

API Onboarding

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Agenda

Wednesday, December 4th, 2019

API Onboarding

- Developer.Deere.com overview
- Developer.Deere.com navigation
- API overview
- Application creation
- Sandbox Test Client
- API onboarding

API Support & Best Practices

- Postman
- John Deere internal API release process
- External application release process
- API best practices
- API support process
- What support changes are coming in 2020?

Developer.Deere.com Overview

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Developer.Deere.com Overview

What is Developer.Deere.com?

Developer.Deere.com (DD.com) is John Deere's API developer portal.

It contains all relevant information for in-production APIs that are available through our open API platform. Sign up is free, and there is no cost to connect your application to our API platform.

As a possible connected software company or integrator with John Deere, this web portal will give you all the necessary information to get started with your application and explain how to connect it to John Deere's API platform.

Developer.Deere.com Overview (cont.)

How do I get to Developer.Deere.com?

<https://developer.deere.com>

What information can be found on this site?

- API inventory
- API documentation
- Help guides
- Application creation & maintenance
- Sandbox test client
- ADAPT & EIC forum

The screenshot shows the John Deere Developer website. At the top is the John Deere logo and navigation links: START DEVELOPING, DOCUMENTATION, and HELP. A search bar and a LOG IN link are also present. The main heading is 'DEVELOP WITH DEERE', followed by a subheading: 'John Deere APIs enable your ag and construction industry software to securely access the robust data from John Deere machines, mobile applications, and more.' Below this is a large illustration of John Deere tractors and a loader. Two buttons are visible: 'Start Developing' (with a 'START DEVELOPING NOW' sub-button) and 'Have questions or comments?' (with a 'CONTACT US' sub-button). The page is divided into two main sections: 'Agriculture' and 'Construction'. The 'Agriculture' section includes 'MyJohnDeere, Field Connect™, & AgLogic™' and 'Integrate with John Deere Operations Center'. The 'Construction' section includes 'Get Machine Data with JDLink'. Below these are 'AGRICULTURAL API CAPABILITIES' (Transfer Data, Agronomic Data, Field Conditions, Machine Monitoring, Logistics Data) and 'CONSTRUCTION API CAPABILITIES' (JDLink™ Machine Data). The 'Offline SDK' section is also visible, with a 'LEARN MORE' button. At the bottom, there is a 'Developer License Agreement' link and a footer with 'Start Developing', 'Documentation', and 'Help' links, along with copyright information and a 'Privacy and Data' link.

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START DEVELOPING DOCUMENTATION HELP

Search LOG IN

DEVELOP WITH DEERE

John Deere APIs enable your ag and construction industry software to securely access the robust data from John Deere machines, mobile applications, and more.

Start Developing

Have questions or comments?

START DEVELOPING NOW CONTACT US

Agriculture

MyJohnDeere, Field Connect™, & AgLogic™

Access data to assist with logistics management and agronomic solutions.

LEARN MORE >

Integrate with John Deere Operations Center

Let's work together to reach more customers and deliver more value with your solution. Check out the MyJohnDeereAPIs on ways to POST data to the Operations Center.

Construction

Get Machine Data with JDLink

Access ISO-standard fleet management data from John Deere machines.

LEARN MORE >

AGRICULTURAL API CAPABILITIES

- Transfer Data
- Agronomic Data
- Field Conditions
- Machine Monitoring
- Logistics Data

CONSTRUCTION API CAPABILITIES

- JDLink™ Machine Data

Offline SDK

Decode display data with EIC or a John Deere ADAPT plugin.

LEARN MORE

Developer License Agreement

Start Developing Documentation Help

Start Developing Guide AgLogic™ API Field Connect™ API JDLink™ Machine Data API MyJohnDeere API Offline SDK

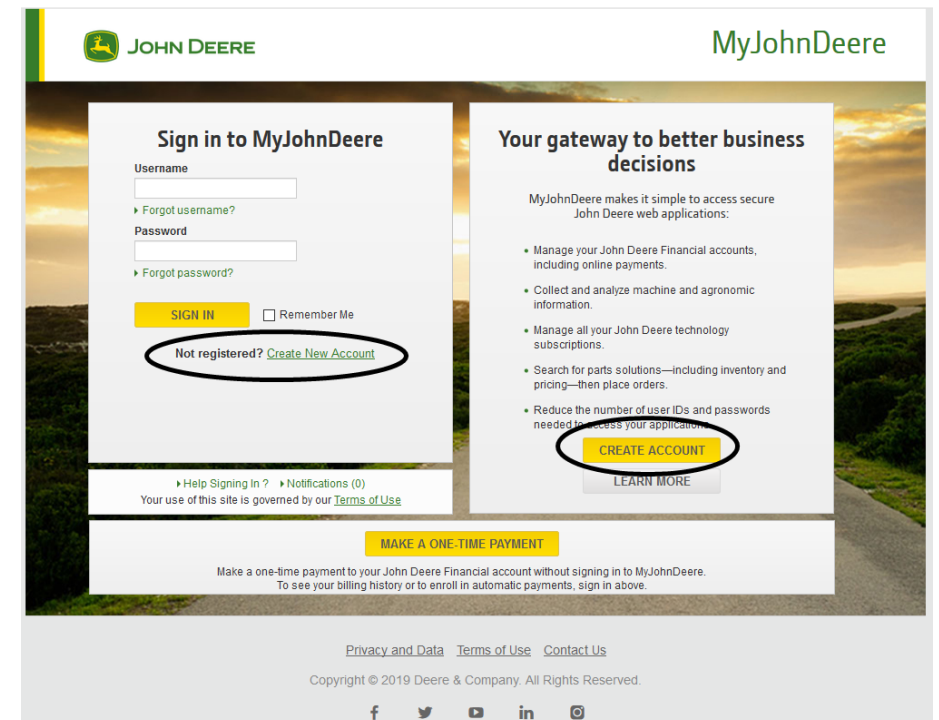
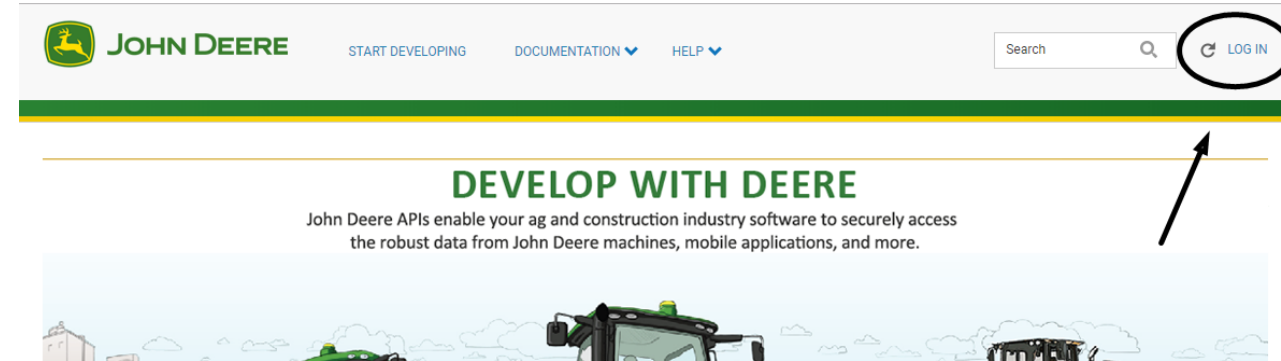
FAQ Contact Us

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Developer.Deere.com Overview (cont.)

How do I log in to Developer.Deere.com?

- Go to <https://developer.deere.com>
- Select Log In
- Re-routed to <https://myjohndeere.com/>
- Log in to MyJohnDeere.com
- Click Create New Account (if you do not have a MyJohnDeere account)
- Once signed in, you are re-routed back to <https://developer.deere.com>
- Accept Terms of Use



Developer.Deere.com Navigation

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Developer.Deere.com - Start Developing

Overview

MyJohnDeere API

JDLINK Machine Data API

Offline SDK

AgLogic

John Deere Field Connect

Start Developing

How to create an account

How to create an application

How to test In sandbox

How to go live in Production

JOHN DEERE **START DEVELOPING** DOCUMENTATION ▼ HELP ▼ Search LOG IN

Overview ←

Start Developing

Tutorial Videos

Guides ✓

MyJohnDeere

The MyJohnDeere API enables client applications to securely pull file, organization, user, and partnership data from MyJohnDeere. With this API, you can develop apps that allow farmers, dealers, organizations, and partners to access and share information on the MyJohnDeere portal via PCs, tablets, and smartphones.

MyJohnDeere API connects your apps with the MyJohnDeere cloud. This API uses the wireless data transfer capability provided by the combination of cloud services, machine telematics, and a JDLINK™ subscription.

Features

- Upload and download files to and from the MyJohnDeere cloud.
- Transfer files from the MyJohnDeere cloud to JDLINK™-enabled John Deere machines.
- Securely share files between MyJohnDeere organizations.

Note: No one can access a customer's files unless the customer has granted them the appropriate permissions in MyJohnDeere.

JDLINK Machine Data

With the JDLINK™ Machine Data API, you can develop apps that can access JDLINK™ Machine Data. John Deere is excited to introduce this compatibility with ISO 15143-3, which is accessible to all partners through developer.deere.com.

Features

- Equipment information such as make, model, equipment ID and serial number.
- Machine location & elevation.
- Cumulative machine hours and fuel consumption within the last 24 hours.

JOHN DEERE **START DEVELOPING** DOCUMENTATION ▼ HELP ▼ Search LOG IN

Overview

Start Developing ←

Tutorial Videos

Guides ▼

Notebook Tutorial MyJohnDeere

You can follow along with our online Onboarding Tutorial using Google Colab if you're interested in a more interactive tutorial.

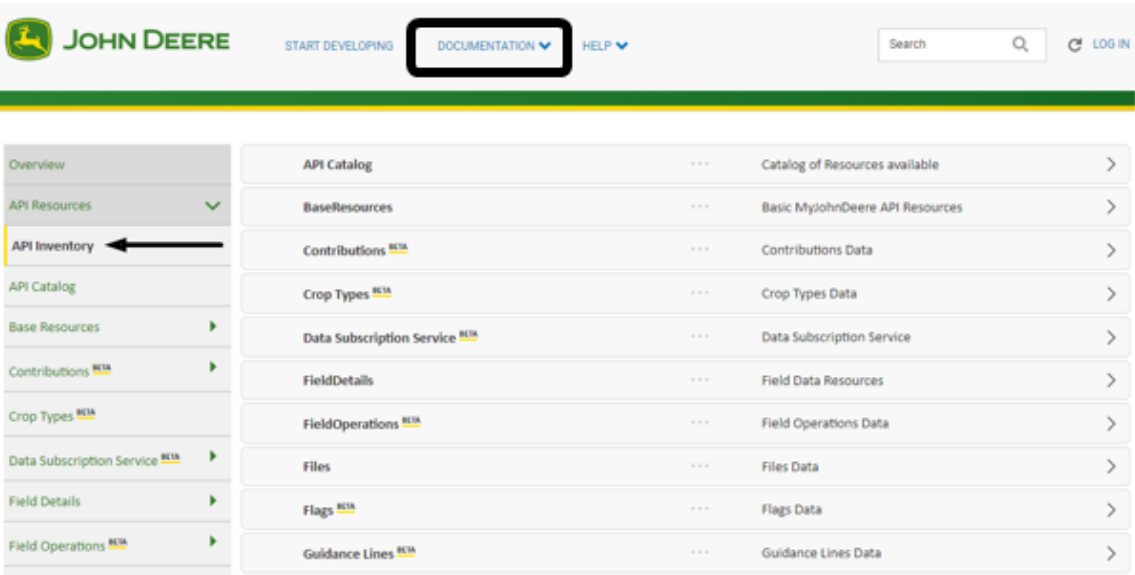
Create an Account Ad

1. If you do not have a MyJohnDeere account, create one [here](#).
2. Fill in both pages of the registration form, and then click the yellow "Submit" button.
3. Check the e-mail account you used when registering. You will have a new e-mail from do-not-reply@johndeere.com. Click the yellow "Validate Profile" button in this e-mail.
4. The MyJohnDeere sign-in form will open again, in a new window, with your new username already entered in. Enter in your password, and log in to your new account.
5. Click the yellow "Continue Validation" button.
6. Problems? See the account help page.
7. Log into Operations Center and create an organization.
8. Sign in to developer.deere.com
9. Accept the terms and conditions to confirm your Deere Developer account.

Create an Application MyJohnDeere JDLINK Field Connect

1. Click on the arrow next to your name in the top navigation, and select Applications from the drop-down menu.
2. Click on the "Add Application" button.
3. Enter your application information. At minimum, you must fill out an "App Name" and "Version ID".
 - Please use a name that describes your company and/or product. Do not use names like "test" or "test app".
 - The "Version ID" field can be anything that makes sense to you. It does not need to be any specific format.
 - While "Description" isn't required, you should add one anyway – your users will see it when they connect their Deere accounts with your application.
4. Click the Finish button in the bottom right corner of the window.
5. Get some coffee. Most of the time, a newly created application is ready to use within 5 - 10 minutes.

Developer.Deere.com - Documentation

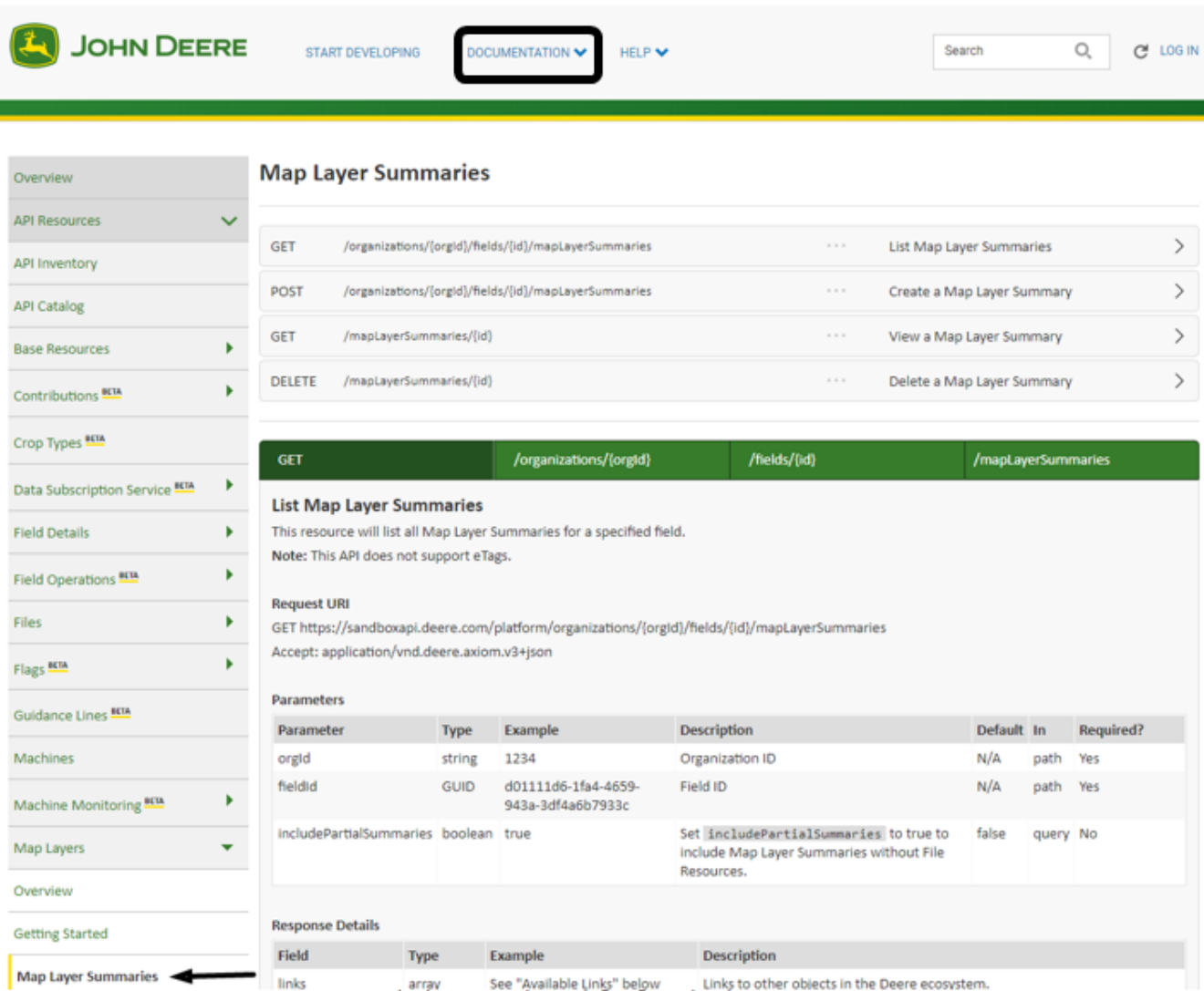


API Inventory

All available APIs

Link to call methods

Description of call methods



API Details

Overview

Getting Started

API Details

Developer.Deere.com - Help

If I have questions, how do I contact John Deere?

Connect With Us

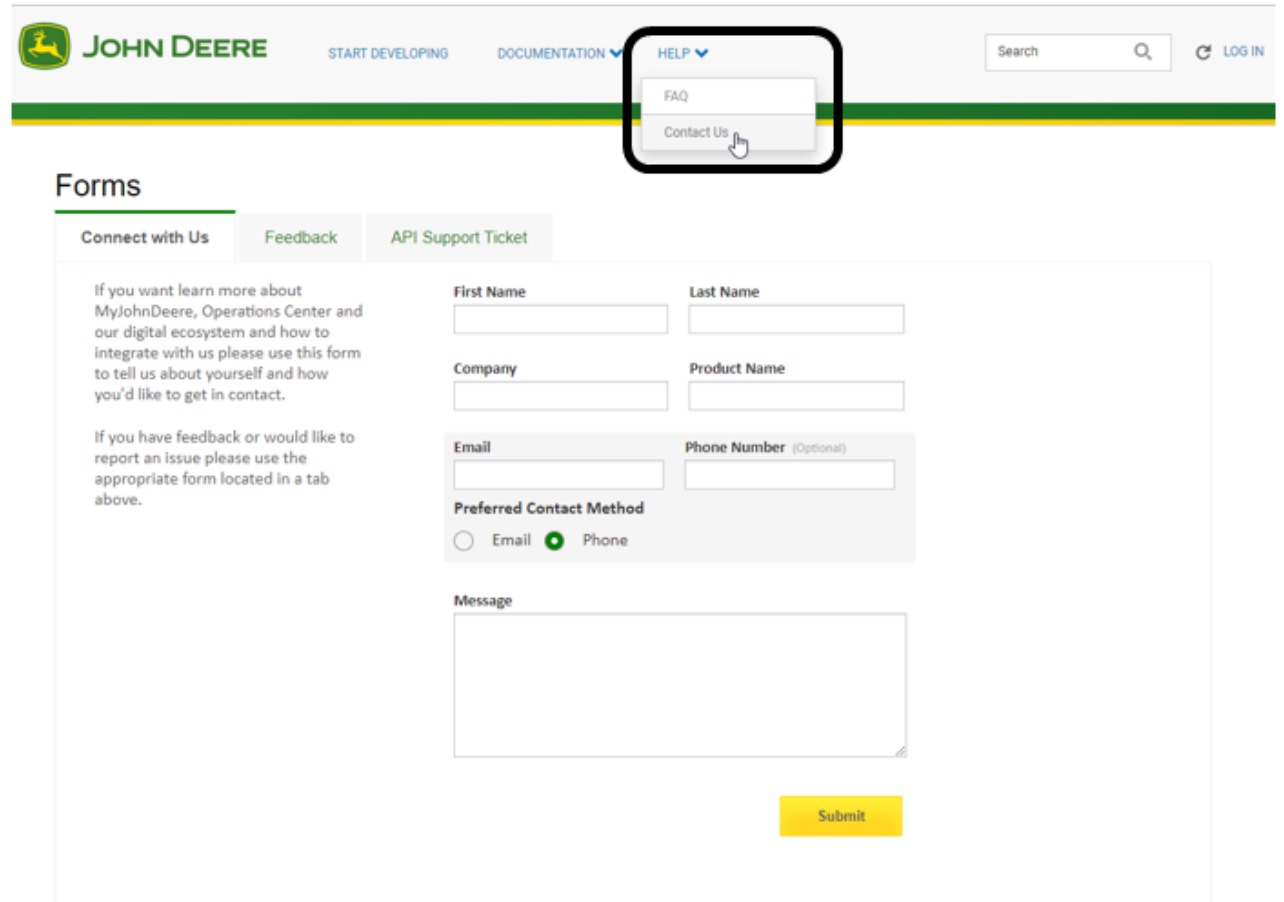
- Submit Contact Information
- Request More Info

Feedback

- Feedback
- Comments
- General Questions

API Support Ticket

- API Support
- ADAPT Support
- Development Questions



The screenshot shows the John Deere Developer website. The top navigation bar includes the John Deere logo, links for 'START DEVELOPING', 'DOCUMENTATION', and 'HELP'. The 'HELP' dropdown menu is open, showing 'FAQ' and 'Contact Us' options. Below the navigation bar, the 'Forms' section is visible, with tabs for 'Connect with Us', 'Feedback', and 'API Support Ticket'. The 'Connect with Us' tab is active, displaying a form with fields for 'First Name', 'Last Name', 'Company', 'Product Name', 'Email', and 'Phone Number (Optional)'. There is also a 'Preferred Contact Method' section with radio buttons for 'Email' and 'Phone'. A 'Message' text area and a 'Submit' button are at the bottom of the form.

JOHN DEERE START DEVELOPING DOCUMENTATION **HELP** Search LOG IN

FAQ
Contact Us

Forms

Connect with Us Feedback API Support Ticket

If you want learn more about MyJohnDeere, Operations Center and our digital ecosystem and how to integrate with us please use this form to tell us about yourself and how you'd like to get in contact.

If you have feedback or would like to report an issue please use the appropriate form located in a tab above.

First Name Last Name

Company Product Name

Email Phone Number (Optional)

Preferred Contact Method

☐ Email ☒ Phone

Message

Submit

API Overview

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JDLink™ Machine Data API – AEMP 2.0

What is it?

John Deere telematics hardware (MTG) captures incredibly detailed, real-time machine data. The JDLink™ Machine Data API retrieves that machine data according to the ISO standard (15143-3).

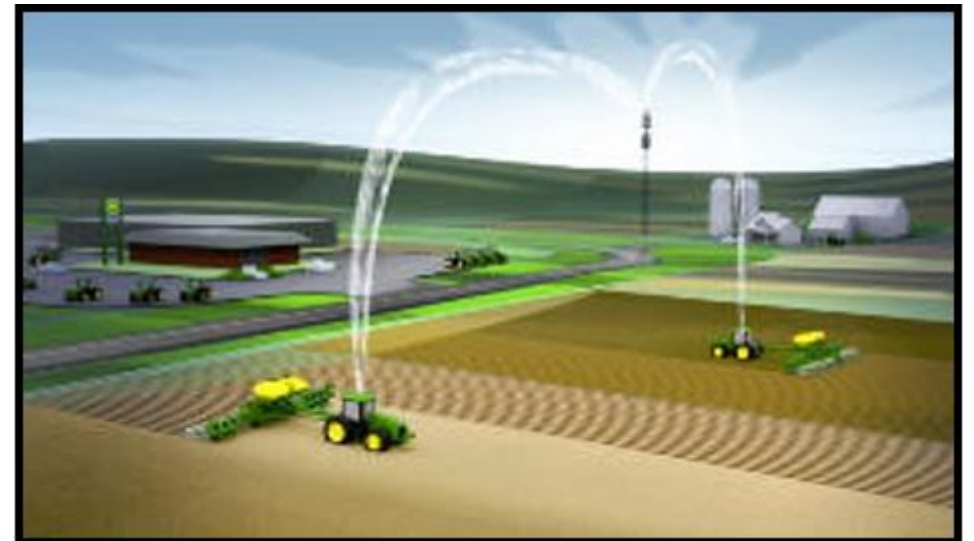
What information is available?

The machine must have a Modular Telematics Gateway installed, and a valid JDLink™ subscription on the MTG to record this data. Not all machines will supply all of these data points.

- Machine Make/Model/Type
- Customer Defined Machine Name
- Machine VIN
- Location/Distance Travelled
- Idle/Operating Hours
- Fuel Information

What information can be contributed back to John Deere?

- None



MyJohnDeere API

What is it?

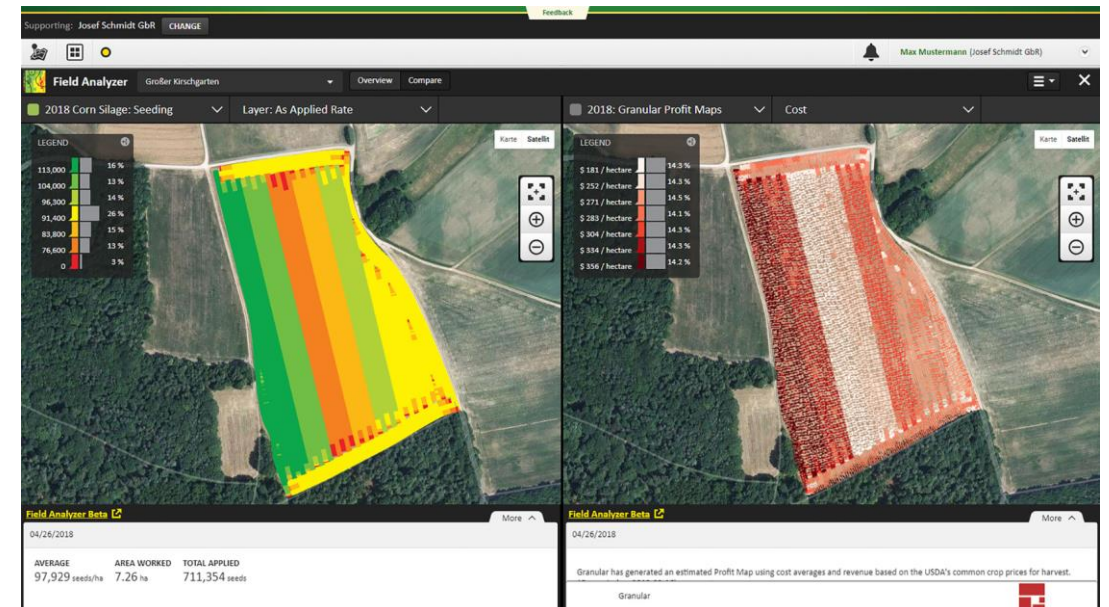
The MyJohnDeere API provides a wide variety of data through many different API endpoints. This API is also capable of contributing data into John Deere's data platform and GUIs.

What information is available?

- Organization data
- Agronomic data
- Machine data

What information can be contributed back to John Deere?

- Map layers
- Notifications
- Flags
- Assets
- More to come!



Offline SDK/ADAPT

What is it?

ADAPT is an open-source SDK developed by [AgGateway](#). The ADAPT SDK includes a data model and a set of plugins.

What does it do?

A plugin converts data. It can import from a proprietary data format into the ADAPT data model, or export from the ADAPT data model into some proprietary format. It assists you in transferring data to/from John Deere.

Why use ADAPT for John Deere Data?

We have built a plugin for each of our currently supported display formats, including the GreenStar2 2600, 1800, and CommandCenter displays, the GreenStar3 2630 display, and the GreenStar4 display series. This ensures any company that integrates with ADAPT can consume John Deere display data by simply licensing the John Deere ADAPT plugins.

How do I get access to the John Deere ADAPT plugin?

The first step is to [request a license for your application](#). With your license, you will get access to [our forums](#) where our plugins are available to download. The forums are also a good place to post questions or feedback.

AgLogic and Field Connect APIs

What are these APIs?

The **AgLogic API** connects to data associated with the AgLogic website only.

The **Field Connect API** connects to data associated with the Field Connect website only.

When would I use these APIs?

Only if your customers will need access to their AgLogic or Field Connect data, and for some reason the John Deere User Interface is not technically feasible for their operation.

One thing to note...

The Field Connect website and API will be deprecated sometime in 2020/2021. John Deere will be shifting sales and support of this product offering to a third party service provider in the near future.

Application Creation

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How do I create an application on Developer.Deere.com?

Demo

Why do I need to create an application?

- To get an application ID (client ID) and secret
- To setup OAuth and Redirect URI
- To test the API calls in a Sandbox environment
- To manage team members for your application
- To view API call logs

API Onboarding Materials

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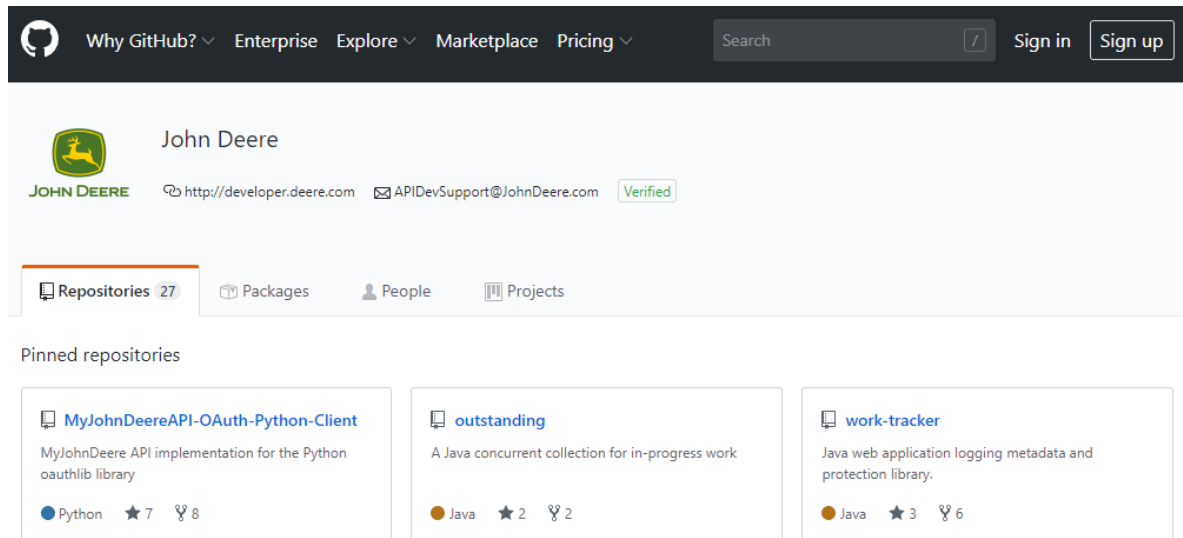
I have my application. How do I get started?

Developer.Deere.com

- <https://developer.deere.com>
- Guides
- Documentation

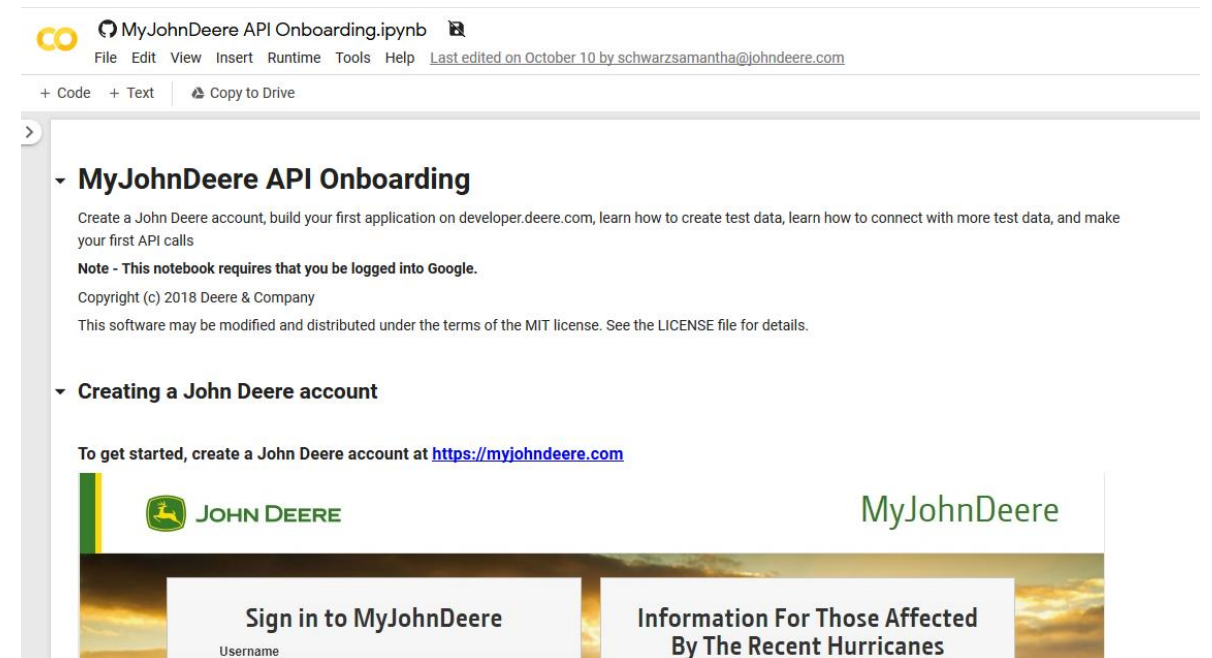
GitHub Sample Code

- <https://github.com/JohnDeere>



Jupyter (Google Colab) Notebooks

*** Must have a Google Account to use



Sandbox Test Client

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How do I use the DD.com Test Client to call APIs?

Demo

- Navigate to the **Applications** section of DD.com (under profile in top right-hand corner) and select one
- Select **Test Client** on the left-hand side
- Select the **Operation** or leave as **GET:/ - GetApiCatalog** (upper right-hand corner)
- Select **Security** (middle right hand area) *OAuth 1.0a default
- Select **Get Token** button
- (Pop up) Approve access to your connected organization
- Select **Finish**
- Select **Invoke** to make a call (Verify 200 OK response)

Why would I use the DD.com test client?

- Verify access to specific API licenses/operations
- Verify OAuth handshake with application
- Review Call logs/analytics

API Support & Best Practices

Josh Conner, API Customer Support

Patrick Haaser, Software Engineer

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Postman



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How do I use Postman to call John Deere APIs?

Demo

- Copy your App client ID and secret from Developer.Deere.com
- Generate a user OAuth token and secret with our sample application code on GitHub/Developer.Deere.com
- The URIs and accept headers for each API are located on Developer.Deere.com
- Sample request/response [JSON] code for contribution APIs is available on Developer.Deere.com for copy/paste

Why should I use Postman?

- Postman is a free application that can be used to test call our APIs
- It's easier to use than the sandbox application on Developer.Deere.com

John Deere Internal API Release Process

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John Deere API States

Internal

- Internal use only
- OpenAPI created
- Development completed
- Stress Tests
- Contract Tests

Beta

- Limited release
- Possible breaking changes (based on feedback)
- API Documentation released

External

- Full release
- Breaking changes require minimum one year lead time

External Application Release Process

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External Application Release Process

Onboarding

1. Log in to Developer.Deere.com (DD.com)
2. Review API documentation
3. Create an application with John Deere
4. Contact John Deere for help

External Application Release Process (cont.)

Sandbox

1. Request API licenses from John Deere
2. Use DD.com sample code for OAuth
3. Use DD.com sandbox or Postman to test
4. Develop your GUI
5. Contact John Deere for help

External Application Release Process (cont.)

Production

1. Request API production access
2. Call API one last time in test
3. Send in test call date/time
4. Request an test call log review
5. Pass the review
6. Sign a developer license agreement
7. Change URI to production
8. Contact John Deere for help

API Best Practices

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API Best Practices

<https://github.com/JohnDeere/DevelopWithDeereNotebooks>

- Use the Sample Applications on Developer.Deere.com
- During development, ensure the user obtaining the OAuth token has data for testing
- Call the API Catalog to start, then follow REST (HATEOAS) links after
- John Deere APIs return a collection of objects, and these collections are wrapped in a JSON object that contains metadata to support pagination. The collection wrapper contains links for 'self', 'nextPage', and 'previousPage'
- Use Embeds (if available) to optimize data retrieval and replace the needs for multiple calls
- Use Deere ETags to monitor for changes. It helps keep data in sync between your system and ours by telling you what changed since the last time you made an API call
- Use a Retry method for 429 and 5XX errors

API Support Process

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API Support Process

How do I contact the John Deere API Support team?

Today: APIDevSupport@JohnDeere.com

Tomorrow (Date TBD): The John Deere API Support team will use an application called ***Zendesk***.

To create a Zendesk ticket:

- Go to Developer.Deere.com and fill out a **Contact Us** form
- Or Click on the **Help** button on Developer.Deere.com (right-hand pane)
- Once a ticket is initiated, you will receive a confirmation email from John Deere

To reply or add information to the Zendesk ticket:

- Click on the ticket link in the email (may require login to MyJohnDeere)
- Or Reply to the email directly (log in not required)

API Support Process (cont.)

What APIs are available from John Deere?

On Developer.Deere.com, all of the *available* APIs are located in the “Documentation” section.

How do I request access to those APIs ?

By default, only the basic API catalog and some other “base resources” are given to new applications created on Developer.Deere.com.

Access to other APIs must be requested from and approved by the John Deere API Support team. Contact Us

API Support Process (cont.)

What is an Alpha API?

There are some “Alpha” APIs that you may see in the help documents on Developer.Deere.com. These are currently made available to a limited number of developers based on business needs and approval from John Deere API Support. [Contact Us](#)

If API Support determines that your development need fits an “Alpha” API, we will enable the API documentation for your application and team members on Developer.Deere.com.

**** NOTE**** John Deere is currently reviewing all “Alpha” APIs, and in the near future we will be either removing these APIs or releasing them to the public in Beta or Production form.

API Support Process (cont.)

How do I move my application out of Sandbox and into Production with John Deere?

Once an application created on Developer.Deere.com has completed the OAuth setup and finished development, the application owners must complete a call log review with API Support.

In order for API Support to review your call logs properly, you must provide a typical production call date/time for review. We will review your call logs using the application logs section of Developer.Deere.com. Contact Us

If your application passes the review, and a review your application (preferred), API Support will send you a developer license agreement. Once the terms are reviewed and accepted, we will provide the production URI for your application to use.

API Support Process (cont.)

Once my app is in Production, how do I receive support?

John Deere is fully committed to supporting all of our connected software companies, input providers, and third party integrators through the development cycle.

API support does not end after the development and licensing process is finished. Our goal is to keep our APIs performant and your applications connected.

John Deere API Support is normally available Monday thru Friday from 9:00am-5:00pm CST for all issues or questions related to John Deere APIs. [Contact Us](#)

What is new in 2020?

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What support changes are coming in 2020?

Developer.Deere.com updates

OAuth 2.0 rollout

John Deere GitHub repository cleanup

Sample application updates (What languages do you want?)

Q&A / Feedback

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