

Pfff, ça rame aujourd'hui !

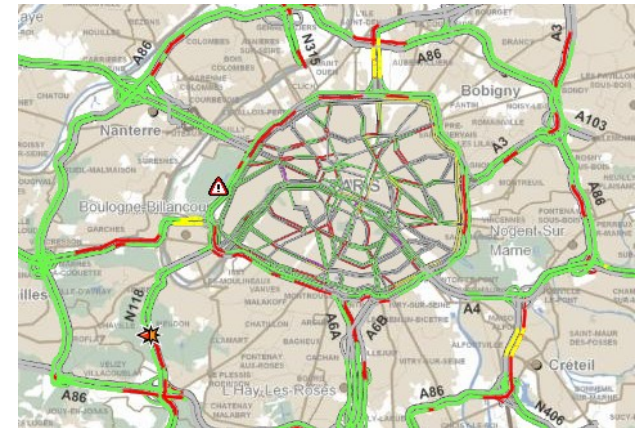


FRNOG #18 – 2/12/2011

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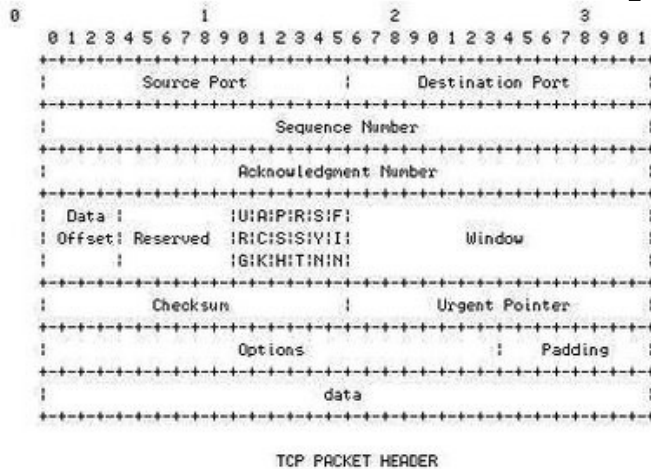
Parlons performance applicative...

- Visibilité de la performance
 - Passive monitoring (flux / DPI)
 - Active monitoring



- Optimisations
 - Sur l'interface (QoS)
 - Sur la liaison (Accélération WAN)
 - Sur le routage (PfR)

Visibility



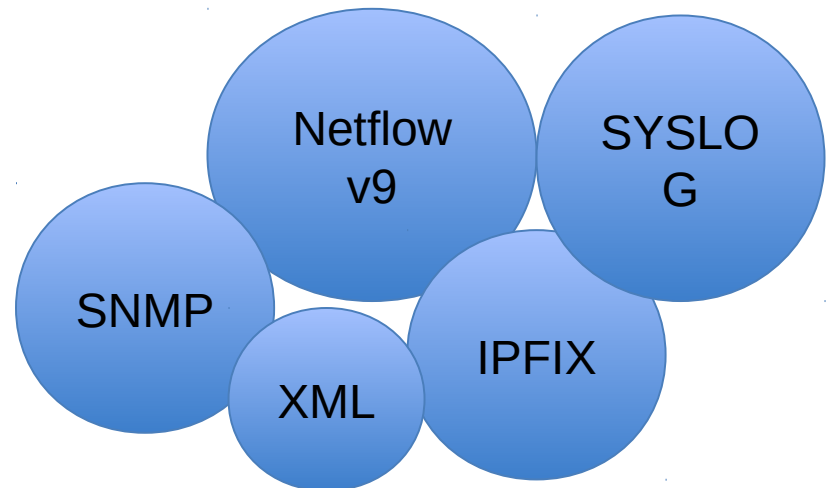
Flow monitoring



Active monitoring



DPI



Export

Optimization

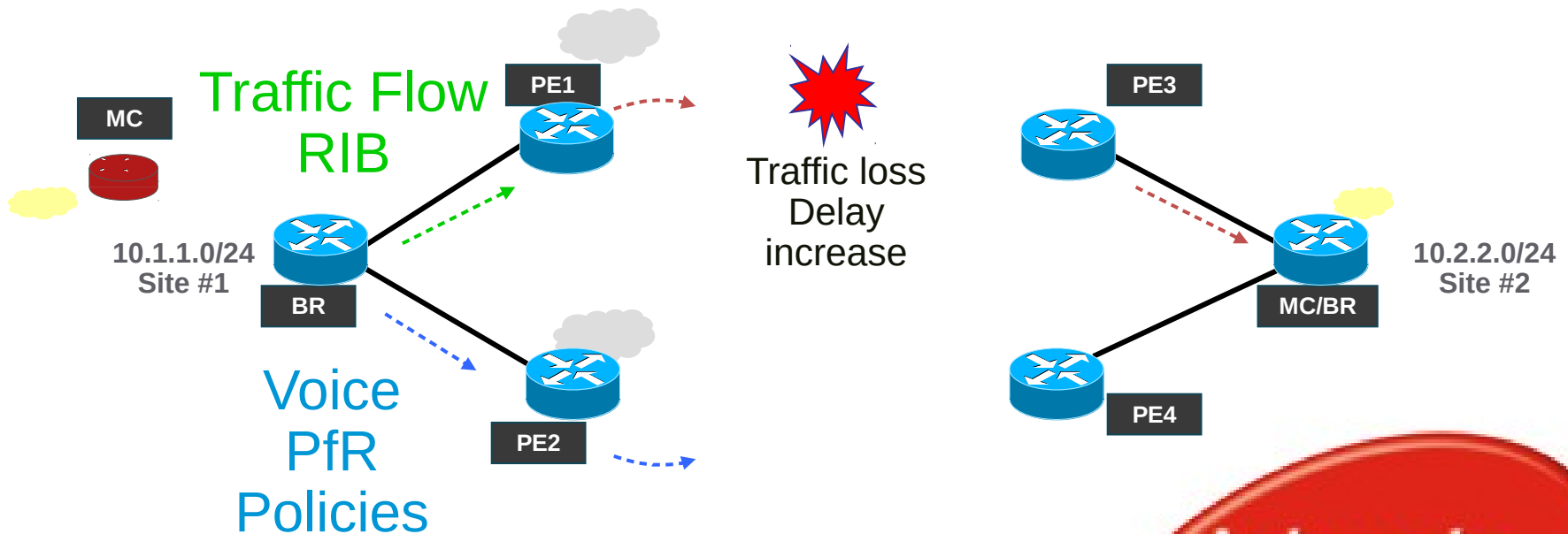
QoS



Accélération WAN



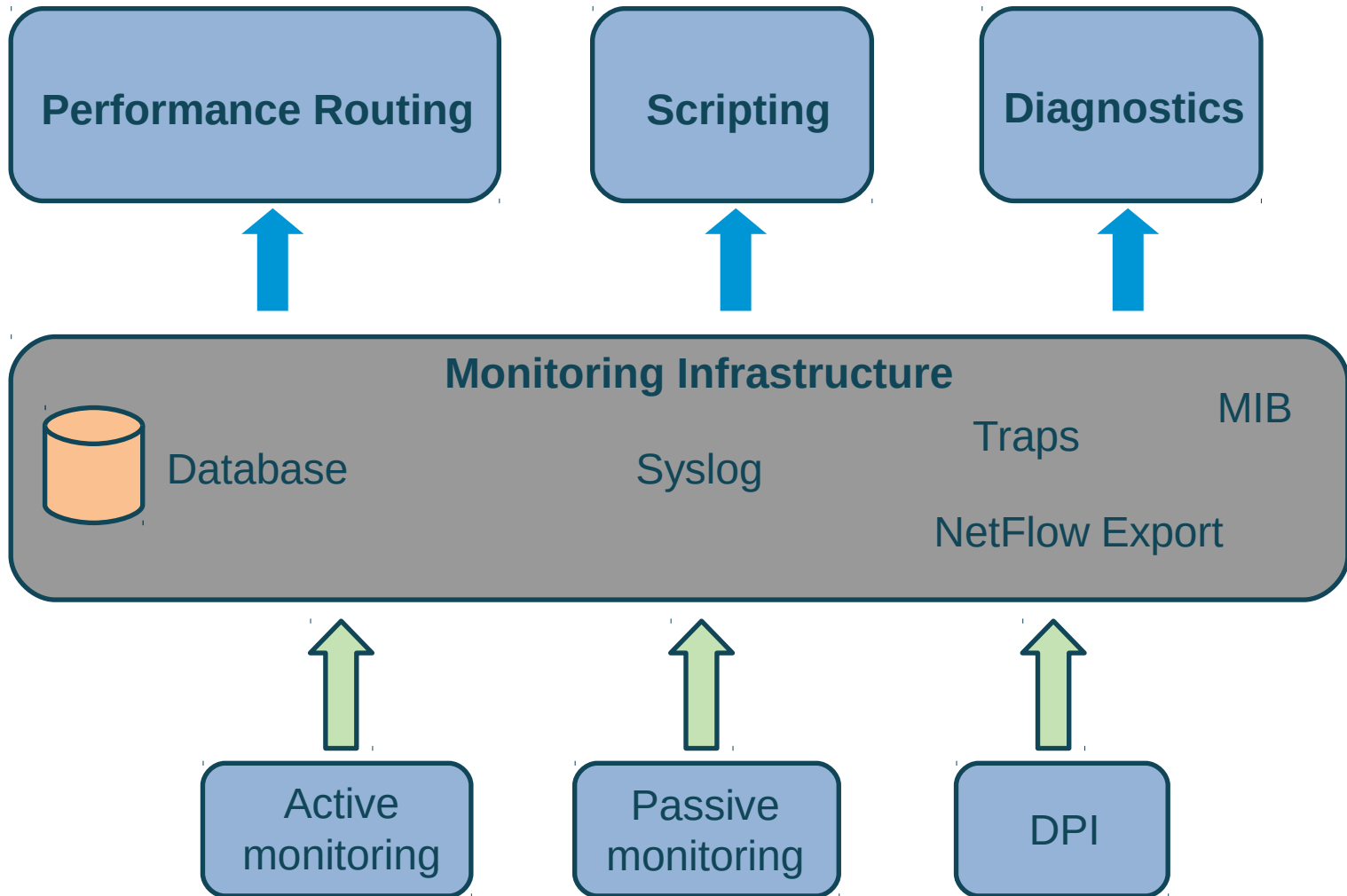
PfR Best Path



Optimize by:
Reachability, Delay,
Loss
Jitter, MOS,
Throughput
Load, Cost

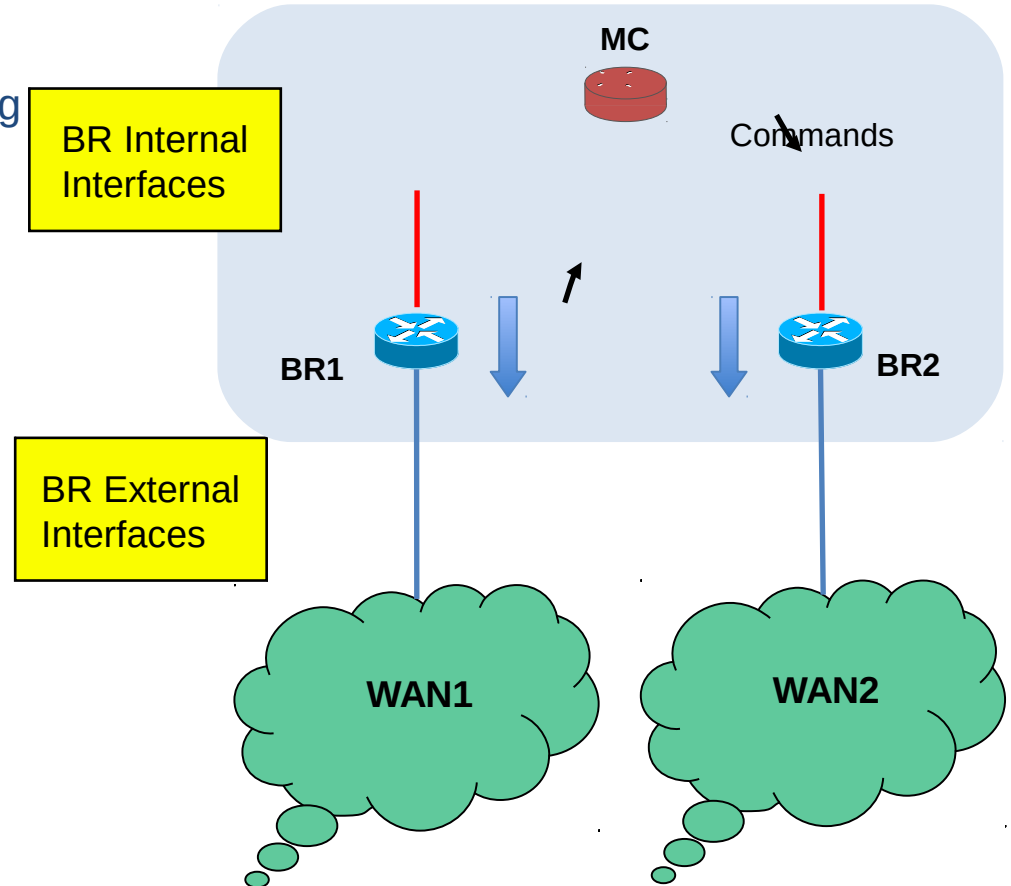


Architecture



2 components : MC & BR

- Master Controller (MC)
 - Apply policy, verification, reporting
 - Standalone or collocated with BR
 - No routing protocol required
 - No packet forwarding/inspection required
- Border Router (BR)
 - Cisco IOS software feature in forwarding router
 - Learn, measure, enforcement
 - NetFlow collector
 - Probe source (IP SLA client)



Selecting “Best” Traffic Class Path

Link	Utilization	Delay (ms) Priority 1	Jitter (ms) Priority 2
Serial1	89%	100	30
Serial2	50%	113	30
Serial3	60%	119	25
Serial4	40%	140	20

Policy

1. Utilization: <75%
2. Delay: < 110 ms variance 20
3. Jitter: < 50 ms

Deployment Methodology

Step

1

Monitoring Only

- Profile application performance
- Detect performance anomalies
- Inform network administrator

Step

2

Monitoring and Mitigation

- Cisco® PfR dynamically selects a path based on performance

Step

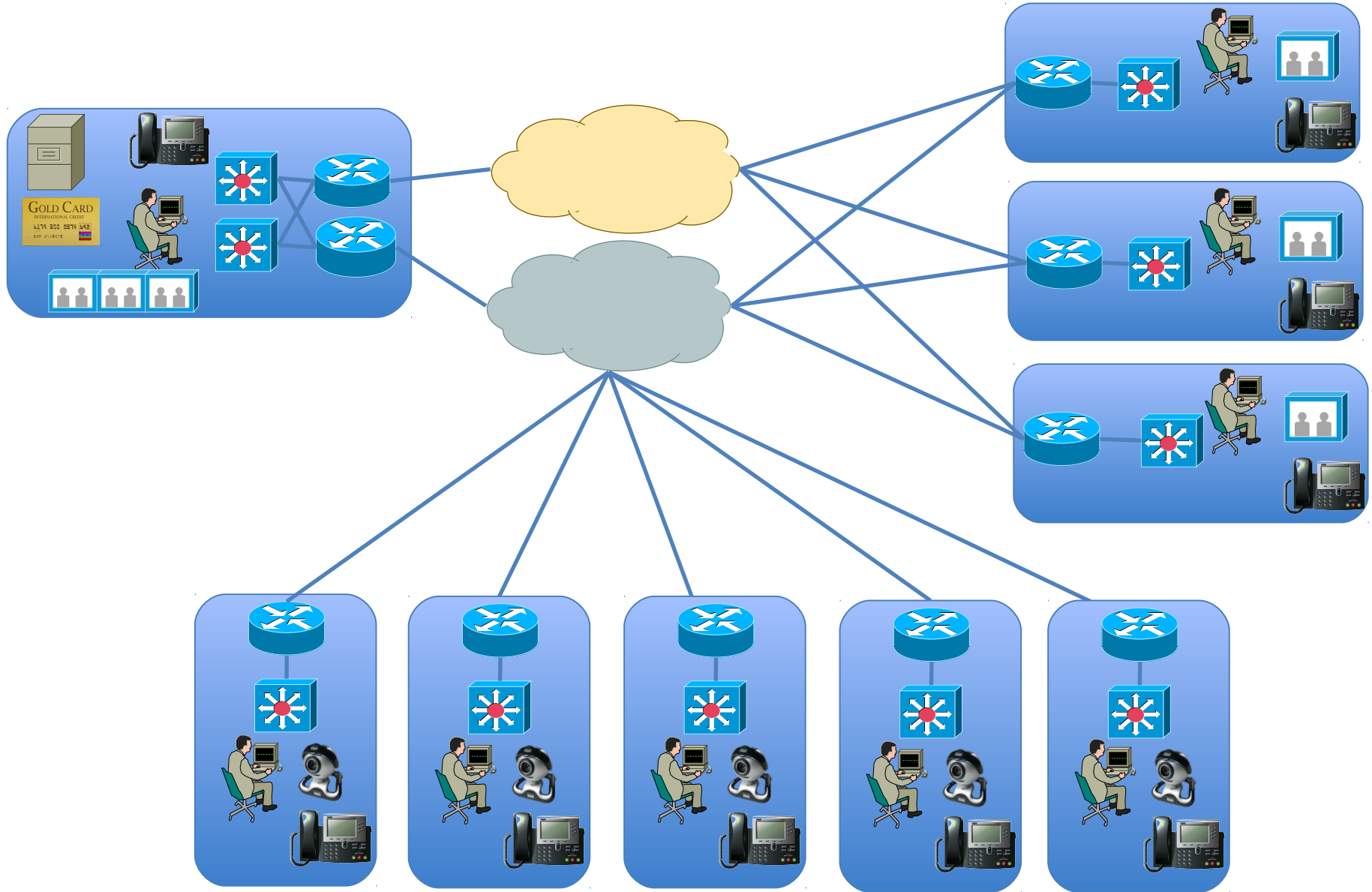
3

Monitoring, Mitigation, and Diagnoses

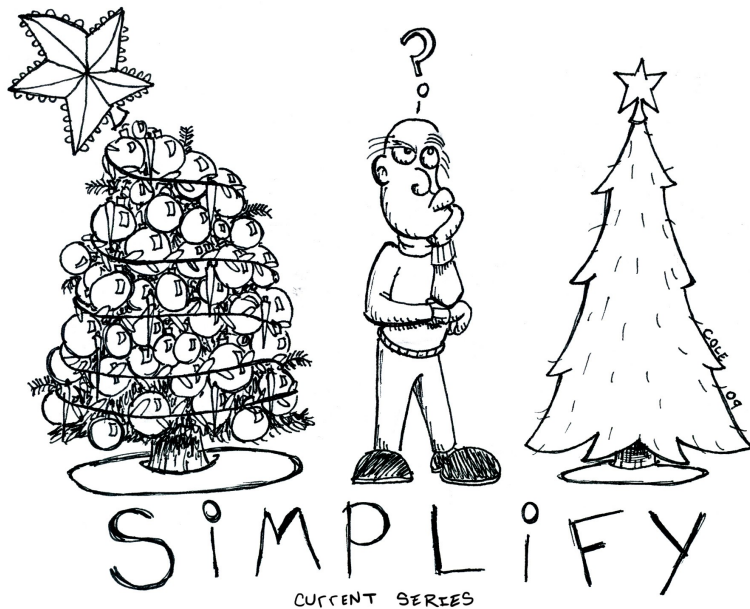
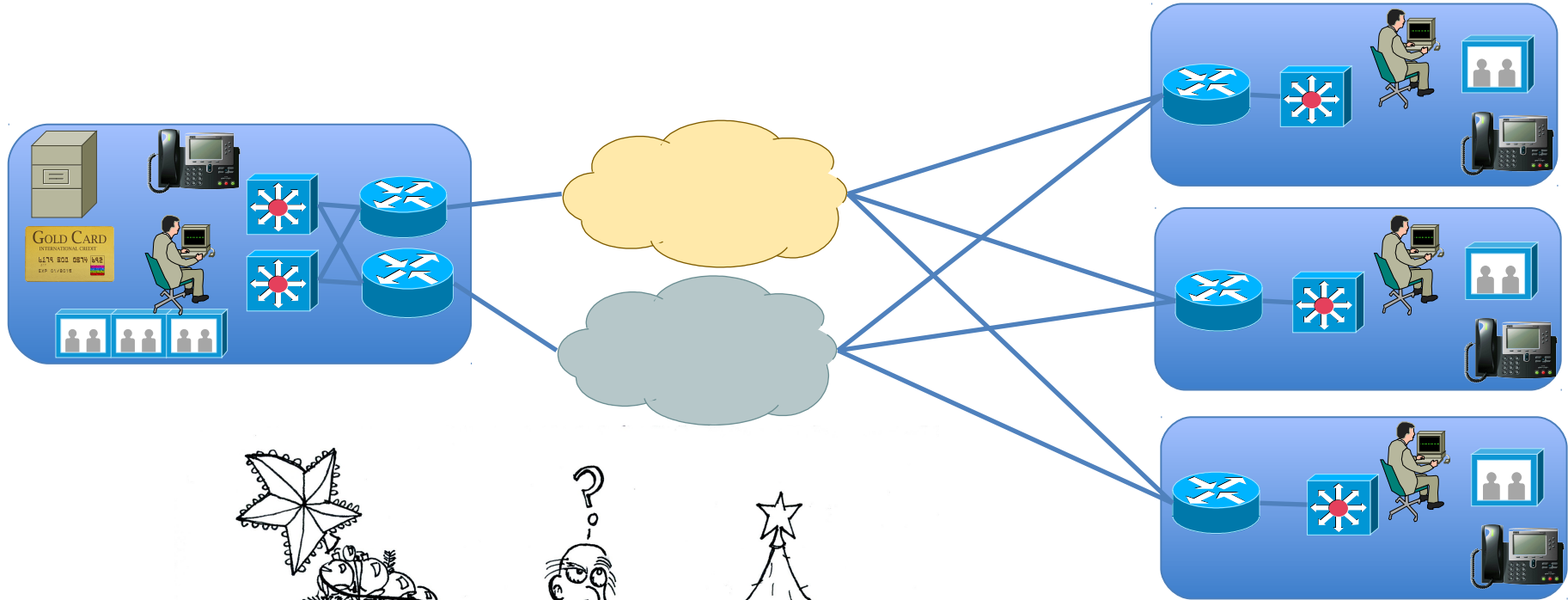
- Localize the performance anomaly



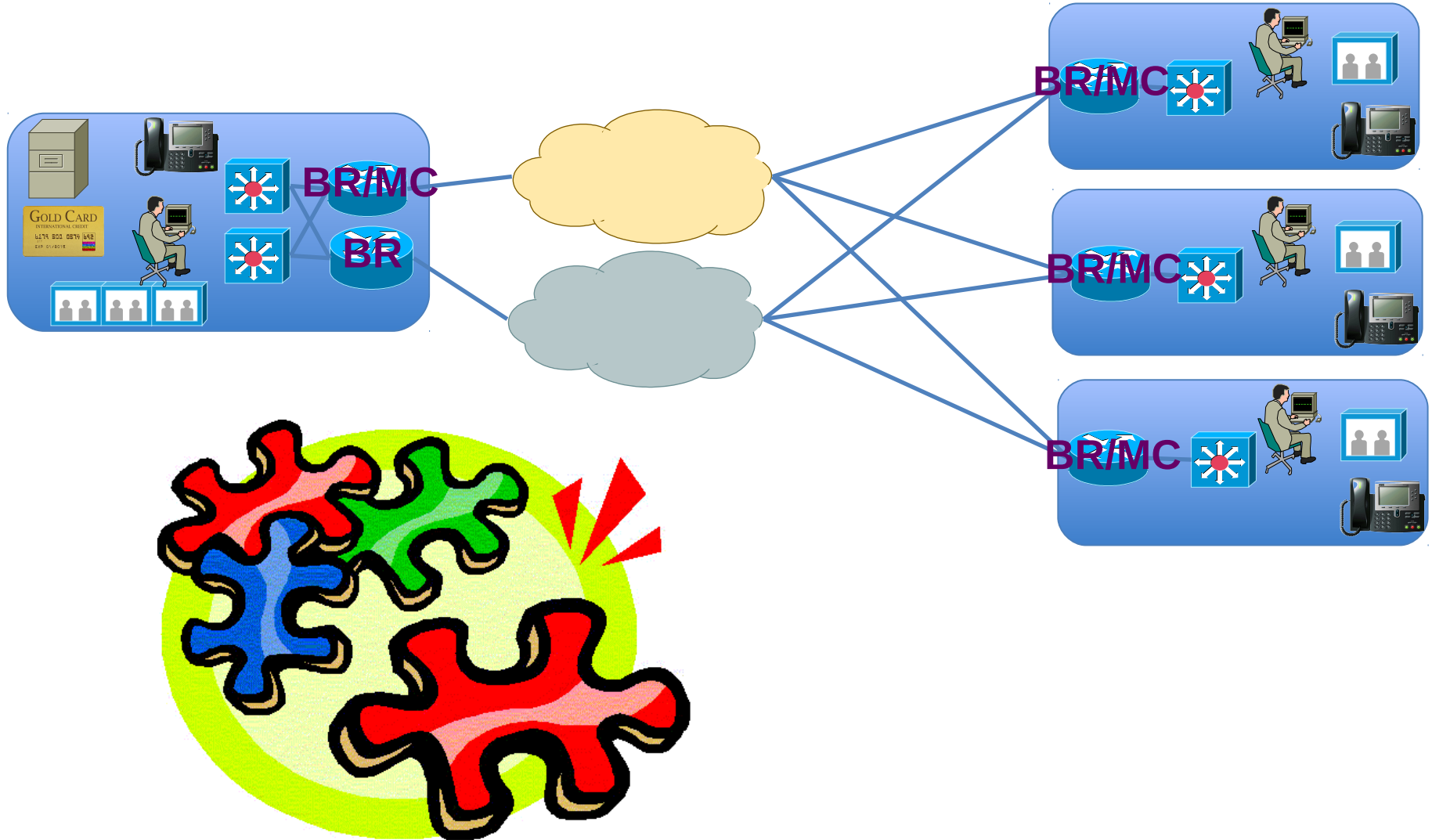
Large Enterprise Customer



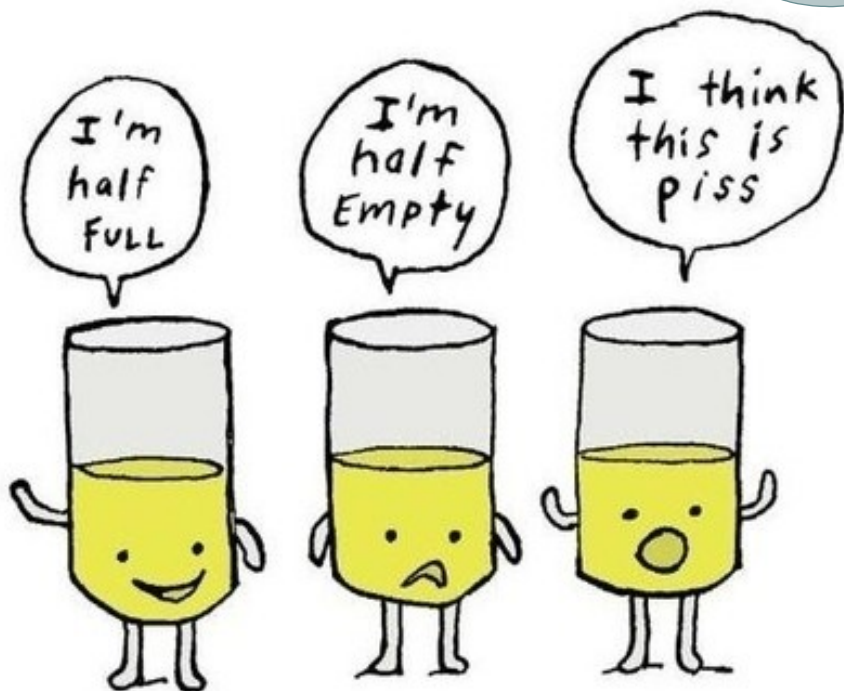
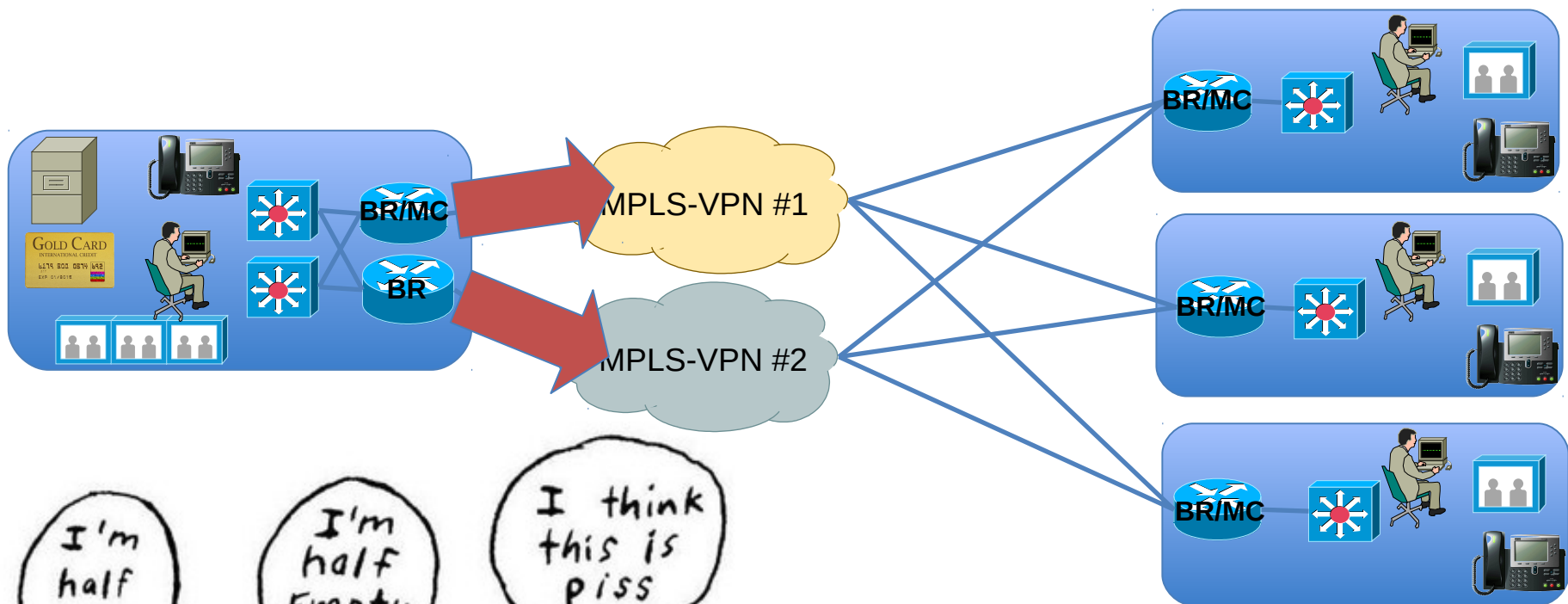
Simplify problem statement



Position the components

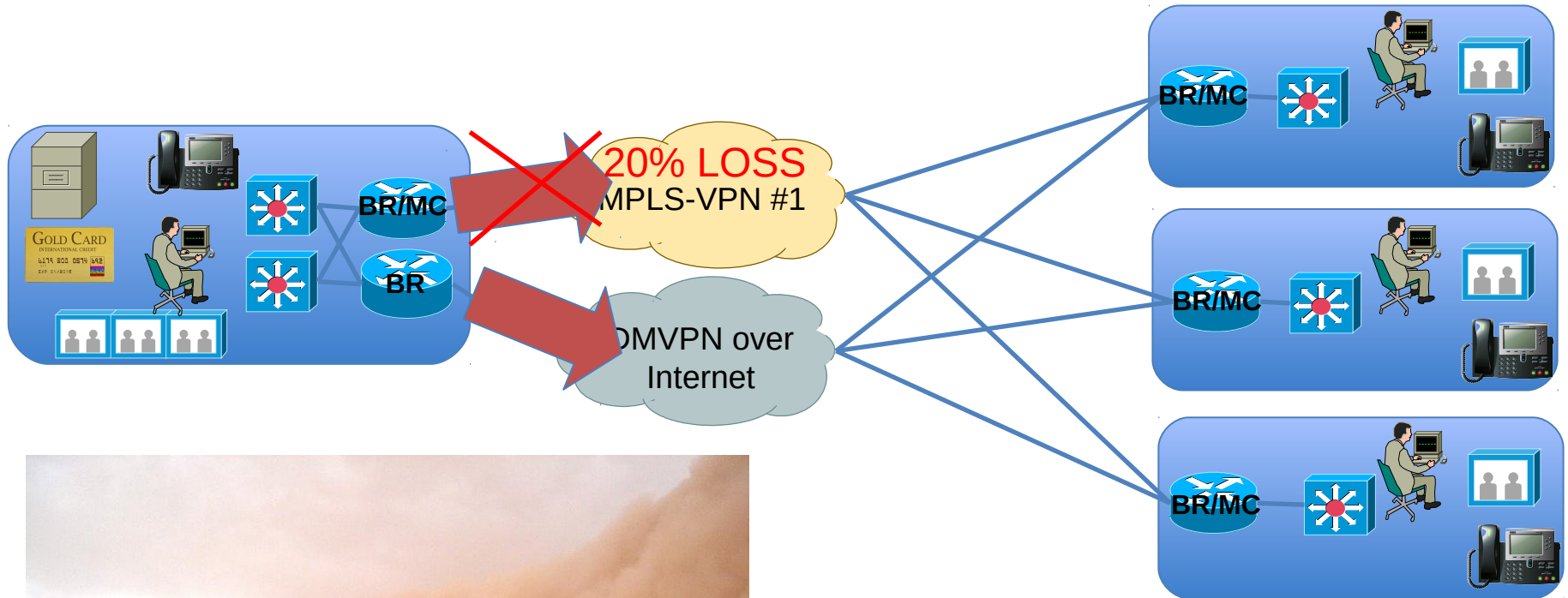


Use case 1 – Enterprise Load balancing



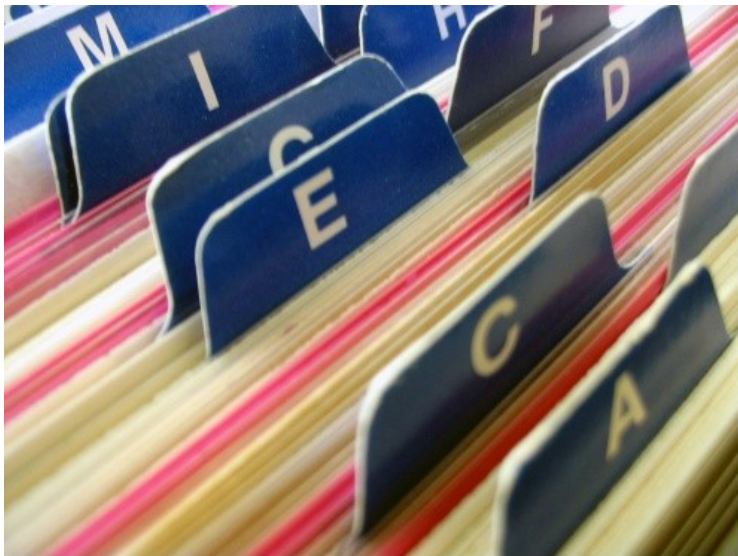
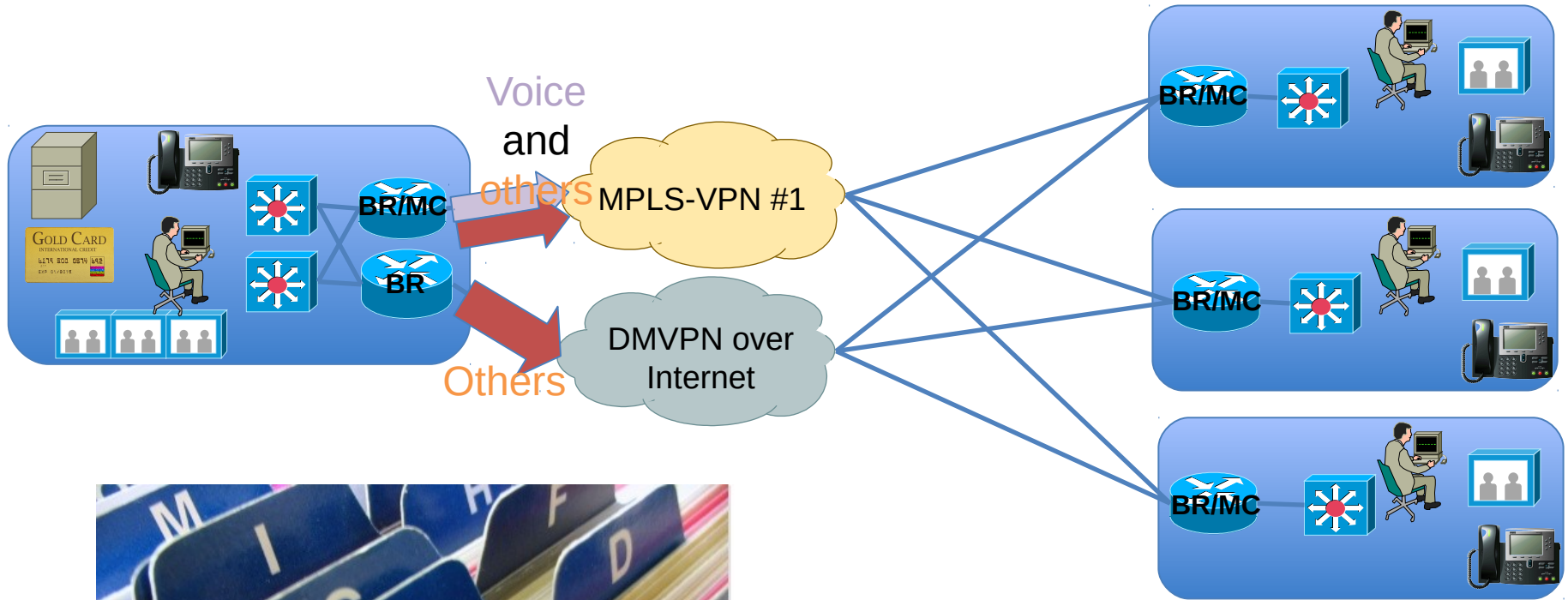
- Learn: throughput
- Measurement: monitor both
- Policies: range/utilization

Use case 2 – Route traffic during Blackout and Brownout conditions



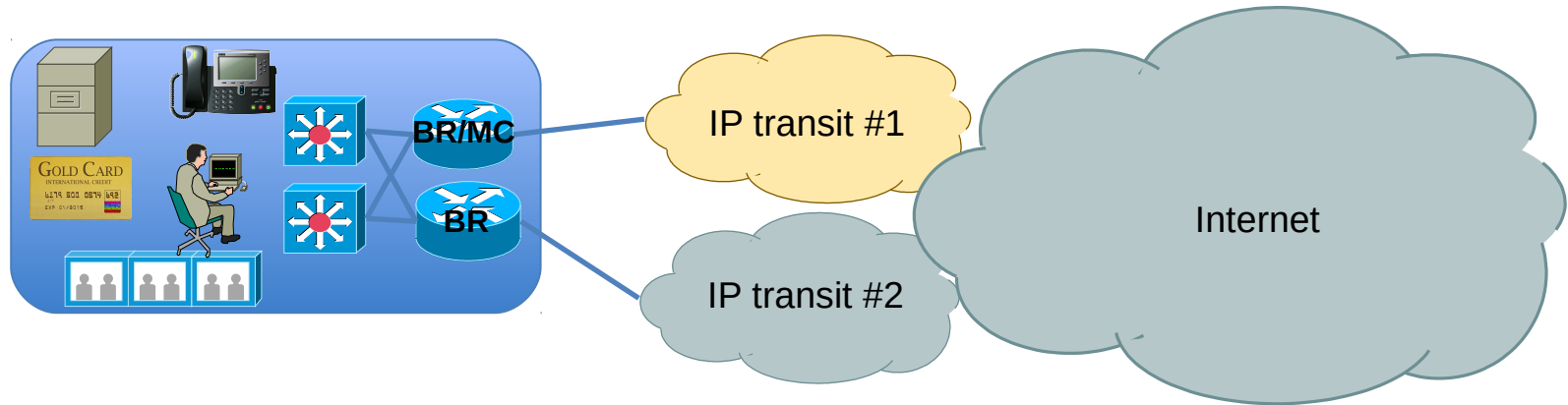
- Primary : MPLS VPN
- Backup : DMVPN
 - loss > 20%
 - usage > 80%

Use case 3 – Application optimization



- Different traffic-classes
 - Voice
 - Others
- Optimization rules per class

Use case 4 – Internet presence



- Internet access optimization
- Ingress & egress
- 20k routes optimized !



Questions ?

Quel impact pour mon réseau ?

Quel service pour mes clients ?

<http://reseauxblog.cisco.fr>

<http://ipv6blog.cisco.fr>

