

What is a sub-resource?

Quick Answer

A **sub-resource** is a [resource](#), which means it can have [properties](#), [sub-properties](#), and be as complex as any resource. The critical difference is that *sub-resources* do not appear alone but rather as members of a parent [property](#). This is similar to how *sub-properties* are displayed, but there can be more than one *sub-resource* belonging to a parent *property*. For this reason, *sub-resources* are contained within a JSON array.

Digging Deeper

Sub-resources are normally used for two reasons. First, when the type of data represented by the *sub-resource* is not merely a composite of the parent property. Second, and most importantly, when the data represented by the *sub-resource* is subject to being *repeated*. Repeated data will often come from two sources: values from associated multivalue fields and rows from a database table.

To visualize *sub-resources*, let's revisit the final resource object created in the [What is a sub-property?](#) article:

```
{
  "mailing":{
    "address":"PO Box 1234",
    "city":"New Orleans",
    "county":"Orleans",
    "state":"LA",
    "zip":"70116"
  },
  "shipping":{
    "address":"6649 N Blue Gum St",
    "city":"New Orleans",
    "county":"Orleans",
    "state":"LA",
    "zip":"70116"
  }
}
```

This sample resource object uses *sub-properties* because it assumes the *mailing* and *shipping* parent properties are unique in the resource object, but they still require their own (albeit similar) composite properties. Now what if we need to display any number of addresses? What if users are allowed to define the address types? Either or both of these situations are perfect candidates for using *sub-resources*. Let's start by seeing how the above resource object would look using *sub-resources*:

```
{
  "addresses":[
    {
      "type":"Mailing",
      "address":"PO Box 1234",
      "city":"New Orleans",
      "county":"Orleans",
      "state":"LA",
      "zip":"70116"
    },
    {
      "type":"Shipping",
      "address":"6649 N Blue Gum St",
      "city":"New Orleans",
      "county":"Orleans",
      "state":"LA",
      "zip":"70116"
    }
  ]
}
```

We see that the *mailing* and *shipping* parent properties have been replaced with a single *addresses* parent property. Furthermore, to properly identify each address *sub-resource*, a *type* property has been added and the values of *Mailing* and *Shipping* have been assigned to them.