

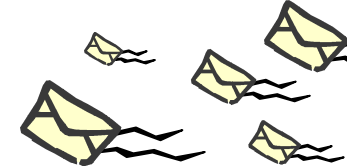


from BGPlay to iBGPlay

graphical inspection of **your** routing data

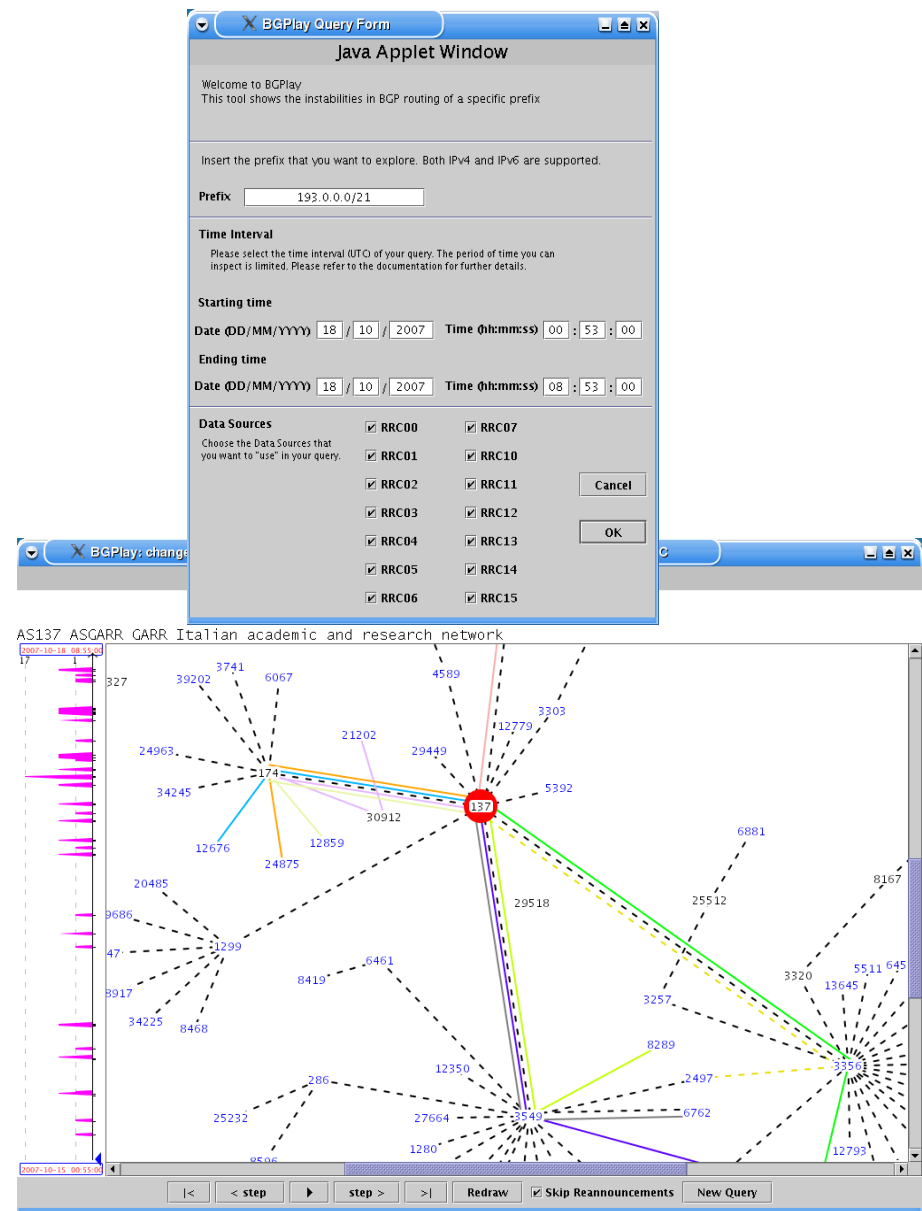
maurizio pizzonia

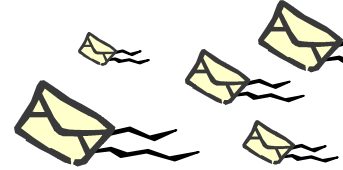
BGPlay team - compunet@dia.uniroma3.it



BGPlay

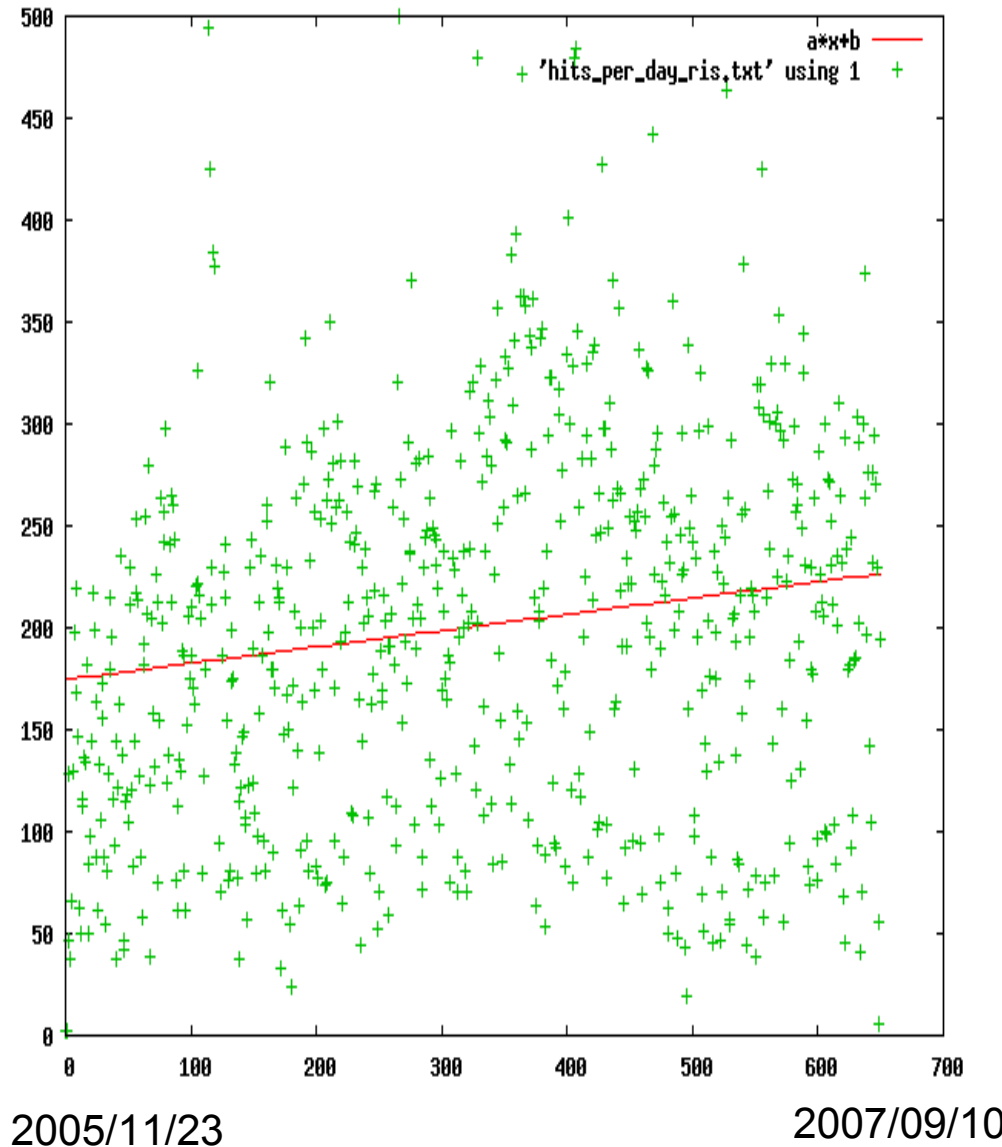
- available as RIS tool since 2004
- graphically shows RIS data
- shows
 - for a certain prefix
 - **incoming** traffic paths from RIS *collector peers*

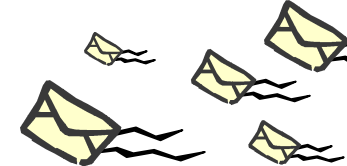




BGPlay

- about 200 queries per day
 - peaks of 500 queries
- slowly increasing
 - linear fit
- the most used RIS query service after the *looking glass service*

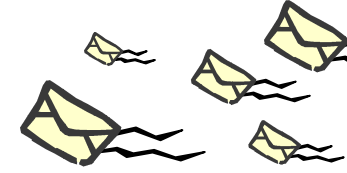




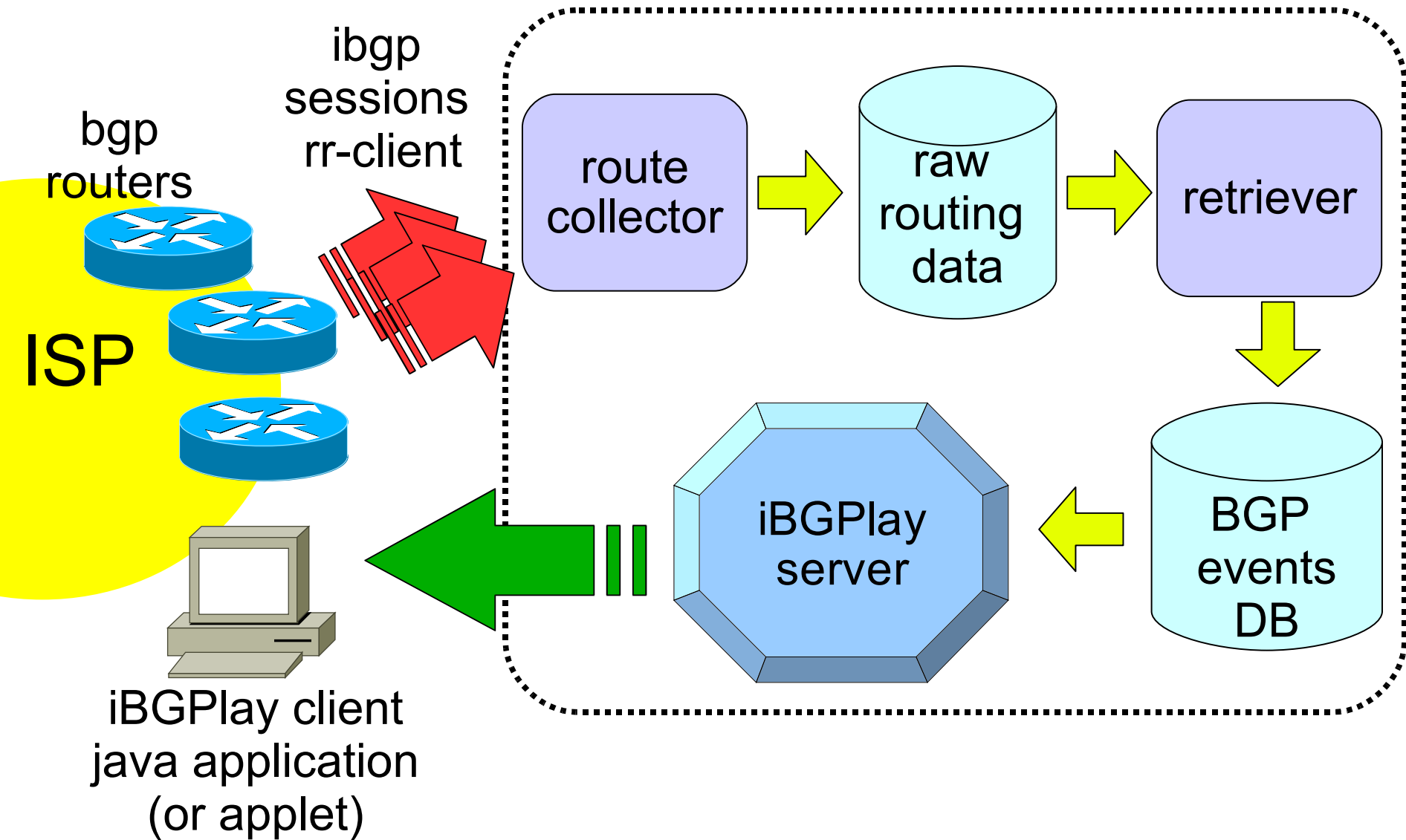
iBGPPlay

- graphically shows data from **your** BGP routers
- similar to BGPlay
 - ... but different semantics
- shows
 - for selected prefixes...
 - ...outgoing traffic paths from **your** routers to the prefixes

Prefix	Origin	AS Name	AS Description	Note
62.85.160.0/1				
62.241.4.0/24	8220	COLT	COLT Telecommunications	
64.12.0.0/16	15720	UNSPECIFIED	Postecom s.p.a. Autonomous Syst...	
64.236.16.0/2	1668	ATDN	AOL Transit Data Network	
65.54.128.0/1	5662	TBS	Turner Broadcasting Systems	
66.135.192.0/1	8075	MICROSOFT	MICROSOFT	
69.147.96.0/1	8075	MICROSOFT	MICROSOFT	
72.21.192.0/1	11643	EBAYNET	eBay, Inc.	
84.53.139.0/2	69 147 96 0/19	14779	YAHOO-RE1	Yahoo RE1 datacenter
87.238.80.0/2	72 21 192 0/19	16509	AMAZON-IAD-C1	amazon.com
145.97.32.0/2	84 53 139 0/24	20940	AKAMAI-ASN1	Akamai Technologies European AS
151.1.0.0/16	87 238 80 0/23	39111	ADSI-AS	Amazon EU DC AS
194.20.0.0/15	145 97 32 0/20	1103	SURFNET-NL	SURFnet, The Netherlands
194.244.0.0/1	151 1 0 0/16	3242	ASN-ITNET # AS-ITNET CONVE...	ITNet S.p.A. Autonomous System
195.210.64.0/1	194 20 0 0/15	3302	TIPNET-ITALY	Netscalibur SpA
207.46.192.0/1	194 20 64 0/121	12663	YODAFONE-ITALY	YODAFONE Autonomous System
207.46.208.0/1	194 244 0 0/16	3302	TIPNET-ITALY	Netscalibur SpA
209.85.134.0/1	195 210 64 0/19	1267	ASN-INFOSTRADA	Infrastra S.p.A. Ilnet S.p.A.

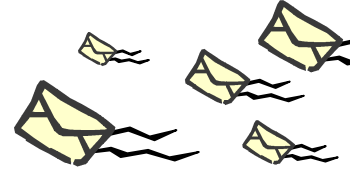


iBGPlay architecture



iBGPlay

- live demo...



iBGPPlay query form



the list of prefixes to be visualized

edit or save the list, or open a previously saved list

start of the time interval to inspect

end of the time interval

select one of your routers

you can aggregate your next-hop ip to show IXP

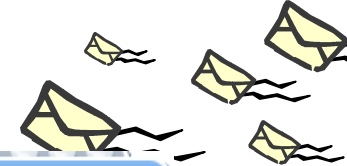
performs a regular query

prefixes behaving the same are shown as if they would be one (to simplify visualization)

start a continuous "real time" monitoring

The screenshot shows the iBGPPlay web interface. At the top, there is a title bar and a welcome message. Below that, a dropdown menu shows the selected prefix '62.85.160.0/19 - AS8220 (COLT)'. To the right of this dropdown are four buttons: 'Clear', 'Edit', 'Load', and 'Save'. Below the prefix dropdown is a section for 'Starting Time' and 'Ending Time', each with fields for 'Date (DD/MM/YYYY)' and 'Time (hh:mm:ss)'. The 'Starting Time' fields are filled with '16 / 10 / 2007' and '09 : 47 : 58'. The 'Ending Time' fields are filled with '18 / 10 / 2007' and '09 : 47 : 58'. Below the time fields is a 'Time Zone' dropdown menu set to 'UTC'. Further down is a 'Peer' dropdown menu set to 'rt.rm2 193.206.131.249' with a 'Refresh peer list' button. At the bottom, there is a 'File' field containing './cfg/aggregator.cfg' and a 'Load' button. To the right of the file field is a checkbox labeled 'Visualize prefixes in classes' which is checked. At the very bottom are three buttons: 'Submit', 'Dashboard', and 'Quit'.

iBGPPlay prefix list editing



29 prefixes in list...

Every search is performed on the last RIB collected for peer 193.206.131.249

Prefix	Origin	AS Name	AS Description	Note
	8220	COLT	COLT Telecommunications	
	15720	UNSPECIFIED	Postecom s.p.a. Autonomous Syst...	poste.it
64.12.0.0/16	1668	ATDN	AOL Transit Data Network	aol
64.236.16.0/20	5662	TBS	Turner Broadcasting Systems	cnn.com
65.54.128.0/19	8075	MICROSOFT	MICROSOFT	msn.com
65.54.128.0/19	8075	MICROSOFT	MICROSOFT	hotmail.com
66.135.192.0/19	11643	EBAYNET	eBay, Inc.	ebay.com
69.147.96.0/19	14779	YAHOO-RE		yahoo.com
72.21.192.0/19	16509	AMAZON-		amazon.com
84.53.139.0/24		AKAMAI-ASN1		akamai.com
87.238.80.0/23				amazon.co.uk, ...
145.97.32.0/20		SURFNET-NL	SURFnet, The Netherlands	wikipedia.org
151.1.0.0/16		ASN-ITNET # AS-ITNET CONVE...	ITnet S.p.A. Auton	
194.20.0.0/15		TIPNET-ITALY	Netscalibur SpA	
194.20.64.0/21		VODAFONE-ITALY	VODAFONE Auton	
194.244.0.0/16		TIPNET-ITALY	Netscalibur SpA	
195.210.64.0/19	1267	ASN-INFOSTRADA	Infrastruct	

IP Prefix: Search

AS Origin: Search Show All

AS Description: Search

AS Announcer: Search Show All

Announcers: Search Show All

Hostname: Search

Next Hop: Search Show All

OK Cancel

AS origin

selected prefixes

description of the AS origin

user annotations (in-place editing)

name of the AS origin

query for prefixes originated by a certain AS

insert a prefix directly

query for all ASes whose description match

query for prefixes related to an hostname

query for prefixes having a certain next-hop in the last RIB

query for prefixes announced to us by a certain AS directly

iBGPlay regular view



Request --> Date: from 2007-10-16 09:47:58 to 2007-10-18 09:47:58 UTC - Collector: 193.206.131.249

97/190 2007-10-17 09:50:14 Path Change from rt.rm2 colt-nap.namex 8220
Collector: rt.rm2 62.85.160.0/19 to rt.rm2 colt2-nap.namex 8220
AS14325 ASN-OSHEAN Ocean State Higher Ed., Econ. Dev. and Admin. Network

bgp event details

end time

future

past

start time

currently visualized instant

stable paths (dashed)

unstable paths (solid). colors disambiguates

your router

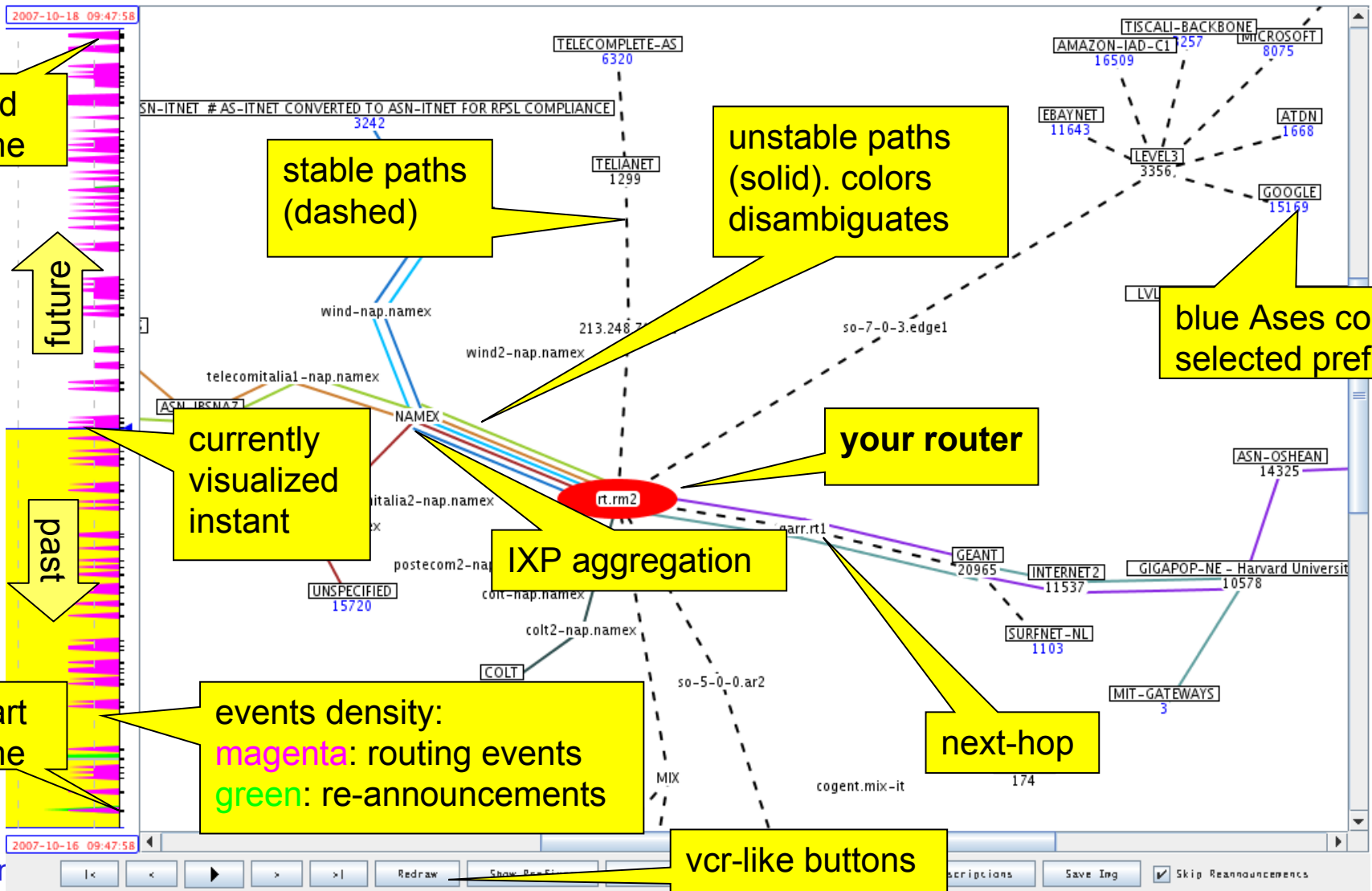
blue Ases contain selected prefix

IXP aggregation

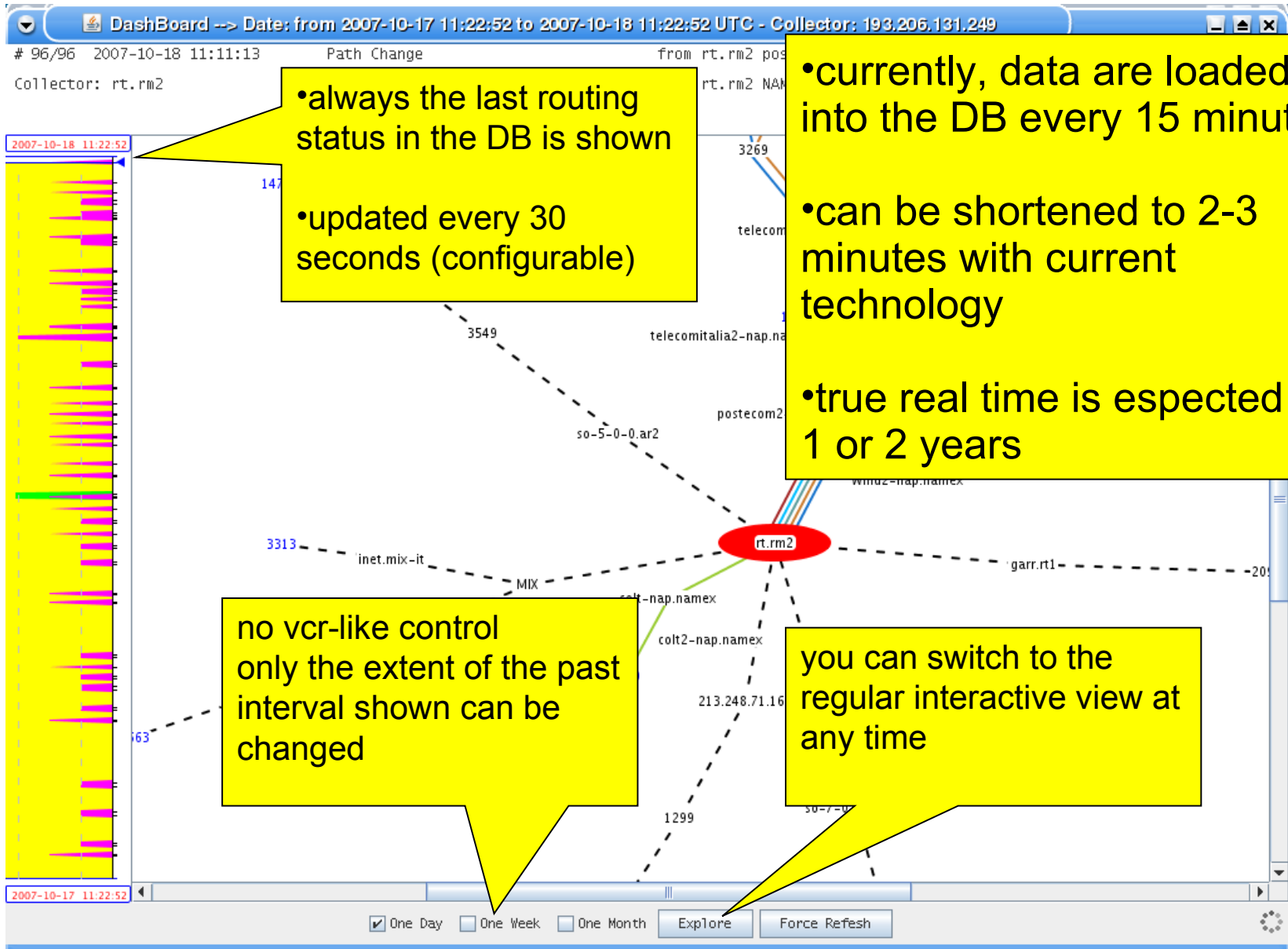
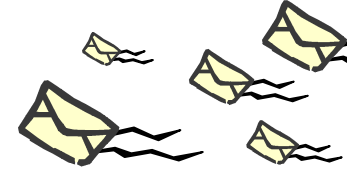
next-hop

events density:
magenta: routing events
green: re-announcements

vcr-like buttons



iBGPlay dashboard view



- always the last routing status in the DB is shown
- updated every 30 seconds (configurable)

- currently, data are loaded into the DB every 15 minute
- can be shortened to 2-3 minutes with current technology
- true real time is expected in 1 or 2 years

no vcr-like control
only the extent of the past interval shown can be changed

you can switch to the regular interactive view at any time

iBGPlay and the RIPE community

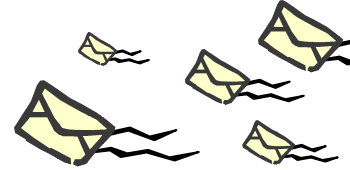


- our intent is to make iBGPlay a valuable tool for an ISP
 - **not** a beta test program: software can be considered **stable**
 - frequent releases where changes are mainly on features
- our current partners...
 - 1 IXPs
 - 2 european scientific research networks
 - 2 ISPs

collaboration



- option 1
 - set up an ibgp peering with us
 - data are collected and stored by us
 - you get the iBGPlay client to view your data
- option 2
 - provide a linux box
 - we install all the software remotely
 - setup peerings with that box
 - data are stored at the ISP's place
- even more interesting collaboration forms
 - 2 or more ISPs may agree on exchanging data
 - IXPs can offer it as a service for their members



future works

- make BGP data exchange between ISPs easy
- **OSPF** and **MPLS** visualization
 - looking for collaborations!
- visual comparison of the routing of **many BGP routers**
- summary visualization of whole address space vs. BGP peers vs. routers
- make data available with **sub-minute delay**



are you interested?

- contact us by email
 - ibgplay@dia.uniroma3.it
- ...or better **contact me here!**

Questions?