# Node 1	Node 2	Node 3	Node 4	1x2	1x3	1x4	2x3	2x4	-	B2	B3	B4	# Groups Other Notes	Tested
1 UP	UP	X	X	100	Х	Х	Х	>	X Leader	Member			1 Stable Groups	5/8/20
2 UP	UP	Χ	X	100	Х	Х	Х	>	X Member	Leader			1 Stable Groups	5/8/20
3 UP	UP	Χ	X	0	Х	Х	Х	>	X Leader	Leader			2 No Elections	5/8/20
4 UP	UP	Χ	X	n	Х	Х	Х	>	X Leader/Member	er Leader/Member			1 or 2 Decreasing n: More groups form, up until n inhibits leader discovery.	5/8/20
5 UP	UP	UP	X	100	100	Х	100	>	X Leader	Member	Member		1 Stable Groups	5/8/20
6 UP	UP	UP	X	100	100	Х	100	>	X Member	Leader	Member		1 Stable Groups	5/8/20
7 UP	UP	UP	X	100	100	Х	100	>	X Member	Member	Leader		1 Stable Groups	5/8/201
8 UP	UP	UP	X	0	0	Х	0	>	X Leader	Leader	Leader		3 No Elections	5/8/201
9 UP	UP	UP	X	0	100	Х	100	>	X Leader	Leader	Member		2 Stable Groups	5/8/201
10 UP	UP	UP	X	0	100	Х	100	>	X Member	Member	Leader		1 Stable Groups	5/8/201
11 UP	UP	UP	X	100	0	Х	100	>	X Leader	Member	Leader		2 Stable Groups	5/8/201
12 UP	UP	UP	X	100	0	Х	100	>	X Member	Leader	Member		1 Stable Groups	5/8/201
13 UP	UP	UP	X	100	100	Х	0	>	X Leader	Member	Member		1 Stable Groups	5/8/201
14 UP	UP	UP	Х	100	100	Х				Leader	Leader		2 Stable Groups	5/8/20
15 UP	UP	UP	Х	n	100	Х	100	>	X Leader	Member	Member		1 Unstable Group	5/8/201
16 UP	UP	UP	Х	n	100	Х	100	>	X Member	Leader	Member		1 Stable Group	5/8/20
17 UP	UP	UP	Х	n	100	Х	100	>	X Member	Member	Leader		1 Stable Group	5/8/20
18 UP	UP	UP	Х	n	100	Х			X Leader	Leader	Member		2 Increasing chance to settle into single group with increasing n.	5/8/20
19 UP	UP	UP	Х	n	100	Х			X Leader	Member	Leader		2 Symmetry	5/8/20
20 UP	UP	UP	Х	n	m	Х		>	X Leader	Member	Leader		2 Increasing chance to settle into single group with increasing n,m	5/8/20
21 UP	UP	UP	Х	n	m	Х	100	>	X Member	Leader	Member		1 Stability of group depends on n. Most likely configuration	5/8/20
22 UP	UP	UP	Х	n	m	Х		>	X Leader	Leader	Member		2 Increasing chance to settle into single group with increasing n,m	5/8/20
23 UP	UP	UP	Х	n	m	Х	р	>	X Leader	Member	Member		1 Stability depends on n, m	5/8/20
24 UP	UP	UP	Х	n	m	Х	g	>	X Leader	Leader	Member		2 Increasing chance to settle into one group depending on n	5/8/20
25 UP	UP	UP	Χ	n	m	Х		>	X Leader	Leader	Leader		3 Chances of merge decreases with n,m,p	5/8/20
26 UP	UP	UP	UP	100	100	100				Member	Member	Member	1 Stable	5/8/20
27 UP	UP	UP	UP	0	0	0	0			Leader	Leader	Leader	4 No Elections	5/8/20
28 UP	UP	UP	UP	100	100	100	100	100		Member	Member	Member	1 Stable	5/8/20
29 UP		UP	UP	100	100	100				Member	Leader	Leader	2 Stable as long as 3 is a leader.	5/8/20
30 UP		UP	UP	100	100	100				Member	Member	Member	1 Stable	5/8/20
31 UP	UP	UP	UP	100	100	100	100	(	0 Member	Leader	Member	Leader	2 Stable as long as 2 or 3 are leader	5/8/20
32 UP		UP	UP	100	100	100				Member	Member	Member	1 Stable	5/8/20
33 UP		UP	UP	100	100	100				Member	Member	Member	1 Stable	5/8/20
34 UP		UP	UP	100	100	100				Leader	Leader	Leader	3 Stable	5/8/20
35 UP		UP	UP	100	100	0	0	Ò		Member	Member	Leader	2 Stable	5/8/20
36 UP		UP	UP	100	0	0	0		o Loudo.	Member	Leader	Leader	3 Stable	5/8/20
37 UP		UP	UP	100	0	0	0	_	100 Leader	Member	Leader	Member	2 Stable (Partition)	5/8/20
38 UP		UP	UP	100	100	0			100 Leader	Member	Member	Leader	2 Stable (1 artiforn)	5/8/20
39 UP	UP	UP	UP	100	n	0	0		100 Leader	Member	Member	Member	1 Transient Partition, Increasing Stability with increasing n	5/8/20
40 UP	UP	UP	UP	100	n	m	-		100 Leader	Member	Member	Member	1 Transient Partition, Other short lived groups form based on m,p,q	5/8/20
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FID Test

Run a patched FREEDM which toggles all the FIDs attached to a node on and off after a period of time. Observe that the node that is toggled leaves the group and then rejoins when its FIDs are closed again

Run a patched FREEDM which sporadically toggles the FIDs attached to a node, when all the FIDs are off the node should leave its groups, if the node only has some of its FIDs off it shouldn't leave the group.

5/8/2012