

# Nexus 9000 ITD for MS NLB replacement

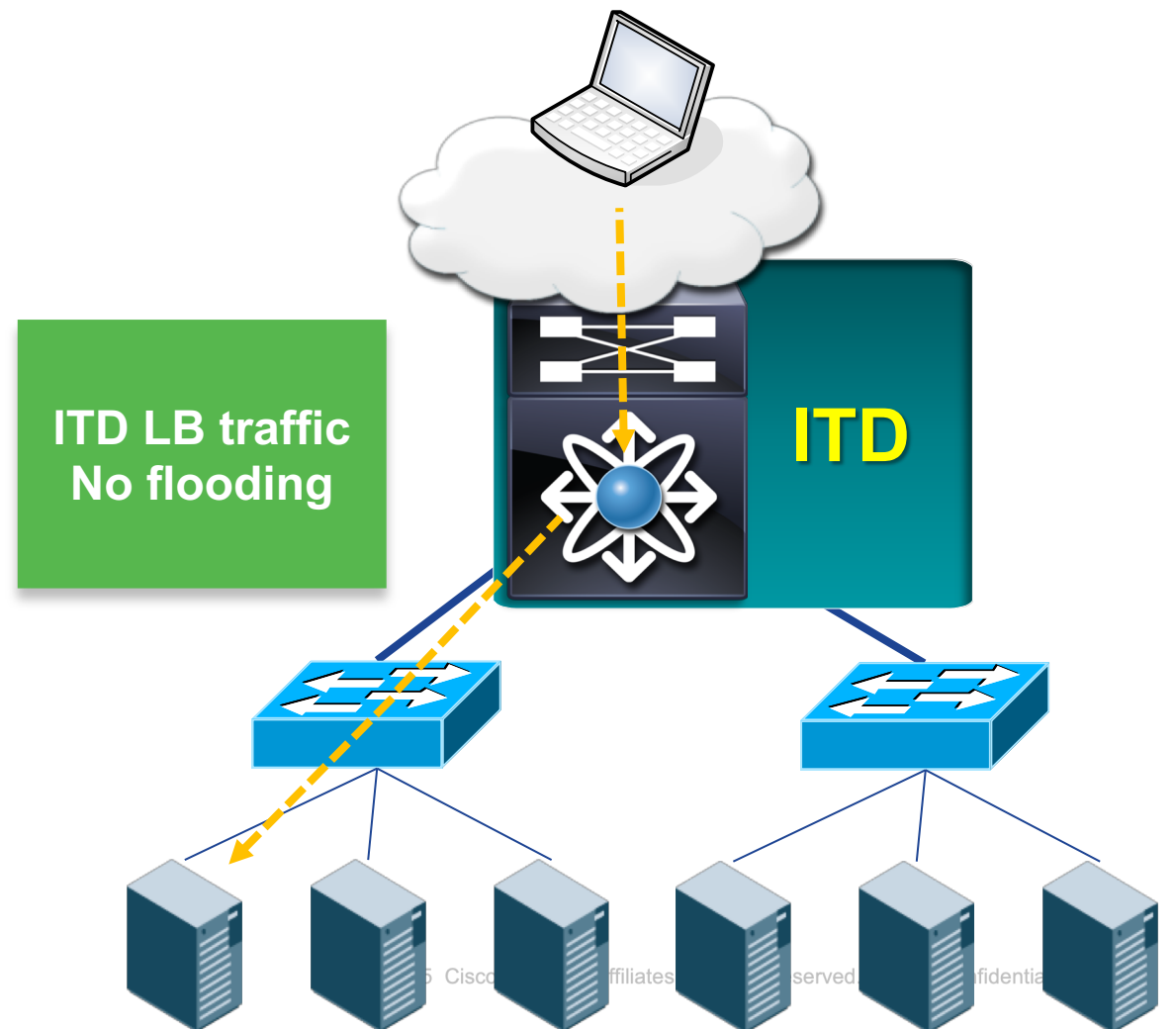
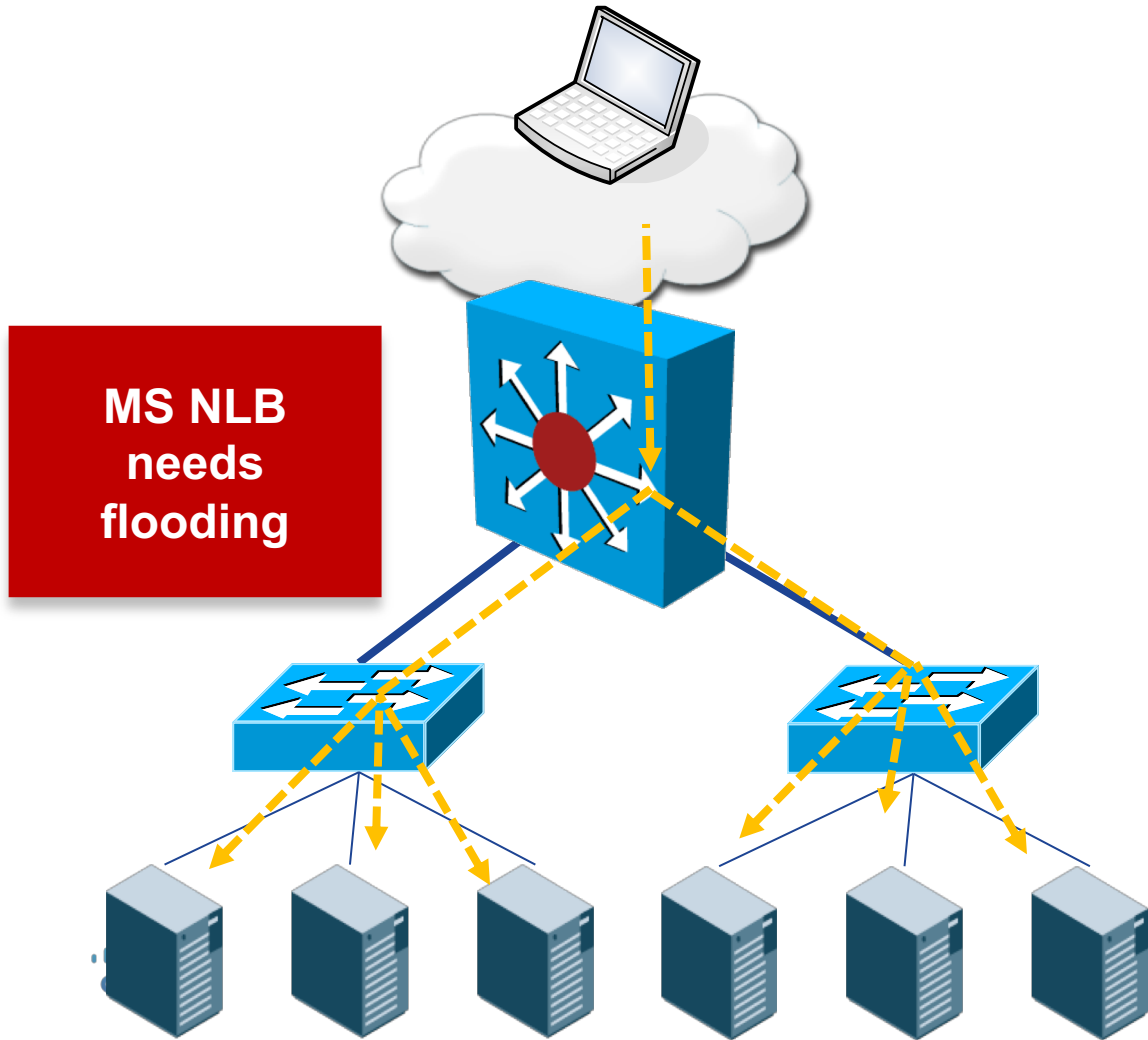
# Agenda

- Microsoft NLB topology and traffic flow example
- ITD configuration example

# Overview

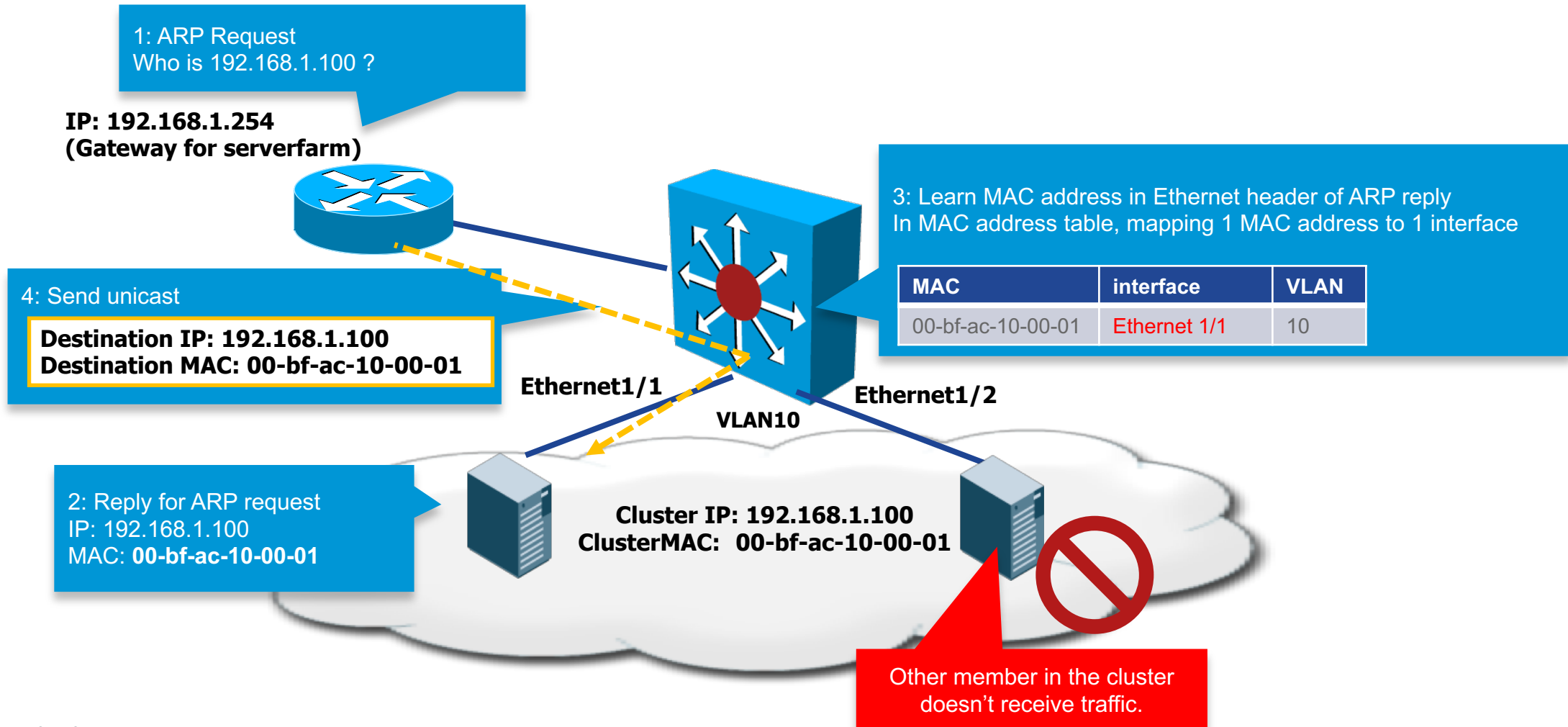
- The purpose of this document is understanding Microsoft NLB behavior and configuration example with ITD for replacement of Microsoft NLB.
- Note: ITD doesn't co-exist with Microsoft NLB. ITD is the replacement solution for Microsoft NLB.
- Advantage of ITD
  - Better performance because of HW based Load Balancing.
  - Remove the requirement for the additional physical Load Balancer.
  - Better traffic flow (No flooding, please see the later slides for detail)
  - Additional documents are available on [cisco.com/go/itd](http://cisco.com/go/itd)

# Microsoft NLB vs ITD Overview

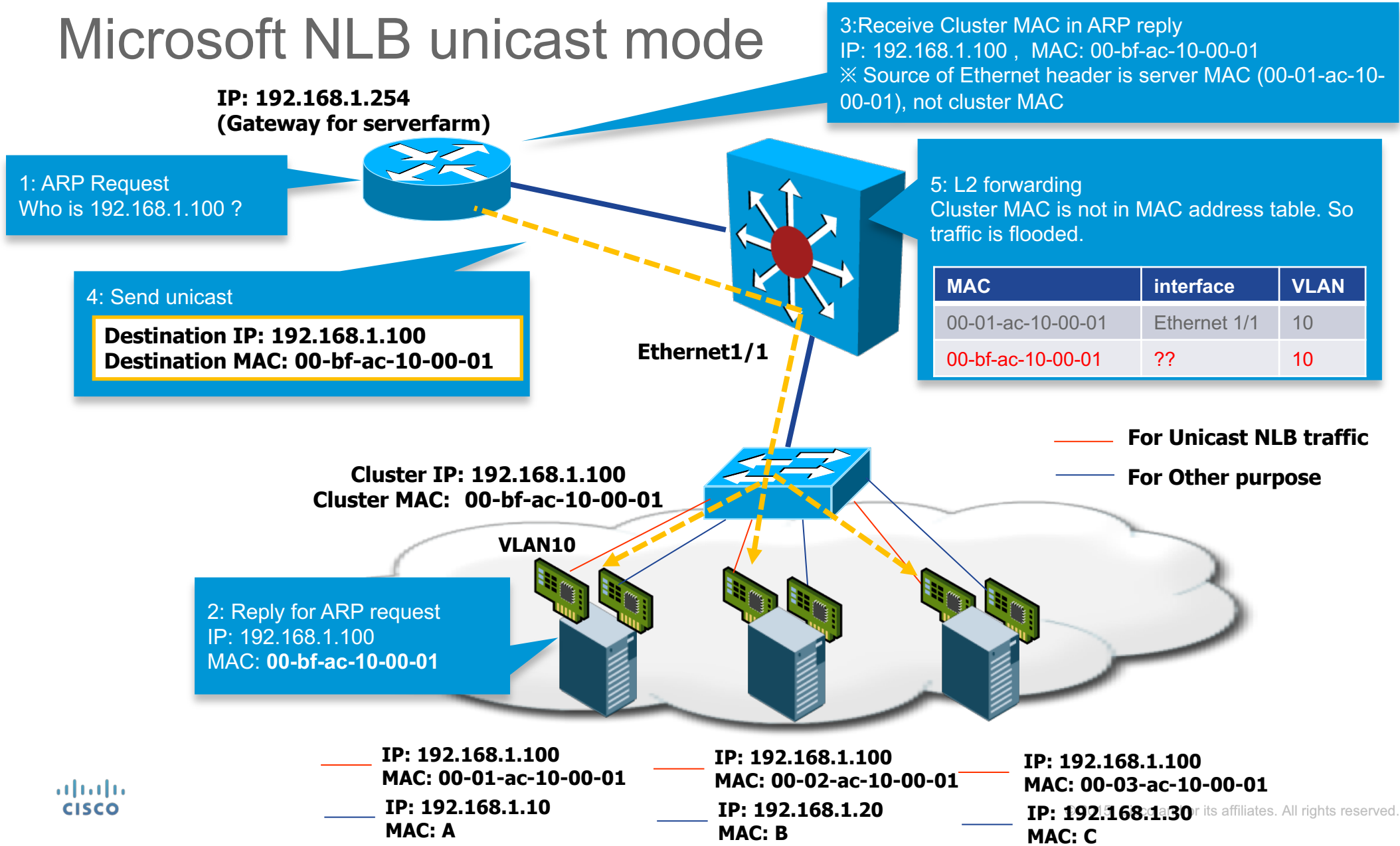


# Microsoft NLB topology and traffic flow example

# Microsoft NLB unicast mode



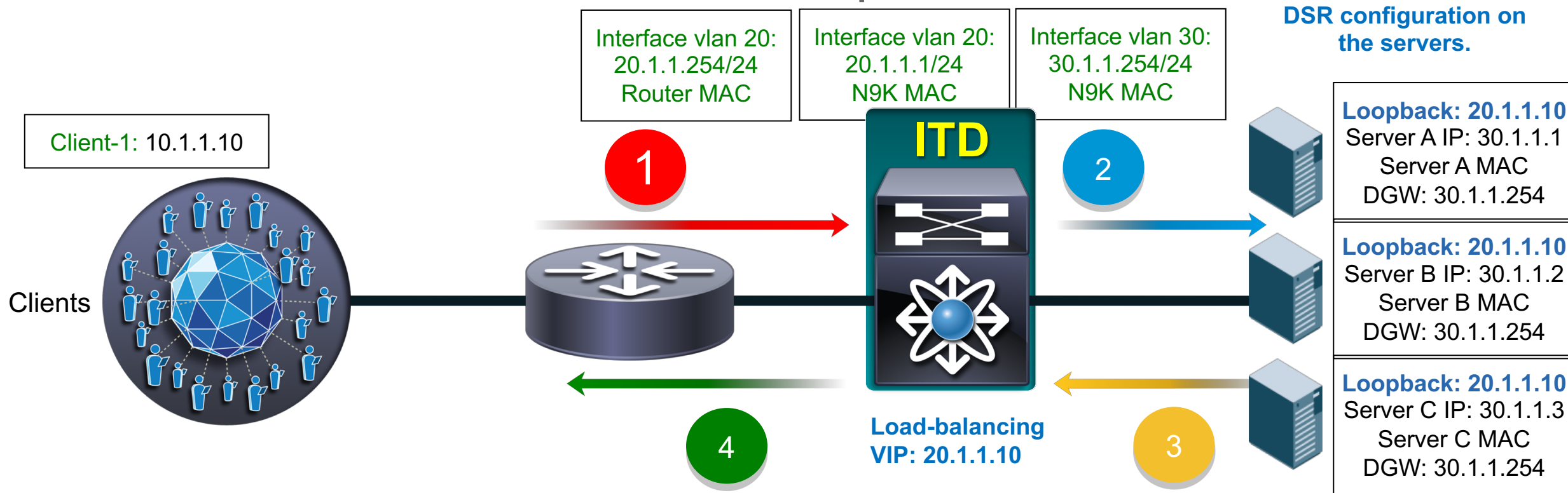
# Microsoft NLB unicast mode



# ITD configuration example

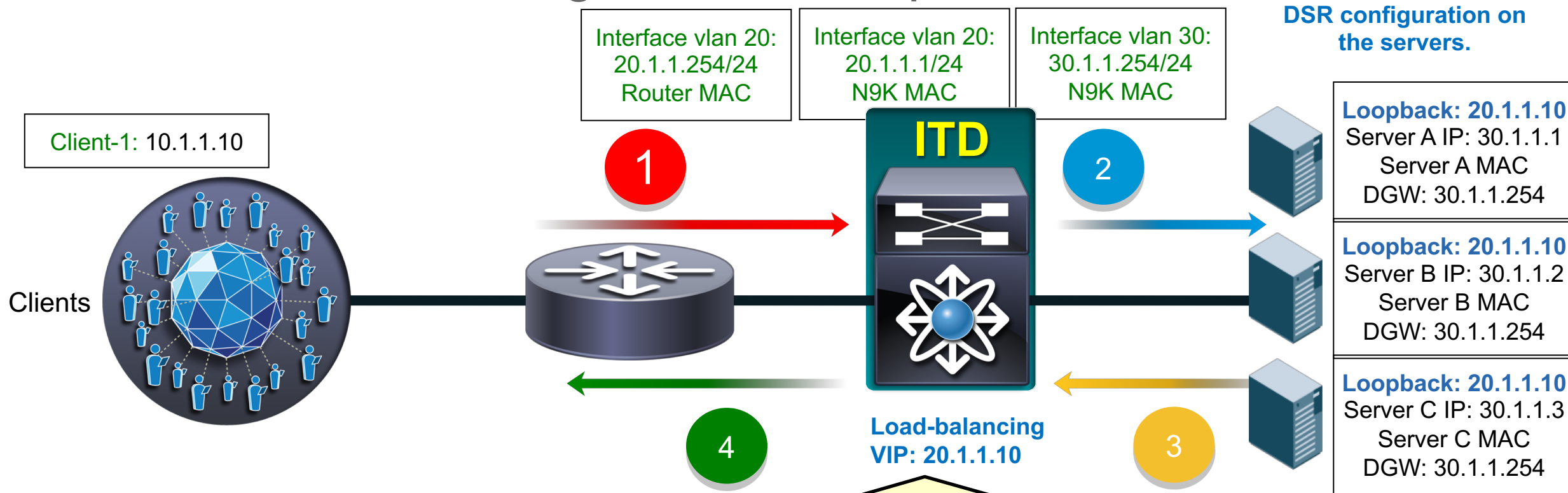


# Nexus 9000 ITD Traffic flow example



Step	dst-mac	src-mac	src-ip	dst-ip
1	N9K MAC	Router MAC	10.1.1.10	20.1.1.10
2	Server A MAC	N9K MAC	10.1.1.10	20.1.1.10
3	N9K MAC	Server A MAC	20.1.1.10	10.1.1.10
4	Router MAC	N9K MAC	20.1.1.10	10.1.1.10

# Nexus 9000 ITD configuration example



```

feature itd
Feature pbr
feature sla sender

interface Vlan20
no shutdown
ip address 20.1.1.1/24

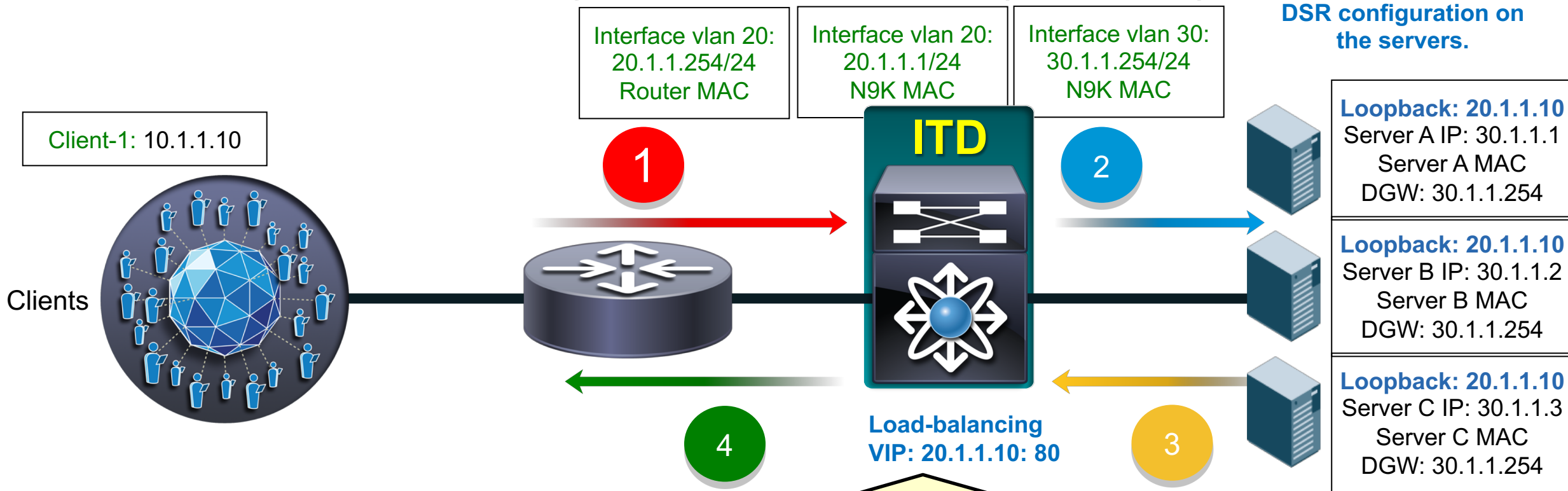
interface Vlan30
no shutdown
ip address 30.1.1.254/24

itd device-group Servers
probe icmp
node ip 30.1.1.1
node ip 30.1.1.2
node ip 30.1.1.3

itd LB

device-group Servers
virtual ip 20.1.1.10 255.255.255.255
ingress interface vlan20
load-balance method src ip
failaction node reassign
    
```

# Nexus 9000 ITD configuration example (TCP 80)



```

feature itd
Feature pbr
feature sla sender

interface Vlan20
no shutdown
ip address 20.1.1.1/24

interface Vlan30
no shutdown
ip address 30.1.1.254/24

itd device-group Servers
probe icmp
node ip 30.1.1.1
node ip 30.1.1.2
node ip 30.1.1.3

itd LB

device-group Servers
virtual ip 20.1.1.10 255.255.255.255 tcp 80
ingress interface vlan20
load-balance method src ip
failaction node reassign
    
```

# Appendix

# Useful links

- <http://blogs.cisco.com/datacenter/itd-load-balancing-traffic-steering-clustering-using-nexus-5k6k7k9k>
- Nexus 9k ITD configuration guide
  - [http://www.cisco.com/c/en/us/td/docs/switches/datacenter/nexus9000/sw/7-x/itd/configuration/guide/b\\_Cisco\\_Nexus\\_9000\\_Series\\_NX-OS\\_Intelligent\\_Traffic\\_Director\\_Configuration\\_Guide\\_7x.html](http://www.cisco.com/c/en/us/td/docs/switches/datacenter/nexus9000/sw/7-x/itd/configuration/guide/b_Cisco_Nexus_9000_Series_NX-OS_Intelligent_Traffic_Director_Configuration_Guide_7x.html)