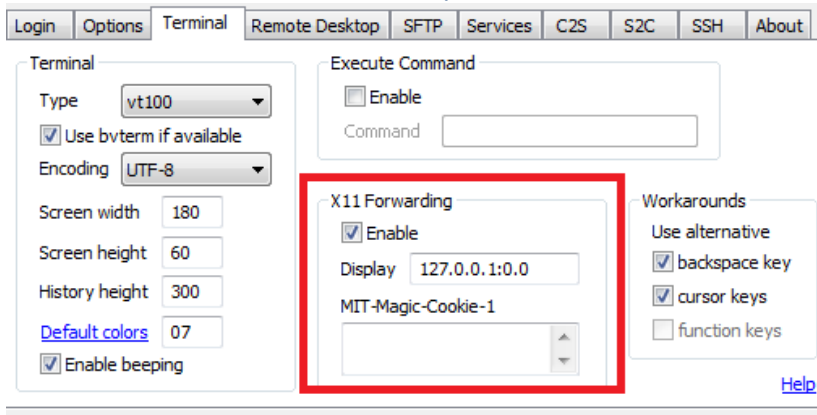
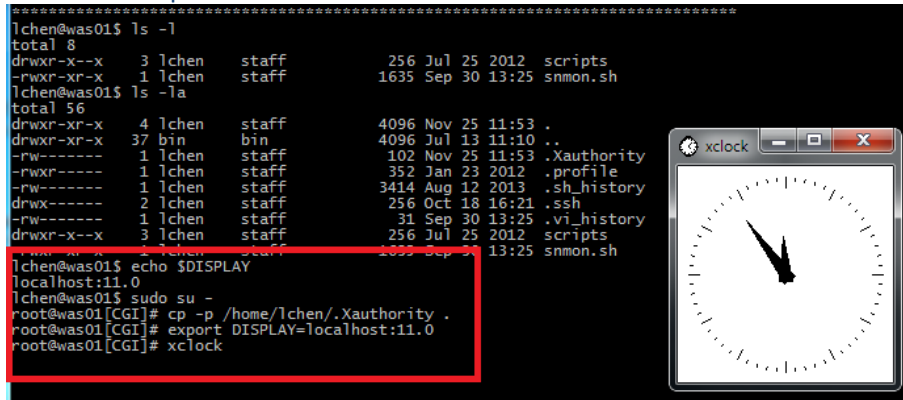


run xwin on laptop as root via ssh protocol,

1. start xming server on laptop
2. connect to AIX via ssh with xauthority enabled



3. follow the steps:



Start Nagios

```
nagios@ifx01:/usr/local/nagios># cat start_nrpe.ksh
#!/usr/bin/ksh
```

```
nohup /usr/local/nagios/bin/nrpe -c /usr/local/nagios/etc/nrpe.cfg -n -d >/dev/null 2>&1
```

```
nagios@ifx01:/usr/local/nagios># ./start_nrpe.ksh
nagios@ifx01:/usr/local/nagios># ps -ef|grep nagios
nagios 14287080      1  0 09:58:48    -  0:00 /usr/local/nagios/bin/nrpe -c /usr/local/nagios/etc/nrpe.cfg -n -d
```

Configure network tuning parameters

Use the `no` command to configure network tuning parameters. The `no` command sets or displays current or next boot values for network tuning parameters. This command can also make permanent changes or defer changes until the next reboot. Whether the command sets or displays a parameter is determined by the accompanying flag. The `-o` flag performs both actions. It can either display the value of a parameter or set a new value for a parameter. When the `no` command is used to modify a network option it logs a message to the syslog using the LOG_KERN facility. For a more information on how the network parameters interact with each other, refer to the Networks and communication management

```
[lchen@ifx01 /home/lchen] $ no -a
      arpqsize = 1024
      arpt_killc = 20
      arptab_bsiz = 7
      arptab_nb = 149
      bcastping = 0
      bsd_loglevel = 3
      clean_partial_conns = 0
      delayack = 0
      delayackports = {}
      dgd_flush_cached_route = 0
      dgd_packets_lost = 3
      dgd_ping_time = 5
      dgd_retry_time = 5
      directed_broadcast = 0
      fasttimo = 200
      hstcp = 0
      icmp6_errmsg_rate = 10
      icmpaddressmask = 0
      ie5_old_multicast_mapping = 0
      ifsize = 256
      igmpv2_deliver = 0
      init_high_wat = 0
      ip6_defttl = 64
      ip6_prune = 1
      ip6forwarding = 0
      ip6srcrouteforward = 1
      ip_ifdelete_notify = 0
      ip_nfrag = 200
      ipforwarding = 0
      ipfragttl = 2
      ipignoreredirects = 0
      ipqmaxlen = 100
      ipsendredirects = 1
      ipsrcrouteforward = 1
      ipsrcrouterrecv = 0
      ipsrcroutesend = 1
      limited_ss = 0
      llsleep_timeout = 3
      lo_perf = 1
      lowthresh = 90
      main_if6 = 0
      main_site6 = 0
      maxnip6q = 20
      maxttl = 255
      medthresh = 95
      mpr_policy = 1
      multi_homed = 1
```

```
        nbc_limit = 524288
        nbc_max_cache = 131072
        nbc_min_cache = 1
        nbc_ofile_hashsz = 12841
        nbc_pseg = 0
        nbc_pseg_limit = 1048576
        ndd_event_name = {all}
        ndd_event_tracing = 0
        ndogthreads = 0
        ndp_mmaxtries = 3
        ndp_umaxtries = 3
        ndpqsize = 50
        ndpt_down = 3
        ndpt_keep = 120
        ndpt_probe = 5
        ndpt_reachable = 30
        ndpt_retrans = 1
        net_buf_size = {all}
        net_buf_type = {all}
        net_malloc_frag_mask = {0}
        netm_page_promote = 1
        nonlocsrcroute = 0
        nstrpush = 8
        passive_dgd = 0
        pmtu_default_age = 10
        pmtu_expire = 10
        pmtu_rediscover_interval = 30
        psebufoalls = 20
        psecache = 1
        psetimers = 20
        rfc1122addrchk = 0
        rfc1323 = 0
        rfc2414 = 1
        route_expire = 1
        routerevalidate = 0
        rtentry_lock_complex = 0
        rto_high = 64
        rto_length = 13
        rto_limit = 7
        rto_low = 1
        sack = 0
        sb_max = 1048576
        send_file_duration = 300
        site6_index = 0
        sockthresh = 85
        sodebug = 0
        sodebug_env = 0
        somaxconn = 1024
        strctlsz = 1024
        strmsgsz = 0
        strthresh = 85
        strturncnt = 15
        subnetsarelocal = 1
        tcp_bad_port_limit = 0
        tcp_cwnd_modified = 0
        tcp_ecn = 0
        tcp_ephemeral_high = 65535
        tcp_ephemeral_low = 32768
```

```

        tcp_fastlo = 0
tcp_fastlo_crosswpar = 0
        tcp_finwait2 = 1200
        tcp_icmpsecure = 0
        tcp_init_window = 0
tcp_inpcb_hashtab_siz = 24499
        tcp_keepcnt = 8
        tcp_keepidle = 3600          #(ipdev) tcp_keepidle = 14400
        tcp_keepinit = 150
        tcp_keepintvl = 150
tcp_limited_transmit = 1
        tcp_low_rto = 0
        tcp_maxburst = 0
        tcp_msdfilt = 1460
        tcp_nagle_limit = 65535
tcp_nagleoverride = 0
        tcp_ndebug = 100
        tcp_newreno = 1
        tcp_nodelayack = 1
tcp_pmtu_discover = 1
        tcp_recvspace = 16384
        tcp_sendspace = 16384
        tcp_tcpsecure = 0
        tcp_timewait = 1
        tcp_ttl = 60
tcprexmtthresh = 3
        tcptr_enable = 0
        thewall = 2097152
timer_wheel_tick = 0
        tn_filter = 1
udp_bad_port_limit = 0
udp_ephemeral_high = 65535
udp_ephemeral_low = 32768
udp_inpcb_hashtab_siz = 24499
udp_pmtu_discover = 1
        udp_recvspace = 42080
        udp_sendspace = 9216
        udp_ttl = 30
        udpcksum = 1
use_sndbufpool = 1

```

```

root@ipdev:/># no -L
General Network Parameters

```

| NAME | CUR | DEF | BOOT | MIN | MAX | UNIT | TYPE |
|--------------------------------|------|------|------|-----|------|--------------|------|
| DEPENDENCIES | | | | | | | |
| bsd_loglevel | 3 | 3 | 3 | 0 | 7 | numeric | D |
| fasttimo | 200 | 200 | 200 | 50 | 200 | millisecond | D |
| init_high_wat | 0 | 0 | 0 | 0 | 10 | %_of_thewall | D |
| nbc_limit thewall | 512K | 512K | 512K | 0 | 8E-1 | kbyte | D |
| nbc_max_cache nbc_min_cache | 128K | 128K | 128K | 1 | 512M | byte | D |

| | | | | | | | |
|-----------------------|-------|-------|-------|----|--------|--------------|---|
| nbc_limit | | | | | | | |
| nbc_min_cache | 1 | 1 | 1 | 1 | 128K | byte | D |
| nbc_max_cache | | | | | | | |
| nbc_ofile_hashsz | 12841 | 12841 | 12841 | 1 | 999999 | segment | D |
| nbc_pseg | 0 | 0 | 0 | 0 | 2G-1 | segment | D |
| nbc_pseg_limit | 1M | 1M | 1M | 0 | 2M | kbyte | D |
| ndd_event_name | {all} | {all} | {all} | 0 | 128 | string | D |
| ndd_event_tracing | 0 | 0 | 0 | 0 | 64K-1 | numeric | D |
| net_buf_size | {all} | {all} | {all} | 0 | 128 | string | D |
| net_buf_type | {all} | {all} | {all} | 0 | 128 | string | D |
| net_malloc_frag_mask | {0} | {0} | {0} | 0 | 128 | string | D |
| netm_page_promote | 1 | 1 | 1 | 0 | 1 | numeric | D |
| sb_max | 1M | 1M | 1M | 4K | 8E-1 | byte | D |
| send_file_duration | 300 | 300 | 300 | 0 | 4G-1 | second | D |
| sockthresh | 85 | 85 | 85 | 0 | 100 | %_of_thewall | D |
| sodebug | 0 | 0 | 0 | 0 | 1 | boolean | C |
| sodebug_env | 0 | 0 | 0 | 0 | 1 | boolean | C |
| somaxconn | 1K | 1K | 1K | 0 | 32K-1 | numeric | C |
| tcp_inpcb_hashtab_siz | 24499 | 24499 | 24499 | 1 | 999999 | numeric | R |
| tcptr_enable | 0 | 0 | 0 | 0 | 1 | boolean | C |
| thewall | 2M | 2M | 2M | 0 | 64M | kbyte | S |
| udp_inpcb_hashtab_siz | 24499 | 24499 | 24499 | 1 | 83000 | numeric | R |
| use_sndbufpool | 1 | 1 | 1 | 0 | 1 | boolean | R |

TCP Network Tunable Parameters

| NAME | CUR | DEF | BOOT | MIN | MAX | UNIT | TYPE |
|---------------------|-----|-----|------|-----|-----|------------|------|
| DEPENDENCIES | | | | | | | |
| clean_partial_conns | 0 | 0 | 0 | 0 | 1 | boolean | D |
| delayack | 0 | 0 | 0 | 0 | 3 | boolean | D |
| delayackports | {} | {} | {} | 0 | 10 | ports_list | D |
| hstcp | 0 | 0 | 0 | 0 | 1 | boolean | D |

| | | | | | | | |
|---|--------------|--------------|--------------|----------|--------------|-------------------|----------|
| limited_ss | 0 | 0 | 0 | 0 | 100 | numeric | D |
| rfc1323 | 0 | 0 | 0 | 0 | 1 | boolean | C |
| rfc2414 | 1 | 1 | 1 | 0 | 1 | boolean | C |
| rto_high rto_low | 64 | 64 | 64 | 2 | 8E-1 | roundtriptime | R |
| rto_length | 13 | 13 | 13 | 1 | 64 | roundtriptime | R |
| rto_limit rto_high rto_low | 7 | 7 | 7 | 1 | 64 | roundtriptime | R |
| rto_low rto_high | 1 | 1 | 1 | 1 | 63 | roundtriptime | R |
| sack | 0 | 0 | 0 | 0 | 1 | boolean | C |
| tcp_bad_port_limit | 0 | 0 | 0 | 0 | 8E-1 | numeric | D |
| tcp_cwnd_modified | 0 | 0 | 0 | 0 | 1 | boolean | C |
| tcp_ecn | 0 | 0 | 0 | 0 | 1 | boolean | C |
| tcp_ephemeral_high tcp_ephemeral_low | 64K-1 | 64K-1 | 64K-1 | 32K+1 | 64K-1 | numeric | D |
| tcp_ephemeral_low tcp_ephemeral_high | 32K | 32K | 32K | 1K | 65534 | numeric | D |
| tcp_fastlo | 0 | 0 | 0 | 0 | 1 | boolean | C |
| tcp_fastlo_crosswpar | 0 | 0 | 0 | 0 | 1 | boolean | C |
| tcp_finwait2 | 1200 | 1200 | 1200 | 0 | 32K-1 | halfsecond | D |
| tcp_icmpsecure | 0 | 0 | 0 | 0 | 1 | boolean | D |
| tcp_init_window | 0 | 0 | 0 | 0 | 32K-1 | byte | C |
| tcp_keeppcnt | 8 | 8 | 8 | 0 | 32K-1 | numeric | D |
| tcp_keeppidle | 14400 | 14400 | 14400 | 1 | 32K-1 | halfsecond | C |
| tcp_keeppinit | 150 | 150 | 150 | 1 | 32K-1 | halfsecond | D |
| tcp_keeppintvl | 150 | 150 | 150 | 1 | 32K-1 | halfsecond | C |
| tcp_limited_transmit | 1 | 1 | 1 | 0 | 1 | boolean | D |
| tcp_low_rto timer_wheel_tick | 0 | 0 | 0 | 0 | 3000 | numeric | D |
| tcp_maxburst | 0 | 0 | 0 | 0 | 32K-1 | numeric | D |

| | | | | | | | |
|-------------------------|-------|-------|-------|----|-------|------------|---|
| tcp_mssdflt | 1460 | 1460 | 1460 | 1 | 64K-1 | byte | C |
| tcp_nagle_limit | 64K-1 | 64K-1 | 64K-1 | 0 | 64K-1 | byte | D |
| tcp_nagleoverride | 0 | 0 | 0 | 0 | 1 | boolean | D |
| tcp_ndebug | 100 | 100 | 100 | 0 | 32K-1 | numeric | D |
| tcp_newreno | 1 | 1 | 1 | 0 | 1 | boolean | D |
| tcp_nodelayack | 1 | 0 | 0 | 0 | 1 | boolean | D |
| tcp_recvspace sb_max | 16K | 16K | 16K | 4K | 8E-1 | byte | C |
| tcp_sendspace sb_max | 16K | 16K | 16K | 4K | 8E-1 | byte | C |
| tcp_tcpsecure | 0 | 0 | 0 | 0 | 7 | numeric | D |
| tcp_timewait | 1 | 1 | 1 | 1 | 5 | 15_second | D |
| tcp_ttl | 60 | 60 | 60 | 1 | 255 | 0.6_second | C |
| tcprexmtthresh | 3 | 3 | 3 | 1 | 32K-1 | numeric | D |
| timer_wheel_tick | 0 | 0 | 0 | 0 | 100 | numeric | R |

UDP Network Tunable Parameters

| NAME DEPENDENCIES | CUR | DEF | BOOT | MIN | MAX | UNIT | TYPE |
|---|-------|-------|-------|-------|-------|---------|------|
| udp_bad_port_limit | 0 | 0 | 0 | 0 | 8E-1 | numeric | D |
| udp_ephemeral_high udp_ephemeral_low | 64K-1 | 64K-1 | 64K-1 | 32K+1 | 64K-1 | numeric | D |
| udp_ephemeral_low udp_ephemeral_high | 32K | 32K | 32K | 1K | 65534 | numeric | D |
| udp_recvspace sb_max | 42080 | 42080 | 42080 | 4K | 8E-1 | byte | C |
| udp_sendspace sb_max | 9K | 9K | 9K | 4K | 8E-1 | byte | C |
| udp_ttl | 30 | 30 | 30 | 1 | 255 | second | C |
| udpcksum | 1 | 1 | 1 | 0 | 1 | boolean | D |

IP Network Tunable Parameters

| NAME DEPENDENCIES | CUR | DEF | BOOT | MIN | MAX | UNIT | TYPE |
|----------------------|-----|-----|------|-----|-----|------|------|
|----------------------|-----|-----|------|-----|-----|------|------|

| | | | | | | | |
|---------------------------|-----|-----|-----|-----|-------|------------|---|
| directed_broadcast | 0 | 0 | 0 | 0 | 1 | boolean | D |
| ie5_old_multicast_mapping | 0 | 0 | 0 | 0 | 1 | boolean | D |
| ip6_defttl | 64 | 64 | 64 | 1 | 255 | numeric | D |
| ip6_prune | 1 | 1 | 1 | 1 | 8E-1 | second | D |
| ip6forwarding | 0 | 0 | 0 | 0 | 1 | boolean | D |
| ip6srcrouteforward | 1 | 1 | 1 | 0 | 1 | boolean | D |
| ip_ifdelete_notify | 0 | 0 | 0 | 0 | 1 | boolean | D |
| ip_nfrag | 200 | 200 | 200 | 1 | 32K-1 | byte | D |
| ipforwarding | 0 | 0 | 0 | 0 | 1 | boolean | D |
| ipfragttl | 2 | 2 | 2 | 1 | 255 | halfsecond | D |
| ipignoreredirects | 0 | 0 | 0 | 0 | 1 | boolean | D |
| ipqmaxlen | 100 | 100 | 100 | 100 | 2G-1 | numeric | R |
| ipsendredirects | 1 | 1 | 1 | 0 | 1 | boolean | D |
| ipsrcrouteforward | 1 | 1 | 1 | 0 | 1 | boolean | D |
| ipsrcrouterrecv | 0 | 0 | 0 | 0 | 1 | boolean | D |
| ipsrcroutesend | 1 | 1 | 1 | 0 | 1 | boolean | D |
| lo_perf | 1 | 1 | 1 | 0 | 1 | boolean | R |
| maxnip6q | 20 | 20 | 20 | 1 | 32K-1 | numeric | D |
| multi_homed | 1 | 1 | 1 | 0 | 3 | boolean | D |
| ndogthreads | 0 | 0 | 0 | 0 | 1K | numeric | D |
| nonlocsrcroute | 0 | 0 | 0 | 0 | 1 | boolean | D |
| subnetsarelocal | 1 | 1 | 1 | 0 | 1 | boolean | D |
| tn_filter | 1 | 1 | 1 | 0 | 1 | boolean | D |

ARP/NDP Network Tunable Parameters

| NAME | CUR | DEF | BOOT | MIN | MAX | UNIT | TYPE |
|-------------------|-----|-----|------|-----|-------|---------|------|
| DEPENDENCIES | | | | | | | |
| arpqsize | 1K | 1K | 1K | 1 | 32K-1 | numeric | D |
| tcp_pmtu_discover | | | | | | | |
| udp_pmtu_discover | | | | | | | |
| arpt_killc | 20 | 20 | 20 | 0 | 255 | minute | D |

| | | | | | | | |
|------------------|-----|-----|-----|---|-------|-------------|---|
| arptab_bsiz | 7 | 7 | 7 | 1 | 32K-1 | bucket_size | R |
| arptab_nb | 149 | 149 | 149 | 1 | 32K-1 | buckets | R |
| dgd_packets_lost | 3 | 3 | 3 | 1 | 32K-1 | numeric | D |
| dgd_ping_time | 5 | 5 | 5 | 1 | 8E-1 | second | D |
| dgd_retry_time | 5 | 5 | 5 | 1 | 32K-1 | numeric | D |
| ndp_mmaxtries | 3 | 3 | 3 | 0 | 8E-1 | numeric | D |
| ndp_umaxtries | 3 | 3 | 3 | 0 | 8E-1 | numeric | D |
| ndpqsize | 50 | 50 | 50 | 1 | 32K-1 | numeric | D |
| ndpt_down | 3 | 3 | 3 | 1 | 8E-1 | halfsecond | D |
| ndpt_keep | 120 | 120 | 120 | 1 | 8E-1 | halfsecond | D |
| ndpt_probe | 5 | 5 | 5 | 1 | 4G-1 | halfsecond | D |
| ndpt_reachable | 30 | 30 | 30 | 1 | 4G-1 | halfsecond | D |
| ndpt_retrans | 1 | 1 | 1 | 1 | 4G-1 | halfsecond | D |
| passive_dgd | 0 | 0 | 0 | 0 | 1 | boolean | D |
| rfc1122addrchk | 0 | 0 | 0 | 0 | 1 | boolean | D |

Stream Header Tunable Parameters

| NAME | CUR | DEF | BOOT | MIN | MAX | UNIT | TYPE |
|--------------|-----|-----|------|-----|-------|--------------|------|
| DEPENDENCIES | | | | | | | |
| lowthresh | 90 | 90 | 90 | 0 | 100 | %_of_thewall | D |
| medthresh | 95 | 95 | 95 | 0 | 100 | %_of_thewall | D |
| nstrpush | 8 | 8 | 8 | 8 | 32K-1 | numeric | S |
| psebufcalls | 20 | 20 | 20 | 20 | 8E-1 | numeric | I |
| psecache | 1 | 1 | 1 | 0 | 1 | boolean | D |
| psetimers | 20 | 20 | 20 | 20 | 8E-1 | numeric | I |
| strctlisz | 1K | 1K | 1K | 0 | 32K-1 | byte | D |
| strmsgsz | 0 | 0 | 0 | 0 | 32K-1 | byte | D |
| strthresh | 85 | 85 | 85 | 0 | 100 | %_of_thewall | D |
| strturncnt | 15 | 15 | 15 | 1 | 8E-1 | numeric | D |

Other Network Tunable Parameters

| NAME | CUR | DEF | BOOT | MIN | MAX | UNIT | TYPE |
|--------------------------|-----|-----|------|-----|-------|------------|------|
| DEPENDENCIES | | | | | | | |
| bcastping | 0 | 0 | 0 | 0 | 1 | boolean | D |
| dgd_flush_cached_route | 0 | 0 | 0 | 0 | 1 | boolean | D |
| icmp6_errmsg_rate | 10 | 10 | 10 | 1 | 255 | msg/second | D |
| icmpaddressmask | 0 | 0 | 0 | 0 | 1 | boolean | D |
| ifsize | 256 | 256 | 256 | 8 | 1K | numeric | R |
| igmpv2_deliver | 0 | 0 | 0 | 0 | 1 | boolean | D |
| llsleep_timeout | 3 | 3 | 3 | 1 | 2G-1 | second | D |
| main_if6 | 0 | 0 | 0 | 0 | 32K-1 | numeric | D |
| main_site6 | 0 | 0 | 0 | 0 | 1 | boolean | D |
| maxttl | 255 | 255 | 255 | 1 | 255 | second | D |
| mpr_policy | 1 | 1 | 1 | 1 | 6 | numeric | D |
| pmtu_default_age | 10 | 10 | 10 | 0 | 32K-1 | minute | D |
| pmtu_expire | 10 | 10 | 10 | 0 | 32K-1 | minute | D |
| pmtu_rediscover_interval | 30 | 30 | 30 | 0 | 32K-1 | minute | D |
| route_expire | 1 | 1 | 1 | 0 | 1 | boolean | D |
| routererevalidate | 0 | 0 | 0 | 0 | 1 | boolean | D |
| rtentry_lock_complex | 0 | 0 | 0 | 0 | 1 | boolean | R |
| site6_index | 0 | 0 | 0 | 0 | 32K-1 | numeric | D |
| tcp_pmtu_discover | 1 | 1 | 1 | 0 | 1 | boolean | D |
| udp_pmtu_discover | 1 | 1 | 1 | 0 | 1 | boolean | D |

n/a means parameter not supported by the current platform or kernel

Parameter types:

S = Static: cannot be changed

D = Dynamic: can be freely changed

B = Bosboot: can only be changed using bosboot and reboot

R = Reboot: can only be changed during reboot

C = Connect: changes are only effective for future socket connections

M = Mount: changes are only effective for future mountings

I = Incremental: can only be incremented

Value conventions:

| | | |
|--------------------|--------------------|--------------------|
| K = Kilo: 2^{10} | G = Giga: 2^{30} | P = Peta: 2^{50} |
| M = Mega: 2^{20} | T = Tera: 2^{40} | E = Exa: 2^{60} |

```
# no -o tcp_keepidle=3600
```