# Contents (click topic to jump to section)

- Resource Mailboxes in Exchange ................................................................. 1
- Overview ............................................................................................................ 2
- Resource Mailbox Features ............................................................................... 2
- Resource Scheduling ......................................................................................... 3
- Feature Comparison .......................................................................................... 4
- Feature ............................................................................................................... 4
- Outlook Direct Booking ...................................................................................... 4
- Auto Accept Agent ............................................................................................ 4
- Resource Scheduling ......................................................................................... 4
- Creating Resource Mailboxes ............................................................................ 5
- Granting Delegation to Resource Mailboxes .................................................... 10
- How to Configure Resource Mailbox Custom Properties ............................... 11
- Maintain Resource Mailboxes with the Exchange Management Console 12
Overview
Exchange offers several types of mailboxes, including:

- Room Mailbox
- Equipment Mailbox

Note: These two mailbox types have some attributes in common and some differences.

Resource Mailbox Features
- Disabled Accounts
  The user account for these mailbox types is disabled. It is expected that you will delegate Full Mailbox Access to another user or group to manage the mailbox.

- Capacity Attributes
  Both mailbox types have an optional default capacity attribute. This makes sense for Room Mailboxes and may or may not make sense for an Equipment Mailbox. For instance, yes for a car, no for a projector.

- Custom Attributes
  Custom attributes such as car or projector for Equipment Mailboxes or whiteboard, TV, or overhead projector for Room Mailboxes can be added to each of these Resource Mailbox types by the mailbox creator. The list of possible extra attributes is global to Exchange and maintained by Exchange Administrators.

- All Rooms Address Book
  All Room Mailboxes are added to a new special All Rooms address book and are accessible from a Rooms… button in Outlook when creating a New Meeting Request. Make sure that only legitimate Rooms are set up as Room Mailboxes. Room Mailboxes also show up in the GAL.

- No All Equipment Address Book
  Equipment Mailboxes do not have their own address book and display in the GAL along with User Mailboxes.

- Resource Scheduling Options
  See Below

- Auto Accept Agent
  The Auto Accept Agent is available for mailboxes, but most of the features of the Auto Accept Agent are built into all Resource Mailboxes

- Converting User Mailboxes to Resource Mailboxes
  Exchange User Mailboxes can be easily converted to Room and Equipment Mailboxes and vice versa using a command line command. This can be done by Self Service administrators.

- Granting Delegation and Full Mailbox Access
  Delegation and full mailbox access is done with a command line command.

- Command Line Tools required for some operations
  Some of the configuration requires using the Exchange Management Shell instead of the GUI.

- Opening a Resource Mailbox in OWA
- Opening another User’s mailbox in OWA
- Shared mailboxes are de-emphasized, don’t have AAA
Resource Scheduling

There are two ways for customers to automate resource booking using Outlook and Exchange: Exchange Auto Accept Agent and Outlook direct booking.

The Auto Accept Agent (AAA) is a server-side store event available in the Exchange timeframe. It provides automatic server-side processing of meeting requests sent to resource mailboxes that have been registered with the agent. The Agent handles both requests and cancellations and sends responses to the meeting organizer.

Direct booking is an Outlook-specific feature that uses the organizer's Outlook client to book an appointment directly into a resource mailbox schedule. The Outlook client of the person organizing the meeting performs all the necessary tasks, such as conflict checking and placing the reservation on the resource calendar. The resource mailbox must be manually configured with Outlook to support direct booking. It can be set up to automatically accept non-conflicting (or conflicting) meeting requests and to allow/deny recurring bookings.

Resource Scheduling Features:

- Booking and search services
  - Up-to-date Free/busy
  - Integration with Office Outlook meeting request process
- Schedule management services
  - Ability to delegate management of resource policy to users using Outlook Web Access
  - Policies and rules to control who can schedule and when they can schedule
  - Support for both manual and automatic approval

The Exchange Resource Booking attendant provides the following features:

- Enforces maximum meeting duration
- Schedules meetings only during working hours
- Forwards out-of-policy requests to delegates for approval
- Provides conflict information for declined meetings
## Feature Comparison

The table below shows a comparison of the features available for direct booking in Outlook, using the Auto Accept Agent, and resource scheduling in Exchange Server.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Outlook Direct Booking</th>
<th>Auto Accept Agent</th>
<th>Resource Scheduling</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Booking Process</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Directly books without sending mail</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resource can be designated as any type of attendee</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Does not require permissions to calendar folder of resource</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td><strong>Resource schema</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distinguish between user and resource mailboxes in GAL/OAB</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Find resources based on resource criteria (location, custom property)</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Add additional, custom resource properties</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><strong>Scheduling Logic</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prevent double booking</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Partially book recurring meeting</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Strips sensitive information from request, calendar item</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>Scheduling Policy</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Define list of users who can book directly</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Control how far requests are booked in the future</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Define list of users who can book with approval, book outside policy</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Set available hours, max duration</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Custom meeting response text*</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

**Note:** It is per server in AAA and per mailbox in Exchange Server.
Creating Resource Mailboxes

As mentioned above, Resource Mailboxes have the following features:

- Always have special resource-specific properties set on the AD user object that define it as a Room or Equipment Mailbox, Capacity attributes and any Custom Attributes.
- Typically have a disabled user account and grants logon privileges to one or more "resource managers".
- May have a scheduling policy automatically enforced by the Resource Booking mailbox assistant.

1. Create a new Mailbox through the Exchange Management Console. Choose a Room or Equipment Mailbox.

**Note:** If you click Existing User and then Browse, only disabled accounts are presented. Only disabled accounts can be used for Resource mailboxes in Exchange Server. Re-enabling a disabled account on a resource mailbox is not a supported configuration. Click **Next**.
2. This will create a new "disabled" user account that is set up as a Room. At this point, the resource mailbox is not completely configured. If you attempt to book the resource it will not automatically accept the meeting. After creating a resource mailbox, you should configure it to auto-accept meetings to which the resource mailbox has been invited. Otherwise, the resource mailbox does not automatically accept meetings sent to it. It remains in the calendar of the resource in a "tentative state".

Delegate the Full Access permission to another user to access the mailbox through Outlook Web App (OWA) since the primary user account is disabled. This can only be done through the Exchange Management Console. If the Room name is Conference Room 1 and the user you want to access the mailbox is User1, run the following command:

```
Add-MailboxPermission -Identity Conference Room 1 -User User1 -AccessRights Fullaccess -InheritanceType all
```

3. Log into OWA using an account that has Full Access permissions to the resource mailbox. In the upper-right corner of the OWA page, click the drop-down next to username and, in the Open Other Mailbox box, type the name of the resource mailbox. When Exchange finds a match, it turns into a link. Click Open.

**Note:** You can also logon to OWA using the following URL with the mailbox's e-mail address, then authenticate with the username and password that has permissions to the mailbox:

https://exchange.umich.edu/owa/user@domain
4. Click **Options** and then click **See All Options**.

![Options](image)

5. In the left pane, click **Resource Settings**. This is only available as an option for Resource Mailboxes. You can set Resource Scheduling Options, Resource Scheduling Permissions, Resource Privacy Options and Response Message via this page. As you can see, there are a large number of options available.

**Note:** The mailbox is not set up to automatically process requests and cancellations. If you leave this unchecked, someone will need to access this mailbox regularly and process those requests.

![Resource Settings](image)

**Note:** When you have finished making changes to these options, click **Save**. If you do not click **Save**, Outlook Web App prompts you with options to save or abandon the changes.
6. Scheduling Options
   You can set a resource mailbox to automatically process all incoming meeting requests and cancellations. If you select the check box to automatically process meeting requests and cancellations, there are several options that you can use to control the automatic behavior of the resource mailbox:

   ![Scheduling Options](image)

   - **Automatically process meeting requests and cancellations**: Click this check box to enable the rest of the options in the Resource Scheduling Options section. The settings in this section determine how the resource can be scheduled and how conflicts are handled. The screenshot above shows the defaults.
   - **Disable Reminders**: This disables the pop up reminders when you logon to this mailbox.
   - **Maximum number of days**: This sets the maximum number of days in advance a single or recurring meeting can be scheduled. The maximum is 1080 days = ~3 years (SP1 only).
   - **Always decline if the end date is beyond this limit**: (Highly Recommended) If this check box is selected, meeting requests for this resource are declined if the end date for the meeting occurs after the Maximum number of days limit.
   - **Limit meeting duration**: If this check box is selected, the meeting cannot exceed the number of minutes specified in the Maximum allowed minutes box.
   - **Maximum allowed minutes**: The number that is specified in this box is the maximum length of time that the resource can be booked for a meeting. (1440 minutes default = 24 hours)
   - **Allow scheduling only during working hours** If this check box is selected, the resource only allows meetings during the hours defined in the Calendar Work Week section of the Calendar Options for this mailbox.
   - **Allow repeating meetings**: If this check box is selected, people can schedule the resource for recurring meetings.
   - **Allow conflicts**: (Not recommended) If this check box is selected, the resource can be scheduled by more than one person during the same time period.
   - **Allow up to this number of individual conflicts**: (Not recommended) See online Help Details.
   - **Allow up to this percentage of individual conflicts**: (Not recommended) See online Help Details.
7. Resource Scheduling Permissions

Resource Scheduling Permissions let you control which users can automatically schedule the resource mailbox, those who must have approval, and those who can automatically schedule and can submit a request for approval when it is unavailable. The possible settings are as follows:

<table>
<thead>
<tr>
<th>Scheduling Permissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choose users and groups that have permission to schedule this resource by sending a meeting request.</td>
</tr>
<tr>
<td>These users can schedule automatically if the resource is available.</td>
</tr>
<tr>
<td>- Everyone</td>
</tr>
<tr>
<td>- Select users and groups:</td>
</tr>
<tr>
<td>Select one or more...</td>
</tr>
<tr>
<td>These users can submit a request for owner approval if the resource is available.</td>
</tr>
<tr>
<td>- Everyone</td>
</tr>
<tr>
<td>- Select users and groups:</td>
</tr>
<tr>
<td>Select one or more...</td>
</tr>
<tr>
<td>These users can schedule automatically if the resource is available and can submit a request for owner approval if the resource is unavailable.</td>
</tr>
<tr>
<td>- Everyone</td>
</tr>
<tr>
<td>- Select users and groups:</td>
</tr>
<tr>
<td>Select one or more...</td>
</tr>
</tbody>
</table>

- **These users can schedule automatically if the resource is available**: Select the users who can automatically schedule the available resource. To specify that all users can schedule the resource, click **Everyone**. To specify individual users or groups of people who can automatically schedule the resource if it is available, click **Select Users and Groups** and then enter those names in the box.

- **These users can submit a request for manual approval if the resource is available**: Select the users who can submit a request for manual approval to schedule the resource. When a request is submitted for manual approval, the request must be accepted by the resource mailbox owner or a delegate of the resource mailbox instead of being automatically accepted. To specify that all users must submit a request for manual approval to schedule the resource, click **Everyone**. To specify individual users or groups of people who must submit a request for manual approval to schedule this resource, click **Select Users and Groups**, and then enter their names or aliases in the box.

- **These users can schedule automatically if the resource is available and submit a request for manual approval if the resource is unavailable**: Select the users who can automatically schedule the resource, when available, and submit a request for manual approval if the resource is unavailable. When a request is submitted for manual approval, the request must be accepted by the resource mailbox owner or a delegate of the resource mailbox instead of being automatically accepted. To specify that all users can automatically schedule the available resource and submit a manual request to schedule the resource if it is unavailable, click **Everyone**. To specify individual users or groups of people who can automatically schedule the resource if it is available or submit a request for manual approval to schedule the resource if it is unavailable, click **Select Users and Groups**, and then enter those names in the box.

- **Always forward to delegates**: if this check box is selected, meeting requests that require approval are forwarded to users who are delegates of the resource.

- **Always tentatively accept these requests**: if this check box is selected, meeting requests that require approval always accept the meeting request tentatively.
8. Resource Privacy Options
   You can use the Resource Privacy settings in Options to control what information is included in meeting requests and cancellations that are sent to the resource mailbox. These options affect only the items in the resource mailbox calendar. They include the following:
   
   - **Always add organizer name to meeting subject**: if this check box is selected, the meeting organizer's name is included in the meeting subject.
   - **Always remove the private flag on an accepted meeting**: if this check box is selected, private meeting requests that are accepted by the resource will be marked as public so that the resource schedule can be viewed by other people.
   - **Include detailed information about conflicting meetings in response**: if this check box is selected, when the resource declines a meeting request because of a conflict with an existing meeting, information about the existing meeting is sent in the declined meeting response.
   - **Include organizer's name in conflict information**: if this check box is selected, when the resource declines a meeting request because of a conflict with an existing meeting, the name of the organizer of the existing meeting is sent with the meeting details in the declined meeting response. This check box is available only if the **Include detailed information about conflicting meetings in response** check box is selected.
   - **Always delete the following when sent to this resource**: Select the check boxes for all items that you want to be automatically deleted when they are sent to the resource mailbox. This list includes the following:
     - E-mail messages
     - Attachments from meeting requests
     - Comments from meeting requests
     - Subject of meeting requests

9. Response Message
   You can send additional text with automated responses to scheduling requests for resources. To add text to automated responses, select **Add additional text that will be included in responses to meeting requests**, and then type and format your message in the box.

**Granting Delegation to Resource Mailboxes**

Delegates to Resource Mailboxes can only be set using an Exchange Management Shell Command.

**Note**: Do not run this on a user mailbox. This causes the user's mail to be forwarded to the assigned delegate.

`Set-MailboxCalendarSettings -ResourceDelegates <List of Delegates>`

How to Set a Delegate on a Resource Mailbox

How to Configure Resource Mailbox Custom Properties

Custom properties can be added to Room and Equipment mailbox types. These can only be added by Exchange Administrators, but can then be added to individual mailboxes by Mailbox Admins. Set-ResourceConfig -ResourcePropertySchema ("Room/TV", "Room/VCR", "Equipment/Auto")


**Projector** and **TV** have already been added to the Room Mailbox type:

![Image of Room Mailbox Configuration](image1.png)

**Projector, Laptop, Car** and **Van** have already been added to the Equipment Mailbox type:

![Image of Equipment Mailbox Configuration](image2.png)
Maintain Resource Mailboxes with the Exchange Management Console

Many of the changes made through Outlook Web App can also be made in the Exchange Management Console (EMC). Below are a few examples of changes that can be made.

1. Open the EMC.
2. Go to Recipient Configuration and select Mailbox.
3. On the right pane, select find.
4. Search for the resource and select Properties.

Resource In-Policy Requests Tab

![Resource In-Policy Requests Tab](image-url)
Resource Information Tab

- **Specify what meeting information will be visible on this resource's calendar:**
  - Delete attachments
  - Delete comments
  - Delete the subject
  - Delete non-calendar items
  - Add the organizer's name to the subject
  - Remove the private flag on an accepted meeting
  - Send organizer information when a meeting request is declined because of conflicts

- **Customize the response message that the meeting organizer will receive:**
  - Add additional text:
    - [Input box for additional text]
  - Mark pending requests as Tentative on the calendar

Resource Policy Tab

- **Specify when the resource mailbox can be scheduled:**
  - Allow conflicting meeting requests
  - Allow repeating meetings
  - Allow scheduling only during working hours
  - Reject repeating meetings that have an end date beyond the booking window

- **Booking window (days):** 1000
- **Minimum duration (minutes):** 1440
- **Conflict percentage allowed:** 0

- **Specify delegates of this mailbox:**
  - [Add button]

- **Forward meeting requests to delegates:**