API Documentation

18th September 2013

GeoPal web site

GeoPal Mobile app

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Change Log

Date	Changes Made	Changes By
2013-05-20	Initial version	Sean O'Reilly, Lukasz Jajesnica, Gabor Zelei
2013-07-08	New API functionality for Employees and Jobs	Gabor Zelei
2013-09-17	New API's for reassigning Jobs, updating Job Statuses and listing Shifts	Gabor Zelei
2013-09-25	Extended Job creation API, added new API for retrieving S3 files	Gabor Zelei
2013-09-25	Updating code examples section.	Lukasz Jajesnica
25/09/13	Put params in the correct case	Sean OReilly

Introduction

GeoPal API provides you with the powerful ability to send and receive data from our system. Currently it supports two types of requests: Pull (or GET) and Push (or POST). In this document you will find a general description of the API, along with code samples for the following programming languages:

- `C#`
- `Java`
- `PHP`
- `Python`
- `Visual Basic .NET`

Syntax

The markdown syntax used in this document is as follows:

Important information
`API Method Name`
A **`mandatory field_name`** in the request you send or receive
An `optional field_name` in the request you send or receive

Sections

This document has been organized into two main sections:

- **General API Description**: This section contains all the information about the GeoPal API in a language independent fashion. This includes the descriptions of the URLs and common request parameters used. Generic GET and PUT style calls will also be also discussed in this section.
- **API Examples**: This sections contains commented API examples in all supported programming languages.

General API Description

Common Request Parameters

When making calls to GeoPal's API, you will typically need to specify the following parameters in your call: Signature, Verb, URI, Timestamp, API key and Operation. A description of these parameters can be found below.

Signature

The Signature is a specially constructed token, converted to the lowercase and then signed with SHA256. Once constructed, it must be encoded with BASE64. You can find more information about the building block parameters of the token below.

PseudoCode:

```
VAR Signature = BASE64(
        SHA256(
                LOWER_CASE(
                        <VERB>+<URI>+<EMPLOYEEID>+<TIMESTAMP>
                )
        )
);
```

Verb

A Verb is a specific type of request. The GeoPal API currently accepts "GET" and "PUT" values for a Verb, depending on the actual method you want to call. You can find more information about the Verb you have to use for each method in their API description tables, later in this chapter.

URI

The URI parameter is the target URL you want to send your request to. Again, you can find the actual value to set for the URI parameter in the API method description tables.

Timestamp

The current timestamp. Please refer to the RFC 2822, in case you need more information.

GeoPal expects the timestamp to be provided in the following format:
Thu, 25 Oct 2012 13:06:50 +0100

API Key

The API key is a randomly generated 128-byte string, assigned to your company by Geopal and used for the authentication of incoming API calls.

Operation

This parameter specifies the operation type, and is only used in Push requests. Valid values for this parameter are: `job`, `job_workflow`, `job_workflow_file` or `job_field`.

Pull API

Creating a Job

Allows creating a job in GeoPal

Parameters	Method specific value
URI	api/jobs/createandassign
Verb	POST
Data Type	JSON

Headers	Method specific value
GEOPAL-SIGNATURE	[reference]
GEOPAL-TIMESTAMP	[reference]
GEOPAL-EMPLOYEEID	A unique ID assigned to the requestor employee by GeoPal

Get Parameter	Description
template_id	The ID of the job template to create the job from
job_identifier	A unique identifier for the job
person_id	The ID of the contact person for the job
person_identifier	The identifier of the contact person for the job
person_title	The title of the contact person for the job
person_first_name	The first name of the contact person for the job
person_last_name	The last name of the contact person for the job
person_phone_number	The phone number of the contact person for the job
person_fax_number	The fax number of the contact person for the job
person_mobile_number	The mobile phone number of the contact person for the job
person_email	The e-mail address of the contact person for the job
person_address_line_1	Address (line 1) of the contact person for the job
person_address_line_2	Address (line 2) of the contact person for the job
person_address_line_3	Address (line 3) of the contact person for the job
person_city	Address (city) of the contact person for the job
person_postal_code	Address (postal code) of the contact person for the job
address_id	ID of the address where the job should be done at
address_identifier	Identifier of the address where the job should be done at
address_line_1	The address (line 1) where the job should be done at
address_line_2	The address (line 2) where the job should be done at
address_line_3	The address (line 3) where the job should be done at

Get Parameter	Description
city	The address (city) where the job should be done at
postal_code	The address (postal code) where the job should be done at
country_id	The address (country ID) where the job should be done at
customer_id	The ID of the customer to do the job for
customer_identifier	The identifier of the customer to do the job for
customer_name	The name of the customer to do the job for
customer_phone_number	The phone number of the customer to do the job for
customer_fax_number	The fax number of the customer to do the job for
customer_web_site	The web site address of the customer to do the job for
customer_mobile_number	The mobile number of the customer to do the job for
customer_email	The e-mail address of the customer to do the job for
customer_address_line_1	The address (line 1) of the customer to do the job for
customer_address_line_2	The address (line 2) of the customer to do the job for
customer_address_line_3	The address (line 3) of the customer to do the job for
customer_city	The address (city) of the customer to do the job for
customer_postal_code	The address (postal code) of the customer to do the job for
estimated_duration	The estimated time (HH:MI) the job will take to complete
rate_per_hour	The cost of the job per hour
prefered_start_date_time	The date and time to start the job at
prefered_stop_date_time	The date and time to finish the job by
priority_text	The textual representation of the job priority (can be any text)
priority_color	The color label for the job. Accepted values are "green", "yellow", "orange", "red", "purple", "white", and "blue". Defaults to "white".
job_notes	Submitter's notes for the job

Response	Description
status	[true/false] Indicates if there was an error on the server or not
tag	An URI to which the call was made to

employee	A JSON array with the account details of the requestor user who made the call.
	
	`{`
	`    id: integer,`
	`    title: string,`
	`    first_name: string,`
	`    last_name: string`
	`}`

Response	Description

company	Details of the current company.
	
	``
	{
	    id: integer,
	    name: string,
	    mobile_main_logo_url: string
	}
	``

job	An object containing details of the new job.
	
	``
	{
	    id: integer,
	    identifier: string,
	    priority_text: string,
	    start_date_time: dateTime / string,
	    prefered_start_date_time: dateTime / string,
	    created_on: dateTime / string,
	    updated_on: dateTime / string
	    duration: integer,
	    priority_color: string,
	    rate_per_hour: integer,
	    prefered_stop_date_time: dateTime / string,
	    job_status_id: integer,
	    schedule_log_id: integer,
	    start_date: dateTime / string,
	    end_time: dateTime / string,
	    first_to_accept: bool,
	    assigned_at: dateTime / string,
	    estimated_duration: integer,
	    ob_assigned_to: string,
	    url: string,
	    notes: string,
	    job_status_change_messages: string,
	    address: {
	        id: integer,
	        identifier: string,
	        is_billing: bool,
	        is_user: bool,
	        is_deleted: bool,
	        created_on: dateTime / string,
	        updated_by: string,
	        updated_on: dateTime / string,
	        city: string,
	        is_primary: bool,
	        company_id: integer,
	        country_id: integer,
	        created_by: string,
	        address_line_1: string,
	        address_line_2: string,
	        address_line_3: string,
	        postal_code: string,
	        lat: float,
	        lng: float
	    },
	    prefered_start_date_time: dateTime / string,
	    priority_text: string,
	    job_template: {
	        id: integer,
	        name: string,
	        is_deleted: bool,
	        default_rate_per_hour: integer,
	        updated_on: dateTime / string,
	        priority_list: string,
	        created_by: string,
	        created_on: dateTime / string,
	        review_job: bool,
	        company_id: integer,
	        description: string,
	        estimate_job_duration: integer
	    },
	    created_by: {
	        id: integer,
	        title: string,
	        first_name: string,
	``

Response	Description
| | ```
        last_name: string
    },
    employee: {
        id: integer,
        title: string,
        first_name: string,
        last_name: string
    },
    company: {
        id: integer,
        name: string
    },
    job_field_files: [],
    job_workflow_files: [],
    customer: {
        id: integer,
        company_id: integer,
        name: string,
        customer_type_id: integer,
        created_by: string,
        created_on: dateTime / string,
        identifier: string,
        industry: string,
        updated_on: dateTime / string,
        annual_revenue: integer,
        employees: string,
        ownership: string,
        phone_office: string,
        phone_alternate: string,
        phone_fax: string,
        updated_by: string,
        website: string,
        email: string,
        email_alternate: string,
        notes: string,
        assigned_user_id: integer,
        rating: integer
    },
    person: {
        id: integer,
        identifier: string,
        first_name: string,
        last_name: string,
        person_type_id: integer,
        title: string,
        person_department_id: integer,
        created_on: dateTime / string,
        updated_on: dateTime / string,
        person_job_title_id: integer,
        company_id: integer,
        created_by: string,
        department: string,
        email: string,
        is_billing: bool,
        phone_number: string,
        updated_by: string,
        fax_number: string,
        home_number: string,
        phone_number_alternate: string,
        mobile_number: string,
        email_alternate: string,
        is_user: bool,
        is_deleted: bool,
        is_primary: bool,
        notes: string
    },
    assigned_to: {
        id: integer,
        title: string,
        first_name: string,
        last_name: string
    }
}
``` |

Getting Job Details

Returns a list with all existing job templates.

Parameters	Method specific value
URI	api/job/get
Verb	GET
Data Type	JSON

Headers	Method specific value
GEOPAL-SIGNATURE	[reference]
GEOPAL-TIMESTAMP	[reference]
GEOPAL-EMPLOYEEID	A unique ID assigned to the requestor employee by GeoPal

Get Parameter	Description
job_id	The ID of the target job

Response	Description
status	[true/false] Indicates if there was an error on the server or not
tag	An URI to which the call was made to
employee	A JSON array with the account details of the requestor user who made the call. ```{
id: integer,
title: string,
first_name: string,
last_name: string
}```
company	Details of the current company. ```{
id: integer,
name: string
}```
job	An object containing the job details. ```{
id: integer,
identifier: string,
priority_text: string,
start_date_time: dateTime / string,
prefered_start_date_time: dateTime / string,
created_on: dateTime / string,
updated_on: dateTime / string
duration: integer,
priority_color: string,
rate_per_hour: integer,
prefered_stop_date_time: dateTime / string,
job_status_id: integer,
schedule_log_id: integer,```

Response	Description
| | ```
start_date: dateTime / string,
end_time: dateTime / string,
first_to_accept: bool,
assigned_at: dateTime / string,
estimated_duration: integer,
ob_assigned_to: string,
url: string,
notes: string,
job_status_change_messages: string,
address: {
    id: integer,
    identifier: string,
    is_billing: bool,
    is_user: bool,
    is_deleted: bool,
    created_on: dateTime / string,
    updated_by: string,
    updated_on: dateTime / string,
    city: string,
    is_primary: bool,
    company_id: integer,
    country_id: integer,
    created_by: string,
    address_line_1: string,
    address_line_2: string,
    address_line_3: string,
    postal_code: string,
    lat: float,
    lng: float
},
prefered_start_date_time: dateTime / string,
priority_text: string,
job_template: {
    id: integer,
    name: string,
    is_deleted: bool,
    default_rate_per_hour: integer,
    updated_on: dateTime / string,
    priority_list: string,
    created_by: string,
    created_on: dateTime / string,
    review_job: bool,
    company_id: integer,
    description: string,
    estimate_job_duration: integer
},
created_by: {
    id: integer,
    title: string,
    first_name: string,
    last_name: string
},
employee: {
    id: integer,
    title: string,
    first_name: string,
    last_name: string
},
company: {
    id: integer,
    name: string
},
job_field_files: [],
job_workflow_files: [],
customer: {
    id: integer,
    company_id: integer,
    name: string,
    customer_type_id: integer,
    created_by: string,
    created_on: dateTime / string,
    identifier: string,
    industry: string,
    updated_on: dateTime / string,
    annual_revenue: integer,
``` |

Response	Description
	<pre> employees: string,
ownership: string,
phone_office: string,
phone_alternate: string,
phone_fax: string,
updated_by: string,
website: string,
email: string,
email_alternate: string,
notes: string,
assigned_user_id: integer,
rating: integer
},
person: {
id: integer,
identifier: string,
first_name: string,
last_name: string,
person_type_id: integer,
title: string,
person_department_id: integer,
created_on: dateTime / string,
updated_on: dateTime / string,
person_job_title_id: integer,
company_id: integer,
created_by: string,
department: string,
email: string,
is_billing: bool,
phone_number: string,
updated_by: string,
fax_number: string,
home_number: string,
phone_number_alternate: string,
mobile_number: string,
email_alternate: string,
is_user: bool,
is_deleted: bool,
is_primary: bool,
notes: string
},
assigned_to: {
id: integer,
title: string,
first_name: string,
last_name: string
}
}</pre>

Changing Job Status

Allows for changing the current status of a job.

Parameters	Method specific value
URI	api/job/status
Verb	POST
Data Type	JSON

Headers	Method specific value
GEOPAL-SIGNATURE	[reference]
GEOPAL-TIMESTAMP	[reference]
GEOPAL-EMPLOYEEID	A unique ID assigned to the requestor employee by GeoPal

Post Parameters	Description
job_id	The ID of the target job
job_status_id	The ID of the job status to set the job to. Valid values are: - **1** for "Accepted" - **2** for "Rejected" - **3** for "Completed" - **5** for "In Progress" - **7** for "Incomplete" Note: Values not listed above will cause the request to fail.
updated_on	A Unix Timestamp to mark the time of the update
message	An optional message to include in the job notes

Response	Description
status	[true/false] Indicates if there was an error on the server or not
tag	An URI to which the call was made to

employee	A JSON array with the account details of the requestor user who made the call.
	
	`{`
	`    id: integer,`
	`    title: string,`
	`    first_name: string,`
	`    last_name: string`
	`}`

company	Details of the current company.
	
	`{`
	`    id: integer,`

Response	Description
| | ```
name: string
}
``` |
| job | An object containing the job details.<br><br>```
{
    id: integer,
    identifier: string,
    priority_text: string,
    start_date_time: dateTime / string,
    prefered_start_date_time: dateTime / string,
    created_on: dateTime / string,
    updated_on: dateTime / string
    duration: integer,
    priority_color: string,
    rate_per_hour: integer,
    prefered_stop_date_time: dateTime / string,
    job_status_id: integer,
    schedule_log_id: integer,
    start_date: dateTime / string,
    end_time: dateTime / string,
    first_to_accept: bool,
    assigned_at: dateTime / string,
    estimated_duration: integer,
    ob_assigned_to: string,
    url: string,
    notes: string,
    job_status_change_messages: string,
    address: {
        id: integer,
        identifier: string,
        is_billing: bool,
        is_user: bool,
        is_deleted: bool,
        created_on: dateTime / string,
        updated_by: string,
        updated_on: dateTime / string,
        city: string,
        is_primary: bool,
        company_id: integer,
        country_id: integer,
        created_by: string,
        address_line_1: string,
        address_line_2: string,
        address_line_3: string,
        postal_code: string,
        lat: float,
        lng: float
    },
    prefered_start_date_time: dateTime / string,
    priority_text: string,
    job_template: {
        id: integer,
        name: string,
        is_deleted: bool,
        default_rate_per_hour: integer,
        updated_on: dateTime / string,
        priority_list: string,
        created_by: string,
        created_on: dateTime / string,
        review_job: bool,
        company_id: integer,
        description: string,
        estimate_job_duration: integer
    },
    created_by: {
        id: integer,
        title: string,
        first_name: string,
        last_name: string
    },
    employee: {
        id: integer,
        title: string,
        first_name: string,
``` |

Response	Description
| | ```
        last_name: string
    },
    company: {
        id: integer,
        name: string
    },
    job_field_files: [],
    job_workflow_files: [],
    customer: {
        id: integer,
        company_id: integer,
        name: string,
        customer_type_id: integer,
        created_by: string,
        created_on: dateTime / string,
        identifier: string,
        industry: string,
        updated_on: dateTime / string,
        annual_revenue: integer,
        employees: string,
        ownership: string,
        phone_office: string,
        phone_alternate: string,
        phone_fax: string,
        updated_by: string,
        website: string,
        email: string,
        email_alternate: string,
        notes: string,
        assigned_user_id: integer,
        rating: integer
    },
    person: {
        id: integer,
        identifier: string,
        first_name: string,
        last_name: string,
        person_type_id: integer,
        title: string,
        person_department_id: integer,
        created_on: dateTime / string,
        updated_on: dateTime / string,
        person_job_title_id: integer,
        company_id: integer,
        created_by: string,
        department: string,
        email: string,
        is_billing: bool,
        phone_number: string,
        updated_by: string,
        fax_number: string,
        home_number: string,
        phone_number_alternate: string,
        mobile_number: string,
        email_alternate: string,
        is_user: bool,
        is_deleted: bool,
        is_primary: bool,
        notes: string
    },
    assigned_to: {
        id: integer,
        title: string,
        first_name: string,
        last_name: string
    }
}
``` |

Reassigning A Job

Allows for reassigning a job to another employee.

Parameters	Method specific value
URI	api/jobs/reassign
Verb	POST
Data Type	JSON

Headers	Method specific value
GEOPAL-SIGNATURE	[reference]
GEOPAL-TIMESTAMP	[reference]
GEOPAL-EMPLOYEEID	A unique ID assigned to the requestor employee by GeoPal

Post Parameter	Description
job_id	The ID of the target job
employee_reassigned_to_id	The ID of the employee to assign the job to
start_date_time	Start date and time for the job (YYYY-MM-DD HH:MI:SS)

Response	Description
status	[true/false] Indicates if there was an error on the server or not
tag	An URI to which the call was made to

employee	A JSON array with the account details of the requestor user who made the call.
	
	``
	{
	    id: integer,
	    title: string,
	    first_name: string,
	    last_name: string
	}
	``

company	Details of the current company.
	
	``
	{
	    id: integer,
	    name: string
	}
	``

job	An object containing the job details.
	
	``
	{
	    id: integer,
	    identifier: string,
	    priority_text: string,
	    start_date_time: dateTime / string,
	    prefered_start_date_time: dateTime / string,
	    created_on: dateTime / string,
	    updated_on: dateTime / string
	    duration: integer,
	    priority_color: string,
	    rate_per_hour: integer,
	``

Response	Description
	<pre>prefered_stop_date_time: dateTime / string,
job_status_id: integer,
schedule_log_id: integer,
start_date: dateTime / string,
end_time: dateTime / string,
first_to_accept: bool,
assigned_at: dateTime / string,
estimated_duration: integer,
ob_assigned_to: string,
url: string,
notes: string,
job_status_change_messages: string,
address: {
id: integer,
identifier: string,
is_billing: bool,
is_user: bool,
is_deleted: bool,
created_on: dateTime / string,
updated_by: string,
updated_on: dateTime / string,
city: string,
is_primary: bool,
company_id: integer,
country_id: integer,
created_by: string,
address_line_1: string,
address_line_2: string,
address_line_3: string,
postal_code: string,
lat: float,
lng: float
},
prefered_start_date_time: dateTime / string,
priority_text: string,
job_template: {
id: integer,
name: string,
is_deleted: bool,
default_rate_per_hour: integer,
updated_on: dateTime / string,
priority_list: string,
created_by: string,
created_on: dateTime / string,
review_job: bool,
company_id: integer,
description: string,
estimate_job_duration: integer
},
created_by: {
id: integer,
title: string,
first_name: string,
last_name: string
},
employee: {
id: integer,
title: string,
first_name: string,
last_name: string
},
company: {
id: integer,
name: string
},
job_field_files: [],
job_workflow_files: [],
customer: {
id: integer,
company_id: integer,
name: string,
customer_type_id: integer,
created_by: string,
created_on: dateTime / string,
identifier: string,</pre>

Response	Description
| | ```
        industry: string,
        updated_on: dateTime / string,
        annual_revenue: integer,
        employees: string,
        ownership: string,
        phone_office: string,
        phone_alternate: string,
        phone_fax: string,
        updated_by: string,
        website: string,
        email: string,
        email_alternate: string,
        notes: string,
        assigned_user_id: integer,
        rating: integer
    },
    person: {
        id: integer,
        identifier: string,
        first_name: string,
        last_name: string,
        person_type_id: integer,
        title: string,
        person_department_id: integer,
        created_on: dateTime / string,
        updated_on: dateTime / string,
        person_job_title_id: integer,
        company_id: integer,
        created_by: string,
        department: string,
        email: string,
        is_billing: bool,
        phone_number: string,
        updated_by: string,
        fax_number: string,
        home_number: string,
        phone_number_alternate: string,
        mobile_number: string,
        email_alternate: string,
        is_user: bool,
        is_deleted: bool,
        is_primary: bool,
        notes: string
    },
    assigned_to: {
        id: integer,
        title: string,
        first_name: string,
        last_name: string
    }
}
``` |

Reading a Job Template

Returns a Job Template.

Parameters	Method specific value
URI	api/jobtemplate/get
Verb	GET
Data Type	JSON

Headers	Method specific value
GEOPAL-SIGNATURE	[reference]
GEOPAL-TIMESTAMP	[reference]
GEOPAL-EMPLOYEEID	A unique ID assigned to the requestor employee by GeoPal

Get Parameter	Description
job_template_id	The ID of the target job template

Response	Description
status	[true/false] Indicates if there was an error on the server or not
tag	An URI to which the call was made to

employee	A JSON array with the account details of the requestor user who made the call.
	
	`{`
	`    id: integer,`
	`    title: string,`
	`    first_name: string,`
	`    last_name: string`
	`}`

company	Details of the current company.
	
	`{`
	`    id: integer,`
	`    name: string`
	`}`

template	An object containing the job template details.
	
	`{`
	`    id: integer,`
	`    name: string,`
	`    company_id: integer,`
	`    description: string,`
	`    created_on: dateTime / string,`
	`    created_by: string,`
	`    updated_on: dateTime / string,`
	`    updated_by: string,`
	`    review_job: bool,`
	`    priority_list: string,`
	`    default_rate_per_hour: integer,`
	`    is_deleted: bool,`
	`    job_template_runbooks: [],`

Response	Description
| | ```
estimate_job_duration: integer,
job_template_fields: [{
    id: integer,
    perm_portal: bool,
    is_deleted: bool,
    name: string,
    include_in_reports: bool,
    perm_mobile: bool,
    updated_at: dateTime / string,
    template_id: integer,
    created_on: dateTime / string,
    action: string,
    action_values: string,
    order_number: integer
}],
job_template_workflows: [{
    id: integer,
    name: string,
    template_id: integer,
    created_on: dateTime / string,
    action_value_entered: string,
    is_deleted: bool,
    order_number: integer,
    optional: bool,
    updated_on: dateTime / string,
    action: string,
    nested_workflow_id: integer,
    level_number: integer,
    updated_at: dateTime / string,
    include_in_reports: bool
}]
}
``` |

Getting Jobs in a Specific Date Range

Returns a detailed list of Jobs created within the target date range.

Parameters	Method specific value
URI	api/jobsearch/ids
Verb	GET
Data Type	JSON

Headers	Method specific value
GEOPAL-SIGNATURE	[reference]
GEOPAL-TIMESTAMP	[reference]
GEOPAL-EMPLOYEEID	A unique ID assigned to the requestor employee by GeoPal

Get Parameter	Description
date_time_from	Date and time to list entries from.
date_time_to	Date and time to list entries to.

Response	Description
status	[true/false] Indicates if there was an error on the server or not
tag	An URI to which the call was made to

employee	A JSON array with the account details of the requestor user who made the call.
	
	{
	    id: integer,
	    title: string,
	    first_name: string,
	    last_name: string
	}

company	Details of the current company.
	
	{
	    id: integer,
	    name: string
	}

jobs	An array containing the details for all the job templates.
	
	Each object has:
	
	{
	    id: integer
	}

Listing Employees

Returns a detailed list with all employees of the company.

Parameters	Method specific value
URI	api/employees/all
Verb	GET
Data Type	JSON

Headers	Method specific value
GEOPAL-SIGNATURE	[reference]
GEOPAL-TIMESTAMP	[reference]
GEOPAL-EMPLOYEEID	A unique ID assigned to the requestor employee by GeoPal

Response	Description
status	[true/false] Indicates if there was an error on the server or not
tag	An URI to which the call was made to
| employee | A JSON array with the account details of the requestor user who made the call.<br><br>```
{
    id: integer,
    identifier: string,
    title: string,
    first_name: string,
    last_name: string
}
``` |
| company | Details of the current company.<br><br>```
{
    id: integer,
    name: string
}
``` |
| employees | An array containing the details for all the employees of the current company.<br><br>Each object has:<br><br>```
{
    id: integer,
    identifier: string,
    title: string,
    first_name: string,
    last_name: string,
    mobile_number: string,
    status: integer [0, 1, 2],
    lat: float,
    lng: float,
    address: string,
    last_updated_on: string
}
``` |

Response	Description
	Statuses: - **0** for "Ready" - **1** for "Busy" - **2** for "Offline"

Create an Employee

Creates a new employee entry in the system.

Parameters	Method specific value
URI	api/employee/create
Verb	POST
Data Type	JSON

Headers	Method specific value
GEOPAL-SIGNATURE	[reference]
GEOPAL-TIMESTAMP	[reference]
GEOPAL-EMPLOYEEID	A unique ID assigned to the requestor employee by GeoPal

Post Parameters	Description
username	A unique username that will allow the employee to log in to GeoPal.
password	A password to allow the employee to log in to GeoPal.
email	The new employee's e-mail address.
mobile_number	The new employee's mobile phone number.
identifier	A unique identifier for the new employee. If not provided, an identifier will be generated automatically.
first_name	The new employee's first name.
last_name	The new employee's last name.
image_url	A URL to the employee's photo.
timezone	The new employee's time zone. It may be provided in either of the following formats: 1.) Area/City – e. g.: Europe/Isle_of_Man (Preferred) 2.) Area/Zone – e.g.: US/Central 3.) Difference from GMT – e. g.: GMT+2 4.) Special formats – e. g.: CET, Zulu, etc. If not provided, the employer's time zone will be applied.

Response	Description
status	[true/false] Indicates if there was an error on the server or not
tag	An URI to which the call was made to
employee	A JSON array with the account details of the requestor user who made the call. { id: integer,

Response	Description
| | ```
    identifier: string,
    title: string,
    first_name: string,
    last_name: string
}
``` |
| company | Details of the current company.<br><br>```
{
    id: integer,
    name: string
}
``` |
| employee_data | An object with data on the newly created user.<br><br>```
{
    id: integer,
    identifier: string,
    first_name: string,
    last_name: string,
    email: string,
    mobile_number: string,
    username: string,
    timezone: string
}
``` |

Update an Employee

Updates data on an existing employee, based on the employee's GeoPal ID.

Parameters	Method specific value
URI	api/employee/update
Verb	PUT
Data Type	JSON

Headers	Method specific value
GEOPAL-SIGNATURE	[reference]
GEOPAL-TIMESTAMP	[reference]
GEOPAL-EMPLOYEEID	A unique ID assigned to the requestor employee by GeoPal

Post Parameters	Description
id	The target employee's GeoPal ID.
identifier	The employee's unique identifier.
username	The employee's unique username for logging in to GeoPal.
password	The employee's password for logging in to GeoPal.
first_name	The employee's first name.
last_name	The employee's last name.
email	The employee's e-mail address.
mobile_number	The employee's mobile phone number.
image_url	An URL to the employee's photo.
timezone	The employee's time zone. It may be provided in either of the following formats: 1.) Area/City – e. g.: `Europe/Isle_of_Man` (Preferred) 2.) Area/Zone – e.g.: `US/Central` 3.) Difference from GMT – e. g.: `GMT+2` 4.) Special formats – e. g.: `CET`, `Zulu`, etc.

Response	Description
status	[true/false] Indicates if there was an error on the server or not
tag	An URI to which the call was made to

employee	A JSON array with the account details of the requestor user who made the call.
	
	`{`
	`    id: integer,`
	`    identifier: string,`
	`    title: string,`

Response	Description
| | ```
    first_name: string,
    last_name: string
}
``` |
| company | Details of the current company.<br><br>```
{
    id: integer,
    name: string
}
``` |
| employee_data | An object with updated data on the target user.<br><br>```
{
    id: integer,
    identifier: string,
    first_name: string,
    last_name: string,
    email: string,
    mobile_number: string,
    username: string,
    timezone: string
}
``` |

Update an Employee By Identifier

Updates data on an existing employee, based on the employee's Identifier.

Parameters	Method specific value
URI	api/employee/updatebyidentifier
Verb	PUT
Data Type	JSON

Headers	Method specific value
GEOPAL-SIGNATURE	[reference]
GEOPAL-TIMESTAMP	[reference]
GEOPAL-EMPLOYEEID	A unique ID assigned to the requestor employee by GeoPal

Post Parameters	Description
identifier	The employee's unique identifier.
username	The employee's unique username for logging in to GeoPal.
password	The employee's password for logging in to GeoPal.
first_name	The employee's first name.
last_name	The employee's last name.
email	The employee's e-mail address.
mobile_number	The employee's mobile phone number.
image_url	An URL to the employee's photo.
timezone	The employee's time zone. It may be provided in either of the following formats: 1.) Area/City – e. g.: Europe/Isle_of_Man (Preferred) 2.) Area/Zone – e.g.: US/Central 3.) Difference from GMT – e. g.: GMT+2 4.) Special formats – e. g.: CET, Zulu, etc.

Response	Description
status	[true/false] Indicates if there was an error on the server or not
tag	An URI to which the call was made to

employee	A JSON array with the account details of the requestor user who made the call.
	
	`{`
	`    id: integer,`
	`    identifier: string,`
	`    title: string,`
	`    first_name: string,`
	`    last_name: string`

Response	Description
	``` } ```
company	Details of the current company. ```{ id: integer, name: string }```
employee_data	An object with updated data on the target user. ```{ id: integer, identifier: string, first_name: string, last_name: string, email: string, mobile_number: string, username: string, timezone: string }```

Listing Shifts

Returns a list of shifts in the target time frame.

Parameters	Method specific value
URI	api/employees/shifts
Verb	GET
Data Type	JSON

Headers	Method specific value
GEOPAL-SIGNATURE	[reference]
GEOPAL-TIMESTAMP	[reference]
GEOPAL-EMPLOYEEID	A unique ID assigned to the requestor employee by GeoPal

Get Parameters	Description
date_time_from	Shifts starting at or after this point will be listed. (YYYY-MM-DD HH:MI:SS)
date_time_to	Shifts ending at or before this point will be listed. (YYYY-MM-DD HH:MI:SS)

Response	Description
status	[true/false] Indicates if there was an error on the server or not
tag	An URI to which the call was made to

employee	A JSON array with the account details of the requestor user who made the call.
	
	``
	{
	    id: integer,
	    identifier: string,
	    title: string,
	    first_name: string,
	    last_name: string
	}
	``

company	Details of the current company.
	
	``
	{
	    id: integer,
	    name: string
	}
	``

shifts	An array containing the details for all the shifts matching provided criteria.
	
	Each object has:
	
	``
	{
	    employee_id: integer,
	    employee_name: string,
	    start_address: string,
	    start_on: dateTime / String,
	``

Response	Description
|  | ```
stop_address: string,
stop_on: dateTime / String,
duration: string
}
``` |

Get Route Replay

Get route data within a given time period, by an employee's GeoPal ID.

Parameters	Method specific value
URI	api/employee/routereplay
Verb	GET
Data Type	JSON

Headers	Method specific value
GEOPAL-SIGNATURE	[reference]
GEOPAL-TIMESTAMP	[reference]
GEOPAL-EMPLOYEEID	A unique ID assigned to the requestor employee by GeoPal

Get Parameters	Description
employee_id	The employee's GeoPal ID.
date_time_from	The date and time to list the entries from.
date_time_to	The date and time to list the entries to.

Response	Description
status	[true/false] Indicates if there was an error on the server or not
tag	An URI to which the call was made to
employee	A JSON array with the account details of the requestor user who made the call. ```{` ` id: integer,` ` identifier: string,` ` title: string,` ` first_name: string,` ` last_name: string` `}```
company	Details of the current company. ```{` ` id: integer,` ` name: string` `}```
tracks	An array of objects with information on the individual points recorded on the user's route, in the target time period. Each object has: ```{` ` employee_name: integer,` ` address: string,` ` lat: float,` ` lng: float,` ` speed: integer,` ` heading_txt: string,` ` signal_strength_txt: string,` ` battery_level_percentage: integer,` ` accuracy: integer,```

Response	Description
| | ```
accuracy_type: string,
tag: string,
distance_travelled: integer,
created_on: dateTime / String
}
``` |

Get Route Replay By Identifier

Get route data within a given time period, by an employee's Identifier.

Parameters	Method specific value
URI	api/employee/routereplaybyidentifier
Verb	GET
Data Type	JSON

Headers	Method specific value
GEOPAL-SIGNATURE	[reference]
GEOPAL-TIMESTAMP	[reference]
GEOPAL-EMPLOYEEID	A unique ID assigned to the requestor employee by GeoPal

Get Parameters	Description
employee_identifier	The employee's Identifier.
date_time_from	The date and time to list the entries from.
date_time_to	The date and time to list the entries to.

Response	Description
status	[true/false] Indicates if there was an error on the server or not
tag	An URI to which the call was made to

employee	A JSON array with the account details of the requestor user who made the call.
	
	`{`
	`    id: integer,`
	`    identifier: string,`
	`    title: string,`
	`    first_name: string,`
	`    last_name: string`
	`}`

company	Details of the current company.
	
	`{`
	`    id: integer,`
	`    name: string`
	`}`

tracks	An array of objects with information on the individual points recorded on the user's route, in the target time period. Each object has:
	
	`{`
	`    employee_name: integer,`
	`    address: string,`
	`    lat: float,`
	`    lng: float,`
	`    speed: integer,`
	`    heading_txt: string,`
	`    signal_strength_txt: string,`
	`    battery_level_percentage: integer,`
	`    accuracy: integer,`

Response	Description
| | ```
accuracy_type: string,
tag: string,
distance_travelled: integer,
created_on: dateTime / String
}
``` |

Get An S3 File

Retrieves An Uploaded File From The System

Parameters	Method specific value
URI	api/s3files/get
Verb	GET
Data Type	Binary or JSON (see parameters)

Headers	Method specific value
GEOPAL-SIGNATURE	[reference]
GEOPAL-TIMESTAMP	[reference]
GEOPAL-EMPLOYEEID	A unique ID assigned to the requestor employee by GeoPal

Get Parameters	Description
s3_file_id	The S3 file's ID in GeoPal.
json	A boolean value to indicate if the file metadata should be returned instead of the file contents. Defaults to false.

Response	Description
status	[true/false] Indicates if there was an error on the server or not
tag	An URI to which the call was made to
employee	A JSON array with the account details of the requestor user who made the call. ```{
id: integer,
identifier: string,
title: string,
first_name: string,
last_name: string
}```
company	Details of the current company. ```{
id: integer,
name: string
}```
S3file (Only if json=true)	A json string with the metadata associated with the file ```{
id: integer,
uuid: string,
bucket: string,
file_name: string,
mime_type: string,
size: integer,
tmp_file_name: string,```

Response	Description
| | ```
    tmp_file_created_on: string / dateTime,
    company_id: integer,
    is_deleted: boolean,
    deleted_by: integer,
    created_by: integer,
    created_on: string / dateTime,
    updated_on: string / dateTime
}
``` |

Visual Basic Reference

1. Creating Signature

```vb
Private Function GetSignature(signtext As String, privateKey As String) As
String
    Dim encoding As New System.Text.ASCIIEncoding()

    Dim keybytes As Byte() = encoding.GetBytes(privateKey)
    Dim signbytes As Byte() = encoding.GetBytes(signtext)

    Dim hmacsha256 As New HMACSHA256(keybytes)

    Return EncodeTo64(ByteToString(hmacsha256.ComputeHash(signbytes)).ToLower())
End Function

Private Function EncodeTo64(toEncode As String) As String
      Dim toEncodeAsBytes As Byte() = System.Text.ASCIIEncoding.ASCII
.GetBytes(toEncode)
    Dim returnValue As String = System.Convert.ToBase64String(toEncodeAsBytes)
    Return returnValue
End Function

Private Shared Function ByteToString(buff As Byte()) As String
    Dim sbinary As String = ""

    For i As Integer = 0 To buff.Length - 1
            ' hex format
        sbinary += buff(i).ToString("X2")
    Next
    Return (sbinary)
End Function
```

2. Creating a Job
https://github.com/geopal-solutions/geopal-api-samples/blob/master/samples/vb.net/VBGeopalJob/Application.vb#L81

3. Getting Job Details

https://github.com/geopal-solutions/geopal-api-samples/blob/master/samples/vb.net/VBGeopalJob/Application.vb#L107

4. Listing All Job Templates

https://github.com/geopal-solutions/geopal-api-samples/blob/master/samples/vb.net/VBGeopalJob/Application.vb#L163

5. Reading a Job Template

https://github.com/geopal-solutions/geopal-api-samples/blob/master/samples/vb.net/VBGeopalJob/Application.vb#L184

6. Getting Jobs in a Specific Date Range

https://github.com/geopal-solutions/geopal-api-samples/blob/master/samples/vb.net/VBGeopalJob/Application.vb#L214

7. Listing Employees

https://github.com/geopal-solutions/geopal-api-samples/blob/master/samples/vb.net/VBGeopalJob/Application.vb#L239

Java Reference

1. Creating Signature

```java
private String getSignature(String signtext, String privateKey){
    String test = getHMAC256(privateKey, signtext);
    return Base64.encodeBase64String(test.getBytes());
}

public String getHMAC256(String pwd, String inputdata) {
    String temp = null;
    SecretKeySpec keySpec = new SecretKeySpec(pwd.getBytes(), "HmacSHA256");
    try {
        Mac mac = Mac.getInstance("HmacSHA256");
        mac.init(keySpec);
        // update method adds the given byte to the Mac's input data.
        mac.update(inputdata.getBytes());
        byte[] m = mac.doFinal();
        // The base64-encoder in Commons Codec
        temp = new String(Hex.encodeHex(m));
    } catch (Exception e) {
        e.printStackTrace();
    }
    return temp;
}
```

2. Creating a Job

https://github.com/geopal-solutions/geopal-api-samples/blob/master/samples/java/src/GeopalJobSample/MainClass.java#L88

3. Getting Job Details

https://github.com/geopal-solutions/geopal-api-samples/blob/master/samples/java/src/GeopalJobSample/MainClass.java#L114

4. Listing All Job Templates

https://github.com/geopal-solutions/geopal-api-samples/blob/master/samples/java/src/GeopalJobSample/MainClass.java#L214

5. Reading a Job Template

https://github.com/geopal-solutions/geopal-api-samples/blob/master/samples/java/src/GeopalJobSample/MainClass.java#L174

6. Getting Jobs in a Specific Date Range

https://github.com/geopal-solutions/geopal-api-samples/blob/master/samples/java/src/GeopalJobSample/MainClass.java#L244

7. Listing Employees

https://github.com/geopal-solutions/geopal-api-samples/blob/master/samples/java/src/GeopalJobSample/MainClass.java#L281

PHP Reference

Creating a Job

Getting Job Details

Listing All Job Templates

Reading a Job Template

Getting Jobs in a Specific Date Range

Listing Employees

JSON output

XML output

Python Reference

1. Creating Signature

```python
def __generateSignatureString(self, method, uri, employee_id):
        return method.lower() + uri + employee_id.__str__() + self.getTimeStamp()


def __generateSignature(self, sign_text, private_key):
    dig = hmac.new(private_key, sign_text, hashlib.sha256).hexdigest()
    sign = base64.b64encode(dig)
    return sign
```

2. Creating a Job
https://github.com/geopal-solutions/geopal-api-samples/blob/master/samples/python/GeopalClient.py#L160

3. Getting Job Details

https://github.com/geopal-solutions/geopal-api-samples/blob/master/samples/python/GeopalClient.py#L172

4. Listing All Job Templates

https://github.com/geopal-solutions/geopal-api-samples/blob/master/samples/python/GeopalClient.py#L194

5. Reading a Job Template

https://github.com/geopal-solutions/geopal-api-samples/blob/master/samples/python/GeopalClient.py#L214

6. Getting Jobs in a Specific Date Range

https://github.com/geopal-solutions/geopal-api-samples/blob/master/samples/python/GeopalClient.py#L235

7. Listing Employees

https://github.com/geopal-solutions/geopal-api-samples/blob/master/samples/python/GeopalClient.py#L250

C# .Net Reference

1. Creating Signature

```csharp
private string GetSignature(string signtext, string privateKey)
{
    System.Text.ASCIIEncoding encoding = new System.Text.ASCIIEncoding();

    byte[] keybytes = encoding.GetBytes(privateKey);
    byte[] signbytes = encoding.GetBytes(signtext);

    HMACSHA256 hmacsha256 = new HMACSHA256(keybytes);

    return EncodeTo64(ByteToString(hmacsha256.ComputeHash(signbytes)).ToLower());
}

private string EncodeTo64(string toEncode)
{
    byte[] toEncodeAsBytes
        = System.Text.ASCIIEncoding.ASCII.GetBytes(toEncode);
    string returnValue
        = System.Convert.ToBase64String(toEncodeAsBytes);
    return returnValue;
}

private static string ByteToString(byte[] buff)
{
    string sbinary = "";

    for (int i = 0; i < buff.Length; i++)
    {
        sbinary += buff[i].ToString("X2"); // hex format
    }
    return (sbinary);
}
```

2. Creating a Job
https://github.com/geopal-solutions/geopal-api-samples/blob/master/samples/csharp.net/GeopalJobSample/Main.cs#L84

3. Getting Job Details
https://github.com/geopal-solutions/geopal-api-samples/blob/master/samples/csharp.net/GeopalJobSample/Main.cs#L117

4. Listing All Job Templates
https://github.com/geopal-solutions/geopal-api-samples/blob/master/samples/csharp.net/GeopalJobSample/Main.cs#L167

5. Reading a Job Template
https://github.com/geopal-solutions/geopal-api-samples/blob/master/samples/csharp.net/GeopalJobSample/Main.cs#L188

6. Getting Jobs in a Specific Date Range
https://github.com/geopal-solutions/geopal-api-samples/blob/master/samples/csharp.net/GeopalJobSample/Main.cs#L218

7. Listing Employees
https://github.com/geopal-solutions/geopal-api-samples/blob/master/samples/csharp.net/GeopalJobSample/Main.cs#L243