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**JSContact: A JSON representation of addressbook data  
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Abstract

This specification defines a data model and JSON representation of contact information that can be used for data storage and exchange in address book or directory applications. It aims to be an alternative to the vCard data format and to be unambiguous, extendable and simple to process. In contrast to the JSON-based jCard format, it is not a direct mapping from the vCard data model and expands semantics where appropriate.

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## [1.](#) Introduction

This document defines a data model for contact data normally used in address book or directory applications and services. It aims to be an alternative to the vCard data format [[RFC6350](#)] and to provide a JSON-based standard representation of contacts data.

The key design considerations for this data model are as follows:

- o Most of the initial set of attributes should be taken from the vCard data format [[RFC6350](#)] and extensions ([[RFC6473](#)], [[RFC6474](#)], [[RFC6715](#)], [[RFC6869](#)], [[RFC8605](#)]). The specification should add new attributes or value types, or not support existing ones, where appropriate. Conversion between the data formats need not fully preserve semantic meaning.
- o The attributes of the contacts data represented must be described as a simple key-value pair, reducing complexity of its representation.
- o The data model should avoid all ambiguities and make it difficult to make mistakes during implementation.
- o Extensions, such as new properties and components, MUST NOT lead to requiring an update to this document.

The representation of this data model is defined in the I-JSON format [[RFC7493](#)], which is a strict subset of the JavaScript Object Notation (JSON) Data Interchange Format [[RFC8259](#)]. Using JSON is mostly a



pragmatic choice: its widespread use makes JSContact easier to adopt, and the availability of production-ready JSON implementations eliminates a whole category of parser-related interoperability issues.

### **1.1. Relation to the xCard and jCard formats**

The xCard [[RFC6351](#)] and jCard [[RFC7095](#)] specifications define alternative representations for vCard data, in XML and JSON format respectively. Both explicitly aim to not change the underlying data model. Accordingly, they are regarded as equal to vCard in the context of this document.

### **1.2. Terminology**

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.

## **2. Contact**

MIME type: "application/jscontact+json;type=jscontact"

A JSContact object stores contact information about a person, organization or company. It has the following properties:

- o uid: String (mandatory). An identifier, used to associate the object as the same across different systems, addressbooks and views. [[RFC4122](#)] describes a range of established algorithms to generate universally unique identifiers (UUID), and the random or pseudo-random version is recommended. For compatibility with [[RFC6350](#)] UUIDs, implementations MUST accept both URI and free-form text.
- o prodId: String (optional). The identifier for the product that created the JSContact object.
- o updated: String (mandatory). The date and time when the data in this JSContact object was last modified. The timestamp MUST be formatted as specified in [[RFC3339](#)].
- o kind: String (optional). The kind of the entity the Contact represents. The value MUST be either one of the following values, registered in a future RFC, or a vendor-specific value:
  - \* "individual": a single person



- \* "org": an organization
- \* "location": a named location
- \* "device": a device, such as appliances, computers, or network elements
- \* "application": a software application
- o fullName: FullName[] (mandatory). The full name(s) of a contact. A FullName object has the following properties:
  - \* name: String (mandatory) The full name (e.g. the personal name and surname of an individual, the name of an organization).
  - \* language: String (optional) The [RFC5646](#) language tag of this name, if any.
  - \* isPreferred: Boolean (optional, default: "false"). Whether this FullName is the preferred name for this contact.
- o structuredName: StructuredName (optional). The name of this contact, structured by its constituents. A StructuredName object has the following properties:
  - \* prefix: String[] (optional). The honorific title(s) of the contact (e.g. "Mr", "Ms", "Dr").
  - \* personalName: String[] (optional). The personal name(s) of a contact (also known as "first name", "give name").
  - \* surname: String[] (optional). The surname(s) of a contact (also known as "last name", "family name").
  - \* additionalName: String[] (optional). The additional name(s) of a contact (also known as "middle name").
  - \* suffix: String[] (optional). The honorific suffix(es) of the contact (e.g. "B.A.", "Esq.").
- o nickname: String[] (optional). The nickname(s) of the contact.
- o birthday: String (optional). The contact's birth date in the form "YYYY-MM-DD" (any part may be all 0s for unknown) or a [RFC3339](#) timestamp.
- o birthPlace: String (optional). The contact's birth place.



- o `deathDate`: String (optional). The contact's death date in the form "YYYY-MM-DD" (any part may be all 0s for unknown) or a [\[RFC3339\]](#) timestamp.
  - o `deathPlace`: String (optional). The contact's death place.
  - o `anniversary`: String (optional). The contact's anniversary date in the form "YYYY-MM-DD" (any part may be all 0s for unknown).
  - o `organization`: String[] (optional). The company or organization name and units associated with this contact. The first entry in the list names the organization, and any following entries name organizational units.
  - o `jobTitle[]`: String (optional). The job title(s) or functional position(s) of the contact.
  - o `role[]`: String (optional). The role(s), function(s) or part(s) played in a particular situation by the contact. In contrast to a job title, the roles might differ for example in project contexts.
  - o `emails`: ContactMethod[] (optional). An array of ContactMethod objects where the values are email addresses. Types are:
    - \* "personal" The address is for emailing the contact in a personal context.
    - \* "work" The address is for emailing the contact in a professional context.
    - \* "other" The address is for some other purpose. A label property MAY be included to display next to the address to help the user identify its purpose.
  - o `phones`: ContactMethod[] (optional). An array of ContactMethod objects where the values are phone numbers. Types are:
    - \* "voice" The number is for calling the contact.
    - \* "fax" The number is for sending faxes to the contact.
    - \* "pager" The number is for a pager or beeper associated with the contact.
    - \* "other" The number is for some other purpose. A label property MAY be included to display next to the number to help the user identify its purpose.
- The following labels are pre-defined for phone contact methods:





- \* "private" The phone number should be used in a private context.
- \* "work" The phone number should be used in a professional context
- o online: ContactMethod[] (optional). An array of ContactMethod objects where the values are URIs or usernames associated with the contact for online services. Types are:
  - \* "uri" The value is a URI, e.g. a website link.
  - \* "username" The value is a username associated with the contact (e.g. for social media, or an IM client). A label property SHOULD be included to identify what service this is for. For compatibility between clients, this label SHOULD be the canonical service name, including capitalisation. e.g. "Twitter", "Facebook", "Skype", "GitHub", "XMPP".
  - \* "other" The value is something else not covered by the above categories. A label property MAY be included to display next to the number to help the user identify its purpose.
- o preferredContactMethod: String (optional) Defines the preferred contact method. The value MUST be the property name of one of the ContactMethod lists: "emails", "phones", "online", "other".
- o addresses: Address[] (optional). An array of Address objects, containing physical locations associated with the contact.
- o personalInfo: PersonalInformation[] (optional). A list of personal information about this contact. A PersonalInformation object has the following properties:
  - \* type: String (mandatory). Specifies the type for this personal information. Allowed values are:
    - + "expertise": a field of expertise or credential
    - + "hobby": a hobby of this contact
    - + "interest": an interest of this contact
    - + "other": an information not covered by the above categories
  - \* value: String (mandatory). The actual contact information. This generally is free-text, but future specifications MAY restrict allowed values depending on the type of this PersonalInformation.



- \* level: String (optional) Indicates the level of expertise, or engagement in hobby or interest. Allowed values are: "high", "medium" and "low".

- o notes: String (optional). Arbitrary notes about the contact.
- o categories: String[] (optional). A list of free-text or URI categories that relate to the contact.

A ContactMethod object has the following properties:

- o type: String (mandatory). Specifies the context of the contact method. This MUST be taken from the set of values allowed depending on whether this is part of the phones, emails or online property (see above).
- o label: String (optional). A label describing the value in more detail, especially if the type property has value "other" (but MAY be included with any type).
- o value: String (mandatory). The actual contact method, e.g. the email address or phone number.
- o isPreferred: Boolean (optional, default: "false"). Whether this ContactMethod is the preferred for its type. This SHOULD only be one per type.

An Address object has the following properties:

- o type: String (mandatory). Specifies the context of the address information. The value MUST be either one of the following values, registered in a future RFC, or a vendor-specific value:
  - \* "home" An address of a residence associated with the contact.
  - \* "work" An address of a workplace associated with the contact.
  - \* "billing" An address to be used with billing associated with the contact..
  - \* "postal" An address to be used for delivering physical items to the contact.
  - \* "other" An address not covered by the above categories.
- o label: String (optional). A label describing the value in more detail.



- o `fullAddress`: String (optional). The complete address, excluding type and label. This property is mainly useful to represent addresses of which the individual address components are unknown.
- o `street`: String (optional). The street address. This MAY be multiple lines; newlines MUST be preserved.
- o `extension`: String (optional) The extended address, such as an apartment or suite number, or care-of address.
- o `postOfficeBox`: String (optional) The post office box.
- o `locality`: String (optional). The city, town, village, post town, or other locality within which the street address may be found.
- o `region`: String (optional). The province, such as a state, county, or canton within which the locality may be found.
- o `postcode`: String (optional). The postal code, post code, ZIP code or other short code associated with the address by the relevant country's postal system.
- o `country`: String (optional). The country name.
- o `countryCode`: String (optional). The ISO-3166-1 country code.
- o `coordinates`: String (optional) A [[RFC5870](#)] "geo:" URI for the address.
- o `timeZone`: String (optional) Identifies the time zone this address is located in. This SHOULD be a time zone name registered in the IANA Time Zone Database [[1](#)]. Unknown time zone identifiers MAY be ignored by implementations.
- o `isPreferred`: Boolean (optional, default: "false"). Whether this Address is the preferred for its type. This SHOULD only be one per type.

### [3.](#) Contact Group

MIME type: "application/jscontact+json;type=jscontactgroup"

A JSContactGroup object represents a named set of contacts. It has the following properties:

- o `uid`: String (mandatory). A globally unique identifier. The same requirements as for the JSContact uid property apply.



- o name: String (optional). The user-visible name for the group, e.g. "Friends". This may be any UTF-8 string of at least 1 character in length and maximum 255 octets in size. The same name may be used by two different groups.
- o contactIds: String[] (mandatory). The ids of the contacts in the group. Implementations MUST preserve the order of list entries.

#### **4. IANA Considerations**

TBD

#### **5. Security Considerations**

TBD

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### **6.3. URIs**

[1] <https://www.iana.org/time-zones>

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