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**Additional IPv4 Delegations for AS112 Nameservers  
draft-sotomayor-as112-ipv4-cull-03**

**Abstract**

This is a direction to IANA concerning the delegation of certain additional IPv4 zones to the AS112 project.

**Status of this Memo**

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## **1. Introduction**

This is a direction to IANA concerning the delegation of certain additional IPv4 zones to the AS112 nameservers [[RFC6304](#)] which operates in an anycast cloud [[RFC4786](#)].

## **2. Reverse DNS Delegation, Local-Use and Test Addresses**

Work documenting special use addresses [[RFC5735](#)] has appeared containing good candidates for inclusion with the existing delegations to the AS112 Project. These local and special use addresses have now been captured and identified for Domain Name System (DNS [[RFC1034](#)] and [[RFC1035](#)]) zone administrators to curtail leaking queries in [[RFC6303](#)], in the fine tradition of [[RFC1912](#)].

Additionally, [[RFC5737](#)] identifies a short listing of IPv4 address blocks for use in documentation. These too should be considered for delegation to the AS112 Project.

Thus the purpose of this memo is to effectively signal to the AS112 Project [[RFC6304](#)] that it should reflect the efforts of [[RFC6303](#)] and follow directives and delegations subsequently issued as described in [section 6](#). The ultimate intention is to not create another IANA registry to the already numerous ones that exist.

It is interesting to note that while the focus has largely been on the use of [[RFC1918](#)] addresses, some addresses (such as those first enumerated within [section 4.1 of \[RFC1912\]](#)) have as of late also been the subject of [[RFC6303](#)] .

## **3. IAB Considerations**

IAB approval of this document is required, consistent with the guidance provided in [[RFC3172](#)].

## **4. IANA Considerations**

As per the provisions of [[RFC3172](#)], this document recommends the IAB to direct IANA to delegate the following reverse DNS zones to the AS112 nameservers [[RFC6304](#)]:



Zone	Present Use	Reference
0.in-addr.arpa	"This" Network	[ <a href="#">RFC1122</a> ]
127.in-addr.arpa	Loopback	[ <a href="#">RFC1122</a> ]
2.0.192.in-addr.arpa	TEST-NET-1	[ <a href="#">RFC5737</a> ]
100.51.198.in-addr.arpa	TEST-NET-2	[ <a href="#">RFC5737</a> ]
113.0.203.in-addr.arpa	TEST-NET-3	[ <a href="#">RFC5737</a> ]
252.233.in-addr.arpa	ASM	[I-D.ietf-mboned-mcaddrdoc]
240.251.233.in-addr.arpa		[I-D.ietf-mboned-mcaddrdoc]
241.251.233.in-addr.arpa		[I-D.ietf-mboned-mcaddrdoc]
242.251.233.in-addr.arpa		[I-D.ietf-mboned-mcaddrdoc]
243.251.233.in-addr.arpa		[I-D.ietf-mboned-mcaddrdoc]
244.251.233.in-addr.arpa		[I-D.ietf-mboned-mcaddrdoc]
245.251.233.in-addr.arpa		[I-D.ietf-mboned-mcaddrdoc]
246.251.233.in-addr.arpa		[I-D.ietf-mboned-mcaddrdoc]
247.251.233.in-addr.arpa		[I-D.ietf-mboned-mcaddrdoc]
248.251.233.in-addr.arpa		[I-D.ietf-mboned-mcaddrdoc]
249.251.233.in-addr.arpa		[I-D.ietf-mboned-mcaddrdoc]
250.251.233.in-addr.arpa		[I-D.ietf-mboned-mcaddrdoc]
251.251.233.in-addr.arpa		[I-D.ietf-mboned-mcaddrdoc]
252.251.233.in-addr.arpa		[I-D.ietf-mboned-mcaddrdoc]
253.251.233.in-addr.arpa		[I-D.ietf-mboned-mcaddrdoc]
254.251.233.in-addr.arpa		[I-D.ietf-mboned-mcaddrdoc]
255.251.233.in-addr.arpa		[I-D.ietf-mboned-mcaddrdoc]



2.0.192.234.in-addr.arpa		[I-D.ietf-mboned-mcaddrdo	
		c]	
100.51.198.234.in-addr.ar		[I-D.ietf-mboned-mcaddrdo	
pa		c]	
113.0.203.234.in-addr.arp		[I-D.ietf-mboned-mcaddrdo	
a		c]	
255.255.255.255.in-addr.a	Limited	[RFC0919]	
rpa	Broadcast		
+-----+-----+-----+-----+			

Further, this document recommends the IAB to direct the IANA to update the Locally Served DNS Zones registry accordingly as per the provisions of [[RFC6303](#)].

AS112 project servers should add these zones to their configuration, and terminate queries efficiently inside their service infrastructure. If they are not added, then those servers missing such zones will appear to be lame to some clients.

This delegation instruction is subject to further direction in the future from the IAB to IANA, as per the provisions of [[RFC3172](#)].

## 5. Security Considerations

The Security Considerations described in [[RFC6304](#)] also apply to local-use IPv4 addresses, and should be considered in the context of the use of these addresses.

Security administrators as well as general support personnel who are involved in the operations of networked devices may also find the information found in the companion document [[RFC6305](#)] quite helpful.

DNS queries may well identify the location of deployment of IPv4 enabled equipment in private contexts, particularly when the reverse queries relate to local-use IPv4 addresses. While operators of the DNS reverse servers should respect the privacy of data relating to individual queries made to these reverse address servers, the unintentional leakage of information beyond its intended scope of use and circulation represents a potential threat to the security of a local private network. This direction to delegate these local-use IPv4 reverse address sub-domains does not substantially change the security risks of information leakage from private environments.

## 6. Acknowledgements

The author would like to acknowledge the efforts of Mark P. Andrews





for preparing the work related to serving certain DNS zones locally and George Michaelson and Geoff Huston for their work [[I-D.michaelson-as112-ipv6](#)] in setting the example for a template to be used by the AS112 Project as a direction for the IANA, Joe Abley for valuable advice in the preparation of this document.

The author would also like to thank Marco d'Itri, Alfred Hoenes, Nick Hilliard and Paul Vixie for their feedback.

## **[7.](#) References**

### **[7.1.](#) Normative References**

[RFC1034] Mockapetris, P., "Domain names - concepts and facilities", STD 13, [RFC 1034](#), November 1987.

### **[7.2.](#) Informative References**

- [I-D.ietf-mboned-mcaddrdoc]  
Venaas, S., Parekh, R., Velde, G., Chown, T., and M. Eubanks, "Multicast Addresses for Documentation", [draft-ietf-mboned-mcaddrdoc-03](#) (work in progress), February 2012.
- [I-D.michaelson-as112-ipv6]  
Michaelson, G., Huston, G., and J. Abley, "AS112 Nameserver Delegations for IPv6", [draft-michaelson-as112-ipv6-02](#) (work in progress), September 2011.
- [RFC0919] Mogul, J., "Broadcasting Internet Datagrams", STD 5, [RFC 919](#), October 1984.
- [RFC1035] Mockapetris, P., "Domain names - implementation and specification", STD 13, [RFC 1035](#), November 1987.
- [RFC1122] Braden, R., "Requirements for Internet Hosts - Communication Layers", STD 3, [RFC 1122](#), October 1989.
- [RFC1912] Barr, D., "Common DNS Operational and Configuration Errors", [RFC 1912](#), February 1996.
- [RFC1918] Rekhter, Y., Moskowitz, R., Karrenberg, D., Groot, G., and E. Lear, "Address Allocation for Private Internets", [BCP 5](#), [RFC 1918](#), February 1996.
- [RFC3172] Huston, G., "Management Guidelines & Operational



Requirements for the Address and Routing Parameter Area Domain ("arpa")", [BCP 52](#), [RFC 3172](#), September 2001.

- [RFC4786] Abley, J. and K. Lindqvist, "Operation of Anycast Services", [BCP 126](#), [RFC 4786](#), December 2006.
- [RFC5735] Cotton, M. and L. Vegoda, "Special Use IPv4 Addresses", [BCP 153](#), [RFC 5735](#), January 2010.
- [RFC5737] Arkko, J., Cotton, M., and L. Vegoda, "IPv4 Address Blocks Reserved for Documentation", [RFC 5737](#), January 2010.
- [RFC6303] Andrews, M., "Locally Served DNS Zones", [BCP 163](#), [RFC 6303](#), July 2011.
- [RFC6304] Abley, J. and W. Maton, "AS112 Nameserver Operations", [RFC 6304](#), July 2011.
- [RFC6305] Abley, J. and W. Maton, "I'm Being Attacked by PRISONER.IANA.ORG!", [RFC 6305](#), July 2011.

## [Appendix A](#). Document Revision History

This section to be removed prior to publication.

- 03 Feedback from Alfred Hoenes regarding the specific cite within [RFC 1912](#). Also corrected reference to [RFC 3596](#) and use [RFC 3172](#) instead.
- 02 Feedback from Joe Abley and Geoff Huston; table lovingly crafted from simple XML artwork; additional references added to table. Include [draft-ietf-mboned-mcaddrdoc](#) multicast addresses used for documentation.
- 01 Subsequent draft split into 2, this one circulated as [draft-sotomayor-as112-ipv4-cull-01](#) as an IANA-only instruction and [draft-sotomayor-as112-maint-00](#) as further AS112 considerations and maintenance.
- 00 Initial draft, circulated as [draft-sotomayor-as112-ipv4-cull-00](#).



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