# Agile tools

**Team Services | TFS 2015 | Previous versions (https://msdn.microsoft.com/library/dd286619%28v=vs.120%29.aspx)**

As a project manager you can plan and track the work required to bring your applications from idea to completion. Agile tools provide you with the power, flexibility, and responsiveness you need to stay on top of changing priorities, deadlines, and requirements.

To use these tools, you need to first create a team project. You can do that either in the cloud with Team Services (../setup-admin/team-services/connect-to-visual-studio-team-services), or by creating one on an on-premises Team Foundation Server (TFS) (../setup-admin/install-tfs/get-started).

**Backlogs**

- Create your backlog (backlogs/create-your-backlog)
- Add work items (backlogs/add-work-items)
- Manage bugs (backlogs/manage-bugs)
- Organize backlogs (backlogs/organize-backlog)

- Storyboarding (office/storyboard-your-ideas-using-powerpoint)
- Share work plans (track/share-plans)
- Integrate with Git (backlogs/connect-work-items-to-git-dev-ops)
- Productivity tips (productivity/productivity-tips)

**Scrum**

- Define sprints (scrum/define-sprints)
- Plan sprints (scrum/sprint-planning)
- Plan capacity (scale/capacity-planning)
- Task board (scrum/task-board)

- Sprint burndown (scrum/sprint-burndown)
- Velocity & forecast (scrum/velocity-and-forecasting)
- Customize cards (customize/customize-cards)

**Kanban**

- Kanban basics (kanban/kanban-basics)
- Task checklists (kanban/add-task-checklists)
- Features and epics (kanban/kanban-epics-features-stories)
- Add and manage inline tests (kanban/add-run-update-tests)
- Cumulative flow (../report/guidance/cumulative-flow)

*Customize*

- Add columns (kanban/add-columns)
- WIP limits (kanban/wip-limits)
- Split columns (kanban/split-columns)
- Expedite work (kanban/expedite-work)

**Track**

- Code search (../search/overview)
- Queries (work items) (track/using-queries)
- Charts (../report/charts)
- Dashboards (../report/dashboards)

- Follow a work item (track/follow-work-items)
- Alerts (track/alerts-and-notifications)
- Tags (track/add-tags-to-work-items)
- History & audit (track/history-and-auditing)

**Scale**

- Culture (scale/culture)
- Multiple teams (scale/multiple-teams)

| | | |
|---|---|---|
| | • Definition of done (kanban/definition-of-done)<br>• Customize cards (customize/customize-cards)<br>• Card reordering (kanban/kanban-basics#card-reorder-setting) | • Set team defaults (scale/set-team-defaults)<br>• Manage team assets (scale/manage-team-assets)<br>• Manage portfolios (scale/portfolio-management)<br><br>• Scaled Agile Framework (scale/scaled-agile-framework)<br>• Practices that scale (scale/practices-that-scale) |

For an overview of all your customization options, see Customize your work tracking experience (customize/customize-work).

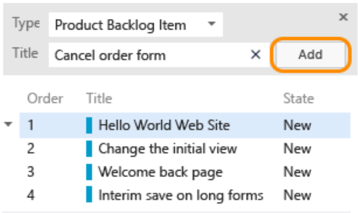
## Backlogs

To manage work, you have access to three flavors of backlogs: product, sprints, and portfolio. Each backlog displays work items in list or board format. You use work items (backlogs/add-work-items) to share information, assign work to team members, track dependencies, organize work, and more.

With list backlogs you can quickly develop your project plan and group and prioritize work. With boards, you can quickly update status and fields displayed for each work item.

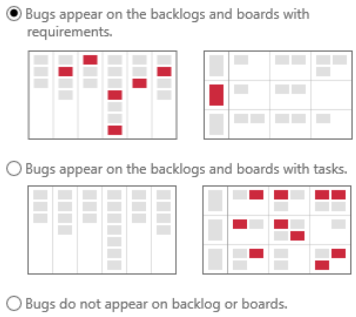
Your backlog corresponds to your road map for what your team plans to deliver. Once defined, you have a prioritized list of features and requirements to build. Your backlog also provides a storehouse of all the information you need to track and share with your team.

| | | |
|---|---|---|
| **Create your backlog**<br>Plan your project by adding a work item for each user story or requirement (backlogs/create-your-backlog). | **New work item experience (Team Services)**<br>The new work item experience (process/new-work-item-experience) provides access to a more modern form, additional features, and the ability to add fields and apply other customizations to the work item type. | **Link work items**<br>Track related work, dependencies, and changes made over time by linking work items (backlogs/add-work-items#link-wi). |




### Choose how you want to track bugs

Each team can choose how they want to manage bugs (customize/show-bugs-on-backlog) and where they'll show up on the backlogs and boards




.

### Organize your backlog

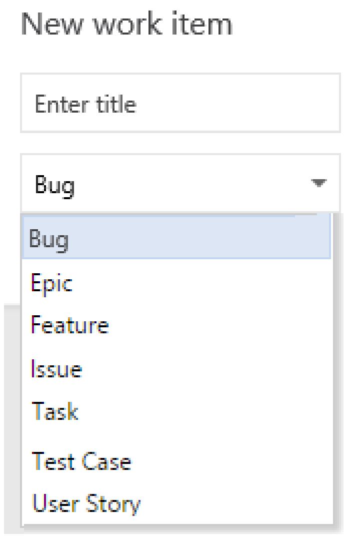
Group items into a hierarchical list using portfolio backlogs (backlogs/organize-backlog) and quickly reorder and re-parent items to effectively manage your deliverables.

### Keyboard shortcuts

Increase your productivity by working with hot keys and shortcuts (../reference/keyboard-shortcuts).

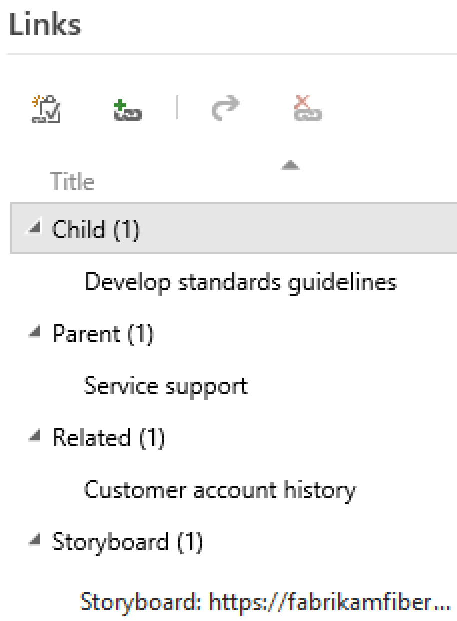
### Track issues and other types of work

Different work item types track different types of work (backlogs/add-work-items) - such as bugs, test cases, risks, issues, and more.




### Manage bugs

Capture and triage bugs (backlogs/manage-bugs) using a variety of tools.

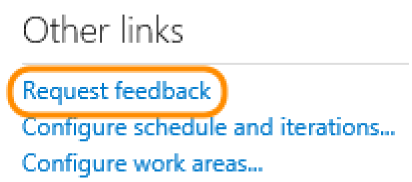



### Storyboard

Visualize your ideas and user stories and support greater understanding of them by storyboarding them with PowerPoint (office/storyboard-your-ideas-using-powerpoint), also link your storyboards to your backlog work items.

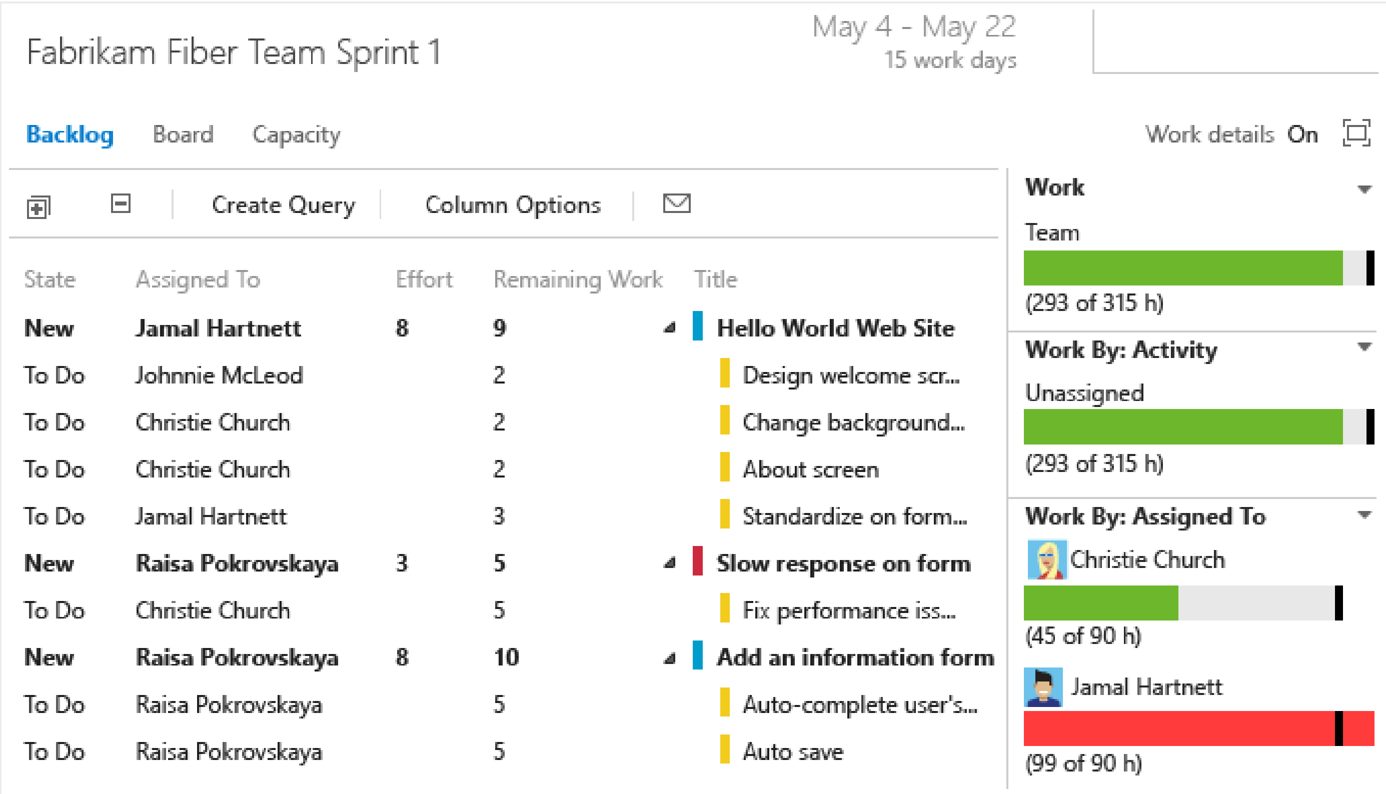
### Request feedback

Request feedback on working software (connect/get-feedback) and easily track responses that capture interaction with video, verbal, or type-written comments.



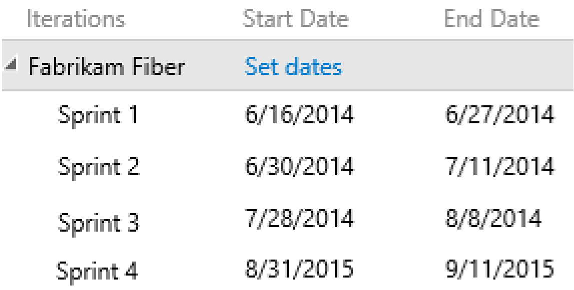

## Scrum

Scrum teams use sprint backlogs to plan sprints (scrum/sprint-planning) and focus on just the set of work they want to accomplish during a sprint.




## Define sprints

Schedule and activate your team's sprints (scrum/define-sprints) to gain access to sprint backlogs and task boards

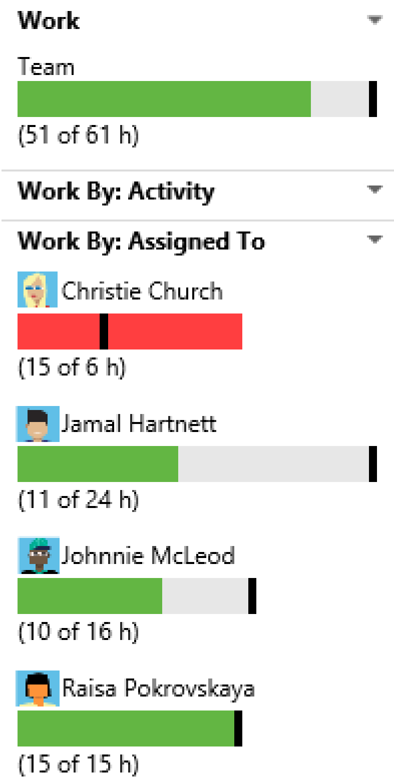


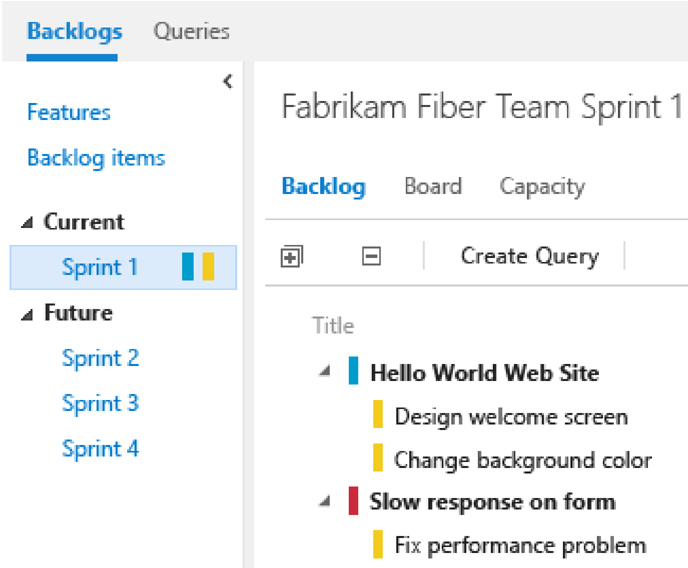

## Plan sprints

Build your sprint backlog, add tasks, and load balance work across your team as you plan your sprint (scrum/sprint-planning)

## Manage resources

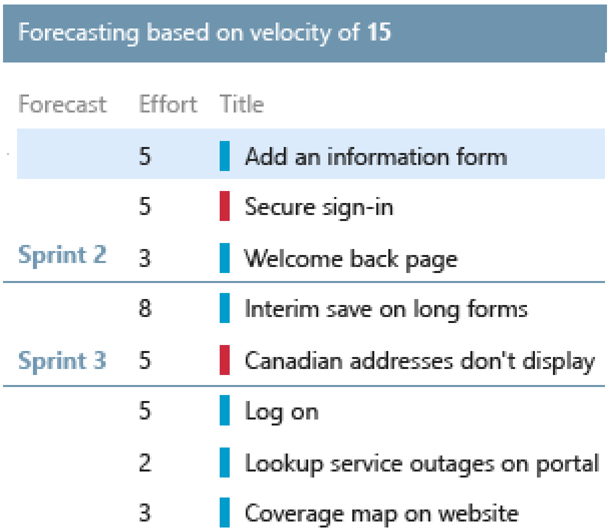
Use capacity planning tools (scale/capacity-planning) to track individual, team, and activity over and under capacity for a sprint






### Velocity & forecasting

Use velocity & forecast tools (scrum/velocity-and-forecasting) to estimate work that can be completed in future sprints

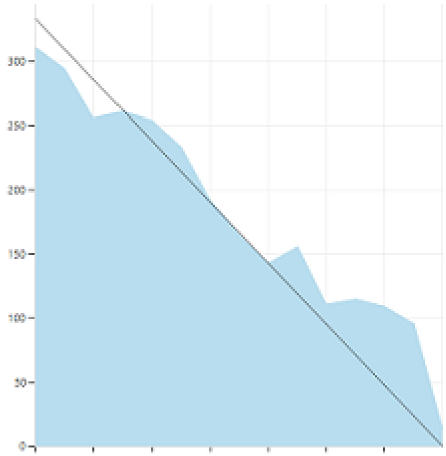



### Track work on your task board

Use your task board (scrum/task-board) during your daily Scrum meetings to view and update progress

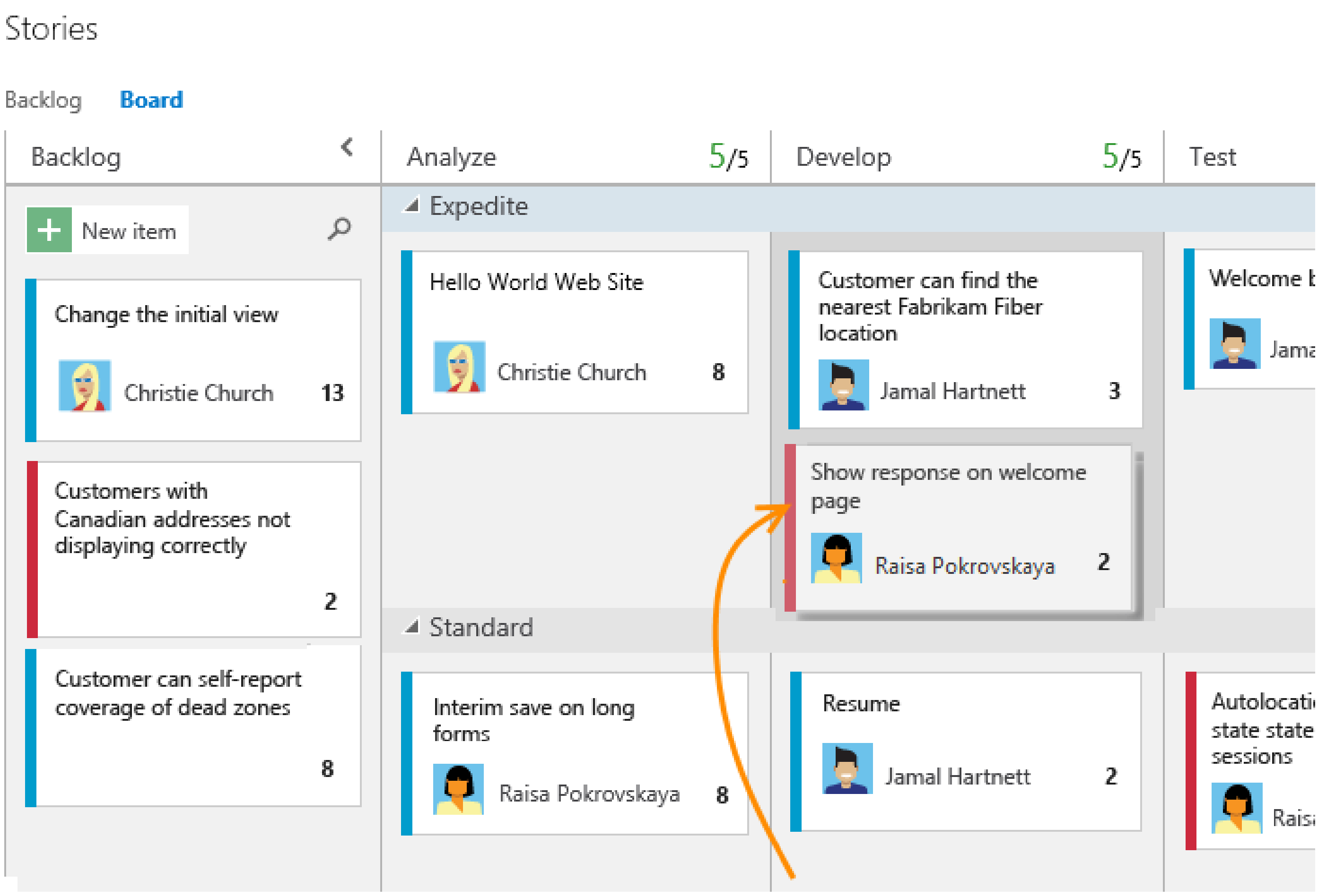
### Sprint burndown charts

Monitor progress and review team patterns from sprint burndown charts (scrum/sprint-burndown)



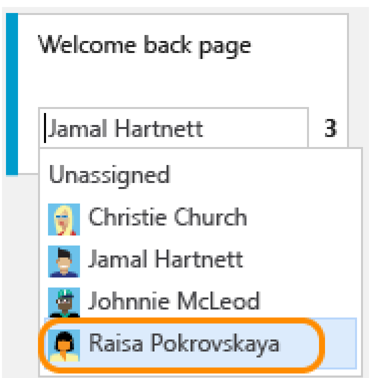

## Kanban

Your Kanban board turns your backlog into an interactive signboard, providing a visual flow of work. Each Kanban column represents a work stage, and each card represents a work item. Using the product backlog Kanban board (kanban/kanban-basics), you can quickly update workflow status by moving items to a downstream column or different swimlane.




### Kanban basics

Use your Kanban board to visualize and track the flow of work (kanban/kanban-basics) from idea to completion as well as quickly update work item fields.

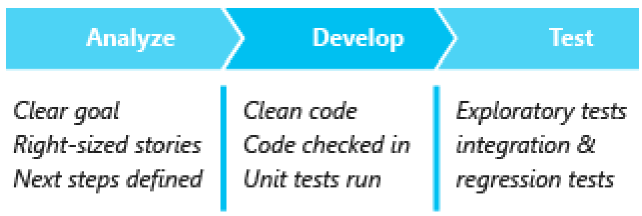



### Add task checklists

Add and mark tasks as done with lightweight tasks checklists (kanban/add-task-checklists).

### Add columns

Customize columns to support your team's workflow (kanban/add-columns) and track work from start to finish.



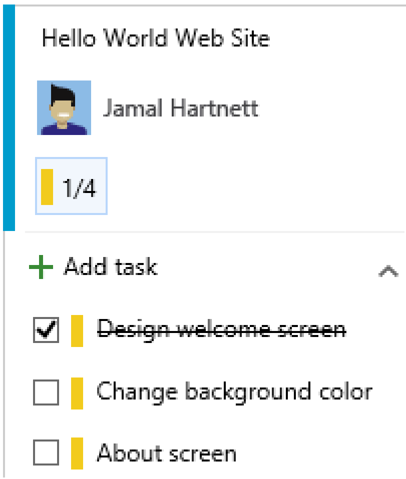

### Definition of done

Support your team to be in sync about when to handoff items to a downstream work stage (kanban/definition-of-done).

### Split columns

Turn on split columns to track the lag between when items are done in one state and work actually starts in a new state (kanban/split-columns).

### Expedite work



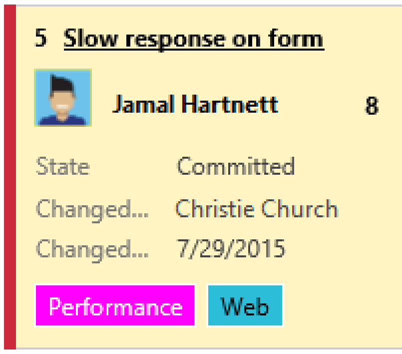

**Set WIP limits**

Set constraints on the amount of work your team undertakes at each work stage (kanban/wip-limits) to gain access to sprint backlogs and task boards.

Use swimlanes (kanban/expedite-work) to track work at different service-level classes.

**Customize cards**

Add fields to cards (customize/customize-cards) that you can edit directly on your Kanban and task boards.




# Track

Track and visualize progress using fit-for-purpose tools. You can search the code base, list work items, and set up alerts to get notified when changes that you care about occur.

## Search, queries, tags, and filters

**Code search**

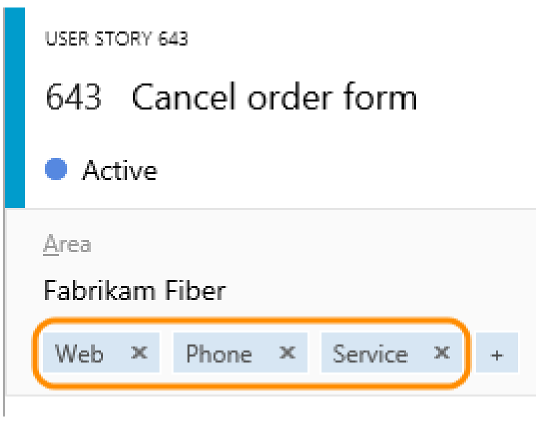
Search within your code branches (TVC) and repositories (Git) (../search/overview) to find files, commits, and more using powerful filters to obtain rich results.


**Work item queries**

Open shared queries or create your own query using the query editor to list work items or show hierarchical or dependent items (track/using-queries).

**Tags**

Add tags to work items (track/add-tags-to-work-items) to filter backlogs and queries.




**Query by workflow or Kanban board changes**: List work items based on changes made to the workflow or Kanban board (track/query-by-workflow-changes).

**Manage risks and dependencies**

Link work items to track related work, dependencies, and changes made over time (track/link-work-items-support-traceability).

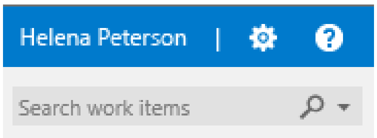
**Alerts & notifications**

Get notified as changes occur to work items, code reviews, source control files, and builds (track/alerts-and-notifications).

**History & Auditing**

Review and query work item change history (track/history-and-auditing)

**Work item search box**: find work items based on ID, assignment, changed date, or keyword (https://msdn.microsoft.com/library/cc668120.aspx).




**Query by date or current iteration**: List work items based on when changes occurred or if they belong to the team's current sprint (track/query-by-date-or-current-iteration).

to learn of past decisions and support future ones.

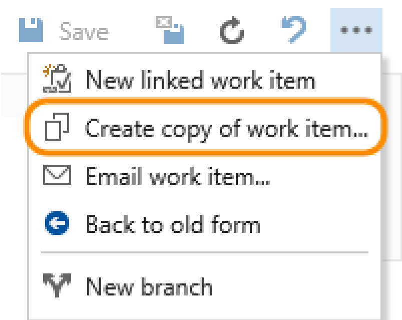
## Copy, bulk modify, update, and delete work items

### Bulk modify

Quickly change one or more fields in several work items using bulk modify in the web portal (backlogs/bulk-modify-work-items) or bulk modify using Excel (office/bulk-add-modify-work-items-excel).

### Copy or clone a work item

Copy an existing work item (backlogs/bulk-modify-work-items#copy-clone) or bulk copy several using Excel (office/bulk-add-modify-work-items-excel).




### Rich text comments

Describe and comment on work to perform using formatted text, hyperlinks, and inline images (backlogs/add-work-items). Click or to expand or contract the viewing area.

### Remove or delete a work item

Remove work items from the backlog by changing their State to Removed. Or, move them to the recycle bin (Team Services) or permanently delete them (backlogs/remove-delete-work-items).


### Work item templates

Quickly add new work items based on templates with pre-populate values for your team's commonly used fields (productivity/work-item-template).

### History & auditing

Review and query work item change history (track/history-and-auditing) to learn of past decisions and support future ones.

### Attachments

Add emails, documents, images, log files, or other file types (backlogs/add-work-items#attachments) to support collaboration of work in progress.

### Discussion (Team Services)

Add or review comments (backlogs/add-work-items) added to a work item. Start by clicking the discussion icon.

### Git development (Team Services)

Follow you development processes associated with your work by adding or linking to branches, pull requests, and commits in the Development section (backlogs/add-work-items#git-development).

### Add or modify a field

Add a custom field (Team Services (process/customize-process) | TFS (customize/add-modify-field)) to support tracking additional data requirements or modify an existing field to apply optional rules.

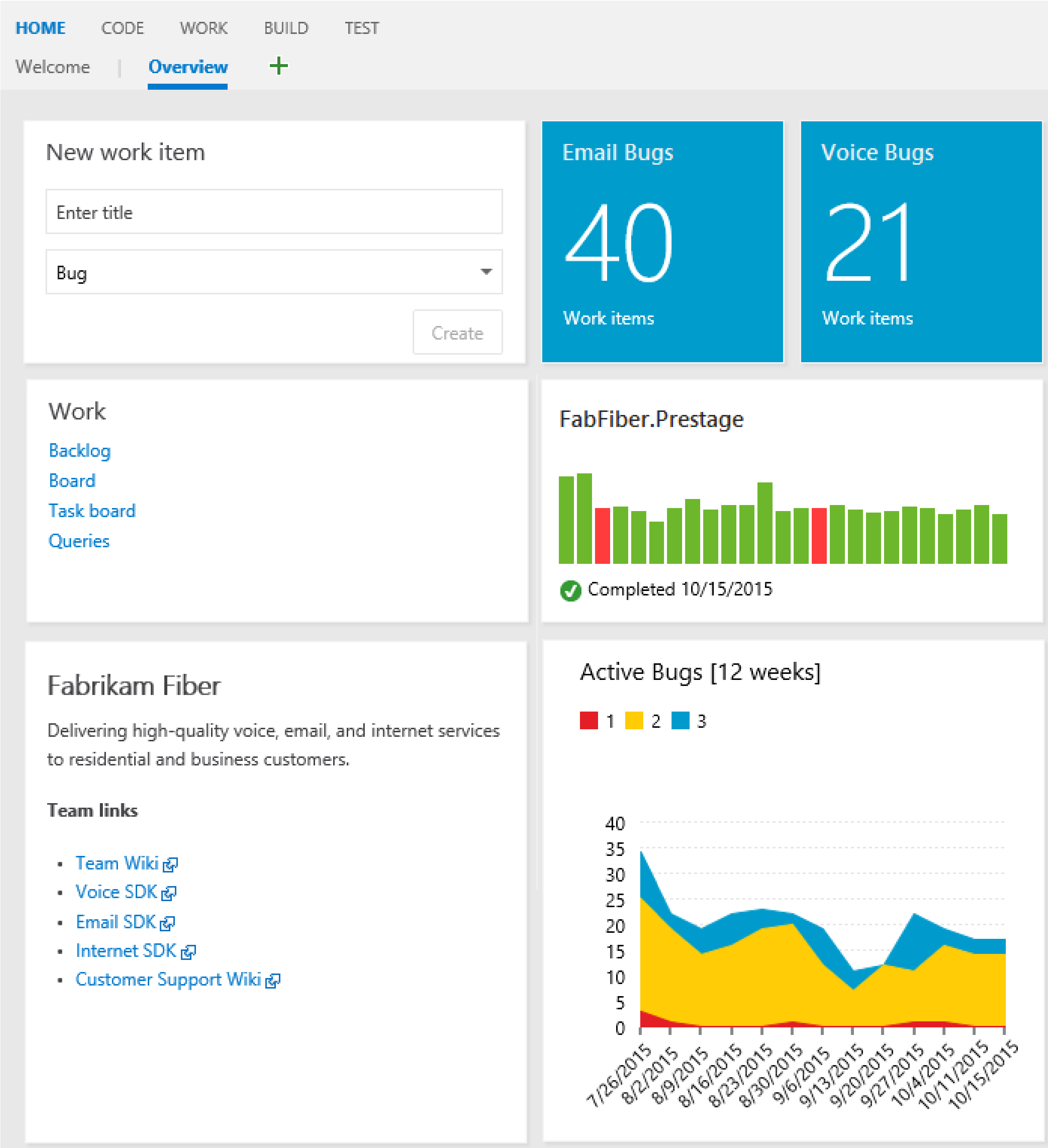
### Restrict access

Limit who can create or modify work items or a work item field (https://msdn.microsoft.com/library/dn249791.aspx) based on area path, work item type, or based on your specific conditions.

| | | |
|---|---|---|
| | | **Field index**<br><br>Find descriptions and usage information for each field from the field index reference (guidance/work-item-field-index). |

## Charts and dashboards

Team dashboards (../report/dashboards) provide a centralized location for keeping both the team and stakeholders in sync. Each dashboard tile provides quick access to the progress of builds, status of work items, or latest code changes.




**Multiple team dashboards**

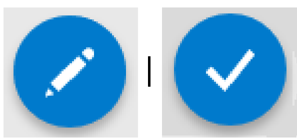
Each team can create several team dashboards (../report/dashboards) to help keep both the team and stakeholders in sync. Each dashboard tile provides quick access to the progress of builds, status of work items, or latest code changes.

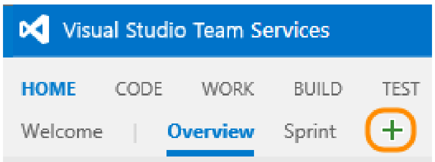
**Capacity planning and tracking**

Easily track how much work your team has completed and has left to do in a sprint by adding the sprint capacity chart widget (../report/widget-catalog#sprint-capacity-widget) to your dashboard.

**Edit dashboard mode**

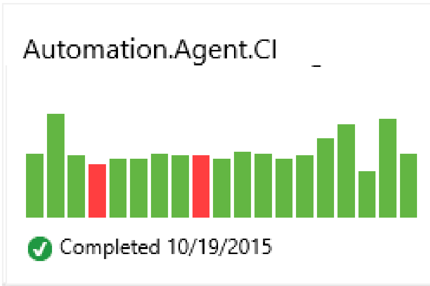
Add, remove, move, and configure widgets by clicking the Edit dashboard icon (../report/dashboards). Click the checkmark icon to exit.





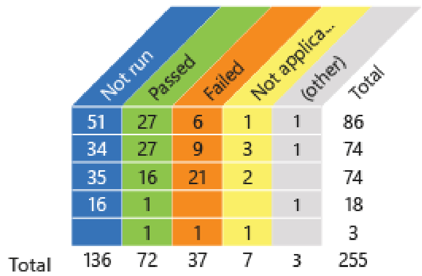

## Build summary charts

Add build summary charts to your dashboards (../report/add-a-chart-dashboard).



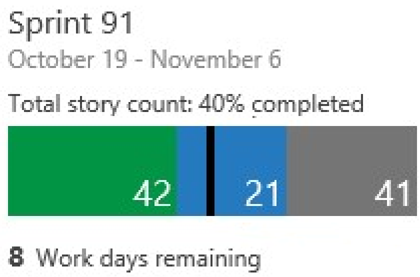

## Work item and test charts

Track status and trends of work items (../report/charts) or test progress and test runs (https://msdn.microsoft.com/library/dn282443.aspx). Optionally add these charts to a dashboard.




## Work item query charts

View the status of work in progress by charting the results of a flat-list query (../report/charts). You can create several types of charts—such as pie, column, or trend—for the same query. Optionally add these charts to a dashboard.

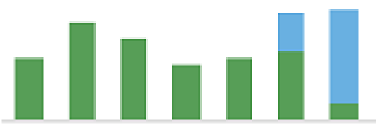



## Share dashboards with stakeholders

Grant non-licensed users access as Stakeholders (Team Services (../setup-admin/team-services/assign-licenses-to-users-vs) | TFS (connect/change-access-levels#stakeholder)) so they can view progress, run queries, and contribute ideas.

## Velocity charts

The team velocity chart (scrum/velocity-and-forecasting) tracks the total estimated effort (story points or size) of backlog items (user stories or requirements) completed or still in progress within each sprint.



## Sprint burndown charts

Monitor progress and review team patterns from sprint burndown charts (scrum/sprint-burndown)


## Widget catalog

Add widgets (../report/widget-catalog) to your dashboard to provide the information and monitor the data your team needs. by accessing a growing.

## Drag-n-drop layout

Configure the layout to your specifications by dragging tiles into the sequence you want (../report/dashboards).

## Cumulative flow diagrams

Track the progress of work on your backlogs through the CFD charts (kanban/kanban-basics).

## Power BI dashboards (Team Services)

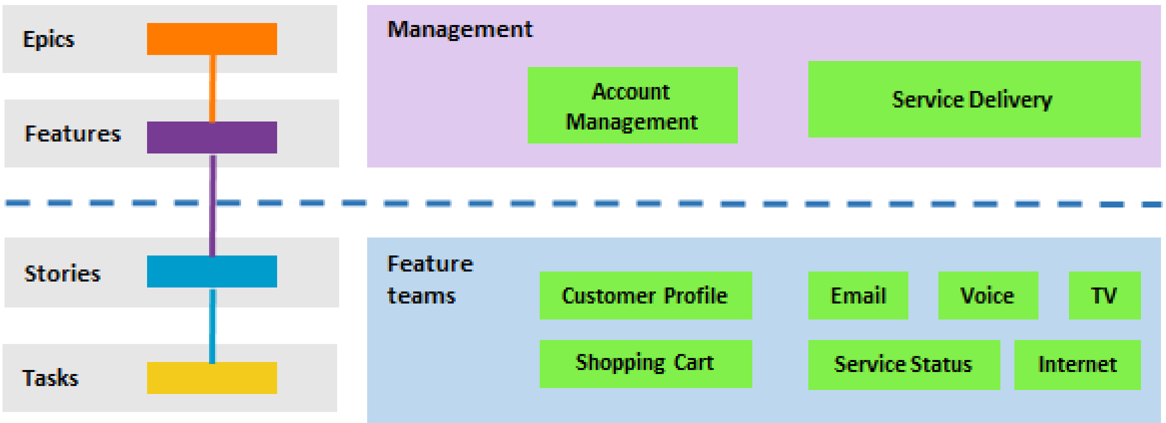
You can create dashboards, individual reports, or explore data collected for your Visual Studio Online account once you connect to Power BI (../report/powerbi/report-on-vso-with-power-bi-vs).

# Scale

How do you manage work across the enterprise using Agile tools? How will you scale your Agile tools to support your growing enterprise?

As your organization grows, your tools can grow to support a culture of team autonomy as well as organizational alignment (scale/culture). You can also:

- Add and structure teams (scale/multiple-teams) and organize work to gain the best of both worlds: team autonomy and organizational alignment. Teams can manage their work independently of one another.
- Manage your team assets and add team administrators (scale/manage-team-assets).
- Manage a portfolio of backlogs (scale/portfolio-management) and gain insight into each team's progress as well as the progress of all programs.




- Incrementally adopt practices that scale (scale/practices-that-scale) to create greater rhythm and flow within your organization, engage customers, improve project visibility, and develop a productive workforce.
- Structure team projects to support epics, release trains, and multiple backlogs to support the Scaled Agile Framework (scale/scaled-agile-framework).

# Related notes

You access tools provided by Team Services and TFS by connecting from a client to the server, either in the cloud or on-premises. Some tools require an Advanced license or Advanced access.

- **Team Services**: Add users and assign licenses in Visual Studio Team Services (../setup-admin/team-services/assign-licenses-to-users-vs)
- **TFS**: Change access levels (connect/change-access-levels)

See the Feature index (https://msdn.microsoft.com/library/vs/alm/overview/alm-devops-feature-index#Relatednotes) for an end-to-end overview of all Team Services and TFS features.

## Team projects and process

- Get started with Team Services] (../overview)
- Choose a process (guidance/choose-process) | Process guidance: Agile (guidance/agile-process),

CMMI (guidance/cmmi-process), Scrum (guidance/scrum-process)
- Create a team project (../setup-admin/create-team-project) | Connect to team projects (https://msdn.microsoft.com/library/ms181475.aspx)
- Work as a stakeholder (no client access license required) (connect/work-as-a-stakeholder)

## Team Foundation clients and additional tools

- Choose the client to support your task (https://msdn.microsoft.com/library/ms181304.aspx)
- Web portal (https://msdn.microsoft.com/library/ee523998.aspx) | Team Explorer (https://msdn.microsoft.com/library/hh500420.aspx) | Team Explorer Everywhere Eclipse plug-in (https://www.visualstudio.com/features/team-explorer-everywhere-and-eclipse-vs.aspx) | Excel (office/bulk-add-modify-work-items-excel) | Project (https://msdn.microsoft.com/library/ms181675.aspx)
- Compatibility and Team Foundation clients (https://msdn.microsoft.com/library/vs/alm/tfs/administer/requirements#Clientcompatibility)

## Customize work tracking

| Team Services | TFS |
|---|---|
| • Customize a process (process/customize-process)<br>• Manage a process (process/manage-process)<br>• Add or modify a field (process/customize-process-field)<br>• Customize a work item form (process/customize-process#groups)<br>• Review fields (process/customize-process-field#review-fields)<br>• Configure and customize (customize/customize-agile-tools)<br>• New work item experience (process/new-work-item-experience) | • Add or modify a field (customize/add-modify-field)<br>• Add or modify a work item type (customize/add-modify-wit)<br>• Configure and customize (customize/customize-agile-tools) |

## Reference

- Index of work item fields (guidance/work-item-field-index)
- Reportable field reference (https://msdn.microsoft.com/library/jj153003.aspx)
- Technical reference (https://msdn.microsoft.com/library/dd236913.aspx)
- Permissions reference (../setup-admin/permissions)
- Integrate with Service Hooks (../service-hooks/authorize)
- REST API reference (https://www.visualstudio.com/integrate/api/overview)