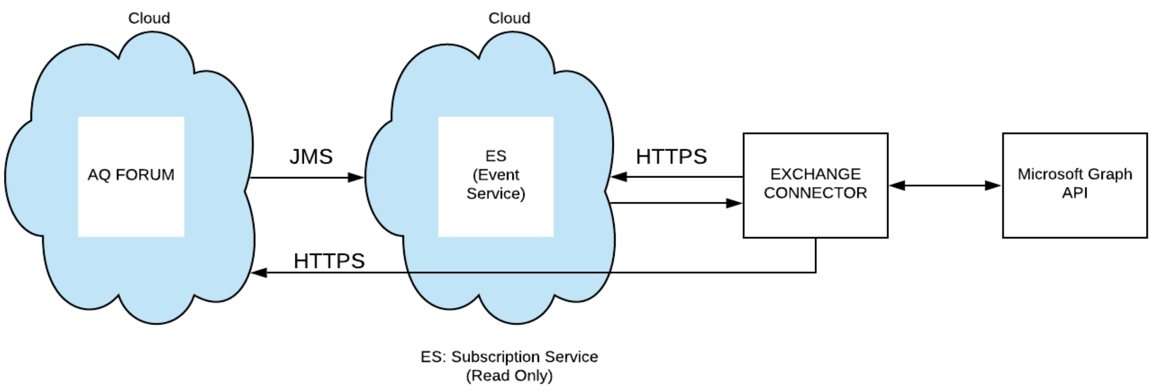
What is Tango Reserve + Exchange?

Reserve + Exchange is AgilQuest's full two-way, real time, integration between your Microsoft O365 and Reserve. The integration leverages each application's native features and API layer to synchronize asset (room) schedules, allowing bookings to be made, modified or canceled in either system. Communicating directly at the server level not only avoids the complexity of installing and maintaining Outlook plugins, it allows users to use any interface to Exchange, such as Outlook, Outlook for Mac, Outlook Web Access, Teams, iOS and Android native calendar apps; and any interface for Reserve, including the Room Kiosk, Mobile Apps and others.



How It Works

The Reserve + Exchange Connector is a proprietary application that sits between the Reserve and Exchange servers and manages communication and event flow between the systems. The following diagram shows the high-level architecture of the solution:

When a reservation is made, modified or canceled in Reserve, the Reserve server sends the key elements of the reservation (including reservation owner, resource, date/time, etc.) to the Exchange Connector. The Connector receives the reservation information and communicates it to the Exchange server via Microsoft Graph API.

The Connector receives reservation information from Exchange via a streaming connection. When a reservation is received by the Connector, the Connector interprets the action (make, modify, cancel) and communicates it appropriately to the Reserve server via the Reserve API layer.

The Exchange Connector software will be configured by your AgilQuest Customer Success team and will contain the following information:

- Connection information for both Reserve and Exchange
- A mapping table to associate assets in Reserve with room objects in Exchange
- A mapping table to associate the users in Reserve with the users' emails in Exchange
- Activity and logging information for all transactions

Benefits

The solution architecture of the Reserve + Exchange Connector allows direct, server to server, communication between the platforms. Not only is this communication faster than other methods, it eliminates the need for a plugin to Microsoft Outlook and it conforms to the recommended integration architecture for the Exchange ecosystem supported by Microsoft. Allowing each server to do what it does best: deliver many benefits to the end users and the organization. End users who are accustomed to working in the Exchange interfaces, such as Outlook, Outlook for Mac and Outlook Web Access, Teams, iOS and Android native calendar apps, etc. to make and manage meetings and invite colleagues can continue to work exactly as they do now – there is no new software or training required. At the same time, because the reservations are managed by the Reserve engine, organizations can take advantage of the full range of Reserve interfaces (Web, Room Kiosk and Mobile Apps).

Note: For Reserve + Exchange to work correctly, a resource must exist in both systems. We recommend that the assets (rooms) have the same name. Business rules should match (for example: Max Days in Advance) in both systems to avoid confusion and issues especially during the initial sync.

Requirements: The main points

1. The Reserve + Exchange integration is compatible with Microsoft Office 365 (cloud based).
2. The following information is required from Azure AD and must be provided to AQ*
    - Tenant ID to be used for the Exchange Authority URL
    - Client ID (Exchange.client.id encoded)
    - Client Secret Value from Azure AD (Exchange.client.secret.encoded)

*Refer to this article for more information on how to obtain this information from Azure AD.

1. Provide the following information to AgilQuest:
   - Exchange URL
   - Autodiscover URL
2. In Exchange, create a user to be used by the Exchange Connector. Use this email to create the user in Reserve ins step #4.
3. In Reserve, create a user that is used primarily for the Exchange integration. As a best practice, the Exchange Connector user should be named “Exchange User” to make it easily identifiable in Reserve. However, this user should be marked as “private”.
4. The “Exchange User” in Reserve must have the following user right: *Create Reservations for Another User and Manage Another User’s Reservation.* The Exchange user must be in a user group that has access to the asset group that all of the Exchange assets will be in.
5. Create resource rooms in Exchange that can be reserved. Set ExchangeConnector user to have FullAccess to the Room Resource.
6. The rooms in Exchange must be set to “auto-accept”.
7. Room Email aliases are cannot be used. The Primary SMTP email is required.

Exchange Connector

AgilQuest will host your Reserve Exchange Connector.

How do you use Reserve + Exchange?

To use Reserve + Exchange, you simply create an Exchange meeting and include the room you’d like to reserve. You can follow these steps:

- In your Outlook calendar, right click on the time period you want for your reservation and choose New Meeting Request.

- In the meeting window that appears, be sure that the Room Finder is enabled. If it isn’t, click the Room Finder button. The Room Finder appears on the right side of the meeting window.

Note: Your meeting window may appear differently due to your organization’s Exchange configuration.

For more information about adding rooms and using the Room Finder, please see the Microsoft-provided help files for Outlook and Exchange.

- Select your preferred room. Depending on your version of Outlook, there are several ways to do this, and not all of these will show the room's availability. We recommend that you check the availability of the room you want to avoid scheduling issues.
  - Choose the room list to use and then double-click on the room you want in the list of available rooms in the Room Finder.
  - Click the Rooms button. In the box that appears, double click on the room you want in the list and click OK.
  - If you've reserved the room before, the room information will auto-populate when you start typing the name of the room in the To field.
  - Click the Scheduling Assistant button to see the availability of a list of rooms in the room list you've selected on the Room Finder. The Scheduling Assistant shows when the rooms are free or busy just as when you're looking at the schedule of another person. If there's a room you prefer to use, this view allows you to change the time of your meeting request to when that room is available.

After you've selected the room, the name of the room appears in the To and Location fields.

- Continue creating the meeting request as you normally would.
- After you send the meeting request, the reservation information is passed through to Reserve. If you logged into Reserve, you would see the reservation listed on your list of Upcoming Reservations. In some cases, it is possible that there could be a 10 to 30 seconds delay for the reservation to be created in Reserve.

If you created the reservation in Reserve, the meeting is added to your Outlook calendar automatically. The opened meeting appears like this:

How to Use the Exchange Add-in

Refer to this article: Exchange Add-in Guide

Emails and Notifications

Each time a user makes or modifies a reservation, the user must pay attention to the emails and notifications received from both Exchange and Reserve because they will contain important information about the user's reservations.

It is possible to turn off confirmation notifications from Reserve. However, notifications from Exchange (acceptance/decline) cannot be turned off through the Reserve + Exchange Integration process.

AllowICS property should be set to **False**. AgilQuest will turn this off in your Reserve.

- When the allowICS property is set to FALSE, then Users will NOT receive any ICS emails from Reserve when a Reservation is made using Exchange or Reserve, even if the reservation made in Reserve includes Invitees. This means that each appointment that is made in Exchange will only show as a single appointment on the User's calendar.
- When the allowICS property is set to TRUE then Users will receive ICS emails from Reserve anytime a Reservation is made using Exchange or Reserve, if the Reserve reservation includes Invitees. This means that each appointment that is made in Exchange of Reserve will show multiple appointments on a User's calendar.

Reservation Scenarios

Some of the common reservation scenarios with examples of expected emails and notifications are:

User creates reservation in either Outlook or Reserve for a conference room.

Exchange email:

Reserve email:

User modifies reservation in either Outlook or Reserve for a conference room.

Exchange email:

Reserve email:

Note: Either system can reject a reservation because it violates business rules or other reasons, which is why you will need to read the emails you receive.

Notes:

- If an existing reservation is declined by Exchange, it will also be canceled in Reserve. But if a newly created meeting in Exchange is declined by Exchange, it will never be created in Reserve.
- When Exchange declines the room, the room remains in the meeting. This is default Exchange behavior. The decline message from Exchange will be like this: "Your meeting request was declined because there are conflicts."

The room is removed from the meeting only when the meeting is canceled/declined in Reserve. The decline message will be like this: "Appointment was rejected by Reserve."

- If a reservation is declined by Reserve, the room will be removed from the Exchange meeting, but the meeting will remain on your calendar.

EMAIL LINKS

The invite that is sent from Exchange for a reservation contains links that are set up for users inside your organization. You can see the three links in the invite below:

The links included in the email are:

- Asset Information link - A user can click on the link to the asset's detail page where a floor plan option is available to see the location of the space.
- Reserve URL link
  - The reservation owner can click on the link to go to Reserve Web to add services/equipment to his reservation.
  - If another Reserve user clicks this link, the user will go to the Reserve login page, where the user can modify the reservation if they are allowed to manage it.
  - If another user clicks on the link, but is not a Reserve user, they will be taken to the login page but will not have a user account to access. This could happen for invitees from outside of the organization who are added to the meeting invite.

Other Features and Functions

Equipment and Services

Equipment and services which are considered Related Assets (Child Assets), must be added to a reservation through Reserve or the Exchange Add-in instead of Exchange. The user can start in Exchange, click the Add-in, add the room and related assets when creating his meeting. They can select the conference room they want and add invitees (as well as include any other options he normally would include).

The user can also choose to create the entire reservation in Reserve instead.

Dynamic Rooms

Because Exchange does not support dynamic rooms, dynamic rooms cannot be included in Reserve + Exchange integration. The user can still benefit from using the dynamic room logic however, these rooms will only be bookable from Reserve or the Add-in. A couple of options to consider:

- Assets that are dynamic rooms can be managed in Reserve (not in Exchange). Reserve has logic to handle the dependencies for dynamic rooms. However, this means that reservations for these rooms will only be in Reserve Assets, not in the Exchange Room calendars because these rooms will not be synced.

    - This method will also allow the user to still book the room via the add-in.
- To allow these rooms to be bookable in both Exchange and Reserve, you can keep the rooms separate (no dependencies). To book the large room (comprised of two rooms), the user must book each of the rooms individually.

Rooms that Require Approval

As a best practice, approval for rooms should be managed though Reserve, and the room setting in Exchange must be set to "auto-accept". Once the request has been approved by the Asset Approver in Reserve, the reservation is committed, and the owner of the reservation can no longer modify the reservation in Exchange. Clients are encouraged to set up an internal process to handle modifications to an approved reservation. The user can cancel their room reservation and resend the request to be approved; or contact the Asset Approver to modify the reservation on behalf of the user from Reserve.

Workspaces

Workspaces are typically booked in Reserve only. Although workspaces can be included in the Reserve + Exchange integration, it's not a best practice to do so for most organizations. A couple of considerations before adding workspaces in Exchange include:

- The number of reservation data that will be managed through the integration will be much higher.
- Also, since workspaces are typically booked for longer periods of time (half-day to whole-day reservations), the user's calendar would look "busy" during this entire period.
- Workspaces can also be booked via the add-in.

Considerations for Use & Best Practices

- Assets must be "room objects" not "shared mailbox calendars".
- If a room is going to be used with Reserve + Exchange and will require check in, users will need to check in via a Reserve interface, such as the iPhone app. There is no mechanism in Exchange to check in.
- End users will receive several emails from both Exchange and Reserve for each reservation. Users may opt to create rules in Exchange for automatically moving the emails to a special folder created for reservation emails. However, they should be sure to read these emails,

or they may miss important information from Reserve or Outlook about their reservations.

- If the subject line for a meeting is left empty in Exchange, the room name will be used as the reservation name in Reserve.
- Contents of the message body of an Outlook meeting will not be synced to the Reserve meeting. This includes any text or attachments.
- Modification of Attendees in Outlook:
    - Outlook client: If a user modifies the attendees on an Outlook meeting, the user must choose the "Send update to all attendees" option before sending the update. If the user chooses "Send updates only to added or deleted attendees," the room on the meeting isn't notified of the change so the user would remain on the *ReservationInvitee* table in the Reserve database.
    - Outlook Web: If a user modifies the attendees on the Outlook Web meeting, The option to "Send updates only to added or deleted attendees" is no longer shown in Outlook for Web. The Exchange server decides who to update. If an attendee gets added to a meeting in Outlook for Web after that meeting has already synced with Reserve, that new attendee will not be added to the reservation in Reserve.
- When a user is making a reservation via Exchange and a room is not available, in Exchange, the user will receive an email from Exchange to let him know the meeting was declined. However, the room remains in the To and Location fields. This is a Microsoft function and Reserve + Exchange cannot alter this behavior. The user will receive an email from Exchange to let him know the meeting was declined. The reservation does not get made in Reserve.
- When a user makes a recurring reservation via Exchange, and one of the occurrences has a conflict, Exchange will decline ALL the recurring days, including the times where the room may be available. When Exchange declines the room, the room remains in the meeting. This is default Exchange behavior.
- In Reserve, a user creating a recurring reservation is limited by how far in advance he's allowed to make a reservation, the number of instances of the same reservation that he's allowed and limits that are set in Exchange.
- When making or modifying a reservation, if there is a blocking reservation, the behavior the user sees will depend on which reservation is written to the Reserve database first.
    - If the blocking reservation was made in Outlook and was made with enough time for it to be populated to the Reserve database, when the user attempts to commit the make/modify to a conflicting reservation in Reserve, an error will appear to tell the user the resource is not available.
    - If the blocking reservation was made in Outlook and is not yet populated to the Reserve database, the outcome depends on

which reservation gets populated to the database first. This is wholly dependent on the network.

  - If the blocking reservation is populated to the database first and the reservation is being created in Outlook, the meeting will be created with the room information but the user will receive a decline from Exchange because of the conflict on the room. In Reserve, the reservation is canceled/never created.
  - If the blocking reservation is populated to the database first and an instance of a recurring reservation is being modified in Outlook, the meeting for the recurring instance will be changed to reflect the modification but the user will receive a decline from Exchange for that one instance. In Reserve, that single instance of the recurring is canceled.
- NO-END DATE reservations are not allowed in Exchange. As an example, recurring reservations must have a specified end-date.
- A single instance of a recurring reservation may not be changed from not private to private or vice versa in Exchange. The user must change the status of the entire series.
- A user can leave an invitee's email address blank when making a reservation from Reserve. When the user is only working in Reserve, this doesn't impact the reservation. However, with the Exchange integration, an invitee must have an email address. If a reservation creator leaves an invitee's email address blank, the reservation creator will get an email that directs him to correct the email address. If the reservation creator doesn't know the invitee's email address, he can use a placeholder email address if it's in the standard email format.
- A customer using cloud-based Office 365 may find that their users don’t receive Exchange emails at times because an event is not sent out from Exchange. This is a documented defect from Microsoft. To avoid issues for the Reserve + Exchange users, Reserve + Exchange will poll Exchange on a periodic basis to capture events that may have been missed otherwise. Synchronization of reservations between Reserve and Exchange may be delayed due to this issue.
- During the initial synchronization, any existing reservations will create a new Exchange notification email (accepted/declined emails). Recurring reservations will create an Exchange notification email per occurrence. This is in addition to the Reserve confirmation emails (if Reserve confirmation emails are on). You can coordinate with your AgilQuest team on how to minimize the number of emails end users receive during any synchronization process.
- The Meeting Invitation must have a valid user as an Owner. Do not book directly in the room’s calendar.

- Subjects/Reservation Names cannot exceed 255 characters.
- Reserve Setup and Breakdown times are not added to the calendar meeting on the user or the resource calendar.
- Back-to-Back restrictions will not appear in Exchange and can make it seem like the room is available when it is not.
- Restricted Exchange groups are not supported.
- The permissions of the Exchange User will NOT impact whether or not reservations can be created in Exchange.
    - Permissions are based upon the Reservation Owner (i.e. for whom the Reservation is being created) rather than the Reservation Creator (i.e. the Exchange User).
- Reservations that are created from Exchange are made in Reserve by a service account, which is similar to having an Admin or Manager create a reservation for the user; the Admin or Manager is the reservation creator, but the user is the reservation owner. The service account may be able to override all Reserve business rules including (but not limited to) maximum days in advance for a reservation, lead time for a reservation and cancellation lead time. An option is to remove these rights from the Exchange user's profile. Determine whether to rely on the Reserve's Business Rules when using Exchange:
    - To use the Reserve Business Rules in Exchange, then the Exchange User should NOT be given the Override and Reservation Rights listed below under the User Rights during initial sync.
    - If not using the Reserve Business Rules in Exchange, then the Exchange User should be given all of the Override and Reservation Rights listed below under the User Rights during initial sync.
- When using the Exchange Add-in, if the room names in Reserve do not match the room names in Exchange, the room names will be duplicated in the location field. The image below shows when this occurs. This can be prevented by ensuring that the room names match.

- When creating an asset in Reserve that will be synced in Exchange, avoid using special characters like / in the asset name.
- When making an "Event" in Reserve, all rooms included in the event must be mapped in the Exchange Connector, or the user and room calendars will not be updated.
- Distribution lists cannot be "owners" of the reservation.

BEST PRACTICES - USERS

- When creating an Outlook meeting, a user should use the scheduling assistant and room finder. The room finder will show which rooms are available during the time selected, so the user can be sure he's choosing a room he'll be able to use. If he just adds the room through the “To:” or “Location:” lines in the meeting window, there's no way for him to check availability of the resource before he sends the meeting request and he would have to wait for the decline message from Exchange to know that the room he selected isn't available.
- The Outlook Room Finder does not work for recurring reservations. This is an Exchange behavior.
- For information on how to use the add-in, check out this article: Exchange Add-in Guide

SYNC CONSIDERATIONS

- The initial synchronization should be done in phases rather than all at once for optimum performance. Please review this with your AgilQuest Customer Success team.
- Ensure that the business rules on the Exchange resource match with the Reserve resource rules. For example: Booking Window in Days = Max Days in Advance
- Determine up to what date the reservations will be synched for. For example: up to 90 days.
    - Initial data sync start date: go back one day in time.
    - Go forward as far as the Account user can book in advance.
- Ensure there are no reservations in Exchange beyond the “sync date” agreed upon.
- During the sync process, acceptance emails will go for each meeting the user currently has in Exchange; including recurring meetings.
- If any rejection occurs due to business rule violations and/or permission assignment, the user and invitee will receive a decline email and the room will be removed from the user’s calendar and the room calendar.
- All rooms in Exchange must be set to “auto accept” and must not allow conflicts.
- The naming convention for the rooms in exchange, should be consistent or similar with the name of the rooms in Reserve.
- The Exchange User must also have the following User Rights during the initial sync to ensure that none of the Exchange Appointments fail.
    - Override Maximum Days in Advance for both Users and Assets.
    - Override Lead Time Necessary for Reservations
    - Override Maximum Number of Simultaneous Workspace Reservations
    - Override Minimum Reservation Duration for Assets
    - Override Maximum Reservation Duration for Assets

    - Override Another User's Email Preferences (Reservation Emails Only)
    - Override Back to Back Reservation Policies
    - Make and Cancel Reservations Lasting More than 24 Hours
    - Cancel Reservations that Do Not have an End Date
    - Make Reservations when Location or Asset is Closed
    - Manage Reservations in a Final State
- Recurring Reservations are handled during the initial sync. The back end modifies the recurring reservation start date so that the sync uses the next available future date, rather than using a start date that is in the past. The sync also gets the entire recurrence pattern.
- Ensure that only ACTIVE rooms in Exchange and ACTIVE assets in Reserve are synched. Any inactive room in either system must not be synced. Contact AgilQuest support at support@agilquest.com if you need to inactivate an asset so this can be updated in your Exchange Connector.