Atlassian JIRA Service Desk

Guide to Asset Management

About the Authors

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Dan Radigan has 15 years of experience in software development wearing a wide variety of hats: program management, engineering, quality, and now content marketing. Dan is currently the Senior Agile Evangelist for Atlassian. He loves to see teams succeed with agile and JIRA, and has helped many technical and non-technical teams see its benefits and transition to agile with JIRA. Previously Dan worked on software development teams for Netflix, Dell, and Adobe. His areas of expertise include agile product development, program management, and marketing. You can find Dan on Twitter at @danradigan.

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Recruited from Apple, Dan joined Atlassian three years ago as a founding member of the internal IT Team (now Workplace Productivity). In this time, he has driven several successful projects, from completely overhauling the IT staff induction, designing and setting up asset management using JIRA, and recently, raising over $40,000 for Atlassian's partner charity, Room to Read. Born in England, Dan has a Science degree with a Psychology major from the University of Sydney. Prior to Atlassian, dan has worked as a divemaster at the Great Barrier Reef, in customer service and technical support for American Express, and JVC Australia, and as a Genius at a flagship Apple store.

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Part 1

Intro to asset management

What is asset management?

Asset management is the process of making sure a company's assets are:

We're not talking about inventory on a store shelf. We're talking about ***fixed*** assets, a company's tangible assets that are used in business operations. For an IT department, this means computers, monitors, software licenses, mobile phones and all the other equipment given to employees for their jobs.

Why do we need it?

Today's IT organizations have a lot on their plates. Between seeing to system uptime, supporting users, and managing inventory of both hardware and software, to say it's a challenge is putting it mildly. Some businesses decide to manage their inventory in spreadsheets, or maybe with a lightweight database. But these solutions don't typically allow shared, real-time access so that anyone can update or see the data.

Effective asset management is a huge cost savings for companies. Check out what Gartner says about it:

"Gartner clients who successfully execute ITAM as a discipline typically achieve 30% cost savings in the first year of their initiatives, and at least 5% cost savings in each of the subsequent five years. Given that software and hardware spending often accounts for 20% of IT budgets, this is a crucial discipline to master."

Source: Gartner, IT Asset Management Key Initiative Overview, June 18, 2013

How are assets and IT service related?

Employees everywhere still rely on phone, email, and ye olde desk drive-by for requests for new equipment, or when needing a laptop's tires kicked, and everything else under the sun. A service desk tool can change all that. It offers an easy way for employees to ask for help, plus it gives IT staff the ability to *organize their requests*. These requests are then fulfilled with the right level of reporting. The result is fast, accountable service.

Now you're thinking: But what does this have to do with *asset management*? Well, for example, when a laptop requires maintenance, certain basic information is required: purchase date, previous issues, etc. A service desk tool is *sine qua non* (that's fancy Latin meaning without which not, but ok, we could just say *essential*) to asset management, because the IT team can access any tickets (and other info) tied to the laptop. This quick and complete visibility means faster resolution to customer issues.

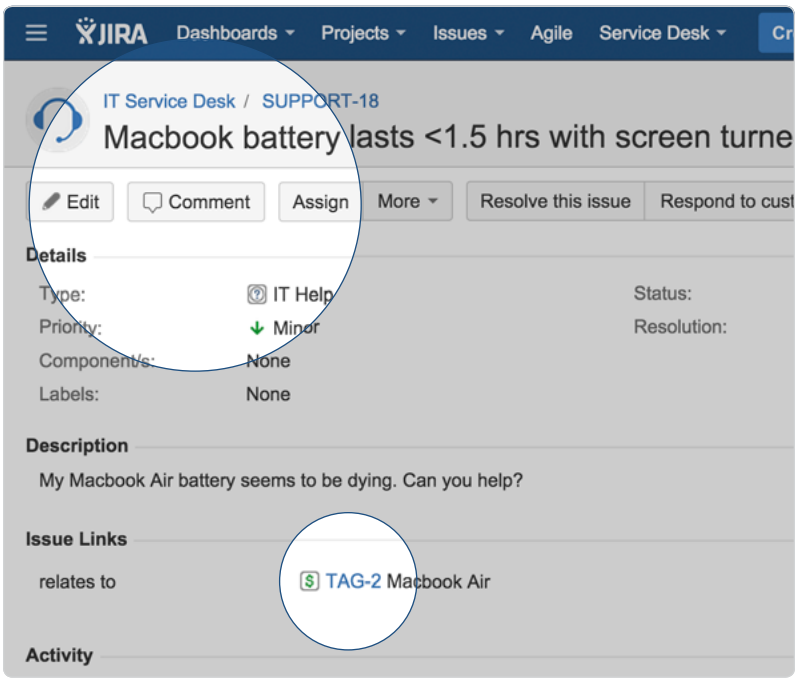
What makes asset management in JIRA so great?

This guide will show you how to build a simple, yet powerful, asset management solution with JIRA's flexible issue types and workflow engine.

Many solutions are able to track and manage inventory effectively. There are plenty of stand-alone tools in the market and there are even a few asset management solutions available in the Atlassian marketplace. So why use JIRA?

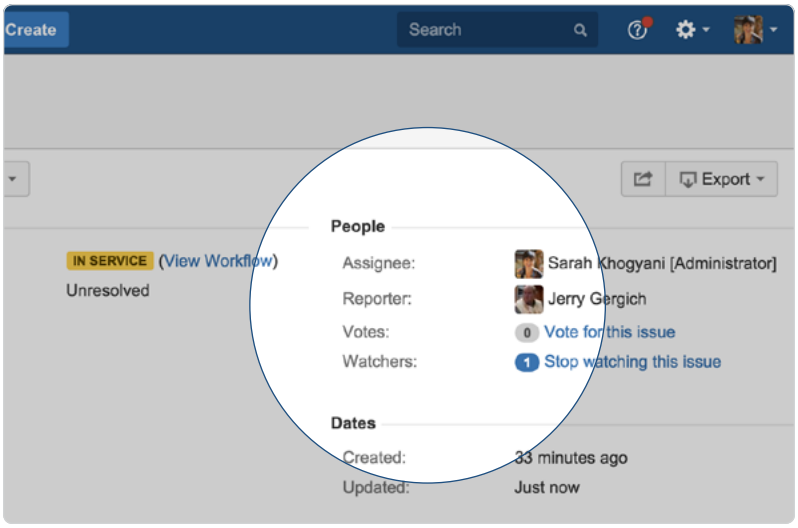
For one thing, JIRA is extremely flexible. With just a few clicks and brush strokes, you can start tracking assets in the exact way your team and organization likes to operate. With JIRA, all assets and related issues are stored in one place. You'll know the reason for acquiring the hardware, who it's assigned to, and its past history. Whether it's a trouble ticket, new hire requisition, purchase order–you name it–JIRA makes it easy to build a history for every asset.

With JIRA and JIRA Service Desk, following a problem to resolution is simple. If the software team finds that a particular server is malfunctioning, for example, they can link that server's tag number directly into a crash report, keeping everyone on the same page. With issues, bugs, tickets, and assets **in one system**, teams have all the information they need to act. In addition, this clear view of service history offers insight into future problem-solving.

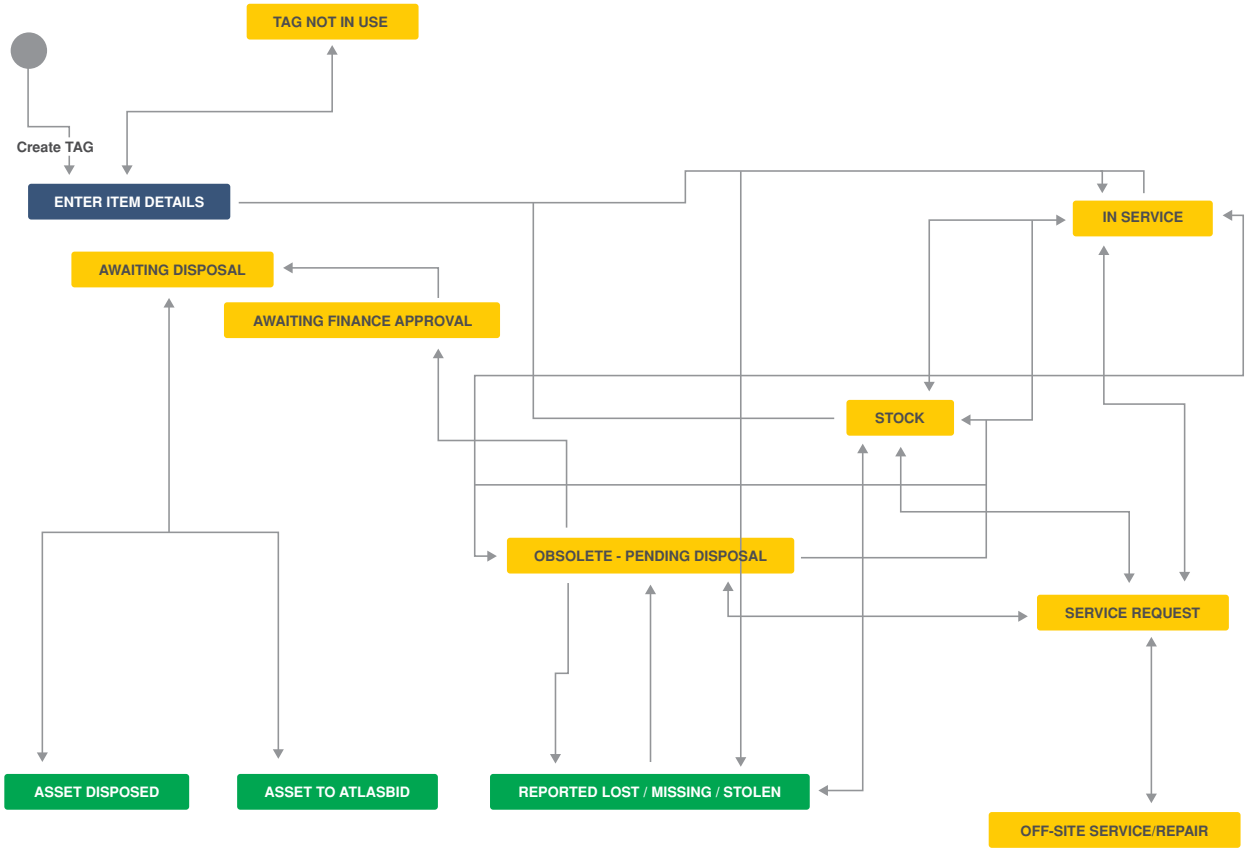


Benefits of JIRA for Asset Management

- Query JIRA for asset location and always know where your assets are.
- Manage levels of inventory in different office locations.
- Determine how long someone has had their hardware to track future hardware replacements.
- Help developers find different configurations of hardware to troubleshoot issues.
- Assign and update responsibility for particular assets, and track transitions of repair orders.
- Build custom workflows for each type of asset in your organization.



Here at Atlassian, for example, we've developed a workflow to help us track our inventory:



Part 2

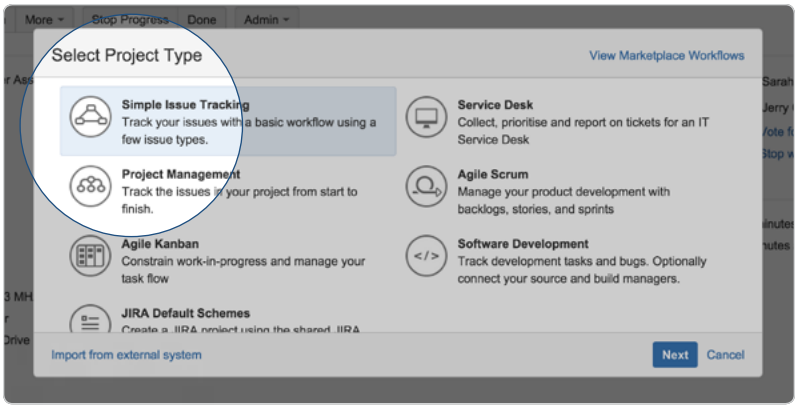
Get started with inventory in JIRA

If you're in IT, it's likely that you manage hardware. Monitors, computers, phones–all the things we need. A popular approach to tracking inventory (and the method used by Atlassian) is by using serial-numbered asset tags with bar codes. IT teams can then take inventory using a barcode reader and produce a report. (We'll cover how Atlassian tags physical assets in depth in Part 5.) First, let's demonstrate how to set up your inventory in JIRA. After which, finding your assets is as simple as a single JIRA query.

Here are five steps to setting up your inventory in JIRA.

Step 1: Create a project

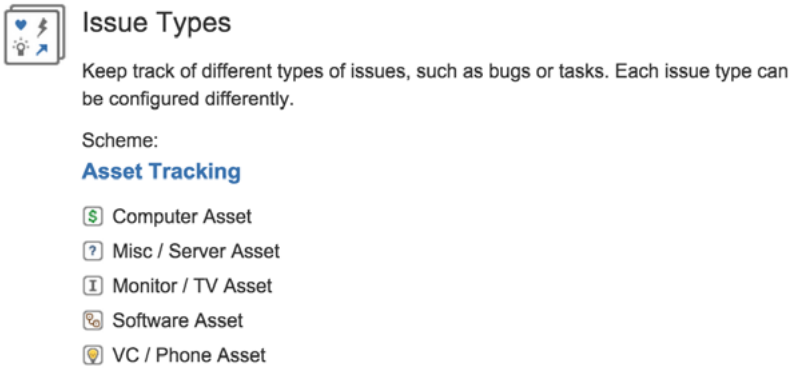
A project in JIRA is a collection of issues revolving around a single set of work or theme. We recommend starting with the simple issue tracking project to manage inventory.



Let's call our project TAG as each item in inventory will have a "tag" from JIRA.

Step 2: Define your asset types

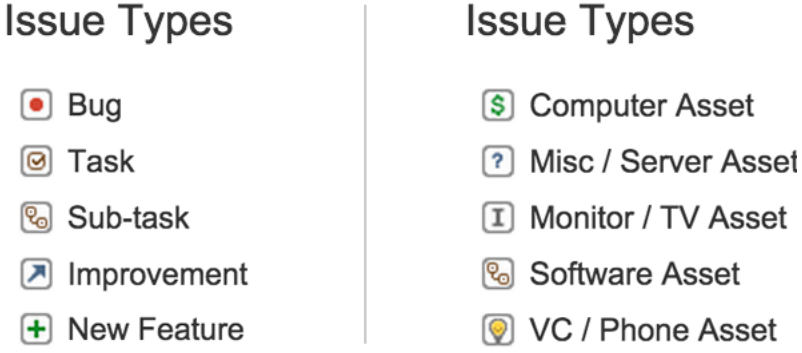
The first step is deciding the classes of inventory you want to track. Each team will have slightly different needs for their asset management. In this example, we'll focus on typical office hardware: computers, monitors, and software.



In JIRA, issue types are what defines your types of inventory. In this example, we'll create an issue type for a computer, monitor, and software. We can then associate the asset issue types using an issue type scheme.

What is an issue type scheme?

An issue type 'scheme' is a set of issue types in your project. Check out the differences in issue types between a software development project and an asset project.



Step 3: Add Custom Fields

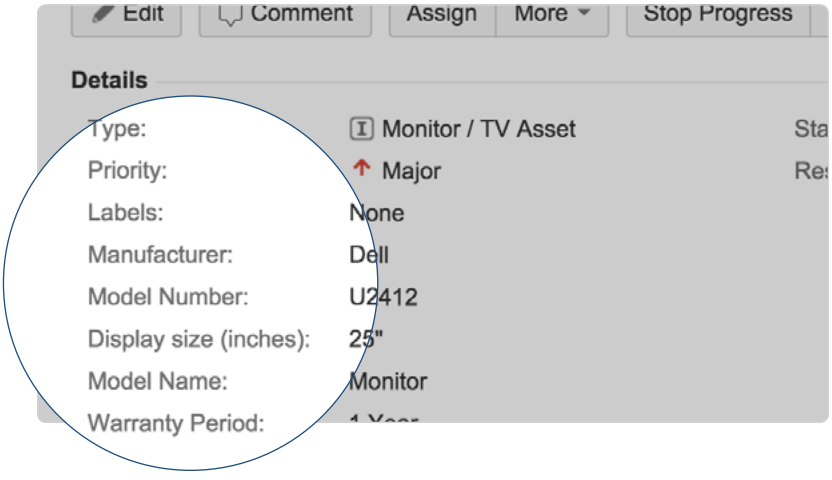
JIRA comes with two main field types: system and custom. System fields are defaults in JIRA and many of them apply to asset management. If you're new to JIRA, let's quickly go over them:

- **Summary:** The summary is a short description that defines what the inventory item is. For example, Dell 2410WFP Monitor
- **Assignee:** Assignees track responsibility for the asset. For example, if John Smith has a Macintosh laptop, the record in JIRA associated with that laptop would be assigned to him.
- **Reporter:** The reporter is usually the person who procures the item and delivers it to the end-user.
- **Labels:** Labels are flexible metadata that teams can use to describe assets. A team may decide to use a label called "custom" to indicate that this piece of inventory deviates from the standard build-out process.
- JIRA also tracks standard fields like **create date**, **last updated**, **status**, **resolution**, and the **inventory type** by default.

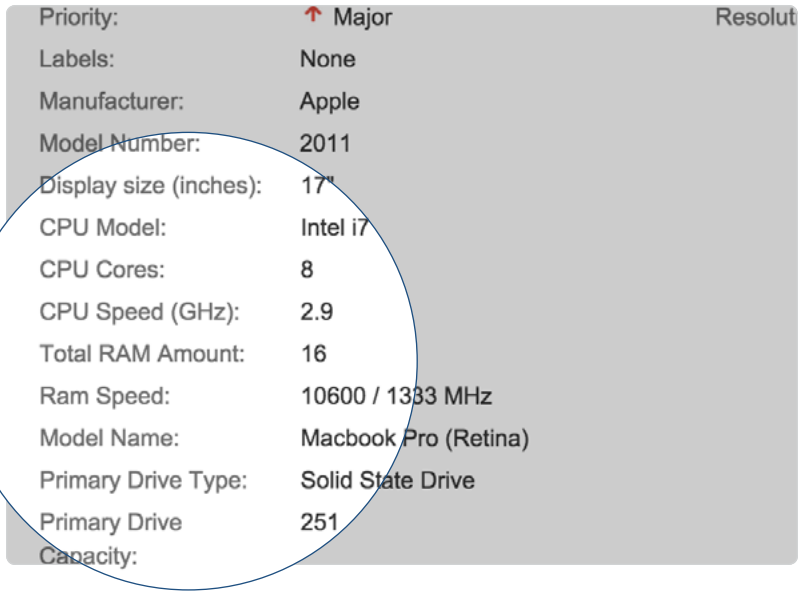
You'll probably want to add your own custom fields to each asset type. Custom fields allow each organization to track the information that's important to them. With JIRA, administrators can create custom fields for each issue type. In this example, we use a custom field to track a computer.

The two screens below show all of the custom fields for a Macintosh computer and a monitor. Because they are two different issue types, you can define custom fields independently between them.

A monitor:

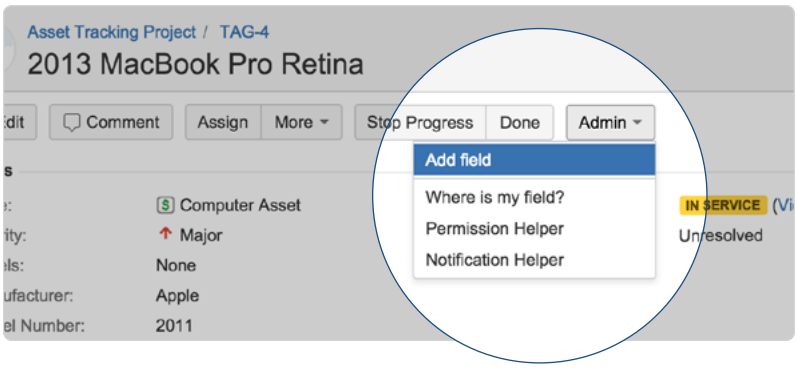


A laptop:

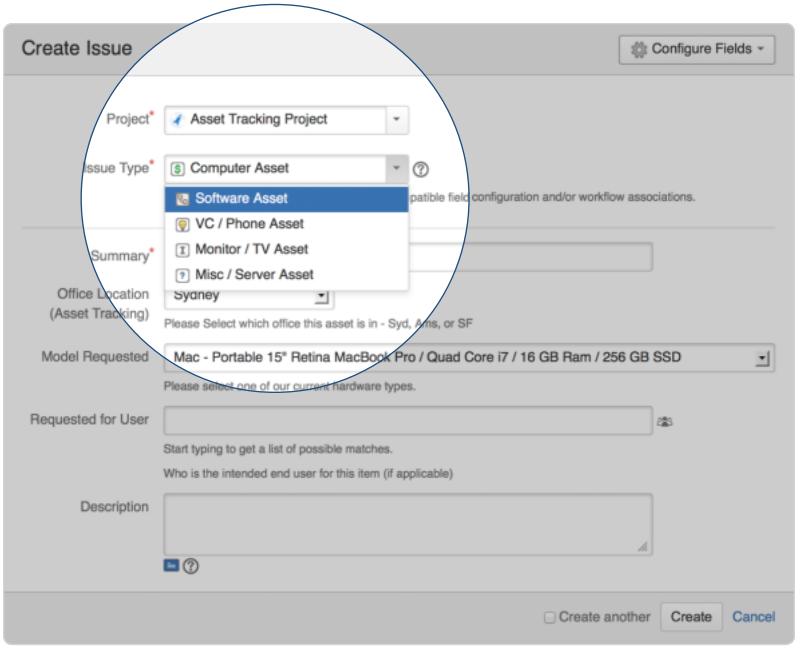


How do you add a custom field? With JIRA 6.1, it's easy! Just go to the issue, click the 'add field' button, and follow the wizard.

Step 4: Configure your screens



Screens in JIRA are how users interact with fields. For example, pressing the "create'" button brings up the "create screen" for that issue type. When creating a field, JIRA will prompt you to associate a field to a screen. By default, each issue type has three primary screens: **create**, **view**, **edit**. Usually, all fields are on the view and edit screen. Some teams will remove a few fields from the create screen that aren't known at creation time.



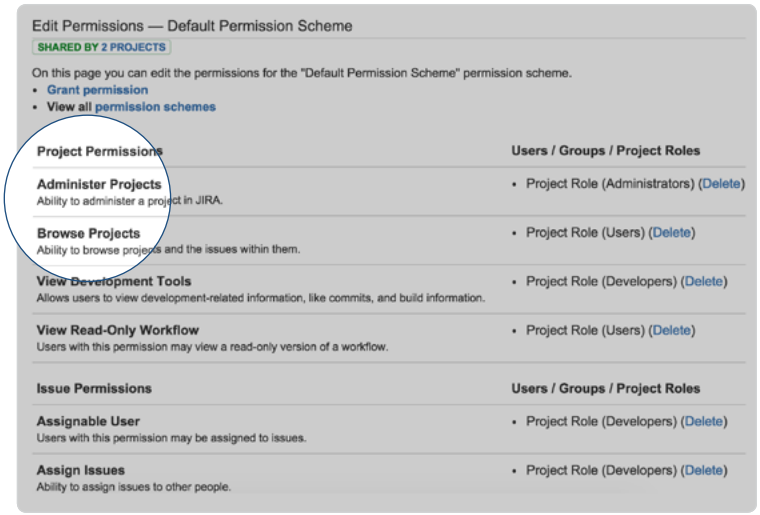
Screens can also be used in workflow transitions. If a device needs to go out for service, the IT team can have a list of vendors pop up when a device transitions to "service required" in JIRA. Screens are optional on workflow transition. Just remember you can collect data incrementally rather than leaving a bunch of fields blank up-front.

As a best practice, we recommend having a screen scheme for each issue type. For example, the computer issue type would have a set of screens for create, view, and edit. A collection of schemes for issue types is called an **issue type screen scheme**. You'll want to associate the issue type screen scheme for asset management with the asset management project in JIRA.

Step 5: Enable permissions and security

Some IT organizations might want to restrict asset editing to just the IT department, while allowing everyone else to browse their individual inventory. You can control access in two ways:

- **Permission schemes** focus on what a user can do inside a JIRA project. A permission scheme can use an active directory or lightweight directory access protocol (LDAP) group to restrict access to the edit issues feature in our asset management project. At Atlassian, we give people the option to browse inventory, but only the IT team can make edits to the individual records.



- **Issue security schemes** restrict which issues a user can see inside of a project. If the IT group wants users to see inventory that is assigned to them but not anything else, an issue security scheme is the way to go. JIRA administrators can create custom security levels for a fine-grained permission model inside of a JIRA project.

Now that you've got your project designed in JIRA, anyone from your IT team can:

Add assets to the JIRA project as they come

Locate assets

See levels of inventory

Understand asset history

Part 3

How to set up an asset workflow

In Part 2, we laid the groundwork for asset management. With your asset project set up, you can now input and locate your assets in the JIRA platform. Next, let's take a look at workflows, one of JIRA's most popular features.

Each team has a culture that defines the *natural* way they work together. **Workflow is all about making that culture reproducible throughout the rest of the organization.** Procuring assets differs between small companies and larger enterprises. Some companies may donate old hardware while others may use a third-party recycling service.

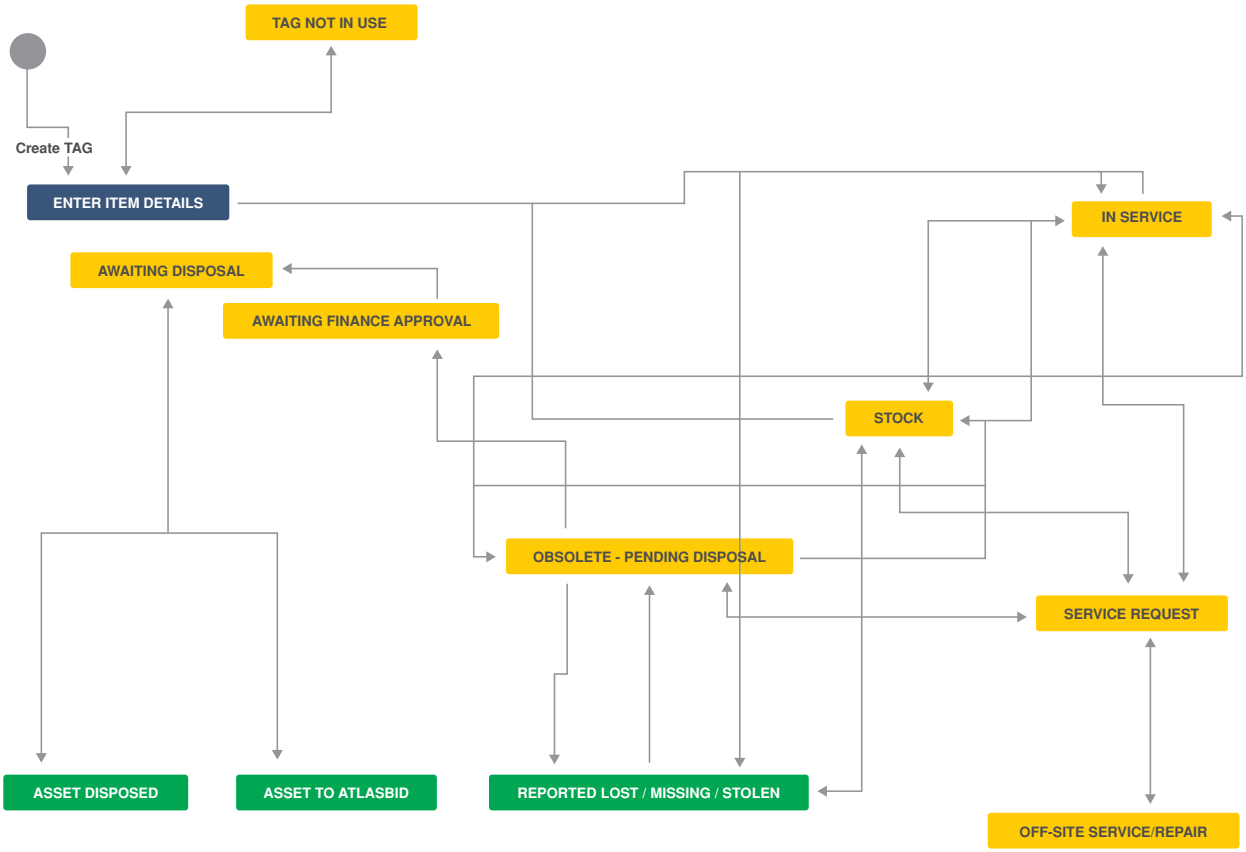
JIRA allows your IT team to define the process that reflects the culture which works for you.

How we do it

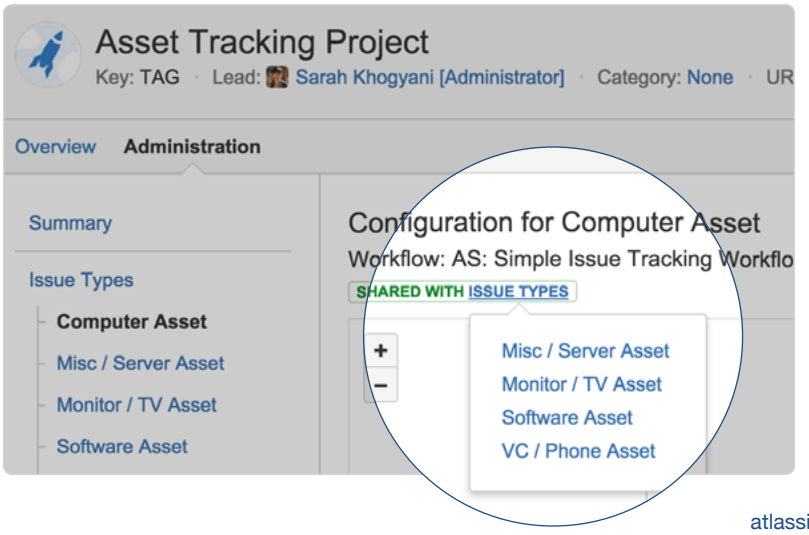
In JIRA, all workflows have three major phases: **new**, **in progress**, and **done**. Each phase can have multiple statuses to reflect the transition of an asset through that phase.

When looking at a workflow in JIRA, it's easy to see an asset's full life cycle in context.

Our asset management workflow reflects our unique culture. Let's look at how we manage our inventory:



At Atlassian, we use the above workflow with each asset type. If you'd like to have different workflows for different asset types, JIRA is always up to the task!



Since each item has a physical sticker with its tag number, the IT team creates batches of tags. Unused tags remain in the “enter item details” state in blue on the diagram. (We’ll cover the physical process of creating labels in Part 5.)

Many of our yellow phases will be assets transitioning between in stock, actively in use by someone in the company, or off for repair. At Atlassian, the finance team reviews all assets that need to be disposed of so they can account for them.

> ***Fun Fact!*** *Once Atlassian assets are ready for disposal, IT will often reserve them for Atlas Bid, an auction event where Atlassians can bid on items which are still serviceable but deemed obsolete by the business. Money raised then goes to our corporate philanthropy partner: Room to Read.*

Ready to start configuring workflow?

Harness the power of transitions

Transitions are how people move through a business process. In the above diagram, transitions are the lines between states. They’re what make workflow in JIRA truly awesome. Teams can build in customizable logic to fit their organization and help scale culture efficiently.

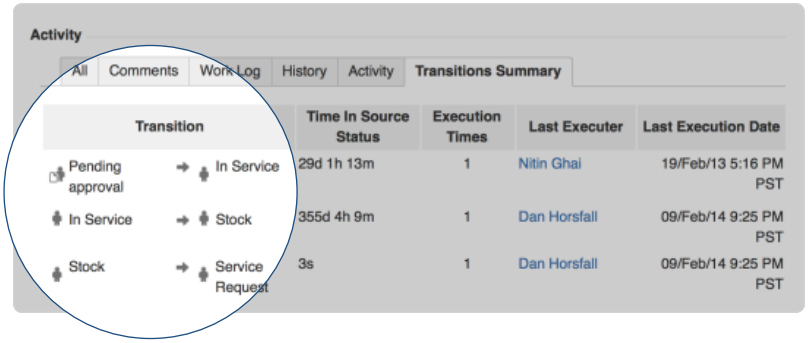
Transitions have four major components: conditions, validators, post functions, and screens. For newbies, here’s a quick overview:

- **Conditions** enforce the permission model around the transition. For example, to transition a piece of inventory from in-service to lost or stolen would require a condition stating that the user is a member of the IT group. This ensures only IT members can record that hardware is lost or stolen.
- **Validators** make sure that the issue has the required data inside of it for the transition. When transitioning an issue from in-service to needs repair, a validator can ensure that a comment is added describing why the repair is needed.
- **Post functions** make changes to issues during the transition. A post function can automatically assign a piece of inventory to a member of the finance group when it’s transitioned to the state “needs finance approval.»
- **Screens** can be linked to transitions to prompt users to add or update data about a piece of inventory. In the validators example above, a screen is used to collect the required comment about why service is needed.

Using Workflow

In your JIRA issue, you'll see available workflow actions displayed at the top of the screen. You can click a particular button to transition the item in inventory from one state to another–for example, you can "deploy to user," "retire," or "send for service."

JIRA records a rich history for each asset tracked. With workflow, it's easy to follow a particular device's path through the organization. Let's take a look at the history panel in JIRA:



We can also use JIRA's query language (JQL) to learn more about inventory. Let's say we wanted to know all of the devices that had been sent offsite for repair in the last 90 days. We can use a simple JQL query to find that out:

```
1   TYPE = "Service Request" AND STATUS was IN ("Off-site Service / Repair")
2   DURING (-90d, now()).
```

If you're not familiar with JQL, check out advanced searching in the JIRA documentation.

Part 4

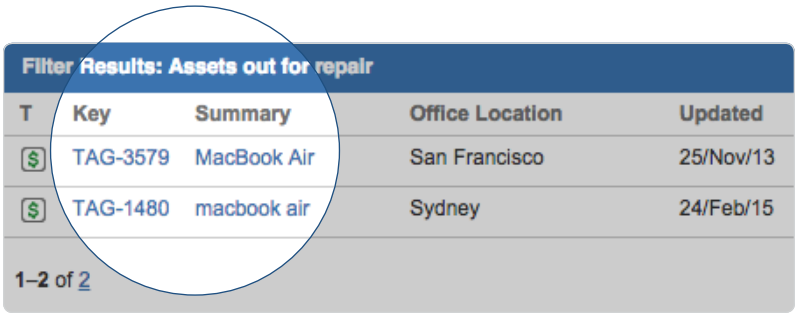
Visualize your assets with reporting

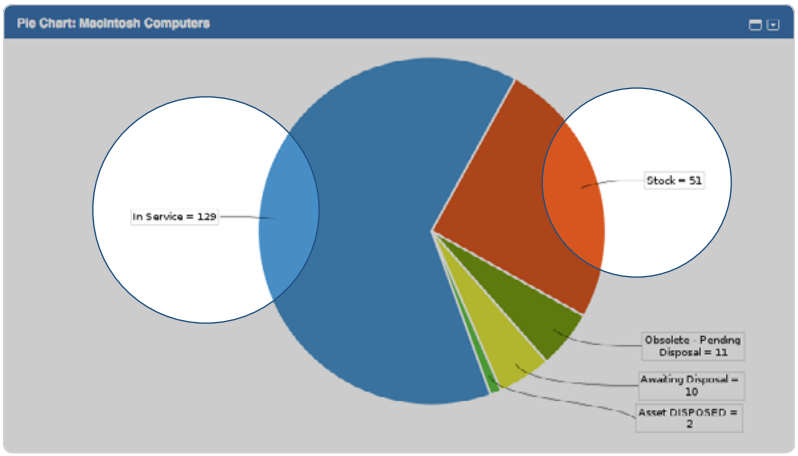
Questions about inventory are huge in the IT world:

- How many Mac computers do we have in stock?
- How many monitors are currently being used?
- Which assets will need to be replaced in the next 3 quarters?
- Which computers are out for repair?

You can answer these questions by querying from JIRA. JIRA dashboards also allow you to visualize the information so that your team can monitor assets in real time. In this chapter, we'll show you how to configure a JIRA dashboard tuned for asset management.

What's a dashboard? Dashboards are a collection of gadgets that allow you to visualize JIRA data.





Two Dimensional Filter Statistics: All Active Assets

Status	Issue Type: 'Do Not Call' Request	Computer Asset	Misc / Server Asset	Monitor / TV Asset	T:
OPEN	22	0	0	0	22
IN PROGRESS	6	0	0	0	6
RESOLVED	59	0	0	0	59
CLOSED	50	0	0	0	50
STOCK	0	331	15	119	465
IN SERVICE	0	1362	1025	968	3355
SERVICE REQUEST	0	17	0	2	19
OFF-SITE SERVICE / R...	0	2	0	0	2
OBSOLETE - PENDING...	0	102	0	31	133
ASSET DISPOSED	0	19	2	13	34
ASSET TO ATLASBID	0	56	0	21	77
REPORTED LOST \ MI...	0	15	0	0	15
AWAITING DISPOSAL	0	15	0	9	24
Total Unique Issues:	137	1919	1042	1163	4261

Showing 13 of 13 statistics.
Filter: All Active Assets

Two Dimensional Filter Statistics: Assets in Stock

Office Location (Asset Tracking)	Issue Type: Computer Asset	Misc / Server Asset	Monitor / TV Asset	T:
Amsterdam	10	0	7	17
Austin	6	0	0	6
Manila	1	0	0	1
Saigon	3	0	0	3
San Francisco	72	3	53	128
Sydney	237	1	18	256
Sydney (Globalswitch)	0	1	0	1
Yokohama	2	10	2	14
None	0	0	39	39
Total Unique Issues:	331	15	119	465

Showing 9 of 9 statistics.
Filter: Assets in Stock

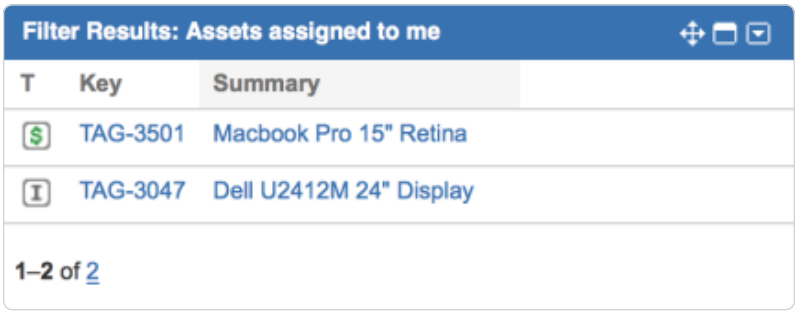
How to show users their own inventory

By default, everyone sees the dashboard when first logging into JIRA. What if they could see which assets are assigned to them? That way, each employee knows what company hardware they are responsible for.

Let's create a simple query that pulls all issues from the asset tracking project that have the logged in user as the current assignee.

```
1   Project = TAG AND assignee = CURRENT USER
```

We can then use the **filter results** gadget on the system dashboard to show which assets are assigned that logged in user (i.e. to me).



How to make key assets visible

What if an employee submits a ticket for a broken computer? The IT team needs to take action.

Let's see how to visualize this in the dashboard with the **filter results** gadget again. This time, let's use two different JQL queries to find issues in the "service request" and "off-site service" states.

Service request

```
1   project = tag AND STATUS = "Service Request"
```

Off for repair

```
1   Project = TAG AND STATUS = "Off-site Service / Repair"
```

We can now see all of the assets in these two important states, making it easy to monitor critical asset transitions.

Filter Results: Assets out for repair

T	Key	Summary	Office Location (Asset Tracking)	Updated
$	TAG-3579	MacBook Air	San Fran	25/Nov/13

1–1 of 1

Filter Results: Assets requiring service

T	Key	Summary	Office Location (Asset Tracking)	Updated
$	TAG-3078	MacBook Air	San Fran	16/Oct/13
$	TAG-1619	2013 MacBook Pro Retina (NO APP)	Sydney	12/Feb/14
$	TAG-1466	2013 MacBook Pro Retina (NO APP)	Sydney	09/Dec/13
$	TAG-1369	MacBook Air	Sydney	01/Dec/13
$	TAG-1337	macbook air	Sydney	06/May/13
$	TAG-1166	MacBook Air	Sydney	09/Feb/14
I	TAG-999	Dell monitor	Sydney	04/Aug/13
I	TAG-95	Dell Monitor	Sydney	15/Sep/13

1–11 of 11

In Stock

“How many laptops do we have in stock?” This is another question important to the IT team when managing assets. You can easily build this report with the **filter results** gadget as well. When using this gadget, it’s possible to add a list of columns. Here, we have a list of hardware in stock, making it easy to see which machines are available for deployment.

Filter Results: SF Apple Portable Laptops

Key	Model Number	Display size (Inches)	CPU Model	CPU Cores	Total RAM Amount	Drive Cap
TAG-3166	2012	15"	Intel i7	4	16	512
TAG-3512	2012	15"	Intel i7	4	16	512
TAG-3530	2012	15"	Intel i7	4	16	256
TAG-3365	2012	15"	Intel i7	4	16	512
TAG-3134	2012	15"	Intel i7	4	16	512
TAG-3881	2014	15"	Intel i7	4	16	512
TAG-3889	2014	15"	Intel i7	4	16	512
TAG-3117	2014	15"	Intel i7	4	16	256
TAG-3781	2014	15"	Intel i7	4	16	512

1–10 of 13 1 2

> **ProTip:** JQL is a powerful way to locate specific assets in the field. If we needed to apply a patch to laptops with a certain configuration to enable the webcam, JQL makes it easy to see how widespread the problem is and which users are affected.

Monitoring overall inventory health

JIRA can also provide insight into inventory as a whole. Let's take a look at how we can track the amount of computer hardware on-site. Let's use a pie chart to visualize how many Mac computers are in stock, out in the field, and requiring service. We can use the simple JQL query to drive our pie chart.

```
1   Project = TAG AND type in ("Computer Asset") AND vendor ~ Apple AND
2   statusCategory != DONE
```

If we want to exclude all statuses where hardware has already been disposed, adding statusCategory != done excludes all of the green statuses in the workflow diagram from part 3.

Binding this query to the pie chart shows us where all of the active hardware is.

Filter Results: SF Apple Portable Laptops

Key	Model Number	Display size (Inches)	CPU Model	CPU Cores	Total RAM Amount	Drive Cap
TAG-3166	2012	15"	Intel i7	4	16	512
TAG-3512	2012	15"	Intel i7	4	16	512
TAG-3530	2012	15"	Intel i7	4	16	256
TAG-3365	2012	15"	Intel i7	4	16	512
TAG-3134	2012	15"	Intel i7	4	16	512
TAG-3881	2014	15"	Intel i7	4	16	512
TAG-3889	2014	15"	Intel i7	4	16	512
TAG-3117	2014	15"	Intel i7	4	16	256
TAG-3781	2014	15"	Intel i7	4	16	512

1–10 of 13 1 2

Another powerful gadget in JIRA is the **two-dimensional filter statistics** gadget. Though the name is a mouthful, the gadget packs a punch for data visualization. Here are two instances of this gadget tracking key metrics for the inventory. Clicking on any link in the gadget brings up the assets that compose that statistic.

Because Atlassian is a global company, it's important for us to understand where all our assets are located. We need to ensure we have healthy stock in each office so that users aren't adversely impacted by long order times. This gadget uses the following JQL

Two Dimensional Filter Statistics: Assets in Stock

Office Location (Asset Tracking)	Issue Type			
	Computer Asset	Misc / Server Asset	Monitor / TV Asset	T:
Amsterdam	8	0	6	14
San Fran	21	3	31	55
Sydney	143	3	0	146
Sydney (Globalswitch)	1	0	0	1
None	0	0	34	34
Total Unique Issues:	173	6	71	250

Showing **5** of **5** statistics.
Filter: Assets in Stock

```
1   Project = TAG AND STATUS = IN stock.
```

Here issue type field is on the x-axis and the custom field "office location" is on the y-axis. We can now browse inventory quantity at each of our various office locations.

In the second example, the query is even simpler.

```
1   Project = TAG
```

We've again used issue type on the x-axis but this time used "status" on the y-axis. This gives an overview of all of the hardware across your organization.

> **Pro-tip:** You can use these queries for tracking software assets as well.

As a whole unit, our dashboard becomes a powerful way to manage inventory across the company.

Two Dimensional Filter Statistics: All Active Assets

Status	Issue Type			
	$ Computer Asset	? Misc / Server Asset	I Monitor / TV Asset	T:
STOCK	173	6	71	250
IN SERVICE	1770	101	868	2739
SERVICE REQUEST	8	0	3	11
OFF-SITE SERVICE / R...	1	0	0	1
OBSOLETE - PENDING...	99	0	27	126
ASSET TO ATLASBID	1	0	1	2
REPORTED LOST \ MI...	4	0	0	4
Total Unique Issues:	2056	107	970	3133

Showing **7** of **7** statistics.
Filter: All Active Assets

> **Pro-tip:** To go beyond dashboards, JIRA can export any issue list to XML, CSV, or Excel for further analysis. Just click tools from the issue list view to get started.

Monitoring your assets with dashboards is one of the many ways to make sense of your inventory. As your organization grows, JIRA continues to organize your data in a scalable way. Combined with JIRA Service Desk, support and assets can live together (and quite happily) in one place.

Next up: a special section on how Atlassian tags hardware.

Part 5

How Atlassian does it: hardware tagging

You might be wondering how assets in JIRA relate to actual physical hardware. Atlassian's own IT department has learned valuable lessons on the hardware side to make the process smoother and more efficient. Take a look at how we do it:

Scan, don't type

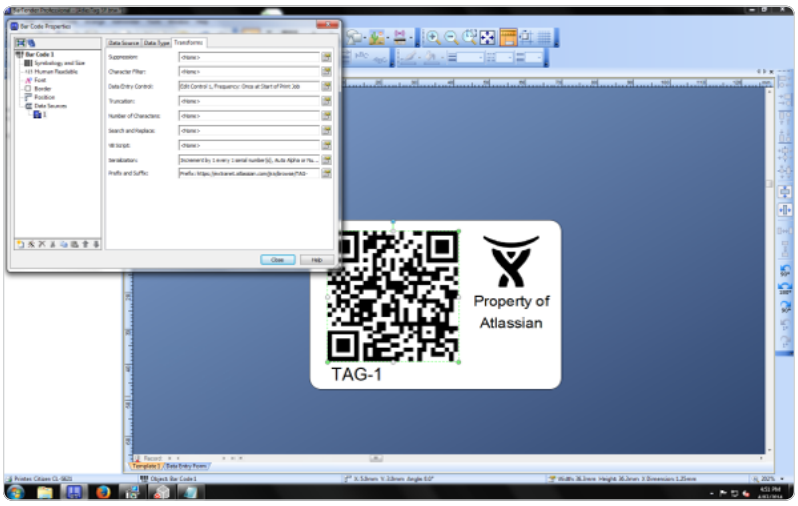
Each asset at Atlassian has a label with a QR code and the asset number on it. The QR code allows the IT group to easily scan the asset and load its details inside of JIRA. How does this work? The URL to that asset's JIRA issue is encoded into the QR code. The team uses the Motorola DS4208 QR code scanner to quickly scan the item and load its details into JIRA. The QR code scanner appears to the PC or Mac as a keyboard so it's compatible with a wide range of computers.

Scanning the QR codes is easy. The scanner is as simple as pointing and capturing.

If you haven't used a QR code reader, download one for iPhone or Android and scan one of the QR codes in this article to learn how QR codes work!

Printing in bulk

The team here uses Bartender to design and print the labels. One of the key benefits of the software is that it allows us to print batches of labels parameterizing the URL in each. We can use the prefix and suffix fields to define our target URL (http://jira.example.com/browse/TAG-XXX).The QR code then is unique for each label.



As we discussed in part 3, all new labels have the status “enter item details.” The team here batch prints labels and stores them for future use.

Once a label is physically attached to the device, the IT team fills out the JIRA issue and moves the item to “in service” or “in stock.”

Note: The creation date for the issue in JIRA using our method will be the date of print of the label. Thus, we have an additional custom field called the date of purchase that reflects the acquisition date for the asset.

Building great labels

Atlassians carry their laptops everywhere. They go from desks, to meeting rooms, to backpacks, and places beyond. Laptops go through heating and cooling cycles that will stress even the best of labels. We needed a solution that could withstand the rigors of regular use and not break down.

At first we settled on just using a label but found the label wore out after a couple of months. We now place an additional clear label over the asset tag for protection. Which labels do we use?

- Label Printer: Citizen CLS-631
- Labels: Plain Poly Trf label 70 x 48 x 25 LAB7048PPWS25 – They don't tear and don't leave much adhesive when removed.
- Label Covers: Avery L7565 Crystal Clear Shipping Labels

What it cost us

ITEM	QUANTITY	COST	TOTAL
Bartender software	2	263	526
QR code scanner	3	350	1,050
Citizen label printer	2	650	1,300
20,000 labels	1	800	800
Thermal transfer ribbon	2	600	1,200
TOTAL			$4,876

Conclusion

Now that you know how to build a lightweight asset management solution in JIRA, it's time to get your IT team to work.

Spin up a JIRA Service Desk so you can:

- Track assets and customer support in one place
- Build an agile IT service culture
- Optimize collaboration between IT and development
- Get more insight into problems and resolve issues faster

Build your IT Service Desk now