

Network Working Group
Internet-Draft
Intended status: Standards Track
Expires: January 9, 2020

P. Jones
G. Salgueiro
Cisco
July 8, 2019

WebFinger Email Automatic Configuration
draft-jones-webfinger-email-autoconfig-00

Abstract

This document describes procedures for automatically configuring an email client by using WebFinger to convey mail server configuration and security-related information.

Status of This Memo

This Internet-Draft is submitted in full conformance with the provisions of [BCP 78](#) and [BCP 79](#).

Internet-Drafts are working documents of the Internet Engineering Task Force (IETF). Note that other groups may also distribute working documents as Internet-Drafts. The list of current Internet-Drafts is at <https://datatracker.ietf.org/drafts/current/>.

Internet-Drafts are draft documents valid for a maximum of six months and may be updated, replaced, or obsoleted by other documents at any time. It is inappropriate to use Internet-Drafts as reference material or to cite them other than as "work in progress."

This Internet-Draft will expire on January 9, 2020.

Copyright Notice

Copyright (c) 2019 IETF Trust and the persons identified as the document authors. All rights reserved.

This document is subject to [BCP 78](#) and the IETF Trust's Legal Provisions Relating to IETF Documents (<https://trustee.ietf.org/license-info>) in effect on the date of publication of this document. Please review these documents carefully, as they describe your rights and restrictions with respect to this document. Code Components extracted from this document must include Simplified BSD License text as described in Section 4.e of the Trust Legal Provisions and are provided without warranty as described in the Simplified BSD License.

Table of Contents

1.	Introduction	2
2.	Conventions Used in This Document	2
3.	Example User Scenario	3
4.	Email Auto-Configuration Procedures	5
4.1.	Initiating a WebFinger Query	5
4.2.	Processing the JSON Resource Descriptor	5
4.3.	Requesting the Email Configuration Document	5
5.	Email Configuration Document Syntax	6
6.	Security Considerations	6
7.	IANA Considerations	6
8.	Acknowledgments	6
9.	References	6
9.1.	Normative References	6
9.2.	Informative References	6
9.3.	URIs	7
	Authors' Addresses	7

[1.](#) Introduction

Configuring email clients manually can be a time-consuming and mundane task that can actually be fairly arduous as the number of users or clients increases. While people with technical understanding of the various protocols and settings employed can configure a single email client fairly easily, the task can prove challenging and frustrating for non-technical users.

This document defines procedures utilizing WebFinger [[RFC7033](#)] that make it trivial for end-users to configure email clients with little or no assistance and with minimal technical skill. All that is required for the user to do is enter his or her account identifier, select an email account, and provide credentials.

Following these procedures, the complexity of configuring an email client is shifted away from the end-user and pushed onto the software tools that implement these procedures and the email administrators who would have to configure the settings for each user server-side and publish the required configuration data. However, the configuration data can be generated with automated tools, meaning there would be minimal effort for the email administrators.

[2.](#) Conventions Used in This Document

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "NOT RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in BCP

14 [[RFC2119](#)] [[RFC8174](#)] when, and only when, they appear in all capitals, as shown here.

3. Example User Scenario

To illustrate how the procedures work, assume Alice just got a new computer and installed her favorite email client. She is using services from Example Mail Corporation and she was told her account identifier is "alice@mail.example" and her password is "abc123". She actually has two different accounts with Example Mail Corporation, one for personal use and one for her business. The accounts are aptly named "Personal" and "Business".

When Alice starts her email client and adds a new email account, the client will ask her for her account identifier. She will then enter "alice@mail.example", at which point the client will initiate a WebFinger query to the host "mail.example". That HTTP [[RFC7230](#)] query will look something like this:

```
GET /.well-known/webfinger?resource=acct%3Aalice%40mail.example \
HTTP/1.1
Host: mail.example
```

(The backslash character '\' is there only to indicate the following line is part of the same line.)

As per the WebFinger specification, a JSON Resource Descriptor (JRD) will be returned with a number of different entires. For brevity, the following reply shown excludes most of the content that is not applicable to this example. The reply might look like this:


```
HTTP/1.1 200 OK
Access-Control-Allow-Origin: *
Content-Type: application/jrd+json

{
  "subject" : "acct:alice@mail.example",
  "links" :
  [
    {
      "rel" : "email-autoconfig",
      "href" : "https://mail-config.mail.example/alice.personal.json"
      "titles" :
      {
        "en-us" : "Personal"
      }
    },
    {
      "rel" : "email-autoconfig",
      "href" : "https://mail-config.mail.example/alice.business.json"
      "titles" :
      {
        "en-us" : "Business"
      }
    },
  ]
}
```

Noting there are two "email-autoconfig" entries in the response, one named "Personal" and one named "Business", Alice's email client will prompt her to select one of the email accounts to configure to provide a password. She selects the one named "Personal", at which point the email client will issue a subsequent HTTP query to the URI associated with that account:

```
GET /alice.personal.json HTTP/1.1
Host: mail-config.mail.example
```

The server "mail-config.mail.example" might require her to authenticate using the password for her email account, which is why she was prompted for it when selecting the account. Once the email client satisfies whatever authentication challenge it is presented, the server will then respond with a JSON document that contains all of the configuration information necessary for the email client to self-provision her "Personal" account. That reply might look something like this:


```
HTTP/1.1 200 OK
Access-Control-Allow-Origin: *
Content-Type: application/jrd+json

{
  "address" : "alice.i.wonder@mail.example",
  "smtp" :
  {
    "login" : "alice.i.wonder",
    "host" : "outbound.mail.example",
    "port" : 587,
    "login-required" : true,
    "transport" : "starttls"
  },
  "imap" :
  {
    "login" : "alice.i.wonder",
    "host" : "imap.mail.example",
    "port" : 143,
    "transport" : "starttls"
  }
}
```

The email client would utilize this information to configure itself to access the mail server using SMTP and IMAP. The email client would reasonably assume that the account password provided is the same password used with both of those protocols. While that might not be correct, it certainly simplifies the user's life if it is the same. However, authentication may be via a digital certificate, for example, conveyed in this response document.

[4. Email Auto-Configuration Procedures](#)

TBD

[4.1. Initiating a WebFinger Query](#)

TBD

[4.2. Processing the JSON Resource Descriptor](#)

TBD

[4.3. Requesting the Email Configuration Document](#)

TBD

5. Email Configuration Document Syntax

TBD

6. Security Considerations

TBD

7. IANA Considerations

TBD

We will need to register "email-autoconfig" in the Link Relations registry: <https://www.iana.org/assignments/link-relations/link-relations.xhtml> [1]

8. Acknowledgments

TBD

9. References

9.1. Normative References

- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), DOI 10.17487/RFC2119, March 1997, <<https://www.rfc-editor.org/info/rfc2119>>.
- [RFC7033] Jones, P., Salgueiro, G., Jones, M., and J. Smarr, "WebFinger", [RFC 7033](#), DOI 10.17487/RFC7033, September 2013, <<https://www.rfc-editor.org/info/rfc7033>>.
- [RFC8174] Leiba, B., "Ambiguity of Uppercase vs Lowercase in [RFC 2119](#) Key Words", [BCP 14](#), [RFC 8174](#), DOI 10.17487/RFC8174, May 2017, <<https://www.rfc-editor.org/info/rfc8174>>.

9.2. Informative References

- [RFC7230] Fielding, R., Ed. and J. Reschke, Ed., "Hypertext Transfer Protocol (HTTP/1.1): Message Syntax and Routing", [RFC 7230](#), DOI 10.17487/RFC7230, June 2014, <<https://www.rfc-editor.org/info/rfc7230>>.

9.3. URIs

- [1] <https://www.iana.org/assignments/link-relations/link-relations.xhtml>

Authors' Addresses

Paul E. Jones
Cisco
7025 Kit Creek Rd.
Research Triangle Park, North Carolina 27709
USA

Phone: +1 919 476 2048
Email: paulej@packetizer.com

Gonzalo Salgueiro
Cisco
7025 Kit Creek Rd.
Research Triangle Park, North Carolina 27709
USA

Phone: +1 919 392 3266
Email: gsalguei@cisco.com

