

2026년 지방기능경기대회 채점기준표

| | | | | | |
|-------|-----------|-----|-------------------|-------------|--------|
| 직 종 명 | IT네트워크시스템 | 과제명 | Secret Challenges | 과제번호 | 제 3 과제 |
| 경기시간 | 4시간 | 비번호 | | 심사위원 확 인 | (인) |

1. 배점 항목

| 번호 | 제목 | 배점 번호 | 내용 | 배점 |
|----|----------|----------|-------------------|------|
| 1 | 기본 구성 | 1 | 기본 구성 검증 | 1.00 |
| | | 2 | R3 서브네팡팅 | 1.00 |
| | | 3 | L3SW 서브네팡팅 | 1.00 |
| 2 | L2 | 4 | 좌측 네트워크 VLAN | 1.50 |
| | | 5 | 우측 네트워크 VLAN | 1.50 |
| | | 6 | VTP | 1.50 |
| | | 7 | Trunk | 1.50 |
| | | 8 | STP | 1.50 |
| 3 | L3 | 9 | Loopback 인터페이스 | 1.50 |
| | | 10 | Loopback 인터페이스 수정 | 1.50 |
| | | 11 | SVI 인터페이스 | 1.50 |
| | | 12 | HSRP | 1.50 |
| | | 13 | OSPF 라우팅 | 1.50 |
| | | 14 | OSPF 고급 구성 | 1.50 |
| | | 15 | EIGRP 라우팅 | 1.50 |
| | | 16 | EIGRP 고급 구성 | 1.50 |
| | | 17 | 정적 라우팅 | 1.50 |
| | | 18 | 정적 라우팅 수정 | 1.50 |
| | | 19 | BGP 라우팅 | 1.50 |
| 4 | 네트워크 서비스 | 20 | DHCP 서비스 | 0.50 |
| | | 21 | NAT 검증 | 0.50 |
| | | 22 | VoIP 서비스 | 0.50 |
| | | 23 | dial-peer 구성 | 0.20 |
| 5 | 추가 과제 | 24 | NetFlow | 0.20 |
| | | 25 | 사용자 로그인 | 0.20 |
| | | 26 | Banner | 0.20 |
| | | 27 | SSH | 0.20 |
| | | 28 | DNS | 0.20 |
| | | 29 | HTTP | 0.20 |
| | | 30 | S2S | 0.10 |
| 합계 | | | | 30 |

| 채점 번호 | 채점 내용 |
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| 주의 사항 | <p>채점 전 최종 파일의 이름을 오늘 날짜로 변경하며 최종 파일을 복사하여 복제본에서 채점을 진행합니다. 복제본에 손상이 발생했을 경우 최종 파일을 다시 복사하여 채점합니다.</p> <p>별도 명시 또는 표시가 없는 경우에는 출력 값과 채점 내용이 일치하는지 확인합니다.</p> <p>선수 요구 사항에 따라 캐시 값을 적절히 삭제 후 채점을 다시 진행할 수 있습니다.</p> <p>채점 명령 수행 후 ICMP, DNS 등 일부 테스트에서 timeout이 발생할 수 있습니다.</p> <p>채점 시 관리자 모드로 진입하여 채점을 수행합니다.</p> <p>채점 시 적색 표시가 있는 경우 해당 부분만 채점하며 출력값과 채점 내용이 일치하는지 확인합니다.</p> <p>원활한 채점 진행을 위해 채점 중 심사위원의 허가를 득하여 Fast Forward 기능 및 show 명령을 사용할 수 있습니다.</p> <p>출력 값의 순서는 다를 수 있으며 함께 출력되는 난수 값은 무시합니다.</p> |
| 1 | <p>ISP-Core ISP-Core 호스트네임 설정 확인 ISP-Core></p> <pre>show ip int br i up GigabitEthernet0/0/0 198.41.0.1 YES manual up GigabitEthernet0/1/0 170.247.170.1 YES manual up GigabitEthernet0/2/0 192.33.4.1 YES manual up GigabitEthernet0/3/0 199.7.91.1 YES manual up Loopback0 8.8.8.8 YES manual up</pre> <p>ISP1 ISP1 호스트네임 설정 확인 ISP1></p> <pre>show ip int br i up GigabitEthernet0/0 10.0.0.1 YES manual up GigabitEthernet0/0/0 198.41.0.2 YES manual up</pre> <p>ISP2 ISP2 호스트네임 설정 확인 ISP2></p> <pre>show ip int br i up GigabitEthernet0/0 10.0.255.1 YES manual up GigabitEthernet0/0/0 170.247.170.2 YES manual up</pre> <p>ISP3 ISP3 호스트네임 설정 확인 ISP3></p> <pre>show ip int br i up GigabitEthernet0/0 192.33.4.5 YES manual up GigabitEthernet0/0/0 192.33.4.2 YES manual up</pre> <p>ISP4 ISP4 호스트네임 설정 확인 ISP4></p> <pre>show ip int br i up GigabitEthernet0/0 199.7.91.5 YES manual up GigabitEthernet0/1 199.7.91.9 YES manual up GigabitEthernet0/0/0 199.7.91.2 YES manual up</pre> |
| 2 | <p>R3 show ip interface gigabitEthernet 0/2 i Internet address Internet address is 10.255.255.126/26</p> |

| 3 | <div>L3SW</div> <div>show ip interface vlan990 i Internet address</div> <div>Internet address is 172.16.0.30/27</div> <div>show ip interface vlan10 i Internet address</div> <div>Internet address is 172.16.0.62/27</div> <div>show ip interface vlan20 i Internet address</div> <div>Internet address is 172.16.0.94/27</div> <div>show ip interface vlan30 i Internet address</div> <div>Internet address is 172.16.0.126/27</div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------|---|---------|--|--|------|------|--------|-------|---|---------|--------|--|-----|---------|--------|--|-----|---------|--------|--|-----|---------|--------|--|-----|-------------|--------|----------|-----|------|--------|---------------------------------|------|------|--------|----------|---|---------|--------|--|-----|---------|--------|--|-----|---------|--------|--|-----|---------|--------|--|-----|---------|--------|--|-----|------|--------|---------------------------------|------|------|--------|-------|---|---------|--------|----------------------------|-----|---------|--------|-------|-----|---------|--------|--|-----|---------|--------|--|-----|---------|--------|--|-----|------|--------|--|------|------|--------|-------|---|---------|--------|----------------------------|-----|---------|--------|--|-----|---------|--------|--|-----|---------|--------|-------|-----|---------|--------|--|-----|------|--------|--|
| 4 | <div>DS1</div> <div>show vlan brief</div> <table><thead><tr><th>VLAN</th><th>Name</th><th>Status</th><th>Ports</th></tr></thead><tbody><tr><td>1</td><td>default</td><td>active</td><td>Gig1/0/5, Gig1/0/6, Gig1/0/7, Gig1/0/8</td></tr><tr><td>101</td><td>ACCESS1</td><td>active</td><td></td></tr><tr><td>102</td><td>ACCESS2</td><td>active</td><td></td></tr><tr><td>103</td><td>ACCESS3</td><td>active</td><td></td></tr><tr><td>104</td><td>ACCESS4</td><td>active</td><td></td></tr><tr><td>999</td><td>CORE</td><td>active</td><td>Gig1/0/22, Gig1/0/23, Gig1/0/24</td></tr></tbody></table> <div>DS2</div> <div>show vlan brief</div> <table><thead><tr><th>VLAN</th><th>Name</th><th>Status</th><th>Ports</th></tr></thead><tbody><tr><td>1</td><td>default</td><td>active</td><td>Gig1/0/5, Gig1/0/6, Gig1/0/7, Gig1/0/8</td></tr><tr><td>101</td><td>ACCESS1</td><td>active</td><td></td></tr><tr><td>102</td><td>ACCESS2</td><td>active</td><td></td></tr><tr><td>103</td><td>ACCESS3</td><td>active</td><td></td></tr><tr><td>104</td><td>ACCESS4</td><td>active</td><td></td></tr><tr><td>999</td><td>CORE</td><td>active</td><td>Gig1/0/22, Gig1/0/23, Gig1/0/24</td></tr></tbody></table> <div>AS1</div> <div>show vlan brief</div> <table><thead><tr><th>VLAN</th><th>Name</th><th>Status</th><th>Ports</th></tr></thead><tbody><tr><td>1</td><td>default</td><td>active</td><td>Fa0/2, Fa0/3, Fa0/4, Fa0/5</td></tr><tr><td>101</td><td>ACCESS1</td><td>active</td><td>Fa0/1</td></tr><tr><td>102</td><td>ACCESS2</td><td>active</td><td></td></tr><tr><td>103</td><td>ACCESS3</td><td>active</td><td></td></tr><tr><td>104</td><td>ACCESS4</td><td>active</td><td></td></tr><tr><td>999</td><td>CORE</td><td>active</td><td></td></tr></tbody></table> <div>AS3</div> <div>show vlan brief</div> <table><thead><tr><th>VLAN</th><th>Name</th><th>Status</th><th>Ports</th></tr></thead><tbody><tr><td>1</td><td>default</td><td>active</td><td>Fa0/2, Fa0/3, Fa0/4, Fa0/5</td></tr><tr><td>101</td><td>ACCESS1</td><td>active</td><td></td></tr><tr><td>102</td><td>ACCESS2</td><td>active</td><td></td></tr><tr><td>103</td><td>ACCESS3</td><td>active</td><td>Fa0/1</td></tr><tr><td>104</td><td>ACCESS4</td><td>active</td><td></td></tr><tr><td>999</td><td>CORE</td><td>active</td><td></td></tr></tbody></table> | | | | VLAN | Name | Status | Ports | 1 | default | active | Gig1/0/5, Gig1/0/6, Gig1/0/7, Gig1/0/8 | 101 | ACCESS1 | active | | 102 | ACCESS2 | active | | 103 | ACCESS3 | active | | 104 | ACCESS4 | active | | 999 | CORE | active | Gig1/0/22, Gig1/0/23, Gig1/0/24 | VLAN | Name | Status | Ports | 1 | default | active | Gig1/0/5, Gig1/0/6, Gig1/0/7, Gig1/0/8 | 101 | ACCESS1 | active | | 102 | ACCESS2 | active | | 103 | ACCESS3 | active | | 104 | ACCESS4 | active | | 999 | CORE | active | Gig1/0/22, Gig1/0/23, Gig1/0/24 | VLAN | Name | Status | Ports | 1 | default | active | Fa0/2, Fa0/3, Fa0/4, Fa0/5 | 101 | ACCESS1 | active | Fa0/1 | 102 | ACCESS2 | active | | 103 | ACCESS3 | active | | 104 | ACCESS4 | active | | 999 | CORE | active | | VLAN | Name | Status | Ports | 1 | default | active | Fa0/2, Fa0/3, Fa0/4, Fa0/5 | 101 | ACCESS1 | active | | 102 | ACCESS2 | active | | 103 | ACCESS3 | active | Fa0/1 | 104 | ACCESS4 | active | | 999 | CORE | active | |
| | VLAN | Name | Status | Ports | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1 | default | active | Gig1/0/5, Gig1/0/6, Gig1/0/7, Gig1/0/8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 101 | ACCESS1 | active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 102 | ACCESS2 | active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 103 | ACCESS3 | active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 104 | ACCESS4 | active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 999 | CORE | active | Gig1/0/22, Gig1/0/23, Gig1/0/24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| VLAN | Name | Status | Ports | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | default | active | Gig1/0/5, Gig1/0/6, Gig1/0/7, Gig1/0/8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 101 | ACCESS1 | active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 102 | ACCESS2 | active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 103 | ACCESS3 | active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 104 | ACCESS4 | active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 999 | CORE | active | Gig1/0/22, Gig1/0/23, Gig1/0/24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| VLAN | Name | Status | Ports | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | default | active | Fa0/2, Fa0/3, Fa0/4, Fa0/5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 101 | ACCESS1 | active | Fa0/1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 102 | ACCESS2 | active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 103 | ACCESS3 | active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 104 | ACCESS4 | active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 999 | CORE | active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| VLAN | Name | Status | Ports | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | default | active | Fa0/2, Fa0/3, Fa0/4, Fa0/5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 101 | ACCESS1 | active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 102 | ACCESS2 | active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 103 | ACCESS3 | active | Fa0/1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 104 | ACCESS4 | active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 999 | CORE | active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | <div>L3SW</div> <div>show vlan brief</div> <table><thead><tr><th>VLAN</th><th>Name</th><th>Status</th><th>Ports</th></tr></thead><tbody><tr><td>1</td><td>default</td><td>active</td><td>Gig1/0/4, Gig1/0/5, Gig1/0/6, Gig1/0/7</td></tr><tr><td>10</td><td>CLIENT1</td><td>active</td><td></td></tr><tr><td>20</td><td>CLIENT2</td><td>active</td><td></td></tr><tr><td>30</td><td>SERVER</td><td>active</td><td></td></tr><tr><td>990</td><td>CALLMANAGER</td><td>active</td><td>Gig1/0/3</td></tr><tr><td>991</td><td>ISP1</td><td>active</td><td>Gig1/0/1</td></tr><tr><td>992</td><td>ISP2</td><td>active</td><td>Gig1/0/2</td></tr></tbody></table> | | | | VLAN | Name | Status | Ports | 1 | default | active | Gig1/0/4, Gig1/0/5, Gig1/0/6, Gig1/0/7 | 10 | CLIENT1 | active | | 20 | CLIENT2 | active | | 30 | SERVER | active | | 990 | CALLMANAGER | active | Gig1/0/3 | 991 | ISP1 | active | Gig1/0/1 | 992 | ISP2 | active | Gig1/0/2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| VLAN | Name | Status | Ports | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | default | active | Gig1/0/4, Gig1/0/5, Gig1/0/6, Gig1/0/7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | CLIENT1 | active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | CLIENT2 | active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | SERVER | active | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 990 | CALLMANAGER | active | Gig1/0/3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 991 | ISP1 | active | Gig1/0/1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 992 | ISP2 | active | Gig1/0/2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

SW1**show vlan brief**

VLAN990, VLAN991 및 VLAN992가 존재하지 않아야 합니다.

| VLAN | Name | Status | Ports |
|------|---------|--------|----------------------------|
| 1 | default | active | Fa0/2, Fa0/3, Fa0/4, Fa0/5 |
| 10 | CLIENT1 | active | |
| 20 | CLIENT2 | active | |
| 30 | SERVER | active | Fa0/1 |

SW2**show vlan brief**

VLAN990, VLAN991 및 VLAN992가 존재하지 않아야 합니다.

| VLAN | Name | Status | Ports |
|------|---------|--------|----------------------------|
| 1 | default | active | Fa0/2, Fa0/3, Fa0/4, Fa0/5 |
| 10 | CLIENT1 | active | |
| 20 | CLIENT2 | active | Fa0/1 |
| 30 | SERVER | active | |

SW3**show vlan brief**

VLAN990, VLAN991 및 VLAN992가 존재하지 않아야 합니다.

| VLAN | Name | Status | Ports |
|------|---------|--------|----------------------------|
| 1 | default | active | Fa0/2, Fa0/3, Fa0/4, Fa0/5 |
| 10 | CLIENT1 | active | Fa0/1 |
| 20 | CLIENT2 | active | |
| 30 | SERVER | active | |

6

DS1**show vtp status**

VTP Version capable : 1 to 2
 VTP version running : 1
 VTP Domain Name : SKILL39
 VTP Pruning Mode : Disabled
 VTP Traps Generation : Disabled
 Device ID : 0060.3E58.2400
 Configuration last modified by 0.0.0.0 at 3-1-93 00:00:00
 Local updater ID is 192.168.101.251 on interface VI101 (lowest numbered VLAN interface found)

Feature VLAN :

VTP Operating Mode : Server

show vtp password

VTP Password: Skill39**

DS2**show vtp status**

VTP Version capable : 1 to 2
 VTP version running : 1
 VTP Domain Name : SKILL39
 VTP Pruning Mode : Disabled
 VTP Traps Generation : Disabled
 Device ID : 0060.7057.5400
 Configuration last modified by 0.0.0.0 at 3-1-93 00:00:00
 Local updater ID is 192.168.101.252 on interface VI101 (lowest numbered VLAN interface found)

Feature VLAN :

VTP Operating Mode : Server

show vtp password

VTP Password: Skill39**

| 7 | <div>DS1</div> <div>show int trunk</div> <table><tr><th>Port</th><th>Mode</th><th>Encapsulation</th><th>Status</th><th>Native vlan</th></tr><tr><td>Gig1/0/1</td><td>on</td><td>802.1q</td><td>trunking</td><td>1</td></tr><tr><td>Gig1/0/2</td><td>on</td><td>802.1q</td><td>trunking</td><td>1</td></tr><tr><td>Gig1/0/3</td><td>on</td><td>802.1q</td><td>trunking</td><td>1</td></tr><tr><td>Gig1/0/4</td><td>on</td><td>802.1q</td><td>trunking</td><td>1</td></tr></table> <div>Port Vlans allowed on trunk</div> <table><tr><td>Gig1/0/1</td><td>101-104</td></tr><tr><td>Gig1/0/2</td><td>101-104</td></tr><tr><td>Gig1/0/3</td><td>101-104</td></tr><tr><td>Gig1/0/4</td><td>101-104</td></tr></table> <div>DS2</div> <div>show int trunk</div> <table><tr><th>Port</th><th>Mode</th><th>Encapsulation</th><th>Status</th><th>Native vlan</th></tr><tr><td>Gig1/0/1</td><td>on</td><td>802.1q</td><td>trunking</td><td>1</td></tr><tr><td>Gig1/0/2</td><td>on</td><td>802.1q</td><td>trunking</td><td>1</td></tr><tr><td>Gig1/0/3</td><td>on</td><td>802.1q</td><td>trunking</td><td>1</td></tr><tr><td>Gig1/0/4</td><td>on</td><td>802.1q</td><td>trunking</td><td>1</td></tr></table> <div>Port Vlans allowed on trunk</div> <table><tr><td>Gig1/0/1</td><td>101-104</td></tr><tr><td>Gig1/0/2</td><td>101-104</td></tr><tr><td>Gig1/0/3</td><td>101-104</td></tr><tr><td>Gig1/0/4</td><td>101-104</td></tr></table> <div>L3SW</div> <div>show int trunk</div> <table><tr><th>Port</th><th>Mode</th><th>Encapsulation</th><th>Status</th><th>Native vlan</th></tr><tr><td>Gig1/0/11</td><td>on</td><td>802.1q</td><td>trunking</td><td>1</td></tr><tr><td>Gig1/0/21</td><td>on</td><td>802.1q</td><td>trunking</td><td>1</td></tr><tr><td>Gig1/0/23</td><td>on</td><td>802.1q</td><td>trunking</td><td>1</td></tr><tr><td>Gig1/0/24</td><td>on</td><td>802.1q</td><td>trunking</td><td>1</td></tr></table> <div>Port Vlans allowed on trunk</div> <table><tr><td>Gig1/0/11</td><td>10,20,30</td></tr><tr><td>Gig1/0/21</td><td>10,20,30</td></tr><tr><td>Gig1/0/23</td><td>10,20,30</td></tr><tr><td>Gig1/0/24</td><td>10,20,30</td></tr></table> | Port | Mode | Encapsulation | Status | Native vlan | Gig1/0/1 | on | 802.1q | trunking | 1 | Gig1/0/2 | on | 802.1q | trunking | 1 | Gig1/0/3 | on | 802.1q | trunking | 1 | Gig1/0/4 | on | 802.1q | trunking | 1 | Gig1/0/1 | 101-104 | Gig1/0/2 | 101-104 | Gig1/0/3 | 101-104 | Gig1/0/4 | 101-104 | Port | Mode | Encapsulation | Status | Native vlan | Gig1/0/1 | on | 802.1q | trunking | 1 | Gig1/0/2 | on | 802.1q | trunking | 1 | Gig1/0/3 | on | 802.1q | trunking | 1 | Gig1/0/4 | on | 802.1q | trunking | 1 | Gig1/0/1 | 101-104 | Gig1/0/2 | 101-104 | Gig1/0/3 | 101-104 | Gig1/0/4 | 101-104 | Port | Mode | Encapsulation | Status | Native vlan | Gig1/0/11 | on | 802.1q | trunking | 1 | Gig1/0/21 | on | 802.1q | trunking | 1 | Gig1/0/23 | on | 802.1q | trunking | 1 | Gig1/0/24 | on | 802.1q | trunking | 1 | Gig1/0/11 | 10,20,30 | Gig1/0/21 | 10,20,30 | Gig1/0/23 | 10,20,30 | Gig1/0/24 | 10,20,30 |
|-----------|--|---------------|----------|---------------|--------|-------------|----------|----|--------|----------|---|----------|----|--------|----------|---|----------|----|--------|----------|---|----------|----|--------|----------|---|----------|---------|----------|---------|----------|---------|----------|---------|------|------|---------------|--------|-------------|----------|----|--------|----------|---|----------|----|--------|----------|---|----------|----|--------|----------|---|----------|----|--------|----------|---|----------|---------|----------|---------|----------|---------|----------|---------|------|------|---------------|--------|-------------|-----------|----|--------|----------|---|-----------|----|--------|----------|---|-----------|----|--------|----------|---|-----------|----|--------|----------|---|-----------|----------|-----------|----------|-----------|----------|-----------|----------|
| Port | Mode | Encapsulation | Status | Native vlan | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gig1/0/1 | on | 802.1q | trunking | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gig1/0/2 | on | 802.1q | trunking | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gig1/0/3 | on | 802.1q | trunking | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gig1/0/4 | on | 802.1q | trunking | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gig1/0/1 | 101-104 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gig1/0/2 | 101-104 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gig1/0/3 | 101-104 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gig1/0/4 | 101-104 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Port | Mode | Encapsulation | Status | Native vlan | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gig1/0/1 | on | 802.1q | trunking | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gig1/0/2 | on | 802.1q | trunking | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gig1/0/3 | on | 802.1q | trunking | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gig1/0/4 | on | 802.1q | trunking | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gig1/0/1 | 101-104 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gig1/0/2 | 101-104 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gig1/0/3 | 101-104 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gig1/0/4 | 101-104 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Port | Mode | Encapsulation | Status | Native vlan | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gig1/0/11 | on | 802.1q | trunking | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gig1/0/21 | on | 802.1q | trunking | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gig1/0/23 | on | 802.1q | trunking | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gig1/0/24 | on | 802.1q | trunking | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gig1/0/11 | 10,20,30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gig1/0/21 | 10,20,30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gig1/0/23 | 10,20,30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gig1/0/24 | 10,20,30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | <div>DS1</div> <div>show spanning-tree summary</div> <div>Switch is in rapid-pvst mode</div> <div>Root bridge for: ACCESS1 ACCESS2 CORE</div> <div>DS2</div> <div>show spanning-tree summary</div> <div>Switch is in rapid-pvst mode</div> <div>Root bridge for: ACCESS3 ACCESS4 CORE</div> <div>L3SW</div> <div>show spanning-tree summary</div> <div>Switch is in rapid-pvst mode</div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | <div>ISP-Core</div> <div>show interfaces loopback 0 i Internet address</div> <div>Internet address is 8.8.8.8/32</div> <div>RT1</div> <div>show interfaces loopback 0 i Internet address</div> <div>Internet address is 192.168.0.1/32</div> <div>Core1</div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | |
|----|---|
| | <pre>show interfaces loopback 0 i Internet address Internet address is 1.1.1.1/32 show interfaces loopback 1 i Internet address Internet address is 1.1.1.5/30 Core2 show interfaces loopback 0 i Internet address Internet address is 1.1.1.1/32 show interfaces loopback 1 i Internet address Internet address is 1.1.1.9/30</pre> |
| 10 | <pre>RT1 show interfaces loopback 1 i Internet address Internet address is 11.11.11.11/32 RT2 show interfaces loopback 0 i Internet address Internet address is 22.22.22.22/32</pre> |
| 11 | <pre>DS1 show ip int br i manual Vlan101 192.168.101.251 YES manual up Vlan102 192.168.102.251 YES manual up Vlan103 192.168.103.251 YES manual up Vlan104 192.168.104.251 YES manual up Vlan999 192.168.201.251 YES manual up DS2 show ip int br i manual Vlan101 192.168.101.252 YES manual up Vlan102 192.168.102.252 YES manual up Vlan103 192.168.103.252 YES manual up Vlan104 192.168.104.252 YES manual up Vlan999 192.168.202.251 YES manual up L3SW show ip int br begin 991 Vlan991 199.7.91.6 YES manual up Vlan992 199.7.91.10 YES manual up</pre> |
| 12 | <pre>DS1 show standby brief Interface Grp Pri P State Active Standby Virtual IP VI101 101 110 P Active local 192.168.101.252 192.168.101.254 VI102 102 110 P Active local 192.168.102.252 192.168.102.254 VI103 103 100 P Standby 192.168.103.252 local 192.168.103.254 VI104 104 100 P Standby 192.168.104.252 local 192.168.104.254 DS2 show standby brief Interface Grp Pri P State Active Standby Virtual IP VI101 101 100 P Standby 192.168.101.251 local 192.168.101.254 VI102 102 100 P Standby 192.168.102.251 local 192.168.102.254 VI103 103 110 P Active local 192.168.103.251 192.168.103.254 VI104 104 110 P Active local 192.168.104.251 192.168.104.254</pre> |
| 13 | <pre>GW show ip ospf 1 neighbor Neighbor ID Pri State Dead Time Address Interface 10.255.255.5 1 FULL/BDR 00:00:33 10.255.0.6 GigabitEthernet0/2 10.255.255.1 1 FULL/BDR 00:00:34 10.255.0.2 GigabitEthernet0/1 show ip ospf 1 Routing Process "ospf 1" with ID 192.33.4.6 Supports only single TOS(TOS0) routes Supports opaque LSA SPF schedule delay 5 secs, Hold time between two SPFs 10 secs Minimum LSA interval 5 secs. Minimum LSA arrival 1 secs Number of external LSA 1. Checksum Sum 0x0005dd</pre> |

| | <div>Number of opaque AS LSA 0. Checksum Sum 0x000000 Number of DCbitless external and opaque AS LSA 0 Number of DoNotAge external and opaque AS LSA 0 Number of areas in this router is 1. 1 normal 0 stub 0 nssa External flood list length 0 Area BACKBONE(0) Number of interfaces in this area is 2</div> <div>R3</div> <div>show ip ospf 1 neighbor</div> <table><tr><th>Neighbor ID</th><th>Pri</th><th>State</th><th>Dead Time</th><th>Address</th><th>Interface</th></tr><tr><td>10.255.255.1</td><td>1</td><td>FULL/BDR</td><td>00:00:35</td><td>10.255.255.1</td><td>GigabitEthernet0/0</td></tr><tr><td>10.255.255.5</td><td>1</td><td>FULL/BDR</td><td>00:00:36</td><td>10.255.255.5</td><td>GigabitEthernet0/1</td></tr></table> <div>show ip ospf 1</div> <div>Routing Process "ospf 1" with ID 10.255.255.126 Supports only single TOS(TOS0) routes Supports opaque LSA SPF schedule delay 5 secs, Hold time between two SPFs 10 secs Minimum LSA interval 5 secs. Minimum LSA arrival 1 secs Number of external LSA 0. Checksum Sum 0x000000 Number of opaque AS LSA 0. Checksum Sum 0x000000 Number of DCbitless external and opaque AS LSA 0 Number of DoNotAge external and opaque AS LSA 0 Number of areas in this router is 1. 0 normal 1 stub 0 nssa External flood list length 0 Area 1 Number of interfaces in this area is 3 It is a stub area</div> | Neighbor ID | Pri | State | Dead Time | Address | Interface | 10.255.255.1 | 1 | FULL/BDR | 00:00:35 | 10.255.255.1 | GigabitEthernet0/0 | 10.255.255.5 | 1 | FULL/BDR | 00:00:36 | 10.255.255.5 | GigabitEthernet0/1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------|---|-------------|------------|--------------|--------------------|---------|-----------|--------------|-------|----------|----------|-----------------|--------------------|--------------|----------|----------|----------|--------------|--------------------|---|-----------------|------|----|----------|----|------|---|----|---|-----------------|------|----|----------|----|------|---|----|---|---------|-----------|------------|--------|-----------|-----|-------|---------|---|-----------------|------|----|----------|----|------|---|----|---|-----------------|------|----|----------|----|------|---|----|---|-----------------|------|----|----------|----|------|---|----|
| Neighbor ID | Pri | State | Dead Time | Address | Interface | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10.255.255.1 | 1 | FULL/BDR | 00:00:35 | 10.255.255.1 | GigabitEthernet0/0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10.255.255.5 | 1 | FULL/BDR | 00:00:36 | 10.255.255.5 | GigabitEthernet0/1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | <div>R1</div> <div>show ip route i 0.0.0.0/0</div> <div>0*E2 0.0.0.0/0 [110/1] via 10.255.0.1, 02:13:50, GigabitEthernet0/0</div> <div>R2</div> <div>show ip route i 0.0.0.0/0</div> <div>0*E2 0.0.0.0/0 [110/1] via 10.255.0.5, 02:14:34, GigabitEthernet0/0</div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | <div>DS1</div> <div>show ip eigrp neighbors</div> <div>아래의 EIGRP 네이버 외에 추가로 네이버가 존재하지 않아야 합니다.</div> <div>IP-EIGRP neighbors for process 65000</div> <table><tr><th>H</th><th>Address</th><th>Interface</th><th>Hold (sec)</th><th>Uptime</th><th>SRTT (ms)</th><th>RT0</th><th>Q Cnt</th><th>Seq Num</th></tr><tr><td>0</td><td>192.168.201.254</td><td>Vlan</td><td>14</td><td>00:09:03</td><td>40</td><td>1000</td><td>0</td><td>19</td></tr><tr><td>1</td><td>192.168.201.253</td><td>Vlan</td><td>14</td><td>00:09:03</td><td>40</td><td>1000</td><td>0</td><td>47</td></tr><tr><td>2</td><td>192.168.201.252</td><td>Vlan</td><td>12</td><td>00:09:03</td><td>40</td><td>1000</td><td>0</td><td>35</td></tr></table> <div>DS2</div> <div>show ip eigrp neighbors</div> <div>아래의 EIGRP 네이버 외에 추가로 네이버가 존재하지 않아야 합니다.</div> <div>IP-EIGRP neighbors for process 65000</div> <table><tr><th>H</th><th>Address</th><th>Interface</th><th>Hold (sec)</th><th>Uptime</th><th>SRTT (ms)</th><th>RT0</th><th>Q Cnt</th><th>Seq Num</th></tr><tr><td>0</td><td>192.168.202.254</td><td>Vlan</td><td>11</td><td>00:11:48</td><td>40</td><td>1000</td><td>0</td><td>20</td></tr><tr><td>1</td><td>192.168.202.253</td><td>Vlan</td><td>14</td><td>00:11:48</td><td>40</td><td>1000</td><td>0</td><td>49</td></tr><tr><td>2</td><td>192.168.202.252</td><td>Vlan</td><td>13</td><td>00:11:48</td><td>40</td><td>1000</td><td>0</td><td>44</td></tr></table> | H | Address | Interface | Hold (sec) | Uptime | SRTT (ms) | RT0 | Q Cnt | Seq Num | 0 | 192.168.201.254 | Vlan | 14 | 00:09:03 | 40 | 1000 | 0 | 19 | 1 | 192.168.201.253 | Vlan | 14 | 00:09:03 | 40 | 1000 | 0 | 47 | 2 | 192.168.201.252 | Vlan | 12 | 00:09:03 | 40 | 1000 | 0 | 35 | H | Address | Interface | Hold (sec) | Uptime | SRTT (ms) | RT0 | Q Cnt | Seq Num | 0 | 192.168.202.254 | Vlan | 11 | 00:11:48 | 40 | 1000 | 0 | 20 | 1 | 192.168.202.253 | Vlan | 14 | 00:11:48 | 40 | 1000 | 0 | 49 | 2 | 192.168.202.252 | Vlan | 13 | 00:11:48 | 40 | 1000 | 0 | 44 |
| H | Address | Interface | Hold (sec) | Uptime | SRTT (ms) | RT0 | Q Cnt | Seq Num | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | 192.168.201.254 | Vlan | 14 | 00:09:03 | 40 | 1000 | 0 | 19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 192.168.201.253 | Vlan | 14 | 00:09:03 | 40 | 1000 | 0 | 47 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 192.168.201.252 | Vlan | 12 | 00:09:03 | 40 | 1000 | 0 | 35 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H | Address | Interface | Hold (sec) | Uptime | SRTT (ms) | RT0 | Q Cnt | Seq Num | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | 192.168.202.254 | Vlan | 11 | 00:11:48 | 40 | 1000 | 0 | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 192.168.202.253 | Vlan | 14 | 00:11:48 | 40 | 1000 | 0 | 49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 192.168.202.252 | Vlan | 13 | 00:11:48 | 40 | 1000 | 0 | 44 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | <div>RT1</div> <div>show ip route i D</div> <div>0.0.0.0/0 경로 외에 다른 외부 네트워크 경로가 존재하지 않아야 합니다.</div> <div>D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area * - candidate default, U - per-user static route, o - ODR</div> <div>D 192.168.101.0/24 [90/28416] via 192.168.201.251, 00:22:42, GigabitEthernet0/0</div> <div>D 192.168.102.0/24 [90/28416] via 192.168.201.251, 00:22:42, GigabitEthernet0/0</div> <div>D 192.168.103.0/24 [90/28416] via 192.168.202.251, 00:22:41, GigabitEthernet0/1</div> <div>D 192.168.104.0/24 [90/28416] via 192.168.202.251, 00:22:41, GigabitEthernet0/1</div> <div>D* 0.0.0.0/0 [90/3072] via 192.168.201.252, 00:22:42, GigabitEthernet0/0</div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | |
|----|---|
| | <p>DS1 show ip route eigrp 0.0.0.0/0 경로 외에 다른 외부 네트워크 경로가 존재하지 않아야 합니다. 192.168.0.0/32 is subnetted, 1 subnets D 192.168.0.1 [90/25753600] via 192.168.201.254, 00:28:24, Vlan999 D 192.168.202.0/24 [90/25625856] via 192.168.201.254, 00:28:24, Vlan999 D* 0.0.0.0/0 [90/25625856] via 192.168.201.252, 00:28:24, Vlan999 D* 0.0.0.0/0 [90/25625856] via 192.168.201.253, 00:28:24, Vlan999</p> <p>DS2 show ip route eigrp 0.0.0.0/0 경로 외에 다른 외부 네트워크 경로가 존재하지 않아야 합니다. 192.168.0.0/32 is subnetted, 1 subnets D 192.168.0.1 [90/25753600] via 192.168.202.254, 00:37:18, Vlan999 D 192.168.201.0/24 [90/25625856] via 192.168.202.254, 00:37:18, Vlan999 D* 0.0.0.0/0 [90/25625856] via 192.168.202.252, 00:37:18, Vlan999 D* 0.0.0.0/0 [90/25625856] via 192.168.202.253, 00:37:18, Vlan999</p> <p>Core1 show ip route i 0/24 D 192.168.101.0/24 [90/28416] via 192.168.201.251, 00:15:09, GigabitEthernet0/0 D 192.168.102.0/24 [90/28416] via 192.168.201.251, 00:15:09, GigabitEthernet0/0 D 192.168.103.0/24 [90/28416] via 192.168.202.251, 00:15:08, GigabitEthernet0/1 D 192.168.104.0/24 [90/28416] via 192.168.202.251, 00:15:08, GigabitEthernet0/1</p> <p>Core2 show ip route i 0/24 D 192.168.101.0/24 [90/28416] via 192.168.201.251, 00:16:12, GigabitEthernet0/0 D 192.168.102.0/24 [90/28416] via 192.168.201.251, 00:16:12, GigabitEthernet0/0 D 192.168.103.0/24 [90/28416] via 192.168.202.251, 00:16:13, GigabitEthernet0/1 D 192.168.104.0/24 [90/28416] via 192.168.202.251, 00:16:13, GigabitEthernet0/1</p> |
| 17 | <p>ISP-Core show ip route static i S S* 0.0.0.0/0 is directly connected, Null0</p> <p>ISP3 show ip route static i S S 2.2.2.2 [1/0] via 192.33.4.6</p> <p>GW show ip route static i S S* 0.0.0.0/0 [1/0] via 192.33.4.5</p> <p>L3SW show ip route static i S S* 0.0.0.0/0 [1/0] via 199.7.91.5</p> <p>ISP4 show ip route static i S S 7.7.7.0 is directly connected, GigabitEthernet0/0</p> <p>인터페이스를 shutdown 후 정적 라우팅 경로 변경 확인 conf t int gi 0/0 shutdown end</p> <p>show ip route static i S S 7.7.7.0 is directly connected, GigabitEthernet0/1</p> <p>L3SW show ip route static i S S* 0.0.0.0/0 [2/0] via 199.7.91.9</p> <p>채점 종료 후 ISP4의 shutdown된 인터페이스를 다시 활성화 conf t int gi 0/0 no shutdown</p> |
| 18 | RT1 |


```

ping 22.22.22.22
Sending 5, 100-byte ICMP Echos to 22.22.22.22, timeout is 2 seconds:
!!!!!!

RT2
ping 11.11.11.11
Sending 5, 100-byte ICMP Echos to 11.11.11.11, timeout is 2 seconds:
!!!!!!

```

19

```

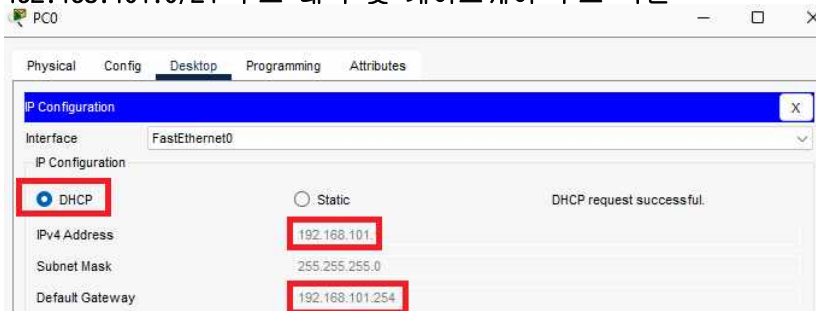
ISP-Core
show ip bgp
  Network                Next Hop           Metric LocPrf Weight Path
*> 0.0.0.0/0              0.0.0.0            0      0      0 10000 i
*  1.1.1.1/32            198.41.0.2         0      0      0 1 65001 i
*>                        170.247.170.2      0      0      0 2 65002 i
*> 1.1.1.4/30             198.41.0.2         0      0      0 1 65001 i
*> 1.1.1.8/30             170.247.170.2      0      0      0 2 65002 i
*> 2.2.2.2/32            192.33.4.2         0      0      0 3 i
*> 7.7.7.0/29            199.7.91.2         0      0      0 4 i
*> 8.8.8.8/32            0.0.0.0            0      0 32768 i

show ip route bgp
B   1.1.1.1/32 [20/0] via 170.247.170.2, 00:00:00
B   1.1.1.4/30 [20/0] via 198.41.0.2, 00:00:00
B   1.1.1.8/30 [20/0] via 170.247.170.2, 00:00:00
B   2.2.2.2 [20/0] via 192.33.4.2, 00:00:00
B   7.7.7.0 [20/0] via 199.7.91.2, 00:00:00

```

20

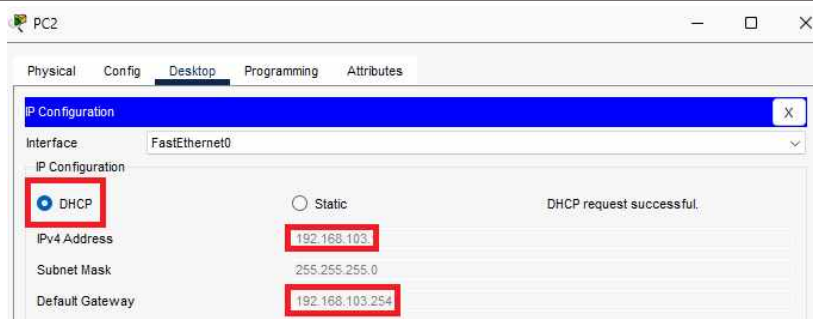
PC0
Desktop 탭의 IP Configuration 애플릿을 실행한 후 DHCP 항목 클릭
192.168.101.0/24 주소 대역 및 게이트웨이 주소 확인



PC1
Desktop 탭의 IP Configuration 애플릿을 실행한 후 DHCP 항목 클릭
192.168.102.0/24 주소 대역 및 게이트웨이 주소 확인



PC2
Desktop 탭의 IP Configuration 애플릿을 실행한 후 DHCP 항목 클릭
192.168.103.0/24 주소 대역 및 게이트웨이 주소 확인



PC3

Desktop 탭의 IP Configuration 애플릿을 실행한 후 DHCP 항목 클릭
192.168.104.0/24 주소 대역 및 게이트웨이 주소 확인



RT1

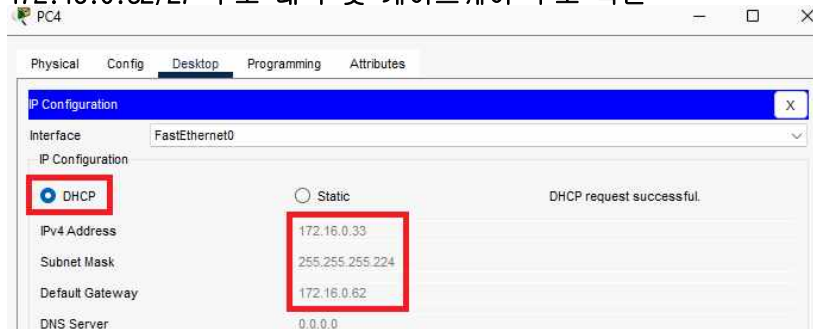
show ip dhcp binding

각 항목은 확인할 필요 없으며 4개의 주소가 할당되었는지 확인

| IP address | Client-ID/ Hardware address | Lease expiration | Type |
|---------------|--------------------------------|------------------|-----------|
| 192.168.101.1 | 0001.43C9.70C8 | --- | Automatic |
| 192.168.102.1 | 00D0.9789.53E7 | --- | Automatic |
| 192.168.103.1 | 000D.BD85.5D0A | --- | Automatic |
| 192.168.104.1 | 0030.A305.581D | --- | Automatic |

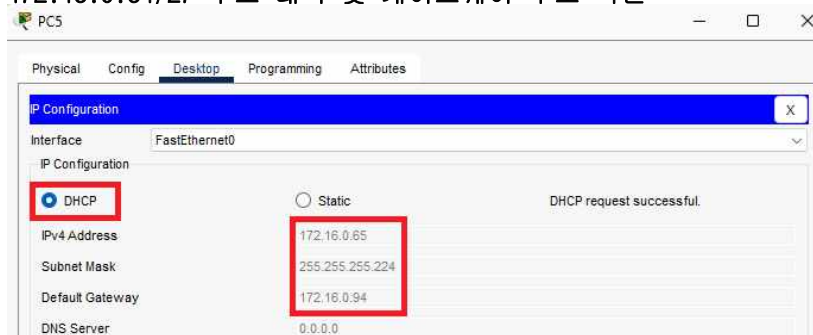
PC4

Desktop 탭의 IP Configuration 애플릿을 실행한 후 DHCP 항목 클릭
172.16.0.32/27 주소 대역 및 게이트웨이 주소 확인



PC5

Desktop 탭의 IP Configuration 애플릿을 실행한 후 DHCP 항목 클릭
172.16.0.64/27 주소 대역 및 게이트웨이 주소 확인



| | |
|----|--|
| | |
| 21 | <p>PC0 Desktop 탭의 Command Prompt 애플릿을 실행한 후 ping 명령 수행 ping 8.8.8.8 Pinging 8.8.8.8 with 32 bytes of data:</p> <p>Reply from 8.8.8.8: bytes=32 time<1ms TTL=252 Reply from 8.8.8.8: bytes=32 time<1ms TTL=252 Reply from 8.8.8.8: bytes=32 time<1ms TTL=252 Reply from 8.8.8.8: bytes=32 time<1ms TTL=252</p> <p>Ping statistics for 8.8.8.8: Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Approximate round trip times in milli-seconds: Minimum = 0ms, Maximum = 0ms, Average = 0ms</p> <p>PC4 Desktop 탭의 Command Prompt 애플릿을 실행한 후 ping 명령 수행 ping 8.8.8.8 Pinging 8.8.8.8 with 32 bytes of data:</p> <p>Reply from 8.8.8.8: bytes=32 time<1ms TTL=253 Reply from 8.8.8.8: bytes=32 time<1ms TTL=253 Reply from 8.8.8.8: bytes=32 time<1ms TTL=253 Reply from 8.8.8.8: bytes=32 time<1ms TTL=253</p> <p>Ping statistics for 8.8.8.8: Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Approximate round trip times in milli-seconds: Minimum = 0ms, Maximum = 0ms, Average = 0ms</p> <p>ISP-Core ping 2.2.2.2 Type escape sequence to abort. Sending 5, 100-byte ICMP Echos to 2.2.2.2, timeout is 2 seconds: !!!! Success rate is 100 percent (5/5), round-trip min/avg/max = 0/0/0 ms</p> <p>ping 7.7.7.7 Type escape sequence to abort. Sending 5, 100-byte ICMP Echos to 7.7.7.7, timeout is 2 seconds: !!!! Success rate is 100 percent (5/5), round-trip min/avg/max = 0/0/0 ms</p> |
| 22 | <p>PC0~PC5 Desktop 탭의 Cisco IP Communicator 애플릿을 실행한 후 아래와 같이 번호를 할당받는지 확인 PC0 : 1001 PC1 : 1002 PC2 : 1003 PC3 : 1004 PC4 : 2001 PC5 : 2002</p> |



RT2

show ephone

2개의 ephone 등록 및 음성 통신 대기 확인

ephone-1 Mac:0030.F2BD.8BEC TCP socket:[1] activeLine:0 REGISTERED in SCCP ver 12 and Server in ver 8

mediaActive:0 offhook:0 ringing:0 reset:0 reset_sent:0 paging 0 debug:0 caps:8

IP:172.16.0.33 1025 CIPC keepalive 43 max_line 2

button 1: dn 1 number 2001 CH1 IDLE

ephone-2 Mac:0002.4ACA.5C5B TCP socket:[1] activeLine:0 REGISTERED in SCCP ver 12 and Server in ver 8

mediaActive:0 offhook:0 ringing:0 reset:0 reset_sent:0 paging 0 debug:0 caps:8

IP:172.16.0.65 1025 CIPC keepalive 43 max_line 2

button 1: dn 2 number 2002 CH1 IDLE

RT1

show ephone

4개의 ephone 등록 및 음성 통신 대기 확인

ephone-1 Mac:0001.43C9.70C8 TCP socket:[1] activeLine:0 REGISTERED in SCCP ver 12 and Server in ver 8

mediaActive:0 offhook:0 ringing:0 reset:0 reset_sent:0 paging 0 debug:0 caps:8

IP:192.168.101.1 1025 CIPC keepalive 43 max_line 2

button 1: dn 1 number 1001 CH1 IDLE

ephone-2 Mac:0000.9789.53E7 TCP socket:[1] activeLine:0 REGISTERED in SCCP ver 12 and Server in ver 8

mediaActive:0 offhook:0 ringing:0 reset:0 reset_sent:0 paging 0 debug:0 caps:8

IP:192.168.102.1 1025 CIPC keepalive 43 max_line 2

button 1: dn 2 number 1002 CH1 IDLE

ephone-3 Mac:000D.BD85.5D0A TCP socket:[1] activeLine:0 REGISTERED in SCCP ver 12 and Server in ver 8

mediaActive:0 offhook:0 ringing:0 reset:0 reset_sent:0 paging 0 debug:0 caps:8

IP:192.168.103.1 1025 CIPC keepalive 43 max_line 2

button 1: dn 3 number 1003 CH1 IDLE

ephone-4 Mac:0030.A305.581D TCP socket:[1] activeLine:0 REGISTERED in SCCP ver 12 and Server in ver 8

mediaActive:0 offhook:0 ringing:0 reset:0 reset_sent:0 paging 0 debug:0 caps:8

IP:192.168.104.1 1025 CIPC keepalive 43 max_line 2

button 1: dn 4 number 1004 CH1 IDLE

show run | sec telephony

telephony-service

max-ephones 4

max-dn 4

ip source-address 192.168.0.1 port 2000

auto assign 1 to 4

PC0

PC0에서 1003으로 Dial 수행



PC2
PC2에서 수신 확인 후 연결 확인



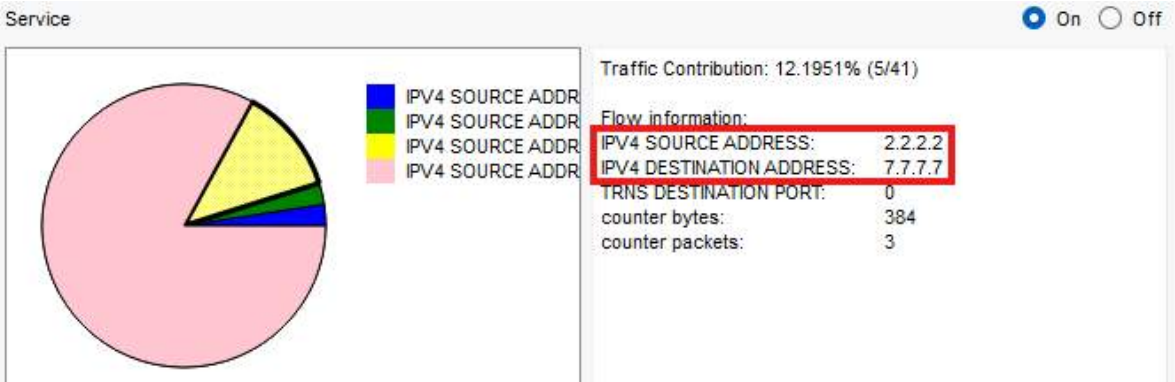
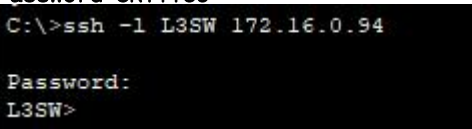

PC0



23

PC4



| 24 | <p>Server1 ping 10.255.255.100</p> <p>Server0</p>  <p>Traffic Contribution: 12.1951% (5/41)</p> <table border="1"> <thead> <tr> <th colspan="2">Flow information:</th> </tr> </thead> <tbody> <tr> <td>IPv4 SOURCE ADDRESS:</td> <td>2.2.2.2</td> </tr> <tr> <td>IPv4 DESTINATION ADDRESS:</td> <td>7.7.7.7</td> </tr> <tr> <td>TRNS DESTINATION PORT:</td> <td>0</td> </tr> <tr> <td>counter bytes:</td> <td>384</td> </tr> <tr> <td>counter packets:</td> <td>3</td> </tr> </tbody> </table> | Flow information: | | IPv4 SOURCE ADDRESS: | 2.2.2.2 | IPv4 DESTINATION ADDRESS: | 7.7.7.7 | TRNS DESTINATION PORT: | 0 | counter bytes: | 384 | counter packets: | 3 |
|---------------------------|--|-------------------|--|----------------------|---------|---------------------------|---------|------------------------|---|----------------|-----|------------------|---|
| Flow information: | | | | | | | | | | | | | |
| IPv4 SOURCE ADDRESS: | 2.2.2.2 | | | | | | | | | | | | |
| IPv4 DESTINATION ADDRESS: | 7.7.7.7 | | | | | | | | | | | | |
| TRNS DESTINATION PORT: | 0 | | | | | | | | | | | | |
| counter bytes: | 384 | | | | | | | | | | | | |
| counter packets: | 3 | | | | | | | | | | | | |
| 25 | <p>ISP-Core</p> <p>ISP-Core에 username:administrator password:Skill39**으로 로그인</p> <p>show run inc username</p> <p>username administrator privilege 15 secret 5 \$1\$mERr\$4YeCC.2D12cpbSm3t0QUW.</p> <p>비밀번호가 암호화되어있어야함</p> | | | | | | | | | | | | |
| 26 | <p>ISP-Core</p> <p>ISP-Core에서 로그인 시도</p> <p>Press RETURN to get started!</p> <p>Warning! Access to authorized users only</p> <p>User Access Verification</p> <p>Username:</p> | | | | | | | | | | | | |
| 27 | <p>PC5</p> <p>ssh -l L3SW 172.16.0.94</p> <p>Password:Skill39**</p>  <p>L3SW</p> <p>%SEC_LOGIN-5-LOGIN_SUCCESS: Login Success [user: L3SW] [Source: 0.0.0.0] [localport: 0] at 00:21:34 UTC Mon Mar 1 1993</p> <p>Server1</p>  | | | | | | | | | | | | |
| 28 | <p>PC5</p> <p>nslookup webservice.com</p> <p>Server: [172.16.0.100]</p> <p>Address: 172.16.0.100</p> <p>Non-authoritative answer:</p> <p>Name: webservice.com</p> <p>Address: 172.16.0.100</p> <p>PC0</p> <p>nslookup webservice.com</p> <p>Server: [2.2.2.2]</p> | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------|--|---------|---------|-------|---------|------|--------|------------|------------|---------|------|---|--------|-----|-----|-------|---------|------|--------|------------|------------|---------|------|---|--------|-----------------------|----------------------|-----------------|----------------------|------------------------|----------------|-----------------------|---------------|-----------|--------------------------------|
| | <p>Address: 2.2.2.2</p> <p>Non-authoritative answer: Name: webservice.com Address: 7.7.7.7 PC0 nslookup www.itnsa.com Server: [2.2.2.2] Address: 2.2.2.2</p> <p>Non-authoritative answer: Name: www.itnsa.com Address: 2.2.2.2</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 29 | <p>PC5 webservice.com/welcome.html</p> <div><div>Web Browser</div><div>< > URL http://webservice.com/welcome.html Go Stop</div><div>Welcome to this Site!</div></div> <p>PC0 webservice.com/welcome.html</p> <div><div>Web Browser</div><div>< > URL http://webservice.com/welcome.html Go Stop</div><div>Welcome to this Site!</div></div> <p>PC0 www.itnsa.com</p> <div><div>Web Browser</div><div>< > URL http://www.itnsa.com Go Stop</div><div>Welcome to this Server</div></div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | <p>ISP4 show crypto isakmp sa</p> <table><tr><td>dst</td><td>src</td><td>state</td><td>conn-id</td><td>slot</td><td>status</td></tr><tr><td>192.33.4.6</td><td>199.7.91.2</td><td>QM_IDLE</td><td>1073</td><td>0</td><td>ACTIVE</td></tr></table> <p>GW show crypto isakmp sa</p> <table><tr><td>dst</td><td>src</td><td>state</td><td>conn-id</td><td>slot</td><td>status</td></tr><tr><td>199.7.91.2</td><td>192.33.4.6</td><td>QM_IDLE</td><td>1025</td><td>0</td><td>ACTIVE</td></tr></table> <p>ISP4, GW show crypto isakmp policy</p> <p>Protection suite of priority 10</p> <table><tr><td>encryption algorithm:</td><td>Three key triple DES</td></tr><tr><td>hash algorithm:</td><td>Secure Hash Standard</td></tr><tr><td>authentication method:</td><td>Pre-Shared Key</td></tr><tr><td>Diffie-Hellman group:</td><td>#5 (1536 bit)</td></tr><tr><td>lifetime:</td><td>86400 seconds, no volume limit</td></tr></table> | dst | src | state | conn-id | slot | status | 192.33.4.6 | 199.7.91.2 | QM_IDLE | 1073 | 0 | ACTIVE | dst | src | state | conn-id | slot | status | 199.7.91.2 | 192.33.4.6 | QM_IDLE | 1025 | 0 | ACTIVE | encryption algorithm: | Three key triple DES | hash algorithm: | Secure Hash Standard | authentication method: | Pre-Shared Key | Diffie-Hellman group: | #5 (1536 bit) | lifetime: | 86400 seconds, no volume limit |
| dst | src | state | conn-id | slot | status | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 192.33.4.6 | 199.7.91.2 | QM_IDLE | 1073 | 0 | ACTIVE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| dst | src | state | conn-id | slot | status | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 199.7.91.2 | 192.33.4.6 | QM_IDLE | 1025 | 0 | ACTIVE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| encryption algorithm: | Three key triple DES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| hash algorithm: | Secure Hash Standard | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| authentication method: | Pre-Shared Key | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Diffie-Hellman group: | #5 (1536 bit) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| lifetime: | 86400 seconds, no volume limit | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |