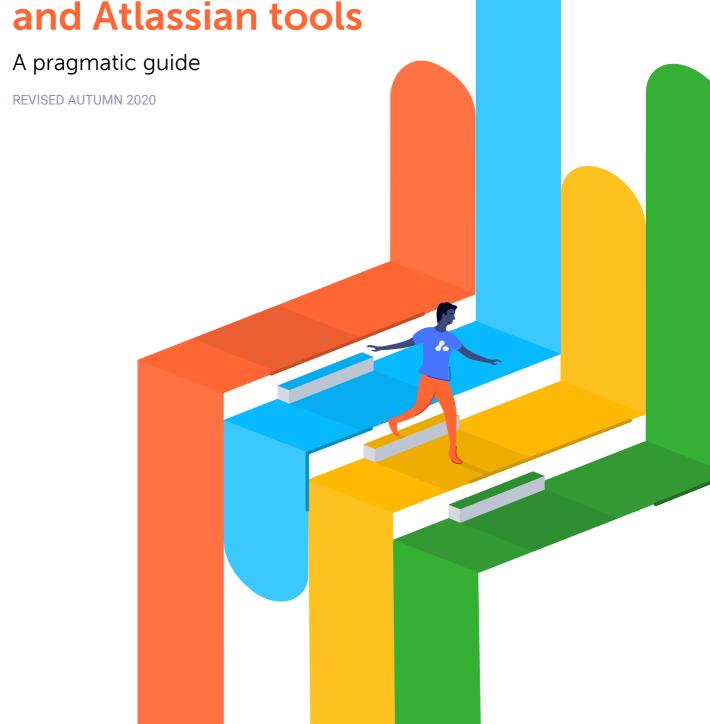
# Building software at scale with SAFe® 5.0 and Atlassian tools









### Building software at scale with SAFe® 5.0 and Atlassian tools

#### A pragmatic guide

by Nick Bialaszewski, William Rojas, Rizwan Hasan and Jennifer Eolin

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### Scaling Agile in the digital workplace

The software products being built today are bigger and more complex than ever before, and the resulting demand has pushed existing development practices to their breaking point. Large organisations feel this pain acutely, often with tens or even hundreds of teams using multiple software tools to run a single business workflow—and frequently without the clarity needed to relate the work back to business strategy and value delivery.

The result? The promises of agile development, like faster time to market and fewer failed initiatives, are hamstrung in enterprise environments when there are no means in place to scale agile effectively.

Now more than ever, the future of the workplace requires digital tooling solutions that can effectively provide a clear visual representation of how the work being delivered relates back to strategic initiatives and customer value. This is the key addition in the 5.0 iteration of the Scaled Agile Framework for Enterprise® (SAFe®): advocating for business agility.

### Why SAFe®?

While there are many approaches to scaling agile development teams and practices, we are focusing this white paper specifically on SAFe® because it continues to be the most widely adopted and recognised framework, and thus is a common starting point even for organisations that are new to agile.

This document is a follow up to Adaptavist's 2019 white paper SAFe® with Atlassian Tools: A pragmatic guide by Adaptavist.

In this iteration, we go into more detail on the value of SAFe<sup>®</sup> including additions for SAFe<sup>®</sup> 5.0, and show how to approach implementation of its practices and principles with Jira Software. In the guide that follows, we'll delve into the Atlassian ecosystem and introduce solutions we have built with our clients to mature their adoption of a scaled agile delivery practice.

### Why Atlassian?

A crucial part of any SAFe® implementation is selecting the right toolset to execute the framework day-to-day, with users spanning from senior leadership across to development teams. This is where the integrated Atlassian platform has a lot of benefit and flexibility, offering organisations the ability to pick and choose what works best for their unique business needs and constraints.

Since Atlassian's software can be customised in so many different ways however, we strongly advise that implementation not be taken lightly. A partnership with experienced SAFe® practitioners can be crucial in enabling success with the tools.

Read on to go beyond the theology of SAFe® and explore the pragmatic implementation of SAFe® 5.0 with the core Atlassian toolset. The Adaptavist team will share our experience aligning customers' teams on their journeys of SAFe® adoption. Included are orientations to the tools, configuration best practices, lessons learned, and further learning resources to help you and your team start on your pathway to adopting SAFe® with Atlassian tools.



### The evolving role of agile

In 2018, an article in the Harvard Business Review<sup>1</sup> stated that eight in ten businesses building software had committed to adopting agile. And of those, more than half were actually were actually still somewhere in the process of adoption. The takeaway is eye-opening: even 17 years after the The Manifesto for Agile Software Development was written, only about half of organisations have emerged from their journey toward meaningful nd effective implementation of agile. This move to agile is still very much a work in progress in many companies—even in teams in research and development, which have traditionally been the first to adopt new ways of working.



"Agile is not a prescription, nor an instruction manual. It's a shift in culture and mindset. That kind of change doesn't happen overnight in any organisation, large or small."

**Jon Kern of Adaptavist** Co-author of the Agile Manifesto for Software Development

Yet in spite of this challenge agile is continuing to spread, even into new (and less obvious) corners of the business. Marketing, finance, and even legal teams are beginning to see the benefits of adopting an agile mindset and processes. Forward-looking enterprises are starting to organise around value, creating opportunities for these newlyagile parts of the business to collaborate and help drive the success of the company in innovative ways.

While maturity of of agile practices and adoption remains a challenge, it's one well worth overcoming. A broad-based, successful agile transformation can yield faster time to market, reduction in defects, increases in productivity, and ultimately happier customers and staff.

### The Atlassian platform and SAFe®

Atlassian rolled out Jira 1.0 in 2002 as a better way to help development teams track and manage bugs, and has since built out its platform to include an entire suite of integrated software products that support all major aspects of agile software development. Today the Atlassian platform holds the enviable position of being the world's leading toolset for agile teams, with over 70% marketshare in the software development industry.

When SAFe<sup>®</sup> 1.0 arrived in 2011, large organisations took notice, as it provided a methodical and prescriptive approach to scale the successes of small development teams. SAFe<sup>®</sup> is a tool agnostic framework—it focuses more on process and organisational structure, and less on tooling. As a result of SAFe<sup>®</sup> gaining more widespread adoption, a large opportunity for tooling solutions built around the framework has opened up.

In 2019 Atlassian acquired AgileCraft, maker of a leading enterprise agile planning tool targeted at SAFe® and other enterprise agile frameworks. Jira Align was born as the evolution of the AgileCraft solution, and introduced into Atlassian's portfolio of products. This move has positioned Atlassian as the go-to choice for organisations that want to adopt SAFe®, no matter what stage they are at in their agile business transformation.

The latest version of SAFe<sup>®</sup>, 5.0, focuses on the transformation of a business into a 'Lean Enterprise' (agile development, systems thinking, Lean product management, and DevOps), as well as improving 'Business Agility' (organising around value streams instead of departments). This is where Jira Align shines, as the tool provides robust reporting and feature sets to measure agile transformation, and visualises this with data from the Jira systems used by development teams.

SAFe® 5.0 requires new mechanisms and management techniques that pose significant challenges for the tools:

- How to get a holistic view of the agile release train
- How to use the tools to run a program increment planning event
- How to leverage Atlassian's rich feature set
- How to get crucial reports and analytics for decision support

For a deep dive into SAFe® 5.0, we recommend digging in at the source: Scaled Agile, Inc

### Making a safe bet on your toolset

A robust tooling framework is necessary to underpin SAFe<sup>®</sup>, enabling teams to work within its principles and deliver solutions and innovation to market faster in a digital workplace. But vetting, implementing, and optimising the right tools for the job can be a long and tedious process, especially if the following apply:

- The delivery teams as a whole are new to SAFe®
- Internal bureaucracies for purchasing new, expensive software in a large, distributed organisation add complication

To ease this pain, Adaptavist has developed a core SAFe<sup>®</sup> configuration based on products that most Atlassian customers already have—Jira Software, Jira Service Desk, Bamboo, and Bitbucket—that can be applied pragmatically in step with an organisation's progress toward SAFe<sup>®</sup> adoption.

And for organisations whose demands and practices are of a scale and maturity that warrant a more all-encompassing solution to measure business value, Jira Align will help bring even more clarity and focus, especially where tools like Jira Software are already in use.

The tried and tested Adaptavist SAFe<sup>®</sup> solution for Atlassian tools can be configured for flexibility to suit the specific compliance requirements, security, process, workflow, and budget constraints every organisation has, while still supporting the seven core competencies of SAFe<sup>®</sup> 5.0:

Lean-Agile Leadership

Team and Technical Agility

Agile Product Delivery

**Enterprise Solution Delivery** 

Lean Portfolio Management

Organisational Agility (new to 5.0)

Continuous Learning Culture (new to 5.0)

What follows in this paper are the big things **you need to know about the changes to SAFe**<sup>®</sup> **5.0,** and what they mean for development tools and teams.



We'll outline an approach to configuring Atlassian Jira and other products for SAFe<sup>®</sup> intake-to-release, as well as how to approach implementation. Lastly we'll touch on some high-level outcomes to expect as you progress along your path.

If you're in need of an experienced partner to help you on your journey with SAFe<sup>®</sup>, the Adaptavist team is here to help.

### Atlassian tooling at a glance

Atlassian has been adding tools to their stack since rolling out Jira 1.0 (issue tracking) in 2002 and Confluence (knowledge management and collaboration) 1.0 in 2003. Let's take a quick look at Atlassian's list of integrated tools and capabilities.



#### Plan and track

Jira Software

Jira Align

Confluence



### Support and fix

Jira Service Desk

Opsgenie

Statuspage



### Code, build, and ship

Jira Software

Bitbucket

Bamboo

Sourcetree



#### **Collaborate**

Confluence

Trello

Jira Core



# Manage portfolio and strategy

Jira Align

In addition to the software offerings, there are over 4000 third-party add-on applications available in the Atlassian Marketplace.

Jira Software is the cornerstone of our SAFe<sup>®</sup> tooling solution, no matter which configuration of tools are implemented. Its Projects, Issue Types, Workflows, Custom Fields, and Boards provide all of the necessary elements to construct and manage Portfolio backlogs, Large Solutions, Programs, Program Increments, Teams, Stories, Defects, and many more items.

Jira Align can be thought of as an 'almost all in one' tool for implementing SAFe® as a framework, without the need for the detailed Jira Software configurations and customisations outlined in the following sections of this paper.

It is important to note however, that most organisations which have implemented Jira Align still rely on Jira to be the foundation on top of which Align can effectively operate. Making sure that development teams are practicing proper 'agile hygiene' in Jira is the common practice of orgs using Jira Align.



### Integration overview

These tables contain a quick overview of Atlassian's flagship products and their integration capabilities to build your customised  $SAFe^{\circledR}$  solution.

Fig. 01 Atlasian Products

| Atlassian product     | Solution role  | Product description  |  |
|-----------------------|--|--|--|
| Jira Software         | Issue tracking, project management                           | Track, plan, and manage all types of work  |  |
| Jira Service desk     | Request intake and management                                | Receive, track, manage, and resolve requests from your team's customers                            |  |
| Confluence            | Document collaboration                                       | Content collaboration and knowledge sharing  |  |
| Bitbucket             | Source code repository                                       | Git and Mercurial source code repository hosting, security, pull requests, and more                |  |
| Bamboo                | Continuous integration / deployment                          | Integrated and automatic build, test, package, and deploy functions for products under development |  |
| Atlassian Marketplace | Third party extensions for Atlassian products                | Apps that extend the out-of-the-box functionality of Atlassian products                            |  |
| Jira Align            | Portfolio management, program management, product management | Connect business strategy to execution, plan and manage product investments                        |  |

### Integration overview continued

These tables contain a quick overview of Atlassian's flagship products and their integration capabilities.

Fig. 02 Atlassian Product Integrations

| Atlassian product | Integration options                   | Integration benefits   |
|-------------------|---------------------------------------|--|
| Jira Software     | Confluence, Bitbucket,<br>Bamboo      | <ul> <li>Expose Jira issues and filters on Confluence pages</li> <li>View and manage commits, branches, and pull requests from Jira</li> <li>View and manage builds, tests, and deployments from Jira</li> </ul> |
| Confluence        | Jira Software                         | Expose Jira issues and filters on Confluence pages   |
| Bitbucket         | Jira Software, Bamboo                 | <ul> <li>View and manage commits, branches, and pull requests from Jira</li> <li>View build and test results from Bitbucket</li> </ul>   |
| Bamboo            | Jira Software, Bitbucket              | <ul> <li>View and manage builds, tests, and deployments from Jira</li> <li>View commits and issues from Bamboo</li> </ul>  |
| Jira Align        | Jira Software<br>(at time of writing) | <ul> <li>View and manage product features from Jira Align into Jira and vice versa</li> <li>Expose and remediate planning issues in Jira</li> </ul>  |

### So which tools are right for you?

This is a great question, and one we hear a lot. Years of experience in the SAFe® realm have helped our hundreds-strong team of technical engineers, business agilists, and Atlassian experts to develop a methodology to analyze and assess each organisation's tooling needs when it comes to SAFe®.

We feel the best approach is to tailor a suite of tools that fits each unique team and company, and addresses their goals and constraints in a bespoke manner. Adaptavist avoids absolutes and encourages teams to discover what they really need versus what they think they need. No two companies will ever have the same set-up!

Some organisations will find a configuration of Atlassian Jira Software to be their pathway to success. The one detailed in this paper, with carefully chosen add-on apps, customisations, and the integration of complimentary Atlassian tools, is a great place to start. Others will adopt Jira Align, a powerful tool that's built specifically for SAFe® and other scaled agile frameworks.

A seamless integration is critical to getting teams up and running in their new workflows. Regardless of the specific path chosen, a SAFe<sup>®</sup> tooling solution using Atlassian software provides both the power and the flexibility to accomplish this best. If you're looking for expert SAFe<sup>®</sup> tooling consultation, you can always reach out to our team.



#### A note about Cloud deployments

We have implemented parts of the solution described in this paper using Atlassian Jira and Confluence cloud deployments for some of our customers. At this time however the full functionality, including some configuration customisations and Marketplace apps, are not yet available for the cloud versions of the Atlassian toolset. The good news is that this is a quickly-evolving space, and **we expect to release updates** to our solution to address new aspects of cloud compatibility in the very near future.

# Adaptavist SAFe® Solution for Atlassian tools overview

In this section, we'll dive into the practicalities of applying Atlassian tools and add-ons to solve the very real problems of globally-distributed teams, high stakes PI Planning events, and the confusion surrounding mixed and non-technical teams on agile release trains. This section will also include information about when an organisation should consider Jira Align as part of their solution.

So, what does a flexible, pragmatic Atlassian tool solution for SAFe® look like?



### Teams manage their own backlogs with dedicated projects and boards

Each team, from development to business-focused, has their own Jira project and board, which enables them to have separate agile reports, velocity, and backlogs. It is also possible to have multiple teams share a single Jira project with discrete boards. This would be the recommended configuration if it's desirable to keep the SAFe® configuration consolidated within a single project.

Team projects can also permit variability in screens, custom fields, workflows, and boards, if teams desire this flexibility. Care should be taken to ensure that impacts to reporting on the underlying data will be understood.

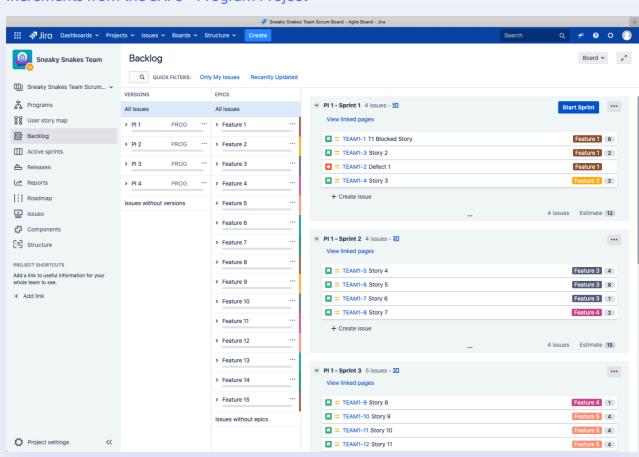


Fig. 03: Team scrum board with Features and Program Increments from the SAFe® Program Project

#### Visualising and managing inter-team dependencies

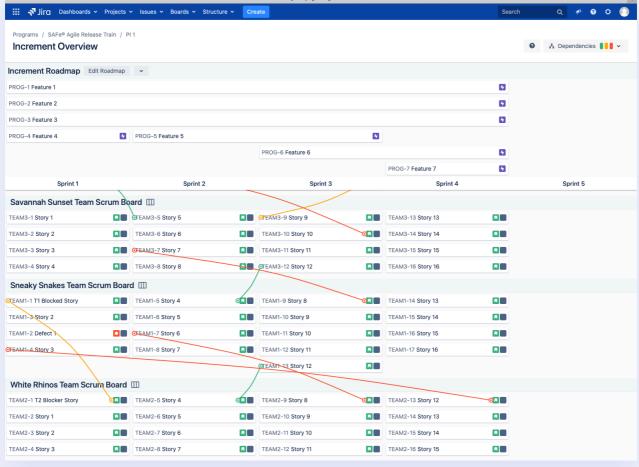
The Marketplace app Easy Agile Programs for Jira has a Board Increment Overview that's outstanding for visualising and managing dependencies between stories at the team level.

During PI planning, as teams populate their sprint backlogs, individuals can start to draw dependencies between stories in other teams' backlogs by clicking and dragging their stories. The application supports healthy/risky/unhealthy dependencies based on the source and target issues' assigned sprints, helping teams to order their work in such a way that dependencies are minimised.

Fig. 04: Easy Agile Programs offers an incredibly powerful and interactive interface for visualising and managing dependencies

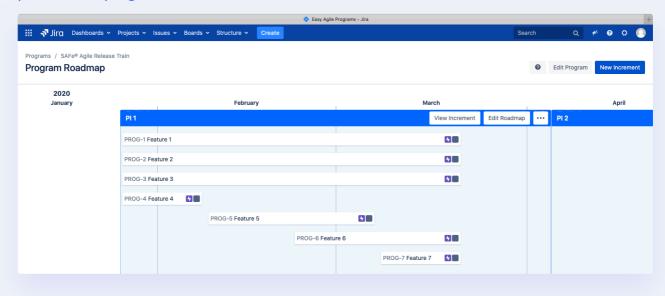
© Easy Agile Programs - Jira

### \*\*Jira Dashboards \* Projects \* Issues \* Boards \* Structure \* Create



Easy Agile Programs' Roadmap View shows features across program increments. This is the primary working view for Release Train Engineers (RTEs) and Product Owners leading up to PI planning and also throughout the event.

Fig. 05: Easy Agile Programs Program Roadmap view shows features planned in a program increment



### Consider Jira Align if...

Your development organisation contains 500 or more Jira Software users performing development or related IT functions (40-50 teams or 4+ ARTs), and multiple programs, along with a diverse set of product portfolios. Organisations with a diversified set of digital products that share the same technical infrastructure, or work frequently with external entities (hardware, logistics, and outsourced services), will find the reporting and analytical tools contained out-of-the-box with Jira Align useful and robust.

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Fig. 06: Jira Align Dependency Map (wheel view) to identify and manage dependencies between large teams of teams





### Product owners and product management manage the program backlog with a dedicated project and board

SAFe<sup>®</sup> programs or agile release trains (ARTs) get their own dedicated project and board in Jira. The project's workflow is based on solution kanban, and can be modified to suit any organisation's desired process for features. We employ two more Easy Agile apps, User Story Maps, and Roadmaps, to assist as shown.

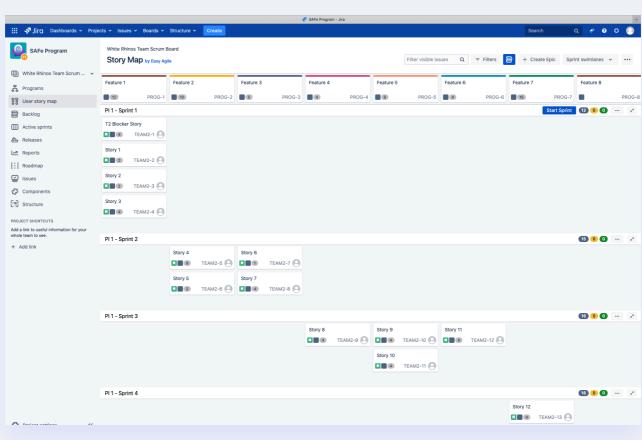


Fig. 08: Easy Agile User Story Maps shows stories by sprint by feature

Fig. 09: Easy Agile Roadmaps shows features over time

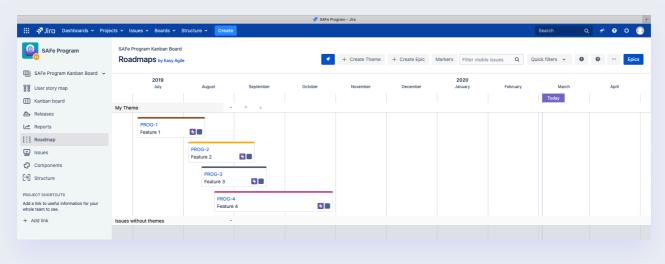
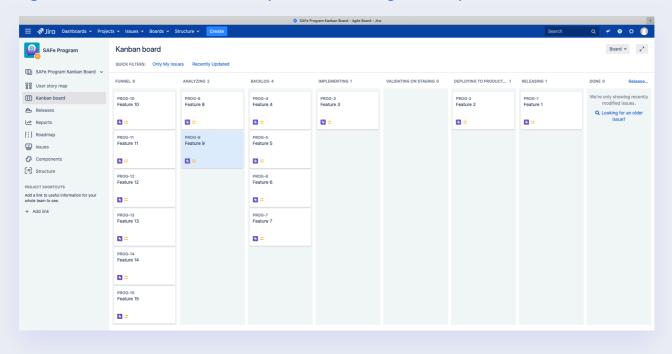


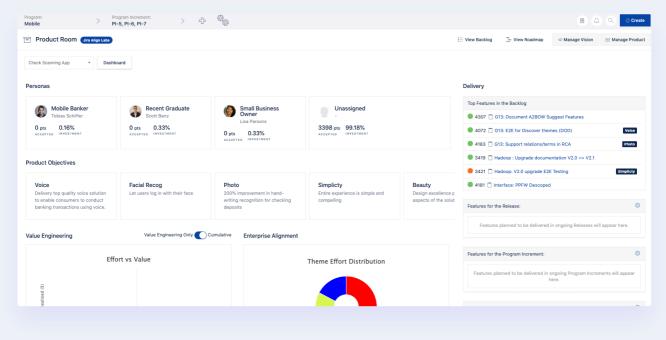
Fig. 10: Jira Software kanban boards provide visual drag-and-drop controls over features



### Consider Jira Align if...

your teams are organised around products and require deeper capabilities for effective product management tooling—such as managing multiple integrated product lines with heavy dependencies, managing personas, and managing overall product investment.

Fig. 11: Jira Align Product Room to manage multiple products, personas, and investment types



### Dedicated Large Solution and Portfolio projects and boards

Large Solution backlogs also get dedicated projects and boards in Jira. Like the Program level, the project's workflow is based on solution kanban and can be modified to suit any organisation's desired process for capabilities.

SAFe Portfolio Dashboard - Jira III VIII Dashboards v Projects v Issues v Boards v Structure v Create SAFe Portfolio Dashboard Add gadget Edit layout ... SAFe Portfolio Dashboard Pie Chart: All Portfolio Epics SAFe Large Solution Dashboard SAFe Program Dashboard SAFe Team Dashboard SAFe Value Stream Dashboard Epic Type Total Issues: 6 1 - Extracting Feature 1 - Investing None 2 - Emerging Enable ▼ ■ SAFe Portfolio PORT-1 Portfolio Epic 1 ▼ ■ Strategic Theme PORT-2 Portfolio Epic 2 FUNNEL 1 - Extracting Portfolio Ep RE 1-210 PORT-3 Portfolio Epic 3 FUNNEL 1 - Investing PORT-4 Portfolio Epic 4 FUNNEL 2 - Emerging Portfolio Ep Fu 1-210 S PORT-5 Value Stream 1 FUNNEL 1 - Extracting Strategic Theme S PORT-6 Value Stream 2 FUNNEL 1 - Extracting Portfolio Ep 📁 F 1 -210 PO Portfolio Ep Fu 2 -210 1-6 of 6 ☑ Open

Fig. 12: Jira dashboards and out-of-the-box gadgets surface vital Portfolio information in a convenient setting

### Consider Jira Align if...

your organisation has multiple Large Solutions or Portfolios. Organisations that undergo mergers and acquisitions, or multiple lines of business where management is delegated or outsourced, will find value in the flexibility to separately track multiple organisations within a holdings or umbrella company.

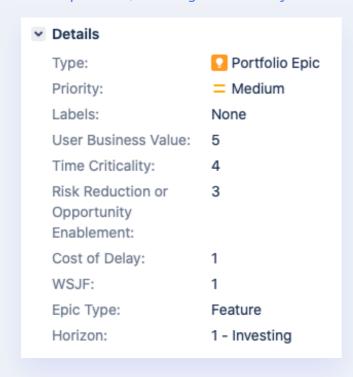
Program Forement:
Digital Services
Program Increment:
Program Incremen

Fig. 13: Jira Align Investment by Theme Report tracks progress on business objectives by multiple portfolios and across a diverse set of products

### ScriptRunner for Jira provides powerful scripted field and automation functions

The ScriptRunner for Jira app by our team at Adaptavist provides the ability to calculate field values dynamically, such as cost of delay and WSJF for Portfolio epics. ScriptRunner also provides essential automation, built-in scripts, and project template functionality that enable the scaling of Jira's configuration for large enterprises.

Fig. 14 Adaptavist ScriptRunner for Jira provides powerful scripted field capabilities, enabling the use of dynamic fields





# ALM Works Structure provides multiple hierarchical drill-down/roll-up views of your portfolio, program increment, product releases, and more

The Structure app by ALM Works can provide a roll-up/drill-down, hierarchical view of any data in the Jira instance—a truly powerful application. In this case, Structure can be relied upon to deliver essential views of Jira's underlying data in a SAFe® Portfolio, Large Solution, or Program. Some examples include the ability to show features by program increment, stories by team by feature by epic, defects by sprint by product component, and so on.

The Portfolio Rollup Structure below is one example of the many possible ways the application can be used to aid in the visualisation of data in Jira. Columns can also be configured to display different field values, enabling further customisation.

Fig. 15: ALM Works Structure provides a top-down view of the entire portfolio, broken down logically by epic, capability, feature, and story

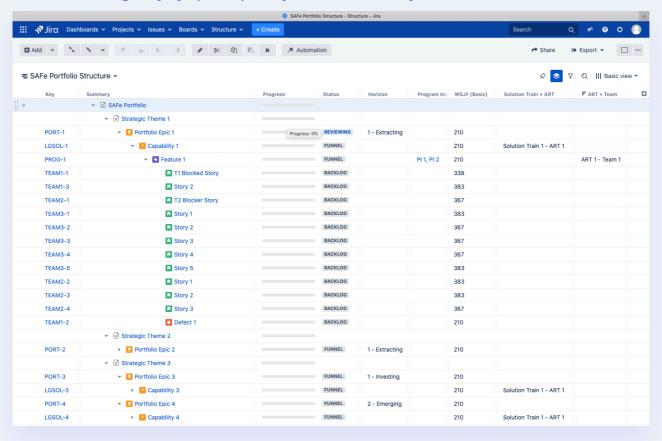


Fig. 16: Structures can be created to assemble dynamic lists, such as story dependencies, enabling scrum masters to manage inter-team collaboration

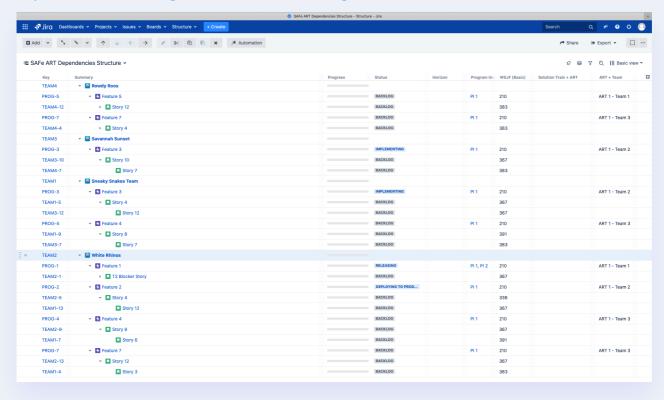
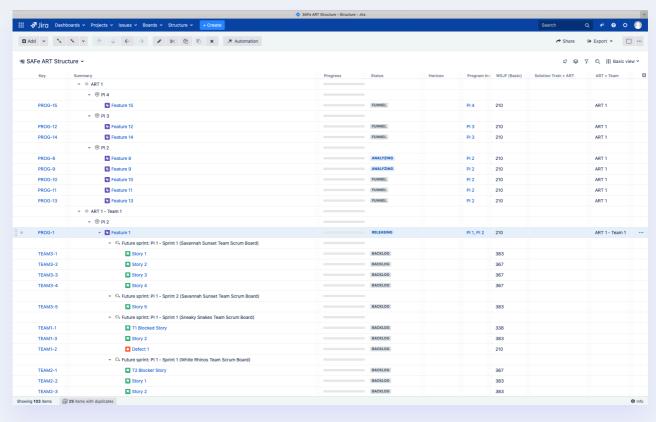


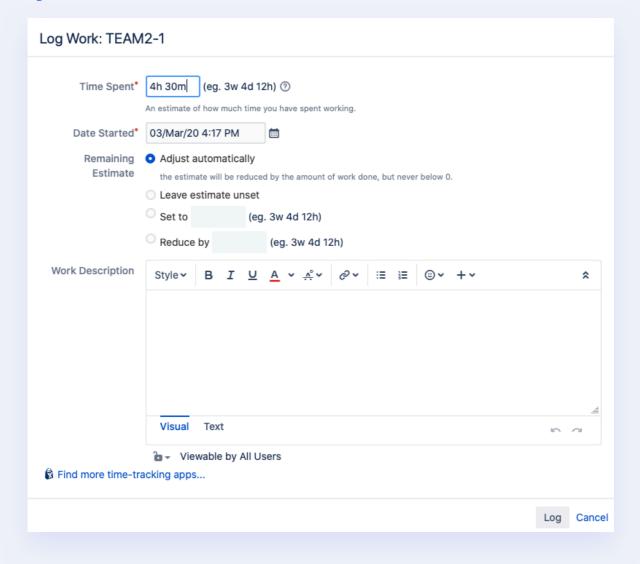
Fig. 17: Another application of Structure is to conflate scope and schedule views, as shown in this example where we see stories by sprint by feature by program increment by team by ART



### Track effort against stories, tasks, or defects

For organisations that capitalise research and development, effort can be logged against Jira issues, enabling organisations to associate costs with development effort.

Fig. 18: Jira provides out-of-the-box time tracking, enabling the logging of effort against stories, defects, tasks, and more



### Process improvement through data-driven recommendations

By leveraging Jira's data in retrospectives, teams can learn about their quality, consistency, velocity, and more.

### Jira Service Desk aligns request intake and product management from idea-to-backlog-to-build-to-ship

With Jira Service Desk, customers can be guided through the process of making requests of any type, helping you and your teams to focus on delivering software.

Common examples of feature requests and reporting defects can be modelled easily with Jira Service Desk, providing a seamless interface between your customers and product management.

Requests can be vetted and converted into stories or defects that get slotted right into any team's backlog. These issues can be linked to the original requests, providing the customer with full transparency.

Fig. 19: The Jira Service Desk customer portal shows a set of configured request groupings to guide users to the right spot

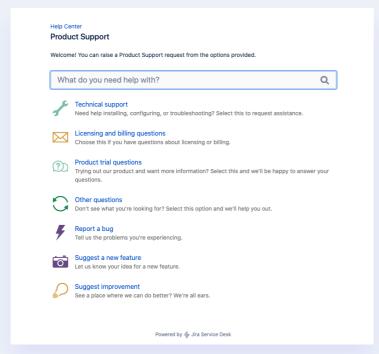


Fig. 20: Request fields can be thoroughly customised—names, descriptions, and required values are all available options

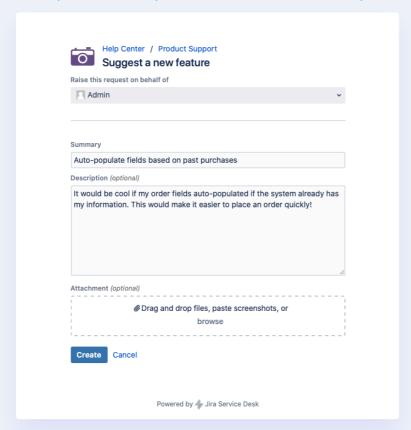
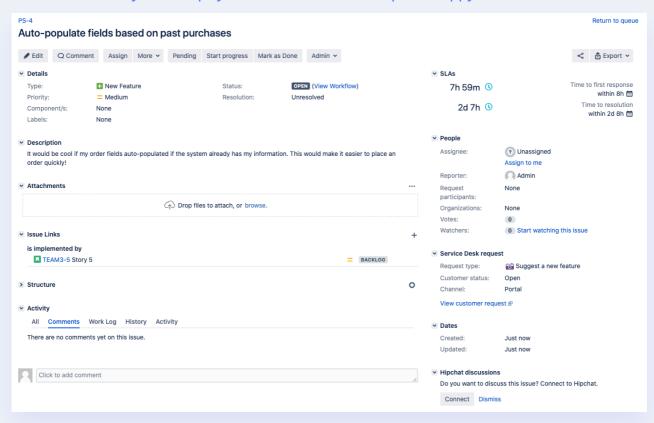


Fig. 21: Link original requests directly to implementation stories to enable full, end-to-end traceability that keeps your customers in the loop and happy



# Solution configuration prerequisites

While it's possible for any organisation to simply dive in and implement the configuration that follows with a Jira Software instance, the benefits won't truly be realised unless the business is already doing a few particular things well.

The number of people involved and amount of coordination involved in the use of development and collaboration tools when organisations begin to scale agile is hugely challenging. Bringing teams together for the first time to work collaboratively as part of an ART is difficult in practice because it will require changes to tool configurations, build and test processes, reporting requirements, and ceremonies. And this is not to mention the cultural challenges around forming teams of people who have not yet built trusting relationships with one another.

Thus, we strongly suggest that all organisations ensure they have adequate SAFe® and Atlassian expertise, either in-house or contracted, along with team level operational excellence, and leadership buy-in and participation. With all of these building blocks in place, you'll be ready to tackle the challenge of determining how best to configure your tools for SAFe® (bearing in mind of course that configurations will change over time).



Our solution is as lightweight as possible while still supporting a Full SAFe® configuration

# SAFe® 5.0 Solution configurations for Jira Software

The tables on the following pages describe the ways in which Jira Software can be set up to support the four SAFe® configurations. This is where Jira shines in its ability to provide different options for configuring projects, custom fields, and workflows to suit the specific needs of each implementation.

These recommendations are intended to be used as guidelines or starting points, as most organisations have constraints that necessitate alternate configuration options.

### Global configuration recommendations

- 'Epic' is used in place of 'Feature' in order to take advantage of Jira
   Software's special relationship between epics and stories
- Portfolio and Solution Kanban workflows are taken from Scaled Agile®
- It is possible to contain the deployment to a single project with creative use of boards, as well. Discrete projects are generally preferred as they provide more flexibility at the expense of administration
- Add Time Tracking fields to the screen(s) for any Issue Type(s) against which you would like to log Effort (Time)

#### Improve quality management

Our solution includes a recommended configuration for bugs or defects. The additional fields enable teams to improve their development process objectively using quality data from each sprint. In order to use this method, teams must:

- Fix their own defects
- Decide what constitutes a defect and what does not
- Commit to logging defects consistently
- Not use defect data punitively

Teams conduct their development activities as normal, but with the logging of defects added as they go.

For instance, let's say a developer is analysing the existing code, looking for a way to implement a new page design. During this phase of work, the developer spends a significant amount of time researching how to achieve cross-browser compatibility with the presented design, only to learn later that the product owner or the solution architect never planned for a specific client-side technology. This is an example of a planning defect, or something that the team failed to plan for.

This incident can be very instructive if we log it and attribute it to:

- Date
- Process phase we were in
- Process phase where the error was made
- Type of defect it was
- Root cause
- How long it took us to diagnose and fix

En masse, we're able to look at our defect data and identify trends that might be costing the team time or predictability. Frequent defects of type 'Oversight' or 'Education' might indicate that better checklists or mentoring could have a positive impact on the team's situation, e.g., reducing the number of overall defects, increasing velocity, and decreasing volatility.

Fig. 22: Defect Custom Fields

| Defect custom field | Field options   | Field description                             |
|---------------------|---|---|
| Phase Injected      | Any status of the team's workflow                           | When the error was made                       |
| Phase Removed       | Any status of the team's workflow                           | When the error was found                      |
| Defect Type         | e.g. User interface, Runtime<br>error, Checking, Data, etc. | What type of defect                           |
| Root Cause          | e.g. Education, Oversight,<br>Rushing, etc.                 | What conditions led to the defect's injection |

### Embrace a DevOps culture by leveraging tight integration between tools

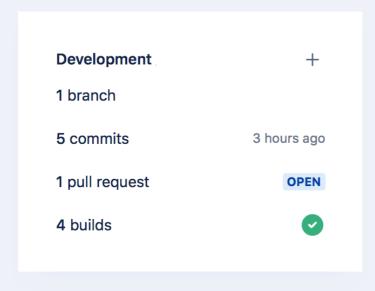
Once again we'll leverage Jira Software's close integration with all of Atlassian's other major products. It's capable of providing Confluence with issue data so that filter results and other issue elements can be displayed on pages, enabling live dashboards.

Issues representing user stories can be traced all the way from planning through development to deployment using Bitbucket and Bamboo.

Developers using Git for version control can reference a Jira issue's unique key in their commit message to associate any Jira issue with a commit in the repository. When integrated, Jira Software displays the issue's associated commits, branches, and pull request status right inside the issue.

A bit further down the line, if the commit is included in a build executed by a Bamboo Build Plan, the Jira issue will also display the current build status (pass/fail/warning) and any environment(s) the build has been deployed to.

Fig. 23: Jira's Development Panel shows associated code commits, branches, builds, test results, pull requests, and deployment when integrated with Bitbucket and Bamboo



#### Control over lean budgets and value streams

Value Streams are first class citizens in the Adaptavist SAFe<sup>®</sup> Solution. You can create and manage them like any other Jira issue. They can be displayed on boards and dashboards, as well as linked to portfolio epics, capabilities, and features, depending on your exact SAFe<sup>®</sup> configuration.

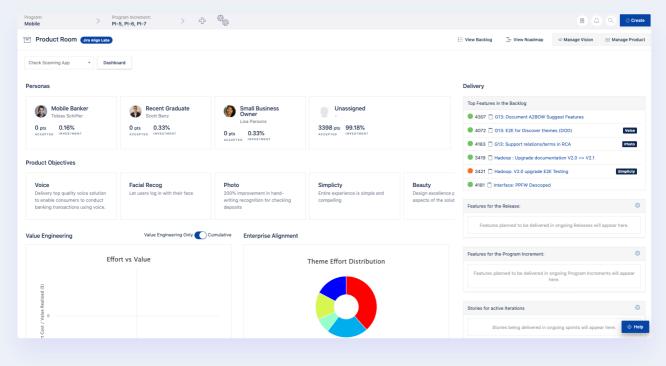
SAFe Portfolio Dashboard - Jira III 🎝 Jira Dashboards v Projects v Issues v Boards v Structure v Create Q 4 0 0 0 SAFe Portfolio Dashboard Add gadget Edit layout ... SAFe Large Solution Pie Chart: All Portfolio Epics SAFe Program SAFe Value Stream Dashboard 1 - Extracting Feature 1 - Investing None 2 - Emerging Enable Filter Results: All Portfolio Epics Prog WSJ Epic Type ▼ 🖹 SAFe Portfolio 1 - Extracting PORT-1 Portfolio Epic 1 REVIEWING Feature PORT-2 Portfolio Epic 2 FUNNEL 1 - Extracting Portfolio Ep RE 1 PORT-3 Portfolio Epic 3 FUNNEL ▼ 🖹 Strategic Theme FUNNEL Portfolio Ep Fu 1 Portfolio Ep FU 1 -210 Portfolio Ep Fu 2 ☑ Open Showing 48 items

Fig. 24: Jira Dashboards can provide a helpful interface for showcasing a portfolio, its epics, and its value streams

### Consider Jira Align if...

your organisation requires an SOC3 compliant system, or generally needs tighter controls around budget, investment, and auditing.

Fig. 25: Jira Align Investment vs. Actuals Report to track portfolio budgets, broken down by theme



## Modern, flexible project and risk management

Many organisations prefer to use Jira to track and manage risks. Risk management is performed in several different ways throughout the software development industry, including ROMB, ROAM, and others. Our solution is capable of replacing homegrown tools such as spreadsheets or napkins.

Risks are tracked as discrete issue types within Jira and can be applied to any project. Risks can also be displayed on a dashboard or within a structure. ScriptRunner is used to calculate dynamic fields.

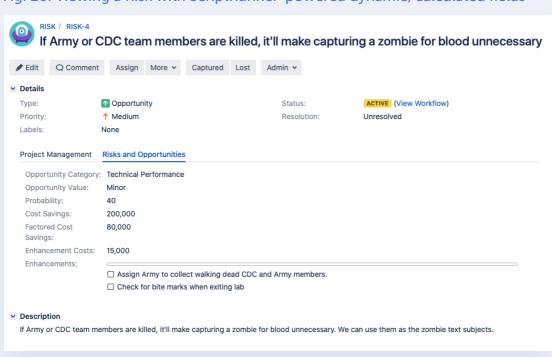


Fig. 26: Viewing a Risk with ScriptRunner-powered dynamic, calculated fields

Fig. 27: Structure providing a view of all risks and opportunities associated with features

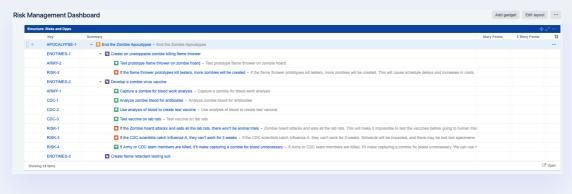


Fig 28a: Jira Software configurations for SAFe® 5.0

|                  |           | Essential SAFe®  Jira configuration      | Large Solution SAFe®<br>Jira configuration | Portfolio SAFe® Jira configuration       | Full SAFe® Jira configuration            |
|------------------|-----------|--|--|--|--|
|                  |           | One Project/Team                         | One Project/Team                           | One Project/Team                         | One Project/Team                         |
| PROJECT<br>SETUP |           | One Project/ART (Program)                | One Project/ART (Program)                  | One Project/ART (Program)                | One Project/ART (Program)                |
|                  |           |  | One Project/Solution                       | One Project/Portfolio                    | One Project/Solution                     |
|                  |           |  |  |  | One Project/Portfolio                    |
| ISSUE<br>TYPES   | Team      | Story<br>Bug/ Defect<br>Task<br>Sub-task | Story<br>Bug/ Defect<br>Task<br>Sub-task   | Story<br>Bug/ Defect<br>Task<br>Sub-task | Story<br>Bug/ Defect<br>Task<br>Sub-task |
|                  | ART       | Epic (Feature)                           | Epic (Feature)                             | Epic (Feature)                           | Epic (Feature)                           |
|                  | Solution  |  | Capability                                 |  | Capability                               |
|                  | Portfolio |  |  | Portfolio Epic<br>Value Stream           | Portfolio Epic<br>Value Stream           |

Fig 28b: Jira Software configurations for SAFe® 5.0

|                        |           | Essential SAFe®  Jira configuration           | Large Solution SAFe®<br>Jira configuration    | Portfolio SAFe® Jira configuration            | Full SAFe® Jira configuration   |
|------------------------|-----------|---|---|---|---|
|                        | Team      | SAFe <sup>®</sup> Team Scrum<br>Workflow  |
| WORKFLOWS              | ART       | SAFe <sup>®</sup> Program<br>Kanban Workflow  |
|                        | Solution  |   | SAFe <sup>®</sup> Solution<br>Kanban Workflow |   | SAFe <sup>®</sup> Program<br>Kanban Workflow  |
|                        | Portfolio |   |   | SAFe <sup>®</sup> Portfolio<br>Workflow       | SAFe <sup>®</sup> Portfolio<br>Kanban Workflow  |
| BOARD<br>CONFIGURATION | Team      | SAFe <sup>®</sup> Team Scrum Board            | SAFe® Team Scrum Board                        | SAFe <sup>®</sup> Team Scrum<br>Board         | SAFe® Team Scrum<br>Board   |
|                        |           | Includes Epics and<br>Versions from ART Board   |
|                        | ART       | SAFe <sup>®</sup> Program<br>Kanban Board     | SAFe <sup>®</sup> Program<br>Kanban Board     | SAFe® Program<br>Kanban Board                 | SAFe® Program<br>Kanban Board   |
|                        | Solution  |   | SAFe® Large Solution<br>Kanban Board          |   | SAFe® Large Solution<br>Kanban Board  |
|                        | Portfolio |   |   | SAFe <sup>®</sup> Portfolio<br>Kanban Board   | SAFe <sup>®</sup> Portfolio<br>Kanban Board<br>Issues ordered by WSJF<br>custom field |

Fig 28c Jira Software configurations for SAFe® 5.0

|                  |                | Essential SAFe®  Jira configuration   | Large Solution SAFe®<br>Jira configuration                                    | Portfolio SAFe® Jira configuration   | Full SAFe® Jira configuration   |
|------------------|----------------|---|---|--|---|
|                  | Story          | Summary, Description  | Summary, Description  | Summary, Description   | Summary, Description  |
|                  | Bug/<br>Defect | Summary, Description Phase Injected, Phase Removed Defect Type, Defect Reason | Summary, Description Phase Injected, Phase Removed Defect Type, Defect Reason | Summary, Description Phase Injected, Phase Removed Defect Type, Defect Reason                                      | Summary, Description Phase Injected, Phase Removed Defect Type, Defect Reason                                       |
|                  | Task           | Summary, Description  | Summary, Description  | Summary, Description   | Summary, Description  |
| CUSTOM<br>FIELDS | Sub-task       | Summary, Description  | Summary, Description  | Summary, Description   | Summary, Description  |
|                  | Epic           | Summary, Description,<br>Epic Name  | Summary, Description,<br>Epic Name  | Summary, Description,<br>Epic Name   | Summary, Description,<br>Epic Name  |
|                  | Capability     |   | Summary, Description  |  | Summary, Description  |
|                  | Portfolio      |   |   | Summary, Description User Business Value Time Criticality Risk Reduction/Opportunity Enablement Cost of Delay WSJF | Summary, Description User Business Value Time Criticality Risk Reduction/ Opportunity Enablement Cost of Delay WSJF |

## Intake and request management

Jira Service Desk Projects can be created to establish any number of independent portals for customers. Each portal can be configured with request groupings and types that aid users in submitting requests correctly.

For product intake situations, common request types include:

- Feature suggestion
- Submit an idea
- Report a bug
- Request enhancement.

Each request type can be configured with custom fields of your choosing, enabling flexibility to collect any and all relevant information from users at the point of entry. Additionally, requests can be retroactively logged and attributed to a requestor for real world scenarios where not everybody has been able to use the portal for one reason or another.

To establish traceability between a request and its implementation in a team's backlog, simply issue link the original request to the appropriate story or stories.

## Naming convention for SAFe® schemes

We recommend using schemes and an appropriate naming convention for consistency and ease of administration.

Guidance on scheme configuration is provided in the table below.

Fig. 29a: Jira Software configurations for  $\mathsf{SAFe}^{\$}$ 

| Jira scheme                                    | Jira entity type            | Scheme elements                       | Purpose   |
|--|-----------------------------|---------------------------------------|---|
| SAFe <sup>®</sup> Team Workflow                | Workflow Scheme             | Workflow(s) for Team Projects         | Ensures all Team Projects have the same set of Workflows                                  |
| SAFe <sup>®</sup> Team Screen                  | Screen Scheme               | Screens for Team Projects             | Ensures all Team Projects have the same set of Screens and Fields                         |
| SAFe <sup>®</sup> Team Issue<br>Type Screen    | Issue Type Screen<br>Scheme | Screen scheme for<br>Team Projects    | Ensures all Team Projects have the same set of Screen Schemes, Actions and Issue Types    |
| SAFe <sup>®</sup> Team Issue                   | Issue Type Scheme           | Issue Type(s) for<br>Team Projects    | Ensures all Team Projects have the same set of Issue Types                                |
| SAFe <sup>®</sup> Program Workflow             | Workflow Scheme             | Workflow(s) for Program<br>Projects   | Ensures all Program Projects have the same set of Workflows                               |
| SAFe <sup>®</sup> Program Screen               | Screen Scheme               | Screens for Program<br>Projects       | Ensures all Program Projects have the same set of Screens and Fields                      |
| SAFe <sup>®</sup> Program<br>Issue Type Screen | Issue Type Screen Scheme    | Screen scheme for Program<br>Projects | Ensures all Program Projects have the same set of Screen Schemes, Actions and Issue Types |
| SAFe <sup>®</sup> Program<br>Issue Type        | Issue Type Scheme           | Issue Type(s) for Program<br>Projects | Ensures all Program Projects have the same set of Issue Types                             |
|  |                             |                                       |   |

Fig. 24b: Jira Software configurations for SAFe® 5.0

| Jira scheme   | Jira entity type            | Scheme elements                              | Purpose  |
|---|-----------------------------|--|--|
| SAFe <sup>®</sup> Program<br>Workflow Scheme          | Workflow Scheme             | Workflow(s) for Program Projects             | Ensures all Program Projects have the same set of Workflows                                      |
| SAFe <sup>®</sup> Program Screen                      | Screen Scheme               | Screens for Program Projects                 | Ensures all Program Projects have the same set of Screens and Fields                             |
| SAFe <sup>®</sup> Program Issue<br>Type Screen        | Issue Type<br>Screen Scheme | Screen scheme for<br>Program Projects        | Ensures all Program Projects have the same set of Screen Schemes, Actions and Issue Types        |
| SAFe <sup>®</sup> Program<br>Issue Type               | Issue Type Scheme           | Issue Type(s) for<br>Program Projects        | Ensures all Program Projects have the same set of Issue Types                                    |
| SAFe <sup>®</sup> Portfolio<br>Workflow               | Workflow Scheme             | Workflow(s) for Portfolio Projects           | Ensures all Portfolio Projects have the same set of Workflows                                    |
| SAFe <sup>®</sup> Portfolio Screen                    | Screen Scheme               | Screens for Portfolio Projects               | Ensures all Portfolio Projects have the same set of Screens and Fields                           |
| SAFe <sup>®</sup> Portfolio Issue<br>Type Screen      | Issue Type Screen<br>Scheme | Screen scheme for<br>Portfolio Projects      | Ensures all Portfolio Projects have the same set of Screen Schemes, Actions and Issue Types      |
| SAFe <sup>®</sup> Portfolio Issue<br>Type             | Issue Type Scheme           | Issue Type(s) for Portfolio<br>Projects      | Ensures all Portfolio Projects have the same set of Issue Types                                  |
| SAFe <sup>®</sup> Large Solution<br>Workflow          | Workflow Scheme             | Workflow(s) for Large<br>Solution Projects   | Ensures all Large Solution Projects have the same set of Workflows                               |
| SAFe <sup>®</sup> Large Solution<br>Screen            | Screen Scheme               | Screens for Large<br>Solution Projects       | Ensures all Large Solution Projects have the same set of Screens and Fields                      |
| SAFe <sup>®</sup> Large Solution<br>Issue Type Screen | Issue Type Screen Scheme    | Screen scheme for Large<br>Solution Projects | Ensures all Large Solution Projects have the same set of Screen Schemes, Actions and Issue Types |
| SAFe <sup>®</sup> Large<br>Solution Issue Type        | Issue Type Scheme           | Issue Type(s) for Large<br>Solution Projects | Ensures all Large Solution Projects have the same set of Issue Types                             |

## **Atlassian Marketplace Apps**

The table below includes all of the Marketplace apps included in the SAFe® solution.

Fig. 25: Atlassian Marketplace apps for the SAFe® solution

| Marketplace App                       | Product   | Platform Compatibility | Benefits  |
|---------------------------------------|-----------|------------------------|---|
| Adaptavist ScriptRunner for Jira      | Jira      | Server / Data Center   | Provides scripted field capabilities  |
| Easy Agile Programs                   | Jira      | Server / Data Center   | Provides program boards and visual dependency mapping   |
| Easy Agile User Story Maps            | Jira      | Server / Data Center   | Provides story map view of features and stories   |
| Easy Agile Roadmaps                   | Jira      | Server / Data Center   | Provides roadmap view of features and releases  |
| ALM Works Structure                   | Jira      | Server / Data Center   | Provides hierarchical view of epics, capabilities, features, stories, PIs, sprints, teams, etc  |
| ALM Works Structure Gantt             | Jira      | Server / Data Center   | Provides Gantt chart view to conflate with standard structures.                                 |
| ALM Works Structure Pages             | Jira      | Server / Data Center   | Provides ability to include Confluence page content into standard structures                    |
| Atlassian Jira Service Desk           | Jira      | Server / Data Center   | Provides a customer portal and configurable requests for request intake and management          |
| Adaptavist ScriptRunner for Bitbucket | BitBucket | Server / Data Center   | Provides helpful customisations for organisations to manage cadence, integration, and standards |

## Reporting and analytics

Adaptavist Quantic Platform with SAFe® 5.0 Reports and Analytics includes 3-5 SAFe® reports that integrate with your Jira Software Server or Data Center instances.

## Atlassian Jira Align compatibility

If your organisation uses Jira Align or is looking into adopting the tool, our recommended configuration for Essential SAFe<sup>®</sup> Teams and Programs is compatible with Jira Align. Adaptavist is a leading provider of Jira Align implementation as part of our tooling practice for large-scale agile transformations.

If you want to learn more about Jira Align and/or pose a question to our experts, head to adaptavist.com/jira-align



# Combining Atlassian products for SAFe®

Now that we've introduced the individual tools, add-ons, and integrations, we want to show you how combining tools further can be beneficial. By combining Atlassian Confluence, Bitbucket, and Bamboo with Jira Software, organisations wield a fully-featured development suite that offers powerful issue tracking, backlog management, team management, document collaboration, source code management, and CI/CD.

Confluence is a key component of the Customer Centricity and Continuous Exploration SAFe<sup>®</sup> processes, as it provides the ability to create and share pages of content with others throughout an organisation. Examples of applications of this ability include collaborating on product designs, product roadmaps, lean business cases, or sprint retrospectives. The possibilities are endless.

Bitbucket and Bamboo are critical components of the Continuous Delivery Pipeline in SAFe<sup>®</sup>. Bitbucket provides source code management, repository hosting, and rich integrations with Jira and Bamboo, enabling story-to-deployment traceability through Smart Commit tagging.

Bamboo can be used to automatically build, test, notify, package, deploy, and release product components, artefacts, or even entire systems. Such capabilities and integration with other tools in the suite enable organisations to rally around a common framework for management, design, planning, tracking, reporting, and more

## Confluence

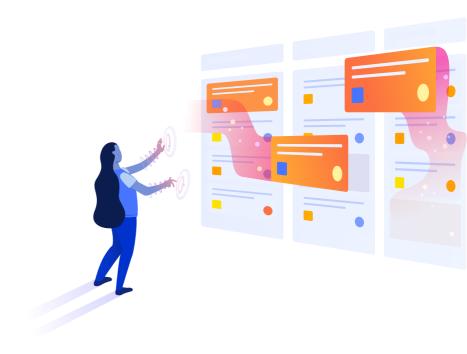
Confluence is a key component of the Customer Centricity and Continuous Exploration SAFe<sup>®</sup> processes, as it provides the ability to create and share pages of content with others throughout an organisation. Examples of applications of this ability include collaborating on product designs, product roadmaps, lean business cases, or sprint retrospectives. The possibilities are endless.

#### Space for Program/ART

- Roster
- Features
- Templates
- Teams
- Roadmap

#### **Spaces for Teams**

- Roster
- · Onboarding info
- Templates
- Development environment setup
- · Helpful links and resource
- Policies
- · Reports and historical data
- Initiatives



#### **Bitbucket**

Bitbucket and Bamboo are critical components of the Continuous Delivery Pipeline in SAFe<sup>®</sup>. Bitbucket provides source code management, repository hosting, and rich integrations with Jira and Bamboo, enabling story-to-deployment traceability through Smart Commit tagging.

No matter what your current practice is, you should consider how your source code repositories are logically structured. What works for one team today is likely not to work for multiple teams tomorrow, so care should be taken to configure Bitbucket's projects and repositories such that they enable good engineering practices, while also supporting the growth of your engineering staff and product portfolio.

Projects = multiple repositories, e.g., one system or product

Repositories = 1 artefact

#### Bamboo

Bamboo can be used to automatically build, test, notify, package, deploy, and release product components, artefacts, or even entire systems. Such capabilities and integration with other tools in the suite enable organisations to rally around a common framework for management, design, planning, tracking, reporting, and more.

Similar to Bitbucket, thought must be put into how Bamboo can enable you and your teams to continuously integrate, test, release, and deliver software.

#### **Build Projects and Plans**

- Per solution
- Per product
- Per artefact

## SAFe® level configurations

## Special usage considerations for Large Solution and Portfolio SAFe®

As we've mentioned for these types of larger implementations, special care should be paid to aspects of the tool chain. The typical path we've seen for Large Solutions and solution trains starts from the successful launch of at least one train. After this successful launch, leaders almost immediately ask how the tools can be outfitted to support the management of multiple trains, simultaneously.

For the most part, the addition of a Large Solution level doesn't require any drastic tooling changes. Provided that you've started with a best practice configuration, you should have little to fear in the way of consistency across trains or teams.

Some care will need to be taken with the continuous delivery pipeline. Large Solutions typically involve suppliers or at least a larger number of internal contributors to a product. Care should also be taken to design and implement a Bitbucket and Bamboo strategy that aligns with the audience and development demands of the solution.

Capabilities of Large Solutions can be managed using a separate project and kanban board. Capabilities can be issue-linked to features, establishing their relationship similarly to how epics relate to stories.

## Portfolio SAFe® configuration elements

Portfolio SAFe<sup>®</sup> introduces Portfolio Epics, Value Streams, Lean Budgeting, and strategic alignment to features. For this SAFe<sup>®</sup> configuration, our solution relies on Confluence for collaboration on and presentation of the strategic portfolio.

Portfolio Epics and Value Streams can be created like features or capabilities in a dedicated project and kanban board.

Dashboard gadgets enable helpful, focused views of content at any level—Portfolio, Large Solution, Program, or Team.

## Going Full SAFe®

Full SAFe® is simply everything above combined into one single implementation.



### **Customising the configuration**

Every organisation customises portions of these recommended configuration, as some elements simply do not apply or aren't a good fit for one reason or another. This is expected with any implementation, and the ability to do this is one of the key benefits of the flexibility of Atlassian tools.

## **Business impact and outcomes**

### Improved collaboration and instant backlog setup in PI planning

We've been fortunate to witness the performance of this solution in our customers' environments. We've seen PI planning events with globally-distributed teams successfully leverage the configuration shown in this paper to build their backlogs, draw dependencies, manage inter-team work, and collaborate on issues.

## Discovery of additional training

The intensity with which the tools are employed during PI planning often surfaces the need for organisations to be rock solid in their Atlassian skillsets. From end users to administrators, an appropriate level of familiarity with the tools is an absolute must in order to best organise and manage essential items such as team backlogs, the program backlog, dependencies, and more.

For PI planning, teams should consider the impact the event will have on infrequentlyconsidered items such as project roles and permissions to mingle in other teams' backlogs, and manage these points accordingly in advance of the event.



Considered preparation goes a long way toward PI Planning success

## Notes on adoption

## Start with a pilot and continuously explore

Small teams with mature, consistent processes and good attitudes are prime candidates for piloting a new configuration.

## Allow the big picture to emerge

Much like how the current situation did not manifest itself overnight, the new reality along with the path to get there will take time to emerge. Start by taking small steps toward the goal of improving one team or train at a time. Create surrogates and advocates by spending as much time as possible one-on-one with individuals, taking care to listen to their concerns as well as to share a consistent message.



With sustained effort, a shared understanding will emerge and the path forward will become clearer

## Final thoughts

## Evolve best practices and learn from experience

Sometimes it seems that the state of the art in software development changes by the hour. The tech industry is constantly learning from experience, and rightly so. Best practices emerge and evolve as new technologies ceaselessly disrupt our businesses and our world.

Adaptavist, along with our customers, have learned much in the past year working with the solution described in this paper. This virtual white paper will continue to change with our practice, and we will revise it here on a continuous basis.

## Get more performance out of your existing tools

Most Jira Software and Confluence instances are cluttered and messy. This comes from the flexible nature of the tools, and the fact that their use has tended to grow organically within teams and companies. The good news is that by applying a healthy amount of best practice organisation, education, and standards, these tools provide everything required to scale agile in any organisation.

## Drive culture change with processes, practices, and policies

In helping customers who are looking to drive cultural change in their organisations, we have found that applying new ways of working in SAFe® and the tool modifications detailed here can have an impact on culture. By focussing on improvements to processes, practices, and policies, the intersecting aspects of culture will often shift organically.

## Foster a productive environment and develop talent

We've yet to meet a client that did not have members on their teams who lacked knowledge of some of the basic features of the Atlassian tools they use every day. It's a fact in organisations of every size, and of every level of maturity in terms of their use of software.

Ensuring that everyone using the tools knows as much about them as possible is the surest way to see that they're used productively and adopted widely. Studies have shown that fostering a productive environment and developing talent are the strongest investments you can make toward delivering the best software to your customers.

## Achieve early wins to gain traction with SAFe®

In our experience the most successful SAFe® journeys begin with choosing the configuration that's most appropriate for your organisation and its unique needs. Then implement it pragmatically, with phased roll-outs of the parts of the solution that will deliver maximum value and pain reduction early on.

As we hope is apparent from this paper, the Atlassian toolset is an excellent choice to do just that—and to emerge on the other side with happier, higher-functioning teams, and with customers who are delighted by what they deliver.







