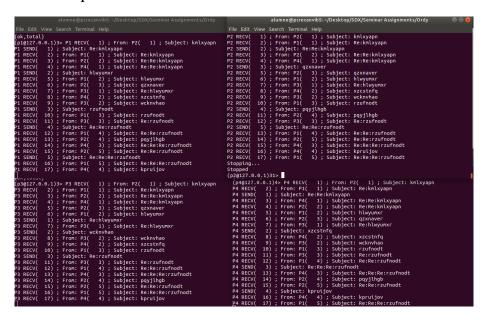
El cas de tenir un sleep time menor al Jitter time, no hauria de causar ninguna mena de desordre, en tot cas el que provocarà, és que els missatges triguin més a ser rebuts, ja que els processos estaran en sleep time més estona, com podem veure en la figura.

```
| All | All
```

Total order multicast

1. Set up the total order multicast system, and repeat the previous tests.

Test 1: Sleep time inferior a Jitter time



Test 2: Sleep time superior a Jitter time

alumne@pcrecanvib5: ~/Desktop/SDX/Seminar Assignments/Ordy	alumne@pcrecanvib5: ~/Desktop/SDX/Seminar Assignments/Ordy
File Edit View Search Terminal Help	File Edit View Search Terminal Help
P1 RECV(61); From: P1(30); Subject: Re:rkyognfp	P2 RECV(67); From: P4(13); Subject: erdkfsxw
P1 RECV(62) ; From: P1(31) ; Subject: hqkrylcp	P2 RECV(68); From: P4(14); Subject: bgksvqth
P1 RECV(63); From: P3(12); Subject: ptcelkuh	P2 SEND(30); Subject: Re:bgksvqth
P1 RECV(64); From: P3(13); Subject: oujxqams	P2 RECV(69) ; From: P4(15) ; Subject: kibuymqe
P1 SEND(32) ; Subject: hfyvnimu	P2 RECV(70); From: P2(30); Subject: Re:bgksvqth
P1 RECV(65); From: P1(32); Subject: hfyvnimu	P2 SEND(31) ; Subject: bhwtvyrq
P1 SEND(33); Subject: mlejowtu	P2 RECV(71); From: P2(31); Subject: bhwtvyrq
P1 RECV(66); From: P1(33); Subject: mlejowtu P1 RECV(67); From: P4(9); Subject: sxdkwuon	P2 SEND(32); Subject: pqbuyzxs P2 RECV(72); From: P2(32); Subject: pqbuyzxs
P1 RECV(68); From: P4(9); Subject: Sxdxwdon P1 RECV(68); From: P2(13); Subject: pwjavexn	P2 RECV(72); From: P2(32); Subject: pqbuyzxs P2 RECV(73); From: P1(10); Subject: wdyrxhnl
P1 SEND(34); Subject: Re:pwjavexn	P2 RECV(74) ; From: P1(11) ; Subject: Re:xbnuzvqq
P1 RECV(69) ; From: P1(34) ; Subject: Re:pwjavexn	P2 RECV(75); From: P1(12); Subject: Re:smdybnhv
P1 SEND(35) ; Subject: xogqakbl	P2 RECV(76); From: P1(13); Subject: kestvxry
P1 RECV(70); From: P1(35); Subject: xoggakbl	P2 RECV(77); From: P1(14); Subject: zanrqlwb
P1 RECV(71); From: P4(10); Subject: owrdmjbg	P2 RECV(78) ; From: P4(16) ; Subject: awhilbop
P1 SEND(36); Subject: Re:owrdmjbg	P2 RECV(79); From: P4(17); Subject: jtofpcbh
P1 RECV(72) ; From: P4(11) ; Subject: gwkqfizt	P2 RECV(80) ; From: P4(18) ; Subject: lxkcvdqp
P1 RECV(73); From: P4(12); Subject: ewocnklu	P2 RECV(81) ; From: P4(19) ; Subject: waqexojl
P1 RECV(74); From: P1(36); Subject: Re:owrdmjbg	P2 SEND(33); Subject: Re:waqexojl
P1 SEND(37); Subject: edxzcfot	P2 RECV(82); From: P4(20); Subject: dwzufmqj
P1 RECV(75); From: P1(37); Subject: edxzcfot	P2 RECV(83); From: P2(33); Subject: Re:waqexojl Stopping
P1 SEND(38); Subject: yfhrwksu P1 RECV(76); From: P1(38); Subject: yfhrwksu	Stopped
T RECV(70) , FION. FI(38) , Subject. yilliwksu	(p20127.0.0.1)32>
du penny no, y poblece poingene	P4 RECV(76); From: P3(16); Subject: mlhxvtop
P3 RECV(71); From: P3(40); Subject: sbfwyzmc	P4 RECV(77); From: P3(17); Subject: maixvelp
P3 SEND(41); Subject: ybgvnixh P3 RECV(72); From: P3(41); Subject: ybgvnixh	P4 RECV(78); From: P3(18); Subject: yomdtepl
P3 SEND(42); Subject: wanyhtpo	P4 SEND(38); Subject: Re:vomdtepl
P3 RECV(73) ; From: P3(42) ; Subject: wanyhtpo	P4 RECV(79); From: P3(19); Subject: casdgtlz
P3 RECV(74); From: P2(11); Subject: uodbwzia	P4 SEND(39); Subject: Re:casdgtlz
P3 RECV(75); From: P2(12); Subject: rkyognfp	P4 RECV(80) ; From: P3(20) ; Subject: xhifecwg
P3 RECV(76); From: P2(13); Subject: pwjavexn	P4 SEND(40); Subject: Re:xhlfecwg
P3 RECV(77); From: P4(15); Subject: kibuymqe	P4 RECV(81) ; From: P3(21) ; Subject: lhrskeua
P3 SEND(43) ; Subject: Re:kibuymqe	P4 RECV(82); From: P3(22); Subject: zjvorkgf
P3 RECV(78) ; From: P3(43) ; Subject: Re:klbuymqe	P4 SEND(41); Subject: Re:zjvorkgf
P3 RECV(79); From: P1(8); Subject: ypdqfogw	P4 RECV(83); From: P3(23); Subject: ivezmrbp P4 RECV(84); From: P3(24); Subject: Re:kmnyxags
P3 RECV(80); From: P1(9); Subject: Re:cglbhndl	P4 RECV(84); From: P3(24); Subject: Re:Rmnyxaqs P4 RECV(85); From: P3(25); Subject: cjgztbeh
P3 RECV(81); From: P1(10); Subject: wdyrxhnl	P4 RECV(86); From: P3(26); Subject: Cjyztbell P4 RECV(86); From: P3(26); Subject: ovkftucp
P3 RECV(82); From: P1(11); Subject: Re:xbnuzvgq P3 RECV(83); From: P1(12); Subject: Re:smdybnhv	P4 RECV(87); From: P4(38); Subject: Re:yomdtepl
P3 RECV(84); From: P1(12); Subject: Re:SMuyonniv P3 RECV(84); From: P1(13); Subject: Restvxry	P4 RECV(88) ; From: P4(39) ; Subject: Re:casdgtlz
P3 RECV(85); From: P1(14); Subject: zanrqlwb	P4 RECV(89); From: P4(40); Subject: Re:xhifecwg
P3 SEND(44) ; Subject: qivljwau	P4 RECV(90); From: P4(41); Subject: Re:zjvorkgf
P3 RECV(86); From: P3(44); Subject: qivljwau	P4 SEND(42); Subject: cfzvlokg
	P4 RECV(91) ; From: P4(42) ; Subject: cfzvlokg

3 Open questions

4 Personal opinion