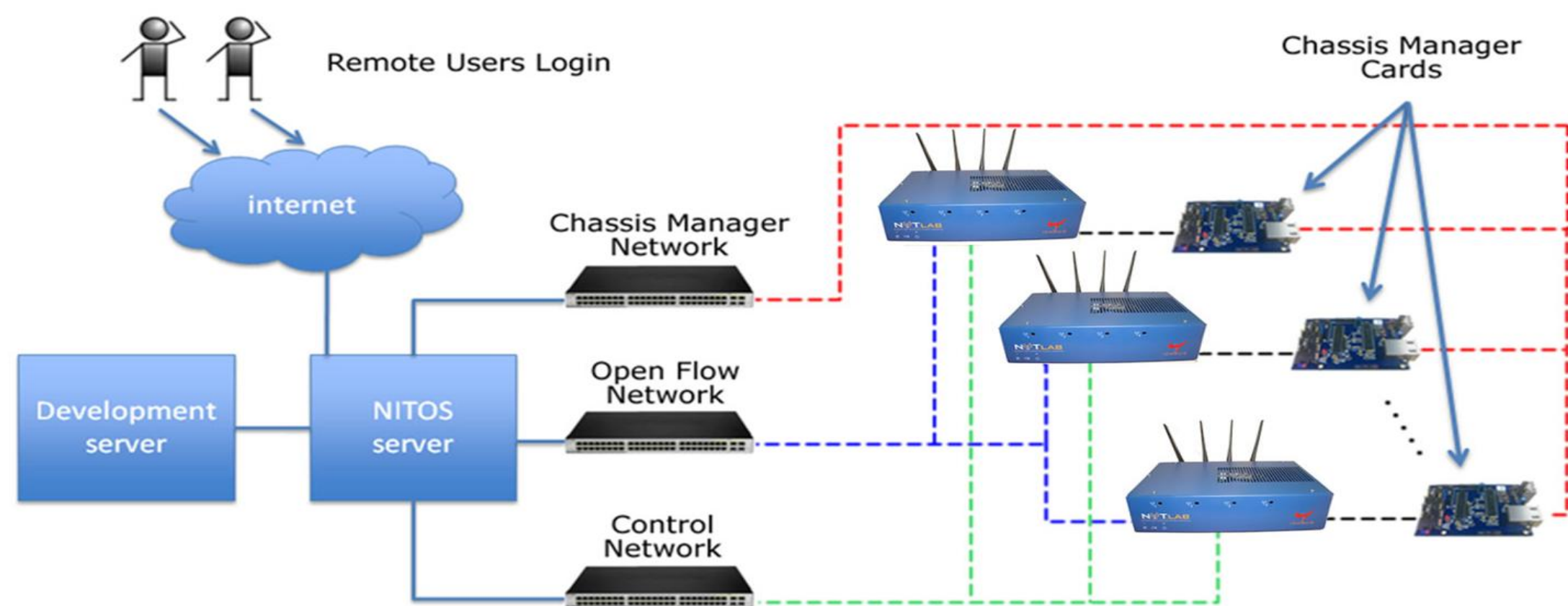# Integrating FlowVisor access control in a publicly available OpenFlow testbed with slicing support

NITOS ARCHITECTURE

•Each physical OpenFlow switch port is connected to a separate physical machine (and not a virtual machine) in NITOS.
•Users reserve NITOS nodes for limited time intervals and are only granted access to them during these intervals.

SCHEME TO EXTEND TESTBED SLICING AT THE OPENFLOW LEVEL
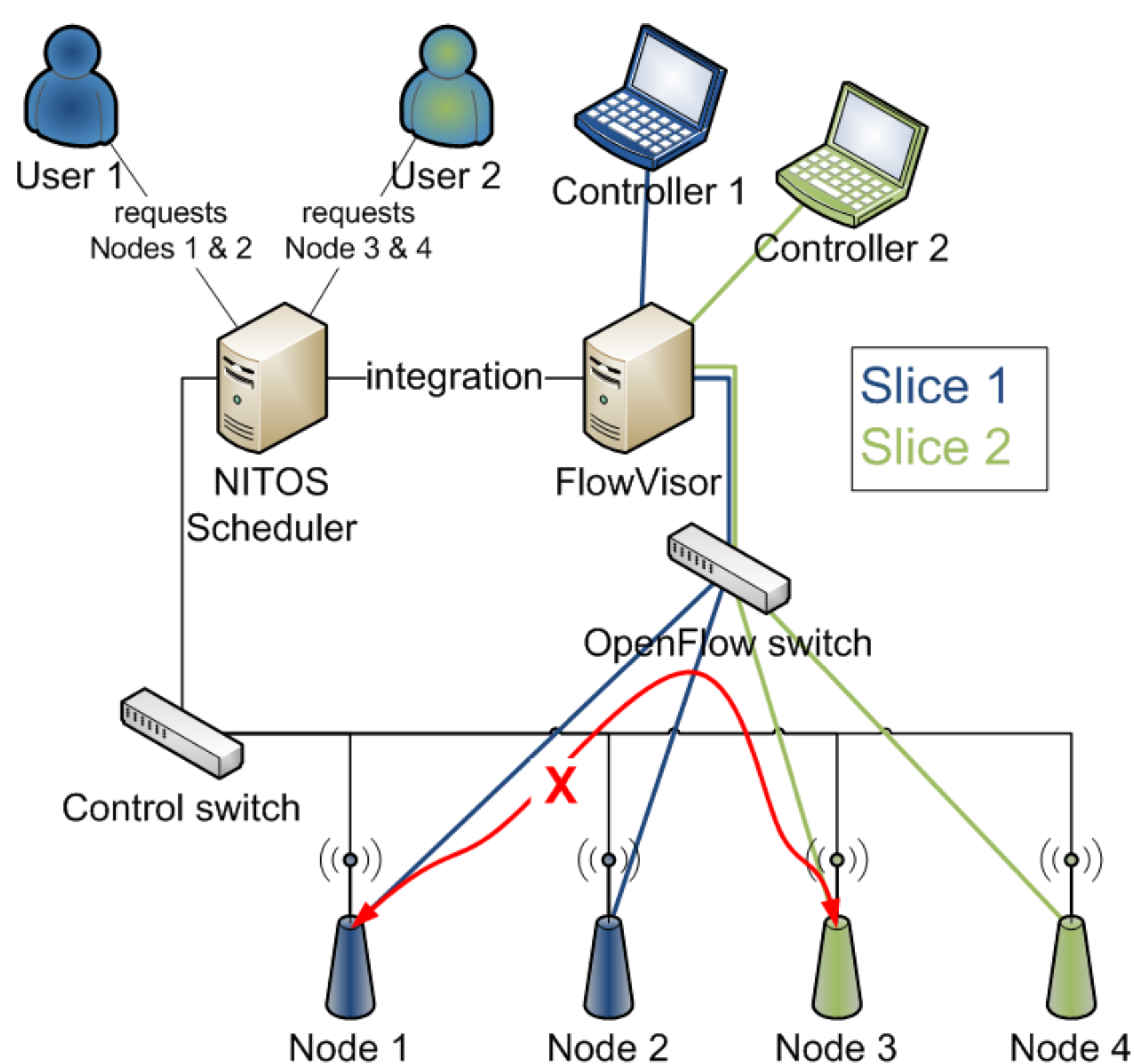
1. When a new NITOS slice is created, a corresponding slice in the FlowVisor of NITOS is also created
2. When a new reservation for a slice and a set of nodes is created, the set of the OF switch ports corresponding to these nodes is also automatically reserved for the same time interval
3. When the reserved time interval begins, the ports are added to the respective FlowVisor slice
4. When the interval ends, the ports are deleted from the slice

➢The whole process takes place transparently to the users, who only interact with the NITOS Scheduler
➢Users can redirect the controller address to which their OF slice is listening to at any time, during or outside a reservation
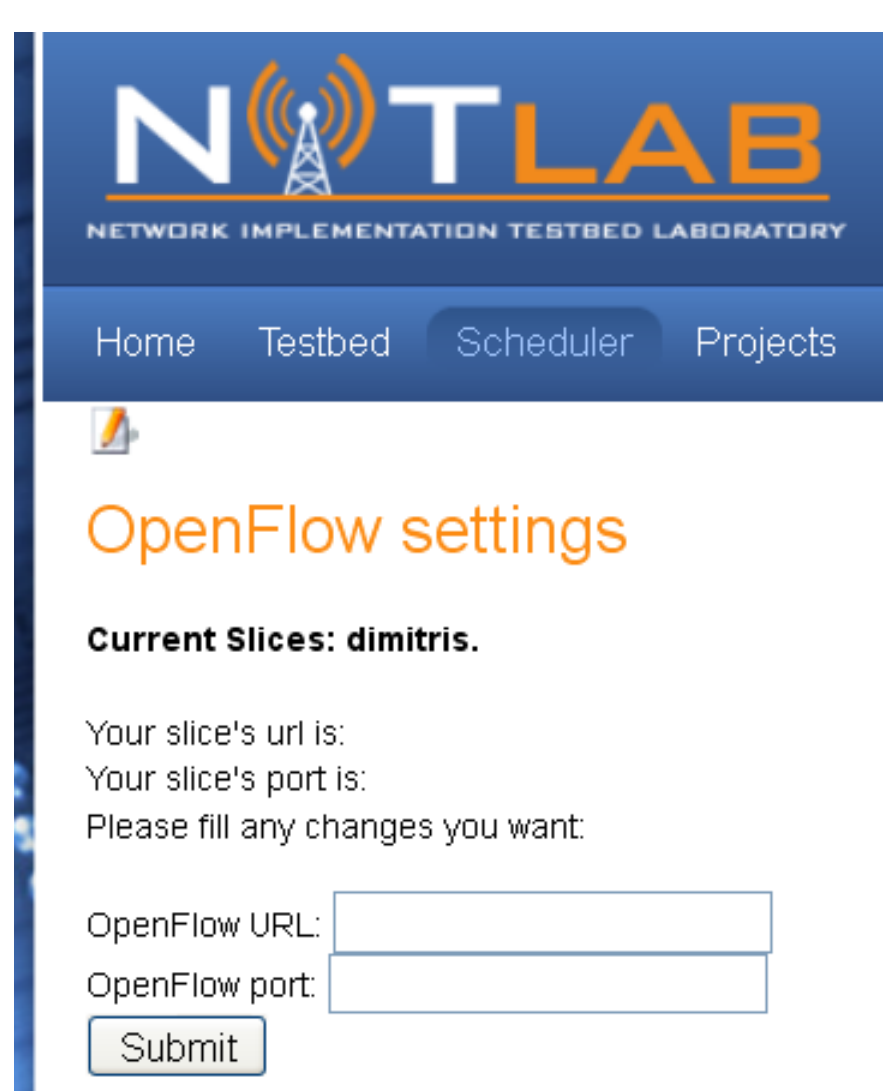
Redirection of the OpenFlow controller's address associated with each slice takes place via the NITOS website

➢The fact that each OF switch port is connected to a standalone node instead of a VM server allows for the assignment of the entire IP address and TCP/UDP port range to the flowspace assigned to a given slice

Dimitris Giatsios, Kostas Choumas, Dimitris Syrivelis, Thanasis Korakis, Iordanis Koutsopoulos, Leandros Tassiulas