



Packet Clearing House
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The Presidio of San Francisco
San Francisco, California
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Except where specifically amended, Packet Clearing House provides DNSSEC signing service on a non-commercial basis to Country Code and national IDN Top Level Domain administrators under the following terms:

Memorandum of Understanding Regarding DNSSEC Signing Service Provided by Packet Clearing House

Packet Clearing House (PCH) operates the world's most secure geographically distributed DNSSEC signing service for the purpose of increasing the efficiency, reliability, stability, security, affordability and performance of the Internet, in keeping with PCH's not-for-profit public-benefit charter.

ADMINISTRATOR is the ICANN-delegated registry of a Top Level Domain (TLD). ADMINISTRATOR is a governmental or not-for-profit organization, chartered to operate in the public or national benefit.

As these constitute a set of complementary goals and values, PCH and ADMINISTRATOR hereby enter into an agreement of mutual support in the furtherance of each other's efforts to fulfill and promote those complementary goals and values.

All services provided by or on behalf of PCH under or in connection with this agreement (collectively, "Services") shall be subject to the terms and conditions of this agreement and those of PCH's DNSSEC Practice Statement (DPS), available at <https://pch.net/dnssec/dps>, which are incorporated herein by reference. To the extent there is any conflict between the DPS and this agreement, the DPS shall govern and control.

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PCH will provide ADMINISTRATOR with a list of IP addresses of PCH servers which will receive TLD zone data from ADMINISTRATOR's master servers. ADMINISTRATOR will provide PCH with the addresses of one or more authoritative master servers for the TLD zone and any subsidiary zones which may also be specified. At ADMINISTRATOR's option, zone transfers or incremental updates may be used. Cryptographic transaction signatures (TSIG) must be employed to secure this transfer, and ADMINISTRATOR and PCH shall agree on the necessary shared cryptographic key to be used for this purpose, transmitting it via a secure method. Each of these pieces of information shall be deemed confidential and shall be protected by both parties.

PCH will receive zone information from ADMINISTRATOR's authoritative master server, shall cryptographically sign it using DNSSEC private keys and NSEC3 methodology, and shall make the signed zones available on PCH servers for transfer to the authoritative nameservers denoted in the IANA root zone, or the designated inbound transfer agents of those servers. PCH shall make its servers available on a best-effort basis via both IPv4 and IPv6 native transit. PCH reserves the right to sort the TLD zone data by signature in order to optimize the NSEC3 compression, and to increment the zone Start of Authority serial number as needed to distinguish between signed and unsigned versions of the zone data. PCH reserves the right to reject zone updates without signing them if they fail to comply with RFCs 1034, 1035, 1101, 1982, and other RFCs as appropriate. The delay between PCH's receipt of ADMINISTRATOR's DNS NOTIFY and PCH's publication of a new signed zone will be variable, and will depend upon many factors, including but not limited to the size of the TLD zone, the number of signed records within it, the frequency with which ADMINISTRATOR updates the TLD zone, the length of the cryptographic key used, and the number of other signatures PCH is being called upon to make.

ADMINISTRATOR shall report any problems by opening a trouble ticket by sending electronic mail to noc@pch.net. ADMINISTRATOR shall provide email and telephone emergency contact information for ADMINISTRATOR's technical and managerial responsible parties.

In so far as commonly-available DNSSEC signing software is compliant with RFCs 4033, 4034, 4035, 4641, 5155 and other RFCs as appropriate, PCH shall use such software in a manner that provides RFC-compliant service. This agreement shall not be interpreted to require PCH to develop or purchase purpose-specific software in order to comply with the aforementioned RFCs.

ADMINISTRATOR shall maintain security best-practices in domain management, and shall not permit abusive practices including, but not limited to, the registration of domains for the purposes of tasting, fast-flux, phishing, spam, the distribution of malware, botnet command and control, illegal access to computers or networks, or any form of fraud or illegality.

PCH shall provide ADMINISTRATOR statistical summaries of DNSSEC signatures performed, through a secure web interface. These statistics will show, at a minimum, the number of signatures performed and the time taken to perform them. PCH may, at its option, analyze or publish aggregate statistical information about the DNSSEC signatures that PCH's servers perform.

Ownership of neither intellectual nor tangible property shall be transferred between ADMINISTRATOR and Packet Clearing House in connection with this agreement.

ADMINISTRATOR shall indemnify, defend and hold harmless PCH and its affiliates, and their respective successors and assigns, and their respective directors, officers, employees, representatives, and agents, from all claims, demands, damages, losses, expenses (including attorneys' fees and costs), suits, and judgments of any nature whatsoever (collectively, "Claims") arising from or in connection with any and all Services, including, without limitation, Claims arising from or in connection with (i) PCH's provision of any Service, (ii) ADMINISTRATOR's use of any Service, (iii) any act or omission by or on behalf of ADMINISTRATOR with respect to any Service, including, without limitation, any failure or non-compliance with any system, software, hardware and/or security standard, policy or practice used or implemented by or on behalf of ADMINISTRATOR, and/or (iii) any person or entity who uses, relies upon, or benefits from any Service, including, without limitation, any and all clients and customers of ADMINISTRATOR and their respective downstream clients and customers. ADMINISTRATOR shall not consent to the entry of any judgment or enter into any settlement that may obligate or have an adverse impact on PCH without PCH's prior written consent. The obligations of ADMINISTRATOR under this paragraph shall survive the termination or discontinuance of this agreement or any Service.

ADMINISTRATOR HEREBY ACKNOWLEDGES AND AGREES THAT ALL SERVICES ARE PROVIDED "AS IS," "WHERE IS" AND "AS AVAILABLE" WITH ALL RISKS AND FAULTS THAT MAY BE ASSOCIATED IN CONNECTION THEREWITH. NOTWITHSTANDING ANYTHING TO THE CONTRARY, PCH MAKES NO REPRESENTATION, WARRANTY OR COVENANT OF ANY KIND WHATSOEVER WITH RESPECT ANY SERVICE, WHETHER EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. ANY AND ALL REPRESENTATIONS, WARRANTIES AND COVENANTS ARE HEREBY DISCLAIMED BY PCH AND WAIVED BY EACH PERSON WHO USES, RELIES UPON, OR BENEFITS FROM ANY SERVICE.

NOTWITHSTANDING ANYTHING TO THE CONTRARY, PCH WILL NOT BE RESPONSIBLE OR OTHERWISE LIABLE, WHETHER AT LAW AND/OR IN EQUITY, FOR ANY CLAIMS AND/OR DAMAGES, INCLUDING, WITHOUT LIMITATION, CONSEQUENTIAL, INCIDENTAL, INDIRECT, PUNITIVE, EXEMPLARY, OR SPECIAL DAMAGES (INCLUDING, WITHOUT LIMITATION, LIABILITIES OR DAMAGES RELATING TO LOST PROFITS, LOST DATA, OR LOSS OF GOODWILL) ARISING OUT OF, RELATING TO, OR OTHERWISE IN CONNECTION WITH ANY SERVICE, WHETHER BASED ON CONTRACT, TORT, OR ANY CAUSE OF ACTION WHATSOEVER.

This agreement may be discontinued by either party, with or without cause, upon ninety days notice by either party to the other. Further, upon a breach of this agreement by a party, the non-breaching party may immediately terminate this agreement upon notice of such breach to the other party.

PCH may modify, suspend and/or terminate any and all services provided under or in connection with this agreement at any time with or without notice to ADMINISTRATOR.

If PCH's performance of any Service is prevented or delayed by an event beyond PCH's reasonable control, including, without limitation, fire, flood, war, riot, acts of terrorism, acts of civil or military authority (including governmental actions), severe weather, loss of utility, strikes or work stoppages, labor disputes, or labor shortages, PCH will be excused from such performance to the extent it is prevented or delayed thereby.

All notices and other communications required or permitted by this agreement shall be in writing and shall be deemed given to a party when: (i) delivered to the recipient's designated email address over the PGP cryptographic signature of the designated sending party; or (ii) delivered to the appropriate address by hand or by courier service, over the notarized original signature of the designated sending party.

To PCH: Email: dnssec-notifications@pch.net
 Attn: William E. Woodcock, Director
 Address: Packet Clearing House, Inc.
 572 B Ruger Street, Box 29920
 The Presidio of San Francisco
 San Francisco, CA 94129-0920
 USA

To ADMINISTRATOR: Email: _____

 Attn: _____

 Address: _____

This agreement shall be governed by and construed in accordance with the domestic laws of the State of California without giving effect to any choice or conflict of law provision or rule that would cause the application of the laws of any jurisdiction other than the State of California. The parties hereto agree that all proceedings arising in connection with this agreement shall be initiated and tried exclusively in the federal or state courts located in San Francisco County, California, USA.

This agreement (including the DPS) constitute the entire agreement between the parties and supersedes all prior understandings and agreements, written or oral, between the parties to the extent related in any way to the subject matter hereof. No amendment of any provision of this agreement shall be valid unless the same shall be in writing and approved in writing by PCH, which writing specifically references such as an amendment to this agreement. No term or condition in any purchase order, invoice, acceptance, acknowledgement or other instrument provided by or on behalf of ADMINISTRATOR in connection with any Service shall be accepted, binding on, or applicable to PCH unless the same shall be in writing and approved in writing by PCH, which writing specifically references such as an amendment to this agreement.

Any term or provision of this agreement that is invalid or unenforceable in any situation in any jurisdiction shall not affect the validity or enforceability of the remaining terms and provisions hereof or the validity or enforceability of the offending term or provision in any other situation or in any other jurisdiction.

Except as otherwise provided in this agreement, each party will bear its own costs and expenses (including legal fees and expenses) incurred in connection with this agreement and the transactions contemplated hereby.

Each party shall operate as and have the status of independent contractors. Nothing contained in this agreement shall be construed or interpreted as authorizing or empowering either party to act as an agent for the other party.

The failure to enforce or the waiver by either party of a default or breach of the other party shall not be considered to be a waiver of any subsequent default or breach. Any waiver of rights must be set forth in writing and signed by the party waiving such right.

This agreement may be executed by a party's signature transmitted by facsimile or electronic format (such as .pdf), and copies of this agreement so executed and delivered shall have the same force and effect as originals. This Agreement may be executed in one or more counterparts, all of which shall be considered one and the same.

ADMINISTRATOR

PACKET CLEARING HOUSE

Signed: _____

Title: _____

Organization: _____

Date: _____

Signed: _____

 William E. Woodcock
 Director
 Packet Clearing House

Date: _____