Supporting Notes for the Provider Independent (PI) Assignment Request Form

RIPE NCC

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Introduction

This document contains instructions for completing the 'Provider Independent (PI)
Assignment Request Form'. It is a tool for gathering the information necessary to evaluate
the request and to ensure that the same guidelines are applied to each request. Where
necessary, the RIPE NCC will ask for additional information.

The 'Provider Independent (PI) Assignment Request Form' can be found at:

http://www.ripe.net/ripe/docs/pi-request.html

A PI assignment is made to the organisation that will use the address space. That
organisation cannot re-assign any of the address space to other organisations. An
organisation wishing to re-assign address space should consider becoming a Local
Internet Registry (LIR).

The policies and procedures to follow in making IP address space assignment decisions
are described in 'IPv4 Address Allocation and Assignment Policies in the RIPE NCC
Service Region' found at:

http://www.ripe.net/ripe/docs/ipv4-policies.html

Supporting Notes for the Request Form Templates

#[GENERAL INFORMATION]#
request-type: pi-ipv4
form-version: 1.0

Please do not alter the value of the 'request-type' and 'form-version' fields.

x-ncc-regid:

The Registry Identifier (RegID) must be included in every message sent to <hostmaster@ripe.net>. It is used to identify the Local Internet Registry (LIR). It has the following format:

<country code>.<organisation name>

Warning: Requests sent to the RIPE NCC that lack a proper RegID (x-ncc-regid) will bounce back to the sender.

#[ADDRESS SPACE USER]#
%
% Who will use the address space being requested?
organisation-name:
organisation-location:
website-if-available:

In the 'organisation-name' field please enter the complete name of the organisation that will use this assignment of PI address space.

In the 'organisation-location' field please enter the location of the main office of the company.

In the 'website-if-available' field please enter the URL of the organisation's website if available.

%
% Does the organisation already have address space that
% can meet the needs for this request? Enter "Yes" or "No".
space-available:

You should only send a request for address space that will be needed in the foreseeable future and for which the End User does not currently have enough space available to cover. If the organisation requesting an assignment does currently have address space that is not in use and could be used for this new assignment, please reply with "Yes" and give an explanation of why more address space is needed.

#[INITIAL INFORMATION]#
%
% Please read the following information and answer the
% questions.

%
% 1. Why is PI space required rather than PA space?
%
why-pi:

In order for the RIPE NCC to approve an assignment for PI address space, you must explain why PA space does not fulfil the needs of the End User.

%
% 2. Please check that you are not requesting extra address
% space for routing or administrative reasons. See Section
% 5.2 "Assignment Guidelines" of the RIPE document "IPv4
% Address Allocation and Assignment Policies in the RIPE NCC
% Service Region".
%
routing-reasons:

Respecting the goal of address space conservation, it is not acceptable to request a larger number of IP addresses than are needed for routing or network administration.

%
% Please confirm whether you have made the End User aware
% of the warning given in the RIPE document "Provider
% Independent vs Provider Aggregatable Address Space",
% Section 3, "Detailed Recommendations".
%
confirmation:

You must ensure that the End User understands that PI address space may be more difficult or expensive to route than PA address space.

Please note that the use of PA address space should always be recommended.

The RIPE NCC needs confirmation that the LIR has passed the warning given in the RIPE document 'Provider Independent vs Provider Aggregatable Address Space' on to their End User and that the End User understands and accepts these conditions.

#[ADDRESSING PLAN]#
number-of-subnets:
address-space-returned:

In the 'number-of-subnets' field please enter the total number of subnets listed in the plan below.

Please complete the 'address-space-returned' field if the user will be returning address space to another LIR. Please enter the prefixes that will be returned, to which LIR, and

when. Include a separate field (address-space-returned:) per prefix. Note that the expected time for renumbering is three months. Use the following syntax for this field:

<x.x.x.x/xx> to <LIR> by <yyyymmdd>

%
%   Size
%   in CIDR   Immediate   1yr   2yr   Purpose
subnet:
totals:

This table represents each subnet and a usage description of the requested address space. Please repeat the 'subnet' field for all subnets requested. Only include information about public address space. Private address space does not need to be described.

Please specify the number of IP addresses needed using the CIDR (slash) notation. (For example if the network needs a total of 128 IP addresses, indicate this as /25.)

In the 'Size in CIDR' column please enter the CIDR (slash) notation corresponding to the total number of IP addresses needed for that subnet. (Only specify one subnet size, i.e. if the subnet needs a total of six IP addresses indicate this as /29 NOT /30, /31.)

In the 'Immediate', '1yr', and '2yr' columns please enter in CIDR (slash) notation the number of IP addresses needed immediately and the estimated usage for the next two years. Include interfaces used for hosts, routers, gateways, terminal concentrators, and any other machines requiring one or more network interfaces. (Multiple slash notations may be used, i.e. /30, /31.)

In the 'Purpose' column please enter a short description of how the subnet being requested will be used.

In the 'totals' field please enter the total for each column. The amount in the 'Size in CIDR' column total should be the total amount of address space required for this request.

#[EQUIPMENT DESCRIPTION]#
%
% Please describe the equipment that will be used in the
% network. Indicate the function of the equipment and provide
% information regarding the way it uses IP address space.
equipment-name:
manufacturer-name:
model-number:
other-data:

In the 'equipment-name' field please enter the type of equipment requiring public IP addresses (Router, Switch, ATM, Workstation, etc.) for this request.

In the 'manufacturer-name' field please enter the vendor name for the equipment listed in 'equipment-name'.

In the 'model-number' field please enter the model number for the equipment listed in 'equipment-name'.

In the 'other-data' field please enter any additional information that would clarify how this equipment or model uses IP address space. For example, the number of cards, ports, or network interfaces that the equipment has. If the software being used by the equipment requires multiple IP addresses, you should also describe this here.

Repeat this template (i.e. all four fields) as many times as necessary to describe the equipment relating to the IP address space being requested in the Addressing Plan template. Please leave a blank line between each template.

#[NETWORK DESCRIPTION]#
%
% If your description does not allow the Hostmaster to
% understand the request you may be asked additional
% questions. Please add any additional information that you
% think may facilitate the evaluation of this request below.

This is free-text space where you can include additional information that you think will be helpful to the RIPE NCC and the Hostmaster evaluating your request. If the Hostmaster requires additional information in order to understand the request, you may be asked more specific questions.

#[NETWORK DIAGRAM]#
%
% Please enter "Yes" or "No" if you have attached a network
% diagram in JPEG or PostScript format to this e-mail
% request.
diagram-attached:

The diagram can be sent as a MIME attachment with your e-mail to <hostmaster@ripe.net>. A network diagram (topology map) can be helpful in clarifying the set up of the network and illustrating why the IP addresses being requested are needed.

#[DATABASE TEMPLATE(S)]#
%
% Please include database template(s) here so that the
% Hostmaster can register the assignment in the RIPE

% Database. If it is necessary to create a maintainer object
% please include that template too.

```
inetnum:
netname:      *specify a netname here*
descr:        *specify the name of the organisation*
country:      *specify the country code*
admin-c:      *insert nic-handle of administrative contact*
tech-c:       *insert nic-handle of technical contact*
status:       ASSIGNED PI
mnt-by:       *specify mntner name here*
mnt-by:       RIPE-NCC-HM-PI-MNT
mnt-lower:    RIPE-NCC-HM-PI-MNT
mnt-routes:   *specify mntner name here*
changed:      hostmaster@ripe.net
source:       RIPE
```

The "inetnum:" attribute (the IPv4 network range) should be left blank. It will be chosen by the RIPE NCC from the available IPv4 address space allocated to it by the Internet Assigned Numbers Authority (IANA).

The "netname" should be a concise, descriptive name for the network and should reflect the organisation name of the address space user. Valid characters are letters, numbers and dash.

The first "descr:" attribute should be completed with the name of the organisation that will use the address space.

The "country:" attribute describes the country or countries the network will operate in. If the network is multi-national a "#" can be used to allow multiple ISO country codes to be listed using a single "country:" attribute.

For example:
country: NL # ES IT

The "admin-c:" attribute contains the nic-hdl for the administrative contact person. This person should be administratively responsible for the network. A **role** object nic-hdl can also be used in this attribute.

The "tech-c:" attribute contains the nic-hdl for the technical contact person. This person should have technical knowledge of the network and will preferably be working on-site. A **role** object nic-hdl can also be used in this attribute.

The "status:" attribute must be ASSIGNED PI.

The first "mnt-by:" attribute must be RIPE-NCC-PI-MNT. The second "mnt-by:" attribute must include either the LIR's or End User's maintainer.

The "mnt-lower:" attribute must be RIPE-NCC-PI-MNT.

The "mnt-routes:" attribute provides hierarchical authentication. It authenticates the creation of **route** objects that use this address range in the "route:" attribute. The LIR's or End User's maintainer must be referenced here.

The "changed:" attribute must be hostmaster@ripe.net.

The "source:" attribute must be RIPE.

If the maintainer referenced does not exist in the RIPE Database please include the **mntner** template below the **inetnum** template. Please leave a blank line between the templates.

#[END OF REQUEST]#

Please insert your signature in plain text (with your full name) after the above header. The Robot will not process any information included here.

Examples

#[GENERAL INFORMATION]#
request-type: pi-ipv4
form-version: 1.0
x-ncc-regid: nn.santa

#[ADDRESS SPACE USER]#
%
% Who will use the address space being requested?
organisation-name: Ruritania Banking Interchange
organisation-location: Ruritania, Northern Nowhere
website-if-available: No

%
% Does the organisation already have address space that
% can meet the needs for this request? Enter "Yes" or "No".
space-available: No

#[INITIAL INFORMATION]#
%
% Please read the following information and answer the
% questions.

%
% 1. Why is PI space required rather than PA space?
%
why-pi: This space will be used to connect the private networks of all the banks operating in Ruritania. It will allow them to introduce electronic settlement services. It will not be routed on the Internet so PA will not be used.

%
% 2. Please check that you are not requesting extra address
% space for routing or administrative reasons. See Section
% 5.2 "Assignment Guidelines" of the RIPE document "IPv4
% Address Allocation and Assignment Policies in the RIPE NCC
% Service Region".
%
routing-reasons: No, we do not require extra space for routing or administrative reasons.

%
% Please confirm whether you have made the End User aware
% of the warning given in the RIPE document "Provider
% Independent vs Provider Aggregatable Address Space",
% Section 3, "Detailed Recommendations".
%
confirmation: I confirm this.

%
% You are required to confirm that the points mentioned
% above have been read and understood and that the
% organisation requesting the PI address space is fully
% aware of the disadvantages of PI address space.
%

#[ADDRESSING PLAN]#
number-of-subnets: 2
address-space-returned: None

%
%   Size
%   in CIDR   Immediate   1yr   2yr   Purpose
subnet: /24   /25   /24   /24   PTP links
subnet: /24   /26   /25   /25,/26   Settlement Servers
totals: /23   /25,/26   /24,/25   /24,/25,/26

#[EQUIPMENT DESCRIPTION]#
%
% Please describe the equipment that will be used in the
% network. Indicate the function of the equipment and provide

% information regarding the way it uses IP address space.
equipment-name: Switch
manufacturer-name: Cisco
model-number: Catalyst 5500
other-data: 64 Ports

equipment-name: Servers
manufacturer-name: Sun
model-number: Fire 6800
other-data: Each has three NICs

#[NETWORK DESCRIPTION]#
%
% If your description does not allow the Hostmaster to
% understand the request you may be asked additional
% questions. Please add any additional information that you
% think may facilitate the evaluation of this request below.

The servers are owned and managed by us but sit in the banks' own networks. They have a NIC connecting to the exchange network, a NIC connecting to the bank network and a NIC connecting to our own private (RFC1918) management network.

The Ruritania Banking Interchange currently has over 40 members. 15 membership applications are currently in process and ten more members are expected to join within one year.

#[NETWORK DIAGRAM]#
%
% Please enter "Yes" or "No" if you have attached a network
% diagram in JPEG or PostScript format to this e-mail
% request.
diagram-attached: No

#[DATABASE TEMPLATE(S)]#
%
% Please include database template(s) here so that the
% Hostmaster can register the assignment in the RIPE
% Database. If it is necessary to create a maintainer object
% please include that template too.

inetnum:
netname: NN-RBI
descr: Ruritania Banking Interchange
country: NN
admin-c: HOHO15-RIPE
tech-c: HOHO15-RIPE

```
status:      ASSIGNED PI
mnt-by:      SANTA-MNT
mnt-by:      RIPE-NCC-HM-PI-MNT
mnt-lower:   RIPE-NCC-HM-PI-MNT
mnt-routes:  SANTA-MNT
changed:     hostmaster@ripe.net
source:      RIPE
```

#[END of REQUEST]#

Best Regards,
Santa Claus

Network Administrator
Santa's Workshop Inc.

#[GENERAL INFORMATION]#
request-type: pi-ipv4
form-version: 1.0
x-ncc-regid: nn.santa

#[ADDRESS SPACE USER]#
%
% Who will use the address space being requested?
organisation-name: Polar Internet Exchange
organisation-location: Polar City, Northern Nowhere
website-if-available: www.pie.nn

%
% Does the organisation already have address space that
% can meet the needs for this request? Enter "Yes" or "No".
space-available: No

#[INITIAL INFORMATION]#
%
% Please read the following information and answer the
% questions.
%
% 1. Why is PI space required rather than PA space?
%
why-pi: Polar Internet Exchange is an internet exchange with 50 members and cannot use
PA space from members connecting to it.

%

% 2. Please check that you are not requesting extra address
% space for routing or administrative reasons. See Section
% 5.2 "Assignment Guidelines" of the RIPE document "IPv4
% Address Allocation and Assignment Policies in the RIPE NCC
% Service Region".
%
routing-reasons: No extra address space is requested for routing or administration.

%
% Please confirm whether you have made the End User aware
% of the warning given in the RIPE document "Provider
% Independent vs Provider Aggregatable Address Space",
% Section 3, "Detailed Recommendations".
%
confirmation: We confirm that Polar Internet Exchange is aware of the warning given.

%
% You are required to confirm that the points mentioned
% above have been read and understood and that the
% organisation requesting the PI address space is fully
% aware of the disadvantages of PI address space.
%

#[ADDRESSING PLAN]#
number-of-subnets: 1
address-space-returned: No

%
%   Size
%   in CIDR   Immediate   1yr   2yr   Purpose
subnet: /24   /25   /25,/26   /24   Network Peering Mesh
totals: /24   /25   /25,/26   /24

#[EQUIPMENT DESCRIPTION]#
%
% Please describe the equipment that will be used in the
% network. Indicate the function of the equipment and provide
% information regarding the way it uses IP address space.
equipment-name: Blackdiamond inferno
manufacturer-name: Extreme networks
model-number: 6800
other-data:

equipment-name: Bigiron
manufacturer-name: Foundry
model-number: 15000

other-data:

#[NETWORK DESCRIPTION]#
%
% If your description does not allow the Hostmaster to
% understand the request you may be asked additional
% questions. Please add any additional information that you
% think may facilitate the evaluation of this request below.

Initially there will be 50 members, we expect membership to increase significantly each
year. All members must take a port on each vendor independent peering LAN.

#[NETWORK DIAGRAM]#
%
% Please enter "Yes" or "No" if you have attached a network
% diagram in JPEG or PostScript format to this e-mail
% request.
diagram-attached: No

#[DATABASE TEMPLATE(S)]#
%
% Please include database template(s) here so that the
% Hostmaster can register the assignment in the RIPE
% Database. If it is necessary to create a maintainer object
% please include that template too.

inetnum:
netname: PIE-IX
descr: Polar Internet Exchange
country: NN
admin-c: HOHO15-RIPE
tech-c: HOHO15-RIPE
status: ASSIGNED PI
mnt-by: SANTA-MNT
mnt-by: RIPE-NCC-HM-PI-MNT
mnt-lower: RIPE-NCC-HM-PI-MNT
mnt-routes: SANTA-MNT
changed: hostmaster@ripe.net
source: RIPE

#[END of REQUEST]#

Best Regards,
Santa Claus

Network Administrator
Santa's Workshop Inc.

#[GENERAL INFORMATION]#
request-type: pi-ipv4
form-version: 1.0
x-ncc-regid: nn.santa

#[ADDRESS SPACE USER]#
%
% Who will use the address space being requested?
organisation-name: Black Elves Intelligence
organisation-location: Polarcity, Northern Nowhere
website-if-available: www.bei.nn

%
% Does the organisation already have address space that
% can meet the needs for this request? Enter "Yes" or "No".
space-available: No

#[INITIAL INFORMATION]#
%
% Please read the following information and answer the
% questions.
%
% 1. Why is PI space required rather than PA space?
%
why-pi: Black Elves Intelligence is a governmental organisation that cannot have
dependence on a commercial organisation – this would be seen as bias towards a
particular company. Also security reasons means independence is required.

%
% 2. Please check that you are not requesting extra address
% space for routing or administrative reasons. See Section
% 5.2 "Assignment Guidelines" of the RIPE document "IPv4
% Address Allocation and Assignment Policies in the RIPE NCC
% Service Region".
%
routing-reasons: No extra space is requested for these purposes.

%
% Please confirm whether you have made the End User aware
% of the warning given in the RIPE document "Provider
% Independent vs Provider Aggregatable Address Space",

% Section 3, "Detailed Recommendations".
%
confirmation: The End User is aware of this warning.

%
% You are required to confirm that the points mentioned
% above have been read and understood and that the
% organisation requesting the PI address space is fully
% aware of the disadvantages of PI address space.
%

#[ADDRESSING PLAN]#
number-of-subnets: 1
address-space-returned: No

%
%   Size
%   in CIDR   Immediate   1yr   2yr   Purpose
subnet: /21   /22,/23   /22,/23,/24   /21   VPN
totals: /21   /22,/23   /22,/23,/24   /21

#[EQUIPMENT DESCRIPTION]#
%
% Please describe the equipment that will be used in the
% network. Indicate the function of the equipment and provide
% information regarding the way it uses IP address space.
equipment-name: VPN Concentrator
manufacturer-name: Cisco
model-number: 3000
other-data: 10 units on order at the moment, 5 more planned

equipment-name: VPN Hardware Client
manufacturer-name: Cisco
model-number: 3002
other-data: 1500 on order, 600 more planned

#[NETWORK DESCRIPTION]#
%
% If your description does not allow the Hostmaster to
% understand the request you may be asked additional
% questions. Please add any additional information that you
% think may facilitate the evaluation of this request below.

Black Elves Intelligence use one static IP address per client (currently 1500 clients, 600 more expected within two years). This will allow access control, monitoring and audit ability as recommended by the Black Elves Intelligence legal department.

#[NETWORK DIAGRAM]#
%
% Please enter "Yes" or "No" if you have attached a network
% diagram in JPEG or PostScript format to this e-mail
% request.
diagram-attached: No

#[DATABASE TEMPLATE(S)]#
%
% Please include database template(s) here so that the
% Hostmaster can register the assignment in the RIPE
% Database. If it is necessary to create a maintainer object
% please include that template too.

```
inetnum:
netname:      BLACK-ELVES-VPN
descr:        Black Elves Intelligence
country:      NN
admin-c:      HOHO15-RIPE
tech-c:       HOHO15-RIPE
status:       ASSIGNED PI
mnt-by:       SANTA-MNT
mnt-by:       RIPE-NCC-HM-PI-MNT
mnt-lower:    RIPE-NCC-HM-PI-MNT
mnt-routes:   SANTA-MNT
changed:      hostmaster@ripe.net
source:       RIPE
```

#[END of REQUEST]#

Best Regards,
Santa Claus

Network Administrator
Santa's Workshop Inc.

References

IPv4 Address Allocation and Assignment Policies in the RIPE NCC Service Region
http://www.ripe.net/ripe/docs/ipv4-policies.html

Provider Independent versus Provider Aggregatable Address Space
http://www.ripe.net/ripe/docs/pi-pa.html

RIPE Database User Manual: Getting Started
http://www.ripe.net/ripe/docs/db-start.html

RIPE NCC LIR Portal
https://lirportal.ripe.net/