# Record Syntax

## JSON Format

A single record may be encoded as a JSON object:

| Property | Value |
|---|---|
| <field name / label> | field type appropriate value / `null` |
| `"expressions"` | JSON object mapping field name/label to expression |
| `"file"` | binary object (if database has `file` enabled) |
| `"tags"` | JSON array of string(s) (if database has `tag` enabled) |

The `"expressions"` property allows field values to be specified by expression, rather than explicit value. Between the base object and `"expressions"` object, field may only have a single value provided, or an error will be thrown.

Multiple records may be encoded as a JSON array of JSON objects in this format.

## DSV Format

Record data may be provided in a delimiter separated values format. In this case the record data itself is contained in a binary object.

| Property | Value |
|---|---|
| `"type"` | `"dsv"`, `"csv"`, or `"tsv"` |
| `"file"` | binary object |
| `"delimiter"` | string (required for `"dsv"`) |
| `"quote"` | string (optional) |

The `"csv"` and `"tsv"` types specify default delimiters of comma (`,`) and tab (`\t`), respectively.

*Example*

```
{
 "records": {
  "type": "dsv",
  "file" : "<object ID>",
  "delimit": ";"
 }
```

```
}
```

The format of the separated values file is largely based on the RFC 4180 standard. The specific requirements are:

- lines must end with `LF` (`\n`) or `CR` `LF` (`\r\n`)
- line breaks cannot be used in values
- the default quote character is `"` (double quotes)
- any field *may* be quoted by the quote character
- any field containing the delimiter must be quoted
- a quote character in a quoted value must be represented by two quote characters
- the first row must contain the names of each field
- blank lines with no data are ignored

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