FREEDM: TEST PLAN FOR STATE COLLECTION MODULE

Case	Precondition of the system			Action Performed by the State Collection	Expected of the system			Date
	Node1	Node2	Node3		Node1	Node2	Node3	
1 Load_timeout = 100ms State_timeout =180ms	groupleader Up	Join the group	Dead	• Node 1 is running DGI • Node 2 is joining the group • Node 1 becomes the leader • Any module in Node 1 send request message for state (gateway value, …)	The request module gets collected states of two nodes.	Report its own state to Node1.	N/A	05/04/12
2 Load_timeout = 100ms State_timeout =180ms	groupleader Up	Join the group	Join the group	• Node 1 is running DGI • Node 2 and Node 3 are joining the group • Node 1 becomes the leader • Any module in Node 1 send request message for state (gateway value, …)	The request module gets collected states of all three nodes.	Report its own state to Node1.	Report its own state to Node1.	05/04/12
3 Load_timeout = 100ms State_timeout =180ms	groupleader Up	Dead	Join the group	• Node 1 is running DGI • Node3 is joining the group • Node 1 becomes the leader • Any module in Node 1 send request message for state (gateway value, …)	The request module gets collected states of two nodes.	N/A	Report its own state to Node1.	05/04/12
4 Load_timeout = 100ms State_timeout =180ms	Dead	groupleader up	Join the group	• Node 2 is running DGI • Node3 is joining the group • Node 2 becomes the leader • Any module in Node 2	N/A	The request module gets collected	Report its own state to Node2.	05/04/12

				send request message for state (gateway value, …)		states of two nodes.		
5 Load_timeout = 50ms State_timeout =180ms	groupleaer, up in group, but later Dead	Up in group	Up in group	• Node 1, 2 and 3 generate a group with node 1 as leader • Kill Node 1 and waiting for Node 2 and 3 to be a group with Node 2 as leader	Dead	The request module gets collected states of two nodes.	Report its own state to Node2.	05/07/12
6 Load_timeout = 50ms State_timeout =180ms	groupleader, up in group	Up in group, but later Dead	Up in group	• Node 1, 2 and 3 generate a group with node 1 as leader • Kill Node 2 and waiting for Node 1 and 3 to be a group with Node 1 as leader	The request module gets collected states of two nodes.	Dead	Report its own state to Node1.	05/07/12
7 Load_timeout = 50ms State_timeout =180ms	groupleader, up in group	Up in group	Up in group, but later Dead	• Node 1, 2 and 3 generate a group with node 1 as leader • Kill Node 3 and waiting for Node 1 and 2 to be a group with Node 1 as leader	The request module gets collected states of two nodes.	Report its own state to Node1.	Dead	05/07/12
8 Load_timeout = 50ms State_timeout =180ms	groupleader, up in group	Up in group, then dead, then join the group again	Up in group	• Node 1, 2 and 3 generate a group with node 1 as leader • Kill Node 2 • Make node 2 join the group again	The request module gets collected states of nodes in	Dead for a while, then report its own state to Node1 again	Report its own state to Node1	05/07/12

					the group.			
9 Load_timeout = 50ms State_timeout =180ms	groupleader, up in group	Up in group	Up in group, then dead, then join the group again	• Node 1, 2 and 3 generate a group with node 1 as leader • Kill Node 3 • Make node 3 join the group again	The request module gets collected states of nodes in the group.	Report its own state to Node1.	Dead for a while, then report its own state to Node1 again.	05/07/12
10 Load_timeout = 50ms State_timeout =180ms	groupleader, up in group, then dead, then join the group again	Up in group	Up in group	• Node 1, 2 and 3 generate a group with node 1 as leader • Kill Node 1 • Make node 1 join the group again (be the leader)	Dead for a while, then could get collected states of nodes in the group again.	Report its own state to group leader.	Report its own state to group leader.	05/07/12
11 Load_timeout = 20ms State_timeout =40ms	groupleader Up	Join the group	Join the group	• Node 1 is running DGI • Node 2 and Node 3 are joining the group • Node 1 becomes the leader • Any module in Node 1 send request message for state (gateway value, …)	Due to the short State_timeout, the state collection in node 1 couldn't run to completion. Normal is always freezing to zero(initial value).			05/07/12
12 Failed test case with Load_timeout = 20ms State_timeout =180ms	groupleader Up	Join the group	Join the group	• Node 1 is running DGI • Node 2 and Node 3 are joining the group • Node 1 becomes the leader • Any module in Node 1 send request message for state (gateway value, …)	Actual Results: State collections run faster in Leader node and slower in follower node. The leader couldn't obtain current state because the follower return the state related to the old marker. this might cause by clock synchronization among three nodes.			05/07/12