Resource management in project service automation capabilities for Microsoft Dynamics CRM

VERSION: 1.0

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RELEASED: July 2016

Microsoft Dynamics CRM

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Audience

Customers, partners, and independent software vendors of Dynamics CRM Online are the target audience of this document. The goal of this document is to provide awareness about the supported scenarios and features that are built into resource management for project service automation capabilities for Microsoft Dynamics CRM.

Key concepts

Concept	Definition
Project team member	An entry in project team that can be a named resource with or without booking. A project team member can be a generic resource with booking as well.
Project generic resource	A resource placeholder that is used to form a team and staff a project plan without knowing the named resource. Project calendar is set as the generic resource calendar. Generic resources can be hard-booked, assigned to tasks, and overbooked.
Booked hours	A resource capacity that's hard-booked against a project.
Assigned hours	Booked hours that are assigned to tasks in project work breakdown structure. Assignment cannot happen before booking.
Required hours	Required capacity that is not yet fulfilled by a named resource.
Demand	Resource requests that can be expressed as: • Resource requirements associated with a project team member • Resource request • Standalone resources requirement
Resource requirement	The entity that is used to capture required hours, start and end dates, skills, geography, and pricing information for the required resources. Requirements can be one of following two types: • New • Extend

Resource request	The entity that is used as an envelope to carry the resource requirement to be fulfilled by a resource manager.
Resource default role	The role that a resource will be grouped under. The role assumes that a resource has the skills that the role requires and meets the target utilization for the role.
Work hours	The entity that is used to identify resource capacity, working hours, and non-working hours. It's also called calendar.

Supported scenarios

Resources are the most important asset of a service-based organization. The ability to find the right resources at the right time, book resources on projects, and keep resources utilized helps organizations meet revenue targets and improve customer satisfaction. Here is the high-level list of supported scenarios:

Web experiences

- Forming a project team by booking qualified resources that are available
- Automatically generating a project team from the roles that are required on tasks in project work breakdown structure
- Skills matching by identifying skills that are required on the demand against resource skills
- Skills matching by using skills that resources have reported time against and the time that is approved
- Substituting resources
- Aligning project schedule and resource allocations when a project has a work breakdown structure
- Interactive visual resource availability view that provides visibility into what resources are doing and makes changes to resource bookings by factoring in resource out-of-office status
- Support for central or hybrid resource allocation
- Resource request collaboration tool to enable collaboration between project managers and resource managers
- Resource utilization heat map to help with historical resource utilization and breakdown of how resources have utilized their time
- Visibility into what resources are doing by using resource project and work order bookings
- Approval or rejection of requests by resource line managers for resource skills and proficiency update
- Maintaining skills and skills proficiency repository
- Planning required capacity that's based on demand on projects
- Resource management dashboard
- Setup experience
- Resources
- Roles
- Skills
- Proficiencies
- Central/hybrid toggle
- Controlling the content that will be visible in the mobile experience

Mobile experiences

- Enabling resources to have visibility into selected projects and being able to sign up for project work
- Enabling resources maintain their skills and skills proficiency
- Providing a notification experience to notify users of resource sign up, accepting an applicant or rejecting an applicant.

Highly collaborative

- Collaboration among stakeholders by using Skype for phone calls, instant messaging, or email
- Email notifications when resources sign up for work, when requests are approved, or when requests are rejected

Global pool of resources for organizations with both field service and project service automation

- Shared pool of resources that can be booked on projects and work orders
- Unified view into resource bookings made on projects and work orders
- Lightweight navigation to provide visibility into the work that resources are doing by using the field service capabilities for Microsoft Dynamics CRM schedule board and resource availability view)

How to

Go to the resource manager dashboard

The Resource Manager Dashboard is the tool that a resource manager uses to inquire into:

- Firm demand, which is submitted resource requests that are aggregated either by role or by project.
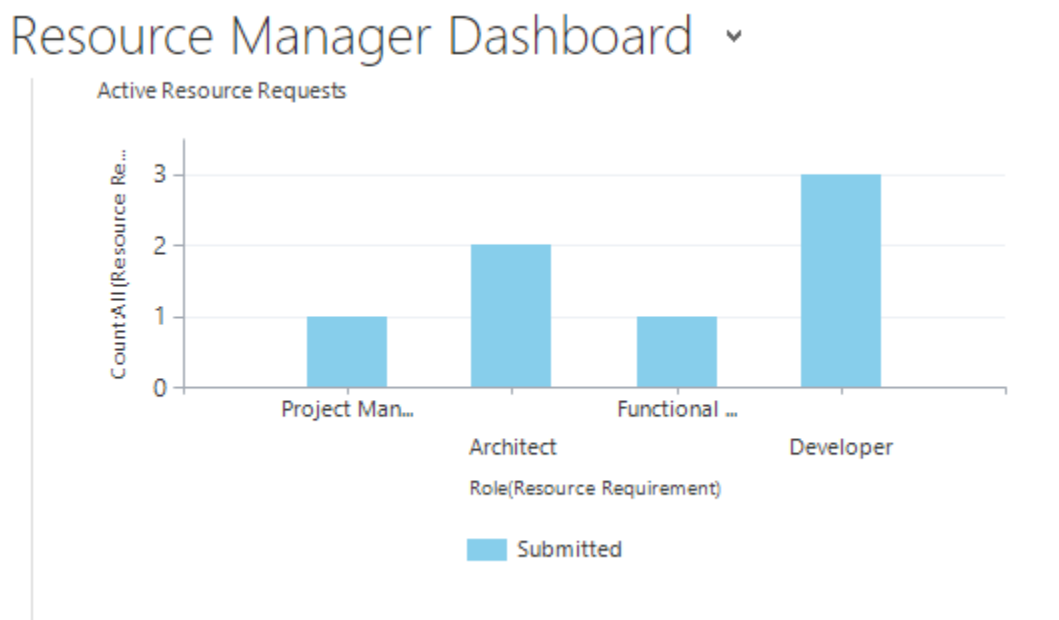

- Unassigned resource requirements (submitted demand).

  This chart represents all resource requirements that are not submitted. The chart helps a resource manager view demand that is not firmed and may or may not be submitted.

Resource Demand Distribution ∨

🏦 Unassigned Resource Demand ∨
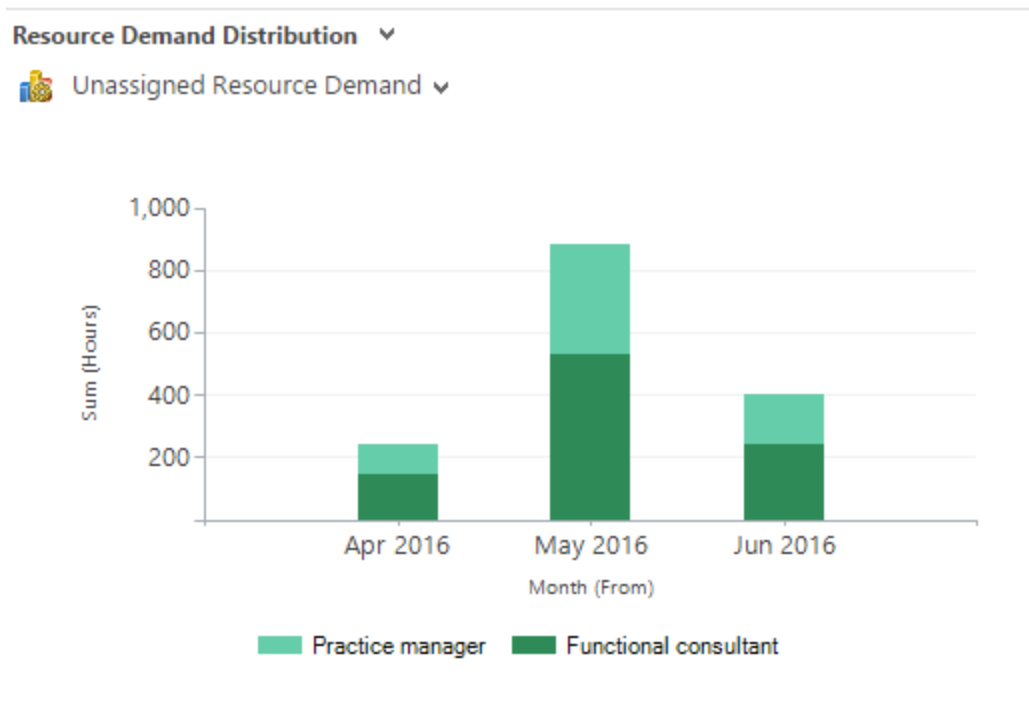
- Billable utilization chart (past-week billable utilization).
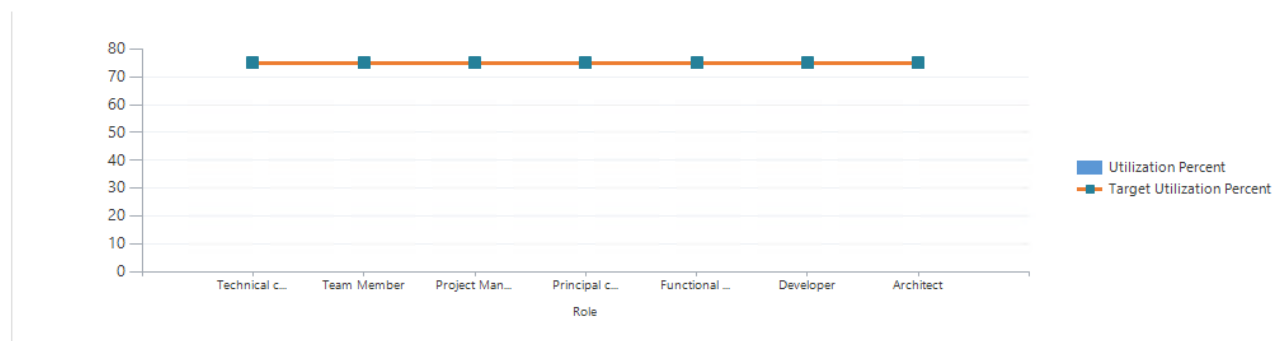
To display this chart, you need to run the **UpdateRoleUtilization** process. The process will be a recurring job that starts every seven days and calculates billable utilization for the last seven days aggregated by role.
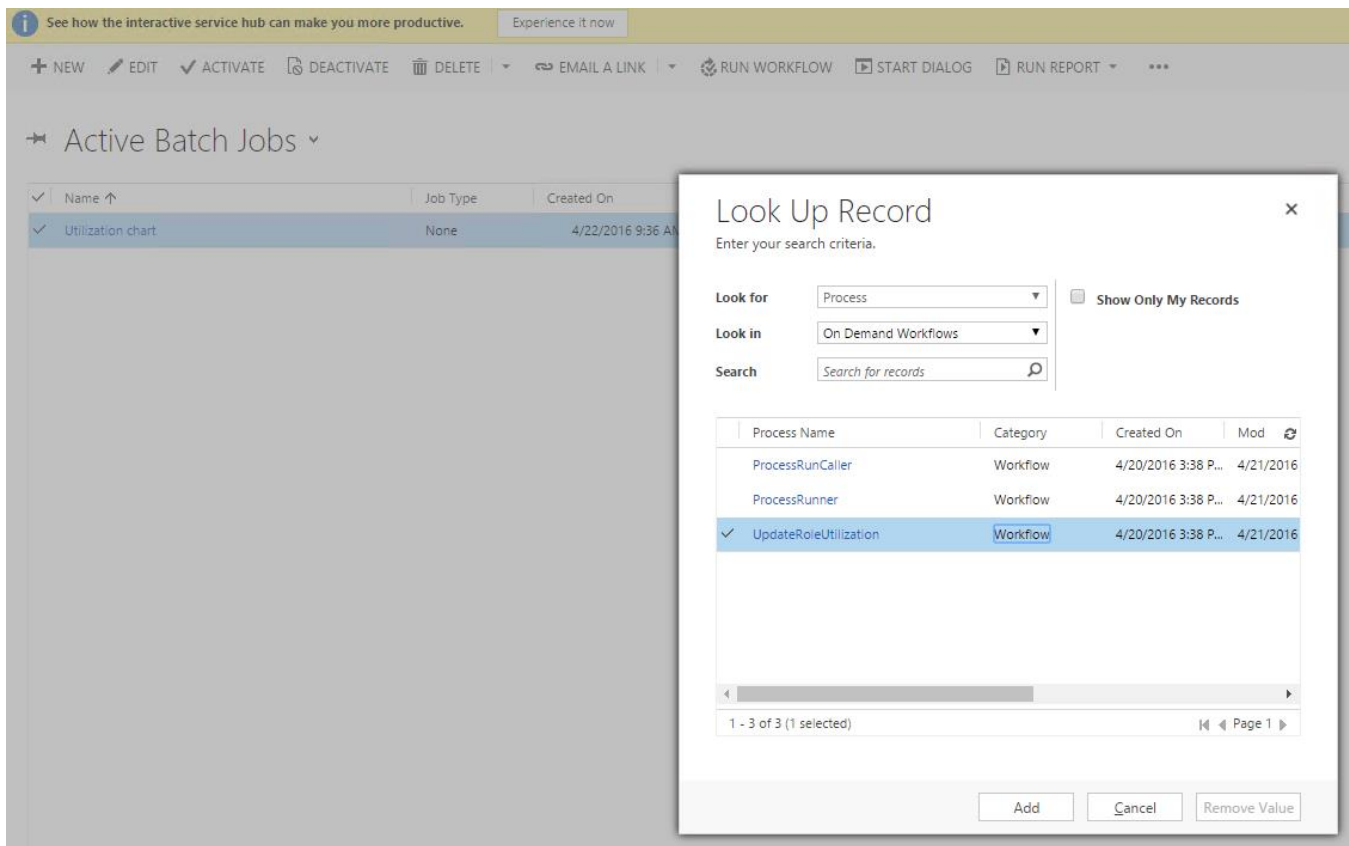
Add a project team member

1. In the **Project** area, in the **Team** section, click the **Add** button (+).
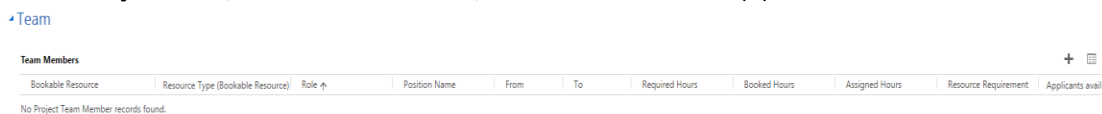
2. In the **Project Team Member** form, choose an option:
   * Book a named resource in the **Bookable Resource** field.
     Choose the name of the resource, the role, the time period, and an allocation method. The process will book the named resource by using the allocation method and resources calendar.
   * Book a generic resource.
     Leave the **Bookable Resource** field empty. Choose the role, time period, and preferred allocation method. A resource placeholder (generic resource) will be added to the team to hold the demand pattern, which will be used to book resources on the team. The booking will be made according to the project calendar.
   * Add a named resource to the team without booking resource capacity.
     Select a resource in the **Bookable Resource** field, select the time period, and select **None** for the allocation method. The resource will be added to the team without any booking.
        * Allocation method has the following options:

- Full capacity
  Book all resource capacity between the **From** value and the **To** value according to the project calendar for generic resources and according to the resources calendar for named resources.
- Percentage capacity
  Book the specified percentage of resource capacity between the **From** value and the **To** value.
- By hours – distribute evenly
  Distribute the hours that a user enters evenly between the **From** value and the **To** value.
- By hours – front load
  Book the first available slots in the resource calendar.

Book a team member to fulfill resource requirements captured by a generic resource

In project service automation, demand can be defined by booking a generic resource on the team where you specify how the required capacity needs to be distributed. You can also specify additional attributes like skills, cost price, and preferred resource, on the resource requirements that are associated with the generic resource.

1. Book a generic resource on the team (same as the **Book a generic resource** option in the previous list).

2. Add skills that are required for the generic resource.
   In the Team section, in the **Resource Requirement** column, click the **Requirement** link.

3. In the **Skills** area, add skills.

4. Click **Hard Book**.

The most skilled resources will be on the top of the list, and their availability status will be highlighted on the screen.

5. Point to a resource to show additional information about the resource and the skill match relative to demand.

6. To change how resources are sorted on the screen, click **Sort**.

When skills are defined on demand, the sort will be automatically set to **Skill**, and the most skilled people will be at the top of the list. If you select **Availability**, the resources with the largest number of available hours (total) will be at the top of the list.

7. Select the resource, and then click **Book**.

Booking is an automatic action, and just one resource can be booked to satisfy the demand.

8. Verify that the resource is booked on the team.

Hard-booked hours are displayed under the **Booked Hours** field in the **Team Members** list.

Make changes to resource bookings after resources are booked on the project

You can make changes to bookings for generic resources or named resources after you add them to the project.

- In the **Team** section, click **Maintain Bookings**.

The project team member will indicate hours that are booked against this project or other projects to consume the member's capacity. Now you can double-click a cell on a project in a

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time period and make changes, or use Autofill to fill out the cells.

Submit resource requests to be fulfilled by a resource manager

A resource request is the entity that carries the demand that a resource manager fulfills. You can submit a resource request directly for a generic resource on the team. Out of the box, the following two resource request types are supported:

- New resource requests
  1. To submit a resource request for a generic resource on the team, select the generic resource, and then click the **Submit Request** button in the team list:

  2. The system will ask to you to provide comments that will be visible to the resource manager who fulfills the request. After submission, the **Status** field changes to **Submitted**.

     When a resource manager proposes a resource, the **Status** field will change to **Proposed**.

  3. Double-click the record that has the **Proposed** status and scroll down to see the proposed resources.

Proposed Resources

Requirement — Required Capacity: 340 Hours
Functional consultant

MARCH 27	APRIL 3	APRIL 10	APRIL 17	APRIL 24	MAY 1	MAY 8	MAY 15	MAY 22	MAY 29
20	20	20	40	40	40	40	40	40	40

4. To accept the proposed resources, click **Accept Proposal**. The yellow bar on the top of the screen identifies that resources are booked. You will go to the Team list where the proposed resources will be hard-booked as team members.

   Note: You cannot partially accept proposed resources. You can accept as a whole or reject as a whole.

- Extension to an existing resource booking

  In many scenarios, you will need to extend the booking of a team member.

  1. Click **Maintain Booking**, select the time period and resource that you want to extend on the project, and then click **Create Extension Requirement**.

Maintain Bookings

Project Name	Total Hard Booked Hours	Total Soft Booked Hours	Requested Hours
CRM Implementaion	0.00	480.00	0.00

< 3/28/2016 - 6/3/2016 >   DAY WEEK MONTH

	MARCH 27	APRIL 3	APRIL 10	APRIL 17	APRIL 24	MAY 1	MAY 8	MAY 15	MAY 22	MAY 29
Abraham McCor... Functional consultant	20	20	20	40						
CRM Implementaion	20	20	20	40						
Bernadette Foley Functional consultant					40	40	40	40	40	40
CRM Implementaion					40	40	40	40	40	40
Gracie George Developer	40	40	40	40	40	40	40			
CRM Implementaion	20	20	20	20	20	20	20			

  2. Choose the allocation method, and then click **OK**. You can submit a request immediately or just add a generic resource as a placeholder. Click **Yes**.

3. Go back to the team where an extension request for the resource is being generated to see the name of the resource in the **Resource Requirement** column.

When the resource manager satisfies the extension request, the original booking record will be updated to reflect the new start date, end date, and booked hours.

Substitute a resource on a project team

1. On the project team, select the resource that you need to find a substitute for, and then click **Maintain Booking**. You can substitute the resource for an entire project duration or for a specific time period. In this example, we want to substitute the resource from mid-May to the end of May.

2. Click **Find Substitute** to show recommended resources that have the same role and the availability status of the resources.

3. Select a resource, and click **Substitute Resource**.

Fulfill resource requests

Resource managers are in charge of fulfilling resource requests that different personas submit to get needed resources.

1. To fulfill a request, go to **Project Service** > **Resources** > **Resource Requests**.
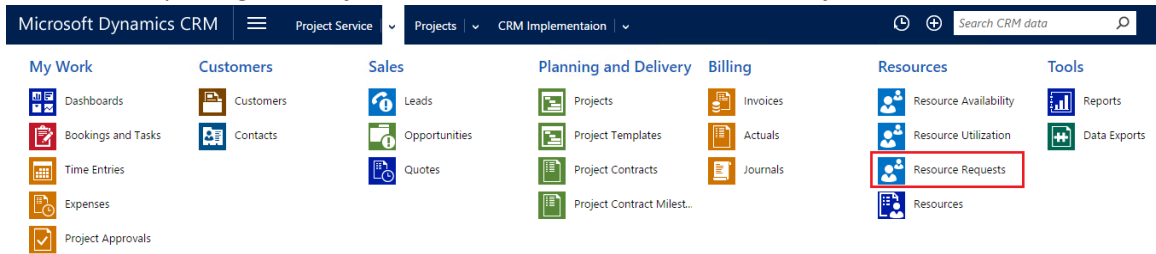
You will see the list of resource requests sorted by request creation date.

2. Select a resource request, and then click **Find Resources**.

Because a resource manager is a power user, the following capabilities are available only to a resource manager:

- Propose a resource
  Propose one resource to satisfy the required number of hours. This will provide an option for the requestor to either accept or reject the proposed resource.

- Propose more than one resource to satisfy the demand
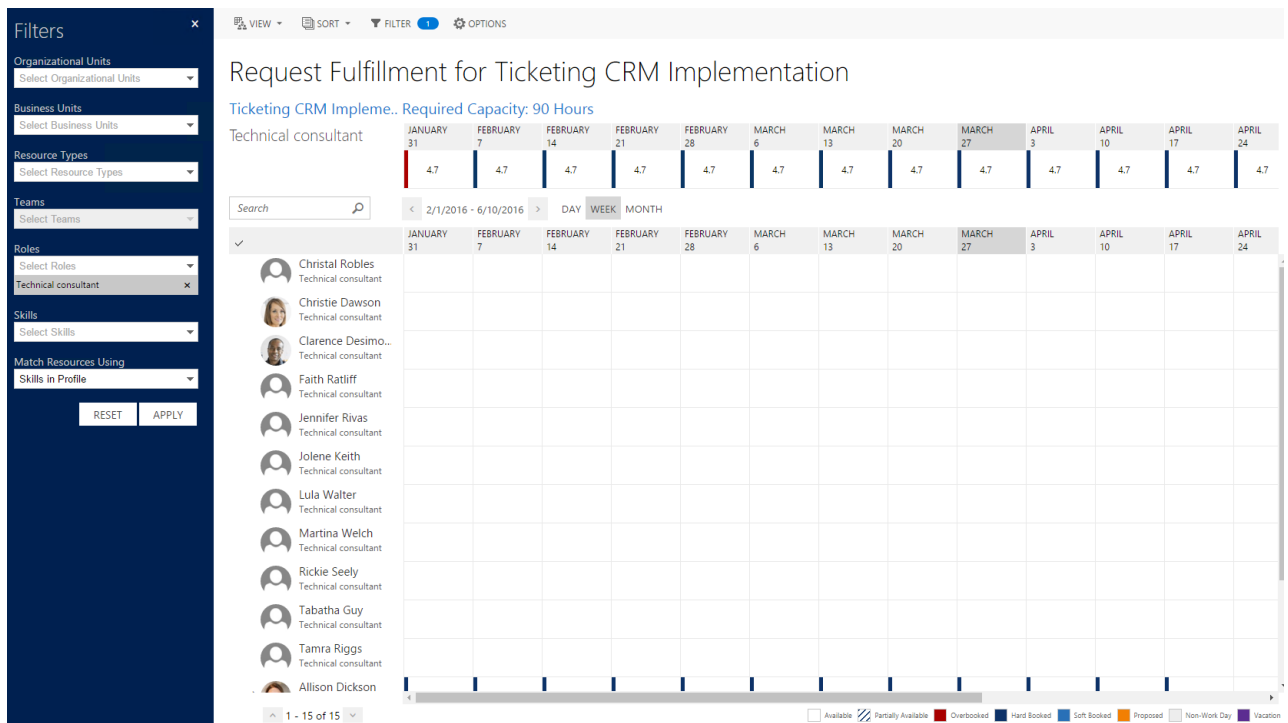 Proposed hours are split between multiple resources that together can satisfy the required hours. The hours cannot overlap in this scenario. This happens when no single, available resource can fulfill the required hours.

- Propose fewer resources than are needed
  Proposed resource capacity is less than the required hours that the requestor specified. In this scenario, when the requestor accepts the proposed resources, a resource requirement will be created to capture the remaining demand.

- Book multiple resources to satisfy the demand
  Because one resource is not available to get the work done, more than one resource can be booked.

- Book fewer resources than are needed
  Booked hours are fewer than required hours. The system will guide the user to propose resources instead of booking so that the requestor can verify and keep track of remaining demand.

Inquire about historical utilization

Resources have a target utilization that's defined as an attribute on their default role or that's set in an individual resource record. Calculation of utilization is based on actual hours that resources have reported. The following formulas calculate utilization:

billable utilization = chargeable actual hours / resource capacity

non-billable utilization = actual time with billing type id as non-chargeable, complementary or not available/ resource capacity

internal = actual time with no sales contract / resource capacity

resource capacity = resource work hours – out of office - non working days

To open the resource utilization heat map, go to **Project Service** > **Resource** > **Resource Utilization.**
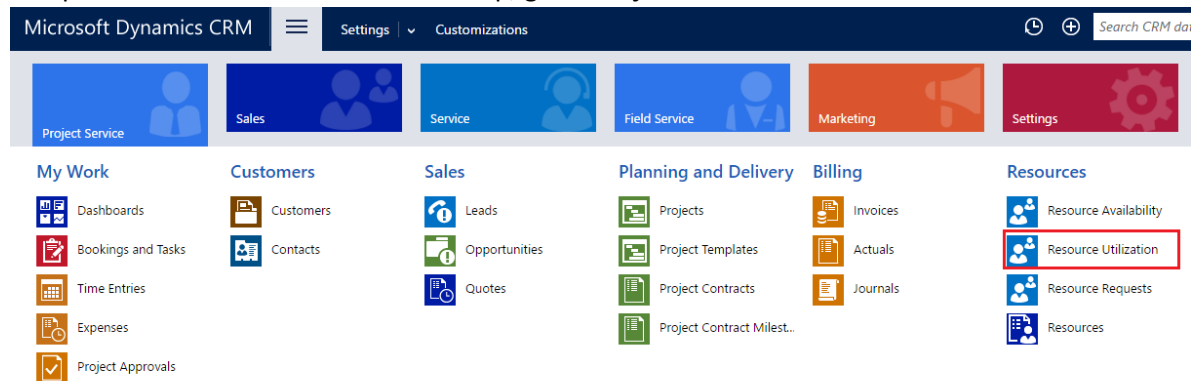
Here's the utilization heat map:

Each cell represents the billable utilization of the resource in a time period and uses the following formulas to color the cells:

Green: billable utilization >= resource target utilization

Yellow: target utilization – 20 <= billable utilization < target utilization

Red: billable utilization < target utilization – 20

Point to a resource to show a resource card that shows the utilization of resources, which includes the start date and end date next to the search box.

Inquire about availability of resources

Enabling resource managers to view the availability of resources and make changes to bookings is a crucial task. In some instances, there is no formal demand (resource request), and a resource manager needs to respond to an impromptu demand that comes through an email, phone call, or other method. Resource managers use the availability view to update resources and bookings.

Resource work hours are the basis for the calculation of the availability of resources. Color coding that's used on the user interface (UI) to mark availability status of resources are:
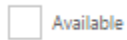
Available

Resource is fully available according to his or her working hours.

Partially Available
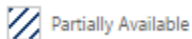
Resource is partially available. This can happen when part of a resource capacity is hard-booked on other projects or when a resource is on vacation for part of a time period.

Overbooked
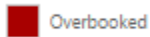
Resource hard-booked hours exceed resource capacity for the displayed time period.

Soft Booked

Resource has soft-booked hours in the displayed time period.

Proposed

Resource has the proposed capacity on projects. Proposed hours are visible only to resource managers and project managers who submitted the resource request.

Non-Work Day
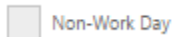
Resource has non-working days according to resource work hours.

Vacation
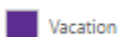
The entire capacity of a resource is marked as out of office.

Book resources on projects (hard and soft booking)

- Select resources, and then select **Book**.

In this scenario, selected resources will be booked for the time period on the date selector on a project.

Booking Type provides **Hard Book** or **Soft Book** options. Hard bookings are marked as solid blue in the resource calendar. When you exceed the resource capacity in a time period, the resource will be overbooked. To select non-adjacent cells from multiple resources, press the Ctrl key while you select the time periods that you want to book on projects.

Make changes to resource bookings (increase, reduce, and release)

The number of booked hours that is displayed on the availability UI is hard booked by default. To show other types of bookings, go to **Options**, and select **Booking Display Type**.
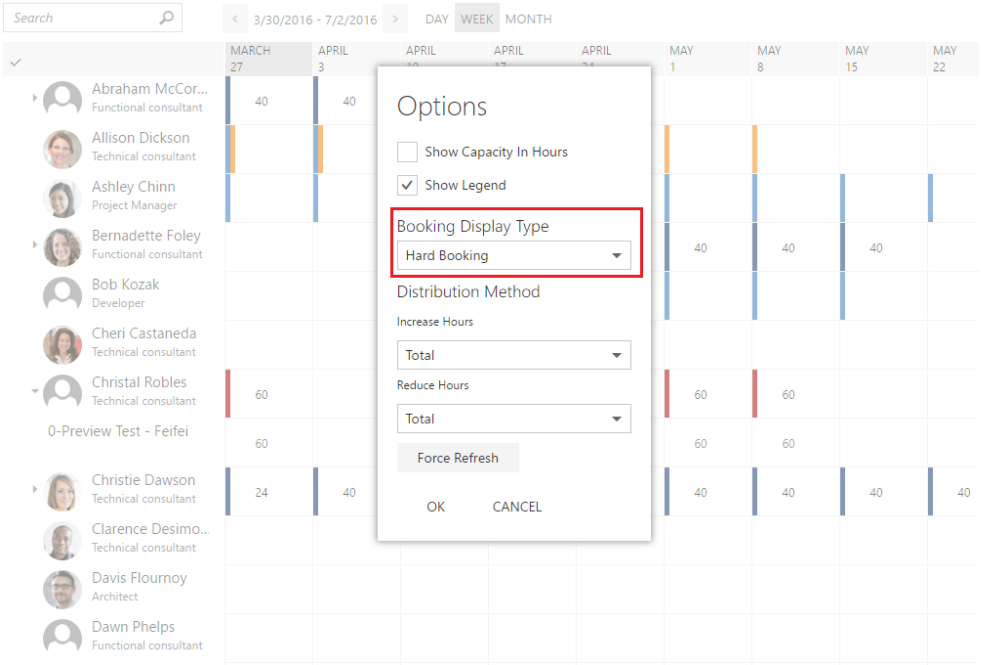
To edit booked hours of resources on projects, click the " ▶ " indicator next to the resource name, and then double-click the cell that you want to edit. You can autofill or manually enter hours.

To control how the increase or decrease of hours will be distributed, go to **Options**, and then select the desired

option for **Increase Hours** and **Reduce Hours.**

Options

☐ Show Capacity In Hours

☑ Show Legend

Booking Display Type

Hard Booking ▼

Distribution Method

Increase Hours

Total ▼

Reduce Hours

Total ▼

Force Refresh

OK   CANCEL

Increase hours:

- Total

  Cancel existing booking and assignments and redistribute hours equally between start date and end date.

- Proportional

  Add hours proportionally to the original booked hours pattern.

- Front load

  Add hours by using available spots in resource capacity.

- Equal

  Add hours equally between start date and end date.

Reduce hours:

- Proportional

  Release the delta proportionally to the original booked hours pattern.

- Total

  Cancel the original booked hours, and rebook the new hours that the user entered.

Filter resources by using rich filters (skills, team, organizational unit, and so on)

When you schedule availability without demand (resource request or a generic resource):

- Organizational unit

  Current resource organizational unit

- Business unit

  Current user business unit

- Resource types

  Users and contacts

- Team

  Access teams that the current user is an administrator of. When the business unit is set, teams that are in same business unit will be filtered.

Match resources by using:

- Skills in profile
  Skill-matching uses the skills and skills proficiency that are set in a resource profile. When this option is selected, required skills and the skills proficiency that is set on the skills filter will be matched against resource skills and skills proficiency.

  The ranking algorithm lists the resources that are at or above the skills requirement (required skills and skills proficiency) on the top of the list.
- Skills demonstrated

In many companies, skills might not be tracked for resources. Almost all service industry organizations track time that resources use in a time entry or directly in the journal. The roles that are used to record time against will be the proxy so that users get credit for all the skills that are associated with a role.

Resources will get credit for skills when:

In time entry, reporting time against a project on a specific role and time is approved
    Or
Directly going to Journal and reporting Time (transaction class = Time)

Set the project status to Complete

- In the Availability view, set the **Match Resource Using** filter to **Skills Demonstrated**.
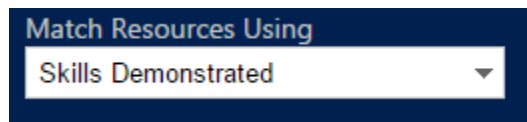
Signing up for work by using the Project Finder phone app

This app enables resources to:

- Have visibility into selected project work and sign up for it.
- View and update their skills and skills proficiency on the phone.

The app is available on the following three platforms:

- iPhone
- Android
- Windows phone

To enable app features, an administrator will need to set the following two attributes to **Yes** on project service automation parameters:
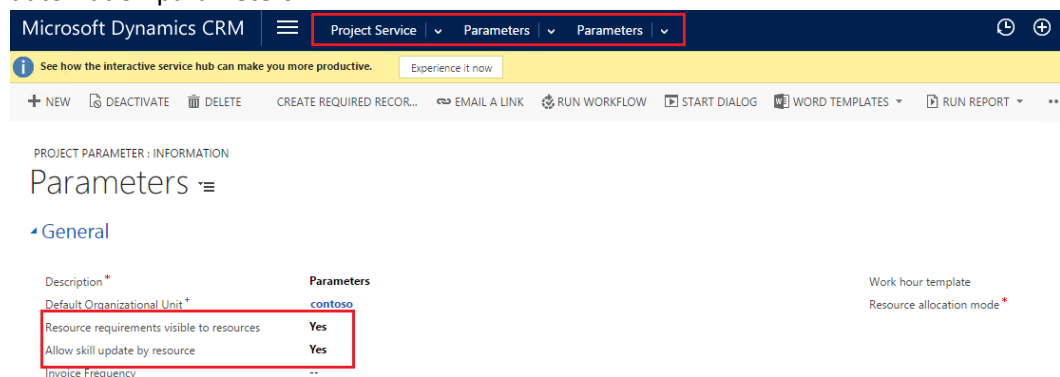
This is a global setting. Each project manager can also control whether project work will be visible to resources on a project-by-project basis on the project team grid.

After you install the Project Finder app, you must enter the URL of the CRM Online server that your organization is using. This app does not work for on-premises CRM installations.

Enter the URL of the server that your organization is using:
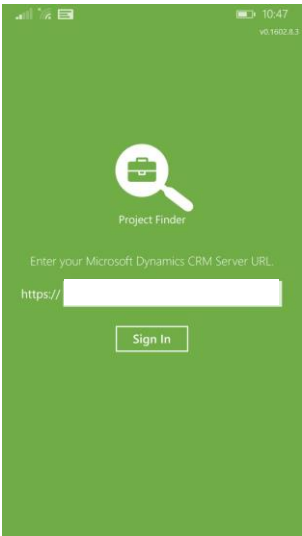
The app models each project work item as a generic resource with required hours on the project team. For each work item, the app will rank skills and skill proficiencies against the skills and skills proficiencies of the resource. Project work items that a resource meets or exceeds will be at the top of the list.

If you click the arrow next to a work item, you'll see the project work requirements. A check mark indicates that the resource satisfies the requirements:
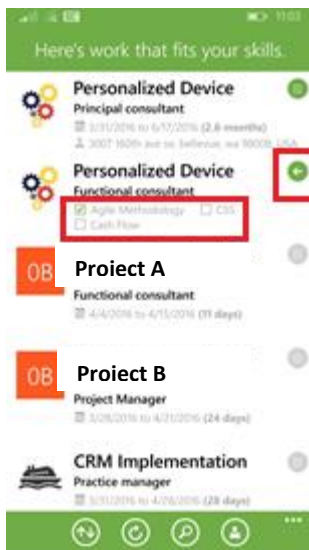
You can also sort the projects by using the following filters:

- Skills

  Default filter, the project work for which the skills of the resource exceed or meet the requirements will be on the top of the list.

- Connections

  Using Delve, indicates the project in which you have the most connections will be on the top of the list.

- Earliest start date

  Project work that starts sooner will be on the top of the list.

- Duration

  The project that has the shortest duration will be on the top of the list.

A resource can open a project work item to see details about the item and apply for it.

To view their profiles, resources click the profile icon, where they can add or modify their skills and skill proficiencies.

When submitted, skills that have **Yes** in the **Require Approval** field will be sent to a line manager of the resource to be approved. Skills that have **No** in the **Require Approval** field will be automatically approved.

To approve or reject skills, a line manager (approver) goes to the **Project Approvals** page to click the **Skill Approval** button.

Email notifications

Email notifications will be sent to following personas in specific scenarios:

Persona	Scenario
Project manager	When a resource signs up for work by using the Project Finder app.
Consultant	When the project work that a resource has signed up for is already fulfilled by another resource.
	When a resource skill approval request is approved or rejected.
	When a resource sign-up request is accepted.

	When a resource sign-up request is rejected.

Unified view into resource bookings made on the field service and project service automation

As you share resources between operations in the field service and project service automation, their bookings will be visible on the project service automation resource availability view and field service schedule board. Here is an example:

Resource availability view:

Users can point to the work order to see more information about the work order and go to the work order.

> **Note**: You cannot edit work order bookings in resource availability UI. You can point to the work order to go to it and make changes.

Here is the corresponding view on the schedule board:

> **Note**: You cannot edit project bookings in the schedule board. You need to go to the Availability area to make changes.

Shared entities between project service automation and field service:

Here is the list of share concepts, although the physical entity name could be different:

- Booking (reservation table)
- Booking status
- Resource category (role)
- Resource
- Rating model
- Rating value
- Characteristics (skills, certification)
- Work hour

Frequently asked questions

What is the difference between a team member and a resource requirement?

A resource requirement can exist without a project team member. A resource requirement functions as a draft note of what you need. Project team members can be assigned to tasks, can be overbooked, and can be set as approvers.

What is the difference between proposed hours and soft-booked hours?

They differ in two ways: visibility and weight. Proposals are visible just to resource managers and the project manager who has initiated the demand. Soft-booked hours are visible to everybody. When you're doing capacity planning, which is not supported out of the box, soft-booked hours have higher weight than proposed hours.

How can I see the resource soft-booked hours on the team?

Only resource managers can make soft bookings. You need to add the soft-booked hours on the project team grid manually.

I have booked a resource (generic or named resource). How can I change the required hours, start date, and end date?

After the resources are booked, changes to bookings are done by using **Maintain Booking**.

What types of resources are supported out of the box?

User and contact are the two supported types of resources. You can create other types of resources, such as equipment, group. etc., but there is no supported end-to-end story in project service automation for them.

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