Quality of Service Setup Guide
(NB14 Series)
About This Quality of Service (QoS) Guide

Quality of Service refers to the reservation of bandwidth resources on the Nb14 Series router to provide different priorities to different applications, users, or data flows, or to guarantee a certain level of performance to a data flow.

The following Quality of Service (QoS) settings offer a basic suggested setup example, setting up 3 devices connecting to an NB14 series router, the first with the highest priority QoS priority data traffic for a VoIP ATA, the second with high medium priority QoS priority data traffic flow for video streaming and the third with medium priority QoS priority SNMP data traffic flow. All other data packet traffic through the router assumes a default best effort setting.

In this implementation Quality of Service employs DSCP – Differentiated Services Code Point – a computer networking architecture that specifies a simple, scalable and coarse-grained mechanism for classifying, managing network traffic.

This example is only one possible QoS setup scenario and is intended as a basic guide only as an introduction to using Quality of Service with an NB14 Series router. This example guide sets up QoS with three devices (VoIP ATA, gaming console and PC) connecting via ethernet cable to an NB14 series router. One device (VoIP ATA) will be assigned the highest priority traffic while the second device (gaming console) will be assigned a medium priority while the third device (PC) will be assigned a best effort priority.
Quality of Service Setup: Part 1 – Highest Priority (for VoIP) Service

1. Navigate to http://192.168.1.1 in a web browser using “admin” as both the username and password when prompted.
2. Select Advanced Setup > QoS from the menu options at the top of the screen.

3. Set the QoS option to Activated.
4. Set the Rule Index to 1 and set the Active option (for Rule 1) to Activated.
5. Select a Pre-Configured Application (if applicable to your QoS rule).

6. Select the Physical Port(s) that you wish the QoS rule to apply to. WLAN represents a wireless local connection with Enet1-4 representing LAN ports 1 through 4.

7. Enter the Destination MAC Address. If the destination MAC address is unknown or could be multiple devices leave this field blank.

8. Enter the Destination IP Address, a WAN address as opposed to a local address, if applicable. If the destination MAC address is unknown or could be multiple devices leave this field blank.

9. Enter the Destination Subnet Mask Address. If you are unsure of this address leave this field blank.

10. Enter the Destination Port Range for the QoS rule if applicable. If you are unsure of the the port or ports used leave these fields blank.

11. Enter the Source MAC Address of the device you are directing the QoS traffic to. If you do not know the MAC address of the device or the QoS rule is to be for multiple devices leave this field blank.

12. Enter the Source (Local) IP Address of the device you wish to direct QoS traffic to.

13. Enter the Source Subnet Mask Address. If you are unsure of this address leave this field blank.

14. Enter the Source Port Range for the QoS field if applicable.

15. Set the Protocol for the QoS rule. Options include TCP/UDP, TCP, UDP, ICMP or IGMP. If you are unsure which protocol to use leave this field blank.

16. Enter the VLAN ID Range if applicable.

17. Set the IPP/DS Field to DSCP.

18. Set the DSCP Range from 48 to 55.

19. Set 802.1p Priority Range from 6 to 6.

20. Under the Action subheading set the IPP/DS Field to DSCP.

21. Set the DSCP Remarking to 48.

22. Set the 802.1p Remaining to 6 and enter a text value if applicable.

23. Set the Queue# to Highest.

24. Press the Add button.
Quality of Service Setup: Part 2 : Medium – High Priority Service

1. Set the **Rule Index** to 2.
2. Set the **Active** option to Activated.
3. Select a Pre-Configured Application (if applicable to the QoS rule).
4. Select the Physical Port(s) that you wish the QoS rule to apply to. WLAN represents a wireless local connection with Enet1-4 representing LAN ports 1 through 4.
5. Enter the Destination MAC Address. If the destination MAC address is unknown or could be multiple devices leave this field blank.
6. Enter the Destination IP Address, a WAN address as opposed to a local address, if applicable. If the destination MAC address is unknown or could be multiple devices leave this field blank.
7. Enter the Destination Subnet Mask Address. If you are unsure of this address leave this field blank.
8. Enter the Destination Port Range for the QoS rule if applicable. If you are unsure of the the port or ports used leave these fields blank.
9. Enter the Source MAC Address of the device you are directing the QoS traffic to. If you do not know the MAC address of the device or the QoS rule is to be for multiple devices leave this field blank.
10. Enter the Source (Local) IP Address of the device you wish to direct QoS traffic to.
11. Enter the Source Subnet Mask Address. If you are unsure of this address leave this field blank.
12. Enter the Source Port Range for the QoS field if applicable.
13. Set the Protocol for the QoS rule. Options include TCP/UDP, TCP, UDP, ICMP or IGMP. If you are unsure which protocol to use leave this field blank.
14. Enter the VLAN ID Range if applicable.
15. Set the IPP/DS Field to DSCP.
16. Set the DSCP Range from 40 to 47.
17. Set the 802.1p Priority Range from 5 to 5.
18. Under the Action subheading set the IPP/DS Field to DSCP.
19. Set the DSCP Remarking to 40.
20. Set the 802.1p Remaining to 5 and enter a text value if applicable.
21. Set the Queue# to High.
22. Press the Add button.
Quality of Service Setup: Part 3: Medium - Low Priority Service

1. Set the **Rule Index** to 3.
2. Set the **Active** option to Activated.
3. Select a Pre-Configured Application (if applicable to the QoS rule).
4. Select the Physical Port(s) that you wish the QoS rule to apply to. WLAN represents a wireless local
5. Enter the **Destination MAC Address**. If the destination MAC address is unknown or could be multiple devices leave this field blank.

6. Enter the **Destination IP Address**, a WAN address as opposed to a local address, if applicable. If the destination MAC address is unknown or could be multiple devices leave this field blank.

7. Enter the **Destination Subnet Mask** Address. If you are unsure of this address leave this field blank.

8. Enter the **Destination Port Range** for the QoS rule if applicable. If you are unsure of the the port or ports used leave these fields blank.

9. Enter the **Source MAC** Address of the device you are directing the QoS traffic to. If you do not know the MAC address of the device or the QoS rule is to be for multiple devices leave this field blank.

10. Enter the **Source (Local) IP Address** of the device you wish to direct QoS traffic to.

11. Enter the **Source Subnet Mask** Address. If you are unsure of this address leave this field blank.

12. Enter the **Source Port Range** for the QoS field if applicable.

13. Set the **Protocol** for the QoS rule. Options include TCP/UDP, TCP, UDP, ICMP or IGMP. If you are unsure which protocol to use leave this field blank.

14. Enter the **VLAN ID Range** if applicable.

15. Set the **IPP/DS Field** to DSCP.

16. Set the **DSCP Range** from 24 to 31.

17. Set the **802.1p Priority Range** from 3 to 3.

18. Under the **Action** subheading set the **IPP/DS Field** to DSCP.

19. Set the **DSCP Remarking** to 24.

20. Set the **802.1p Remaining** to 3 and enter a text value if applicable.

21. Set the **Queue#** to Medium.

22. Press the **Add** button.
Quality of Service Setup: Summary

1. Select **Advanced > QoS > QoS Settings Summary**. The current QoS rules will be listed in the QoS Settings Summary table.

2. After adding the completed QoS settings reboot the router by selecting **Maintenance > SysRestart > System Restart with Current Settings**.