

Network Working Group  
Internet-Draft  
Intended status: Standards Track  
Expires: October 19, 2016

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April 17, 2016

DAV Server Information Object  
draft-douglass-server-info-03

Abstract

This specification describes a new XML object that can be retrieved from hosts to discover applications, features and limits for that host or domain.

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## Table of Contents

1.	Introduction . . . . .	3
2.	Conventions Used in This Document . . . . .	3
2.1.	Application . . . . .	3
2.2.	Feature . . . . .	4
3.	Server Information Document Use . . . . .	4
3.1.	Server Information Location and Retrieval . . . . .	4
3.1.1.	Server Information Retrieval . . . . .	4
3.1.2.	Server Information Synchronization . . . . .	5
3.1.2.1.	Header Field: server-info-token . . . . .	5
3.1.2.2.	Header Field: link . . . . .	5
4.	Server Information Document Structure . . . . .	6
4.1.	Server Information server-info element . . . . .	6
4.2.	Server Information server element . . . . .	7
4.3.	Server Information applications element . . . . .	7
4.3.1.	Server Information application element . . . . .	7
4.4.	Server Information features element . . . . .	8
4.4.1.	Server Information feature element . . . . .	8
5.	XML Element Definitions . . . . .	9
5.1.	server-info XML element . . . . .	9
5.2.	token XML element . . . . .	9
5.3.	server-instance-info XML element . . . . .	9
5.4.	name XML element . . . . .	10
5.5.	version XML element . . . . .	10
5.6.	applications XML element . . . . .	10
5.7.	application XML element . . . . .	10
5.8.	features XML element . . . . .	11
6.	WebDAV Features . . . . .	11
6.1.	DAV class-1 feature XML element . . . . .	11
6.2.	DAV class-2 feature XML element . . . . .	12
6.3.	DAV class-3 feature XML element . . . . .	12
6.4.	DAV access control feature XML element . . . . .	12
6.5.	DAV version control feature XML element . . . . .	13
6.6.	DAV Extended mkcol feature XML element . . . . .	13
6.7.	DAV bind feature XML element . . . . .	13
6.8.	DAV search feature XML element . . . . .	14
6.9.	DAV quota feature XML element . . . . .	14
6.10.	DAV Sync Collection feature XML element . . . . .	14
6.11.	DAV Add Member feature XML element . . . . .	15
7.	CalDAV Features . . . . .	15
7.1.	CalDAV calendar-access feature XML element . . . . .	15
7.2.	CalDAV calendar-auto-schedule feature XML element . . . . .	16
7.3.	CalDAV calendar-no-timezone feature XML element . . . . .	16
8.	Examples . . . . .	16
8.1.	WebDAV server information . . . . .	16
9.	Notes . . . . .	16
10.	Security Considerations . . . . .	17

11. IANA Considerations . . . . .	17
11.1. MIME media type Registrations . . . . .	17
11.2. New Link reltype Registration . . . . .	18
12. Acknowledgments . . . . .	18
13. Normative References . . . . .	18
Author's Address . . . . .	20

## 1. Introduction

Any given host on a network may support a number of applications. Each will have limits or optional features. The advertising and discovery of applications, features and limits is often through the use of properties and headers. As the number of applications and features grows the amount of data and complexity of the requests grows.

Additionally, headers and properties don't allow for caching mechanisms based on etags. A client has to fetch all the information and compare with its stored copies to determine if a application change has taken place.

This specification defines a new XML document type which can be retrieved from a host and is easily extended to allow the description of complex applications. The schema as described here only handles basic DAV applications. Other specifications will extend this specification to define elements for other DAV based applications.

## 2. Conventions Used in This Document

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

### 2.1. Application

An application running on one or more hosts at the network application layer and above. The application may provide data storage, manipulation, presentation, communication or other capabilities. The application may use a well defined protocol and is often implemented with a client-server relationship.

A application will usually implement one or more features which may be defined by standard specifications. Applications and features may also be constrained by various limits.

Examples of applications are

- o caldav

- o email
- o File servers

## 2.2. Feature

A feature is some functionality provided by a application. For example, a DAV based application may provide the versioning feature.

Applications need not support all features that are defined as an optional part of that application. Some features may depend on the authenticated state and/or the authorization of the authenticated principal.

Examples of features are

- o DAV versioning.
- o DAV access control.
- o CalDAV scheduling.

## 3. Server Information Document Use

A host will make the document available through one or more methods. Depending upon the endpoint and method of retrieval the retrieved document may describe one or more applications.

If a document provides information for more than one application it SHOULD contain information allowing clients to obtain information about each individual application only. This allows a client to determine what the actual limits and features are for the specific application.

### 3.1. Server Information Location and Retrieval

#### 3.1.1. Server Information Retrieval

The document may be retrieved from the server by including the server-info-token header field with a value of "\*" any request to the server.

The server MUST respond to such a request by including a LINK header field with a reltype of "server-info", a token parameter with the current token value and the url being the location of the document..

Following that a GET may be executed by the client against that URL, specifying a content type in the ACCEPT header field of "application/server-info+xml".

Clients SHOULD retrieve the document in the context of a session and applications SHOULD ensure the context is appropriate. Values in the returned document may differ depending on who is authenticated so a server SHOULD require authentication before returning server information for an authenticated application.

### 3.1.2. Server Information Synchronization

While server features may not change frequently it may be important for clients to react rapidly when server features or limits change. Polling for server feature changes is undesirable so this specification allows clients to check for such changes during normal operations.

Clients SHOULD include the server-info-token header field with the current stored value of the token from the document in requests to the server

The server MUST add the link header field to the response when the tokens do not match.

#### 3.1.2.1. Header Field: server-info-token

The server-info-token header field takes as a value the current value of the token element in the server-info document or the value "\*".

This header field may be included in a request at any time a client feels appropriate.

#### 3.1.2.2. Header Field: link

The link header field is defined in [RFC5988]. The target IRI as defined by that specification will be the location of the server information document. The "reltype" parameter will have the value "server-info".

Additionally, there will be a "token" parameter which has a quoted token as the value.

This header field may be included in a response at any time a server feels appropriate.

The link header field MUST be returned in response to:

- o An OPTIONS request where the server-info-token header is absent or it's value does not match.
- o Any request with the server-info-token header field where the value of the header field does not match the current token value.

The link header field SHOULD be returned when a client

- o Attempts to use an unsupported feature.
- o Misuses a feature according to the server info document.
- o Exceeds a limit defined in the document.

If the server returns a link header field as part of the response it is an indication to the client that it SHOULD fetch a new copy of the server information document.

The following is an example of a link header field - folded to fit on the page

```
Link: </dav/principals/.server-info>; rel="server-info";  
token="7140903eelb57d0752a7d8da774a398b10de5868"
```

#### 4. Server Information Document Structure

This specification defines a new XML document type "server-info". All XML elements in this specification are in the DAV name space.

##### 4.1. Server Information server-info element

At the top level of the document is a "server-info" element which encloses a change token, an optional "features" element and an "applications" element

```
<?xml version="1.0" encoding="utf-8"?>
<server-info xmlns="DAV">
  <token>...</token>
  <server>
    <name>...</name>
    <version>...</version>
  </server>
  <features>
    ...
  </features>
  <applications>
    ...
  </applications>
</server-info>
```

If a "features" element appears inside the "server-info" element then the features apply to all applications.

#### 4.2. Server Information server element

The optional "server" element appears once and contains a name and version for the server. The values for both those elements is server specific.

#### 4.3. Server Information applications element

The "applications" element appears once and contains 0 or more "application" elements each of which provides information about a application.

NOTE: do the applications have to be on the same host? I think not.

##### 4.3.1. Server Information application element

The "application" element contains the name and information about the location of that application and how to obtain a application specific server-info document.

It may also contain a "features" element which lists features implemented by that application.

For example:

```
<applications>
  <application>
    <name>caldav</name>
    <features>
      <CALDAV:calendar-access />
      <CS:sharing>
        <CS:no-scheduling />
      </CS:sharing>
    </features>
  </application>
</applications>
```

#### 4.4. Server Information features element

The "features" element contains 0 or more elements each specifying a feature supported by that application.

The "features" element may appear within the "server-info" element - in which case it applies to all applications or it may appear inside a "application" element in which case it only applies to that application.

When a single application is specified the features named SHOULD be accessible for the same authentication and authorization level.

##### 4.4.1. Server Information feature element

A feature is specified by an element defined in this document or by an element defined in the specification for that feature.

WebDAV feature elements correspond to, but are not exactly the same as, the elements returned in the DAV header field.

Some features have no corresponding DAV header field element. This may be because the feature is not available on all resources. The occurrence of a such a feature simply advertises the availability of that feature on some resources.

For an application supporting this specification, the absence of a feature means that this feature is NOT supported on any resource.

For example, a calendar application may return the following which specifies a global set of features:

```
<features>
  <DAV:class-1 />
  <DAV:class-2 />
  <DAV:access-control />
  <CALDAV:calendar-access />
  <CALDAV:calendar-availability />
  <CALDAV:calendar-auto-schedule />
</features>
```

## 5. XML Element Definitions

All elements defined here are in the "DAV" namespace.

### 5.1. server-info XML element

Name: server-info

Purpose: Contains information about a server.

Definition:

```
<!ELEMENT server-info (token, server-instance-info?, features?, appli
cations?) >
```

### 5.2. token XML element

Name: token

Purpose: Contains an opaque token which changes when the document changes..

Definition:

```
<!ELEMENT token (#PCDATA) >
```

### 5.3. server-instance-info XML element

Name: server-instance-info

Purpose: Contains name and version information for a server.

Definition:

```
<!ELEMENT server-instance-info (server-name*, server-version*,
                                server-link, server-contact) >
  * product name
  * product version
  * product bug tracker link (or just link)
  * system administrator contact ("mailto:", "tel:" an embedded vcard
or a link to a vcard?)
  * operating system info (string like the result of "uname -a" on POS
IX systems)
```

#### 5.4. name XML element

Name: name

Purpose: Within an application or feature element provides the registered name of that application or feature.

Within a server element the value of the name element is any text string.

Definition:

```
<!ELEMENT name (#PCDATA) >
```

#### 5.5. version XML element

Name: version

Purpose: Within a server element the value of the version element is any text string.

Definition:

```
<!ELEMENT version (#PCDATA) >
```

#### 5.6. applications XML element

Name: applications

Purpose: Contains information about all applications on a host.

Definition:

```
<!ELEMENT applications (application*) >
```

#### 5.7. application XML element

Name: application



Purpose: Contains information about a specific application on a host.

Definition:

```
<!ELEMENT application (name, features) >
```

## 5.8. features XML element

Name: features

Purpose: Contains information about all application features on a host.

Definition:

```
<!ELEMENT features ANY* >
```

## 6. WebDAV Features

Here we define the feature elements for features defined in the various DAV related specifications.

Specifications which extend this specification should define additions to this table. In addition, they may define the XML specification for that element.

Namespace	Name	Reference
DAV	class-1	[RFC4918]: section 18.1
DAV	class-2	[RFC4918]: section 18.2
DAV	class-3	[RFC4918]: section 18.3
DAV	access-control	[RFC3744]: section 7.2
DAV	version-control	[RFC3253]: section 3
DAV	extended-mkcol	[RFC5689]: section 3.1
DAV	quota	[RFC4331]
DAV	bind	[RFC5842]
DAV	search	[RFC5323]
DAV	sync-collection	[RFC6578]
DAV	add-member	[RFC5995]

### 6.1. DAV class-1 feature XML element

Namespace: DAV

Name: class-1

DAV Header Name: 1

Reference: [RFC4918]: section 18.1

Description: Class 1 compliant resource

Definition:

```
<!ELEMENT class-1 >
```

#### 6.2. DAV class-2 feature XML element

Namespace: DAV

Name: class-2

DAV Header Name: 2

Reference: [RFC4918]: section 18.2

Description: Class 2 compliant resource

Definition:

```
<!ELEMENT class-2 >
```

#### 6.3. DAV class-3 feature XML element

Namespace: DAV

Name: class-3

DAV Header Name: 3

Reference: [RFC4918]: section 18.3

Description: Class 3 compliant resource

Definition:

```
<!ELEMENT class-3 >
```

#### 6.4. DAV access control feature XML element

Namespace: DAV

Name: access-control

DAV Header Name: access-control

Reference: [RFC3744]: section 7.2

Description: WebDAV ACL

Definition:

```
<!ELEMENT access-control >
```

#### 6.5. DAV version control feature XML element

Namespace: DAV

Name: version-control

DAV Header Name: version-control

Reference: [RFC3253]: section 3

Description: WebDAV DeltaV

Definition:

```
<!ELEMENT version-control >
```

#### 6.6. DAV Extended mkcol feature XML element

Namespace: DAV

Name: extended-mkcol

DAV Header Name: extended-mkcol

Reference: [RFC5689]: section 3.1

Description: Extended mkcol

Definition:

```
<!ELEMENT extended-mkcol >
```

#### 6.7. DAV bind feature XML element

Namespace: DAV

Name: bind

DAV Header Name: bind

Reference: [RFC5842]

Description: Binding extensions

Definition:

```
<!ELEMENT bind >
```

#### 6.8. DAV search feature XML element

Namespace: DAV

Name: search

Reference: [RFC5323]

Description: Search extensions

Definition:

```
<!ELEMENT search >
```

#### 6.9. DAV quota feature XML element

Namespace: DAV

Name: quota

Reference: [RFC4331]

Description: DAV quotas. May not apply to all resources. Absence of this feature implies no support on any resource.

Definition:

```
<!ELEMENT quota >
```

#### 6.10. DAV Sync Collection feature XML element

Namespace: DAV

Name: sync-collection

Reference: [RFC6578]

Description: Collection synchronization report. May not apply to all resources. Absence of this feature implies no support on any resource.

Definition:

```
<!ELEMENT sync-collection >
```

#### 6.11. DAV Add Member feature XML element

Namespace: DAV

Name: add-member

Reference: [RFC6578]

Description: Using POST to add a member to a collection. May not apply to all resources. Absence of this feature implies no support on any resource.

Definition:

```
<!ELEMENT add-member >
```

### 7. CalDAV Features

Here we define the feature elements for features defined in the various CalDAV related specifications. All of these are under the CalDAV namespace

urn:ietf:params:xml:ns:caldav

Name	Reference
calendar-access	[RFC4791]
calendar-auto-schedule	[RFC6638]
calendar-no-timezone	RFC????

#### 7.1. CalDAV calendar-access feature XML element

Namespace: urn:ietf:params:xml:ns:caldav

Name: calendar-access

Reference: [RFC4791]

Description: Calendar access

Definition:

```
<!ELEMENT calendar-access >
```

## 7.2. CalDAV calendar-auto-schedule feature XML element

Namespace: urn:ietf:params:xml:ns:caldav

Name: calendar-auto-schedule

Reference: [RFC4791]

Description: CalDAV implicit scheduling

Definition:

```
<!ELEMENT calendar-auto-schedule >
```

## 7.3. CalDAV calendar-no-timezone feature XML element

Namespace: urn:ietf:params:xml:ns:caldav

Name: calendar-no-timezone

Reference: [RFC4791]

Description: CalDAV implicit timezones

Definition:

```
<!ELEMENT calendar-no-timezone >
```

## 8. Examples

### 8.1. WebDAV server information

TBD.

## 9. Notes

Tag enabling synchronization Document location (section 3) server-info token in DAV header returned as part of OPTIONS response Clients that see that and do not have a server-info document for that application should do a propfind to discover document href.

Authenticated v unauth Clients may fetch the si doc in an unauth mode. When they auth they must recheck their token and refetch if

appropriate. Caching by intermediaries might be an issue Server info may vary by user-agent.

\* product name \* product version \* product bug tracker link (or just link) \* system administrator contact ("mailto:", "tel:" an embedded vcard or a link to a vcard?) \* operating system info (string like the result of "uname -a" on POSIX systems)

Add something about rscale - calendar-rscale element

## 10. Security Considerations

TBD.

Something about not sending server name + version. Opaque version code.

## 11. IANA Considerations

### 11.1. MIME media type Registrations

Media Type: This section defines the MIME media type for use with the server information document.

Type name: application

Subtype name: server-info+xml

Required parameters: None

Optional parameters: charset as defined for application/xml in [RFC3023]; per [RFC3023], use of the charset property parameter with the value "utf-8" is STRONGLY RECOMMENDED.

Encoding considerations: Same as encoding considerations of application/xml as specified in [RFC3023].

Security considerations: See previous section.

Interoperability considerations: This media type provides an alternative format for iCalendar data based on XML.

Published specification: This specification.

Additional information:

Magic number(s): None

File extension(s): xml

Macintosh file type code(s): None specified.

Person & email address to contact for further information:  
calsify@ietf.org

Intended usage: COMMON

Restrictions on usage: There are no restrictions on where this media type can be used.

Author: See the "Authors' Addresses" section of this document.

Change controller: IETF

## 11.2. New Link reltype Registration

The link relation type "server-info" has been added to the Reference Types Registry defined in Section 6.2 of [RFC5988] with the following values

- o Relation Name: server-info
- o Description: Provides the location of and current token for the server information document
- o Reference: This specification

## 12. Acknowledgments

This specification is a result of discussions that took place within the Calendaring and Scheduling Consortium's CalDAV Technical Committee. The author thanks the participants of that group.

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