



RIPE NCC
RIPE NETWORK COORDINATION CENTRE

RIPE Database Workshop

For Law Enforcements Agencies

Minsk, BY | 18 April 2017 | RIPE NCC LEA Meeting

Overview



- The RIPE Database
- RIPE Database Queries - IPv4
- Basic IPv6 Facts
- RIPE Database Queries - IPv6



The RIPE Database

Brief Introduction

The RIPE Database



- **Public Internet resource and routing registry database**
 - IP addresses, AS Numbers
 - Contact information
 - Reverse DNS delegations
 - Routing policies

RIPE Database Objects



- **IPs and ASNs**
 - inetnum, inet6num, aut-num
- **Contact**
 - organisation, person, role
- **Routing**
 - route, route6
- **Reverse DNS**
 - domain
- **Object protection**
 - mntner

Anatomy of an Object



Attributes

person:	Juan Carlos Lopez
address:	Calle 123 - A
address:	Ciudad Grande
e-mail:	jclopez@empresa.com
nic-hdl:	CL9876-RIPE
mnt-by:	SEGURIDAD-MNT
created:	(date & time)
last-modified:	(date & time)
source:	RIPE

Values

Lookup Keys



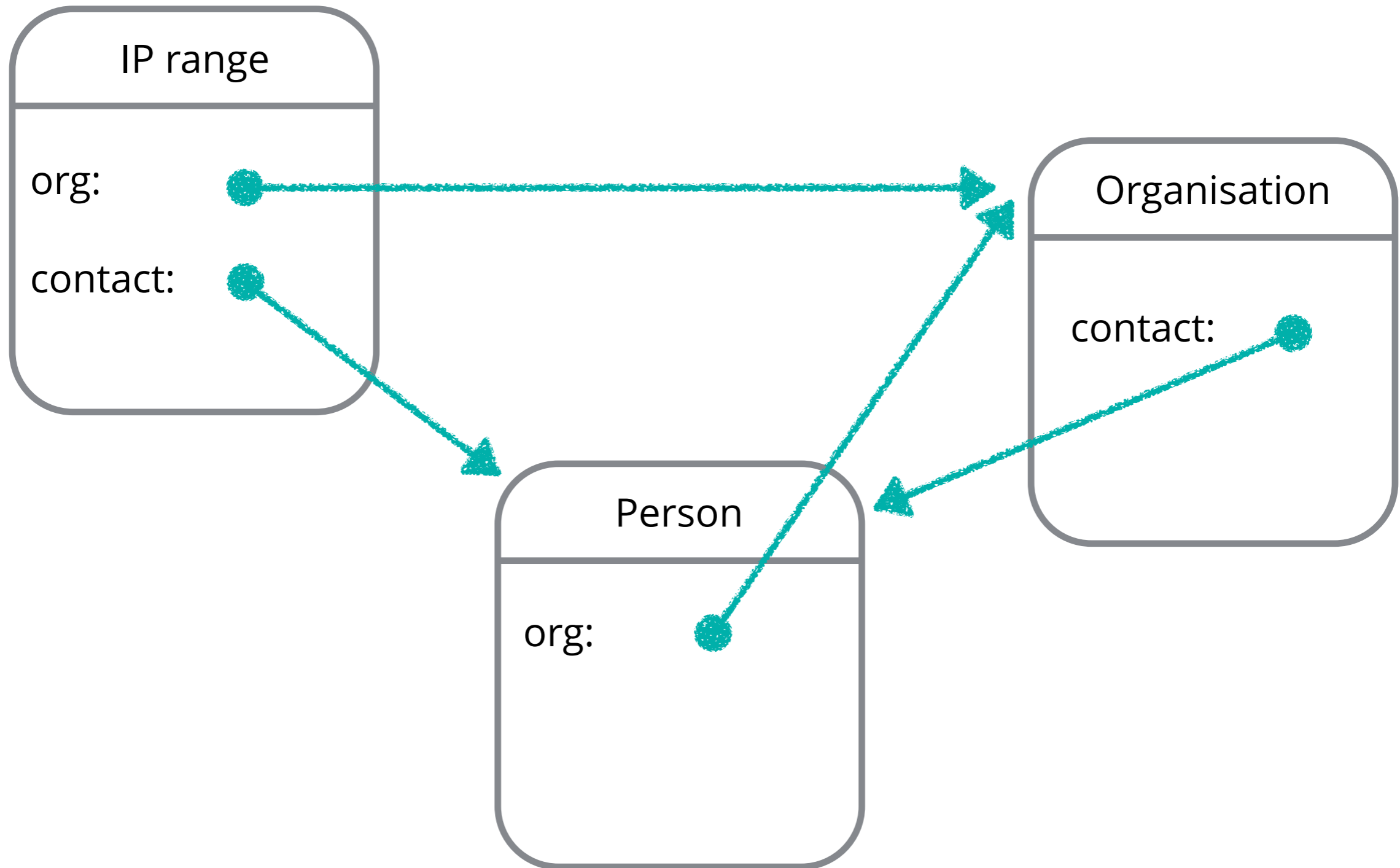
person:	Juan Carlos Lopez	
address:	Calle 123 - A	
address:	Ciudad Grande	
e-mail:	jclopez@empresa.com	
nic-hdl:	CL9876-RIPE	
mnt-by:	SEGURIDAD-MNT	
created:	(date & time)	
last-modified:	(date & time)	
source:	RIPE	

Object Templates



person:	[mandatory]	[single]	[lookup key]
address:	[mandatory]	[multiple]	[]
phone:	[mandatory]	[multiple]	[]
fax-no:	[optional]	[multiple]	[]
e-mail:	[optional]	[multiple]	[lookup key]
org:	[optional]	[multiple]	[inverse key]
nic-hdl:	[mandatory]	[single]	[primary/lookup key]
remarks:	[optional]	[multiple]	[]
notify:	[optional]	[multiple]	[inverse key]
abuse-mailbox:	[optional]	[multiple]	[inverse key]
mnt-by:	[mandatory]	[multiple]	[inverse key]
changed:	[optional]	[multiple]	[]
created:	[generated]	[single]	[]
last-modified:	[generated]	[single]	[]
source:	[mandatory]	[single]	[]

Objects Are Related To Each Other



Querying the RIPE Database



- Web interface
- Full Text Search
- Command line
- Restful API (XML/JSON)

RIPE Database Query

Search term

Show full object details ?

Do not retrieve related objects ?

You can search up to 5 terms at once in the search box above, separating them with a semicolon.

Sources Types Hierarchy Flags Inverse lookup

Search resource objects in all available databases ?

Search RIPE Database only

Are you looking for the [TEST Database?](#)

By submitting this form you explicitly express your agreement with the [RIPE Database Terms and Conditions](#)


Search

Query Results



Abuse contact info: abuse@ripe.net

[Update](#)  [Delete](#)  [RIPEstat](#) 

inetnum: 193.0.24.0 - 193.0.30.255 
netname: RIPENCC-MEETING-PUBLIC
descr: Reseaux IP Europeens Network Coordination Centre
(RIPE NCC)
remarks: RIPE NCC Training Services & RIPE Meetings
remarks: This space is used as public space during RIPE
meetings
country: NL
admin-c: JDR-RIPE
admin-c: BRD-RIPE
tech-c: OPS4-RIPE
status: ASSIGNED PA
mnt-by: RIPE-NCC-MNT
mnt-routes: RIPE-NCC-MNT
mnt-domains: RIPE-NCC-MNT
created: 2013-10-09T14:42:14Z
last-modified: 2013-10-09T14:42:14Z
source: RIPE
changed: mvantol@ripe.net 20131009

Refining Queries



- Reduce the amount of objects returned
- Use options and flags to modify the results

Show full object details ?

Do not retrieve related objects ?

You can search up to 5 terms at once in the search box above, separating them with a semicolon.

Sources **Types** Hierarchy Flags Inverse lookup

Search resource objects in all available databases ?

Search RIPE Database only

Results With Related Objects



Search term: 193.0.24.1

```
inetnum:      193.0.24.0 - 193.0.30.255
netname:      RIPENCC-MEETING-PUBLIC
descr:        RIPE NCC
country:      NL
admin-c:      JDR-RIPE
admin-c:      BRD-RIPE
tech-c:       OPS4-RIPE
status:       ASSIGNED PA
mnt-by:       RIPE-NCC-MNT
created:      2013-10-09T07:58:22Z
last-modified: 2013-10-09T08:34:09Z
source:      RIPE # Filtered
```

```
role:         RIPE NCC Operations
address:      Singel 258
address:      1016 AB Amsterdam
address:
person:       Brian Riddle
phone:        address: IT Manager
fax-no:       address: RIPE NCC - Operations
```

```
person:       Jochem de Ruig
address:      RIPE NCC
address:      Singel 258
```

```
route:       193.0.24.0/21
```

```
route:       193.0.24.0/21
descr:       RIPE-MEETINGS
origin:      AS2121
mnt-by:      RIPE-NCC-MNT
created:     2008-04-09T11:04:18Z
last-modified: 2012-04-24T10:09:25Z
source:     RIPE # Filtered
```

Results Without Related Objects



Search term:

```
inetnum:      193.0.24.0 - 193.0.30.255
netname:      RIPENCC-MEETING-PUBLIC
descr:        RIPE NCC
country:      NL
admin-c:      JDR-RIPE
admin-c:      BRD-RIPE
tech-c:       OPS4-RIPE
status:       ASSIGNED PA
mnt-by:       RIPE-NCC-MNT
created:      2013-10-09T07:58:22Z
last-modified: 2013-10-09T08:34:09Z
source:       RIPE # Filtered
```

```
route:        193.0.24.0/21
descr:        RIPE-STOCKHOLM
origin:       AS201965
mnt-by:       RIPE-NCC-MNT
```

```
route:        193.0.24.0/21
descr:        RIPE-MEETINGS
origin:       AS2121
mnt-by:       RIPE-NCC-MNT
created:      2008-04-09T11:04:18Z
last-modified: 2012-04-24T10:09:25Z
source:       RIPE # Filtered
```

More Efficient Queries



- Default query brings back all related objects
- Use '-r' and '--no-personal' flags
- First find the resources
- Then look up organisations and persons

Search term

Show full object details ?

Do not retrieve related objects ?

Protecting Objects: Maintainers



person: Jasper Jansen
address: Singel 258
phone: +31 20 5354444
nic-hdl: JJ357-RIPE
mnt-by: PROTECT-MNT
source: RIPE # Filtered



mntner: PROTECT-MNT
...
auth: MD5-PW \$1\$crypto-stuff
auth: SSO email@domain.com
auth: PGP-KEY Some-Key-Obj
...
mnt-by: PROTECT-MNT
source: RIPE # Filtered



Live Demo

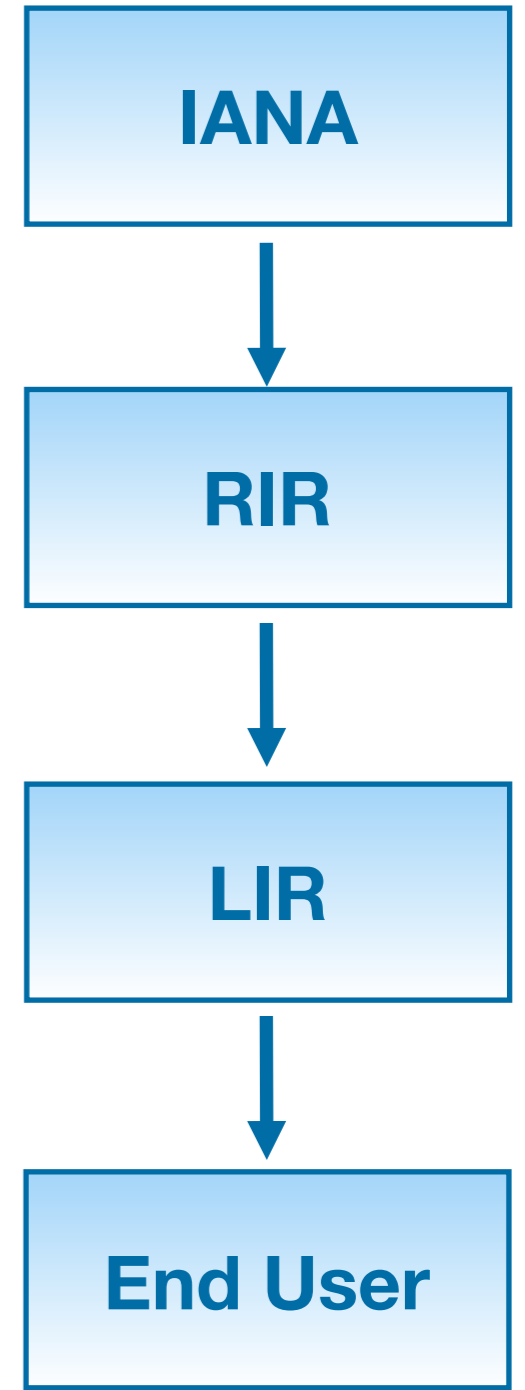
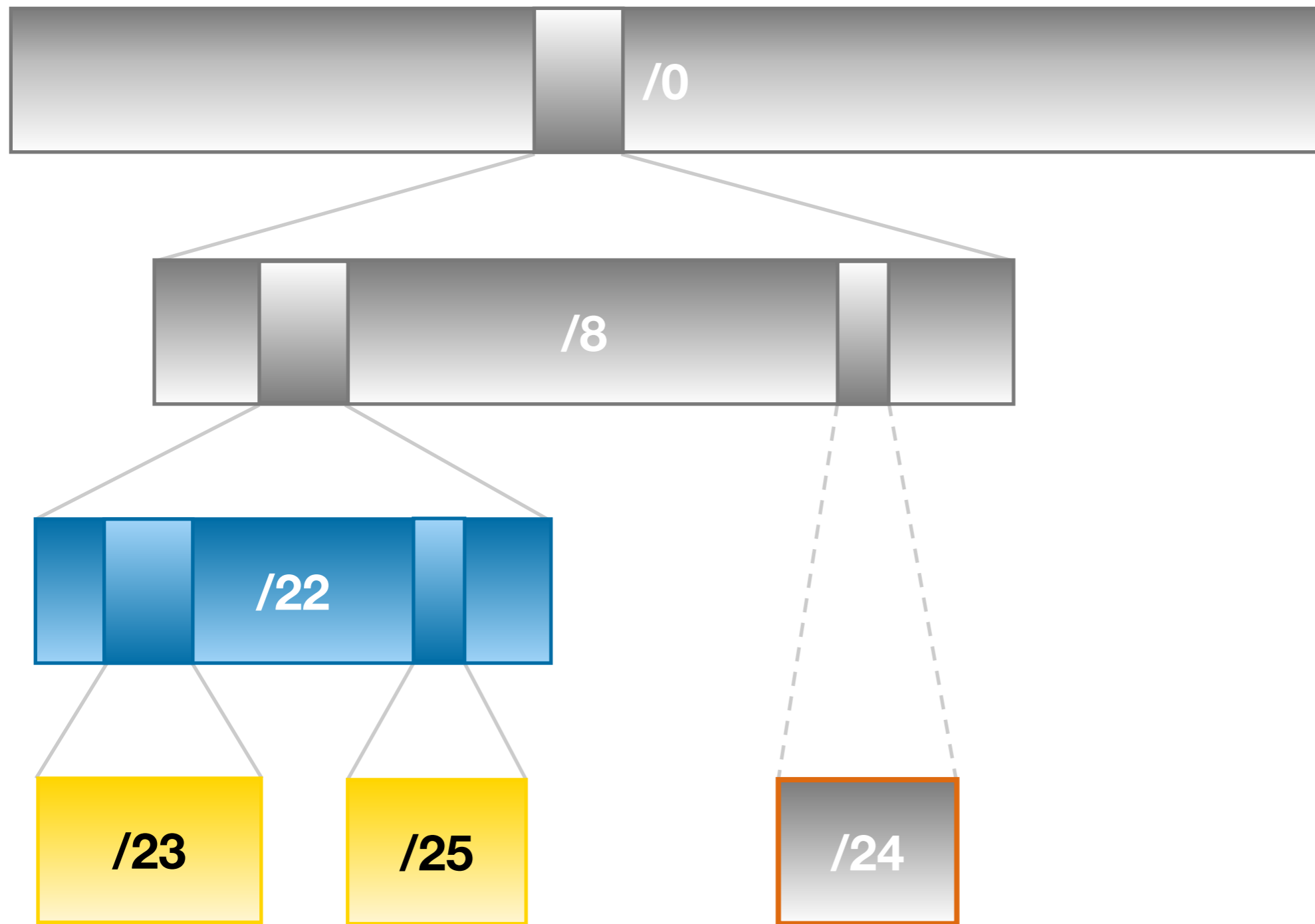
RIPE Database






RIPE Database Queries

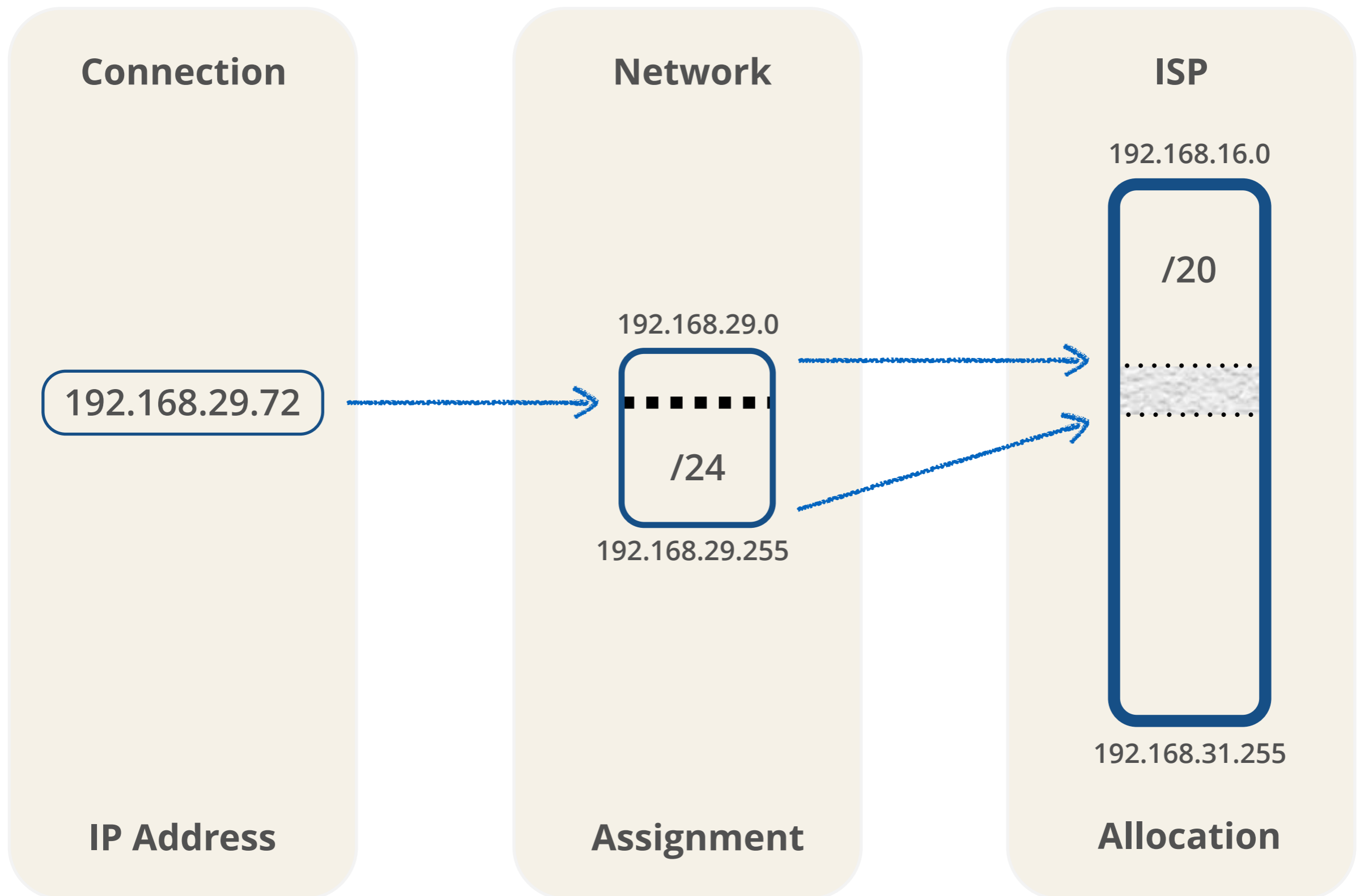
IPv4

IPv4 Address Distribution



 Allocation  PA Assignment  PI Assignment

From One IP Address



IPv4 objects: inetnum status



TYPE	INETNUM STATUS
Allocation	ALLOCATED PA
PA Assignment	ASSIGNED PA
Sub-allocation	SUB-ALLOCATED PA
PI Assignment	ASSIGNED PI

IPv4 PA Assignment



inetnum: 193.0.24.0 - 193.0.30.255 ←

netname: RIPENCC-MEETING-PUBLIC

descr: Reseaux IP Europeens Network Coordination Centre

country: NL

admin-c: JDR-RIPE

admin-c: BRD-RIPE

tech-c: OPS4-RIPE

status: ASSIGNED PA ←

mnt-by: RIPE-NCC-MNT

mnt-routes: RIPE-NCC-MNT

mnt-domains: RIPE-NCC-MNT

created: 2013-10-09T14:42:14Z ←

last-modified: 2013-10-09T14:42:14Z ←

source: RIPE # Filtered

IPv4 PA Allocation

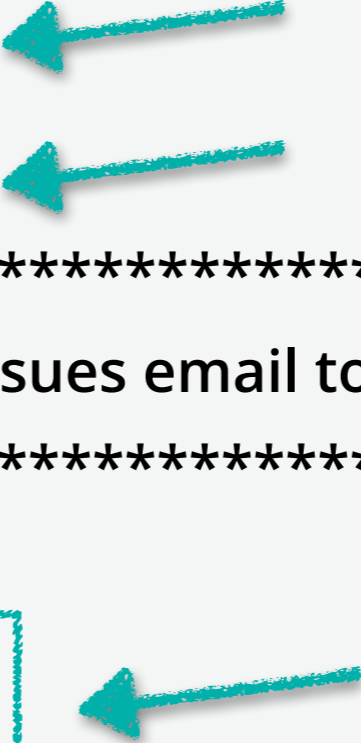


inetnum: 193.0.24.0 - 193.0.31.255
netname: NL-RIPENCC-TS-19930901 ←
descr: Reseaux IP Europeens Network Coordination Centre
country: NL
org: ORG-Bb2-RIPE
admin-c: JDR-RIPE ←
admin-c: BRD-RIPE ←
tech-c: OPS4-RIPE
status: ALLOCATED PA ←
mnt-by: RIPE-NCC-HM-MNT
mnt-lower: RIPE-NCC-MNT
mnt-routes: RIPE-NCC-MNT
mnt-domains: RIPE-NCC-MNT
created: 2008-04-09T11:04:17Z ←
last-modified: 2015-09-17T08:49:39Z ←
source: RIPE # Filtered

IPv4 PA Sub-Allocation



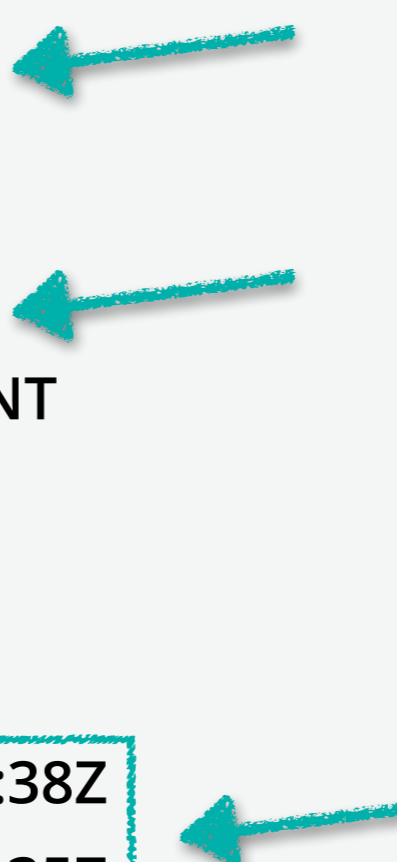
```
inetnum:        62.39.252.0 - 62.39.253.255
netname:        MAGIC-ONLINE
descr:          IP Pool for DSL Services
descr:          Gaoland
country:        FR
admin-c:        EC4108-RIPE
tech-c:         EC4108-RIPE
status:         SUB-ALLOCATED PA
remarks:        *****
remarks:        * For spam & abuse issues email to abus@magic.fr *
remarks:        *****
mnt-by:         LDCOM-MNT
created:        2003-11-20T14:11:01Z
last-modified:  2007-10-19T09:56:20Z
source:        RIPE # Filtered
```



IPv4 PI Assignment



inetnum:	193.189.108.0 - 193.189.109.255
netname:	UNI-INVEST-NET
descr:	UNIVERSAL INVESTMENT GMBH
country:	DE
org:	ORG-UIG1-RIPE
sponsoring-org:	ORG-CI9-RIPE
admin-c:	TD3339-RIPE
tech-c:	TD3339-RIPE
status:	ASSIGNED PI
mnt-by:	RIPE-NCC-END-MNT
mnt-by:	EU-COLT-MNT
mnt-routes:	EU-COLT-MNT
mnt-domains:	EU-COLT-MNT
created:	2005-05-03T11:17:38Z
last-modified:	2015-05-05T01:47:35Z
source:	RIPE # Filtered



Navigating the Hierarchy

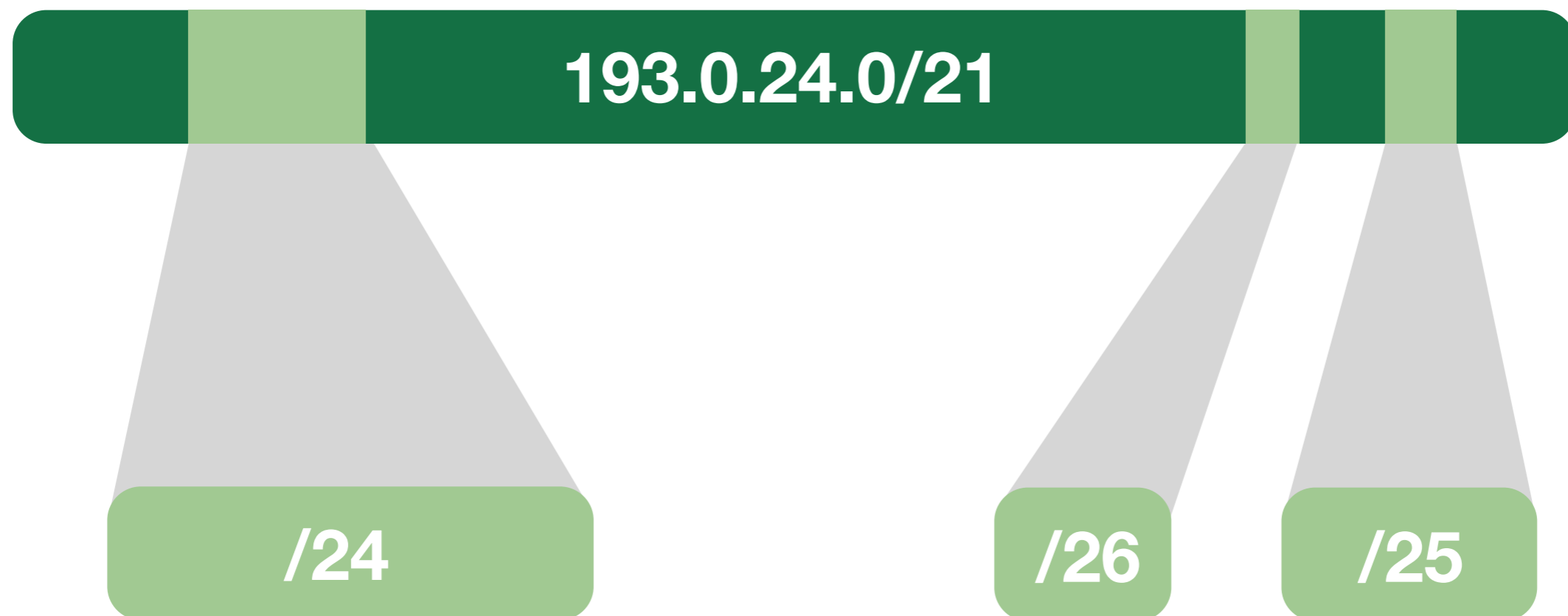


- With PA space, you want to find what is **under** or **above** the inetnum object
 - Under = More Specific
 - Above = Less Specific
- There are flags: -m, -M, -I, -L
- Also in the “Hierarchy Flags” tab

More Specific inetnums: -m



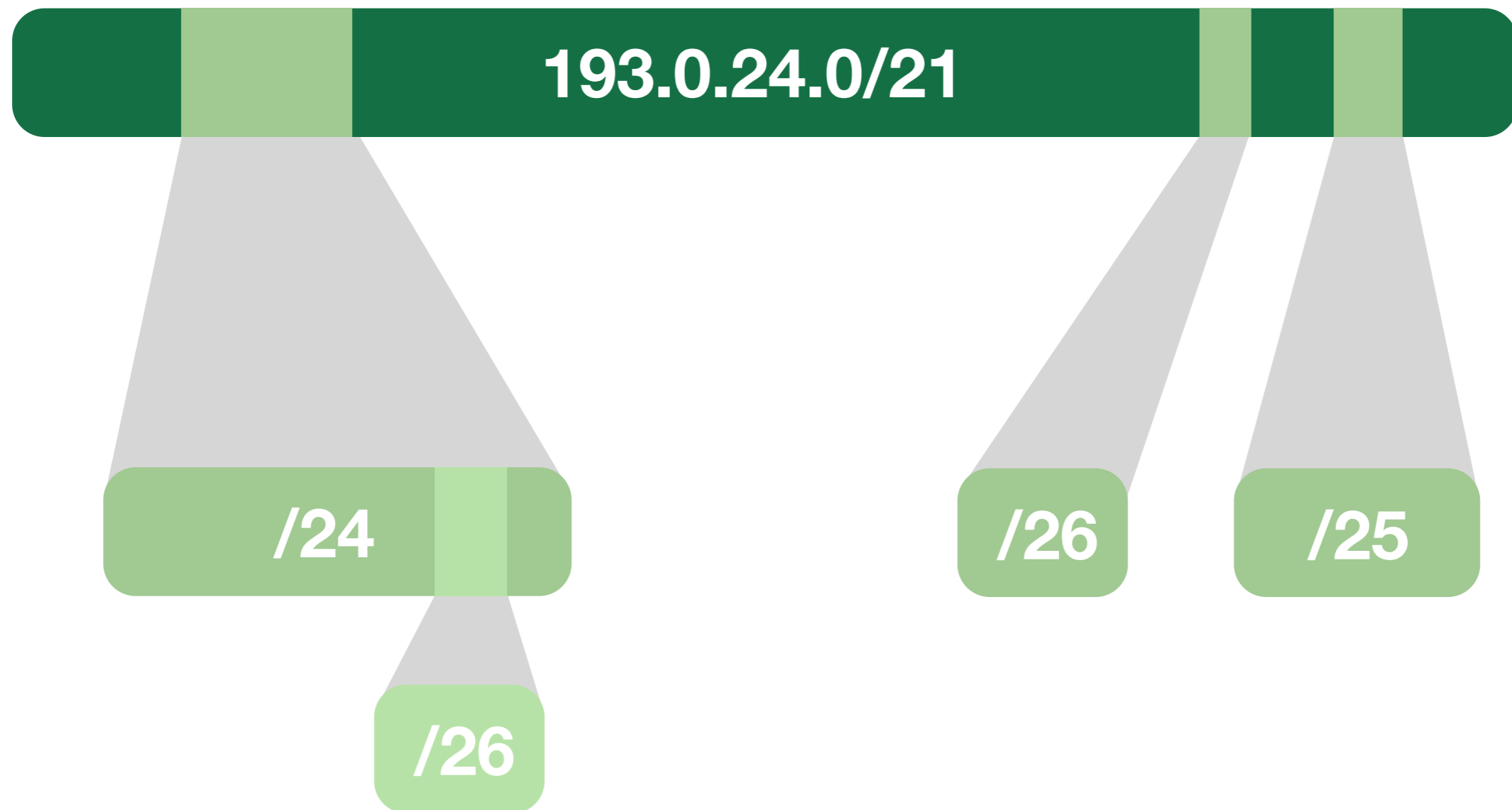
-m 193.0.24.0/21



More Specific inetnums: -M



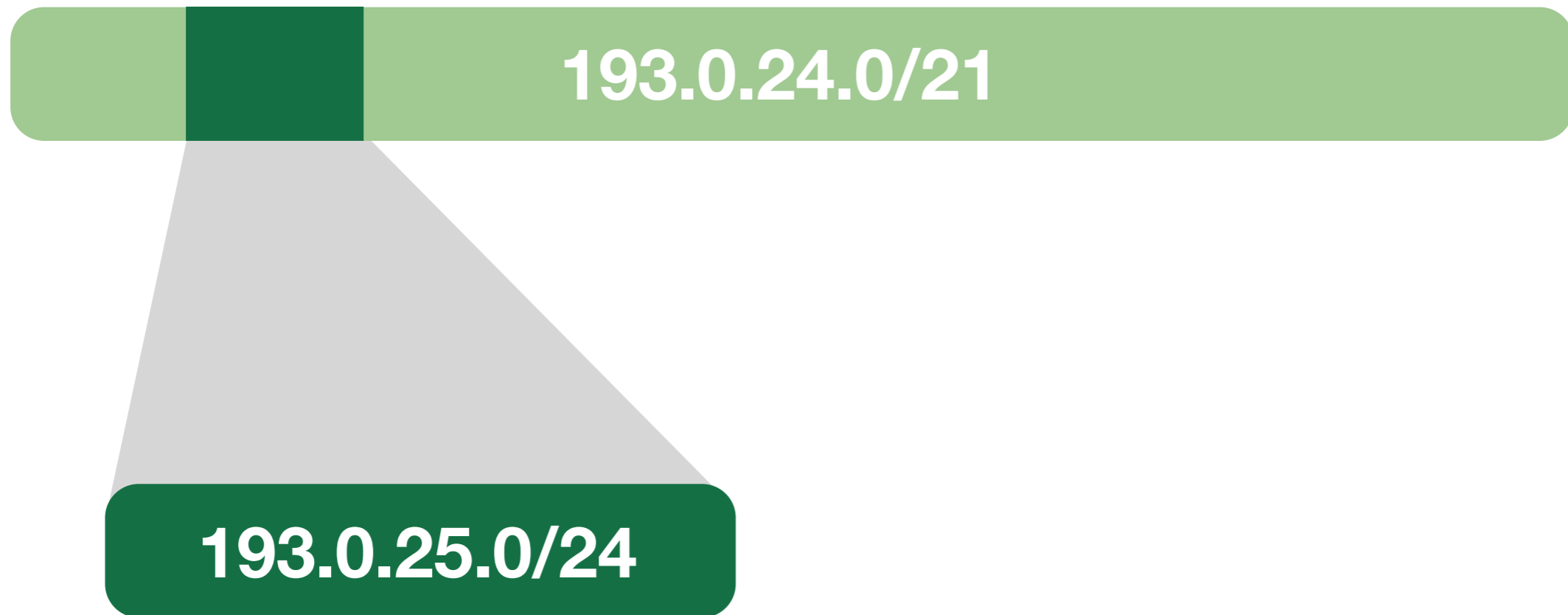
-M 193.0.24.0/21



Less Specific inetnums: -l



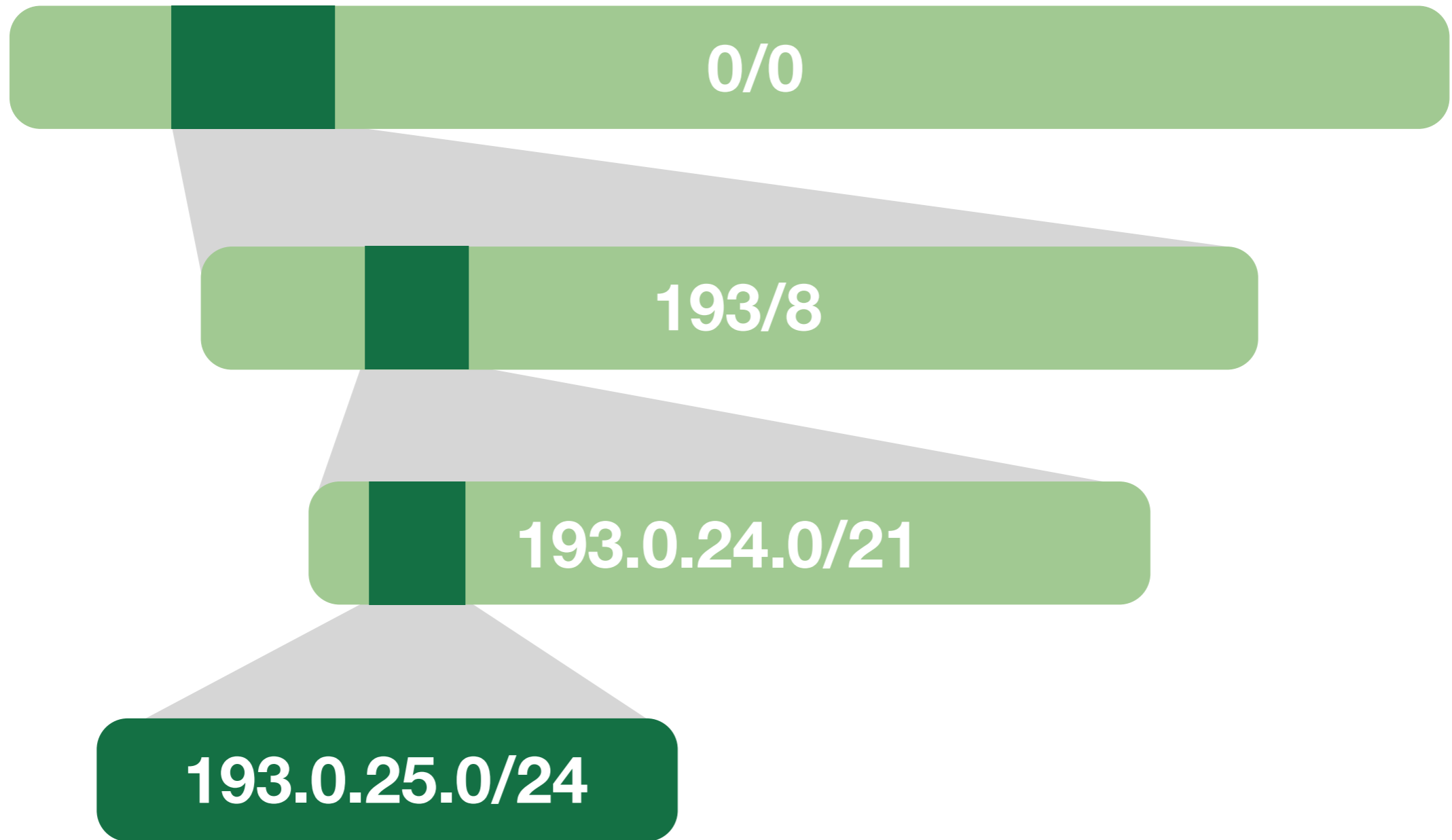
-l 193.0.25.0/24



Less Specific inetnums: -L



-L 193.0.25.0/24

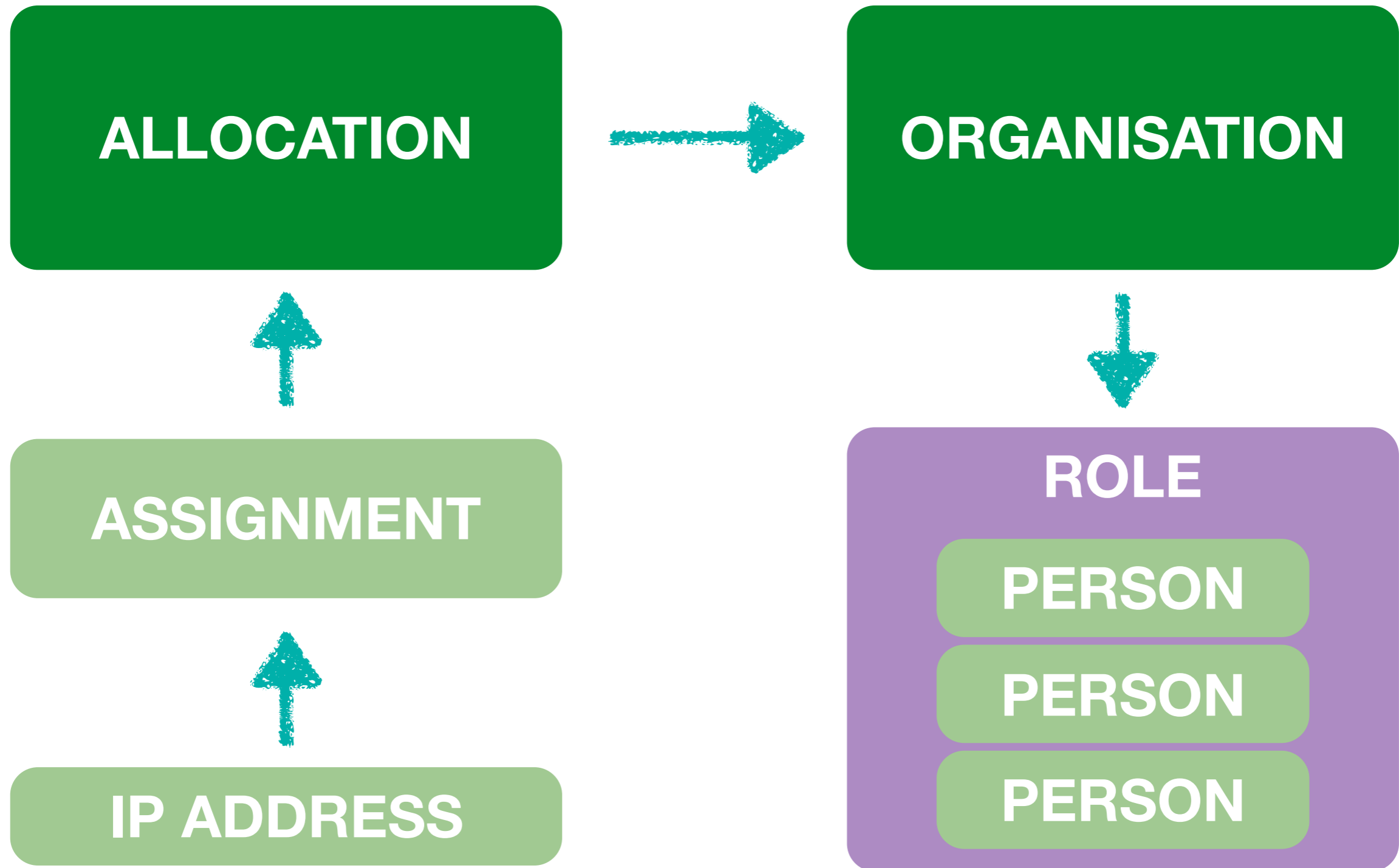


Hierarchy Flags Tab



Sources	Types	Hierarchy Flags	Inverse lookup
		<p>?</p> <ul style="list-style-type: none"><input checked="" type="radio"/> No hierarchy flag (default)<input type="radio"/> l - Returns first level less specific inetnum, inet6num or route(6) objects, excluding exact matches.<input type="radio"/> L - Returns all level less specific inetnum, inet6num or route(6) objects, including exact matches.<input type="radio"/> m - Returns first level more specific inetnum, inet6num or route(6) objects, excluding exact matches.<input type="radio"/> M - Returns all level more specific inetnum, inet6num or route(6) objects, excluding exact matches.<input type="radio"/> x - Requests that only an exact match on a prefix be performed. If no exact match is found no objects are returned.<input type="checkbox"/> d - When used with a hierarchical flags (like --one-less), both address and route object types and domain object types are returned.	

Relation between IP and LIR



Contact Information



- Objects have contact information
- Organisation
 - “org:” points to an organisation object
- **admin-c, tech-c, zone-c, abuse-c**
 - point to person/role objects

Organisation Object



```
organisation:  ORG-KL71-RIPE
org-name:      KIEVLINE LLC
org-type:      LIR
remarks:       http://kievline.net
address:       PO Box 88
address:       03040
address:       Kiev
address:       UKRAINE
phone:         +380442590101
fax-no:        +380444923121
e-mail:        ripe@kievline.net
admin-c:       OB577-RIPE
admin-c:       SR8953-RIPE
abuse-c:       AR20175-RIPE
mnt-ref:       RIPE-NCC-HM-MNT
mnt-ref:       KIEVLINE-MNT
mnt-by:        RIPE-NCC-HM-MNT
mnt-by:        KIEVLINE-MNT
created:       2010-03-04T09:15:12Z
last-modified: 2016-08-02T12:32:23Z
source:       RIPE
```

Role Object





role: Taras Shevchenko Kiev University NOC
address: 01033 Kiev, Ukraine Volodymyrska st, 64
phone: +380-44-5269347
e-mail: noc@univ.kiev.ua
remarks: trouble: Abuse-related reports and
troubles mail-to:abuse@univ.kiev.ua
remarks: trouble: Routing-related reports and
troubles mail-to:noc@univ.kiev.ua
admin-c: RS12003-RIPE
tech-c: RS12003-RIPE
nic-hdl: KUN1-RIPE
mnt-by: AS13032-MNT
created: 2004-01-26T14:38:48Z
last-modified: 2005-05-04T13:17:38Z
source: RIPE



Person Object



person: Roman Sinyuk 
address: Taras Shevchenko Kiev University
address: 01033 Kiev,Ukraine
address: Volodymyrska st, 64
phone: +380-44-5269347
fax-no: +380-44-5261214
e-mail: roman@univ.kiev.ua
nic-hdl: RS12003-RIPE 
mnt-by: AS13032-MNT
created: 1970-01-01T00:00:00Z
last-modified: 2005-03-31T22:59:07Z
source: RIPE



Live Demo

IPv4 Queries



Questions





Basic IPv6 Facts

The WHY, WHAT and HOW

Why IPv6?



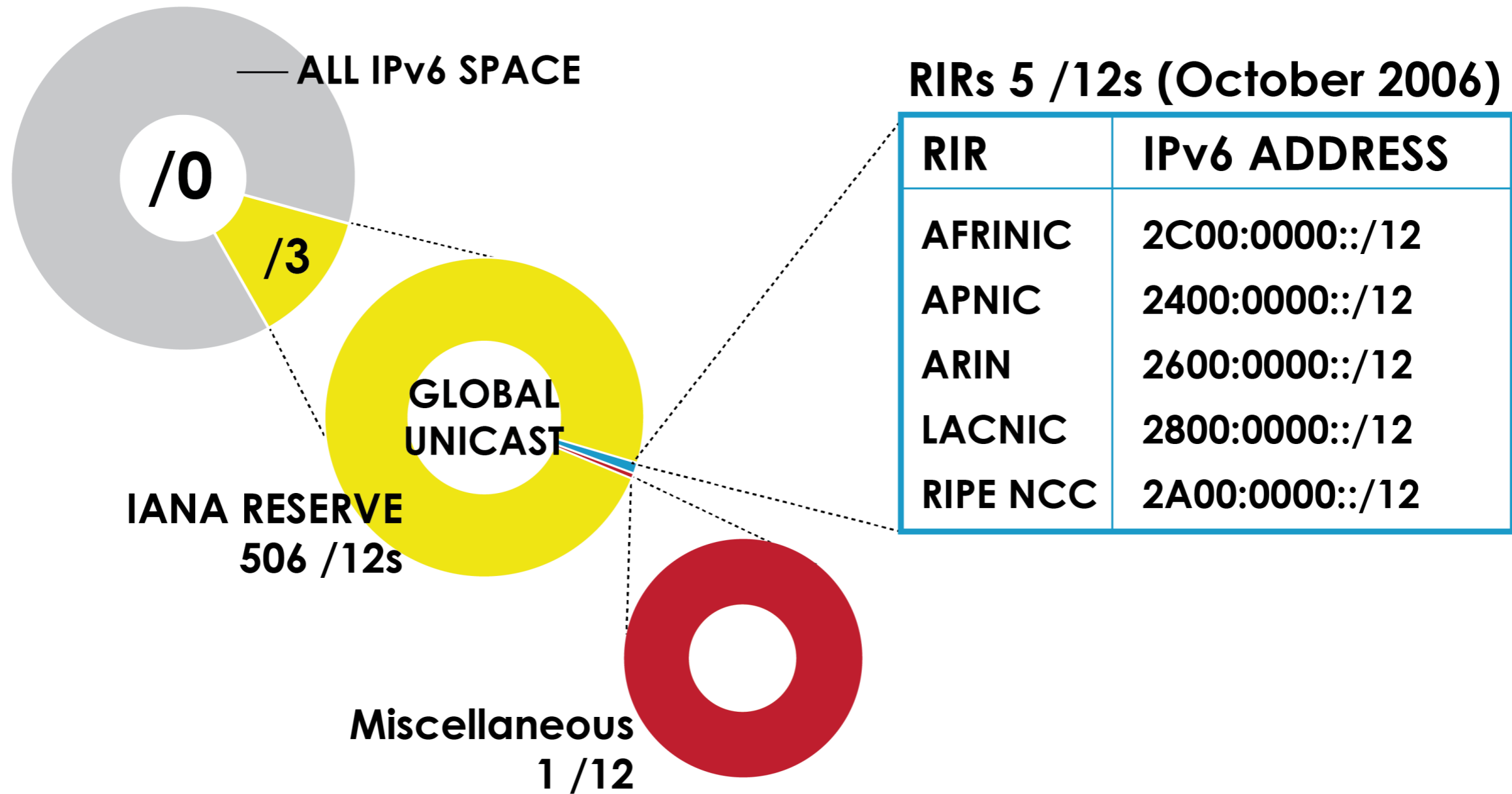
- IPv4 = ~4 billion possible addresses
- Not enough for everybody to connect
- NAT extends the possibilities of IPv4, but...
 - Has performance issues
 - Difficult to track users

What is IPv6?

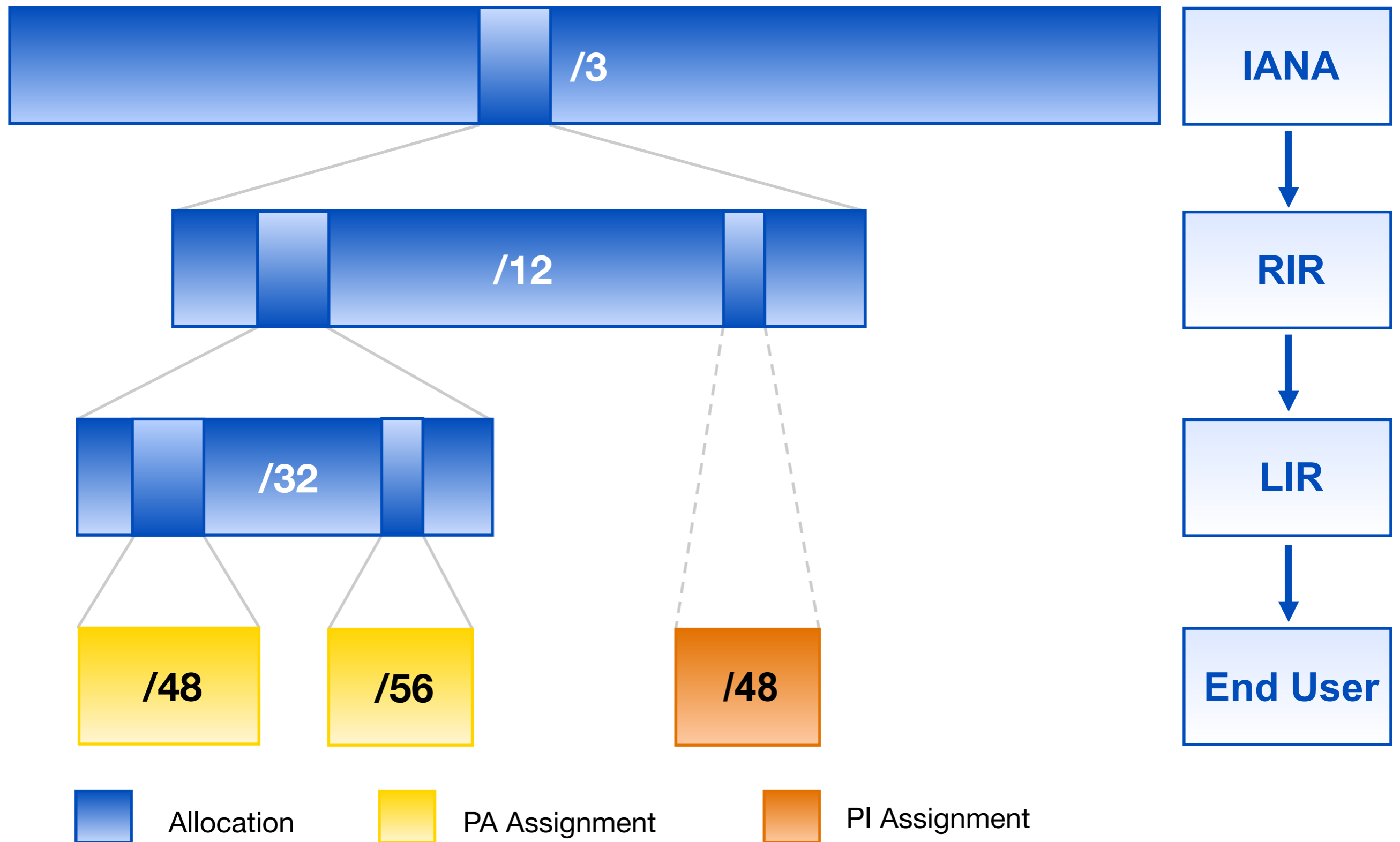


- 128 bits address space = 2^{128} addresses
- Notation in CIDR is similar to IPv4
 - /128 = one IPv6 address
 - /64 = one subnet
 - /56 - /48 = typical assignment sizes
 - /32 = minimum allocation

IPv6 Address Distribution



IPv6 Address Distribution



Multiple address types



Addresses

Range

Scope

Unspecified	::/128	n/a
Loopback	::1	host
Link Local	fe80::/10	link
Unique Local	fc00::/7	global
Global Unicast	2000::/3	global
Multicast	ff00::/8	variable

Address Notation



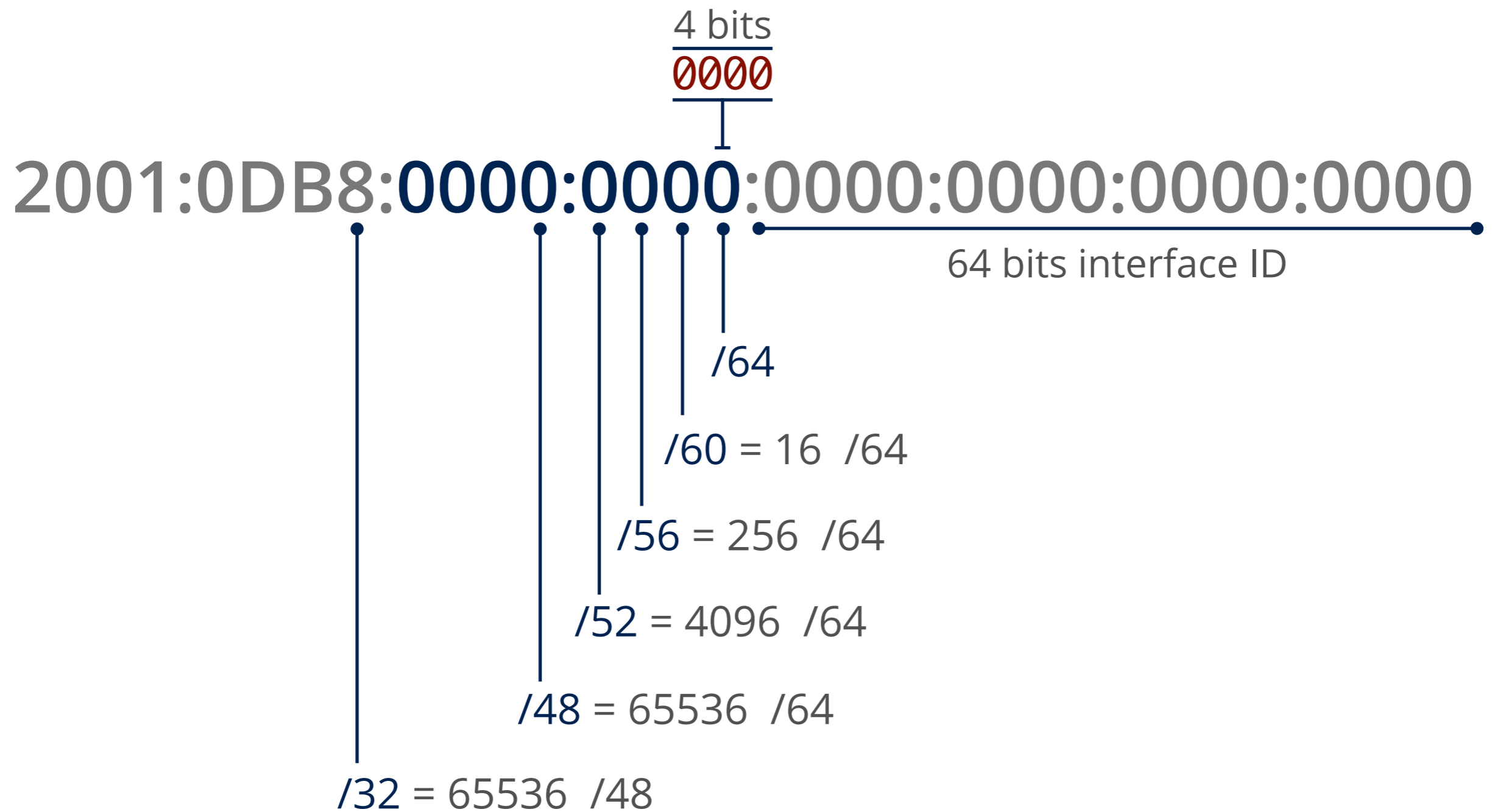
2001:0db8:003e:ef11:0000:0000:c100:004d

2001:0db8:003e:ef11:0000:0000:c100:004d

2001:db8:3e:ef11:0:0:c100:4d

- Double colon :: can only be used once

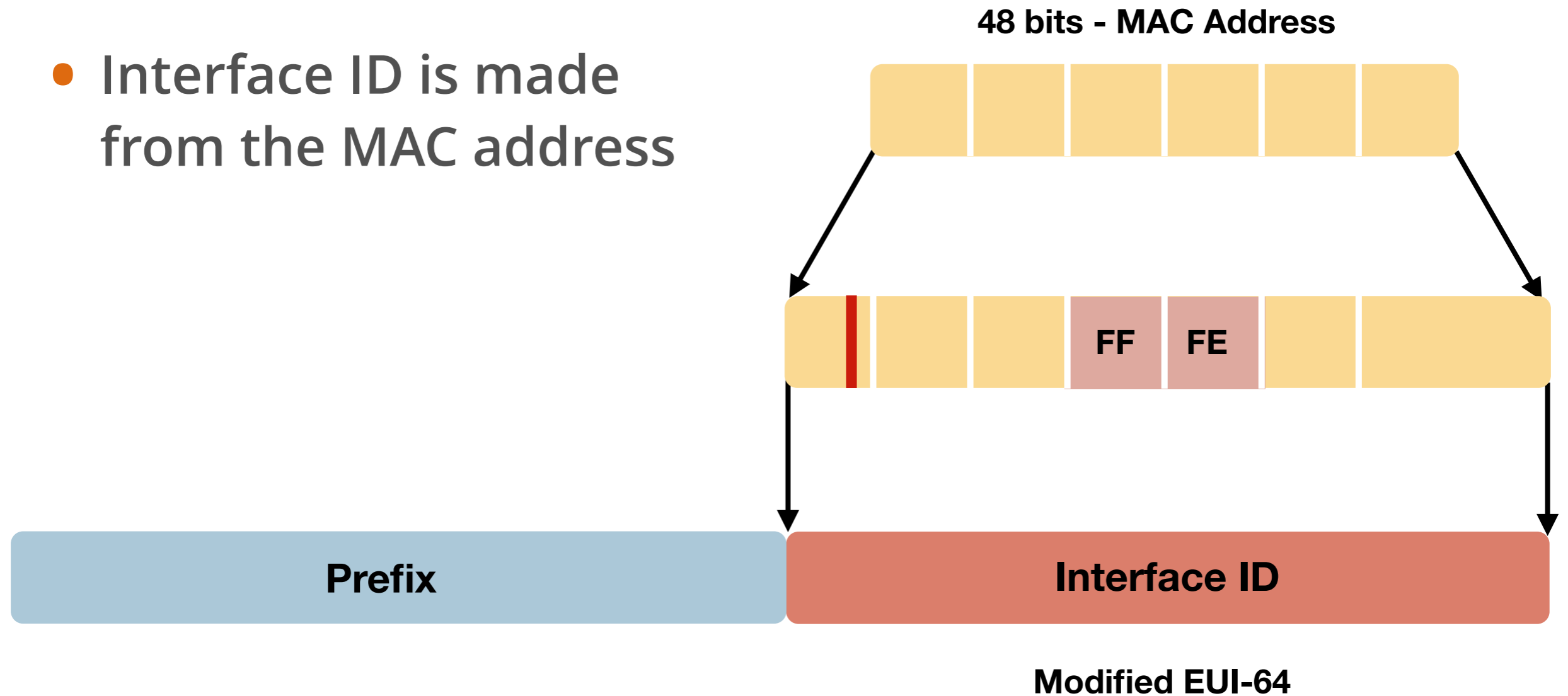
IPv6 Subnetting



Address Auto-Configuration



- Interface ID is made from the MAC address



Privacy Extensions



- Changes the interface ID over time
- The prefix stays the same while connected to network

2001:0DB8:0000:0000:0000:0000:0000:0000

Prefix remains the same Interface ID changes

Interfaces have multiple addresses



- **Link Local** **Self-generated - No Internet**
fe80::6676:baff:fe98:d5e
- **Unique Local** **Just like private IPv4 - No Internet**
fda3:3dcb:ebee::6676:baff:fe98:d5e
- **Global Unicast** **From /64 - Public Internet**
2001:db8:2e8:13:6676:baff:fe98:d5e
2001:db8:2e8:13:694a:1337:8ed4:77b3

IPv6 Assignments



~~IPs ?~~

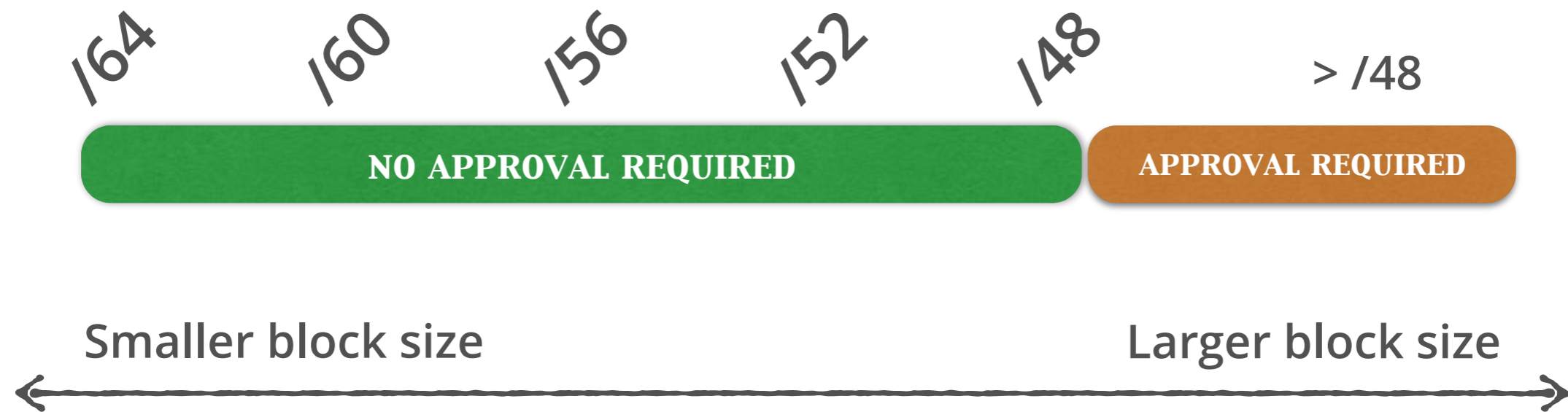


Subnets!

1 subnet = /64

18,446,744,073,709,551,616 addresses

IPv6 Assignments



Prefix	Number of /64 subnets
/64	1
/60	16
/56	256
/52	4096
/48	65536

IPv6 Assignments



/64



IPv6 Assignments



/56



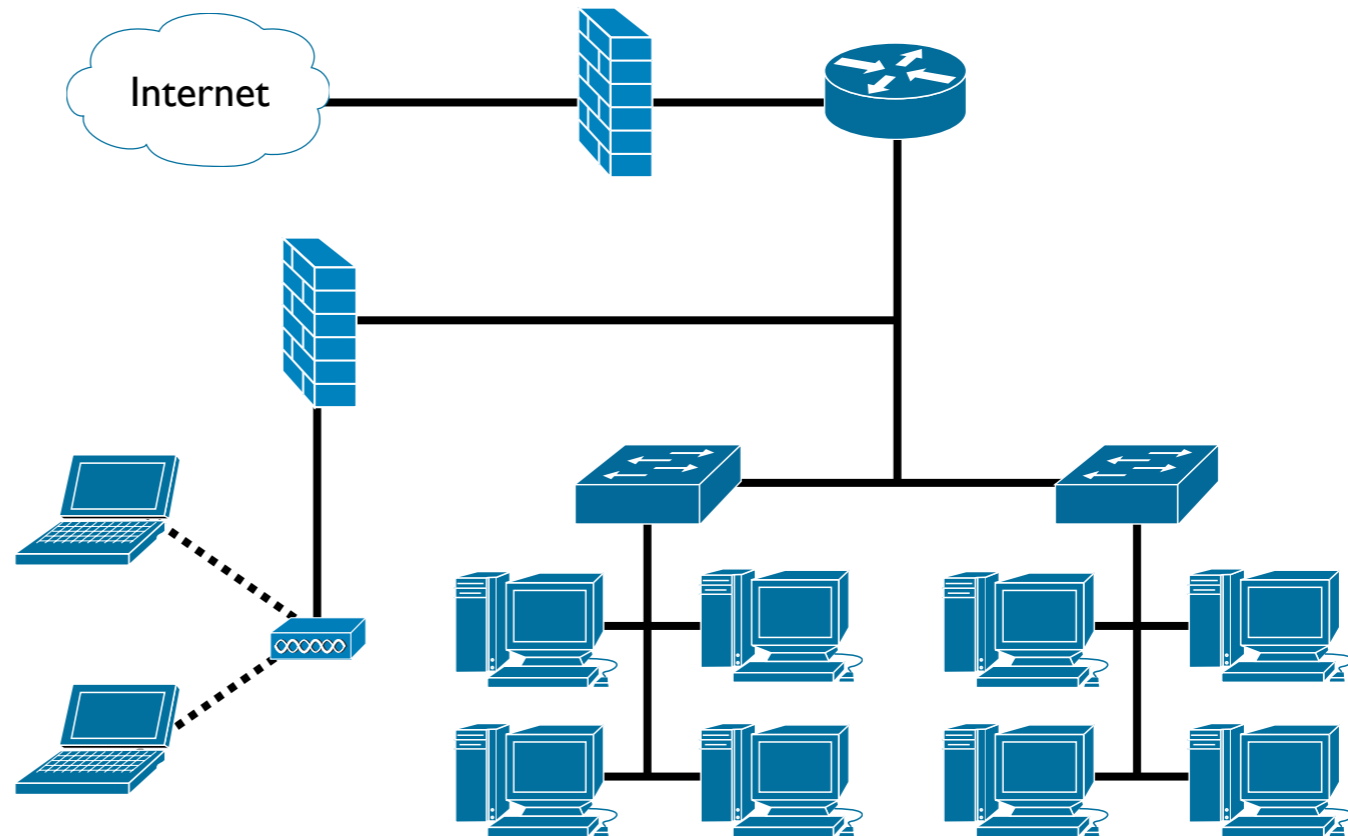
/48



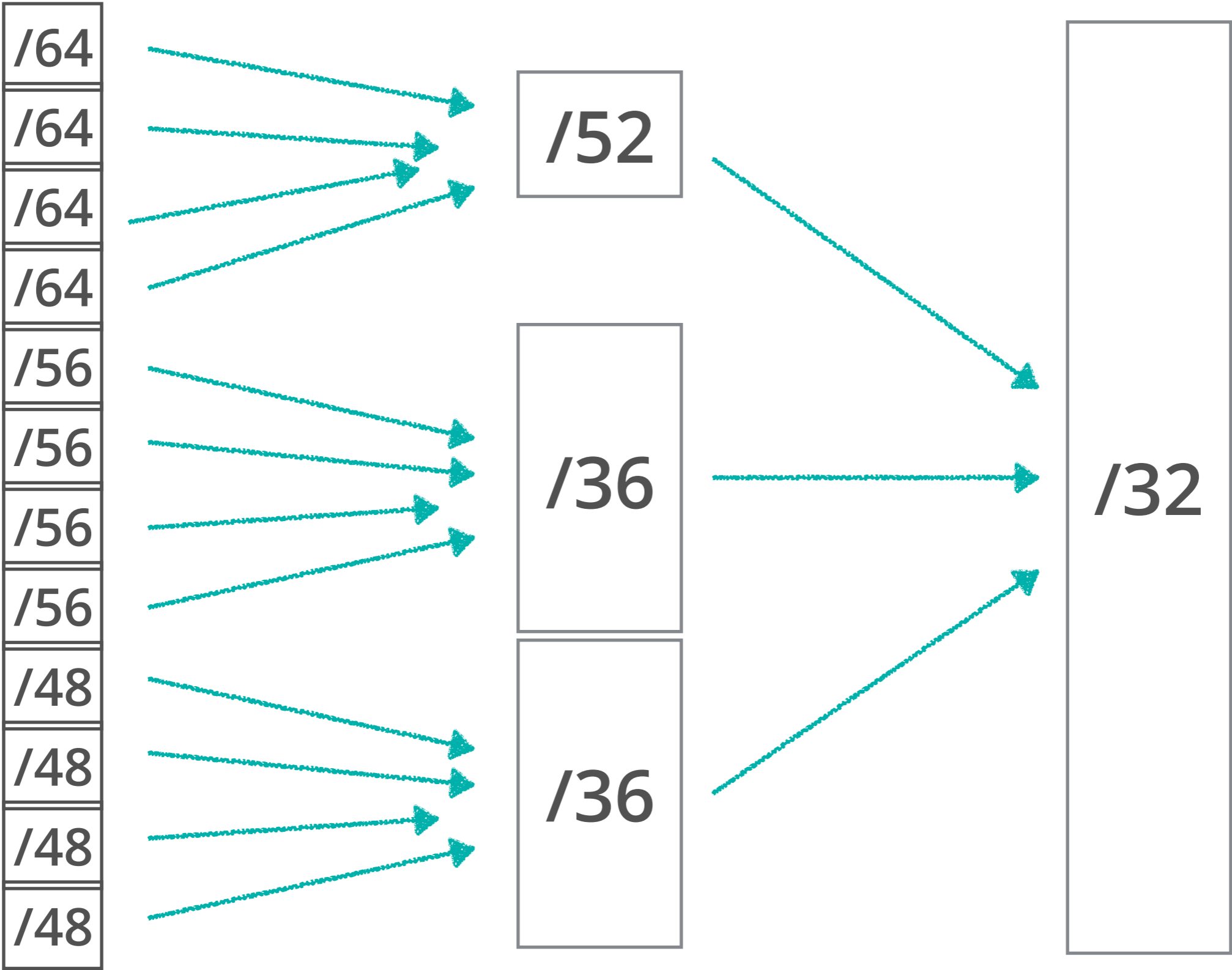
IPv6 Assignments



/48



Aggregation in IPv6





Questions

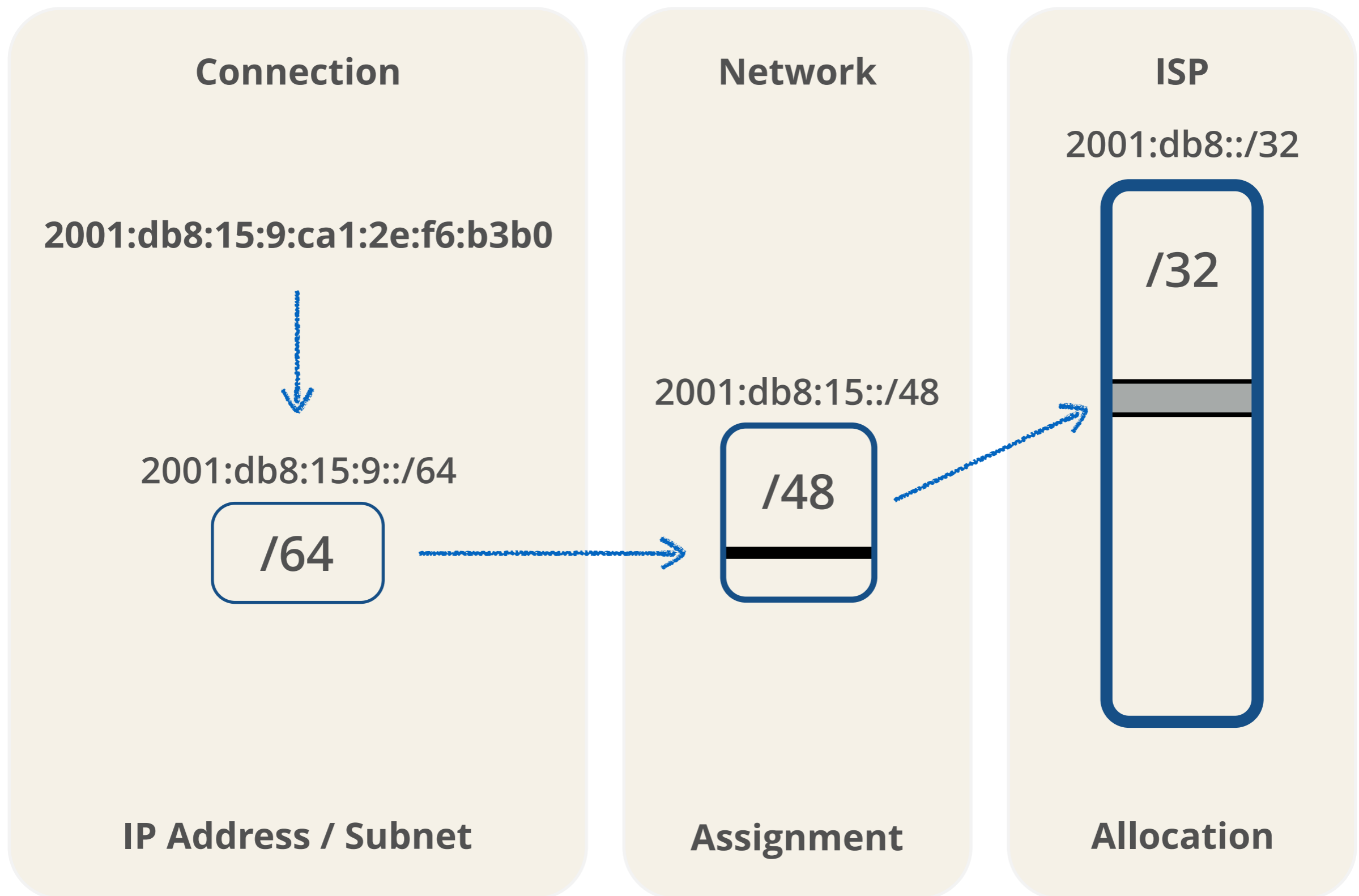




RIPE Database Queries

IPv6

From One IP Address



IPv6 objects: inet6num status



TYPE	INET6NUM STATUS
Allocation	ALLOCATED-BY-RIR
PA Assignment	ASSIGNED
Group of Assignments	AGGREGATED-BY-LIR
Sub-allocation	ALLOCATED-BY LIR
PI Assignment	ASSIGNED PI

IPv6 PA Assignment



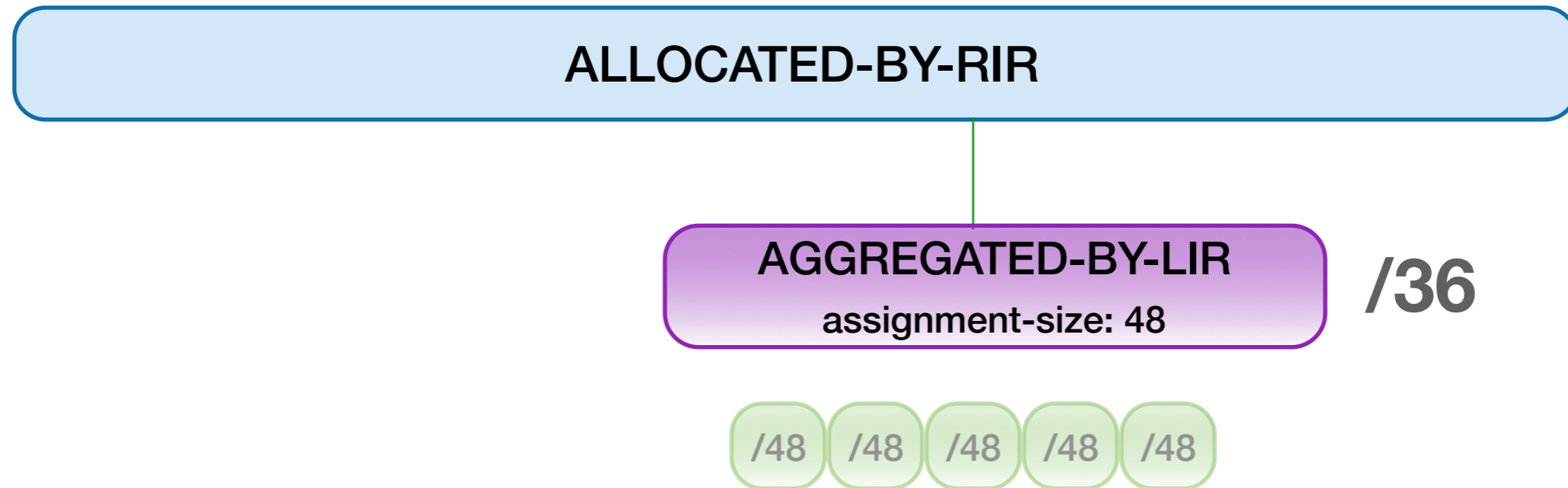
inet6num: 2a02:9010:87::/48
netname: TGT
descr: TGT
descr: Internet Public Addresses
descr: 133828
country: ES
admin-c: FA4939-RIPE
tech-c: FA4939-RIPE
status: ASSIGNED
mnt-by: MAINT-AS3352
created: 2014-04-16T11:45:58Z
last-modified: 2014-04-16T11:45:58Z
source: RIPE

IPv6 Group of PA Assignments



inet6num:	2a01:b600:e000::/36	←
netname:	EHIWEB-IPV6-DYN-1	
descr:	Ehiweb xDSL IPv6 Dynamic Addresses 1st Pool	
country:	IT	
org:	ORG-ES53-RIPE	
admin-c:	MS17084-RIPE	
tech-c:	MS17084-RIPE	
status:	AGGREGATED-BY-LIR	←
assignment-size:	48	
mnt-by:	MNT-EHIWEB	
created:	2012-05-22T11:38:56Z	←
last-modified:	2012-05-22T11:38:56Z	
source:	RIPE # Filtered	

AGGREGATED-BY-LIR



- Used to group customers
 - example: residential broadband customers
- “assignment size:” = assignment of each customer

IPv6 Allocation

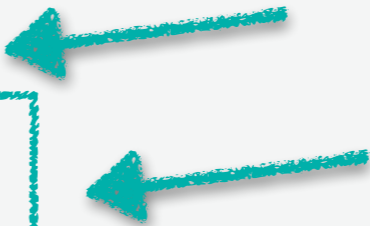


```
inet6num:      2a02:9000::/23
netname:       ES-TELEFONICA-20110302
descr:        Telefonica de Espana
country:       ES
org:          ORG-TDE1-RIPE
admin-c:      ATdE1-RIPE
tech-c:       TTdE1-RIPE
status:       ALLOCATED-BY-RIR
mnt-by:       RIPE-NCC-HM-MNT
mnt-lower:    MAINT-AS3352
mnt-routes:   MAINT-AS3352
created:      2011-03-02T17:17:14Z
last-modified: 2011-03-02T17:17:14Z
source:       RIPE # Filtered
```

IPv6 Sub-Allocation




```
inet6num:      2001:7b8:1000::/36
netname:       NL-BIT2
descr:        BIT IPv6 deployment
country:      NL
admin-c:      BIT-RIPE
tech-c:       BIT-RIPE
remarks:      For information, contact the NOC <noc@bit.nl>
mnt-by:       BIT-MNT
status:       ALLOCATED-BY-LIR
created:      2002-04-05T18:36:30Z
last-modified: 2007-01-17T08:32:11Z
source:      RIPE # Filtered
```



IPv6 PI Assignment



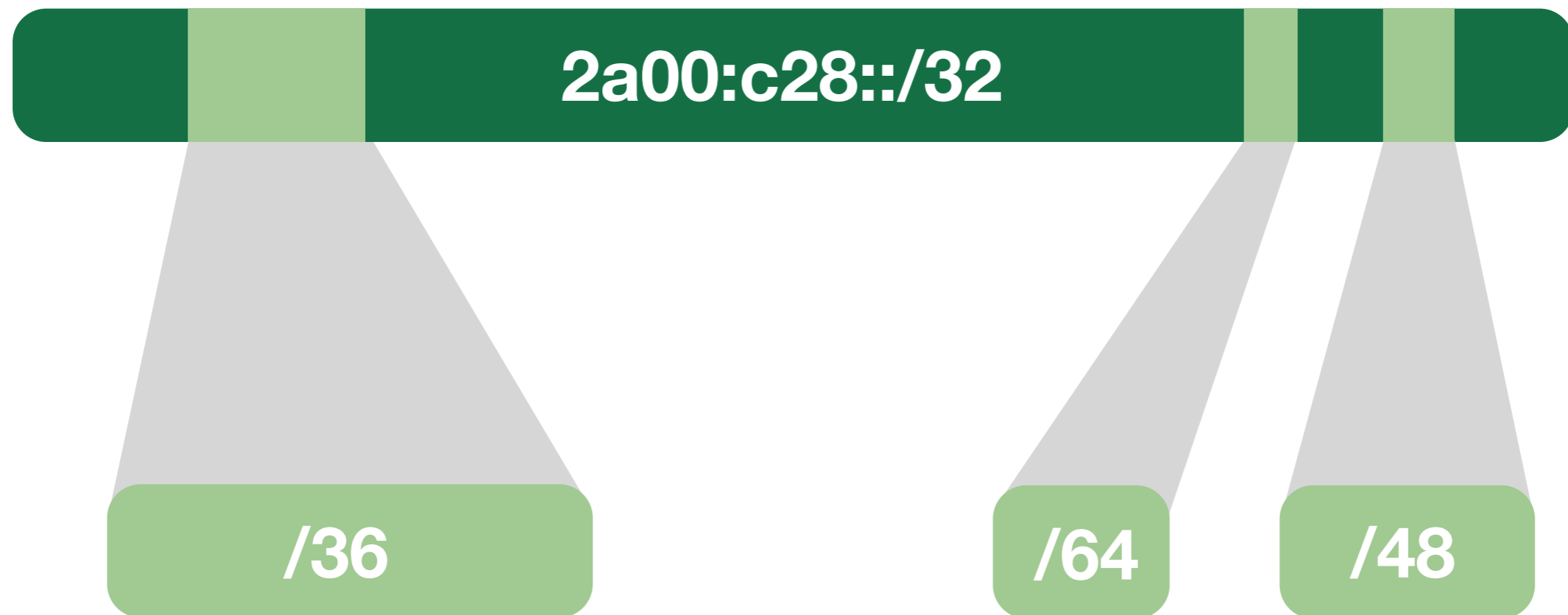
```
inet6num:      2001:67c:29cc::/48
netname:       HCS-V6-NET
descr:        HCS HEALTH COMMUNICATION SERVICE GMBH
country:      AT
org:          ORG-HHCS1-RIPE
sponsoring-org: ORG-iEWA1-RIPE
admin-c:      WW85-RIPE
tech-c:       WW85-RIPE
status:       ASSIGNED PI
mnt-by:       RIPE-NCC-END-MNT
mnt-by:       AS3330-MNT
mnt-routes:   AS3330-MNT
mnt-domains:  AS3330-MNT
created:      2012-06-06T09:26:00Z
last-modified: 2015-08-05T13:49:51Z
source:      RIPE # Filtered
```



More Specific inet6nums: -m



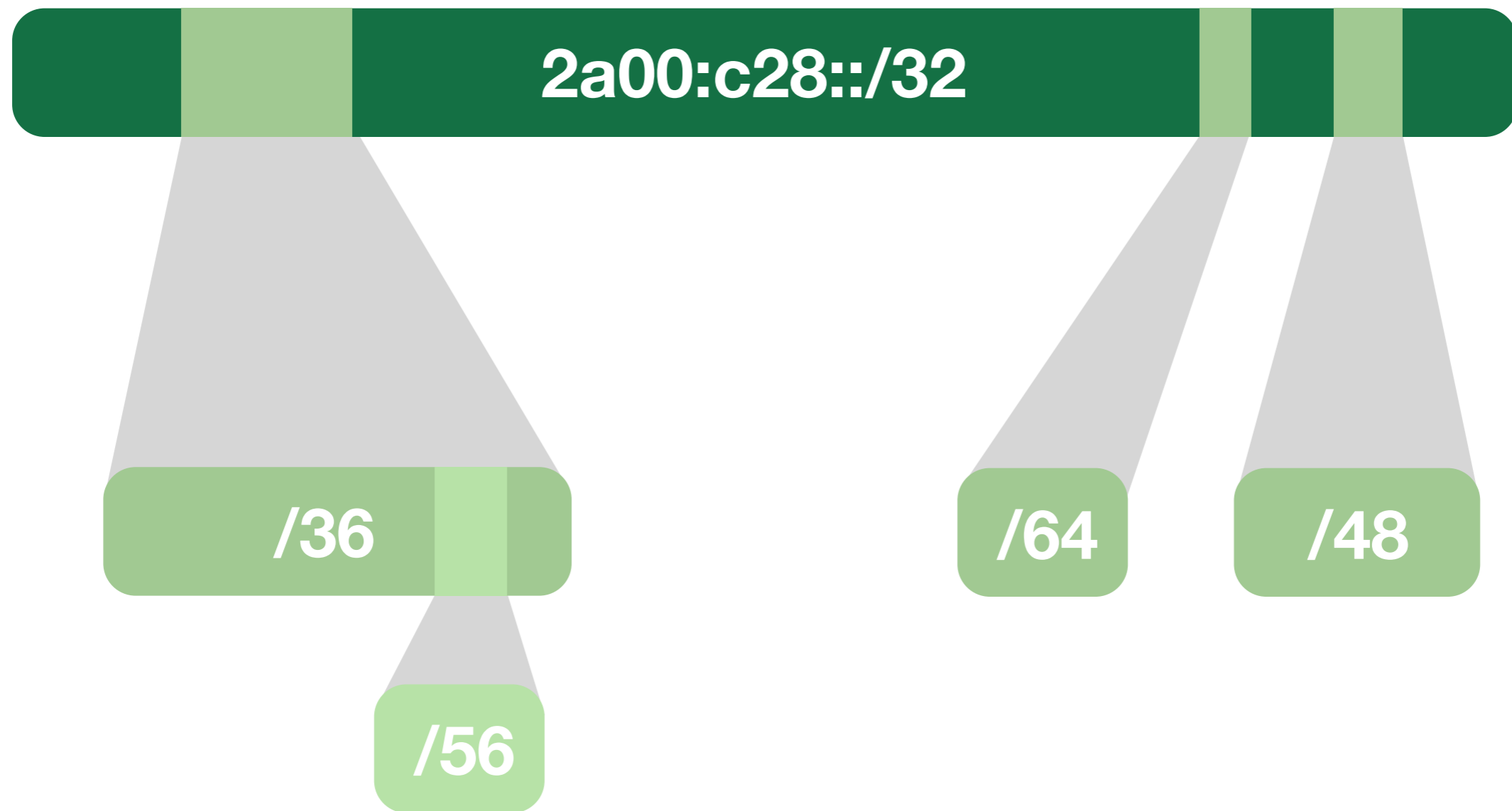
`-m 2a00:c28::/32`



More Specific inet6nums: -M



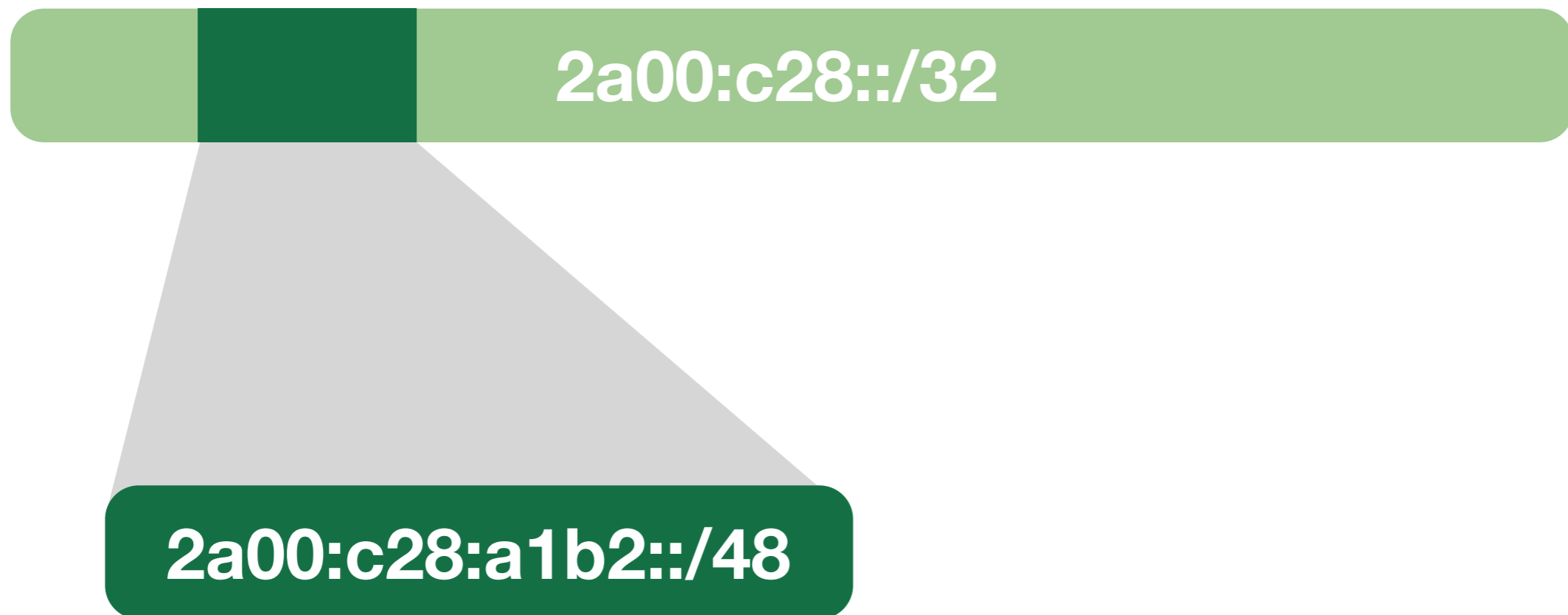
-M 2a00:c28::/32



Less Specific inet6nums: -l



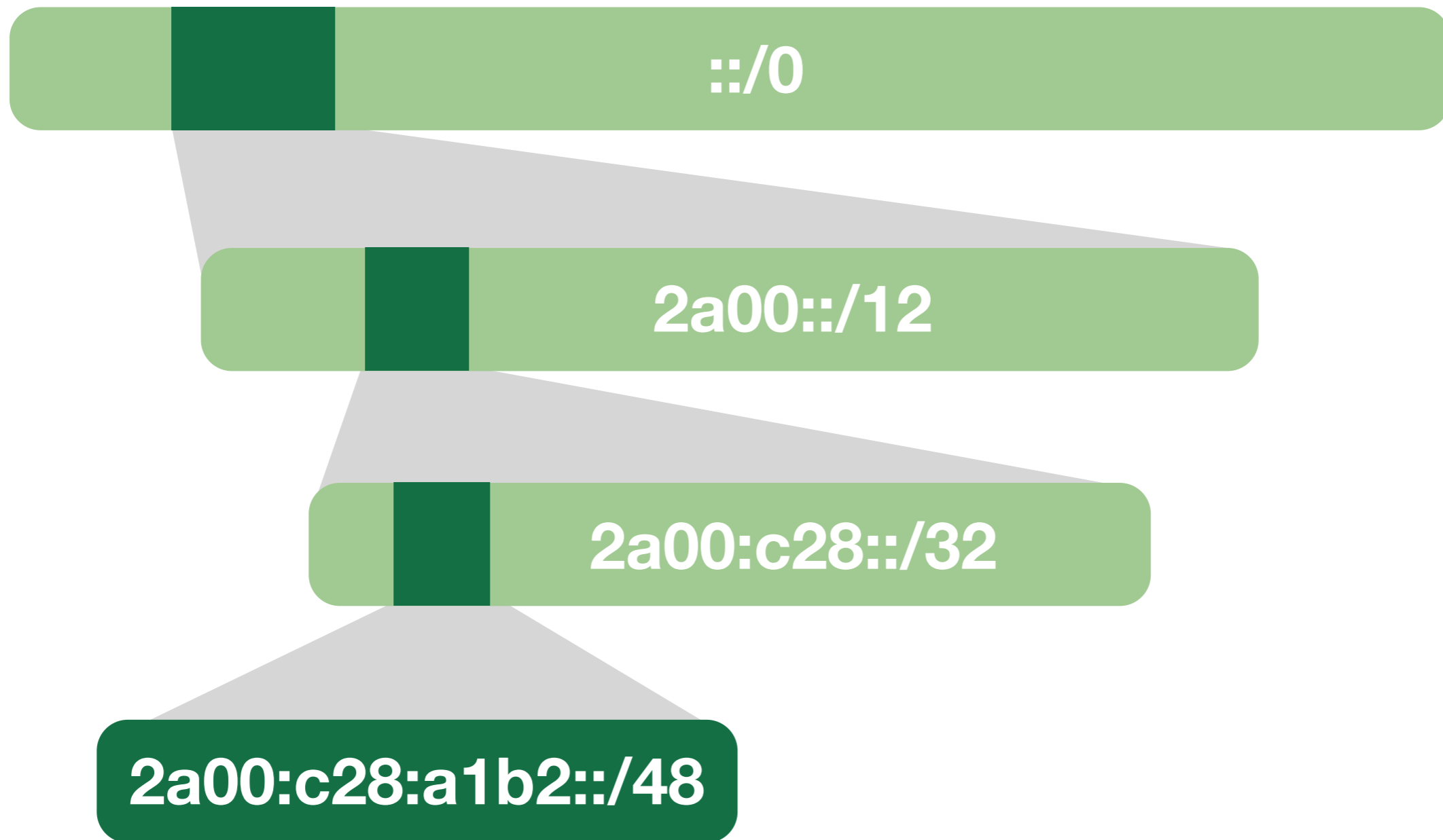
-l 2a00:c28:a1b2::/48



Less Specific inet6nums: -L



`-L 2a00:c28:a1b2::/48`



Contact Information



- The same as IPv4
- Find the ALLOCATION
- Follow to the ORGANISATION

ALLOCATION



ORGANISATION



Live Demo

IPv6 Queries



Questions





Extra RIPE Database

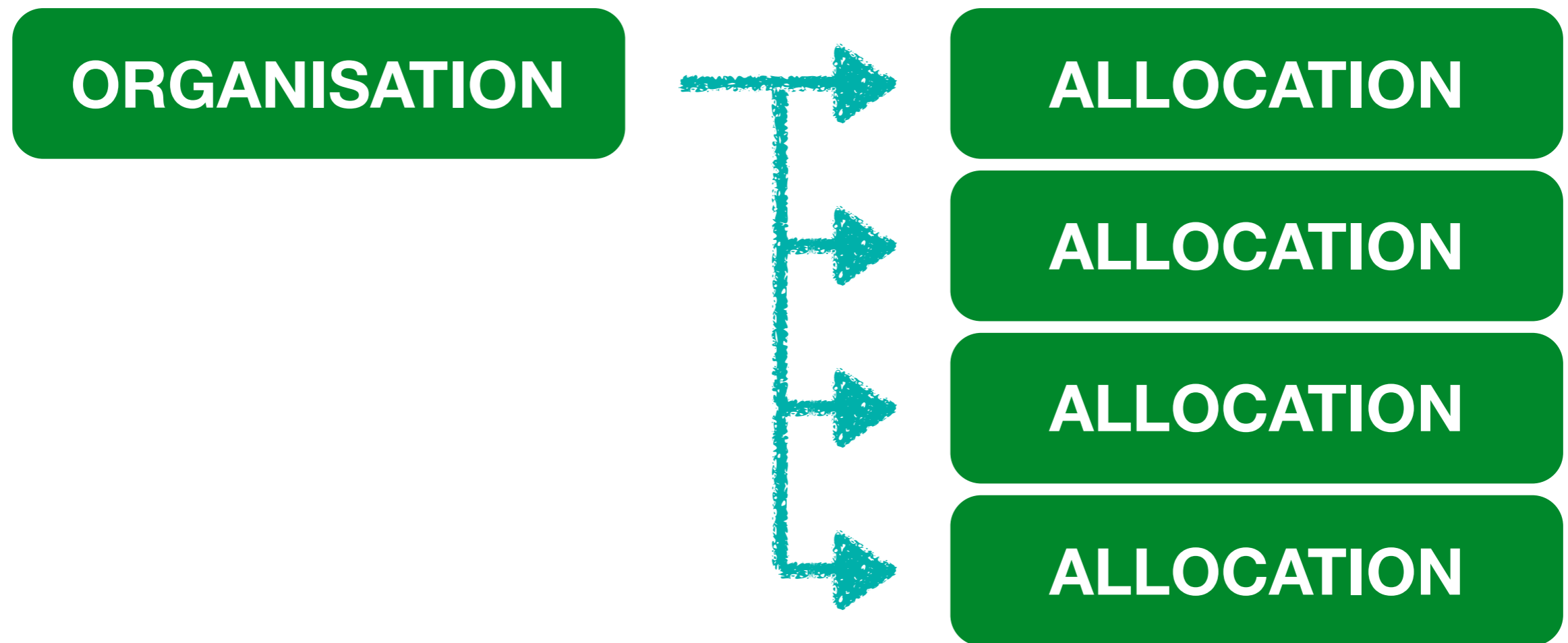
Inverse Lookups

Full Text Search

Inverse Lookup



- Finding all objects in which an object is referenced



Inverse Lookup



JD-RIPE

Show full object details ?

Do not retrieve related objects ?

You can search up to 5 terms at once in the search box above, separating them with a semicolon.

Sources	Types	Hierarchy	Flags	Inverse lookup	
?					
<input type="checkbox"/>	abuse-mailbox	<input type="checkbox"/>	member-of	<input type="checkbox"/>	nserver
<input type="checkbox"/>	admin-c	<input type="checkbox"/>	mnt-by	<input type="checkbox"/>	org
<input type="checkbox"/>	auth	<input type="checkbox"/>	mnt-domains	<input type="checkbox"/>	origin
<input type="checkbox"/>	author	<input type="checkbox"/>	mnt-irt	<input checked="" type="checkbox"/>	person
<input type="checkbox"/>	fingerpr	<input type="checkbox"/>	mnt-lower	<input type="checkbox"/>	ping-hdl
<input type="checkbox"/>	form	<input type="checkbox"/>	mnt-nfy	<input type="checkbox"/>	referral-by
<input type="checkbox"/>	irt-nfy	<input type="checkbox"/>	mnt-ref	<input type="checkbox"/>	ref-nfy
<input type="checkbox"/>	local-as	<input type="checkbox"/>	mnt-routes	<input type="checkbox"/>	tech-c
<input type="checkbox"/>	mbrs-by-ref	<input type="checkbox"/>	notify	<input type="checkbox"/>	upd-to
				<input type="checkbox"/>	zone-c

By submitting this form you explicitly express your agreement with the [RIPE Database Terms and Conditions](#)

Search

Referenced person object



inet6num: 2001:db8::/32
descr: my IPv6 range
mnt-by: RIPE-NCC-HM-MNT
org: ORG-BB2-RIPE
admin-c: JE777-RIPE
tech-c: JD1-RIPE

aut-num: AS64551
descr: my AS number
mnt-by: RIPE-NCC-HM-MNT
org: ORG-BB2-RIPE
admin-c: **JD1-RIPE**
tech-c: LA789-RIPE

mntner: LIR-MNT
admin-c: **JD1-RIPE**
tech-c: LA789-RIPE
mnt-by: LIR-MNT

role: Bluelight Staff
nic-hdl: BLS77-RIPE
admin-c: **JD1-RIPE**
address: Sesame Street 1
e-mail: staff@example.org

-i admin-c JD1-RIPE

person: John Smith
nic-hdl: JD1-RIPE
address: Sesame Street 1
phone: +1 555 0101
e-mail: john@example.org
mnt-by: LIR-MNT

Referenced person object



inet6num: 2001:db8::/32
descr: my IPv6 range
mnt-by: RIPE-NCC-HM-MNT
org: ORG-BB2-RIPE
admin-c: JE777-RIPE
tech-c: **JD1-RIPE**

aut-num: AS64551
descr: my AS number
mnt-by: RIPE-NCC-HM-MNT
org: ORG-BB2-RIPE
tech-c: **JD1-RIPE**
tech-c: LA789-RIPE

mntner: LIR-MNT
admin-c: **JD1-RIPE**
tech-c: LA789-RIPE
mnt-by: LIR-MNT

role: Bluelight Staff
nic-hdl: BLS77-RIPE
admin-c: **JD1-RIPE**
address: Sesame Street 1
e-mail: staff@example.org

-i person JD1-RIPE

person: John Smith
nic-hdl: JD1-RIPE
address: Sesame Street 1
phone: +1 555 0101
e-mail: john@example.org
mnt-by: LIR-MNT

Referenced Organisation



inet6num: 2001:db8::/32
descr: My IPv6 range
org: **ORG-BB2-RIPE**
admin-c: JE777-RIPE
tech-c: JD1-RIPE

inetnum: 85.23.16.0/21
descr: My v4 allocation
org: **ORG-BB2-RIPE**
admin-c: JE777-RIPE
tech-c: JD1-RIPE

inetnum: 85.111.185.0/21
descr: Other v4 allocation
org: **ORG-BB2-RIPE**
admin-c: JE777-RIPE
tech-c: JD1-RIPE

aut-num: AS64551
descr: my AS number
org: **ORG-BB2-RIPE**
admin-c: JE777-RIPE
tech-c: JD1-RIPE

-i org **ORG-BB2-RIPE**

organisation: **ORG-BB2-RIPE**
admin-c: JD1-RIPE
tech-c: LA789-RIPE
abuse-c: **AR789-RIPE**
mnt-by: LIR-MNT

Full Text Search



RIPE Database text search

This service allows searches over the full text of the RIPE Database object data.

The search is done on object text without regard for any relationships. Multiple search terms should be separated with a space.

[Advanced Search](#)

By submitting this form you explicitly express your agreement with the [RIPE Database Terms and Conditions](#)

Search results

This is the RIPE Database full text search service.
The RIPE Database is subject to [Terms and Conditions](#).

[1] 2 3

domain: [205.149.82.in-addr.arpa](#)
descr=Reverse delegation for **Bluelight** 2nd/24

domain: [210.149.82.in-addr.arpa](#)
descr=Reverse delegation for **Bluelight** 2nd/24

domain: [201.156.178.IN-ADDR.ARPA](#)
mnt-by=RO-BLUELIGHT, descr=**BLUELIGHT**

domain: [200.156.178.IN-ADDR.ARPA](#)
mnt-by=RO-BLUELIGHT, descr=**BLUELIGHT**

inet6num: [2a01:4f8:201:31ea::/64](#)
netname=**BLUE-LIGHT**

Full Text Search - Advanced



Search term

+ Basic Search

All
 Any
 Exact Match

Search only within the following objects:

- as-block
- as-set
- aut-num
- domain
- filter-set
- inet-rtr
- inet6num
- inetnum**
- irt
- key-cert
- mntner
- organisation
- peering-set
- person
- poem
- poetic-form
- role
- route
- route-set
- route6
- rtr-set

Search within the following fields: ?

- admin-c
- changed
- country
- created
- descr
- geoloc
- inetnum
- language
- last-modified
- mnt-by
- mnt-domains
- mnt-irt
- mnt-lower
- mnt-routes
- netname
- notify
- org
- remarks
- source
- sponsoring-org
- status
- tech-c

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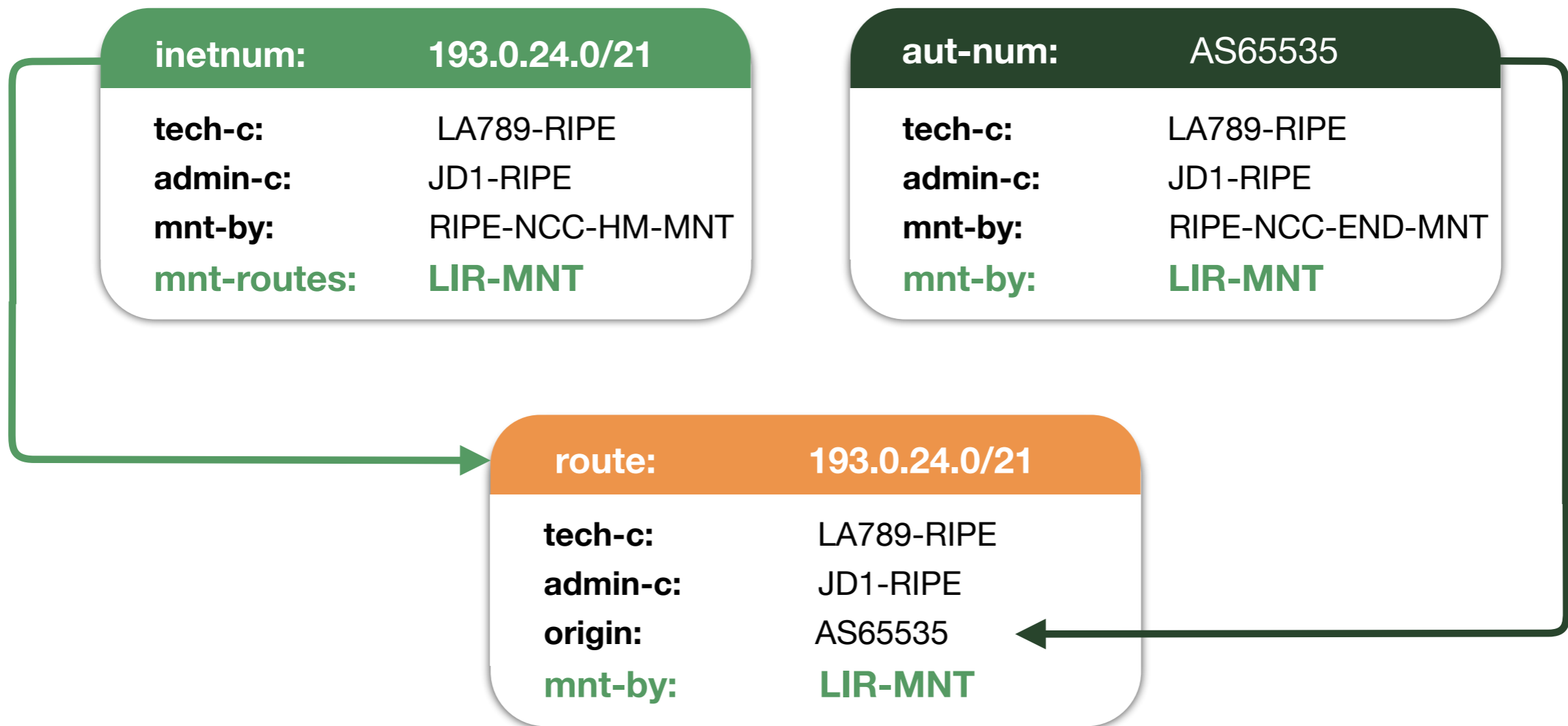
Search



Other Database Objects

route / route6 / domain

Route objects

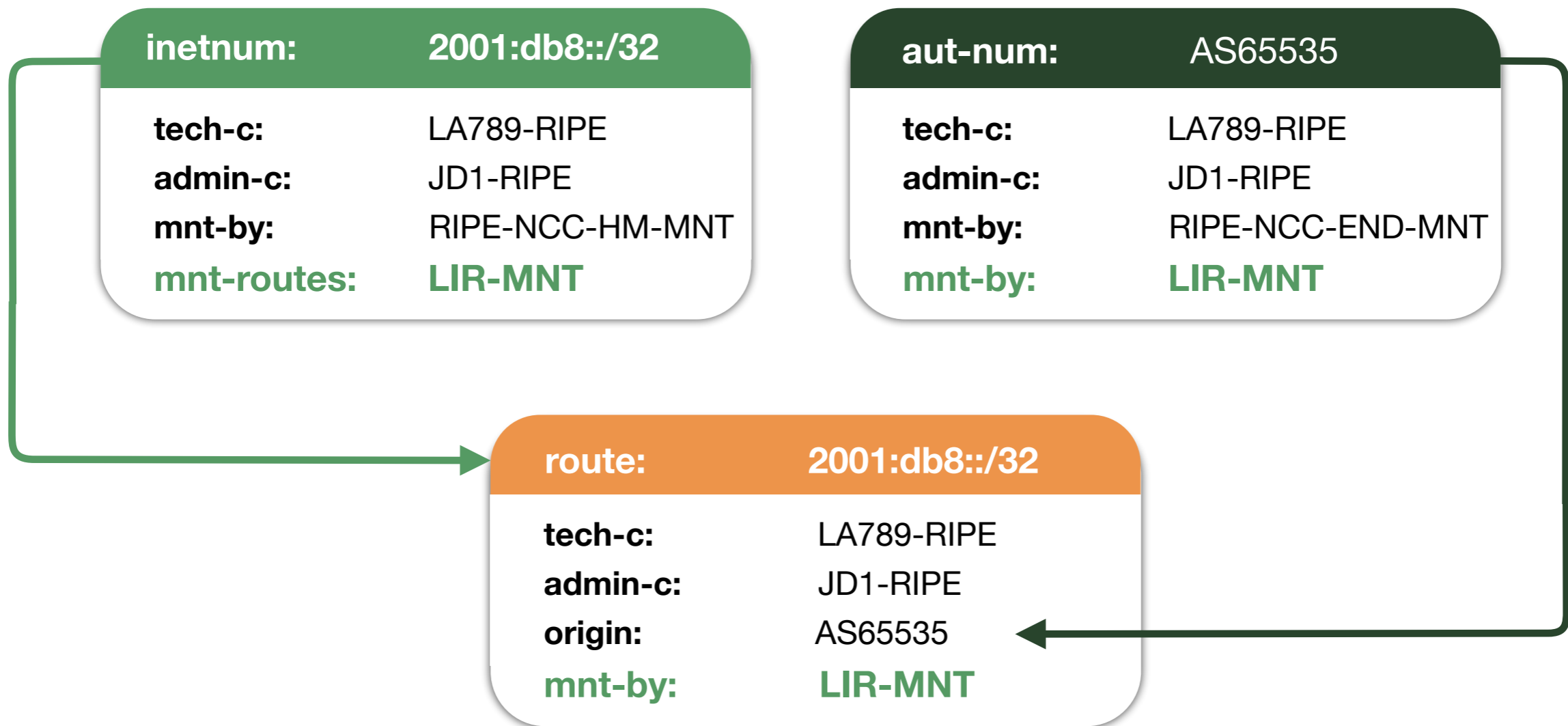


Example route object



```
route:          193.0.24.0/21
descr:          The Demo Network
origin:         AS65535
mnt-by:         LIR-MNT
created:        2010-09-27T12:14:23Z
last-modified: 2010-09-27T12:14:23Z
source:        RIPE # Filtered
```

Route6 objects



Example route6 object



route6: 2001:67c:2e8::/48

descr: RIPE-NCC

origin: AS3333

mnt-lower: RIPE-NCC-MNT

mnt-routes: RIPE-NCC-MNT

mnt-by: RIPE-NCC-MNT

created: 2010-09-27T12:14:23Z

last-modified: 2010-09-27T12:14:23Z

source: RIPE # Filtered

IPv4 domain objects



- For reverse delegation
- Using domain objects
 - Creates glue records on RIPE NCC name servers
- /24 and /16 block sizes
- in-addr.arpa zone
- Domain points to the authoritative NS

Example domain object



domain: 27.0.193.in-addr.arpa

descr: RIPE MEETING

admin-c: JDR-RIPE

tech-c: OPS4-RIPE

zone-c: OPS4-RIPE

nserver: pri.authdns.ripe.net

nserver: sns-pb.isc.org

nserver: sec1.apnic.net

nserver: ns3.nic.fr

nserver: tinnie.arin.net

mnt-by: RIPE-NCC-MNT

mnt-by: RIPE-GII-MNT

created: 2008-04-21T13:14:45Z

last-modified: 2014-11-11T16:39:06Z

source: RIPE # Filtered



IPv6 domain objects



- For reverse DNS
- Using domain objects
 - Creates glue records on RIPE NCC name servers
- 4-bit boundary: /48, /44, /40, /36, /32...
- ip6.arpa zone
- Domain object points to the authoritative NS

Example domain object



```
domain:      0.e.0.0.c.7.6.0.1.0.0.2.ip6.arpa
descr:      RIPE NCC External DNS Infrastructure
admin-c:    GII-RIPE
tech-c:     GII-RIPE
zone-c:     GII-RIPE
nserver:    pri.authdns.ripe.net
nserver:    sns-pb.isc.org
nserver:    sec1.apnic.net
nserver:    ns3.nic.fr
nserver:    tinnie.arin.net
mnt-by:     RIPE-GII-MNT
created:    2010-06-16T15:15:36Z
last-modified: 2014-11-12T12:30:22Z
source:     RIPE # Filtered
```



Questions



The End!

Край

Y Diwedd

النهاية

Соңы

ჟღერა

Fí

Finis

Ende

Finvezh

Liðugt

Кінець

Konec

Kraj

Ěnn

Fund

پایان

Lõpp

Beigas

Vége

Son

An Críoch

Kraj

הסוף

Fine

Endir

Sfârșit

Fin

Τέλος

Einde

Конец

Slut

Slutt

დასასრული

Pabaiga

Fim

Amaia

Loppu

Tmíem

Koniec