Functional Specifications

New Feature Summary
A feature will be developed for the Evergreen ILS web staff client which will allow for automatic renewals (‘auto-renewals’) of certain open circulations. Auto-renewals will be configurable in terms of patron criteria, participating organizational units, number of auto-renewals allowed, and notifications about auto-renewals.

Overview
Current behavior
Currently, Evergreen has no automatic renewal process. If set up appropriately, the Action/Trigger module will remind a patron to renew their items via a Courtesy Notification email that contains a list of those items approaching their due dates. However, the renewal itself currently requires manual action on behalf of either the patron or library staff.

Development Plan
This feature will be developed as a new part of the existing Action Trigger system. This will involve an action trigger that relies on the checkout.due hook and will use a new reactor which will perform the necessary actions to renew a circulation on the day it is due.

Additionally, a validator will be developed to enforce that the auto renewal events will only occur on items that do not have holds, or have not exceeded the max amount of auto-renewals, for their owning library. The auto-renewal validator will override benign events such as Copy.Alert_Message, Copy.Bad_Status, and Copy.Status_Missing. Also, the patron of the circulation will be validated to make sure that they are in good standing. With respect to auto-renewals, a patron is considered in good standing and validated to be able to have an item(s) auto-renewed if all conditions are met such that the patron would be permitted to manually renew said item(s) via the OPAC.

Lastly, an Action Trigger event definition will be developed that gathers and composes email or SMS notifications for the processed auto-renewal events and informs patrons with outstanding loans about the new status of their checked out items. A default stock
notification template will be created as part of this feature that will contain a list of the patron’s checked out items, and the outcome of the auto-renewal process for each item.

Each line item of the list will contain the title of the loan, the new due date, and an informational note that will let the patron know if the item was successfully auto-renewed, or if not, will display the reason for the failure. Items not able to be auto-renewed will be listed first. For example:

Dear Jane Patron,
Your library would like to let you know about your current borrowed items:

<table>
<thead>
<tr>
<th>Title</th>
<th>Status</th>
<th>Info</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Plastic Purge”</td>
<td>Not Renewed</td>
<td>(Item auto-renewals maxed out)</td>
</tr>
<tr>
<td>“Dora the Explorer”</td>
<td>Not Renewed</td>
<td>(Item has pending hold)</td>
</tr>
<tr>
<td>“Beowulf”</td>
<td>Auto-Renewed</td>
<td>Due: 2018/04/01</td>
</tr>
</tbody>
</table>

Please be sure to return any overdue books ASAP.

In the case of a patron not in good standing, the notification will say:

“Your card is expired/blocked and your borrowed items could not be auto-renewed at this time. Please contact your library.”

The new development will not change or interact with any existing configured Courtesy Notices; however, we recommend that libraries evaluate whether they wish to send both Courtesy Notices and Auto-Renewal Notices or if one set is sufficient.

**User interface**

**Staff user interface details**

There are not any major user interface changes, other than the addition of the new validators and reactors discussed above that will allow auto-renewals to be configured via the Action Trigger system. These will be available in their respective dropdown menus in the Action Trigger Event Definition interface.

A staff member will be able to create, configure, and activate Action Trigger events for Auto-Renew, and will be able to define and activate the Auto-Renewal function for their specific organizational unit, or if permitted, at a higher level.

Finally, under the Server Administration > Circulation Duration Rules interface, a new column for the `max_auto_renewals` value and a corresponding input field will be added. This will enable staff to configure the number of auto-renewals they want to be able to set up in the Circulation Policies.

**Workflow changes**

Once the Action Trigger definition for the Auto-Renew feature is configured and set to active and the `max_auto_renewals` values have been set in the appropriate Circulation Policies, staff should be able to see renewable outstanding loans automatically renewed every day by this feature. Patrons from participating libraries will not have to log on to their
OPAC accounts in order to renew any circulation items they wish to renew, nor rely on library staff to do it for them, as it will happen automatically.

**Settings & permissions**
No additional permissions will be needed for this development. Any staff member able to create and enable an Action Trigger will be able to set up and use this feature. All users and/or patrons in participating organizational units will be able to have items auto-renewed. A patron’s total items out shall have no effect on their ability to auto-renew items.

**Reporting**
This feature will allow staff to run reports on the circulations that were automatically renewed. A reporting template will be developed that allows for basic querying of the auto-renewal events for the affected circulations. This reporting template will allow staff to run reports for circulations that were auto-renewed by this feature and filter them based on checkout times and/or circulation library or organizational unit.

**Public catalog details**
On the OPAC’s My Account page under the Items Checked Out tab, each auto-renewed item will have a visual indicator that will allow the patron to know when an item was auto-renewed.

**Implementation Areas**

**Database**
An auto_renewal (Boolean) column will be added to the action.circulation table, in order to flag the item circulation as auto-renewed by this feature. Additionally, in the same table, an auto_renewal_remaining (integer) column will track the remaining auto-renewals available for that latest circulation in the circulation chain.

A max_auto_renewals (integer) column will be added to the config.rule_circ_duration table in order to specify the number of times a loan is allowed to be auto-renewed. This will let each participating organizational unit specify the max number of auto-renewals allowed for a given circulation duration rule. Normally, the existing config.rule_circ_duration max_renewals column’s value will be greater than the new max_auto_renewals; however, in all cases the effective number of auto renewals will be controlled by whichever value is less. Thus, even when there are no more auto-renewals allowed, it will not bar a patron from manually renewing an item via the OPAC.

**Indexing**
No additional database indexes are expected to be required by this feature.

**Business Logic**
When an organizational unit has enabled auto-renew, that unit’s Action Trigger for auto-renew will run every day as part of the default cron job and use the checkout.due hook to target all circulations that are due that day. The Auto-Renew action trigger will output events which will be the input of a second action trigger which will take care of the notifications portion of the auto-renewal process. These events will be set with a newly created hook named auto_renewal to distinguish these events from manual renewal events.
Further, these events will make use of the `action_trigger.user_data` field to store the relevant data from the user’s circulation for use in the notifications part of the automatic renewal process. The notification process will be able to be set up to run in the early morning hours, and (via SendEmail or similar reactor) send the auto-renewal notifications to each patron.

### Ancillary details

#### Identification of non-ordinary seed data

For this feature, it is anticipated that new default email and/or SMS templates will be required in order for the output notifications generated to properly advise the patron or staff member of the items which were auto-renewed by this feature and which were not. Equinox will be providing a default template for this notification as part of this development.

#### Identification of any potential upgrade deviations

There are no anticipated upgrade deviations.

### Re-ingest or Indexing Dependencies

There are no special re-ingest considerations or indexing dependencies.

### Security Consideration Planning

OPAC renewals require valid authorization and this is taken care of when a patron logs in manually through the OPAC by the `open-ils.auth` service, which generates and returns a session token. The auto-renew feature, however, since it works in the background automatically but needs to emulate a patron for a renewal, will make use of the internal `open-ils.auth_internal` service, which is an internal authentication method. This method is not available publicly and thus is secure against unauthorized use.

### Quality Assurance Planning

#### Performance Implications or Concerns

This feature is not anticipated to affect performance more than any other Action Trigger process that generates and processes events and notifications.

#### Recommended Unit and Regression Testing

Automated tests that integrate with community tools such as the Buildbot and the live tester will also be included.

#### Recommended Compliance and Accessibility Testing

We will develop new features in accordance with existing OPAC WCAG compliance and will specifically test usability in desktop versions of Chrome and Firefox.

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Mockups

As there are only very minor interface changes with this development, mockups have not been included.

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