

Quality of Service (QoS) Setup Guide (NB604n)

# NB604n and Quality of Service (QoS)

The following Quality of Service (QoS) settings offer a basic setup example, setting up 2 devices connecting to an NB604n router, one with the highest priority QoS priority data traffic and the other with the lowest priority QoS priority data traffic flow. All other data packet traffic through the router assumes a default best effort setting.

Quality of Service refers to the reservation of bandwidth resources on the NB604n router to provide different priorities to different applications, users, or data flows, or to guarantee a certain level of performance to a data flow.

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 guide sets up QoS with two devices (PC and laptop) connecting via ethernet cable to an NB604n router. One device (PC) is assigned high priority traffic while the other device (laptop) is assigned a low priority. Before Quality of Service can be implemented the first step involves reserving an IP address for each device linking the MAC address of each device to each IP address.

# Quality of Service (QoS) Setup: Part 1 Reserve IP addresses

It is necessary to reserve an IP address for a device that is connecting to the NB604n router so that the QoS settings can manage each device and set data packet traffic priority by MAC and IP address.

- 1. Navigate to <a href="http://192.168.1.1">http://192.168.1.1</a> in a web browser.
- 2. Enter 'admin' (without quotes) for both the username and password and click Ok.
- 3. Select Advanced > LAN > IPv4 Autoconfig.

NotPomm.

MGLGUMM			
Device Info	Local Area Netwo	ork (LAN) Setup	
Basic setup	Configure the Broad	dhand Bouter IB Address and Subpat Mask for LAN interface. GroupName	ault 🔻
Advanced Setup	Configure the broad	uband Router IF Address and Subnet Mask for EAR interface. GroupHame	
WAN Service	IP Address:	192, 168, 1, 1	
LAN	Subnet Mask	255 255 255 0	
IPv4 Autoconfig	Sublictingski	233,233,233,0	
IPv6 Autoconfig	Enable IGMP Spr	pooping	
NAT		looping	
Security			
Parental Control	Enable LAN side	e firewall	
Quality of Service			
Routing	O Disable DHCP Set	erver	
DNS	Enable DHCP Ser	erver	
DSL	Start IP Address:	192.168.1.2	
UPnP	End IP Address:	192.168.1.254	
DNS Proxy	Leased Time (hour):	: 24	
Packet Acceleration	Static IP Lease List:	: (A maximum 32 entries can be configured)	
Storage Service	Edit DH(	HCP Option Edit DHCP Option 60 DHCP Advance setup	
Interface Grouping			
IPSec	MAC Addre	ress IP Address Remove	
Power Management	Add Entries	es Remove Entries	
Wireless	-		
Diagnostics			
Management			

Configure the second IP Address and Subnet Mask for LAN interface

Apply/Save

4. Click the **Add Entries** button.

- 5. Enter the MAC address of the computer/device you are connecting to the router. The MAC address is a 12 character set of numbers and letters (A-F), with every 2 characters separated by a colon.
- 6. Enter the IP address of the computer/device. This is the local address in the range of 192.168.1.x where x = 2 to 254.



- 7. Click the **Apply/Save** button.
- 8. Complete steps 4 through 7 for each device connected to the NB604n router. Each entry will be listed in the Static IP Lease List as shown below.

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NetGomm											
Device Info	Local Area Network (LAN) Setup										
Basic setup											
Advanced Setup	Configure the Broadband Router IP Address and Subnet Mask for LAN Interface. GroupName Default										
Layer 2 Interface	ID Address: 192 168 1 1										
WAN Service	0.4555 Model										
IDu4 Autoconfig	Subnet Mask: 255.255.0										
IPv6 Autoconfig	Enable IGMP Spooning										
NAT											
Security	Enable LAN side firewall										
Parental Control											
Quality of Service	© Disable DHCP Server										
Routing	Enable DHCP Server										
DNS	Start IP Address: 192.168.1.2										
DSL	End IP Address: 192.168.1.254										
UPnP	Leased Time (hour): 24										
DNS Proxy	Static IP Lease List: (A maximum 32 entries can be configured)										
Packet Acceleration	Edit DHCP Option Edit DHCP Option 60 DHCP Advance setup										
Storage Service											
Interface Grouping	MAC Address IP Address Remove										
Power Management	50:20:A1:34:0F:30 192.168.1.5										
Wireless	00:10:P2:24:04:22 102 168 1 10 🔲										
Diagnostics	00.10.02.07.04.23 132.100.1.10										
Management	Add Entries Remove Entries										

Configure the second IP Address and Subnet Mask for LAN interface

# **Quality of Service (QoS) Setup: Part 2 QoS Configuration Settings**

The following guide shows how to setup 2 devices to an NB604n router, one with high priority QoS, one with low priority QoS.

9. Select Advanced Setup > Quality of Service



10. Check the "Enable QoS" checkbox.

### 11. Select the **Default DSCP Mark** as **default(000000)**.

12. Click the **Apply/Save** button.

## High Priority QoS Queue Configuration

13. Select Advanced > Quality of Service > Queue Config.

evice Info asic setup dvanced Setup Layer 2 Interface WAN Service LAN	QoS Queue Setup In ATM mode, maximum 16 queues can be configured. In PTM mode, maximum 8 queues can be configured. For each Ethernet interface, maximum 4 queues can be configured. If you disable WMM function in Wireless Page, queues related to wireless will not take effects													
NAT	Name	Key	Interface	Scheduler	Precedence	Weight	DSL Latency	PTM Priority	Enable	Remove				
Security Parental Control	WMM Voice Priority	1	wl0	SP	1				Enabled					
Quality of Service Queue Config	WMM Voice Priority	2	wl0	SP	2				Enabled					
QoS Classification	WMM Video Priority	3	wl0	SP	3				Enabled	1				
Routing DNS	WMM Video Priority	4	wl0	SP	4				Enabled					
DSL UPnP	WMM Best Effort	5	wi0	SP	5				Enabled					
DNS Proxy	WMM Background	6	wl0	SP	6				Enabled	1				
Packet Acceleration	WMM Background	7	wl0	SP	7				Enabled					
Interface Grouping	WMM Best Effort	8	wl0	SP	8				Enabled					
Power Management	Default Queue	37	atm0	SP	8		Path0							

### 14. Click the **Add** button.

NetComm <sup>•</sup>		
Device Info	QoS Queue Config	guration
Basic setup Advanced Setup Layer 2 Interface WAN Service LAN	This screen allows y scheduler algorithm Note: For SP sche unique precedenc relative to others	tou to configure a QoS queue and assign it to a specific layer2 interface. The is defined by the layer2 interface. Eduling, queues assigned to the same layer2 interface shall have the set. Lower precedence value implies higher priority for this queues as a set of the same layer priority for the same layer pri
NAT	Click 'Apply/Save' to	save and activate the queue.
Security Parental Control	Name:	PC1HighPriority
Quality of Service Queue Config	Enable:	Enable •
QoS Classification Routing	Interface:	atm0(0_0_100)SP ·
DNS DSL	Precedence:	1 -
UPnP DNS Proxy	DSL Latency:	Path0 •
Packet Acceleration Storage Service		
Interface Grouping IPSec		Apply/Save

- 15. Enter a name of 15 characters or less to reflect the device will use high priority QoS eg. PC1HighPriority
- 16. Set **Enable** to "*Enable"*.
- 17. Set the **Interface** (Australian customers use *atm0(0\_8\_35)*, NZ customers use *atm0(0\_0\_100)*).
- 18. Enter a **Precedence**. For the highest priority set it to **1**. For the lowest priority use **3**.
- 19. Set the **DSL Latency** as **Path0**.
- 20. Click the **Apply/Save** button.

### Low Priority QoS Queue Configuration

### 21. Select Advanced > Quality of Service > Queue Config.

22. Click the Add button.

NetComm		
Device Info	QoS Queue Config	juration
Basic setup	This serves allows w	
Advanced Setup	scheduler algorithm	is defined by the layer2 interface
Layer 2 Interface	Note: For SP sche	duling, gueues assigned to the same layer2 interface shall have
WAN Service	unique precedenc	e. Lower precedence value implies higher priority for this queue
LAN	relative to others	
NAT	Click 'Apply/Save' to	save and activate the queue.
Security	Namo	DC2L owDriverity
Parental Control	Name.	PCZLOWPHOIIty
Quality of Service	Frahler	Frable
Queue Config	EndDie:	
QoS Classification	Interface	atm0(0_0_100)CD
Routing	Intenace:	auno(o_o_100)SP +
DNS	Durandanana	
DSL	Precedence:	3 •
UPnP	DCL Latanau	Dath0 -
DNS Proxy	DSL Latency:	Pathu 🔻
Packet Acceleration		
Storage Service		
Interface Grouping		Apply/Save
IPSec		hph/Jouro

23. Enter a name of 15 characters or less to reflect the device will use low priority QoS - eg. PC2LowPriority.

24. Set Enable to "Enable".

25. Set the Interface (Australian customers use atm0(0\_8\_35), NZ customers use atm0(0\_0\_100)).

26. Enter a **Precedence**. For the lowest priority set it to **3**. For the highest priority use **1**.

27. Set the **DSL Latency** as **Path0**.

28. Click the **Apply/Save** button.

## High Priority QoS Classification

## 29. Select Advanced > Quality of Service > QoS Classification.

NetComm														
Device Info Basic setup	QoS Cl	QoS Classification Setup A maximum 32 entries can be configured.												
dvanced Setup Layer 2 Interface WAN Service	Choose If you d	Choose Add or Remove to configure network traffic classes. If you disable WMM function in Wireless Page, classification related to wireless will not take effects												
LAN							CLASSI	FICATION CR	ITERI	4				
NAT Security	Class Name	Order	Class Intf	Ether Type	SrcMAC/ Mask	DstMAC/ Mask	SrcIP/ PrefixLength	DstIP/ PrefixLength	Proto	SrcPort	DstPort	DSCP Check	TOS Check	
Parental Control Quality of Service Queue Config QoS Classification Routing DNS						Add	Enable Remo	ove			·		<u>.</u>	

30. Click the **Add** button.

Device Info     Add Retwork Traffic Class Rule       Resis setup Advanced Setup Layer 2 Interface WMI Service Quality of Service Distantion Indicates It is not used for classification.     Image: Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Picture Pi	NetGomm			
Device Info     Add Network Traffic Class Rule       Basic setup     Advanced Stup       Advanced Stup     The cream cruates a traffic class rule to classify the updates traffic, suip quoue which defines the precedence and the interface and optionally overwrite to The Advanced Stup       UAW Service     That cream cruates a traffic class Rule       TAT     Traffic Class Name:       UAN     Traffic Class Name:       Parental Control     Rule Status:       Quality of Service     Specify Classification Criteria       Ots     Source MAC Address       Upp     Source MAC Address       Discuttoring     Source MAC Address       Destination MAC Address     Spicify Classification       Destination MAC Address     Spicify Classification Criteria       Descer Acceleration     Destination MAC Address       Destination MAC Address     Spicify Classification Criteria       Destination MAC Address     Spicify Classification       Destination MAC Address     Spicify Classification Criteria       Destination MAC Address     Spicify Classification Criteria       Differentisted Service Code Point (DSCP) Ch				
Device Info       Add Network Traffic Class Rule         Basic setup       Advanced Setup         Advanced Setup       The screen creates a traffic class rule to classify the updraam traffic, asign quuue which defines the precedence and the interface and optionally overwrite the IP hader DSCP byte. A rule consists of a class rule not activate the nule.         WAN Service       Traffic Class Rules         WAN Service       LAN         NAT       Rule Order:         Quality of Service       Specify Classification Criteria         Quality of Service       Specify Classification Criteria         Rotting       Specify Classification Criteria         Rotting       Specify Classification Criteria         Rotting       Source MAC Address         Source MAC Address       Specify Classification Criteria         Rotting       Destination MAC Address         Source MAC Address       Specify Classification Rule;         Proteooli       Trans ster cage for findged Interface(ROME:TO):         Interface Grouping       Precesoin         PBec       Destination MAC Address:         Dagnostics       Descrite Classification Quality         Proteool:       UDP/TCP Destination Pool (pDSCP) Check: *         Mark Boilt, priority:       Eff(101110) *         UDP/TCP Destination Quality       Specify Classificat				
Device Info       Add Hetwork Traffic Class Rule         Baic setup       Advanced Setup         Layer 2 Interface       The screen creates a trafic class rule to classify the updream traffic, asign quuee which defines the precedence and the interface and optionally overwrite the IP headed Conditions in this classification rule must be satisfied for the rule to take effect. Click 'Appl/Serve' to save and activate the rule.         VMNI Service       Traffic Class Name:       CLIHIphPriority         NAT       Rule Status:       Enable ▼         Quality of Service       Specify Classification Criteria       A blank criterion indicates it is not used for classification.         Quality of Service       Specify Classification Criteria       A blank criterion indicates it is not used for classification.         Notifie       Source MAC Address       Source MAC Address       Source MAC Address         Dissource MAC Address       Source MAC Address       Source MAC Address       Source MAC Address         Dissource MAC Address       Source MAC Address       Source MAC Address       Source MAC Address         Dissource MAC Address       Source MAC Address       Source MAC Address       Source MAC Address         Dispositios       Destination MAC Maks:       Eff(101110) ▼       Frien size rage for Bridged Interface(FROME: TO):       Eff(101110) ▼         Dispositios       Destination PActogen Address       Source PActors(Sourg				
Basic setup Advanced Setup Law 2 Interface WAN Service LM INT TAT Security Queue Config Queue Config Queue Mak Deltanton Pot (pot oportport): Queue Mak Deltanton Pot (pot oportport): Queue Config Queue Config Queue Config Queue Config Queue Config Queue	Device Info	Add Network Traffic Class Rule		
Advanced Setup Luyer 2 Interface WAN Service UAN Traffic Class Name: UAN Traff	Basic setup	The screen creates a traffic class rule to classify the unstream t	raffic assign queue which de	fines the precedence and the interface and optionally overwrite the IP header DSCP
Layer 2 Interface     'Apply/Save' to ave and activate the rule.       VAN Service     Traffic Class Name:       LAN     Rule Order:       Last	Advanced Setup	byte. A rule consists of a class name and at least one condition	n below. All of the specified o	onditions in this classification rule must be satisfied for the rule to take effect. Click
UAI       Traffic Class Name:       PC1HighPriority         NAT       Rule Order:       Last         NAT       Rule Order:       Last         Quality of Service       Specify Classification Criteria       Last         Quality of Service       Specify Classification Criteria       Abark criterion indicates it is not used for classification.         Dis       Specify Classification Criteria       Abark criterion indicates it is not used for classification.         Dis       Ether Type:       IP (0x600)         Dis       Source MAC Address       50:20:A1134:0F130         Dis Source MAC Mask:       Destination MAC Address:       Source IP Address(/Mask):         Interface foreign       Frame size rage for Bridged Interface(FROME:TO):       IP:168.1.5         Power Management       Differentiated Service Code Point (DSCP) Check:         Eff(101110)           UDP/TCP Destration Port (port or port:port):       UDP/TCP Destration Port (port or port:port):       UDP/TCP Destration Port (port or port:port):         Specify Classification Queue:               Mark B02.1p profry:       Imagement               Mark B02.1p profry:       Imagement <th>Layer 2 Interface</th> <th>'Apply/Save' to save and activate the rule.</th> <th></th> <th></th>	Layer 2 Interface	'Apply/Save' to save and activate the rule.		
IAT       Instructions (addres)       Pricing/Priority         Security       Rule Order:       Instructions         Queue Config       Specify Classification Criteria       A blank criterion indicates it is not used for classification.         Queue Config       A blank criterion indicates it is not used for classification.       Image: Classification Criteria         Rotting       Class Interface:       Image: Classification Criteria         Diss       Ether Type:       IP (0x800)         Diss       Ether Type:       IP (0x800)         Diss       Ether Type:       Image: Classification Criteria         Storage Service       Source MAC Address       Disposition         Diss Proxy       Source MAC Address       Disposition         Packet Acceleration       Destination MAC Address:       Image: Classification Criteria         Diss Proxy       Destination MAC Mask:       Image: Classification Results         Diss Proxy       Destination MAC Mask:       Image: Classification Results         Disses       Differentiated Service Code Point (DSCP) Check: Top       EF(101110)       Top         Partices       Disposition       Disposition Point (port or port;port):       Image: Classification Queue:       EF(101110)       Top         Wireless       Differentiated Service Code Point (DSCP): Tag VLAI	VAN Service	Tarffin Class Name	DOUG-ED-G-Ch.	
Nule Order:     LBR       Parental Control     Quelity of Service       Quese Config     Specify Classification Criteria       A blank criterion indicates it is not used for classification.     Image: Config       QoS Classification     Class Interface:       DNS     Ether Type:       DSL     Source MAC Address:       DNS     Source MAC Address:       DNS     Source MAC Address:       DNS     Destination MAC Mask:       DNS     Destination MAC Address:       Dist     Destination MAC Address:       Distore     Destination MAC Mask:       Interface Grouping     Frame site rage for Bridged interface(FROME:TO):       IPSec     Source IP Address/Mask):       Power Management     Destination MAC Mask:       Dispositics     Differentiated Service Code Point (DSCP) Check: TCP       Management     Differentiated Service Code Point (DSCP): TCP       Mat selet a classification queue. A blank mark or tag value means no change.       Mark 80:1: priority:     Differentiated Service Code Point (DSCP): Tag VLAN ID [0-4094];       Set Rate Control(kbps);     Dispositise	NAT	I rame Class Name:	PC1HighPriority	
Parental Control Quality of Service Quese Config Quese Config Quese Config QoS Classification Routing       Specify Classification Criteria A blank criterion indicates it is not used for classification.         Routing       Class Interface:       LAN         DHS       Ether Types       IP (0x800)         DSL       Source MAC Address       59:20:A1:24:0F:30         DNS Proxy       Source MAC Markes:       Image: Control (Control (C	Security	Rule Order:	Last V	
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Quee Config     A blank criterion indicates it is not used for classification.       Noting     A blank criterion indicates it is not used for classification.       DNS     Ether Type:       DSL     Source MAC Address       DNS Proxy     Source MAC Address:       Packet Acceleration     Destination MAC Mask:       Theraface Grouping     Frame size rage for Bridged interface(FROME:TO):       Theraface Grouping     Frame size rage for Bridged interface(FROME:TO):       Theraface Grouping     Frame size rage for Dridged interface(FROME:TO):       Theraface Grouping     Frame size rage for Dridged interface(FROME:TO):       Togenetics     Differentiated Service Code Point (DSCP) Check:         Power Management     Differentiated Service Code Point (DSCP) Check:         Wireless     Differentiated Service Code Point (DSCP) Check:         DipTCP Source Port (port or portport):     UDP/TCP Destination Port (port or portport):       UDP/TCP Destination Queue:     Mark acting queue: A blank mark or tag value means no change.       Assign Classification Queue:     Mark bilferentiated Service Code Point (DSCP):         Mark 802.1p priority:     Tag VLAN ID [0-4094];       Set Rate Control(kbps):     0	Quality of Service	Specify Classification Cuitovia		
QoS Classification       Class Interface:       LAN         DNS       Ether Type:       IP (0x800)         DSL       Source MAC Address       50:20:A1134:0F:30         DNS Proxy       Source MAC Make:       Image: Classification         Data       Destination MAC Make:       Image: Classification         Storage Service       Destination MAC Make:       Image: Classification         Interface Grouping       Frame size rage for Bridged Interface(FROME:TO):       Image: Classification         Power Management       Destination MAC Makel;       Image: Classification Results         Wireless       Differentiated Service Code Point (DSCP) Check:       EF(101110)         Diagnostics       Protocol:       TCP         Management       UDP/TCP Source Port (port or port:port):       Image: Classification queue: A blank mark or tag value means no change.         Mark Differentiated Service Code Point (DSCP):       Mark 80:1p priority:       Image: Proso@atm0&Path0&Key38&Pre1        Empose@atm0&Path0&Key3&B&Pre1          Mark Differentiated Service Code Point (DSCP):       Mark 80:1p priority:       Image: Proso@atm0&Path0&Key3&B&Pre1        Empose@atm0&Path0&Key3&B&Pre1          Mark 80:1p priority:       Tag VLAN ID [0:4094]:       Image: Proso@atm0&Path0&Key3&B&Pre1        Empose@atm0&Path0&Key3&B&Pre1        Empose@atm0&Path0&Key3&B&Pre1        Image: Proso@atm0&Pat	Queue Config	A blank criterion indicates it is not used for classification.		
Routing DNS       Class Interface:       LAN         DNS       Ether Type:       IP (0x800)         UPnP       Source MAC Address       50:20:A1:34:0F:30         DNS Proxy       Packet Acceleration       Destination MAC Address:         Destination MAC Address:       Image: Comparison of the	QoS Classification			
DISL       Ether Type:       IP (0x800)         UPnP       Source MAC Address       50:20:A1:34:0F:30         DIS Proxy       Source MAC Mask:       Image: Control (Control (Contro (Contro (Control (Control (Control (Contro) (Control (	Routing	Class Interface:	LAN	<b>▼</b>
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Packet Acceleration       Destination MAC Address:         Storage Service       Destination MAC Mask:         Interface Grouping       Frame size rage for Bridged interface(FROME:TO):         IPSec       Source IP Address(Mask):         Power Management       Destination IP Address(Mask):         Wireless       Differentiated Service Code Point (DSCP) Check:         Protocol:       TCP         UDP/TCP Source Port (port or port:port):       UDP/TCP Destination Port (port or port:port):         UDP/TCP Destination Queue:       Ppopo0&atm0&Prath0&Key38&Pre1         Mark Bifferentiated Service Code Point (DSCP):       S         Mark Bifferentiated Service Code Point (DSCP):       S         Straign Classification Queue:       Ppopo0&atm0&Prath0&Key38&Pre1         Mark Bifferentiated Service Code Point (DSCP):       S         Mark Differentiated Service Code Point (DSCP):       S         Mark B02.1p priority:       Tag VLAN ID [0-4094]:         Set Rate Control(kbps):       0	DNS Proxy	Source MAC Mask:		
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IPSec       Source IP Address[/Mask]:       192.168.1.5         Power Management       Destination IP Address[/Mask]:       192.168.1.5         Diagnostics       Differentiated Service Code Point (DSCP) Check:       EF(101110)         Protocol:       TCP         UDP/TCP Source Port (port or port:port):       UDP/TCP Destination Port (port or port:port):         UDP/TCP Destination Results       Must select a classification queue. A blank mark or tag value means no change.         Assign Classification Queue:       pppoa0&atm0&Path0&Key38&Pre1          Mark 802.1p priority:       5         Tag VLAN ID [0-4094]:       0         Set Rate Control(kbps):       0	Interface Grouping	Frame size rage for Bridged interface(FROME:TO):		
Power Management       Destination IP Address[/Mask]:         Wireless       Differentiated Service Code Point (DSCP) Check: <ul> <li>Protocol:</li> <li>UDP/TCP Source Port (port or port:port):</li> <li>UDP/TCP Destination Port (port or port:port):</li> <li>UDP/TCP Destination Port (port or port:port):</li> <li>UDP/TCP Destination Queue. A blank mark or tag value means no change.</li> </ul> Assign Classification Queue:         pppoa0&atm0&Path0&Key38&Pre1 <ul> <li>EF(101110)</li> <li>Mark 202.1p priority:</li> <li>Tag VLAN ID [0-4094]:</li> <li>Set Rate Control(kbps):</li> </ul>	IPSec	Source IP Address[/Mask]:	192.168.1.5	
Wireless       Differentiated Service Code Point (DSCP) Check:        EF(101110)          Diagnostics       Protocol:       TCP          Management       UDP/TCP Source Port (port or port:port):       UDP/TCP Destination Port (port or port:port):         Specify Classification Results       Must select a classification queue. A blank mark or tag value means no change.         Assign Classification Queue:       pppoa0&atm0&Path0&Key38&Pre1          Mark Differentiated Service Code Point (DSCP):        5         Tag VLAN ID [0-4094]:       0         Set Rate Control(kbps):       —	Power Management	Destination IP Address[/Mask]:		
Dragnostics       Protocol:       TCP         Management       UDP/TCP Source Port (port or port:port):       UDP/TCP Destination Port (port or port:port):         Specify Classification Results       Must select a classification queue. A blank mark or tag value means no change.         Assign Classification Queue:       pppoa0&atm0&Path0&Key38&Pre1 ▼         Mark Differentiated Service Code Point (DSCP):       EF(101110) ▼         Mark 802.1p priority:       5         Tag VLAN ID [0-4094]:       0         Set Rate Control(kbps):       —	Wireless	Differentiated Service Code Point (DSCP) Check: 🔻	EF(101110)	•
UDP/TCP Source Port (port or port;port): UDP/TCP Destination Port (port or port;port): Specify Classification Results Must select a classification queue. A blank mark or tag value means no change. Assign Classification Queue: Mark Differentiated Service Code Point (DSCP):  Pppoa0&atm0&Path0&Key38&Pre1 Mark 802.1p priority: Tag VLAN ID [0-4094]: Set Rate Control(kbps):	Management	Protocol:	TCP	•
UDP/TCP Destination Port (port or port:port):  Specify Classification Results Must select a classification queue. A blank mark or tag value means no change.  Assign Classification Queue:  Mark Differentiated Service Code Point (DSCP):  Pppoa0&atm0&Path0&Key38&Pre1  Mark 802.1p priority:  Tag VLAN ID [0-4094]: Set Rate Control(kbps):	- Management	UDP/TCP Source Port (port or port:port):		
Specify Classification Results         Must select a classification queue. A blank mark or tag value means no change.         Assign Classification Queue:       pppoa0&atm0&Path0&Key38&Pre1 ▼         Mark Differentiated Service Code Point (DSCP):       EF(101110) ▼         Mark 802.1p priority:       5         Tag VLAN ID [0-4094]:       0         Set Rate Control(kbps):       —		UDP/TCP Destination Port (port or port:port):		
Specify Classification Results         Must select a classification queue. A blank mark or tag value means no change.         Assign Classification Queue:       pppoa0&atm0&Path0&Key38&Pre1 ▼         Mark Differentiated Service Code Point (DSCP):       ▼         Mark 802.1p priority:       5         Tag VLAN ID [0-4094]:       0         Set Rate Control(kbps):       —				
Assign Classification Queue: pppoa0&atm0&Path0&Key38&Pre1 Mark Differentiated Service Code Point (DSCP): Mark 802.1p priority: 5 Tag VLAN ID [0-4094]: 0 Set Rate Control(kbps):		Specify Classification Results Must select a classification queue. A blank mark or tag value n	neans no change.	
Mark Differentiated Service Code Point (DSCP):     EF(101110)       Mark 802.1p priority:     5       Tag VLAN ID [0-4094]:     0       Set Rate Control(kbps):		Assign Classification Queue:	pppoa0&atm0&Path	0&Key38&Pre1 ▼
Mark 802.1p priority:     5       Tag VLAN ID [0-4094]:     0       Set Rate Control(kbps):		Mark Differentiated Service Code Point (DSCP):	EF(101110)	<b>•</b>
Tag VLAN ID [0-4094]: 0 Set Rate Control(kbps):		Mark 802.1p priority:	5	•
Set Rate Control(kbps):		Tag VLAN ID [0-4094]:	0	
		Set Rate Control(kbps):		
Apply/Save			Apply/S	Save

- 31. Enter a Traffic Class Name reflecting the High Priority QoS rule; eg. PC1HighPriority.
- 32. Leave the **Rule Order** as **Last**.

#### 33. Set the Rule Status to Enable.

- 34. Set the Class Interface according to how the device connects to the router. In the example above LAN is selected. Other options are **Wireless**, Local and USB.
- 35. Set the **Ether Type** to **IP(0x800)**. Other options include ARP(0x8086), Ipv6(0x86DD), PPPoE\_DISC(0x8863), 8865(0x8865), 8866(0x8866), 8021Q(0x8100).
- 36. Enter the **Source MAC Address** of the device, the unique 12 character signature with every 2 characters separated by a colon(:), that you previously entered to reserve the device's IP address.
- 37. Enter the **Source IP Address** of the device that you previously entered into the Static IP Lease List, in the range of 192.168.1.x In the example above the IP address is 192.168.1.5.
- 38. Enter a **Destination MAC Address** if the connection is to a single device. This is useful for VPN connections. If you wish the destination MAC address to be any address leave the field blank.
- 39. Enter a **Destination IP Address** if the connection is to a single device. This is useful for VPN connections. If you wish the destination IP address to be any address leave the field blank.
- 40. Enter a **Destination Subnet Mask** if you have entered a Destination MAC address and Destination IP address. This would normally be 255.255.255.0 unless your system administrator advises otherwise. If you have not entered a Destination MAC or IP address leave the field blank.

#### 41. Set the Differentiated Service Code Point (DSCP) Check to EF(101110).

- 42. Set the Protocol to TCP. Other options include UDP, ICMP or IGMP.
- 43. Set **\*Assign Classification Queue**" to Priority 1 (in the example above pppoa0&atm0&Path0&Key38&Pre1). Other options or priority 2 and 3. Priority 1 gives the highest priority with priority 3 being the lowest.

### 44. Set Mark Differentiated Service Code Point (DSCP) as EF(101110).

- 45. Set **Mark 802.1p Priority** as **5**. In the scale 0-7, 0 is best effort, 6 and 7 are reserved for networking performance so set 5 as the highest priority.
- 46. Click the **Apply/Save** button.

#### Low Priority QoS Classification

#### 47. Select Advanced > Quality of Service > QoS Classification.

48. Click the **Add** button.

NetComm												
Device Info	Add Network Traffic Class Rule											
Basic setup												
Advanced Setup	The screen creates a traffic class rule to classify the upstream t byte. A rule consists of a class name and at least one condition	traffic, assign queue which defines the precedence and the interface and optionally overwrite the IP header DSCP n below. All of the specified conditions in this classification rule must be satisfied for the rule to take effect. Click										
Layer 2 Interface	'Apply/Save' to save and activate the rule.											
WAN Service												
LAN	Traffic Class Name:	PC2LowPriority										
NAT	Rule Order:	Last 🔻										
Security	Rule Status:	Enable 🔻										
Parental Control												
Quality of Service	Specify Classification Criteria											
QoS Classification	A blank criterion indicates it is not used for classification,											
Routing	Class Interface:	I AN 🔻										
DNS	Ether Type:	IP (0~800)										
DSL	Course MAC Address	00-10-02-24-04-22										
UPnP	Source MAC Address	00:10:B2:34:0A:23										
DNS Proxy	Source MAC Mask:											
Packet Acceleration	Destination MAC Address:											
Storage Service	Destination MAC Mask:											
Interface Grouping	Frame size rage for Bridged interface(FROME:TO):											
Power Management	Source IP Address[/Mask]:	192.168.1.10										
Wireless	Destination IP Address[/Mask]:											
Diagnostics	Differentiated Service Code Point (DSCP) Check:	AF11(001010)										
Management	Protocol:	TCP 🔹										
	UDP/TCP Source Port (port or port:port):											
	UDP/TCP Destination Port (port or port:port):											
	Specify Classification Results Must select a classification queue. A blank mark or tag value r	Specify Classification Results Must select a classification queue. A blank mark or tag value means no change.										
	Assign Classification Queue:	pppoa0&atm0&Path0&Key39&Pre3 ▼										
	Mark Differentiated Service Code Point (DSCP):	AF11(001010) 🔻										
	Mark 802.1p priority:	0 🔻										
	Tag VLAN ID [0-4094]:	0										
	Set Rate Control(kbps):											
		Apply/Save										

49. Enter a Traffic Class Name reflecting the High Priority QoS rule; eg. PC2LowPriority.

#### 50. Leave the Rule Order as Last.

### 51. Set the Rule Status to Enable.

- 52. Set the Class Interface according to how the device connects to the router. In the example above LAN is selected. Other options are **Wireless**, Local and USB.
- 53. Set the **Ether Type** to **IP(0x800)**. Other options include ARP(0x8086), Ipv6(0x86DD), PPPoE\_DISC(0x8863), 8865(0x8865), 8866(0x8866), 8021Q(0x8100).
- 54. Enter the **Source MAC Address** of the device, the unique 12 character signature with every 2 characters separated by a colon(:), that you previously entered to reserve the device's IP address.

- 55. Enter the **Source IP Address** of the device that you previously entered into the Static IP Lease List, in the range of 192.168.1.x In the example above the IP address is 192.168.1.10.
- 56. Enter a **Destination MAC Address** if the connection is to a single device. This is useful for VPN connections. If you wish the destination MAC address to be any address leave the field blank.
- 57. Enter a **Destination IP Address** if the connection is to a single device. This is useful for VPN connections. If you wish the destination IP address to be any address leave the field blank.
- 58. Enter a **Destination Subnet Mask** if you have entered a Destination MAC address and Destination IP address. This would normally be 255.255.255.0 unless your system administrator advises otherwise. If you have not entered a Destination MAC or IP address leave the field blank.
- 59. Set the Differentiated Service Code Point (DSCP) Check to AF11(001010).
- 60. Set the **Protocol** to **TCP**. Other options include UDP, ICMP or IGMP.
- 61. Set **\*Assign Classification Queue**" to Priority 3 (in the example above pppoa0&atm0&Path0&Key39&Pre3). Other options are priority 1 and 2. Priority 1 gives the highest priority with priority 3 being the lowest.
- 62. Set Mark Differentiated Service Code Point (DSCP) as AF11(001010).
- 63. Set **Mark 802.1p Priority** as **0**. In the scale 0-7, 0 is best effort, 6 and 7 are reserved for networking performance so set 0 as the lowest priority.
- 64. Click the **Apply/Save** button.
- 65. You now have 2 Quality of Service rules implemented for 2 devices connecting to the NB604n router.

etGomm																							
ice Info c setup anced Setup yer 2 Interface NI Service	<b>QoS Classifica</b> Choose Add or If you disable V	ition Set Remove WMM fur	tup A to con action in	figure n NWirele	num 32 entries c etwork traffic class ss Page, classificati	an be cont es. ion related	fi <b>gured.</b> to wireless will r	not take effects															
N							CLASSIFIC	ATION CRITER	IA							CLAS	SIFIC	ATION R	ESULTS				
T	Class Name	Order	Class Intf	Ether Type	SrcMAC/ Mask	DstMAC/ Mask	SrcIP/ PrefixLength	DstIP/ PrefixLength	Proto	SrcPort	DstPort	DSCP Check	TOS Check	802.1P Check	Quéué Kéy	DSCP Mark	TOS Mark	802.1P Mark	VlanID Tag	Rate Control	Frame size	Enable	Remov
ental Control	PC1HighPriority	y 1	LAN	IP	50:20:A1:34:0F:30		192.168.1.5		тср			EF			38	EF		5	0			1	
lity of Service	PC2LowPriority	2	LAN	IP	00:10:82:34:0A:23		192.168.1.10		тср			AF11			39	AF11		0	0		[	4	
uS Classification tring S L nP S Proxy ket Acceleration trage Service erface Grouping iec wer Management less nostics agement									Add	(Enable)	) (Remo												

- 66. Select **Management** > **Settings** > **Restore Default**. Click the **Restore Default Settings** button to restart the router and save the new settings.
- 67. To test your Quality of Service settings try running speed-tests ( <u>http://speedtest.net</u> ) on both pcs/devices **simultaneously**.