

# ??ping????????????10?????????

“

???? | Linux??????

????????????????????A??B????????????????

??????ping 10.10.1.20——??

telnet 10.10.1.20 8080——??

????????????????

????????????????????????????

**????????????ping????????**

????????10????????????????????

## ????????????

????????????????????6????????????

????	??	?????
???	ping / ping6	??ICMP???
??	ip route / traceroute	???????????
??	ss / netstat	?????????
DNS	dig / nslookup	???????
?????	ethtool / ip addr	??UP?????????
??	tcpdump	????????TCP???
???	curl -w	????????DNS/TCP/SSL/????

**10????????ping????????**

### ? ss — ?????????

```
# ?????TCP????????????
# NR>1 ?????????? "State" ???
ss -tan | awk 'NR>1 {print $1}' | sort | uniq -c | sort -rn

# ??????????8080????????
sudo ss -tlnp | grep 8080

# ?????????????????????????
# state established ??? est ?????????? RHEL/CentOS ???
ss -tn state established | awk 'NR>1 {print $4}' | sort | uniq -c | sort -rn | head -20
```

### ? ip route — ?????????

```
# ?????????????????
ip route show

# ??????IP?????????????IP????????????????
traceroute -n 10.10.1.20

# ???mtr????????????
mtr -r -c 10 10.10.1.20
```

### ? tcpdump — ?????????????

```
# ?????eth0?HTTP????????????
sudo tcpdump -i eth0 -nn port 80 and host 10.10.1.20 -c 100

# ??ICMP???ping????????
sudo tcpdump -i eth0 -nn icmp

# ??????????Wireshark??
sudo tcpdump -i eth0 -w /tmp/capture.pcap port not 22
```

### ? dig — DNS????????

```
# ?A????????????
dig +short api.example.com

# ??DNS?????????????DNS????
dig +trace api.example.com

# ??????IP????????????????
```

```
dig -x 10.10.1.20
```

## ? ethtool — ???????

```
# ?????UP????????????/??/?  
ethtool eth0 | grep -E "Speed|Duplex|Link detected"  
  
# ??????????  
ethtool -i eth0  
  
# ??????????????  
ethtool -S eth0 | grep -iE "drop|error|discard"
```

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? ????? ethtool? ?????? "?????" "?????" "?????????" "?????????" ping ????? ss ?????? ethtool ????

## ? curl — ??????????????????

```
# ???HTTP??????? DNS?TCP???SSL????? ??  
curl -w '\nDNS?: %{time_namelookup}s  
TCP?: %{time_connect}s  
SSL?: %{time_appconnect}s  
?????: %{time_starttransfer}s  
?: %{time_total}s\n' \  
-o /dev/null -s http://10.10.1.20:8080/api/health
```

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? ping ?????? curl -w ??????DNS ?? DNS?TCP ??????????????—???

?????10?????ping?????MTU???

????????????????

?????A????B?????????GET /health ?????? payload ? POST ??????A?B????? ping ???telnet

?????

?????????10?????

```

# ?1????????????
ping 10.10.1.20
# ??????????????

# ?2?????curl?????—????
curl -X POST -d "$(dd if=/dev/urandom bs=1000 count=50 2>/dev/null | base64)" \
  --connect-timeout 3 --max-time 10 \
  http://10.10.1.20:8080/api/submit
# ??????OK??body??????

# ?3?????TCP????MSS????tcpdump???
sudo tcpdump -i eth0 -nn 'tcp port 8080 and (tcp[tcpflags] & tcp-syn != 0)' -c 3
# ?? A?B SYN ?? MSS=1460?A?MTU 1500 ???
# ?? B?A SYN-ACK ?? MSS=8960?B?MTU 9000 ???

```

???? MSS=8960?

B ????????????? MTU=9000?TCP ???B ? A ?? "?? 8960 ??? TCP ?"A ????????????????? 8960 ??????  
 ——? A ????? MTU ?? 1500?????? IP ???

```

# ?4????????????
ip link show eth0 | grep mtu
# A?: mtu 1500
ip link show eth0 | grep mtu # ?B???
# B?: mtu 9000 ? ???

```

???? IP ???B ?? TCP ?????????????????????  
 ????????????????? 1460 ?????????????

```

# ?5?????????—?B?MTU??1500??????
sudo ip link set eth0 mtu 1500

# ??????curl???
curl -X POST -d "$(dd if=/dev/urandom bs=1000 count=50 2>/dev/null | base64)" \
  --connect-timeout 3 --max-time 10 \
  http://10.10.1.20:8080/api/submit
# ?????

```

???????????? NetworkManager ?????????????

```

# ?????? network-scripts?RHEL 7 ?????
sed -i 's/^MTU=.*\/MTU=1500\/' /etc/sysconfig/network-scripts/ifcfg-eth0

# ?????NetworkManager?RHEL 8+ ?????????????
nmcli con mod eth0 802-3-ethernet.mtu 1500
nmcli con up eth0

```

??????10??????

??????—????????????????????—??????2???

## ??crontab???????

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```
#!/bin/bash
# network_check.sh - ???????

REPORT="/tmp/network_report_$(date +%Y%m%d).txt"

echo"=== ?????? $(date) ===" > "$REPORT"

# 1. ??????????
DEFAULT_ROUTE=$(ip route | grep default | wc -l)
echo"?????: ${DEFAULT_ROUTE}" >> "$REPORT"
[ "$DEFAULT_ROUTE" -eq 0 ] && echo"[WARN] ??????" >> "$REPORT"

# 2. ?DNS????????????????????resolver?
DNS_NS=$(grep -c '^nameserver' /etc/resolv.conf 2>/dev/null)
echo"DNS????: ${DNS_NS}" >> "$REPORT"
[ "$DNS_NS" -eq 0 ] && echo"[WARN] ?DNS???" >> "$REPORT"
# ?????????????????dig +time=2 +short ??????

# 3. ??????????
for iface in $(ls /sys/class/net/ | grep -v lo); do
    STATE=$(cat /sys/class/net/$iface/operstate 2>/dev/null || echo"N/A")
    SPEED=$(ethtool $iface 2>/dev/null | grep -oP 'Speed: \K.*')
    [ -z "$SPEED" ] && SPEED="N/A"
    echo"?? $iface: ??=${SPEED} ??=${STATE}" >> "$REPORT"
    [ "$STATE" != "up" ] && echo"[WARN] ?? $iface ??UP???" >> "$REPORT"
done

# 4. ??MTU????????????????????
for iface in $(ls /sys/class/net/ | grep -v lo); do
    MTU=$(cat /sys/class/net/$iface/mtu 2>/dev/null)
    [ -n "$MTU" ] && [ "$MTU" -ne 1500 ] && \
        echo"[WARN] ?? $iface MTU=${MTU} (???1500)?" >> "$REPORT"
done

# 5. ?????????????????????
ESTAB_COUNT=$(ss -tn state established | tail -n +2 | wc -l)
echo"??ESTABLISHED???: ${ESTAB_COUNT}" >> "$REPORT"
[ "$ESTAB_COUNT" -gt 500 ] && echo"[WARN] ??????(${ESTAB_COUNT})???" >> "$REPORT"

# 6. ??????????
for iface in $(ls /sys/class/net/ | grep -v lo); do
    RX_DROP=$(cat /sys/class/net/$iface/statistics/rx_dropped 2>/dev/null || echo 0)
    TX_DROP=$(cat /sys/class/net/$iface/statistics/tx_dropped 2>/dev/null || echo 0)
```

```
[ "$RX_DROP" -gt 100 ] && echo "[WARN] $iface RX?: $RX_DROP" >> "$REPORT"
[ "$TX_DROP" -gt 100 ] && echo "[WARN] $iface TX?: $TX_DROP" >> "$REPORT"
done

cat "$REPORT"
```

tail -f /opt/scripts/network\_check.sh >> /var/log/network\_daily.log 2>&1

```
0 8 * * * /opt/scripts/network_check.sh >> /var/log/network_daily.log 2>&1
```

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10????????????

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????????????ping??

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?MTU????????????

????????????ping?????

? ?????????????bro????????????????

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