

# PLANETLAB@EPFL



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# OUR NEEDS

## VALIDATING A DISTRIBUTED APPLICATION

Local machine



Compiles and runs

2-5 instances on a local machine



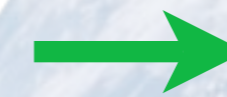
Basic functionalities

2-5 remote lab machines



Network works

50-200 EPFL machines



First validation




200-400 PlanetLab nodes



# FACTS

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Computers available for students @ EPFL site

OS	Nb. of computers
 Win XP	560
 Linux	280
 Solaris	30

# OPPORTUNISTIC SOLUTION

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We can use those machines for our private planetlab.

Retained solution should provide:

1. A small administration overhead.
2. An easy deployment (adding new nodes).
3. A good balance between **security** v.s. **resource accessibility**.

# PROPOSED SOLUTION

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- Run PlanetLab OS in a VMWare
  - Easy installation (work only with ISO)
  - Enforce security
- Automatic node registration (based on Rock project)

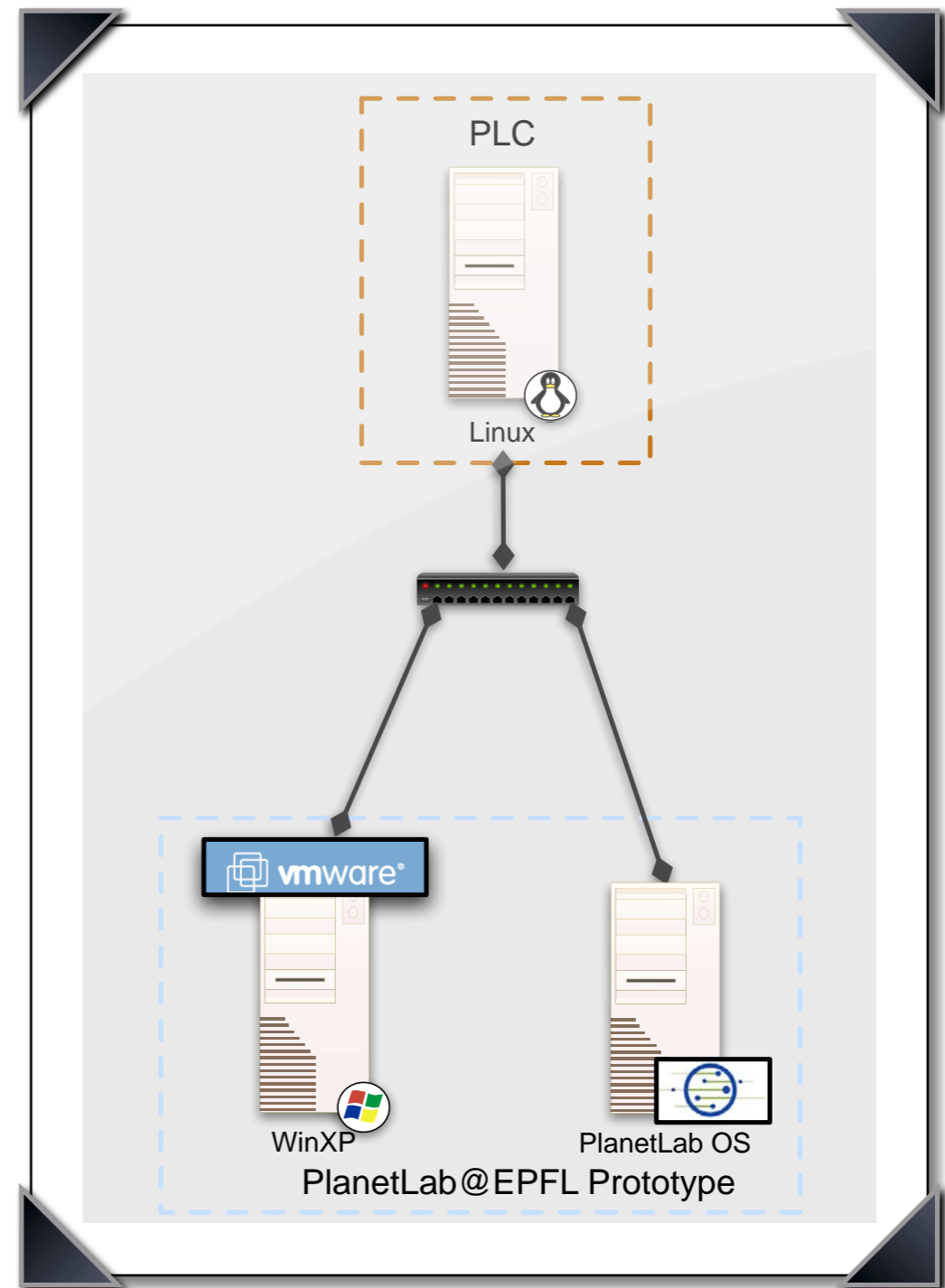
Is it **feasible**?

Is it **viable**?

# PROTOTYPE

- ✿ 2 nodes:
  1. WinXP with VMWare
  2. A native PlanetLab OS
- ✿ A PLC (Fedora Core 2)

Our solution is **feasible**.



# EVALUATION

Using VMWare implies an overhead.

What do we get at the end of the day?

	Real hardware	Seen through VMWare
CPU	P4 2.8GHz	P4 2.4GHz
Disk	7200RPM	5400/4200RPM
Network band.	1 Gb/s	616Mb/s

# WHAT ABOUT LATENCIES?

Network latency in VMWare is not good. (3x slower)

	Native	VMWare
Ping delay	0.2ms	0.6ms

Having a PING delay of 100ms inside PlanetLab is not unusual.

Our solution is **viable**.

# FUTURE WORK (TECHNICAL)

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- Fully automatize installation process
- Upgrade our PLC to MyPLC



# FUTURE WORK (ADMIN)

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- Define usage policies
  - **Who** will have access to PlanetLab@EPFL
  - **When** PlanetLab@EPFL will be accessible (always, at night and during the week-end...)
- Long term goal: **federate**

# CONCLUSION

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- Our solution is feasible and viable
- We are currently deploying PL in a student room (10-20 machines)
- Negotiation on deployment with our IT Department will start this month.

# QUESTIONS?

