

# BMS – APIs in IQ4

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## IQ4 Overview

- IQ4 is a leading **irrigation management system** from Rain Bird
- The IQ4 BMS/API solution retains **irrigation management within IQ4**. It will share the data from IQ4 with a BMS or other 3<sup>rd</sup> party system and provide some limited control.
- IQ4 contains an “irrigation engine” in each controller to control irrigation, managing all aspects of the system in real time independent of IQ4 software. The BMS/API solution does not override this.
- Irrigation monitoring and control are in the controller, irrigation management is in IQ4 software and irrigation data can be shared from the IQ4 database.

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To manage irrigation events and gather the results, IQ4 sends irrigation programs daily to controllers (Synchronization) and retrieves the results (Log Retrieval) one or more times daily. These tasks must be achieved before current data is available for BMS/API calls

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IQ4 is an on-demand system. It requires data collection to get event results and can then send them to a 3<sup>rd</sup> party system

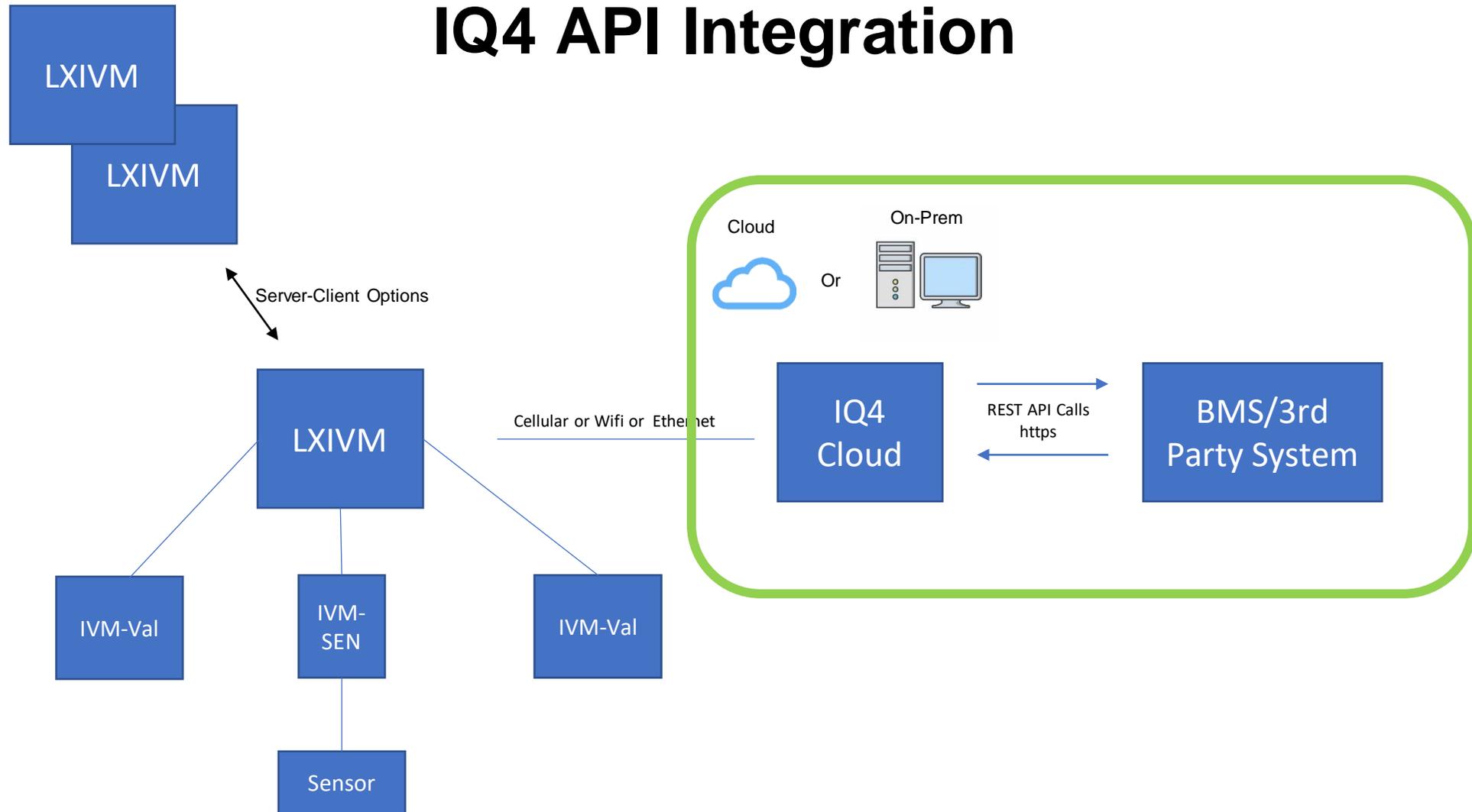
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Example: Flow data – all flow data is kept in the controller and sent to IQ4 as needed. To see flow results for a day or week, a log retrieval is required and then an API call is initiated to send the data to a BMS system.

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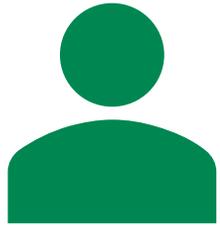
Example: Alarms – alarms are kept in the controller and retrieved as needed for transfer to the BMS system

# IQ4 API Integration



# BMS – APIs in IQ4

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## What is an API Call?

An API call is the process of a client application (BMS System) submitting a request to an API and that API retrieving the requested data from the external server (IQ4) and delivering it back to the client (BMS or other 3<sup>rd</sup> Party System).



## IQ4 APIs with BMS:

Let's say your BMS app uses IQ4 APIs to extract data and functionality from the IQ4 platform. When you request data from IQ4 via an API, you are making an API call to the IQ4 database, retrieving the data and sending it to the BMS database for use.

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## Specifications

- API-based system (software to software, JSON)
- TCP/IP based system (works through Cloud servers)
- Available in IQ4 Cloud-based system
- Available in the IQ4 Desktop (Standalone) system in 2024
- API user must have the Owner role
- Company must be authorized for Third Party API Access through a subscription.

# BMS – APIs in IQ4

The screenshot shows the IQ4 dashboard interface. At the top, there is a green navigation bar with the IQ4 logo and menu items: ACTIVITY, SITES, CONTROLLERS, PROGRAMS, REPORTS, and SYSTEM SETUP. On the right side of this bar are several status icons: a refresh icon with '72', a triangle icon with '5', a circle with a slash icon with '0', a circle with an 'x' icon with '11', and a circle icon with '0'. Below the navigation bar is a dark grey sidebar with 'ADMIN' and sub-items: Users, Auto FW Updates, Restore Data, and Subscriptions (which is highlighted with a yellow underline). Under 'Subscriptions', there are four sub-items: Overview (highlighted with a yellow underline), Pro Features, Cellular data plans, and API Keys. The main content area is white and contains a large grey box on the left with a circular arrow icon around a calendar icon. To the right of this box are three sections: 'Pro Features & Cellular Data Plans' (a large heading), 'Pro Features' (with a crown icon) which includes a paragraph about Global Weather Pro, 'Cellular Data Plans' which includes a paragraph about connectivity data, and 'BMS/API Feature' which includes a paragraph about third-party system access. At the bottom left of the dashboard, there is a breadcrumb trail: 'Rain Bird Dashboard > Admin > Subscriptions > Overview'. At the bottom right, there is a circular refresh icon.

# BMS – APIs in IQ4

**iQ4**   ACTIVITY   SITES   CONTROLLERS   PROGRAMS   REPORTS   SYSTEM SETUP

ADMIN   Users   Auto FW Updates   Restore Data   Subscriptions

Overview   Pro Features   Cellular data plans   API Keys

## API KEYS

### IQ4 API Integration

IQ4 supports 3rd party applications by providing API Keys. Developers can create external applications, or integrate existing enterprise applications with these IQ4 APIs.

**Generate an API Key**  
Once generated, use the key to integrate with IQ4

[Generate new key](#)

```
93B995555FEAD3A57441989286D075AC1CE6E4DA
E013195FFEB8BB6639427182-1
```

API Key generated on 2023/10/17 at 19:04

#### Training

Learn more about how IQ4 works with API integration. Check out our training presentation and additional resources.

[Access document](#) →

#### Documentation

Read the official documentation. Critical technical information and definition of terms used in IQ4

[Read documentation](#) →

Activate Windows  
Go to Settings to activate Windows

# BMS – APIs in IQ4

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## Other uses with APIs

- Google Sheets
- Excel
- Third-Party Tools
  - Retool
  - DataDirect REST Connector

## Implementing Google Sheets REST API Integration

Google Apps Script is a Javascript-based scripting language, hosted and run on Google servers, that extends the functionality of Google Apps. Using **Google Apps Script**, we can connect a Google Sheet to a REST API and retrieve data from that API (for example, Numbers API) into our Google Sheet.

Establishing Google Sheets REST API Integration can be illustrated with an example of calling a REST API called Numbers API from Google Sheets.

The steps involved in connecting Google Sheets REST API Integration (Numbers API) are as follows:

- [Google Sheets REST API Integration: Open a new Sheet](#)
- [Google Sheets REST API Integration: Open Apps Script Editor](#)
- [Google Sheets REST API Integration: Name the Project](#)
- [Google Sheets REST API Integration: Add API Example Code](#)
- [Google Sheets REST API Integration: Run the Function](#)
- [Google Sheets REST API Integration: Authorize your Script](#)
- [Google Sheets REST API Integration: View the Logs](#)



# Purchase Data

BMS/APIs in IQ4



# BMS/API Purchase Data

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## Overview:

- IQ4 BMS/API Feature is available via a subscription
- There are two options for purchasing a subscription: 1-year and 5-year

## SKUs:

- IQ6100 – BMS/API Feature – 1-year subscription
- IQ6110 – BMS/API Feature – 5-year subscription

# BMS/API Purchase Data

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## Pricing:

- IQ6100 = \$5,000.00 USD
- IQ6110 = \$20,000.00 USD

## Ordering:

- Ordering is done through Rain Bird distributors with the above Product IDs

# BMS – APIs in IQ4

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## Marketing Items

- Brochure – available on the IQ4 web page
- Emails – production release details will be sent to distributors, specifiers, contractors and IQ4 Users via email over Q4 2023
- Social Media – 4 main media outlets
- Insider's Corner
- Training Tuesday
- Translations – coming over the next few weeks for international markets



# API List

BMS/APIs in IQ4



# BMS – APIs in IQ4

## List of APIs in IQ4 (Field Test APIs)

### Controllers

- Get** a list of controllers
- Get** details of a controller
- Get** Programs in a controller
- Get** Total Flow by Site (breakout results by controller): return the total flow by Site over a specified time period

### Programs

- Get** all programs in a Company
- Patch/Update** water days and program adjust in a program
- Get** details of a program
- Get** a list of start times that belong to a program
- Post/Create** a list of start times for a program
- Delete** a start time in a program
- Patch/Update** a start time in a program
- Get** a list of run times in a program
- Post/Create** a list of runtimes for a program
- Patch/Update** one or more runtimes, only allow updates to base runtime
- Delete** a runtime in a program

### Sites

- Get** a list of all available sites in a company

# BMS – APIs in IQ4

## Alarms

- **Get** Hardware Alarms (return any of the following if data exists)
  - Log Retrieval Failed
  - Synchronization Failed
  - Manual Connection Failed
  - Short Circuit Detected
  - Two-Wire Path Short Detected
  - Firmware Out of Date
- **Get** Irrigation Alarms (return any of the following if data exists)
  - Irrigation Suspended by Sensor
  - Irrigation Paused by Sensor

# BMS – APIs in IQ4

## Alarms - continued

- **Get** Flow Alarms (return any of the following if data exists)
  - 201:** High Flow Detected FloZone
  - 202:** High Flow Detected
  - 209:** High Flow, Mainline Break, FloZone
  - 210:** High Flow, Mainline Break, High-resolution Flow
  - 211:** High Flow, Lateral Line Break
  - 235:** High Flow, Lateral Line Break, Station
  - 212:** High Flow FloZone Shutdown
  - 213:** High Flow FloZone Alarm
  - 214:** High Flow, Mainline Break, Manual Master Valve, FloZone
  - 215:** High Flow, Mainline Break, Manual Master Valve, High-resolution Flow
  - 216:** Low Flow, Lateral Line, Station
  - 217:** Low Flow, Lateral Line, High-resolution Flow
  - 218:** Low Flow, FloZone Shutdown
  - 219:** Low Flow, FloZone Alarm
  - 220:** High Flow, Detected - Universal
  - 221:** Low Flow, Detected - Universal
  - 222:** High Flow, Mainline Break - Universal
  - 223:** High Flow, Lateral Line Break - Universal
  - 224:** High Flow, Mainline Break, Manual Master Valve - Universal
  - 225:** Low Flow, Lateral Line - Universal
- Please note that events 220 - 225 are used for the following controllers: LXME2, LX-IVM, LX-IVMPRO.

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## Alarms - continued

- **Get** Weather Alarms (return any of the following if data exists)
  - Weather Data Invalid or Weather Source Failing

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