

Epiroc

CertiQ API Endpoints Description

Version 2.1

Overview

The Certiq API Endpoints Description document gives a basic information about the Certiq API endpoints. The reader may expect to understand a summary of each Certiq API endpoint and a brief about what information is provided by each Certiq API endpoint.

This document is for internal reference and can be referred by the marketing, sales or high-level IT personnel. The developers are not the intended audience of this document.

Introduction

The following table lists all the Certiq API endpoints:

API	Resource	Endpoint
Certiq API	Authentication	AuthenticationLogin
		AuthenticationPing
	Machine	GetMachineModels
		GetMachineMetadata
		GetMachineAlarmHistory
		GetMachineAlarmsStatus
		AcknowledgeMachineAlarms
		GetMachineDetailsByItemNumber
		GetMachineServiceHistory
		GetMachineServiceStatus
		ReportMachineServices
		GetMachineTypes
		GetMachineAccumulators
	MachineKpi	GetMachineKpisByDate
		GetMachineKpisByDateRange
		GetMachineKpiOverview
	User	GetUserInformation
		GetUserCompanies
Certiq Work Cycles API	LoadCycle	GetLoadCycles

Certiq API

Authentication Endpoints

AuthenticationLogin

Use the Certiq Web Portal credentials (**user name** and **password**) to receive the User Code Token (**X-Auth-Token**). The User Code Token is to be used as authentication type for all the Certiq API endpoints.

Note: The User Code Token is valid for 24 hours. A new token is required after 24 hours.

AuthenticationPing

Checks if a connection to the server is accomplished. Status "OK" will be received if the connection is successful.

Machine Endpoints

GetMachineModels

Returns list of model names of all the machine that are accessible to the authenticated user.

GetMachineMetadata

Returns list of all the machines that are accessible to the authenticated user. The resulting data can be further filtered using the following parameters:

- Company
- Site
- Machine type
- Machine model

For each machine, the following metadata is provided:

Parameter	Description
machineItemNumber	Item number of the machine
machineId	ID of the machine
machineType	Type of the machine
machineModel	Model number of the machine
machineName	Name of the machine
machineSite	Site name where the machine is deployed
machineCompany	Company name of the owner of the machine
machineCustomerCenter	Customer center detail for the machine

GetMachineAlarmHistory

Returns list of all the machine alarms that are occurred within a given date range, for a specific machine. The input **Start** and **End** date parameters should follow the ISO 8601 standard and any of the UTC formats mentioned below:

- yyyy-MM-dd
- yyyy-MM-ddTHH:mm:ss
- yyyy-MM-ddTHH:mm:ssZ

Note: Maximum 30 days of history information can be retrieved.

For each alarm, the following information is provided:

Parameter	Description
alarmId	ID of the alarm
alarmName	Name of the alarm
alarmDescription	Description of the alarm
alarmNodeIndex	System generated number of the machine component for which the alarm has occurred
alarmLevel	Severity level of the alarm
alarmTime¹	Time at which the alarm has occurred
alarmValue	Value of the alarm
alarmAcknowledgedBy	Name of the user who has acknowledged the alarm

¹ The resulting date and time follows the UTC format: yyyy-MM-ddTHH:mm:ss[.fff]Z.

GetMachineAlarmsStatus

Returns list of recent alarms that are not acknowledged by the user, for a specific machine.

For each alarm, the following information is provided:

Parameter	Description
alarmId	ID of the alarm
alarmName	Name of the alarm
alarmDescription	Details of the alarm
alarmNodeIndex	System generated number of the machine component for which the alarm has occurred
alarmLevel	Severity level of the alarm
alarmTime¹	Time at which the alarm has occurred
alarmValue	Value of the alarm

¹ The resulting date and time follows the UTC format: yyyy-MM-ddTHH:mm:ss[.fff]Z.

AcknowledgeMachineAlarms

Acknowledge the machine alarm for a specific machine.

Note: The input **AlarmId** parameter value can be found using the **GetMachineAlarmStatus** endpoint.

The following information is provided after a successful update:

Parameter	Description
alarmId	ID of the alarm
alarmName	Name of the alarm
alarmDescription	Details of the alarm
alarmNodeIndex	System generated number of the machine component for which the alarm has occurred
alarmLevel	Severity level of the alarm
alarmTime ¹	Time at which the alarm has occurred
alarmValue	Value of the alarm
alarmAcknowledgedBy	Name of the user who has acknowledged the alarm
¹ The resulting date and time follows the UTC format: yyyy-MM-ddTHH:mm:ss[.fff]Z	

GetMachineDetailsByItemNumber

Returns the following detailed information of a specific machine:

Parameter	Description
machineId	ID of the machine
machineItemNumber	Item number of the machine
machineName	Name of the machine
machineType	Type of the machine
machineModel	Model number of the machine
machineCompany	Company name of the owner of the machine
machineSite	Site name where the machine is deployed
machineLatitude	Latitude of the location where the machine is deployed
machineLongitude	Longitude of the location where the machine is deployed
machineTimeZone ²	Time zone of the location where the machine is deployed
machineLastContact ¹	Date and Time when the server had latest contact with the machine
machineLastData ¹	Date and Time when the server has fetched the latest data from the machine
¹ The resulting date and time follows the UTC format: yyyy-MM-ddTHH:mm:ss[.fff]Z.	
² The resulting timezone follows the Windows standard format.	

GetMachineServiceHistory

Returns list of services that were reported or skipped within a given date range, for a specific machine. The input **Start** and **End** date parameters should follow the ISO 8601 standard and any of the UTC formats mentioned below:

- yyyy-MM-dd
- yyyy-MM-ddTHH:mm:ss
- yyyy-MM-ddTHH:mm:ssZ

For each service, the following information is provided:

Parameter	Description
serviceId	ID of the service
serviceAccumulator	Accumulated hours when this service gets due
serviceInterval	Time interval between two services
serviceDescription	Description of the service
serviceType	Type of the service (<i>Example: Engine service, Drill service etc</i>)
serviceNodeIndex	System generated number of the machine component for which the service is reported or skipped
serviceReportedDate¹	Date at which the service is done or skipped
serviceStatus	Status of the service (<i>Example: Upcoming, Not setup, Due or Overdue</i>)

¹ The resulting date and time follows the UTC format: yyyy-MM-ddTHH:mm:ss[.fff]Z.

GetMachineServiceStatus

Returns list of services that are not attended, for a specific machine.

For each service, the following information is provided:

Parameter	Description
serviceId	ID of the service
serviceAccumulator	Accumulated hours when this service gets due
serviceInterval	Time interval between two services
serviceDescription	Description of the service
serviceType	Type of the service (<i>Example: Engine service, Drill service etc</i>)
serviceNodeIndex	System generated number of the machine component for which the service is not attended
servicePredictedDate¹	Date for the service
hoursLeftToService	Machine operable hours before next service gets due
serviceStatus	Status of the service (<i>Example: Upcoming, Not setup, Due or Overdue</i>)

¹ The resulting date and time follows the UTC format: yyyy-MM-ddTHH:mm:ss[.fff]Z.

ReportMachineServices

Report or skip the service for a specific machine.

The input **serviceReportedDate** parameter should follow the ISO 8601 standard and any of the UTC formats mentioned below:

- yyyy-MM-dd
- yyyy-MM-ddTHH:mm:ss
- yyyy-MM-ddTHH:mm:ssZ

The default values for the following input parameters are as mentioned:

Input Parameter	Default Value
serviceReportedDate	System date
serviceUsername	Logged-in user name

Note: The input **ServiceId** parameter can be found using the **GetMachineServiceStatus** endpoint.

The following information is provided after a successful update:

Parameter	Description
serviceId	ID of the service
serviceAccumulator	Accumulated hours when this service gets due
serviceInterval	Time interval between two services
serviceDescription	Description of the service
serviceType	Type of the service (Example: Engine service, Drill service etc)
serviceNodeIndex	System generated number of the machine component for which the service is to be reported or skipped
serviceReportedDate¹	Date at which the service is reported
serviceStatus	Status of the service (Example: Upcoming, Not setup, Due or Overdue)

¹ The resulting date and time follows the UTC format: yyyy-MM-ddTHH:mm:ss[.fff]Z.

GetMachineTypes

Returns list of machine types of all the machines that are accessible to the authenticated user.

GetMachineAccumulators

Gives overview of different accumulators by providing cumulative values, for a specific machine. Following is the list of accumulators that are provided by the endpoint:

Accumulator	Description
cumulativeEngineHours	Number of machine engine operating hours
cumulativeIdleHours	Number of machine non-operating hours
cumulativeLoadingTonnes	Loading in tonnes
cumulativeTrammingHours	Number of tramming hours
cumulativeDrillMeters	Drilling in meters
cumulativeDrillHours	Number of drilling hours
cumulativeHydraulicPumpHours	Number of pump hours
cumulativeFuelLiters	Fuel consumed in liters
cumulativeWorkHours	Number of machine operating hours
cumulativeDrillHoleCount	Number of drilled holes
cumulativeBoltCount	Number of bolts
cumulativeLoadDistance	Number of loaded distance covered
cumulativeTravelDistance	Number of distance covered
cumulativeBucketCount	Number of loaded buckets
cumulativeBoxesCount	Number of loaded boxes

For each accumulator, the following information is provided:

Parameter	Description
Accumulator parameters	
totalValue	Total value of the accumulator
timeStamp¹	Date and time at which the machine data is recorded
Node parameters	
nodeIndex	System generated number of the machine component
value	Value of the accumulator for specific node
timeStamp¹	Date and time at which the machine data is recorded

¹ The resulting date and time follows the UTC format: yyyy-MM-ddTHH:mm:ss[.fff]Z.

Machine KPI Endpoints

GetMachineKpisByDate

Returns the values of different KPIs of a specific machine, for a given date.

The input date (**day**) parameter is relative to the machine date and should follow the ISO 8601 standard having the following format: yyyy-MM-dd.

Note: Maximum 30 days of history information can be retrieved.

The following machine KPIs are provided:

Parameter	Description
date¹	Date and time at which the machine data is recorded
dailyDrillHours	Number of drilling hours for a day
dailyDrillMeters	Drilling done in meters for a day
dailyDrillMetersPerEngineHour	Drilling done in meters per engine hour for a day
dailyDrillMetersPerDrillHour	Drilling done in meters per hour for a day
dailyDrillHoursPerEngineHour	Number of drilling hours per engine hour for a day
dailyDrillHoles	Number of drilled holes for a day
dailyFuelLiters	Fuel consumed for a day in liters
dailyFuelLitersPerHour	Fuel consumed in liters per hour for a day
dailyFuelCO2Emission	Fuel CO2 emission for a day
dailyFuelLitersPerTonnes	Fuel consumed in liters per tonne for a day
dailyFuelLitersPerMeter	Fuel consumed in liters per meter for a day
dailyLoadingTonnes	Loading in tonnes for a day
dailyLoadingTonnesPerHour	Loading in tonnes per hour for a day
dailyLoadingNumberOfBuckets	Number of loaded buckets for a day
dailyLoadingTonnesPerBucket	Loading in tonnes per bucket for a day
dailyLoadingNumberOfBoxes	Number of loaded boxes for a day
dailyLoadingTonnesPerBox	Loading in tonnes per box for a day
dailyUtilizationAvailableHours	Number of hours available to use a machine for a day
dailyUtilizationWorkedHours	Number of work hours calculated for a day
dailyUtilizationDrillHours	Number of drilling hours for a day
dailyUtilizationHydraulicPumpHours	Number of pump hours for a day
dailyUtilizationTrammingHours	Number of tramming hours for a day
dailyUtilizationIdleHours	Number of machine non-operating hours for a day
dailyUtilizationEngineHours	Number of machine engine operating hours for a day

¹ The resulting date and time are presented in the following format: yyyy-MM-dd.

GetMachineKpisByDateRange

Returns the values of different KPIs of a specific machine, within a given date range.

The input **Start** and **End** date parameters are relative to the machine date and should follow the ISO 8601 standard having following format: yyyy-MM-dd.

Note: Maximum 30 days of history information can be retrieved.

For each day, the following machine KPIs are provided:

Parameter	Description
date ¹	Date and time at which the machine data is recorded
dailyDrillHours	Number of drilling hours for a day
dailyDrillMeters	Drilling done in meters for a day
dailyDrillMetersPerEngineHour	Drilling done in meters per engine hour for a day
dailyDrillMetersPerDrillHour	Drilling done in meters per hour for a day
dailyDrillHoursPerEngineHour	Number of drilling hours per engine hour for a day
dailyDrillHoles	Number of drilled holes for a day
dailyFuelLiters	Fuel consumed for a day in liters for a day
dailyFuelLitersPerHour	Fuel consumed in liters per hour for a day
dailyFuelCO2Emission	Fuel CO2 emission for a day
dailyFuelLitersPerTonnes	Fuel consumed in liters per tonne for a day
dailyFuelLitersPerMeter	Fuel consumed in liters per meter for a day
dailyLoadingTonnes	Loading in tonnes for a day
dailyLoadingTonnesPerHour	Loading in tonnes per hour for a day
dailyLoadingNumberOfBuckets	Number of loaded buckets for a day
dailyLoadingTonnesPerBucket	Loading in tonnes per bucket for a day
dailyLoadingNumberOfBoxes	Number of loaded boxes for a day
dailyLoadingTonnesPerBox	Loading in tonnes per box for a day
dailyUtilizationAvailableHours	Number of hours available to use a machine for a day
dailyUtilizationWorkedHours	Number of work hours calculated for a day
dailyUtilizationDrillHours	Number of drilling hours for a day
dailyUtilizationHydraulicPumpHours	Number of pump hours for a day
dailyUtilizationTrammingHours	Number of tramming hours for a day
dailyUtilizationIdleHours	Number of machine non-operating hours for a day
dailyUtilizationEngineHours	Number of machine engine operating hours for a day

¹ The resulting date and time are presented in the following format: yyyy-MM-dd.

GetMachineKpiOverview

Note: This endpoint has been deprecated in Certiq API version 2.1. Use **GetMachineAccumulators** endpoint instead.

Gives a current overview of different cumulative KPIs (Key Performance Indicator) of a specific machine.

For each KPI, the following information is provided:

Parameter	Description
name	Name of the KPI
nodeIndex	Node index of the machine
value	Value of the KPI
timeStamp ¹	Date and time at which the machine data is recorded

¹ The resulting date and time follows the UTC format: yyyy-MM-ddTHH:mm:ss[.fff]Z.

User Endpoints

GetUserInformation

Returns the following information of the logged-in user:

Parameter	Description
User Metadata	
firstName	First name of the user
lastName	Last name of the user
company	Name of the company
timeZone	Time zone where the user is located
measurementSystem	Measurement unit
userId	User Id of the user
Role Overview	
roleName	Name of the role assigned to the user
roleId	Role Id of the role assigned to the user

GetUserCompanies

Returns list of company names and respective site names of the machines that are accessible to the logged-in user.

Certiq Work Cycles API

Load Cycle Endpoint

GetLoadCycles

Returns load cycle information within a given date range, for a specific machine.

The input **Start** and **End** date parameters should follow the ISO 8601 standard and any of the UTC formats mentioned below:

- yyyy-MM-dd
- yyyy-MM-ddTHH:mm:ss
- yyyy-MM-ddTHH:mm:ssZ

Note: Maximum one year of history information can be retrieved.

For each day, the following load cycle information is provided:

Parameter	Description
operator	Operator ID
cycleStartTime ¹	Date and time at which the load cycle has started
cycleEndTime ¹	Date and time at which the load cycle has ended
machine	Item number of the machine
payloadTonnes	Payload in tonnes
loadedTimeMin	Time (in minutes) for which the bucket is loaded in the load cycle
cycleTimeMin	Load cycle time in minutes
loadedDistanceKm	Loaded distance (in km) covered in the load cycle
cycleDistanceKm	Total distance (in km) covered in the load cycle
fuelLiters	Fuel consumed (in liter) throughout the load cycle
loadPoint	Position at which loading is done in the load cycle
dumpPoint	Position at which the dumping is done in the load cycle
material	Material handled in the load cycle
delays	Comments about the delays
¹ The resulting date and time follows the UTC format: yyyy-MM-ddTHH:mm:ss[.fff]Z.	

Document Version

Part number	Application list
9865 0212 01	Certiq API version 2.1

Revision History

Issue	Date	Change
Rev A	15 May 2019	Initial Draft

Internal use only. Subject to alteration without prior notice.

Epiroc Rock Drills AB
SE-701 91 Örebro, Sweden

epiroc.com

