Core Attribute Specification

⚠ This document is based on an early draft by Benn Oshrin (internet2.edu)

There are no required attributes from the perspective of the Core Schema. It is up to a given protocol or implementation to determine what attributes are required, and how such status is conveyed between participants.

Where attributes are multi-valued, it is up to a given protocol or implementation as to whether multiple values are supported, and how such status is conveyed between participants.

Attribute names containing a slash (`/`) may be represented "flat" as listed, or "hierarchical" by removing the slash and establishing a suitable representation in the encoding in use. For example, "name/given" could be represented in JSON as

```
{
  "name":{
    "given":"value"
  }
}
```

Multiple values could be represented as

```
{
  "identifiers":[
    {
      "type":"enterprise",
      "value":"E12345678",
    },
    {
      "type":"network",
      "value":"jqs123"
    }
  ]
}
```

Attribute Data Types

- binary
- boolean
- country: ISO 3166-1 two letter country code
- date: YYYY-MM-DD format (ISO 8601)
- dateTerm: A datestamp used to indicate intervals such as a semester, trimester, or quarter. The general format is YYYY-L#, where L is one of H (half year), T (third), or Q (quarter), and # is the sequential number. eg: 2015-H2 designates the second semester of the 2015 academic year (and so might physically be in the year 2016).
- dateTime: YYYY-MM-DDTHH:MM:SSZ format (ISO 8601)
- integer
- locale: LL_CC format (ISO 639-1 two letter language code, an underscore, ISO 3166-1 two letter country code)
- region: ISO 3166-2 subdivision code, not including country prefix (eg: `BC` not `CA-BC`)
- string: Strings are case-preserving but not case-sensitive
- extensibleVocabulary: The Core Schema vocabulary should be supported when described values are relevant, however implementations may add to the vocabulary. How supported values are conveyed between participants is outside of the scope of this document. Extended vocabulary must begin with `x-`.

Case Sensitivity

All attribute names and other elements specified here are case sensitive. eg: `official` and `OFFICIAL` are *not* the same.

Person Core Attributes

Attribute	Data Type	Definition	Multi-Valued? (Parent Attribute)
address			Yes (`addresses`)
address/country	country	Country from a postal address	One per parent object
address/formatted	string	Address rendered as a single string, possibly with embedded newlines (`\n`)	One per parent object

`address/locality`	string	Locality information from a postal address (city, etc)	One per parent object
`address/language`	locale	The language encoding of the address	One per parent object
`address/postalCode`	string	Postal code from a postal address	One per parent object
`address/region`	region	Region information from a postal address (state, province, etc)	One per parent object
`address/room`	string	Room information from a postal address	One per parent object
`address /streetAddress` ⚠ was `street`	string (multi-line)	Street/site information from a postal address (street name, house number, etc)	One per parent object
`address/type`	extensibleVocabulary: • `campus` • `home` • `office` • `parent` • `postal` • `summer` • `former-`*anytype*	The type of the address	One per parent object
`address/verified`	boolean	True if the address has been verified	One per parent object
`citizenship`	country	Country of citizenship of the person	Yes (`citizenships`)
`dateOfBirth`	date	The date of birth of the person	No
`emailAddress`			Yes (`emailAddresses`)
`emailAddress/address`	string	The email address	One per parent object
`emailAddress/type`	extensibleVocabulary: • `delivery` • `department` • `department-`*deptlabel* • `forwarding` • `official` • `personal` • `preferred` • `former-`*anytype*	The type of the email address	One per parent object
`emailAddress /verified`	boolean	True if the address has been verified	One per parent object
`ethnicity`	extensibleVocabulary: • `africanAmerican` • `alaskaNative` • `americanIndian` • `asian` • `hispanic` • `nativeHawaiian` • `other` • `pacificIslander` • `white`	The ethnicity of the person ([US Census](#))	Yes (`ethnicities`)
`gender`	extensibleVocabulary: • `female` • `male`	The gender of the person	No
`identifier`			Yes (`identifiers`)
`identifier /identifier`	string	The identifier	One per parent object
`identifier/authority`	string	The system or authority that assigns and manges this identifier	One per parent object

`identifier/type`	extensibleVocabulary: • `applicant` • `badge` • `badge-barcode` • `badge-chip` • `badge-magstripe` • `enterprise` • `external` • `national` • `network` • `referenceId` • `role` • `role-affiliate` • `role-alumni` • `role-employee` • `role-guest` • `role-student` • `sor` • `sor-affiliate` • `sor-alumni` • `sor-employee` • `sor-guest` • `sor-student` • `former-`*anytype*	The type of the identifier • applicant: Identifier assigned to an applicant (eg: student application registration system) • badge: Identifier as encoded on a badge/physical ID card • badge-barcode: Identifier as encoded on a 1D or 2D barcode printed on a badge • badge-chip: Identifier as stored on a smart chip (contact or NFC) embedded in a badge • badge-magstripe: Identifier as encoded on a magnetic stripe of a badge • enterprise: Persistent identifier used to uniquely identify an individual across the enterprise • external: Identifier assigned by an external (federated) system • national: Government issued identifier (eg: SSN) • network: Identifier used for access to network services (eg: NetID) • referenceId: An ID Match reference identifier • role: Persistent identifier for a given role, used by an individual system of record and/or registry • role-*: Persistent identifier for a given role assigned by the specified system of record • sor: Persistent identifier used by an individual system of record • sor-*: Persistent identifier assigned by the specified system of record	One per parent object
`identityProof`			Yes (`identityProofs`)
`identityProof /dateOfBirth`	date	Date of birth, as confirmed on document	One per parent object
`identityProof /documentIssuer`	string	Name of agency issuing the confirmation document	One per parent object
`identityProof /documentType`	extensibleVocabulary: • `driversLicense` • `national` • `passport` • `regional` • `tribal`	Type of document used to confirm identity • driversLicense: Photo ID used to license drivers • national: ID issued by a national government, other than drivers licenses or passports • passport: Passport, including Passport Cards • regional: ID issued by a regional government (such as states or provinces), other than drivers licenses • tribal: ID issued by a tribal government (such as Native American tribes)	One per parent object
`identityProof /fullName`	string	Full name, as confirmed on document	One per parent object
`identityProof/status`	extensibleVocabulary: • `expired` • `invalid` • `valid`	Status of the identity proofing	One per parent object
`identityProof /timeVerified`	dateTime	Time document was confirmed	One per parent object
`identityProof /verifiedAddress`	string	Address, as confirmed on document	One per parent object
`name`			Yes (`names`)
`name/family`	string	The component of the person's name excluding the given, middle, and honorific components	One per parent object
`name/formatted`	string	The person's name, suitably formatted for display	One per parent object
`name/given`	string	The component of the person's name excluding the middle, family, and honorific components	One per parent object
`name/language`	locale	The language encoding of the person's name	One per parent object
`name/middle`	string	The component of the person's name excluding the given, family, and honorific components	One per parent object
`name/prefix`	string	The honorific prefix of the person's name, such as "Dr" or "Ms"	One per parent object
`name/suffix`	string	The honorific suffix of the person's name, such as "Jr" or "III"	One per parent object

name/type	extensibleVocabulary: - author - fka - official - preferred	The type of the name - author: Name suitable for publishing (eg: on academic papers) - fka: "Formerly Known As", a previous name for the person (eg: maiden name) - official: Name as found on government-issued ID - preferred: Name as self-asserted	One per parent object
photo			Yes (`photos`)
photo/data	binary	Encoding of a photo of the person	One per parent object
photo/encoding	extensibleVocabulary: - bmp - gif - jpg - png - tiff	The encoding used for the photo	One per parent object
photo/type	extensibleVocabulary: - badge - official - personal	The type of the photo (*not* the encoding) - badge: Photo used on an ID card - official: Photo taken for official purposes (such as display in a faculty directory) - personal: User supplied photo for non-official purposes	One per parent object
primaryAffiliation	string	The primary affiliation for the person, as defined by the institution (values same as for Person Role *affiliation* attribute, below)	No
primaryCampus	string	The primary campus location for the person, as defined by the institution	No
role		Parent attribute for Role attributes, described below	Yes
telephoneNumber			Yes (`telephoneNumbers`)
telephoneNumber /number	string	Telephone number for the person, preferably in + notation	One per parent object
telephoneNumber/type	extensibleVocabulary: - campus - fax - home - mobile - office - summer - former-*anytype*	The type of the telephone number	One per parent object
telephoneNumber /verified	boolean	True if the telephone number has been verified	One per parent object
test	boolean	True if this record represents a test entry	No
url			Yes (`urls`)
url/url	string	URL for the person	One per parent object
url/type	extensibleVocabulary: - official - personal	The type of the telephone number	One per parent object

visa	extensibleVocabulary: - `permanentRes` `ident` - `A` - `A-2` - `B-1` - `B-2` - `BCC` - `C` - `CR1` - `D` - `E` - `E-3` - `F` - `G-1` - `G-2` - `G-3` - `G-4` - `G-5` - `H-1B` - `H-1B1` - `H-2A` - `H-2B` - `H-3` - `I` - `IR1` - `J` - `K-1` - `K-3` - `L` - `M` - `NATO` - `P` - `Q` - `T` - `TD` - `TN` - `U`	Visa status of the person	No

Person Role Core Attributes

Attribute	Data Type	Definition	Multi-Valued?
`address`		*As defined for Person Attributes*	Yes (`addresses`)
`affiliation`	extensibleVocabulary: - `affiliate` - `alum` - `employee` - `faculty` - `library-` `walk-in` - `member` - `staff` - `student`	The person's broad relationship to the institution for the role ([eduPerson](#))	One per role
`campus`	string	The campus location this role is attached to, as defined by the institution	Yes (`campuses`)
`campusCode`	string	Machine readable identifier for a campus. This value is unlikely to have meaning outside of a specific institution.	Yes (`campusCodes`)
`department`	string	The name of the department the role is attached to (multiple values are permitted if multiple departments sponsor a single role)	Yes (`departments`)
`departmentCode`	string	Machine readable identifier for a department. This value is unlikely to have meaning outside of a specific institution.	Yes (`departmentCodes`)
`displayTitle`	string	The display title for this role	One per role
`emailAddress`		*As defined for Person Attributes*	Yes (`emailAddresses`)
`identifier`		*As defined for Person Attributes*	Yes (`identifiers`)
`leaveBegins`	dateTime	Time at which leave from this role begins; advisory – `status` is controlling	One per role
`leaveEnds`	dateTime	Time after which leave from this role is no longer in effect; advisory – `status` is controlling	One per role
`manager`	string	An identifier (preferably of type `enterprise`) describing the manager for this role ⚠ This should become a complex attribute (identifier+type)	Yes (`managers`)

`organization`	string	The name of the organization/institution the role is attached to (multiple values are permitted if multiple organizations sponsor a single role)	Yes (`organizations`)
`organizationCode`	string	Machine readable identifier for an organization. This value is unlikely to have meaning outside of a specific institution.	Yes (`organizationCodes`)
`percentTime`	integer (0 - 100)	The percentage time for this role (100 = full time)	One per role
`rank`	positive integer	The rank of this role relative to *all* roles from all SORs (highest rank = 1)	One per role
`rankSor`	positive integer	The rank of this role relative to_ only_ roles from this SOR (highest rank = 1)	One per role
`roleBegins`	dateTime	Time at which the role officially begins	One per role
`roleEnds`	dateTime	Time after which the role is officially no longer in effect	One per role
`sor`	string	Label for the system of record asserting this role	One per role
`sponsor`	string	An identifier (preferably of type `enterprise`) describing the sponsor for this role ⚠️ This should become a complex attribute (identifier+type)	Yes (`sponsors`)
`status`	extensibleVocabulary: • `accepted` • `applied` • `active` • `offered` • `onLeave` • `registered` • `suspended` • `terminated`	Status associated with this role: • The person has accepted an offer for this role (enrollment or hire) • The person has applied for this role (enrollment or hire) • The role is active (hire) • The person has been made an offer for this role but has not yet accepted (enrollment or hire) • The person is on leave from this role (enrollment or hire) • The person has registered for this role (enrollment) • The person has been suspended from this role (enrollment or hire) • The role has been terminated (enrollment or hire) (termination date is in `roleEnds`)	One per role
`telephoneNumber`		*As defined for Person Attributes*	Yes (`telephoneNumbers`)
`terminationReason`	extensibleVocabulary: • `deceased` • `graduated` • `involuntary` • `resigned` • `retired` • `withdrew`	Reason for termination associated with this role	One per role
`title`	string	The official title for this role	Yes (`titles`)
`url`		*As defined for Person Attributes*	Yes (`urls`)
`validFrom`	dateTime	Time at which services associated with the role should begin	One per role
`validThrough`	dateTime	Time after which services associated with the role should be terminated	One per role

HR Person Role Attributes

Attribute	Data Type	Definition	Multi-Valued?
`employeeType`	extensibleVocabulary: • `consultant` • `contractor` • `emeritus` • `exempt` • `regular` • `tenured` • `vendor` • `visiting` • `workStudy`		No

Student Person Role Attributes

Attribute	Data Type	Definition	Multi-Valued?

classYear	extensibleVocabulary: • freshman • sophomore • junior • senior • ####	#### is a four digit expected year of graduation	No
courseAffiliation	extensibleVocabulary: • Administrator • ContentDeveloper • Instructor • Learner • Manager • Member • Mentor • Officer • TeachingAssistant	Person's affiliation/role with a course. Based on MACE-Dir work.	Yes, per-courseMembership
courseMembership	string		Yes
degree	extensibleVocabulary: • AAS • BA • BFA • BS • DDS • DNP • JD • LLM • MA • MArch • MBA • MD • MFA • MPH • MPS • MS • PhD		Yes, if a single program generates more than one degree. (Otherwise use separate roles.)
major			Yes (majors)
major/major	string	Student's major	No
major/majorCode	string	Machine readable identifier for the major. This value is unlikely to have meaning outside of a specific institution.	No
major/type	extensibleVocabulary • dual • minor • primary • secondary		No
residenceHall	string		No
studentType	extensibleVocabulary: • continuing • graduate • nondegree • professional • secondary • summer • undergraduate • visiting	Secondary = (eg) high school	No
term	dateTerm	Term for which this record applies	No

College/School should be expressed in `organization` and Major/Program should be expressed in `department`. (XXX or should they get dedicated attributes?)

Extended Attributes

The Core Schema may be extended. How extended attributes are conveyed between participants is outside of the scope of this document. Extended attributes must begin with `x-`, may be hierarchical, and may be attached to the Person or Person Role.