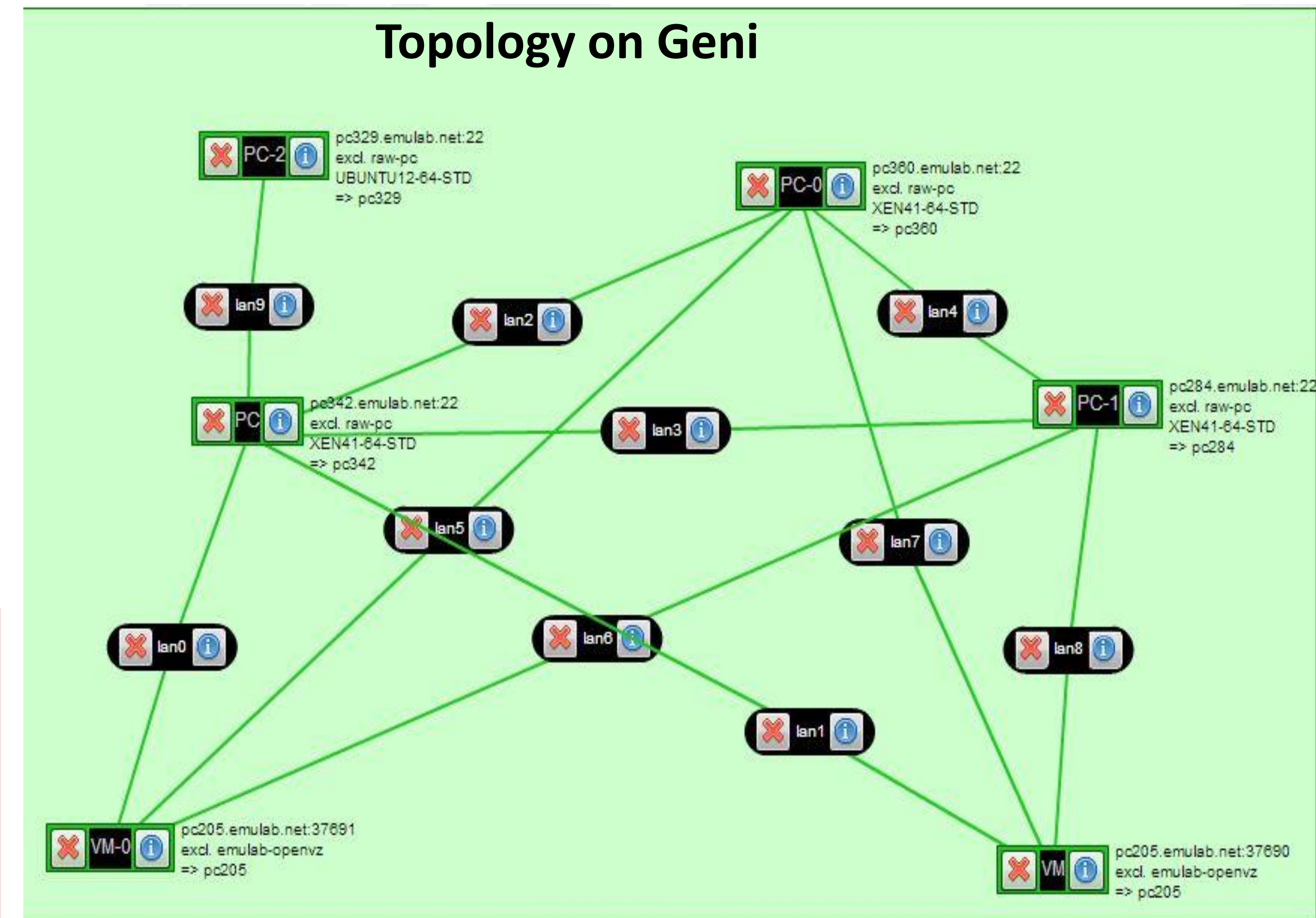# Distributed OpenFlow Switches with Fault Tolerance
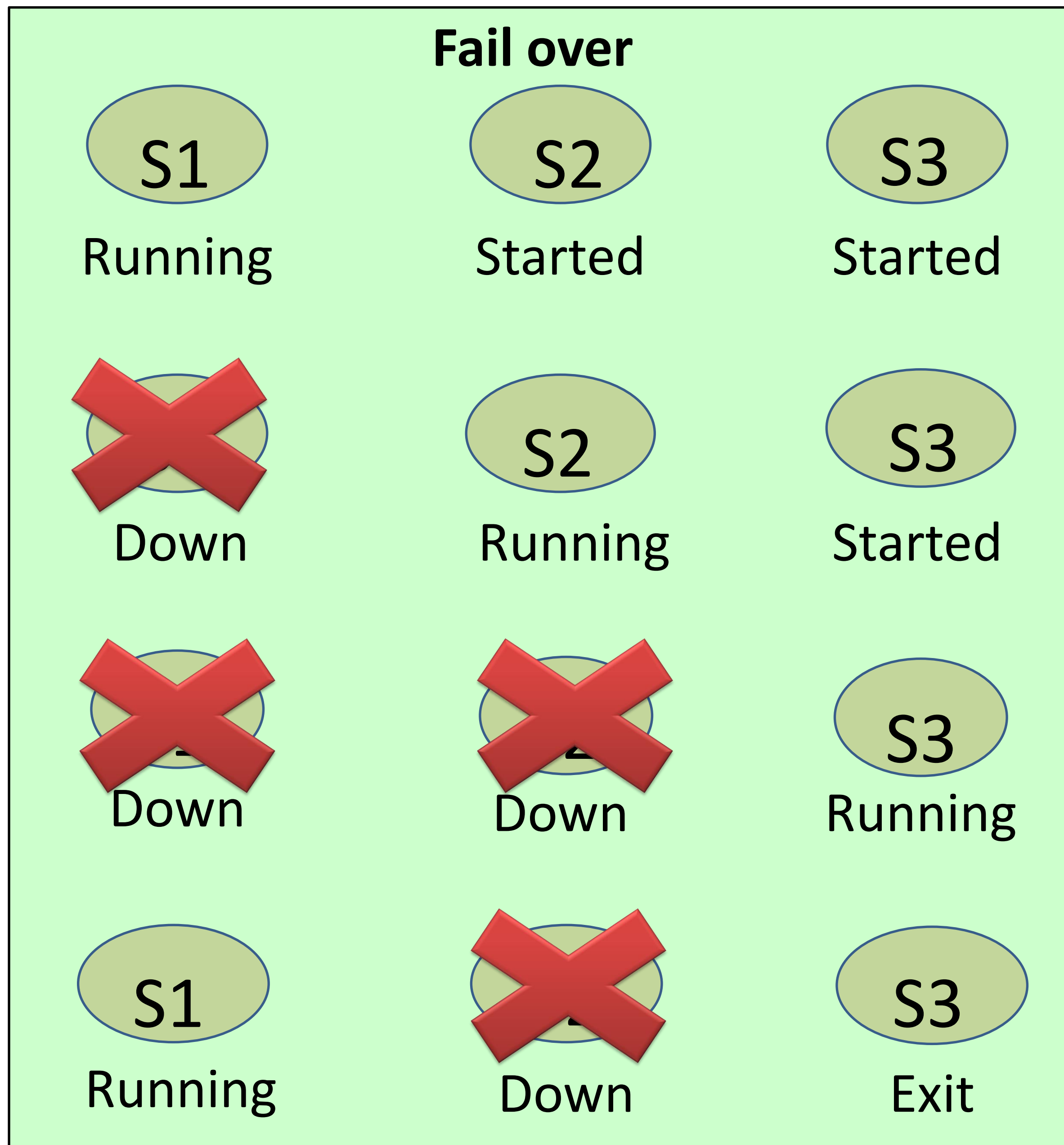
Gandhimathi Velusamy and Deniz Gurkan

## LINC Switch

- LINC is a complete Open Flow software switch.
- Supports Open Flow- 1.2, OpenFlow-1.3.1 specifications.
- Supports OFConfig 1.1.1 Management Protocol
- It is written in functional concurrent programming language.
- It is implemented in operating system 's user space as a Erlang node.

## Fail over

| S1 | S2 | S3 |
|----|----|----|
| Running | Started | Started |
| Down | S2 Running | S3 Started |
| Down | Down | S3 Running |
| S1 Running | Down | S3 Exit |

## Topology on Geni



PC-2  pc329.emulab.net:22 excl. raw-pc UBUNTU12-64-STD => pc329
PC-0  pc360.emulab.net:22 excl. raw-pc XEN41-64-STD => pc360
lan9
lan2
lan4
PC  pc342.emulab.net:22 excl. raw-pc XEN41-64-STD => pc342
lan3
PC-1  pc284.emulab.net:22 excl. raw-pc XEN41-64-STD => pc284
lan5
lan7
lan0
lan6
lan8
lan1
VM-0  pc205.emulab.net:37691 excl. emulab-openvz => pc205
VM  pc205.emulab.net:37690 excl. emulab-openvz => pc205

Net_kernel module monitors network connection between nodes

## Kernel Configuration

```
{kernel,
  [{distributed, [{linc, 5000, ['linc@pc', 'linc@pc-0', 'linc@pc-1']}]},
   {sync_nodes_mandatory, ['linc@pc', 'linc@pc-0']},
   {sync_nodes_optinal, ['linc@pc-0']},
   {sync_nodes_timeout, 30000}
  ]}
```

LINC switch, more info at:
FLOWFORWARDING.ORG

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