

Internet Engineering Task Force
Internet-Draft
Intended status: Informational
Expires: September 13, 2012

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March 12, 2012

Route Flap Damping Deployment Status Survey
draft-shishio-grow-isp-rfd-implement-survey-04

Abstract

BGP Route Flap Damping [[RFC2439](#)] is a mechanism that targets route stability. It penalizes routes that flap with the aim of reducing CPU load on the routers.

But it has side-effects. Thus, in 2006, RIPE recommended not to use Route Flap Damping (see [[RIPE-378](#)]).

Now, some researchers propose to turn RFD, with less aggressive parameters, back on [[draft-ymbk-rfd-usable](#)].

This document describes results of a survey conducted among service provider on their use of BGP Route Flap Damping.

Status of this Memo

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1. Survey Purpose

RIPE published some recommendations such as [[RIPE-178](#)], [[RIPE-210](#)], [[RIPE-229](#)] and [[RIPE-378](#)].

The purpose of this survey is to understand the current usage and requirements of Route Flap Damping [[RFC2439](#)] among service providers.

2. Survey's target and period

2.1. For Japan

Target: Japan Network Operator Group janog@janog.gr.jp

Period: Jan 28,2011 - Feb 12,2011

2.2. For Global

Target: All operators who has answered the survey
<https://www.surveymonkey.com/s/rfd-survey>.

We posted this document to the following mailing list.

North American Network Operators Group nanog@nanog.org
RIPE Routing Working Group routing-wg@ripe.net
Asia Pacific Operators Forum apops@apops.net
Africa Network Operators Group afnog@afnog.org
South Asian Network Operators Group sanog@sanog.org
Latin America and Caribbean Region Network Operators Group
lacnog@lacnic.net

Period:Mar 7,2011 - May 25,2011

3. Survey Results

3.1. Q1.Which is the best description of your job role?

3.1.1. Japan

This question did not exist for Japan version.

3.1.2. Global

BGP operator:27
 Researcher:1
 Engineer of vendor:3
 Engineer of Network/System Integrator:13
 Student:0
 Other:0

3.2. Q2.Do you use Route Flap Damping ?

Answer	Japan	Global	Total Number	Percentage[%]
YES	5	8	13	20.6
NO	8	36	49	77.8
Skipped Q2.	1	0	1	1.6

3.3. Q3.If you select No on Q2,why?

Answer	Japan	Global	Total Number	Percentage[%]
Do not have the need	3	7	10	19.6
Did not know about the feature	2	3	5	9.8
No benefits expected	3	7	10	19.6
Customers would complain	1	4	5	9.8
Because I read [RIPE-378]	2	13	15	29.4
Other	3	3	6	11.8

1 person answered Q3,even if he selected "Yes" on Q2.

3.4. Q4.If you select Yes on Q2,what parameter do you use?

Answer	Japan	Global	Total Number	Percentage[%]
Default parameters	3	3	6	40.0
[RIPE-178]	0	1	1	6.7
[RIPE-210]	0	0	0	0.0
[RIPE-229]	0	1	1	6.7
Other	3	4	7	46.7

1 person answered Q4, even if he selected "No" on Q2.

3.5. Q5.Do you know Randy Bush et. al's report ''Route Flap Damping Considered Usable?''

Answer	Japan	Global	Total Number	Percentage[%]
YES	12	21	33	52.4
NO	7	22	29	46.0
Skipped Q5.	0	1	1	1.6

One person skipped Q2, but answered Q5.

3.6. Q6.IOS's max-penalty is currently limited to 20K. Do you need this limitation to be relaxed to over 50K?

Answer	Japan	Global	Total Number	Percentage[%]
YES	10	14	24	38.1
NO	9	23	32	50.8
Skipped Q6.	0	7	7	11.1

3.7. Q7.According to [[draft-ymbk-rfd-usable](#)], Suppress Threshold should be set to 6K.Do you think the default value on implementations should be changed to 6K?''

Answer	Japan	Global	Total Number	Percentage[%]
YES	N/A	17	17	38.6
NO	N/A	18	18	40.9
Skipped Q7.	N/A	9	9	20.5

This question did not exist for Japan version.

3.8. Q8.If you have any comments, please fill this box.

Free format

3.8.1. Japan

-Our peer seems to have damping enabled, and our prefix gets damped sometimes.

-We do not enable damping because we think that customers want a non-damped route.

-From the perspective of a downstream ISP, if our upstream told us that an outage occurred because a route was damped, I may call and ask "is it written in the agreement that you will do this?"

-We use damping pretty heavily

-I had RFD turned on until this morning when I discovered our router has CSCtd26215 issues. I would like to turn on a "useful" RFD.

3.8.2. Global

-Statistical reports from big Service Providers may better visualize the situation.

-best current practices is nice, but always needs to be adjusted to reflect local network settings.

-We used RFD in the past and came to the conclusion that we do not want to use RFD any more. We still have it configured to be able to get Flap statistics out of our Cisco boxes, but no prefixes get dampended

-We recently removed all RFD from the configs due to the information read on the topic among the preso's on the NANOG Archive.

-after seeing this survey, I read the draft; sounds promising; would be nice to see vendors start to implement it.

-Q3, other: Juniper RFD is broken, default values count penalty for both update and withdrawal, and they would not fix that. No clear motivation for us, has caused outage when our customers (with primary and backup connection to us) had a flapping link.

-Strong desire to see the path vector penalized rather than the prefix.

4. Analysis

Operator's reason why RFD disable, it depends on position of BGP network.

If the network is stub and the router has enough resource against flapping, Route Flap Damping does not really need. In this case, if the upstream ISP enabled Route Flap Damping, the downstream complained

about this. The survey shows the result in Q8.

-Our peer seems to have damping enabled, and our prefix gets damped sometimes.

-We do not enable damping because we think that customers want a non-damped route.

-From the perspective of a downstream ISP, if our upstream told us that an outage occurred because a route was damped, I may call and ask "is it written in the agreement that you will do this?"

Also, total of 5 people selected "Customer would complain" as reason of Route Flap Damping disable.

This is good example as current too damping RFD is harmful. RFD targets are to protect customer resource such as CPU and provide stable internet reachability to customer, but current RFD would be disaffection.

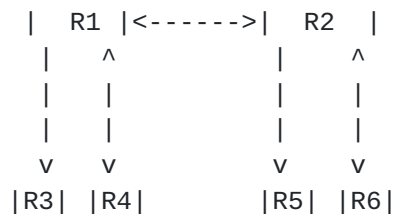


Figure 1

Figure.1 shows BGP topology. R1 and R2 is big service provider. R3 buy transit from R1. R4 peering with R1. R5 buy transit from R2. R6 peering with R2. R1 enabled Route Flap Damping and R2 disabled Route Flap Damping. In this case, R3 and R4 would complain to R1, because internet route and itself are often disappeared due to too damping. R5 and R6 would not complain about Route Flap Damping. But if once the internet would be unstable, the influence will be reach to all of R2, R5 and R6 even though R1, R3 and R4 are safe.

We can recognize the people who selected "NO" on Q2 and "Yes" on "YES" on Q6 are really expecting implementation of [\[draft-ymbk-rfd-usable\]](#) on the router. The total number is 18.

Parameter implementation differs among different vendors. To avoid operation complexity, [\[RFC2439\]](#) might need to redefine.

5. Summary of data

From the survey we see that there are many service providers with RFD disabled. The reason varies among providers, but it is clear that there are those who wish that RFD was made useful.

[[draft-ymbk-rfd-usable](#)] describes how to improve RFD with minor changes to some parameters. From the comments in the survey, the most significant fear of enabling RFD is its impact on customers.

6. Acknowledgements

We thank the 63 respondant to this survey.

7. IANA Considerations

This document has no actions for IANA.

8. Security Considerations

This document has no security considerations.

9. References

9.1. Normative References

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[RIPE-378]

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[Route Flap Damping Considered Usable?]

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Appendix A. Additional Stuff

This becomes an Appendix.

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