   **An update to RFC6302 on Logging Recommendations for Internet-Facing
                                Servers
            draft-andersdotter-intarea-update-to-rfc6302-00**

Abstract

   This draft seeks to update RFC6302 on Logging Recommendations for
   Internet-Facing Servers.  The new recommendations aim to be a best
   practice for service providers and server maintainers, by following
   recommendations outlined in RFC6973 and taking into account new
   regulatory requirements in the privacy area.

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## 1.  Introduction

In 2013, the IETF adopted [RFC6973] Privacy Guidelines for Internet
protocols to ensure robust procedures for evaluating existing
protocols and standards with respect to privacy, and insert
protective mechanisms for privacy in future protocol and standards
work.  In the past couple of years, new data privacy regulations with
wide geographical scope are entering into effect with big effects for
technology companies and technology consumers around the world.  The
combination of these changes, in IETF procedure and regulatory
requirements, have caused some previously established best practices
to become poor practices.

This draft proposes updates to specifically [RFC6302] on Logging
Recommendations for Internet-Facing Servers with a view for it to
serve as a useful reference for operators seeking to be compliant
with modern regulatory requirements for the protection of end-users,
e.g.  [GDPR].

Earlier recommendations contained in [RFC6302] relied heavily on
observations made in Section 12 of [RFC6269] that regulatory
requirements could imply a broad obligation to log identifiers.  At
the time of the adoption of [RFC6302], it was known that European
Union law mandated data retention and trace-ability of each and every
telecommunications subscriber in the European Union.  The regulatory
landscape in Europe has since changed, for instance in the European
Union through [C20315], and in the broader Council of Europe area
through [Zakharov] and [SzaboVissy].  It is possible that [RFC6269]

should be revisited in light of these developments, but such work is
outside the scope of this text.

The below text is intended to replace Section 1 in [RFC6302].

Service providers, in so far as they are a collection of individual
persons, and subscribers, and the transactional relationships of
these individuals with the service provision, all give rise to
personal data.  In [RFC6973] it is specified that data minimization
and security are important mitigation strategies against privacy
threats.  Further, regulatory requirements place an obligation on
protocol designers and operators of servers to implement privacy-by-
design and data minimization techniques.

[RFC6973] as well as new regulatory requirements have been put in
place to protect the privacy of internet users.  They are in the vein
of previous IETF work on pervasive monitoring as a security risk in
and of itself [RFC7258], and have parallels in new developments in
international human rights law, see e.g.  [UNGA2013].

## 2.  Terminology

This section is intended to be introduced in [RFC6302] as a separate
terminology section, replacing the first paragraph of Section 2 of
[RFC6302].

The key words *MUST*, *MUST NOT*, *REQUIRED*, *SHALL*, *SHALL NOT*,
*SHOULD*, *SHOULD NOT*, *RECOMMENDED*, *MAY* and *OPTIONAL* in this
document as to be interpreted as described in [RFC2119].

This document adheres to the privacy terminology established in
[RFC6973].

## 3.  Recommendations for Internet-facing servers

This section is intended to replace Section 2 of [RFC6302].

Providers of internet-facing servers

   SHOULD only store entire incoming IP addresses for as long as is
   necessary to provide the specific service requested by the user.

   SHOULD keep only the first two octets (of an IPv4 address) or the
   first three octets (of an IPv6 address) with remaining octets set
   to zero, when logging.

   SHOULD NOT store logs of incoming IP addresses from inbound
   traffic for longer than three days.

SHOULD NOT log unnecessary identifiers, such as source port
number, time stamps, transport protocol numbers or destination
port numbers.

SHOULD ensure adequate log access control, with suitable
mechanisms for keeping track of which entity accesses logged
identifiers, for what reason and at what time.

It is RECOMMENDED that deviations from the above practices are
carefully documented and communicated to subscribers.

## 3.1.  Data minimization

Data minimization is proposed by Section 6.1 in [RFC6973] as an
effective way of ensuring privacy protections.  A data minimization
principle is further a regulatory requirement in some parts of the
world (e.g.  [GDPR]).

Data minimization can be effectuated in a number of different ways,
including by limiting collection, retention and identifiability to
personal data.  The recommendation to anonymize IP addresses intended
for logging, the recommendation not to store logs for longer than a
limited amount of time, and the recommendation not to log unnecessary
identifiers are intended to advance such effectuations of data
minimization.

A three-day logging period covers a week-end, which is convenient for
professional server providers.  It also accounts for the ability of
content providers to geolocate subscribers for the duration of their
content consumption, in those cases where this is necessary due to
legal restrictions.

## 3.2.  User involvement

In Section 6.2 of [RFC6973] it is established involving individuals
in decisions about data collection and treatment of data is a way of
mitigating privacy threats.  The section proposes that individuals be
informed, and that they are provided ways to signal their
preferences, and make choices, about collection and sharing of data.

Identifiers about subscribers can be logged at an internet-facing
server to enable provision of content that is geoblocked, but are
only required for as long as the service is requested by the user.
In these circumstances, data which is logged for longer than the time
it takes to deliver the service should be subject to careful
considerations and the subscriber should be informed thereof.

Similarly, there exists no duty of subscribers to assist internet-facing servers in their efforts to improve services or the Internet. Where IP addresses or identifiers about individuals are logged with a view to improving services or the Internet, and having no other technical justification, individuals should be given a way to signal preferences and make choices about such logging.

### 3.3.  Security

Security is advanced by Section 6.3 of [RFC6973] as an effective way to mitigate privacy threats.  Among the important security goals mentioned are confidentiality, unauthorized usage and inappropriate usage.  The recommendation to have adequate access control is intended to ensure security in the handling of such logs that are kept even after the data minimization strategies are deployed.

### 4.  Considerations for electronic communications providers

This section is intended to replace Section 3 of [RFC6302].

The new regulatory requirements referenced earlier in this document imply that electronic communications providers may also have to review their logging practices.  It is advisable that they should do so, bearing in mind [RFC6973].  However, the details are outside the scope of this document.

### 5.  Security considerations

This draft gives recommendations for logging at internet-facing servers.  It is intended to protect internet users from the threats of pervasive monitoring [RFC7258] and to assist operators of internet-facing servers in adhering to regulatory requirements.

Operators seeking to deviate from the base-level of privacy and security assumed for internet users, should make time-limited, specific exceptions which have clearly stated and lawful aims. Deviations could for instance be included in employment contracts or consumer contracts that are tied to non-public services which are nevertheless provided through Internet-facing servers and which require authentication for access.

### 6.  Acknowledgments

The author would like to thank Mallory Knodel, Linus Nordberg and Anders Jensen-Urstad for their comments during the drafting of this document.

## 7.  References

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