

SHL AB

IPv6 BGP config for "small" ISP with Hurricane Electric peering

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Objective

- To get our RIPE assigned IPv6 running even if our internet provider is not providing IPv6
- BGP IPv6 Peering with HE
- OSPFv3 internal

Think FIRST!

- Google Authenticator for RIPE and HE account
- Resource Certification at RIPE
- Route Origin Authorisations (ROAs)
- Route Object

BGP Peering HE

- Get an account with HE first
- Edit or add 'admin-c' in RIPE database
- Edit or add 'tech-c' in RIPE database
- Send e-mail to <u>ipv6@he.net</u>
- Create BGP Tunnel

BGP Peering HE



Create New BGP Tunnel

You currently have 1 of 5 tunnels configured.

Through this interface you can request a static, IPv6 BGP tunnel that will receive full transit routes from AS6939 and be able to announce your RIR allocated IPv6 space. To minimize any issues or delays in turnup please note the following:

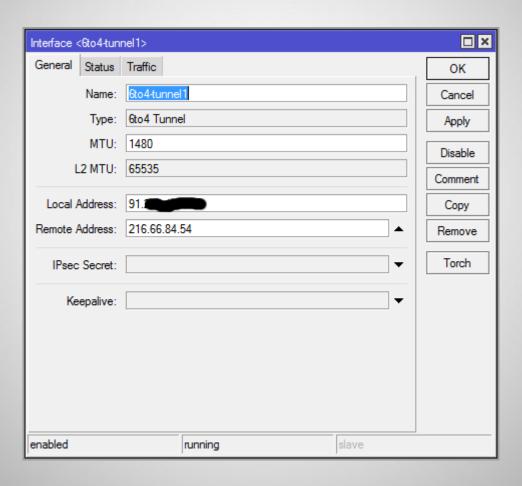
- Your ASN must be allocated from a RIR. (Public ASNs only)
- We must be able to validate that this is your ASN/address space (SWIP entries or a LoA will do)
- We will prefix-filter your BGP session. If you are adding new announcements, please let us know via an email to ipv6@he.net.
- We do not filter traffic. However, we do reserve the right to filter at our sole discretion as needed.
- If this is your first tunnel for this ASN, you should receive a message to your account's
 email address. Please follow the instructions in the email to complete the verification
 process. During this period the tunnel and BGP session will be unavailable. If you have
 not heard from us within 48 hours then please email ipv6@he.net.

IPv4 Endpoint (Your side):		
Your ASN:		
Prefixes announced:		
		.:
Available Tunnel Servers:	_Asia	
	O Hong Kong, HK	216.218.221.2
	Europe	
	O Frankfurt, DE	216.66.84.54
	O London, UK	216.66.84.50
	North America	
	O Ashburn, VA, US	216.218.229.118
	O Fremont, CA, US	64.71.128.26
	O Miami, FL, US	216.66.70.2

Let's do it live

- This is done to my home router not to HE
- No extra tunnel to HE as I already have the main one running.

Setup the 6to4 tunnel



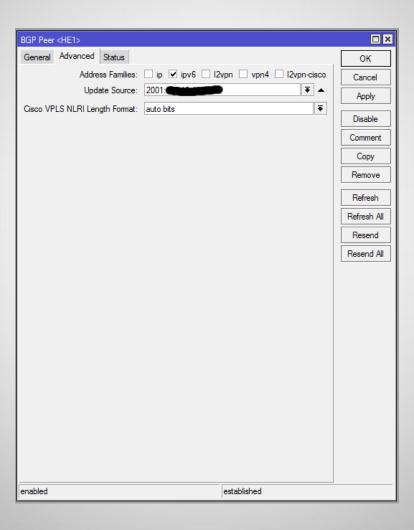
Setup the BGP instance

BGP Instance <satellith< th=""><th>nuset></th><th>□×</th></satellith<>	nuset>	□×
Name:	satellithuset	OK
AS:	44	Cancel
Router ID:	91.2	Apply
	Redistribute Connected	Disable
	Redistribute Static Redistribute RIP	Comment
	✓ Redistribute OSPF	Сору
	Redistribute Other BGP	Remove
Out Filter:	BGP-ut ▼	
Confederation:	▼	
Confederation Peers:	\$	
Cluster ID:	▼	
Routing Table:	▼	
	Client To Client Reflection	
	Ignore AS Path Length	
enabled		

Setup the BGP peer

BGP Peer <he1></he1>				□×
General Advanced St	atus			ОК
Name:	HE1			Cancel
Instance:	satellithuset		₹	Apply
Remote Address:	2001:			Disable
Remote Port:			•	Comment
Remote AS:	6939			Сору
TCP MD5 Key:			•	Remove
Nexthop Choice:	default		₹	Nelliove
	Multihop			Refresh
	Route Reflect			Refresh All
Hold Time:	180	1	s	Resend
Keepalive Time:			•	Resend All
TTL:	default		₹	
Max Prefix Limit:			•	
Max Prefix Restart Time:			•	
In Filter:			Ŧ	
Out Filter:			₹	
			1_	
AllowAS In:	Remove Private AS			
	AS Override			
D.C. 11.011.1			-	
Default Originate:	never Passive		∓	
	Use BFD			
enabled		established		

Setup the BGP peer



Setup the BGP peer

BGP Peer <he1></he1>			□×
General Advanced	Status		ОК
Remote ID:	72.52.92.150		Cancel
Local Address:	2001:		Apply
Uptime:	3d 05:14:30		Disable
Prefix Count:	26275		Comment
Updates Sent:	1		Сору
Updates Received:	114 542		Remove
Withdrawn Sent:			Refresh
Withdrawn Received:	12 073		Refresh All
Remote Hold Time:	180 s		Resend
Used Hold Time:	180 s		Resend All
Used Keepalive Time:	60 s		
	✓ Refresh Capability		
	AS4 Capability		
enabled		established	

BGP Networks

BGP Netwo	ork <2a05:b880::/29>	□×
Network:	80::/29	ОК
	Synchronize	Cancel
		Apply
		Disable
		Сору
		Remove
enabled		

BGP Aggregates

BGP Aggregate <2a0	5:b880::/29>	□×
Instance:	satellithuset ₹	ОК
Prefix:	80::/29	Cancel
	✓ Summary Only Inherit Attributes	Apply
	✓ Include IGP	Disable
Attribute Filter:	₹	Сору
Suppress Filter:	₹	Remove
Advertise Filter:	=	
Routes Used Count:	6	
enabled		

OSPFv3

- Quick Start-up
- Interface settings
- Instance settings
- No need for public IPv6 addresses on routing interfaces

OSPF instances

OSPFv3 Instance <default></default>		□×
General Metrics Status		OK
Name	default	Cancel
Router ID	0.0.0.0	Apply
Redistribute Default Route	always (as type 1)	Disable
Redistribute Connected Routes	as type 1 ▼	Comment
Redistribute Static Routes	no 🔻	Сору
Redistribute RIP Routes	no Ŧ	Remove
Redistribute BGP Routes	no 🔻	
Redistribute Other OSPF Routes	no 🔻	
enabled	default	

OSPF Interface

OSPFv3 <ether10></ether10>			□×
General Status			OK
Area:	backbone	₹	Cancel
Interface:	ether10	₹	Apply
Cost:	10		Disable
Priority:	1		Сору
Network Type:	default	₹	Remove
Instance ID:	0		
	Passive		
	Use BFD		
Retransmit Interval:	5	s	
Transmit Delay:	1	s	
Hello Interval:	10	s	
Router Dead Interval:	40	s	
enabled passive	inactive State	: design	ated router



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