MaintScape Release Notes

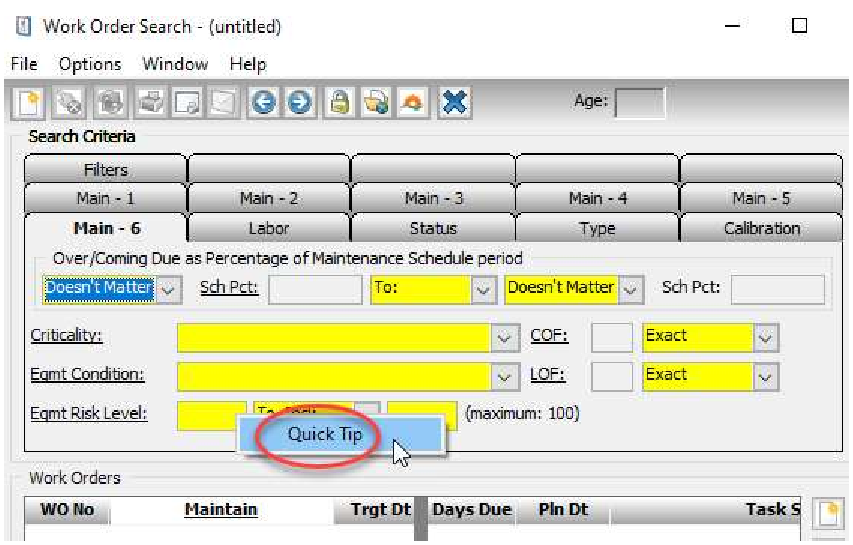
MaintScape enhancements are provided to MaintScape customers with an active product support agreement in place. The agreement entitles a MaintScape customer to unlimited technical support and all available upgrades. The annual product support agreement cost is 15% of the MaintScape license fees paid, which equals the cost of the original license plus the costs of any upgrades subsequently purchased. There are no additional upgrade fees.

MaintScape releases are identified by “Build Number”. All customers are notified by email when a new Build is released. Those on active support agreements may request an upgrade at any time. We provide download instructions to the customers and usually set an appointment when we install the upgrade with the customer over a web meeting.

Please contact GrandRavine Software (using contact information at the bottom of the page) if you wish an upgrade or to inquire about the status of your product support agreement.

The list of enhancements, below, does not include bug fixes, which are made on a continual basis, or the most minor of enhancements.

Please note that sometimes our enhancements pre-date documentation updates. Up-to-date documentary information can be obtained from “Quick Tips” that we liberally add to MaintScape when we think more explanation is useful. Remember – Any MaintScape label with an underline tells you that you can right-click on the data item to get a pop-up context menu. Often that Menu will include a “Quick Tip” with helpful information:



Please do not hesitate to contact us if you have questions or inquiries.

Continued…

Build 148 (April 10, 2025)

MaintScapeWeb

Single Sign-On Enhancements

- Okta Single Sign-On is now supported.
    - Authentication occurs when accessing any MaintScapeWeb page – there is no need to go through the Logon page (unless you need to select a logon database within a multi-database environment).
    - Anonymous Authentication must be enabled for MaintScapeWeb in IIS, and Windows Authentication disabled.
    - Okta configuration values are specified in the MaintScapeWeb “appsettings.json” file.
    - Okta SSO is enabled for a user by entering their Okta Authentication ID into the Staff window, Access to MaintScape tab.
- Windows Single Sign-On
    - Authentication now occurs when accessing any MaintScapeWeb page – there is no longer the need to go through the Logon page (unless you need to select a logon database within a multi-database environment).
    - Windows Authentication must be enabled for MaintScapeWeb in IIS, and Anonymous Authentication disabled.
    - Windows SSO is enabled for a user by entering their Windows ID (prefixed by domain) into the Staff window, Access to MaintScape tab, which is how SSO has always been enabled for MaintScape Classic.

Miscellaneous

- “New Service Request” action is now available in Equipment and Location Hubs when the Service Request module is enabled.
- The database list for multi-database MaintScapeWeb is now specified in the “appsettings.json” file rather than a separate “databases.json” file.

MaintScape Classic

- An Okta Authentication ID for a MaintScape User can now be specified in the Staff window, Access to MaintScape tab. This supports the new Okta Single Sign-On capability of MaintScapeWeb.

Build 147 (February 24, 2025)

MaintScapeWeb

Attachments

- An Attachment can now be created from a file rather than just from the device camera.

- Clicking to browse for an Attachment file from an Android device will also let you create a picture or movie file using the device camera. This is how you can create a video attachment from within MaintScapeWeb.
- Attachment documents that can now be viewed in MaintScapeWeb include images, PDFs, and videos. To be sure, only MaintScape Attachments of Storage Type “In Database – Native” are compatible with MaintScapeWeb.
- Pages to create new Work Order and Service Request now have a “Submit, Add Attachment(s)” button in addition to regular “Submit” button. This new button will flip to the Attachments tab on WO/SR page when the newly added record is displayed, thus making it easier and quicker to subsequently add attachments.
- Requirements for a user to be able to add an Attachment to a Work Order or Service Request from within MaintScapeWeb:
  - The user needs Attachment/New security permission.
  - The WO or SR must be modifiable (i.e. not closed or cancelled) and, when multi-site functionality is enabled, must belong to a Site for which the user has Active access.
  - The user needs either security permission to update a WO or SR of the given status, or failing that, the new security permission “New Attachment using MaintScapeWeb” for Work Orders and/or Service Requests.

Work Order Pages

- Work Order Task Page:
  - Layout modifications to widen fields that were too narrow.
  - Labor rate basis (e.g. overtime) now shows for labor hours if the hours are other than regular time.
  - Equipment Department now shown.
- Work Order Hub:
  - Sort criteria can now be specified in addition to search criteria.
  - Newly supported search criteria: Status Date, Equipment Department.
- Search Results Page:
  - Equipment Department now shows in results list.
  - Sort order can be changed without having to return to the Work Order Hub to execute a new search.

New Part Inventory Transaction Page

- An Equipment can now be specified for a new Direct Issue part inventory transaction, thus direct issuing to an Equipment. The Equipment field supports suggestions and type-ahead completion. An Equipment can also be specified by scanning a MaintScape part barcode.

Miscellaneous

- MaintScapeWeb and MscpApi (the underlying Web API used by MaintScapeWeb) are now build with .NET Core Version 8.0, which is a long-term support release.

- Default web page navigated-to after logon can now be identified in the “appsettings.json” file.
- Minor enhancements and layout changes to Service Request pages.

MaintScape Classic

Attachments

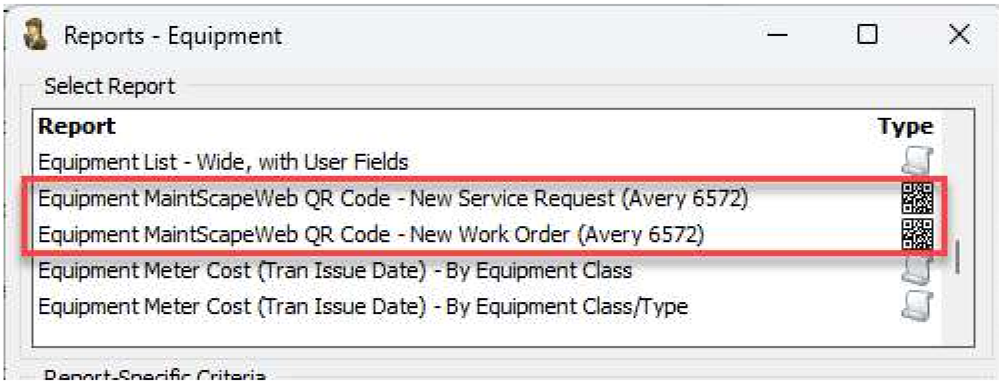
- Attachments can now be searched for by “In Database – Native Type” value. For example, “docx”, “xlsx”, “pdf”.
- New Attachment report: “Attachment References”. This report lists MaintScape Object references for attachments, also indicating when an attachment is not referenced by any MaintScape Object. For example, attachment “x” is referenced by Work Order “123”, attachment “y” is referenced by Procedure “FL Annual”, attachment “z” is not referenced by anything in MaintScape.

MaintScapeWeb QR Code Labels

QR Code Labels can now be printed for Equipment, where the QR Code encodes a MaintScapeWeb URL. For example, the QR Code in the following label launches a MaintScapeWeb page to create a Service Request for the identified Equipment:

The labels are designed to print on Avery 6572 label stock. The printing process supports identifying the starting label position (row/column) for first page of QR Code labels

Labels are printed for Equipment matching an Equipment query from the Equipment Search window, "Reports" pop-up:



Service Requests

- Email notifications:
  - Failure Description is now included in the notification email body if a value is set.
  - The email notifying of SR closure, whether closure happens because associated WO is closed or otherwise, is now sent to the SR Notify email address as well as to the requestor.
  - Subject of notification emails triggered because of a SR status change now identifies the status changed-to.
- "Also Notify" recipient for notification emails can now be multiple people (i.e. multiple staff records) rather than just one.

Search Windows and Results

- Multi-Search implemented for following Procedure search constraints: Procedure Code, Work Order Type.
- Procedures may now be searched by Procedure Account.
- Equipment Department added to Work Order search results list and corresponding reports.
- Account Code and Name added to results sets of all Part Inventory Value reports accessible from the Part Search window. Values do not display in the report but are available for export.

Security

- New security permission available in the Security Level window, General tab, Miscellaneous category: MaintScape => Maintscape Extension. This permission controls whether user can click the External Application main menu icon, if such is enabled.
- New pop-up menu action available in the Main Menu window, Security icon: "Set Read-Only Password…". This action lets the user set the password for the special "readonly" database user ID, which was introduced in Build 146. This user ID is designed to be used by third-party reporting tools connecting to the MaintScape database.
- New Security permission available for Work Orders and Service Requests: "New Attachment using MaintScapeWeb". This permission controls whether user can add Attachments to a Work Order or

Service Request within MaintScapeWeb when the user does not otherwise have update permission to the WO or SR (see MaintScapeWeb notes regarding this new capability).

- Security permission PO => Receive PO Items can now be set independently for each PO Status. Accordingly, this permission moves from the General Permissions tab of the Security Levels window to the Varying Permissions tab.

System Configuration Settings

- The Purchase Order Logo image is now stored in the MaintScape database and can be set in the MaintScape System Configuration window. Until now, the PO Logo was installed into in the MaintScape program directory as file “po_logo.bmp”. Image file types now supported are BMP, GIF, JPG, JPEG, PNG.
- Sender email address and sender name can now be configured for emails sent by MaintScape (both Classic and Web). These values are set in the MaintScape System Configuration window, Email tab.
- A setting to control or disable drop-down list auto-complete and automatic filtering is now available when this capability is supported (see Miscellaneous enhancements discussion of new programming language).
- MaintScapeWeb Root URL may now be specified. This is useful when MaintScapeWeb is in use as it allows MaintScape to generate URLs to specific MaintScapeWeb pages populated with appropriate data (e.g. in email messages sent by MaintScape). A value must be specified in order for MaintScapeWeb QR Code Labels, as described above, to be printed.

Miscellaneous

- A MaintScape Classic version is available compiled using the latest (2025) version of the underlying programming language. Implications:
  - “Export to Excel” functionality requires the Microsoft “.NET Desktop Runtime 8.0.x” software to be installed, “x86” version (32 bit). Please note that the 32- and 64-bit versions of this Microsoft software can co-exist. Current download site: https://dotnet.microsoft.com/en-us/download/dotnet/8.0.
  - Most drop-down list boxes support auto-complete and automatic filtering when MaintScape Classic is compiled using this new technology. A setting to control or disable this functionality is added to the MaintScape Configuration Settings window (tab Page 5).
- The Equipment Type Wizard for setting an Equipment’s Equipment Type value is enhanced such that text entered to search for Manufacturer now searches for records with the specified text in the External Resource Code value in addition to the Name value.
- User is now prompted for starting label position (row/column) for first page of Part/Part-Location labels – both when previewing and when printing.
- Printed Purchase Requisition now includes Vendor Name as well as Vendor Code.

Build 146 (May 2, 2025)

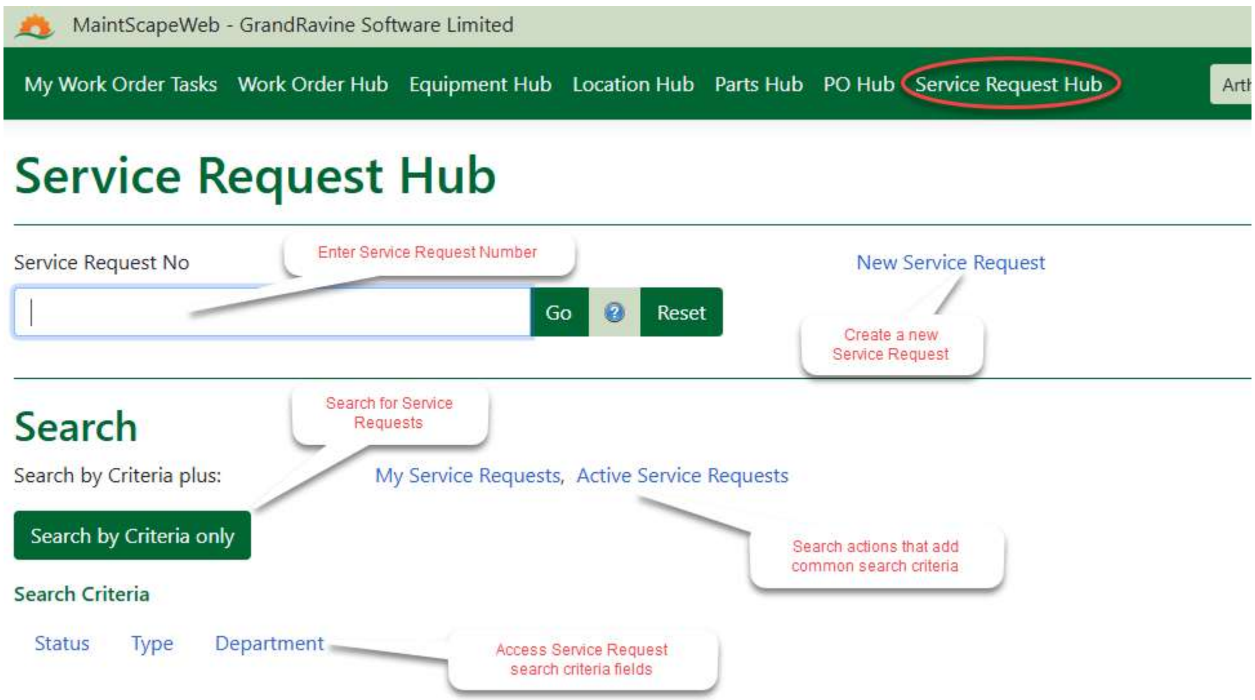
MaintScapeWeb

Service Request Support

All Service Request functionality described here requires a MaintScape license that enables the Service Request module.

Service Request Hub

The MaintScapeWeb menu bar has a new entry, “Service Request Hub”, which appears as follows:



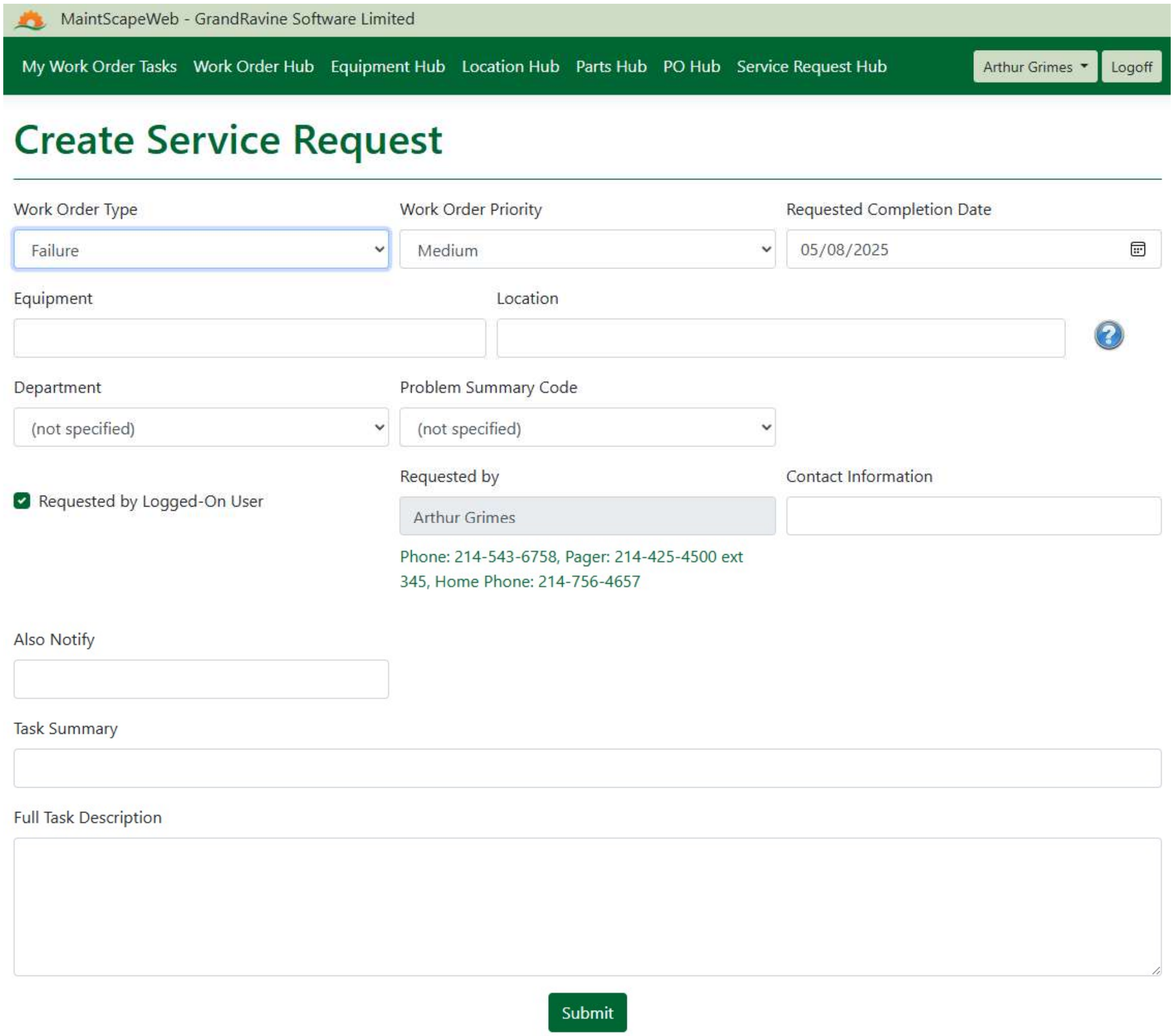
Enter a service request number and click “Go” (or press <enter>) to view the service request in the new Service Request page.

Click the “New Service Request” link to open a page for creating and submitting service requests (subject to the required security permissions).

You can also search for service requests within the Service Request Hub using the supported search criteria. Click any of the available Search Criteria labels, such as Status and Type, to view and select from searchable values. List Service Requests matching search criteria values by clicking the “Search by Criteria Only” button. Alternatively, you could click the “My Search Requests” or “Active Service Request” link. The former link will search for Service Requests matching search criteria values AND that were submitted by you (i.e. the logged-on user).

Create Service Request

Click the “New Service Request” link on the Service Request Hub page to open the Create Service Request page, which appears as follows:

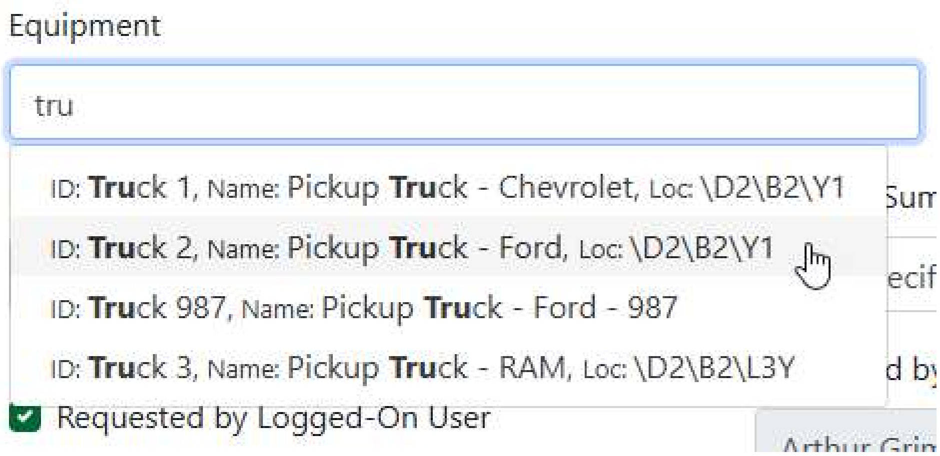


Clicking the “?” button beside the Equipment and Location fields reveals the following information:

At least one of Equipment or Location must be specified. Neither is required to match any type-ahead suggestion offered.

If Equipment is specified, then service is requested for that equipment. If Location is also specified, then you are identifying the location of the equipment. If only Location is specified, then service is requested for that location.

As indicated, both the Equipment and Location fields support type-ahead suggestions. For example:



If the "Requested by Logged-On User" is un-checked, then the user can identify the requestor using an editable field (which also supports type-ahead suggestions of MaintScape Staff members). The requestor value need not match a MaintScape Staff record.

The Contact Information field is mandatory only when contact information is not found in MaintScape for the requestor (via their Staff record).

See the "Email Notifications" section within the "Service Request Enhancements" release notes, below, for a description of the Also Notify field.

A MaintScapeWeb configuration file setting is available to hide the Problem Summary Code field from the Create Service Request page when there are no Problem Summary Code values.

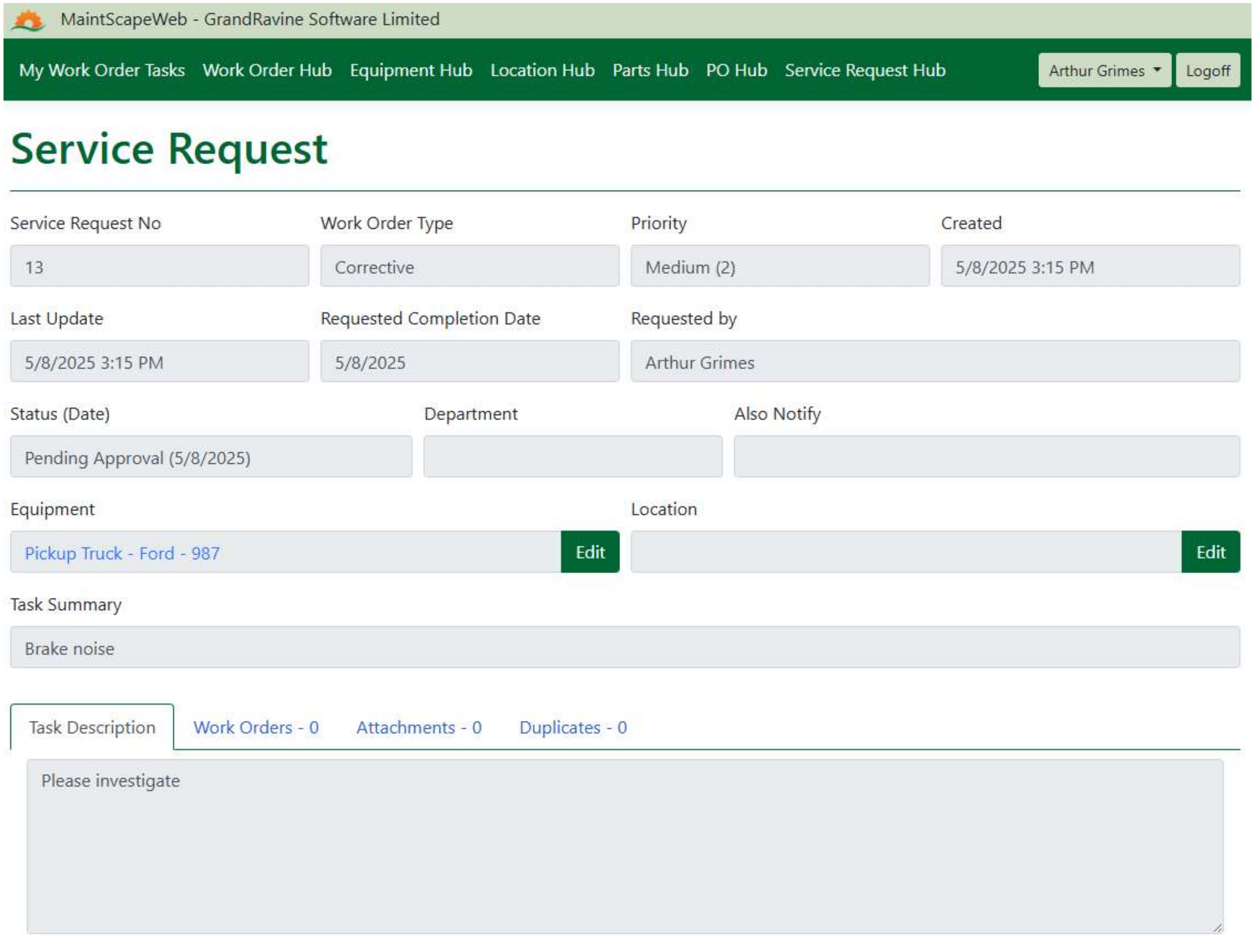
Clicking "Submit" validates the information specified, and if acceptable, creates the Service Request, sends an email notification if required information is configured, and then displays the created Service Request in the Service Request page (described below).

Service Request Page

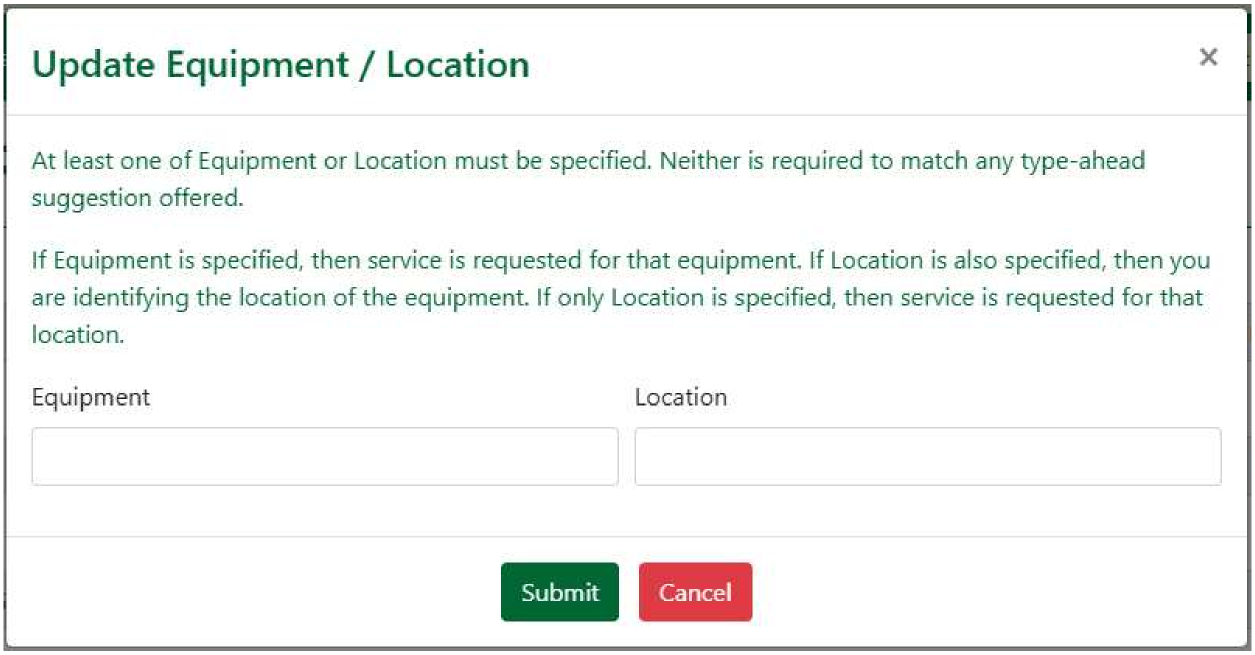
A Service Request can be displayed in the Service Request page any number of ways:

- Enter a Service Request number in the Service Request Hub and press <enter> or click "Go".
- Upon successful acceptance of a new Service Request.
- By searching for Service Requests and clicking the Service Request number of a record in the list.
- By linking from a Service Request listed in the Work Order page, Service Requests tab, when a Work Order associated with a Service Request is displayed (e.g. the Work Order was generated from a Service Request).

The Service Request page appears as follows:



The “Edit” buttons for the Equipment and Location field both present the same pop-up to change the subject of the Service Request (subject to security permission and Service Request status):



The Update Equipment/Location capability is mostly useful when the submitter of the Service Request did not select an Equipment and/or Location from the database. The reviewer of the Service Request can now do so, and in fact must do so to generate a Work Order from the Service Request. Type-ahead suggestions are provided here, just as they were in the Create Service Request page.

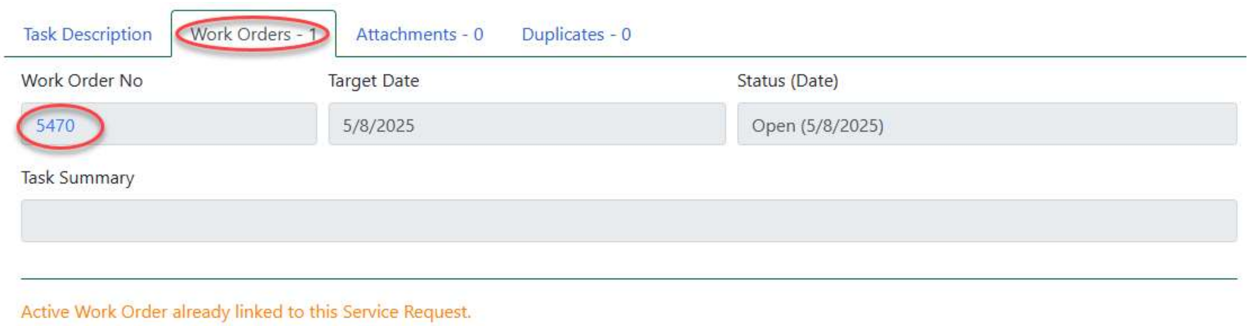
Associated Work Orders

The Service Request page has a tab to show Work Order(s) associated with the Service Request. In the above screen print excerpt below, tab label “Work Orders – 0” indicates there are no work orders associated with the Service Request. In most cases, the Work Order associated with a Service Request is the Work Order generated from a Service Request.

Clicking the Work Orders tab shows the following:

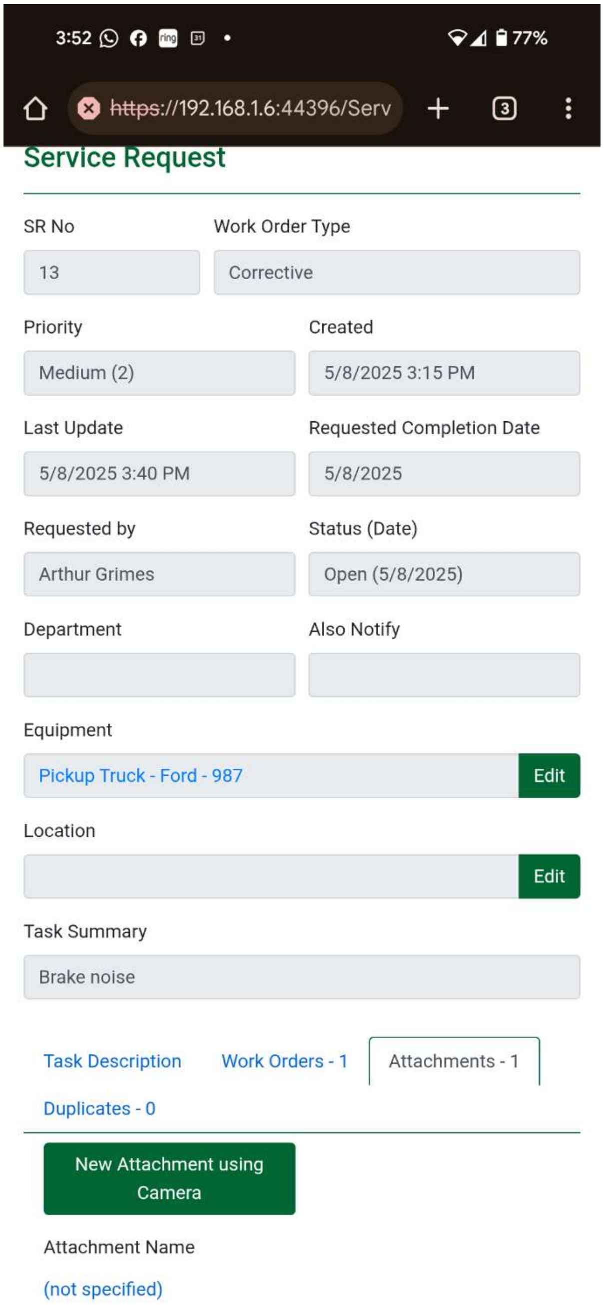
Subject to security permission, you can create a Work Order from the Service Request by clicking the “Create Work Order” button. If successful, you will see the new Work Order in the Work Order Task page, and if all configuration data is set up, an email notification will be sent to a designated recipient, copied to the requestor (and the Also Notify individual, if specified). The Work Order Task page now has a new tab which will show the associated Service Request:

Notice the circled tab label, above, indicates the Work Order is associated with one Service Request, which is the Service Request that we just generated the Work Order from. Navigate from the Work Order back to the associated Service Request by clicking the circled Service Request Number link. Now the Service Request page shows that there is 1 associated Work Order:



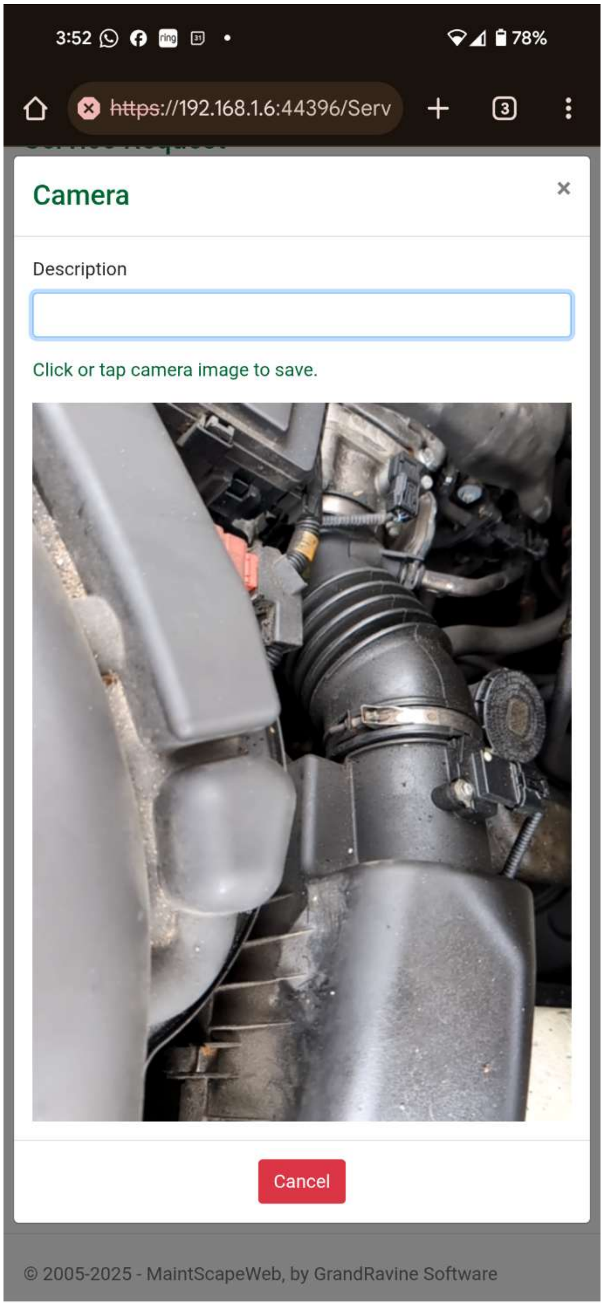
Attachments

The Service Request page has a tab to show Attachment(s) associated with the Service Request. Following is a screen print of the Service Request page, Attachments tab in MaintScapeWeb running on a smartphone. In the example, tab label “Attachments – 1” indicates there is 1 Attachment associated with the Service Request. Most details of the Attachment are clipped on the small phone screen and can be seen by scrolling down:



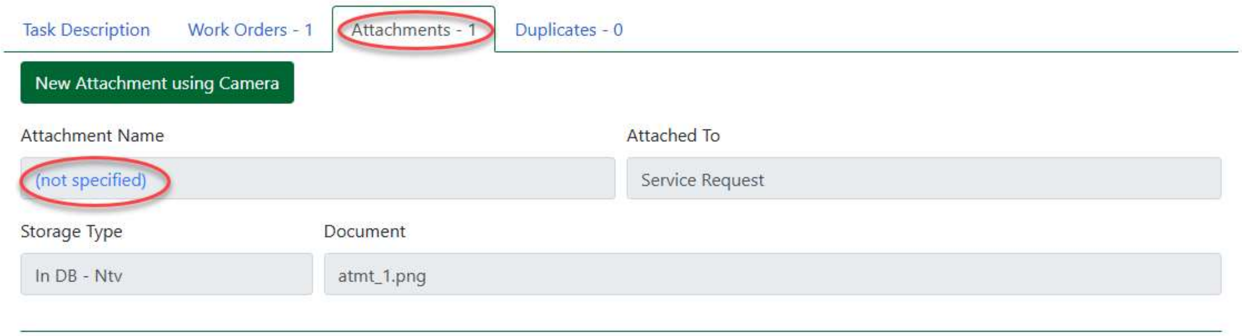
Notice the button, "New Attachment using Camera", above. If your device has a camera, then clicking this button would let you take a picture with the camera and save it in MaintScape as a new "In Database – Native" attachment. See documentation section, "New In-Database Attachment Storage Type", in section "MaintScape Classic", below, for more information on the new "In Database – Native" attachment storage type.

If you click the “New Attachment using Camera” button, and your device has a camera, you will get a pop-up window showing you the camera view:



You can optionally type a description for the attachment, then tap the camera view to save the image as a MaintScape attachment and link the new attachment to the Service Request.

Here is another view of the Attachments tab of the Service Request page, showing the attachment just created and linked via the device camera:



Clicking the circled Attachment Name will show you the Attachment in MaintScapeWeb, which is the picture that was taken using the mobile device camera. The Attachment will display in a new browser tab, rather than replacing the page displayed in the current browser tab. Therefore, delete the browser tab showing the Attachment when done.

The Attachment created from the camera is accessible when viewing the Service Request in MaintScape Classic as well.

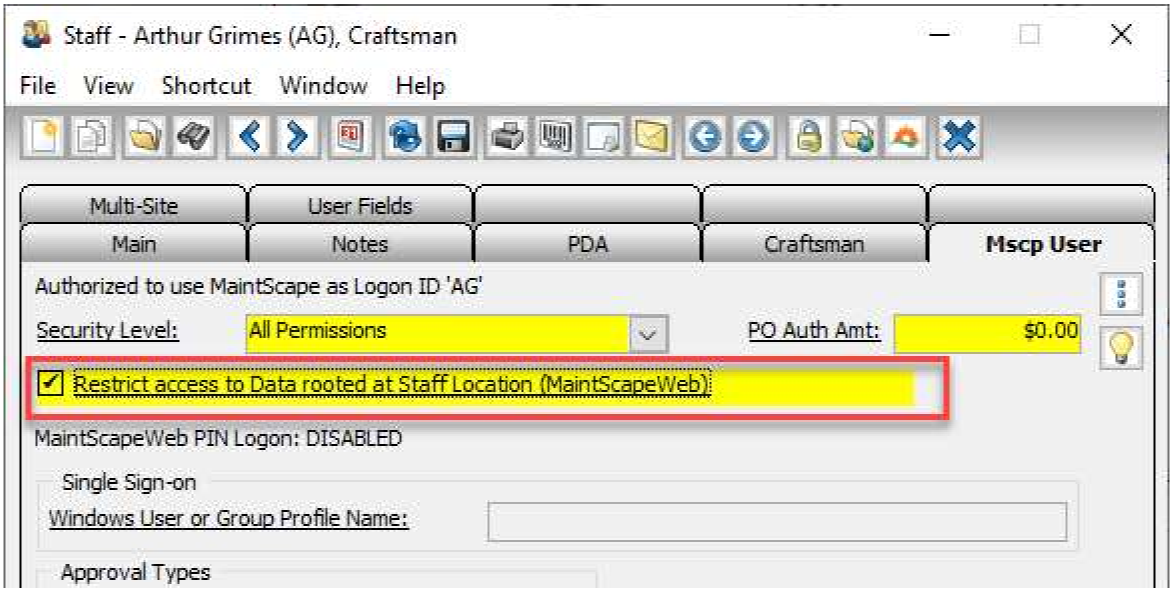
This new functionality to view Attachments on a Service Request, and add new Attachments using the device camera, is similarly newly implemented in MaintScapeWeb for Work Orders.

Duplicates

The ability to mark one Service Request as a duplicate of another is a long-standing capability of MaintScape Classic. You can view Service Request duplication relationships in MaintScapeWeb but not create them.

Restrict Data by Location

MaintScape Classic has always supported associating a Staff member, MaintScape User or otherwise, with a MaintScape Location. There is now a new checkbox in MaintScape Classic for MaintScape Users labelled, "Restrict access to Data rooted at Staff Location (MaintScapeWeb)":



When checked for a MaintScape User, the user can only create and update data in MaintScapeWeb tied to a Location if that data's Location is within the subtree rooted at their MaintScape Location.

This is like the existing MaintScape multi-site functionality restricting a user's data access to within their Site, however this new functionality provides more granularity. For example, within a MaintScape Site, this new functionality can restrict one user to Equipment on the shop floor, and another to Equipment in the testing lab.

This new data restriction by Location only applies to MaintScapeWeb functionality, whereas multi-site restrictions apply also to MaintScape Classic functionality.

Single Sign-On

MaintScape Classic has supported Single Sign-On since Build 142 – please see notes for that release in this document for more details. This means a user can sign on to MaintScapeWeb without entering a username and password. Single Sign-On succeeds if the MaintScapeWeb user's Active Directory name matches that configured for their Staff record in MaintScape. The following are also required:

- Single Sign-On must be enabled for MaintScape Classic.
- The MaintScapeWeb application must be configured for Windows Authentication in IIS (Microsoft Internet Information Services). This should be done by the IT department in conjunction with MaintScape Support.

Single Sign On will only work when MaintScapeWeb is run from a Browser running on Microsoft Windows. If running MaintScapeWeb from a browser on another platform, accessing MaintScapeWeb configured for Single Sign On will prompt for a Windows logon. If you run a hybrid Browser platform environment, then a workaround is to install two instances of MaintScapeWeb, each accessed with their own URL: One instance with Single Sign On enabled (Windows Authentication), and the other instance not (Anonymous Authentication).

Work Order Task Page

Some of the enhancements described here may already have been described in other release notes sections for this release, particularly “Service Request Support”.

- An additional tab “Service Requests” is displayed for a Work Order that is associated with a Service Request (e.g. work order generated from a service request). A link is available to navigate from a listed Service Request to its full view in the Service Request page.
- The Work Order Task page has a new tab to show Attachment(s) associated with the Work Order. Attachments may be directly associated with the Work Order, or they may be associated with other objects associated with the Work Order, such as Equipment, Location, Procedures, Parts. The behavior of this tab is the same as described for the new Service Request page. In summary:
  - Attachments of all storage types will be listed, but only those of storage type “In Database – Native” can be viewed in MaintScapeWeb.
  - A device camera can be used to add a photograph as an attachment to the Work Order, assuming the Work Order is modifiable, and the user has security permission.
- The new Work Order Sub-Status field is added to the Main tab and may be updated assuming the Work Order is modifiable, the user has security permission, and at least one sub-status value is valid for the work order’s status. See release notes section “Work Order Sub-Status” within section “MaintScape Classic”.
- The Work Order Status Change pop-up now supports setting a sub-status value for the new status value. This support works exactly as described for the MaintScape Classic Work Order Status Change pop-up window – see section “Work Order Sub-Status”, within section “MaintScape Classic”, below.
- Failure Date/Time, Failure Reason and Failure Description can now be edited on the Failure tab for Work Orders of type Failure.
- The Initiate Type field has moved from tab “Main – 2” to tab “Main”.
- The Initiated By field on tab “Main – 2” now displays the individual’s name rather than code.

Miscellaneous

- Equipment Typeahead suggestions list improvements apply anywhere in MaintScapeWeb that Equipment Typeahead is supported:
  - Suggestions identification is now done on Equipment Code values as well as Equipment Name and Location values. Equipment Code is now also shown in the suggestion value, except when it is identical to Equipment Name.
  - Typing “1234” will now match “abc-1234” whereas previously matching required “1234” to be at the beginning of a word.

- Work Order Hub search criteria now includes Target Date, permitting searching for Work Orders with target date greater or equal to a specified date.

MaintScape Classic

Service Request Enhancements

The Service Request enhancements in MaintScape Classic are in support of the new implementation of Service Requests in MaintScapeWeb – please see corresponding documentation for MaintScapeWeb enhancements, above.

- A Department field is now available in the Service Request record. A requestor may optionally specify a Department value to help identify a non-coded equipment. The Department value is NOT defaulted to equipment department when an Equipment is specifically identified.
- An Also Notify field is now available in the Service Request record. This is a list of Staff members who can be "also notified" (i.e. cc'd) when email notifications are sent out for the Service Request. See "Email Notifications" documentation, just below.

Email Notifications

Email notifications can now be sent when any of the following events occur for a Service Request:

- A new Service Request is created.
- A Service Request changes status.
- A Work Order is generated from a Service Request.

The primary recipient of a New Service Request email notification is either:

- The "SR Notify E-mail Address" now available in the MaintScape Configuration Settings window, tab "Page 5".
- When MaintScape multi-site functionality is enabled, a site-specific email address can be specified for any Site record. When specified, the Site email address overrides the general email address specified in the MaintScape Configuration Settings window. Thus, each Site in a multi-site MaintScape configuration can have its own Service Request notification email address.

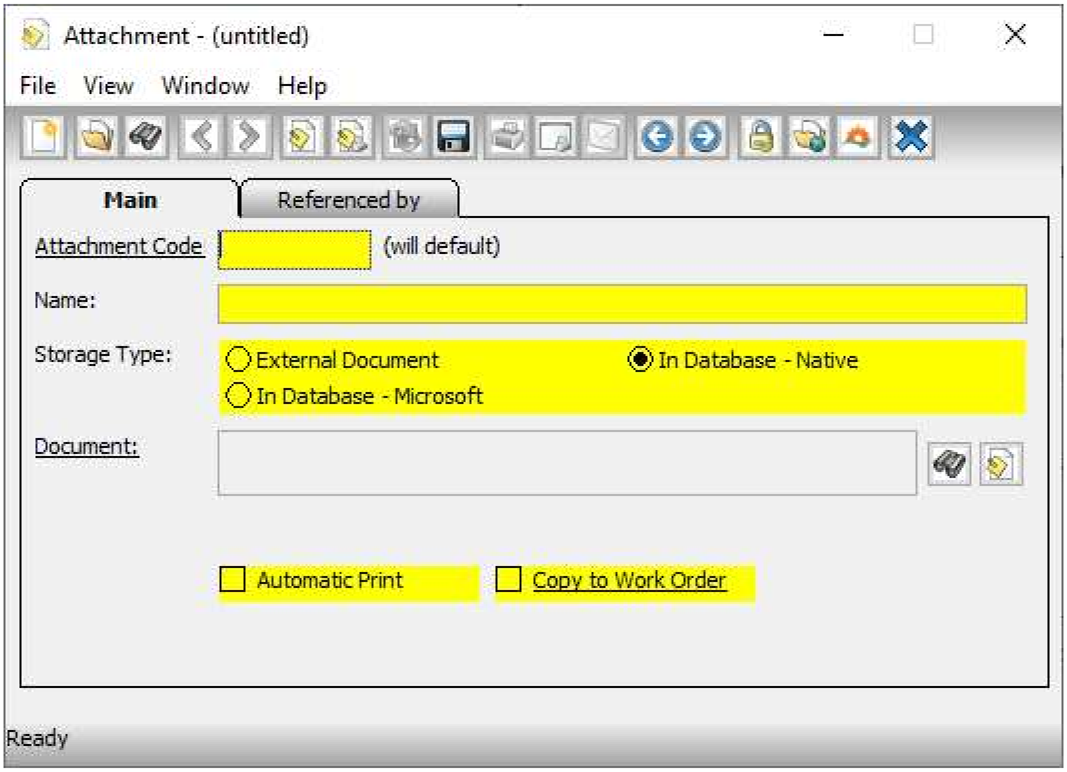
The creator of a Service Request is copied on any email notification sent regarding their service requests. If specified, the "Also Notify" Staff member for a Service Request is also copied on all email notifications.

Email notifications for Service Requests are only sent out when all the following are true:

- A primary recipient can be determined from either the site-specific value or, failing this, from the general value specified in the Configuration Settings window.
- Valid "Send E-mail" configuration settings are specified in the Configuration Settings window, "E-mail" tab.

New In-Database Attachment Storage Type

The Attachment detail window has been updated to look as follows:



Notice there are now two "In Database" Storage Types. The traditional type is renamed to "In Database – Microsoft", reflecting the fact that it is based on proprietary Microsoft technology (OLE – Object Linking and Embedding), which runs only on Microsoft Windows.

The new storage type, "In Database – Native", stores documents inside the database exactly as they would be stored in a computer file. Attachments of this type are the only ones compatible with MaintScapeWeb. I.e. Attachments of storage type "In Database – Native" can be viewed in both MaintScape Classic, running on Microsoft Windows, and in MaintScapeWeb, running in a web browser.

Please note the following options constraints:

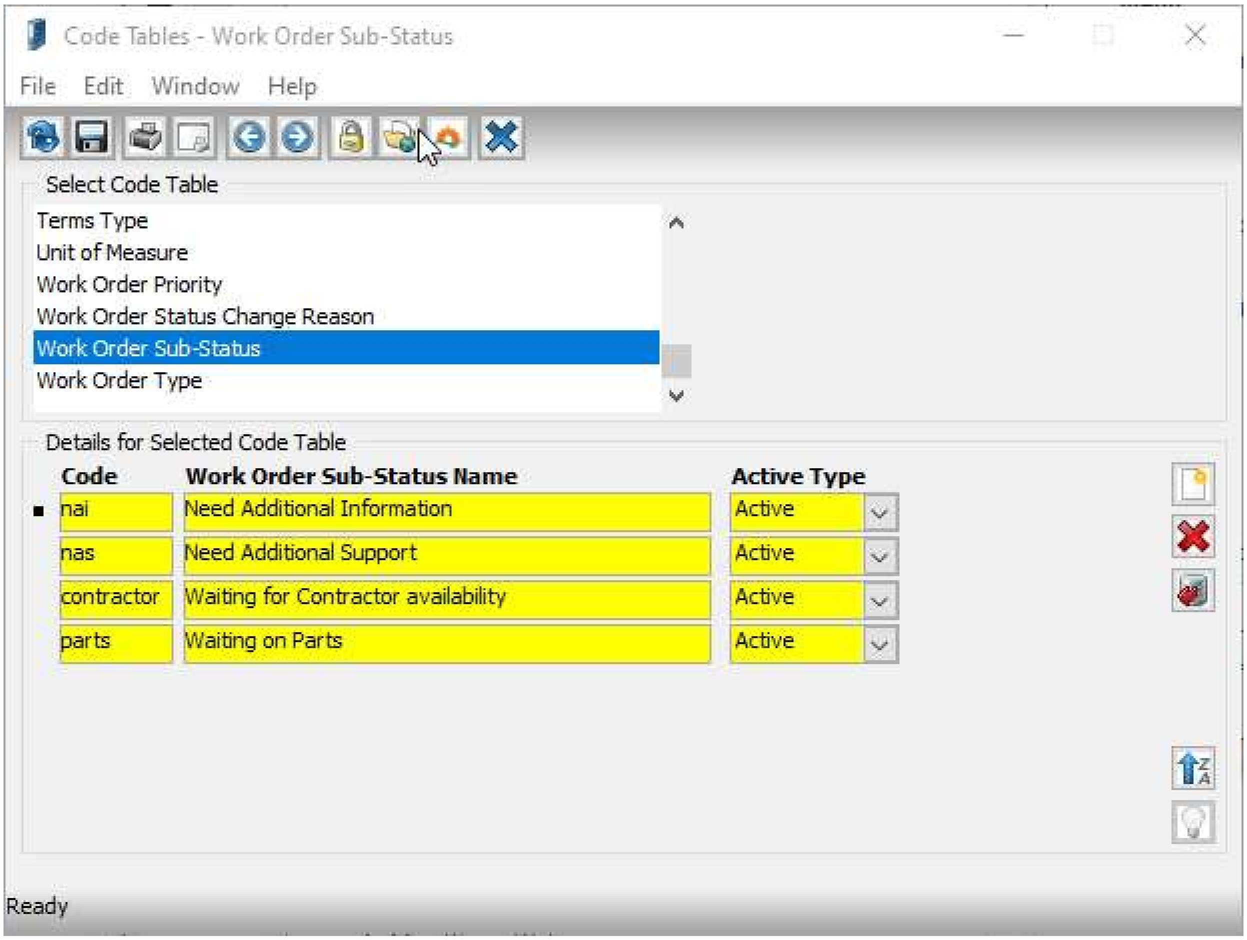
- Only attachments of storage type "External Document" can be marked as "Automatic Print". Such attachments will be printed when a work order they are associated with is printed.
- Only attachments of storage type "In Database - Microsoft" can be marked as "Copy to Work Order". Such attachments are copied when attached to a work order that they are associated with. I.e. Each work order will get their own copy of the Attachment, which can be edited to contain work-order specific information.

Attachment tabs on detail windows such as Work Order, Equipment, Part, etc., have been enhanced to display attachments of the new attachment storage type and their distinct properties. Attachment List reports and Attachment printout have been similarly enhanced.

Work Order Sub-Status

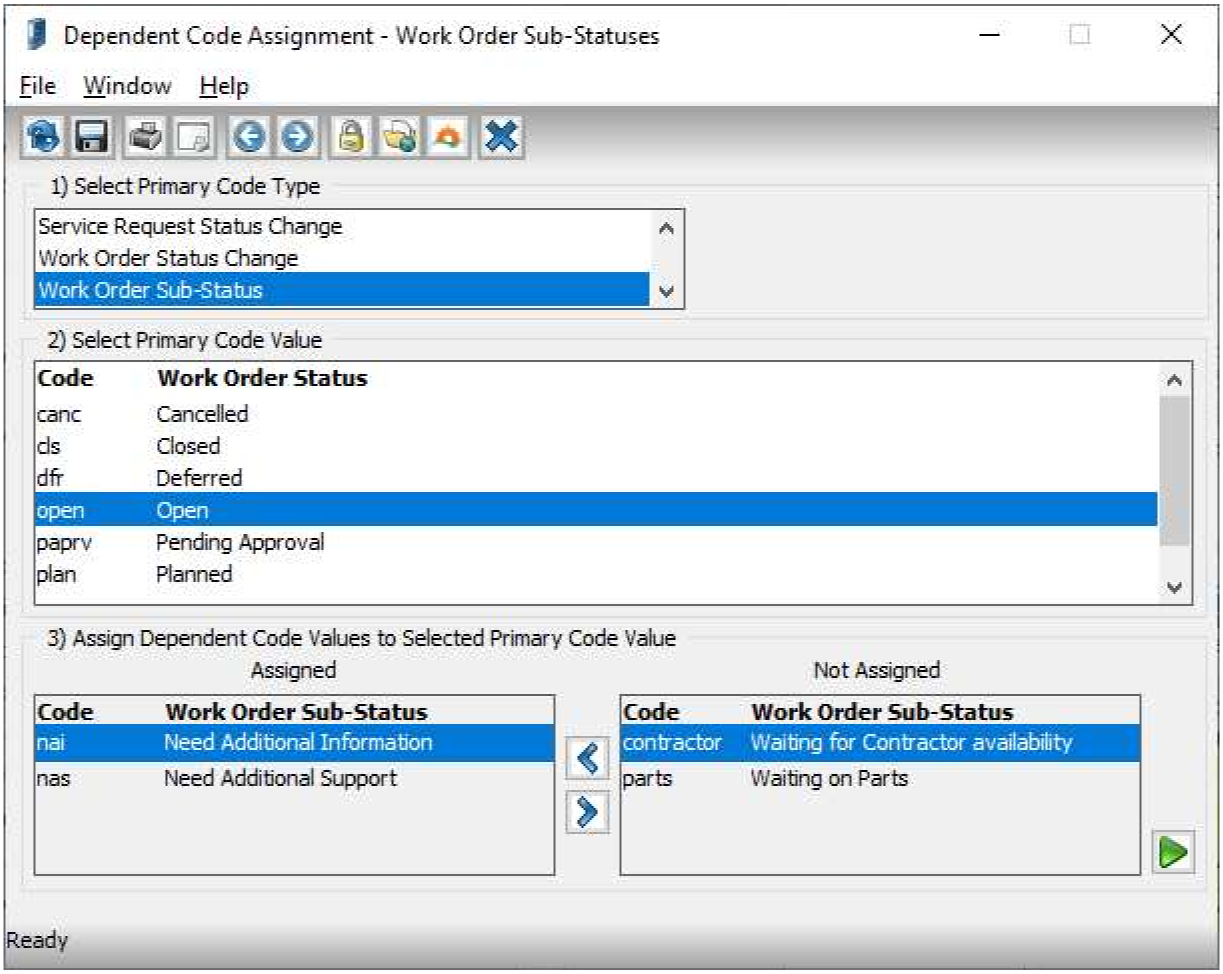
Work Order sub-status codes are now supported, with the ability to mark the sub-status values that are valid for work orders of a particular status.

The first step is to define the set of Work Order Sub-Status values supported within the Code Tables window (System Administration icon => Setup Data => Code Tables):

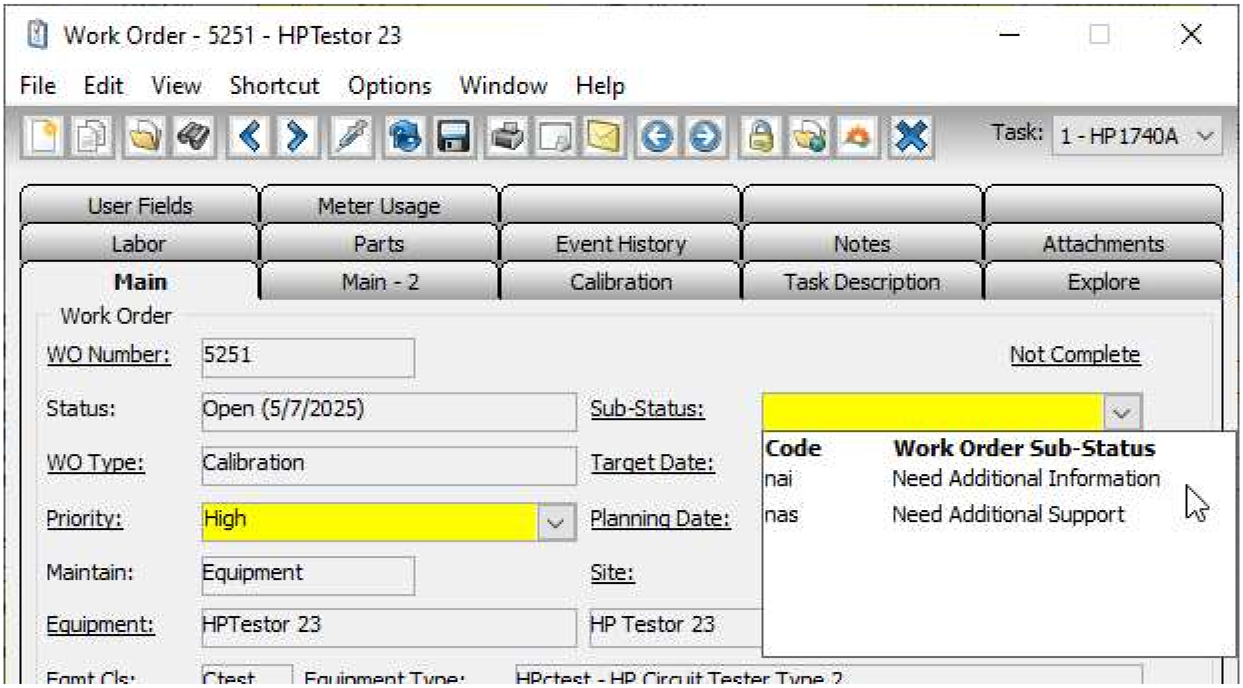


The next step is to define the Sub-Status values that are valid for work orders of a particular status (System Administration icon => Setup Data => Dependent Code Assignments).

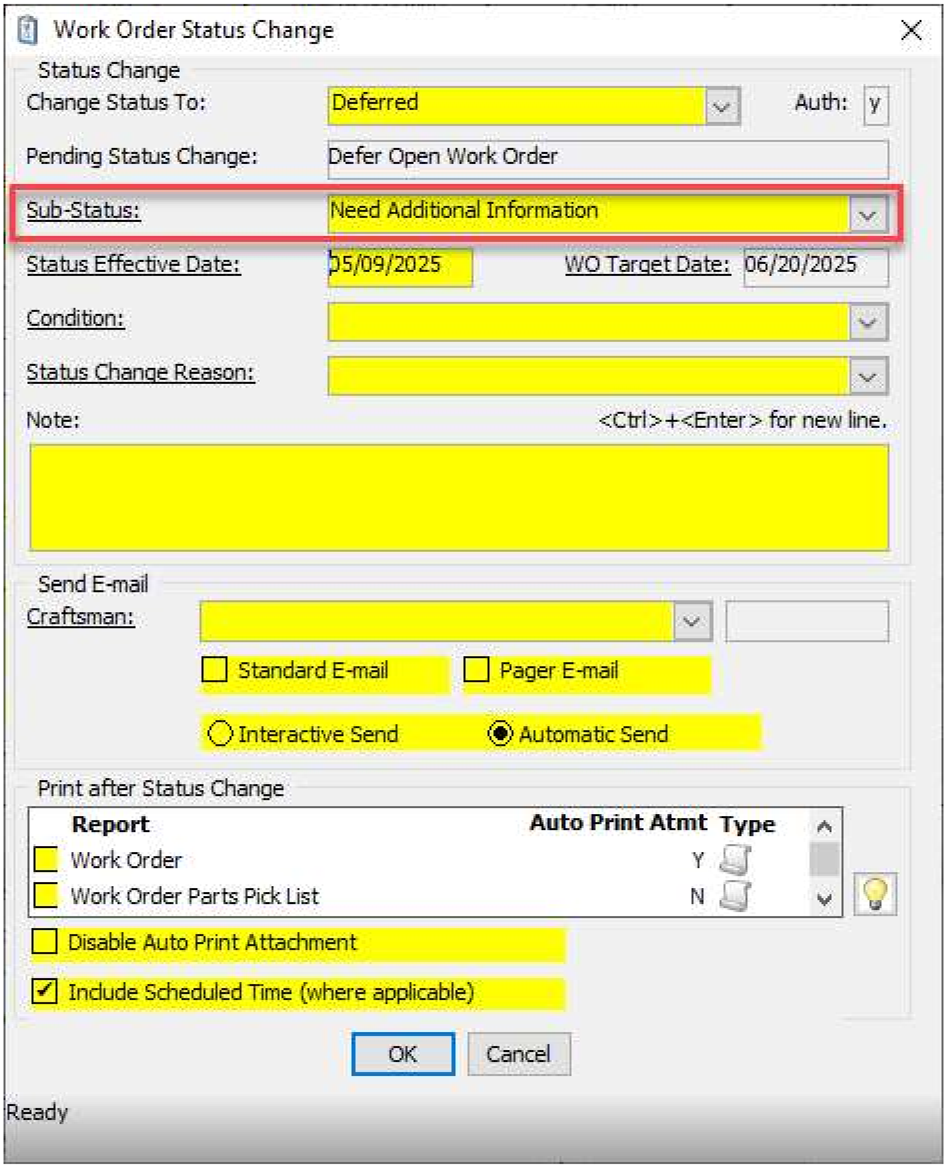
For example, the following shows that sub-status values “Need Additional Information” and “Need Additional Support” are valid for work orders of status “Open”:



The Work Order window now has a field for selecting a valid sub-status for the work order, depending on its status:

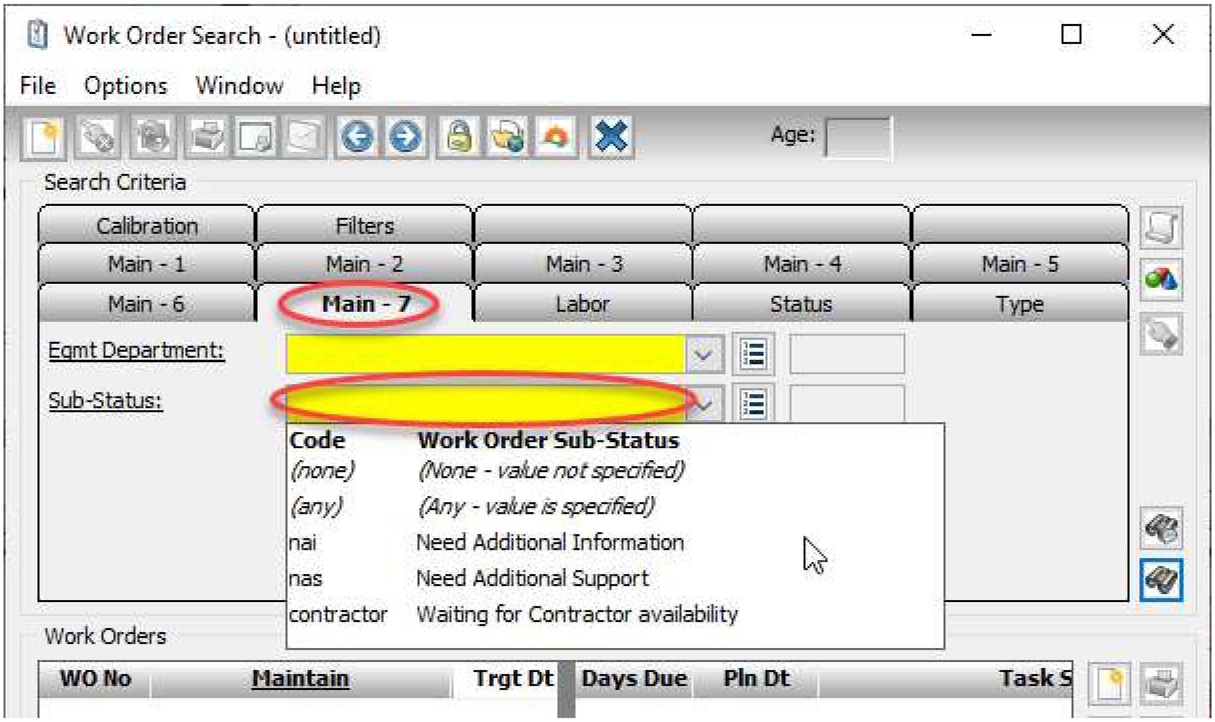


The MaintScape Classic status change pop-up window now supports setting a sub-status value for the new status value:



If the work order's current sub-status value is also valid for the new status, then the current sub-status value will be pre-filled in the status change window. Otherwise, the sub-status field in the status change window will be blank, and the user may choose a sub-status value valid for the new status (or just leave the new sub-status blank).

The Work Order Search window now supports searching for work orders by Sub-Status value:



Miscellaneous

- The Reason Code Assignment window has been renamed to the Dependent Code Assignment window, since it is now used for associating Work Order Sub-Status values to Work Order Status values, and Work Order Sub-Status is not a “Reason Code”.
- The Staff window, “MaintScape User” tab has a new checkbox labelled, “Restrict access to Data rooted at Staff Location (MaintScapeWeb)”. The tab and checkbox are only accessible when logged on as the MaintScape Administrator (user “dba”). Please see the description for MaintScapeWeb enhancement, “Restrict Data by Location” section, for more details.
- The Work Order window is slightly enlarged and re-arranged, particularly to support the new Work Order Sub-Status code (described above).
- The Pop-up window to manually import a Procedure into a Work Order now supports searching for Procedures with classification compatible with the specified Equipment. This is already supported for Procedure search within the Maintenance Schedule window.
- Department is now a field on the Staff window. Search for Staff by Department is supported, and Department is listed in the search results and Staff reports.
- A new SQL Anywhere database logon “readonly” is available with read-only access to all database tables. This logon should be used by third party software querying the MaintScape database.
- SQL Anywhere version 11 database software is no longer supported. Supported SQL Anywhere versions are 16 and 17.

Build 145 (August 2, 2024)

MaintScape Classic

PR/PO Non-Catalogued Part Permissions and Matching Non-Catalogued PR Item to Catalogued PO Item

For those not familiar with Catalogued/Non-Catalogued Part terminology:

- A Catalogued Part is a Part represented by a record in the MaintScape Part file. The MaintScape Part file is managed and queried via the MaintScape Main Menu window "Parts" icon actions.
- A Non-Catalogued Part is simply a free-text description of something and does not have to match any lookup record.

Behavior Change from Build 144

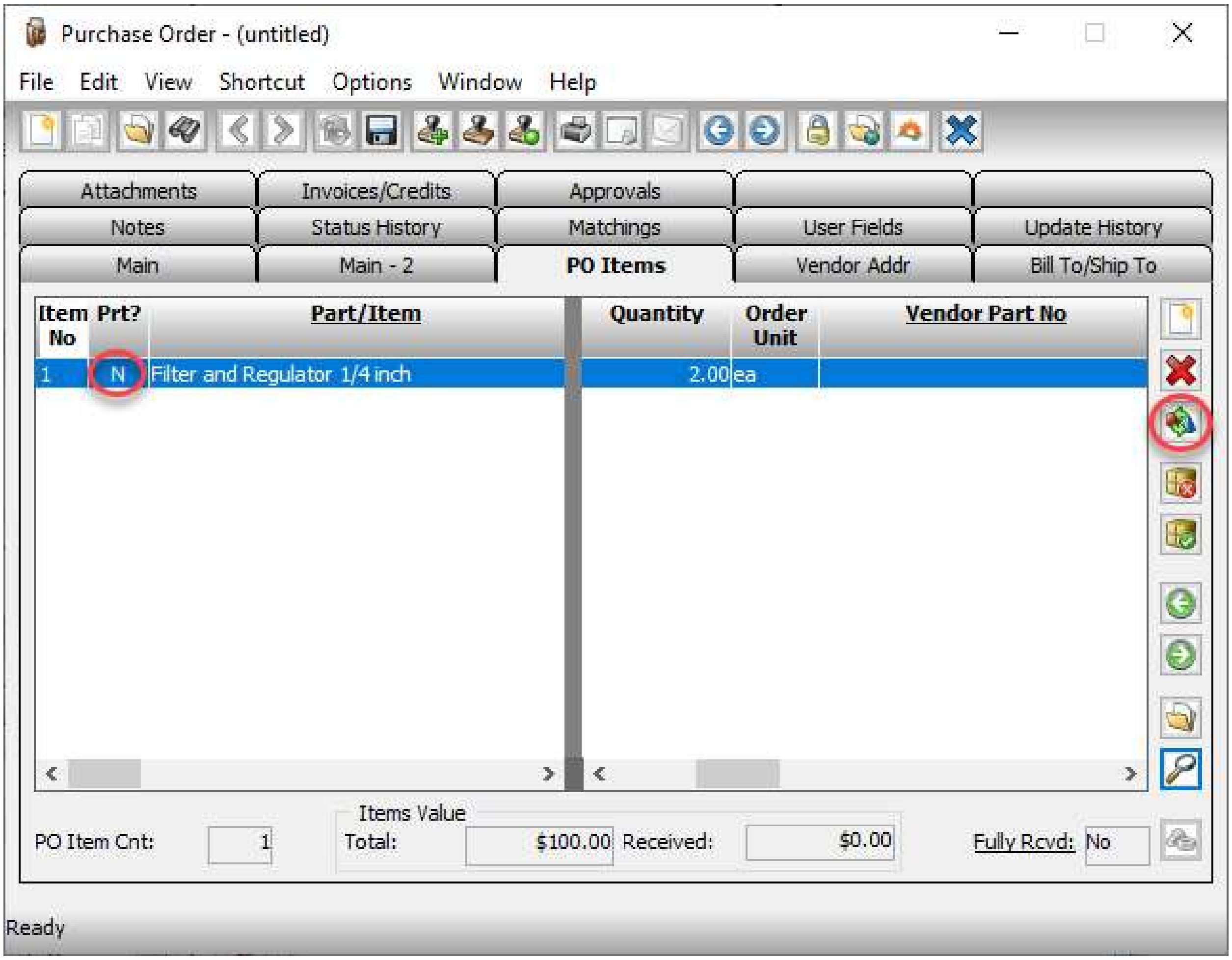
The Non-Catalogued Part permission for Purchase Requisitions (PRs) and Purchase Orders (POs), introduced in Build 144, has been refined, including some changes from original behavior.

Users who do NOT have Non-Catalogued Part permission for PRs or POs cannot add, modify, or delete a non-catalogued item on a PR or PO. Their ability to add, modify, or delete catalogued items, or perform any other action on PRs or POs, are now subject to normal security constraints that have been in place for a long time.

A non-catalogued item on a PR or PO is assumed to be authorized to be there, and either was created before the Non-Catalogued Part permissions were created or subsequently by a user with such permissions. Users authorized to Receive PR or PO Items are now able to receive non-catalogued items, regardless of whether they have Non-Catalogued Part permission.

PO Item Substitution Overview

A user with security permission to create POs will be able to send a non-catalogued PR item to a PO, regardless of whether they have PR or PO Non-Catalogued Part permission. However, if they do NOT have PO Non-Catalogued Part permission, they will be prohibited from saving the PO with the non-catalogued item. They must first use the new “Substitute” button (circled below) to replace the non-catalogued item with a catalogued item:



The circled “Substitute” button operates on the selected PO Item. The circled “N” in the selected Item indicates the Item is for a Non-Catalogued Part.

Clicking the “Substitute” button pops up the usual window for adding a new PO Item. On acceptance, the new PO Item will replace the PO Item selected when the button was clicked.

In summary, if a user without PO Non-Catalogued Part permission wants to send a non-catalogued PR Item to a PO, they would do the following:

- Send the non-catalogued PR Item to a PO.
- Use the “Substitute” button to replace the new PO Item for the Non-Catalogued Part with a PO Item for a Catalogued Part.
- Save changes to the PO.

Matchings from Non-Catalogued PR Items to Catalogued PO Items

Up until this release, MaintScape required Matchings to be between identical items. For example:

- A Matching between a PR Item and a PO Item indicates a requisitioned item now on order. Both matched items had to be the same Catalogued Part, or both be a Non-Catalogued Part with similar descriptive text.
- A Matching between a PR or PO Item and a Receipt (part inventory transaction) indicates a requisitioned or ordered item that has been received in whole or part. Both matched items had to be the same Catalogued Part, or both be a Non-Catalogued Part with similar descriptive text.

This release now permits a PR Item for a Non-Catalogued Part to match a PO Item for a Catalogued Part. This reflects the case where the person who creates the PR Item cannot determine the correct part code, but the person ordering the item can determine the correct part code. We want to maintain a matching from the Non-Catalogued PR Item to the Catalogued PO Item, to preserve the relationship between the requisitioned and ordered item.

When you use the Substitute button for a PO Item, and the PO Item to be replaced is matched to a non-catalogued PR Item, then the replacement PO Item will be matched to that PR Item as well. Full details on this process and its constraints are in the section immediately below.

Full Details on PO Item Substitution

PO Item substitution (using the new ‘substitute’ button) is permitted in the following cases, and the replacement PO Item can be for either a catalogued or non-catalogued part:

- The PO Item is NOT matched from a PR Item, which means the PO Item was NOT sent from a Purchase Requisition.
- The PO Item is matched from a single non-catalogued PR Item, which means the PO Item represents the purchase of a non-catalogued requisitioned item. The PO Item to be replaced can be either for a catalogued or non-catalogued part. The former will be the case when the original non-catalogued PO Item sent from the PR has already been replaced by a catalogued PO Item.

Cases where PO Item substitution are NOT permitted:

- The PO Item is matched from more than one PR Items, which means the PO Item represents the purchase of quantities from multiple Purchase Requisitions.
- The PO Item is matched from a Catalogued PR Item. This case is not supported because matchings between catalogued parts must still represent the same parts.

When PO substitution is permitted and a replacement PO Item is accepted, then the original PO Item is deleted, and the replacement PO Item is added. One of the two following cases will apply:

- If the original PO Item was matched from a single non-catalogued PR Item, then the replacement PO Item must be catalogued, and it will also match from the non-catalogued PR Item.

If you wanted to substitute a non-catalogued PO Item matched from a non-catalogued PR Item, you should instead just edit the existing non-catalogued PR Item and change its item description (MaintScape will require similarity between the PO Item description and that of its matched PR Item).

- If the original PO Item was NOT matched from a PR Item, then the replacement PO Item will not be either.

When replacing a Catalogued Part PO Item that is matched from a single Non-Catalogued Part PR Item, and the catalogued part does not have a price for the PO vendor, then pricing on the replacement PO Item defaults to that of the matched-from Non-Catalogued PR Item. If the catalogued part has a price for the PO vendor, then that vendor's primary price is used.

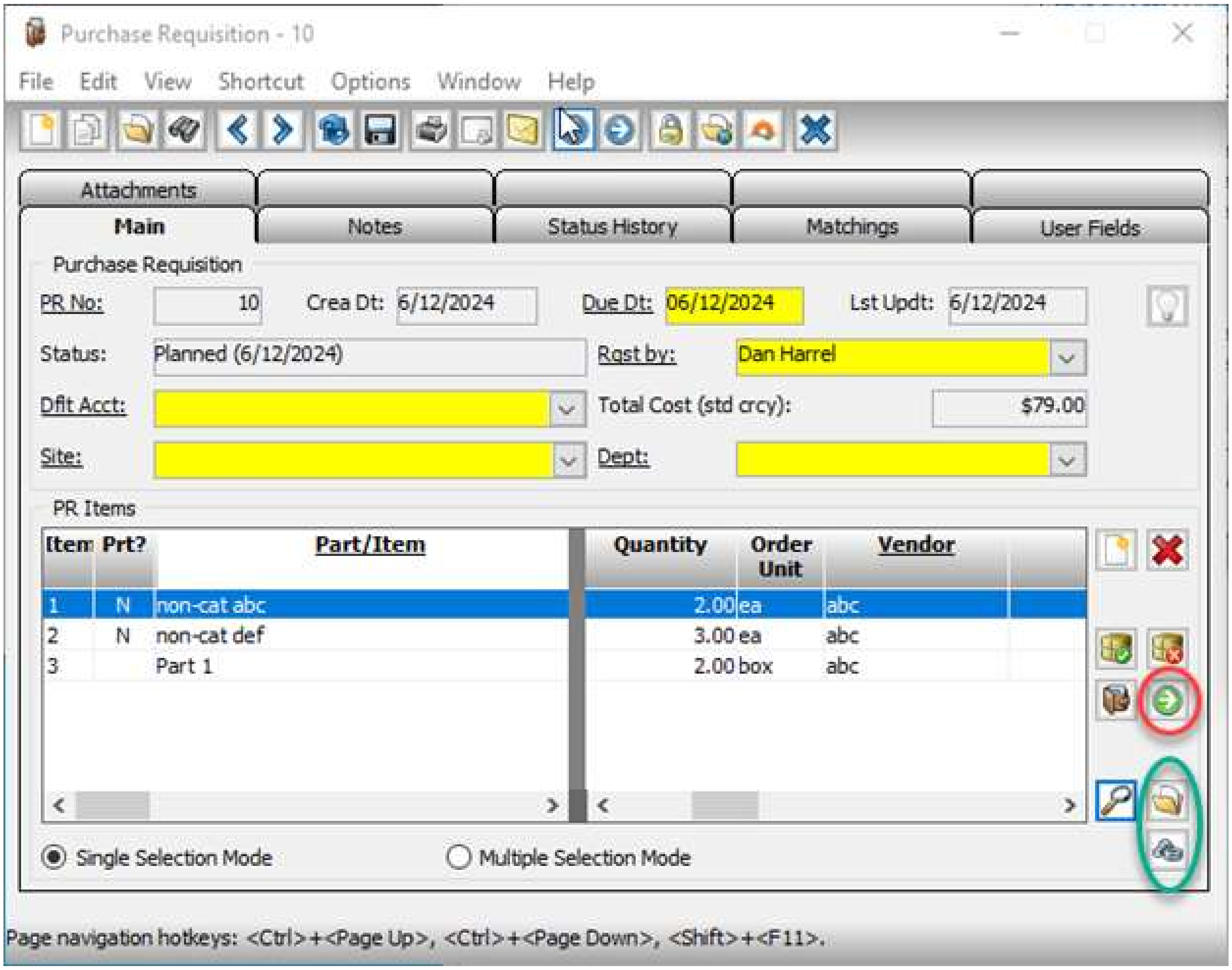
Other PR/PO/Receipt/Return Matchings Enhancements

Matchings Navigation

New buttons are available to greatly simplify navigating Matching relationships in MaintScape. There are 3 such relationships that can be navigated:

- Matching from PR Item to PO Item (order an item on a PR)
- Matching from PR Item to Receipt/Return (receive/return directly from a PR)
- Matching from PO Item to Receipt/Return (receive/return from a PO)

PR window example:



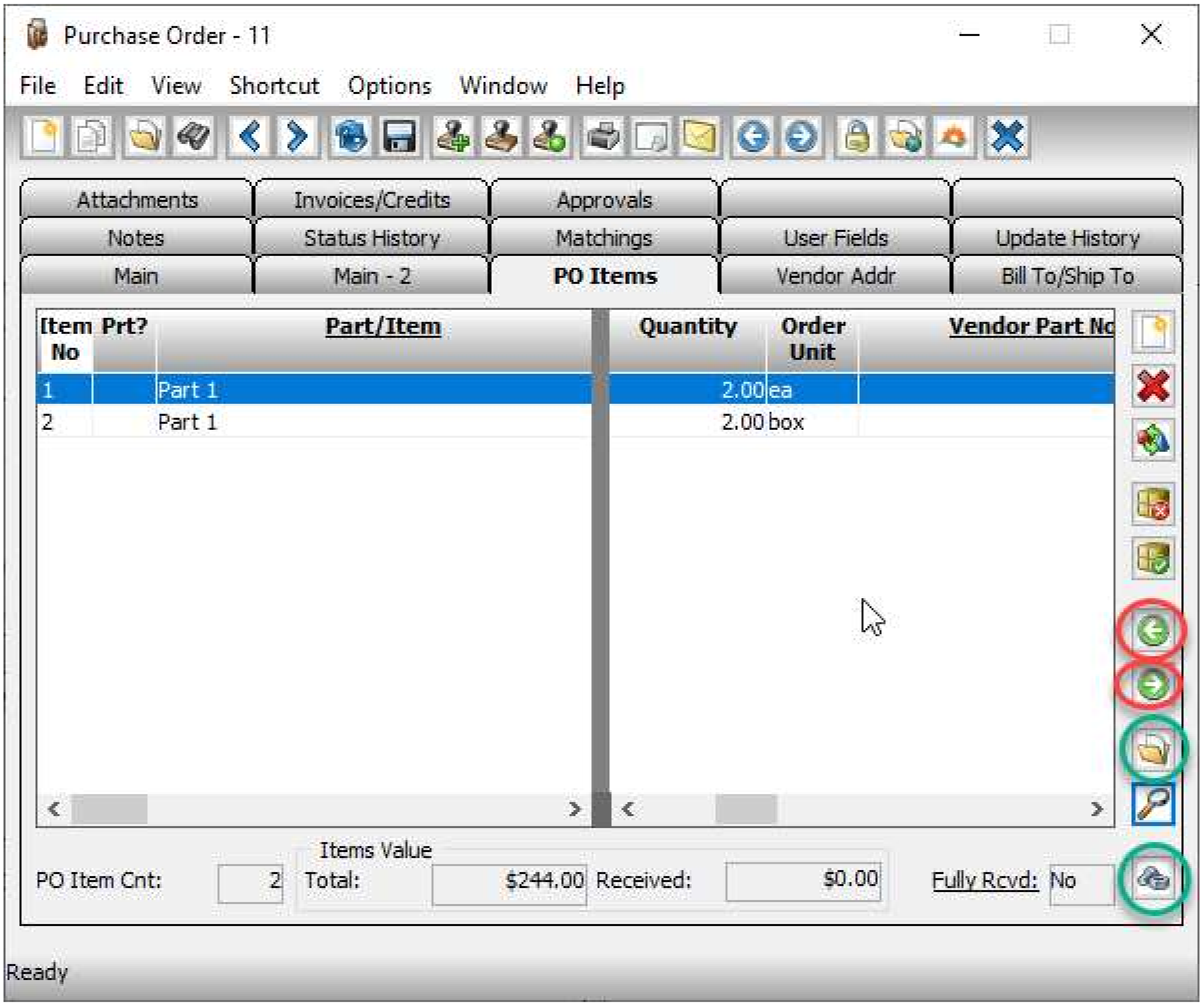
Clicking the arrow button, red-circled above, will navigate you to:

- The PO and PO Item if the selected PR Item is ordered as one item on one PO.
- The Receipt Part Inventory Transaction if the selected PR Item is received via one receipt.
- The “Matchings” tab of the PR window, appropriately positioned, if the PR Item is matched to more than one PO Item and/or Receipt/Return.
- Issue a message if the selected PR Item is not matched to either a PO Item or a Receipt/Return.

Green circled buttons:

- The “Open” button will display the catalogued Part of the selected Item in the Part window. User will be advised if the Item is not for a catalogued part.
- The button with a picture identical to the MaintScape Part window icon had a different picture in prior releases of MaintScape. Clicking this button will open the Part Search window, executing a query to show the same set of Catalogued Parts as appear within all PR Items. This is useful because more information is visible in the Part Search window, and more actions are supported.

PO window example:



Clicking the left-arrow button, red-circled above, will navigate you to:

- The PR and PR Item if the selected PO Item represents the order of one item on one PR.
- The “Matchings” tab of the PO window, appropriately positioned, if the PO Item is matched from more than one PR Item.
- Issue a message if the selected PO Item is not matched from a PR Item.

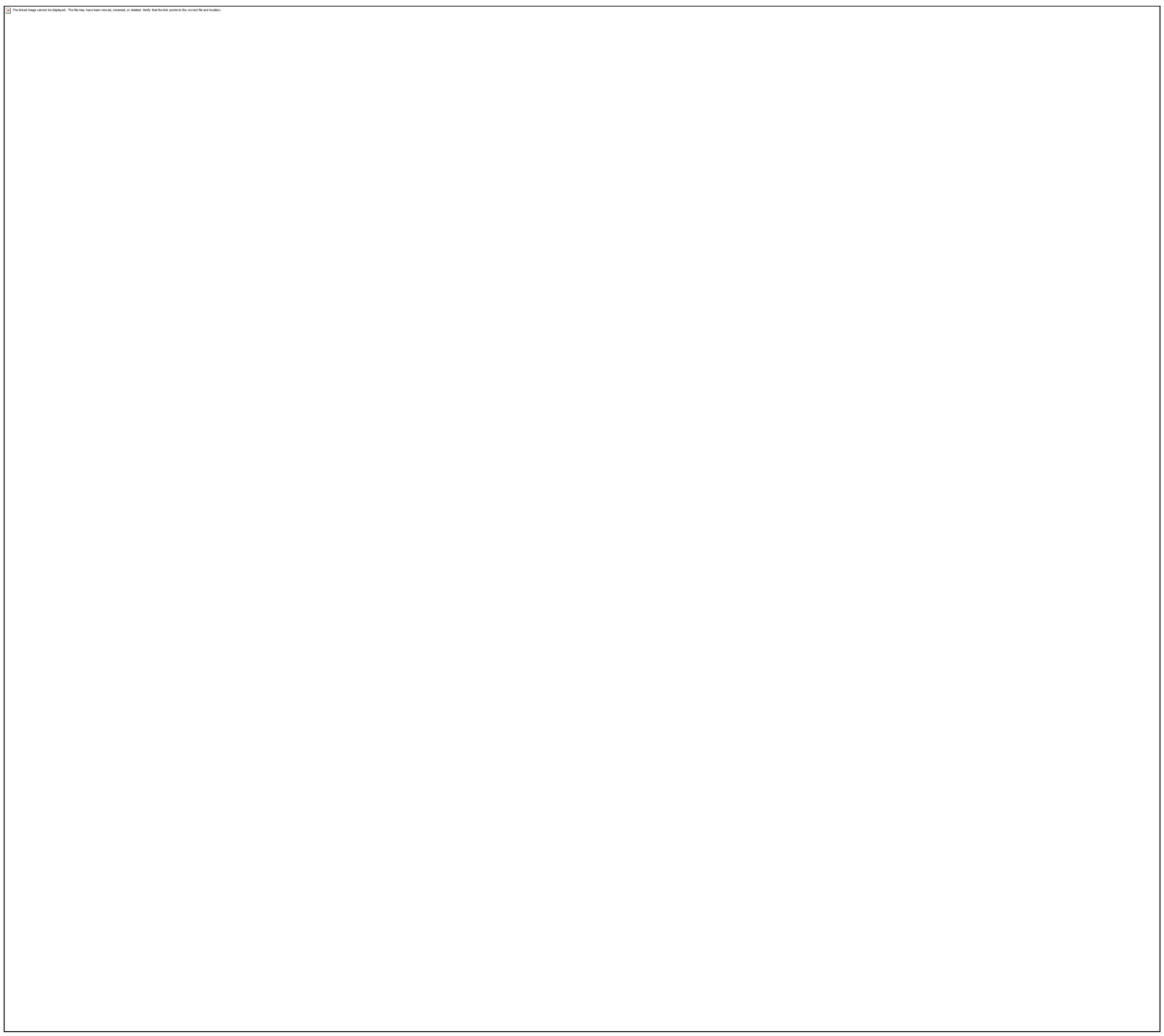
Clicking the right-arrow button, red-circled above, will navigate you to:

- The Receipt Part Inventory Transaction if the selected PO Item is received via one receipt.
- The “Matchings” tab of the PO window, appropriately positioned, if the PO Item is matched to more than one Receipt/Return.
- Issue a message if the selected PO Item is not matched to a Receipt/Return.

Green circled buttons:

- The “Open” button will display the catalogued Part of the selected Item in the Part window. User will be advised if the Item is not for a catalogued part.
- The button with a picture identical to the MaintScape Part window icon had a different picture in prior releases of MaintScape. Clicking this button will open the Part Search window, executing a query to show the same set of Catalogued Parts as appear within all PO Items. This is useful because more information is visible in the Part Search window, and more actions are supported.

Part Inventory Transaction window example:



Clicking the arrow button, red-circled above, will navigate you to:

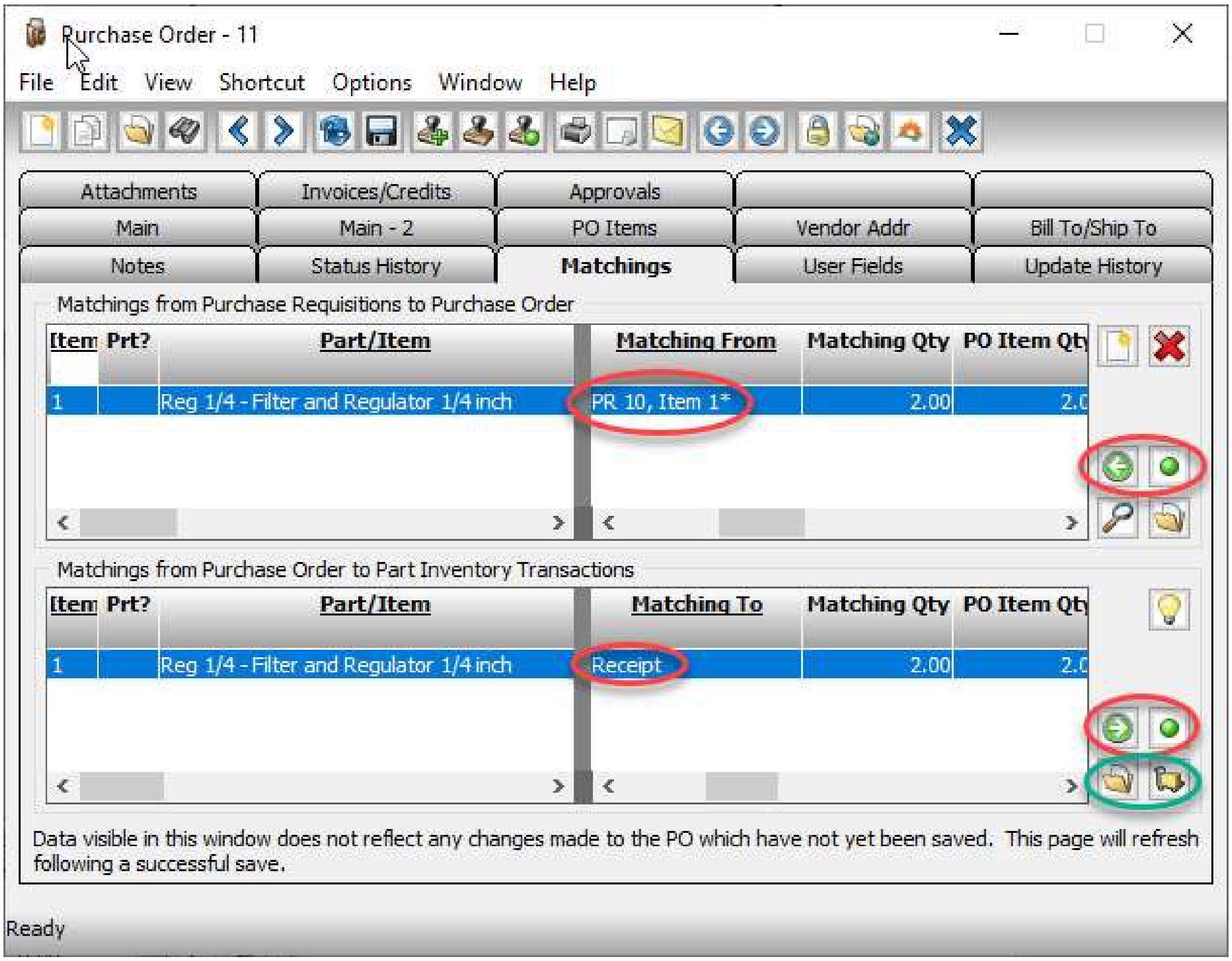
- The PO and PO Item if the Receipt or Return transaction receives only a single PO Item.
- The PR and PR Item if the Receipt or Return transaction receives only a single PR Item.

- The “Matchings” tab of the Part Inventory Transaction window, appropriately positioned, if the Receipt/Return is matched to more than one PO Item and/or PR Item.
- Issue a message if the Receipt or Return is not matched to either a PO Item or a PR Item.

The green-arrow navigate functionality described in all the above examples was previously available by right-clicking on the matching partner, however the new green-arrow buttons are much easier to use.

Matchings View

Each of the MaintScape Objects that can take part in Matchings (PR, PO, Receipt/Return part inventory transactions) has a “Matchings” tab in their respective view windows. Enhancements have been made here, and will be illustrated via the following PO window example:



In each list, above, each row identifies a Matching, and the first column identifies the PO Item number that takes part in the Matching. The top list shows that PO Item number 1 is matched from a PR Item (i.e. PO Item orders the PR item) and the bottom list that the same PO Item is matched to a Receipt (i.e. PO Item has been received). Enhancements in this release are as follows:

- Prior to this release, Matching From value “PR 10, Item 1*” would only have been “PR 10”. I.e. the PR Item was not identified.

- The "*" at the end of "PR 10, Item 1*" indicates the matched-from PR Item is not identical to the matched-to PO Item. In this case, the PR Item is for a Non-Catalogued Part, and the matched-to PO Item is for a catalogued part.
- The green-arrow buttons in the red-circled group behave exactly like the same buttons described above. For example:
  - In the "Matchings from" group, clicking the left-arrow button will navigate you to the matched PR Item.
  - In the "Matchings to" group, clicking the right-arrow button will navigate you to the matched Receipt Part Inventory Transaction.
- The red-circled green-dot buttons will flip to the PO Items tab and navigate you to the PO Item that the selected Matching is for.
- Green-circled buttons in the "Matchings to" group:
  - The left "Open" button will display the catalogued Part of the selected Matching in the Part window. User will be advised if the Matching is not for a catalogued Part.
  - The button with a picture identical to the MaintScape Part Inventory Transaction window icon had a different picture in prior releases of MaintScape. Clicking this button will open the Part Inventory Transaction Search window, executing a query to show the same set of Receipt/Return transactions as are shown in the group. This is useful because more information is visible in the Part Inventory Transaction Search window, and more actions are supported.

The Matchings tab on the Part Inventory Transaction window (for transaction type Receipt or Return or their reversals) is updated to be more consistent with Matchings lists on the PR and PO windows.

Miscellaneous

- Can now search for Staff by Craftsman Trade.

MaintScapeWeb Original

- Site dropdown will now appear on the New Service Request page when Multi-Site is enabled. Submitter must select a Site value unless they specify an equipment/location code that matches a MaintScape record, in which case Site is inferred from that matched record.
- The configuration file supports identifying notification email addresses by Site. Thus, the individual notified of a new Service Request can be Site specific.

Build 144 (March 11, 2024)

This MaintScape release represents a major filling-out of the new MaintScapeWeb barcode-enabled mobile web companion application to MaintScape Classic that was introduced in the prior release, Build 143. There are significant enhancements to MaintScape Classic as well, with a focus on simplifying tasks that have historically been complex, and implementing features specifically requested by customers.

The elapsed time from the last release to this one is a record for us; however, we have been just as busy enhancing MaintScape as always. The larger time frame is mitigated by most of our efforts being invested in MaintScapeWeb, combined with our ability to issue “interim releases” of MaintScapeWeb to customers rather than requiring customers to wait for a full release.

We will describe MaintScape Classic enhancements first since all our customers use it. We hope for more and more MaintScapeWeb adoption over time. Our goal remains for “focussed users” performing specific tasks to primarily use MaintScapeWeb, while power users and administrators will primarily use MaintScape Classic.

MaintScape Classic

New Equipment Type Wizard

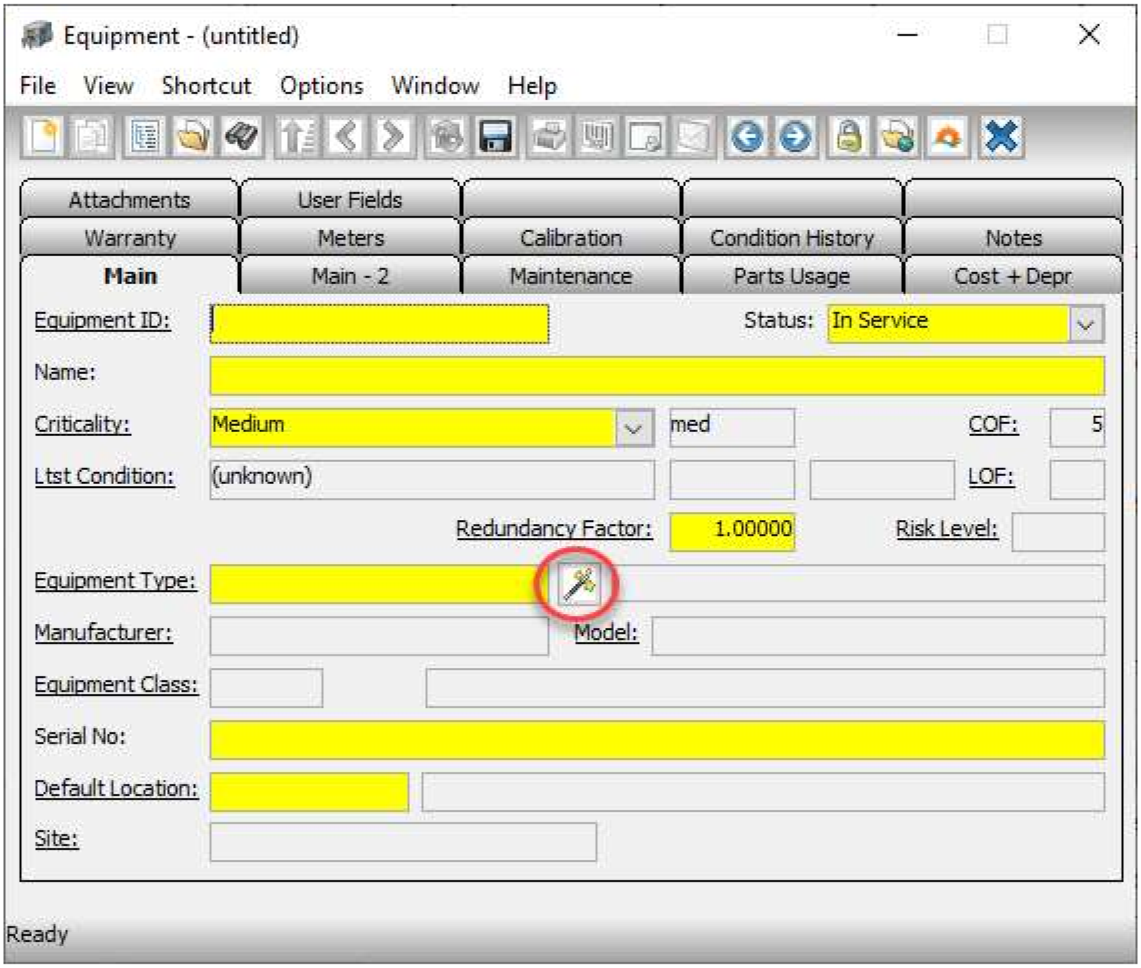
The Equipment Type concept in MaintScape has often been found confusing and awkward. Hopefully this will no longer be the case with the new Equipment Type Wizard!

A MaintScape Equipment Type record is meant to represent a particular equipment make and model. Separating make and model information out from equipment records makes it possible to maintain made-and-model information, such as bills of material (BOM) and meter types, in one place. For example, if you add a particular part to an Equipment Type record BOM, then that part is automatically in the BOM of all Equipment records of that Equipment Type. There is no need to make the same change to multiple Equipment records, nor worry about the BOM for each getting out of synch.

It has historically been difficult in MaintScape when creating a new Equipment record to first see whether an appropriate Equipment Type record already exists, and if not, create an appropriately named one. The new Equipment Type Wizard is designed to make this process very easy.

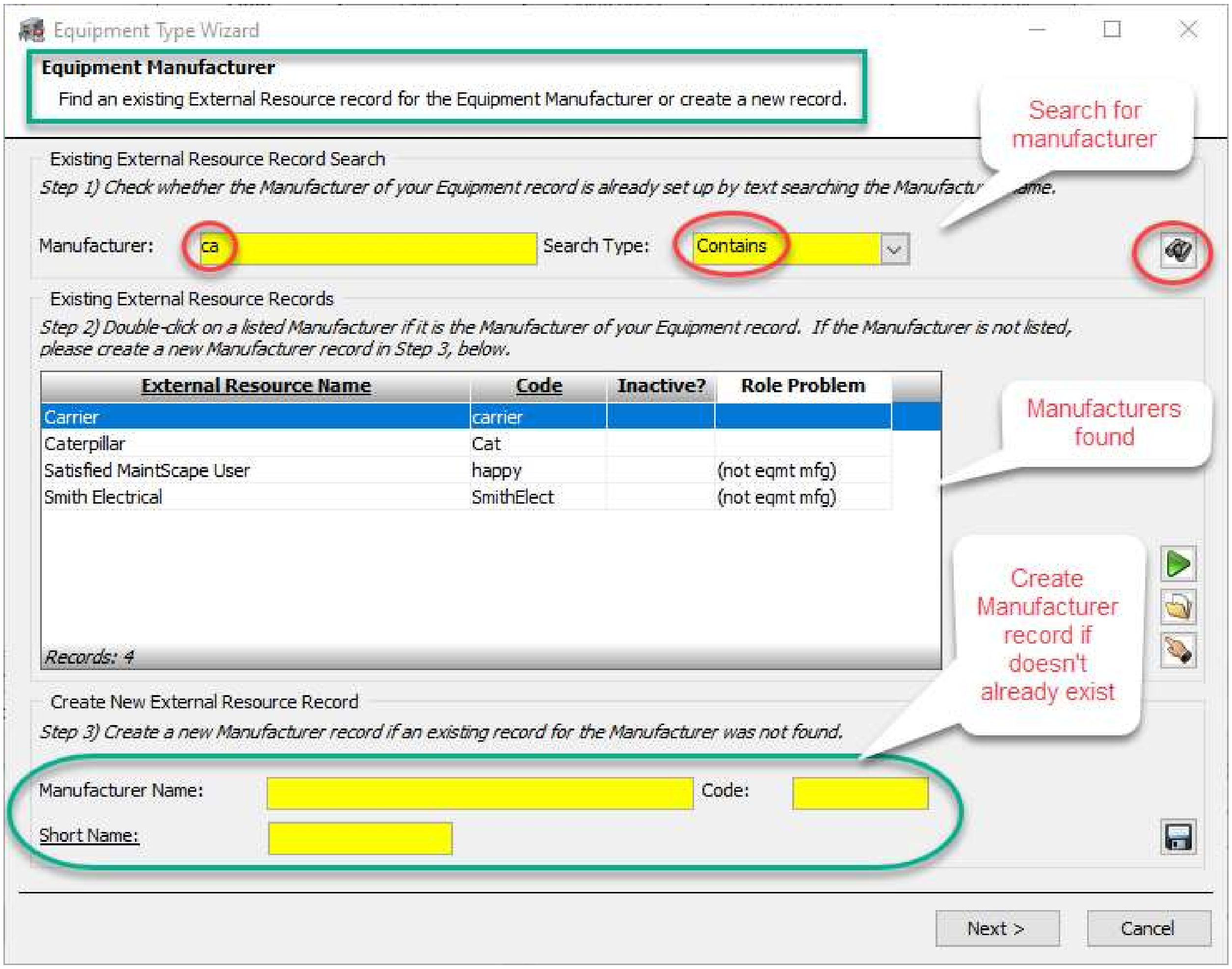
The Equipment Type Wizard can be used to both set the Equipment Type of a new Equipment record and to modify the Equipment Type of an existing Equipment record. The example that follows shows the former.

Open the Equipment Type Wizard from the Equipment window by clicking the new button beside the Equipment Type field (circled below):



This brings up the Equipment Type Wizard at the Equipment Manufacturer page. Here you identify or create the MaintScape External Resource record that represents the new equipment's manufacturer.

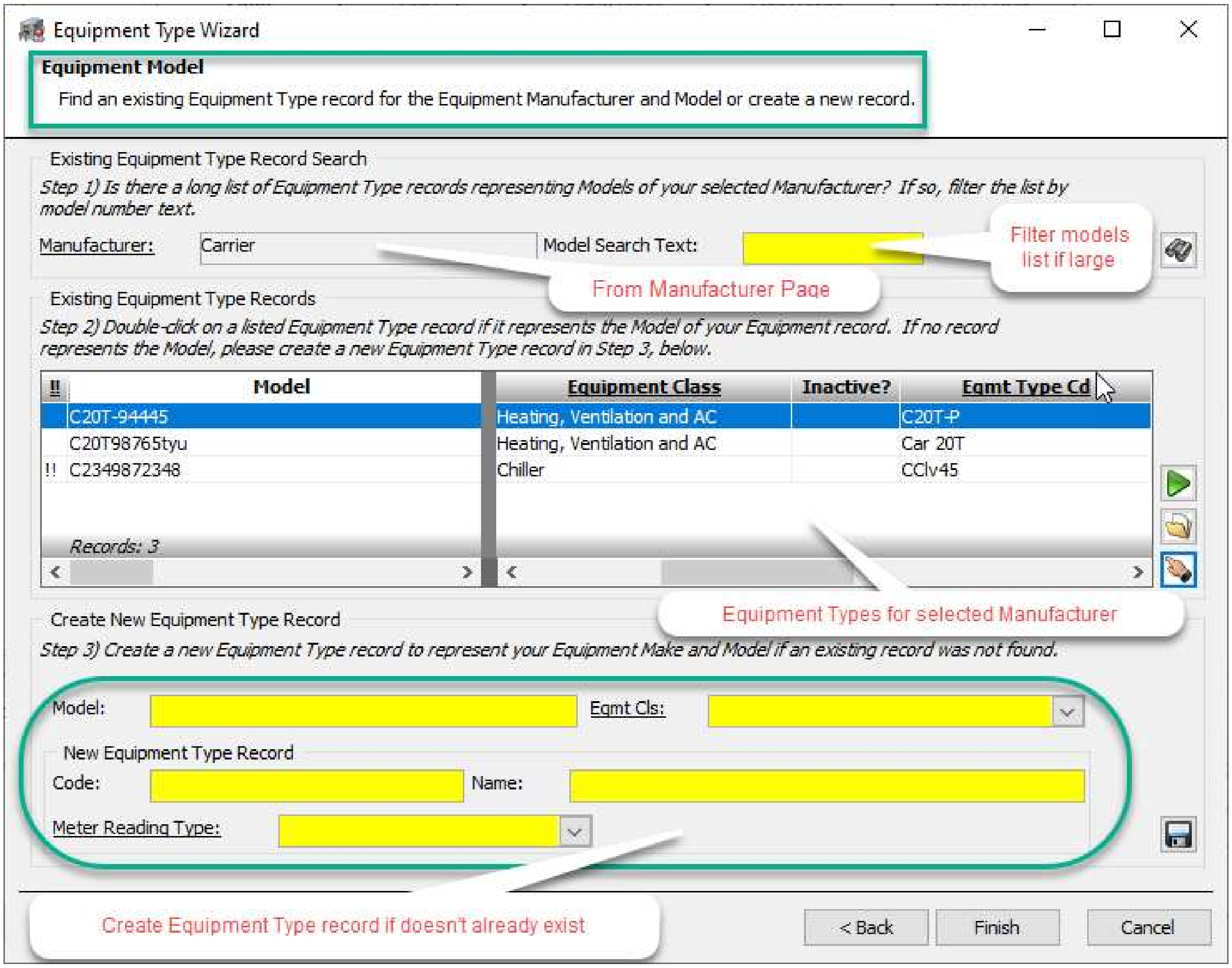
This page makes it very easy to search for existing Manufacturer records. In the screen print below, we have searched for manufacturers that contain "ca" in their name:



We will assume our new equipment is manufactured by Carrier and will double-click "Carrier" to move the wizard to the next step (or select the "Carrier" row and click the "Next >" button).

If our manufacturer were not in the list, create an External Resource record for Carrier by filling in the "Step 3" fields at the bottom of the page within the green oval and then clicking "Next >".

Double-clicking "Carrier" flips to the Model page of the Equipment Type Wizard:



This page shows you the existing Equipment Type records representing make and model records for manufacturer Carrier. If one is correct for your new equipment, double-click it or select it and click "Finish". If none are correct, or the list is empty, create an Equipment Type record for your new Equipment's make and model by filling in "Step 3" fields at the bottom of the page within the green oval, and then clicking "Finish". Either way, i.e. selecting or creating and Equipment Type, the Equipment Type Wizard will close, and the Equipment Type field in the Equipment window will be set.

One last detail – you will notice "!!" at the left of one of the Equipment Type records in the above list. You can right-click on these characters and select pop-up action "Quick Tip" to get an explanation, which we will also give here:

"!!" means that "Carrier" is recorded as a "non-coded manufacturer" in the corresponding Equipment Type record. This means "Carrier" is recorded as just plain text rather than as a reference to an External Resource record. External Resource references are the preferred way to identify manufacturers, as it allows grouping and searching. Non-coded manufacturers were supported as a data entry convenience however they are no longer more convenient with the advent of the Equipment Type Wizard. If you select such an External Resource for your Equipment record, then MaintScape will change the non-coded Manufacturer value to an External Resource reference, thus both selecting an Equipment Type for your Equipment record and improving the quality of the Equipment Type record.

Reset Maintenance Schedule Calculator

Reset Maintenance Schedule parameters have often been found confusing in Maintscape. For example:

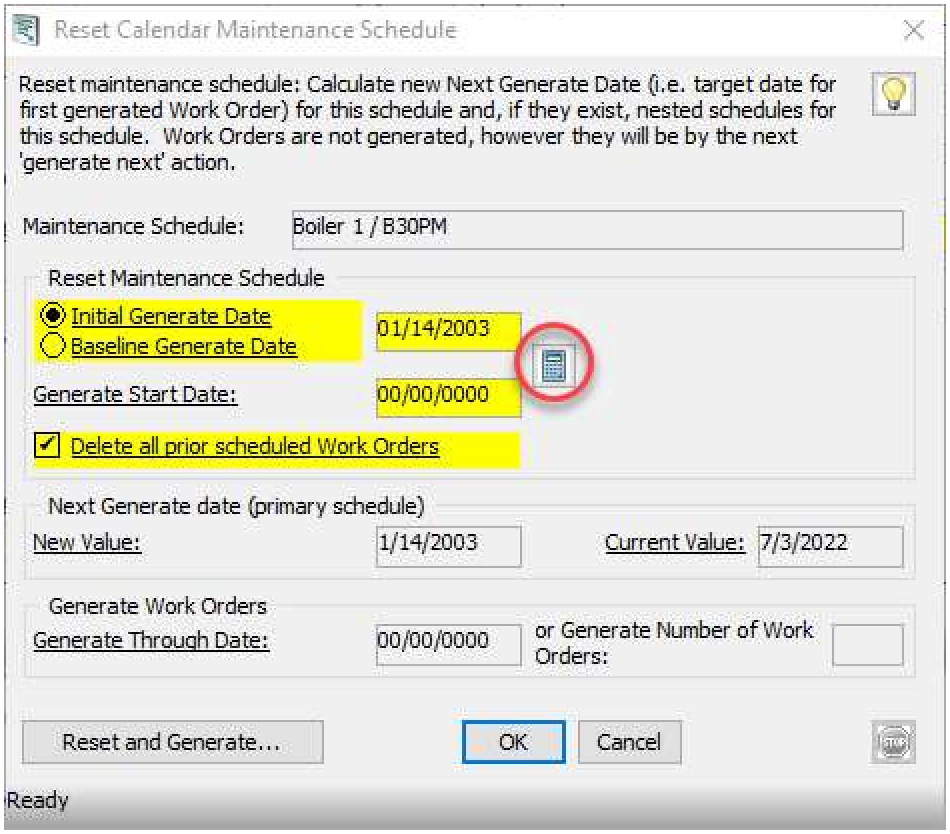
- Initial Generate Date, Baseline Generate Date, and Generate Start Date for calendar maintenance schedules.
- Initial Generate Reading, Baseline Generate Reading, and Generate Start Reading for meter maintenance schedules.

Hopefully this will no longer be the case with new MaintScape calculators to compute these important values. There is one calculator for calendar maintenance schedules and another for meter maintenance schedules.

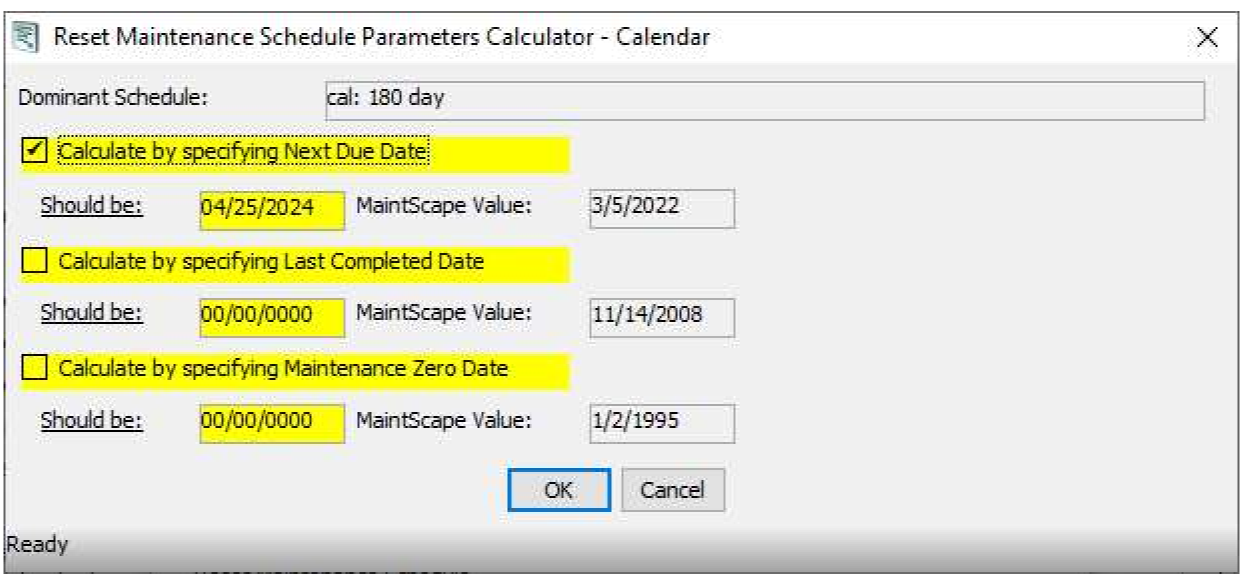
Resetting a maintenance schedule optionally deletes existing scheduled work orders, and then sets up to create new ones at different dates or trigger meter readings.

Calendar Maintenance Schedule Calculator

The following example is for two nested maintenance schedules for equipment "Boiler 1" – one with a frequency of 30 days, the other 180 days. The most frequent schedule (30 days) is called the Primary schedule, and the least frequent schedule (180 days) is called the Dominant schedule. The Primary schedule of a nested set is the one that is reset, and the Reset Calendar Maintenance Schedule window looks as follows:



The new Calendar Maintenance Schedule Calculator is opened using the calculator button circled above:



Note that the window identifies the period of the dominant schedule – i.e. the least frequent schedule, and in this case, 180 days. All calculator options apply to that schedule. Select an option by clicking its checkbox and providing a value for the option parameter just below it. The options are:

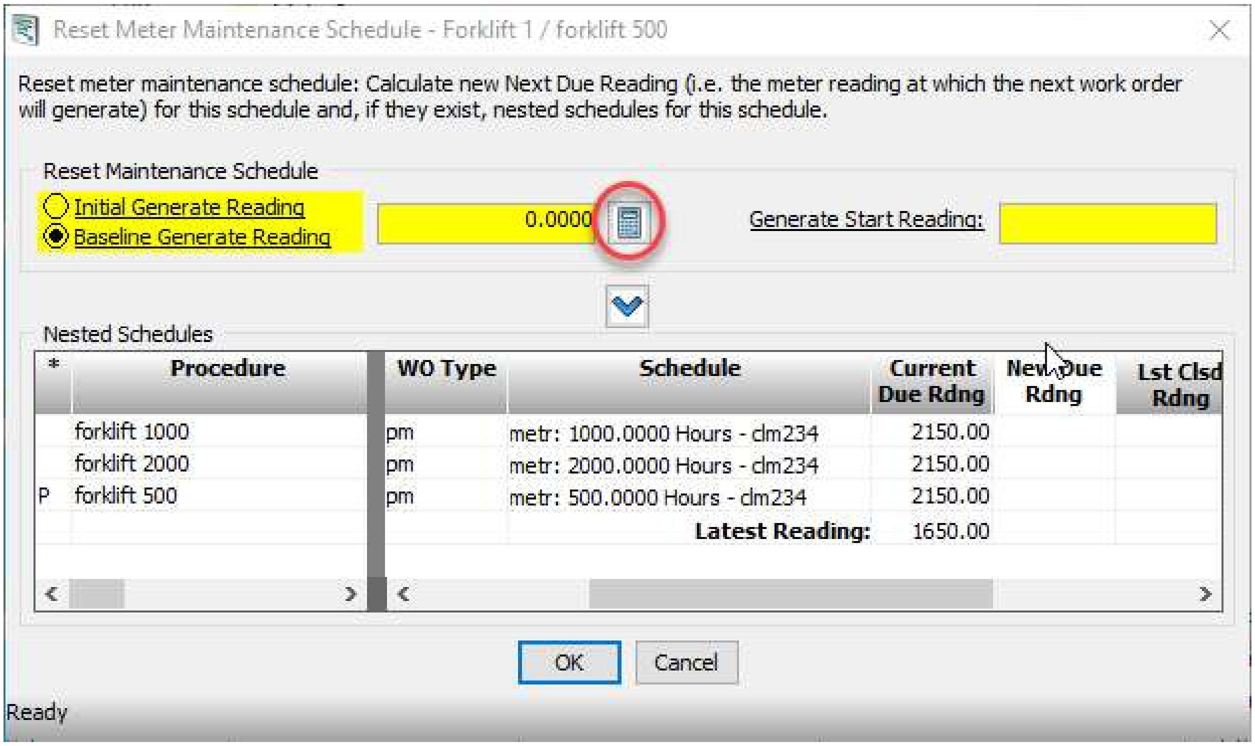
- Identify the next due date for the dominant (180 day) maintenance schedule. I.e. The date the next 180 day maintenance should be due.
- Identify the last completed date for the dominant (180 day) maintenance schedule. I.e. The date the 180 day maintenance was last done.
- Identify the maintenance "zero date", which is usually the date a new machine was installed. Use of this option assumes all maintenance to date has been done on time.

  Note that MaintScape can handle cases where this assumption does not hold, but this must be managed in the Reset Calendar Maintenance Schedule window rather than in this new calculator window (set baseline generate date to the "zero date", and the generate date reading to the latest date for which all maintenance was done. This may result in overdue work orders being generated).

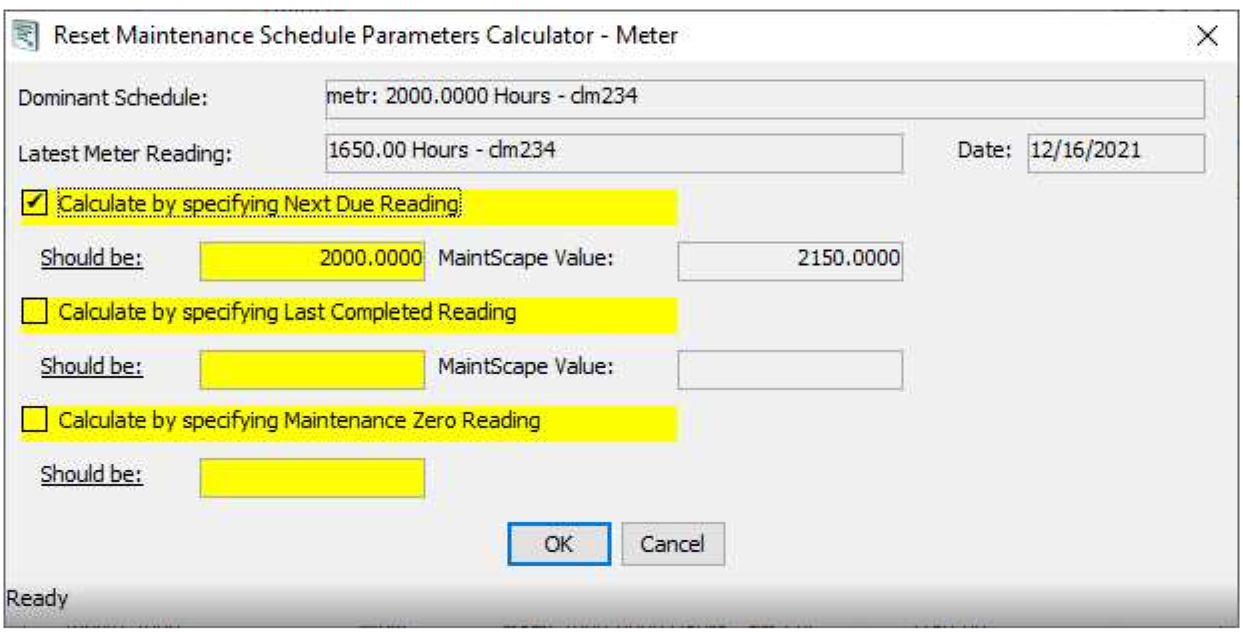
Click "OK" in the Maintenance Schedule Calculator window to return to the Reset Maintenance Schedule window with Reset Schedule parameters duly calculated.

Meter Maintenance Schedule Calculator

The following example is for three nested maintenance schedules for equipment "Forklift 1", one for each of 500, 1000 and 2000 hours. The most frequent schedule (500 hours) is called the Primary schedule, and the least frequent schedule (2000 hours) is called the Dominant schedule. The Primary schedule of a nested set is the one that is reset, and the Reset Meter Maintenance Schedule window looks as follows:



The new Meter Maintenance Schedule Calculator is opened using the calculator button circled above:



Note that the window identifies the period of the dominant schedule – i.e. the least frequent schedule, and in this case, 2000 hours. All calculator options apply to that schedule. Select an option by clicking its checkbox and providing a value for the option parameter just below it. The options are:

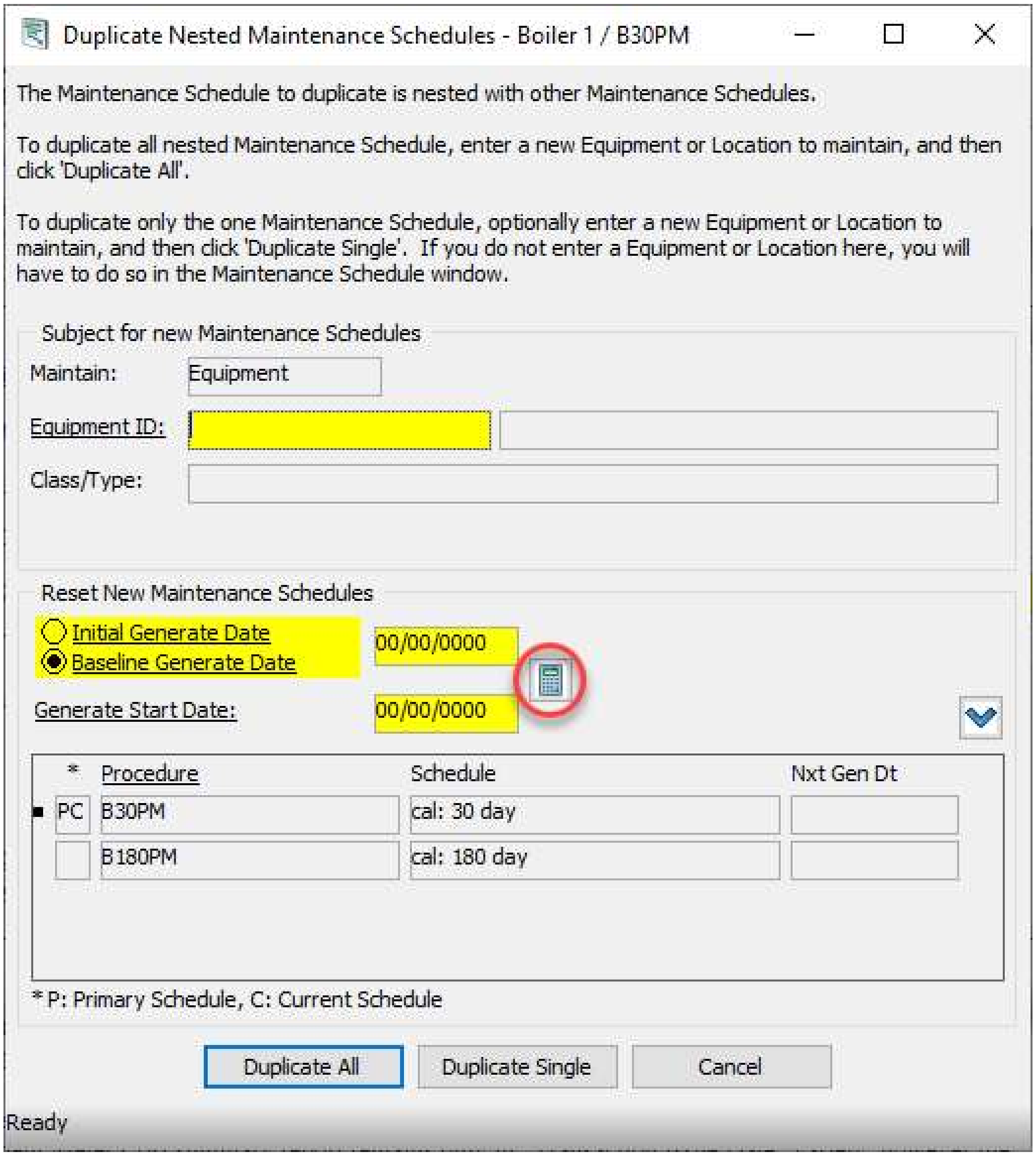
- Identify the next due reading for the dominant (2000 hours) maintenance schedule. I.e. The meter reading at which the next 2000 hour maintenance should be due.
- Identify the last completed meter reading for the dominant (2000 hours) maintenance schedule. I.e. The date the 2000 hours maintenance was last done.
- Identify the maintenance "zero reading", which would be 0 for a brand-new machine. This option assumes all maintenance to date has been done on time.

  Note that MaintScape can handle cases where this assumption does not hold, but this must be managed in the Reset Meter Maintenance Schedule window rather than in this new calculator window (set baseline generate reading to zero, and the generate start reading to the largest reading value for which all maintenance was done. This course of action may not be practical for meter maintenance schedules).

Click "OK" in the Maintenance Schedule Calculator window to return to the Reset Maintenance Schedule window with Reset Schedule parameters duly calculated.

Available when Duplicating Nested Maintenance Schedules

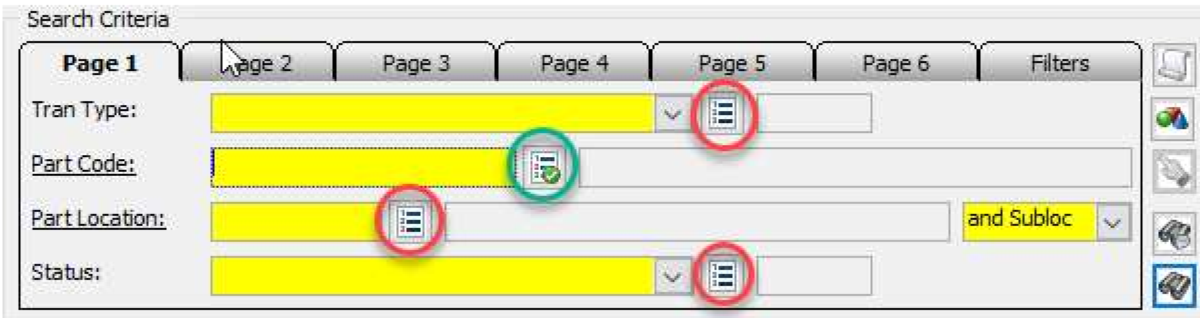
The powerful Duplicate Nested Maintenance Schedules function also requires resetting the new nested maintenance schedule set. Therefore, the Reset Maintenance Schedule calculator is available from here as well. For example, the following shows the button to launch the calculator when duplicating a nested calendar maintenance schedule:



The calculator is similarly available when duplicating a nested meter maintenance schedule.

Multiple Search Values

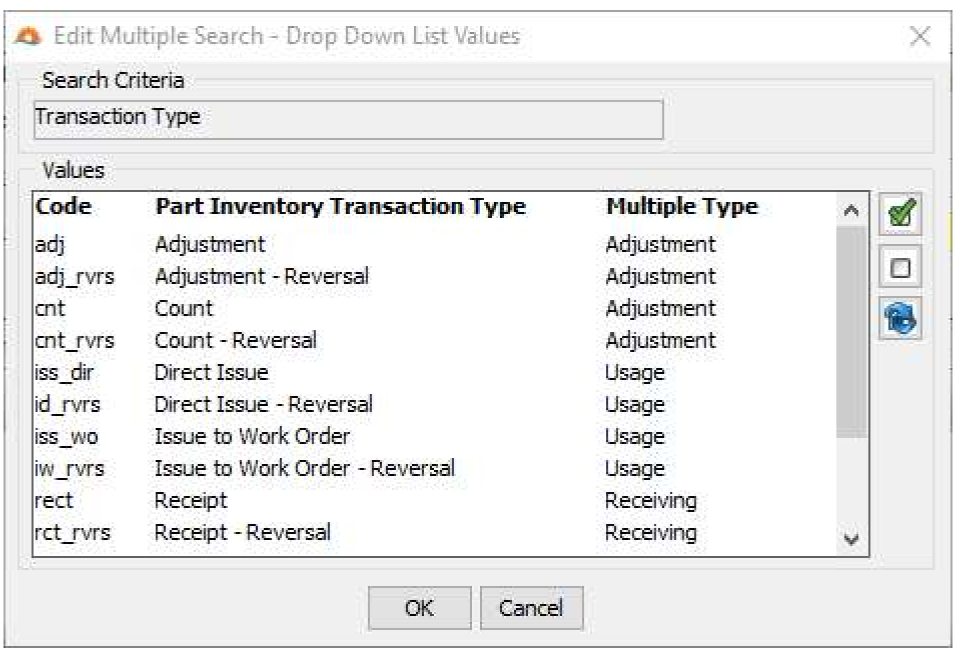
MaintScape now supports searching by multiple values for certain search criteria fields rather than just one value. The set of “Multiple Search” fields will expand over time, particularly in response to user requests. The new Multiple Search convention looks as follows:



The circled buttons to the right of search criteria fields indicates Multiple Search is available for the field. The green circled button has a check mark in the image, which indicates multiple values are chosen for this search criteria.

One way to set multiple values for a search criteria field is to enter (or select from the drop-down) a value for the field as usual, then click the Multiple Search button. You can repeat for subsequent values.

A shortcut for search criteria fields that are drop-downs is to click the Multiple Search button when the field is empty or has a value already in the multiple search. In the case of the Transaction Type field, above, you will then see the following pop-up window:



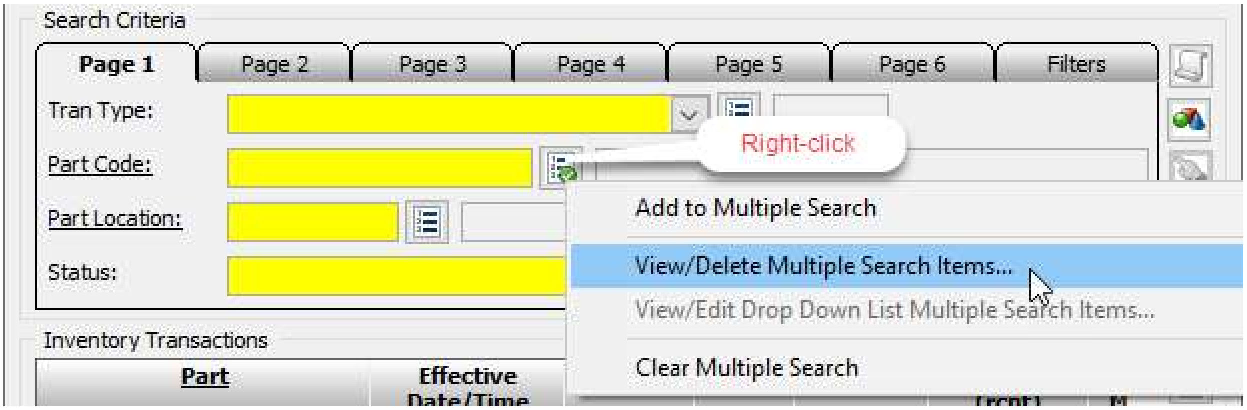
The data presented above are the same values as in the drop down, except here you can select multiple rows at once and then click “OK”. The above window would show multiple search values already set up as selected rows. You can then unselect some already selected rows, select some not yet selected rows, and then click OK to update the multiple search selection.

Another way to set multiple values for criteria fields with no drop-down is to use the MaintScape Search window corresponding to that field. For example, you can right-click in the Part Code field and select one of the “Search” options. You could also just click the Multiple Search button when the corresponding criteria field is either empty or has a value already in the multiple search, which will take you to the search window in a default state. Right-clicking on the field, however, could give you more options on what happens when you arrive in the search window.

Within the other search window, you can run a query as usual and double-click a found item to bring it back to the multiple value field in the first search window, and then click the Multiple Search button to add the value to the Multiple Search list. You can then repeat the search and select for more multiple search values. However, there is an easier way: MaintScape search windows now support multiple record selection in certain cases, such as selecting multiple search values. Consider the following example:

First notice the red text in the status bar saying you are in “Select Multiple Objects Mode”. This means you can select more than one row, then click the circled “Select” button to bring **all** selections back to the window you are selecting to in one go!

Once you have multiple search values in a search criteria field, you can take further action by right-clicking on the Multiple Search button:

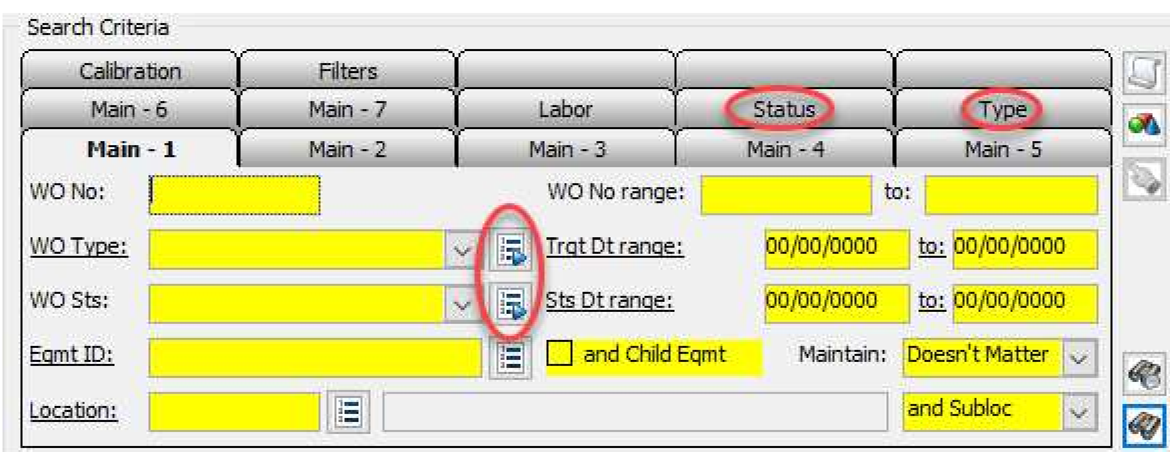


The "View/Delete…" action will show you the multiple search values set up for this field (or any other field), and let you selectively delete values. The "Clear…" action will delete all multiple search values for the field. The "Add…" action is the same as just clicking on the button.

The "View/Edit Drop Down List…" button is enabled only for multiple search fields with drop-down lists, and will open the "Edit Multiple Search – Drop Down List Values" pop-up window, shown above.

A couple of final notes on the new multiple search functionality:

- "Search using Explorer" does not support Multiple Select, however you can use "Search using Explorer" to select a single value, the click the Multiple Search button to add it to the multiple search list, and then "Search using Explorer" again. Only standard MaintScape search windows support Multiple Select.
- A different method of Multiple Search has been in place for some time for some search criteria fields, such as searching for work orders by status or type. These fields have multiple search buttons with a green arrow (see below), and simply navigate you to the tabs that have previously supported multiple search for these values:



Equipment

- A report can be created from the Equipment window, Parts Usage tab of the equipment's part usage history. This report is sensitive to user selections for options: "Include Non-Issued Parts", "Include Future Parts".
- The maximum number of equipment user defined fields has been increased from 20 to 30.

Search and Report

- Equipment search by Department now supports none/any. I.e. Search for equipment with no department value, or with any department value.
- New report: "Equipment Part Usage – by Part". This report has report-specific parameters.
- Equipment Search results lists (wide and narrow) now include Condition Staff (i.e. who recorded the condition) as well as the corresponding reports.
- Equipment List variation reports accessible from the Equipment Search window are renamed as follows:
  - "Equipment List – Abbreviated" to "Equipment List – Narrow"
  - "Equipment List – Full" to "Equipment List – Wide"
  - "Equipment List - Full, with User Fields" to "Equipment Wide - Full, with User Fields"
- Cost reports:
  - Equipment Meter Cost Detail reports accessible from Equipment Search window now come in two varieties:
    - Transaction Issue Date: This is the original form of the report. Work Order costs are included based on the issue date. Costs included for a report line have issue dates within the first/last Meter Reading effective date range (report-specific parameter).
    - Work Order Close Date: Work Order costs are included based on the work order close date. Therefore, only costs for closed work orders are included. Work Order costs are included for a report if the work order close date is within the Meter Reading Date Range (report-specific parameter). Because of this, cost per meter unit requires meter units to be prorated to that same range.
  - Equipment Meter Cost summary report remains only the "Transaction Issue Date" variety, however the report name is updated to reflect this.
  - The "Equipment Cost Detail - By Equipment" report is renamed to "Equipment Cost Detail (Tran Issue Date) - By Equipment". A new "Work Order Close Date" variation is not yet available.

Work Order

- The change work order status pop-up window now has two additional right-mouse options for setting the Status Effective Date:
  - Set to Target Date.
  - Set to Status Date of latest status change. This is useful when re-opening and re-closing a work order to make corrections, keeping the closure effective the original date.

Search and Report

- Instead of showing “(none or multiple)” for craftsman, show “(none)” or, for example, “JS” for the single craftsman with that code, or “JS (+)” when there are multiple craftsmen, one of whom has code “JS”. Therefore, users can now distinguish between the “none” and “multiple” cases.
- Can now switch between “narrow” and “wide” results list using a new menu bar “Options” item. The narrow results list has fewer fields and omits expensive-to-compute fields, and thus could run more quickly. The wide results list has more data columns than prior to this update.
- When “narrow” results list is enabled:
  - A new menu bar “Options” item selects whether a narrow or wide report is the default when printing the results list. The narrow report is 1 line per work order, and the wide report is 2 lines per work order and thus not as easy to visually scan.
  - Menu bar “File” -> “Print” lets you choose between the narrow and wide printout.
- The following Work Order List variation reports are now available in the list accessible from the Work Order Search window:
  - Narrow: One line per work order. This is the easiest to visually scan, however data columns are limited.
  - Medium: Two lines per work order.
  - Wide: Three lines per work order. This report includes computationally expensive data, and thus the report may take more time to run when there are a large number of work orders.
  - Wide with User Fields: Standard “with user field” report variation (user field values in exportable result set).

  The above reports replace the following prior release reports:

  - Work Order List
  - Work Order List with Hours
  - Work Order List with Hours - Wide
- Can now search for Work Orders by Department (multiple value search is supported) directly rather than via an Equipment filter.
- Work Order reports with Parts usage line items now only include the part specified in the Part Code search criteria field. Previously all a work order’s parts would be included if one of the parts matched.
- If you specify one of the following filters in the Work Order Search window, and then run a report that reports on Work Order parts or labor, then you will now only get the parts or labor that match the filter, rather than all sibling parts or labor items when one matches the filter:
  - Part
  - Craftsman
  - Contractor

Data Injector

- User can inject “task complete” as was supported by MaintScapeWeb in Build 143. A new security permission is available to secure this action – see Security section.

- User can inject Operable/In-Tolerance As-Found/As-Left for Calibration work orders. Security permission "Mark Task Complete" for a work order of the status will be required.

Maintenance Schedules

- A warning is now issued when resetting a maintenance schedule such that the initial or baseline generate date is within a seasonal bypass period. This situation should be avoided because the calculated Next Generate Date may not be as expected.
- Minor layout changes made to the Maintenance Schedule window, "Main" tab:
  - Displays Last Closed Meter Reading for meter schedules, and subject (i.e. equipment) status.
  - Minor layout changes

Search and Report

- Last Closed Meter Reading for meter schedules, and subject (i.e. equipment) status are new columns in the Maintenance Schedule window results list.
- Maintenance Schedule window, Nested tab now shows last closed date for each nested schedule, and last closed reading for meter maintenance schedules. These new data items also now show in the nested schedules list of the "Manual Generate" and "Reset Meter Maintenance Schedule" windows for meter maintenance schedules.
- Wide versions are now available of all Maintenance Schedule reports include extra fields and wider fields. Wider fields mean values are less likely to be truncated, however the wide reports have more than 1 line per maintenance schedule and are thus not as easy to visually scan.

Purchase Orders

- New System Configuration options:
  - Default Account must be specified for a PO to close.
  - Print barcode on the default PO printout (subject to the Barcode module being enabled)
- A new security permission is available to ensure POs only have catalogued items – see Security section.

Search and Report

- If you specify one of the following filters in the Purchase Order Search window, and then run a report that reports on PO line items, then you will now only get the items that match the filter, rather than all a PO's items when one item matches the filter:
  - Part
  - "Purchased-for Equipment"
  - "Purchased-for Location"
- Purchase Order search by Received Yes/No is now search by: No Receipts, Not Fully Received, Partially Received, Fully Received.
- Can now search for POs by Part Class (multiple value search is supported) directly rather than via a Part filter. This will list POs where any item is a part of the class, or only include items in PO item reports where the part ordered is of the class.

Security

- The following new security permissions are supported:
  - Part: “Update Note and Specifications”.
  - Work Order – varying permission by Status: “Mark Complete”.
  - Purchase Order: “Non-Catalogued Items”.
    - When disabled:
      - A user cannot modify a PO with at least one non-catalogued item, nor add a non-catalogued item to a PO they can otherwise modify.
      - A user can send a non-catalogued PR item to a PO, but they cannot save the PO without converting the non-catalogued item into a catalogued item.
    - This new security permission can be used to ensure POs only have catalogued items when they go out to a vendor.
  - Purchase Requisition: “Non-Catalogued Items”.
    - When disabled: A user cannot modify a PR with at least one non-catalogued item, nor add a non-catalogued item to a PR they can otherwise modify.
  - Security permissions pertaining to actions in the new Equipment Type Wizard:
    - External Resource: “Create New from Equipment Type Wizard”.
    - Equipment Type: “Create New from Equipment Type Wizard”.
- The Security Level window maintains its position in the displayed permissions list when switching between security levels. This simplifies comparing security levels (although the best way to compare is to export records to an Excel compatible file).

MaintScapeWeb Scan to Logon Barcodes

- Staff barcode labels can be printed in the Staff Search and Staff Detail windows. Two types of labels can be printed: standard and staff logon. The staff logon label is used for MaintScapeWeb scan-to-logon – see Scan to Logon in the MaintScapeWeb section.
- The Staff window, MaintScape User tab has new functionality usable by the MaintScape Administrator (“dba” logon) to support MaintScapeWeb Scan to Logon:
  - Ability to specify or clear a MaintScapeWeb scan-to-logon pin for an existing MaintScape user.
  - Ability to specify a scan-to-logon pin when granting MaintScape access to a new user.

Miscellaneous

- Attachment:
  - Defaulted code values are now ‘dflt-’ followed by a number rather than just being a number.
- Equipment Type:
  - Manufacturer and Model are now split into separate fields in the search window results list and can thus be sorted independently. Non-coded manufacturer values are shown italicized.
- External Resources:
  - New “Short Name” field is available. Value is used by the Equipment Type Wizard to suggest Equipment Type Name values.
  - Updates to Detail window layout.

- Location and Part Location:
    - Long absolute names are now columns in the respective search windows' results list. This column is not displayed in the corresponding reports however it is in the results exportable to Excel.
- MaintScape Explorer:
    - Location Type and Part Location Type code table values now include a "Bold" checkbox in the System Administration – Setup Data – Code Tables window. When checked, any location or part location of that type will appear in bold in MaintScape Explorer.
    - You can right click on a Location or Part Location tree node and select new action "Default Filters". It probably makes most sense to right-click on the "Location" and "Part Location" root to set up filters, because the filters will then apply when selecting any location or part location, although this is not strictly necessary. Default filters are:
        - Select a Location tree node to see in the right pane: all equipment at the location.
        - Select a Part Location tree node to see in the right pane: all parts at the part location.
- Part Inventory Transaction:
    - New report: "Part Inventory Transaction - Usage - by Issue To".
- Purchase Requisition:
    - If you specify one of the following filters in the search window and run a report that reports on PR line items, then you will now only get the items that match the filter, rather than all a PR's items when one item matches the filter:
        - Vendor
        - Part
        - "Purchased-for Equipment"
        - "Purchased-for Location"

MaintScapeWeb

The initial release of MaintScapeWeb in Build 143 included only the My Work Order Tasks menu item and corresponding page. This page listed active work orders assigned to the logged-on user, and included a drill-down Work Order Task page that showed the work order in detail and supported a few work order actions.

This release of MaintScapeWeb lets you find and see work orders other than just those you are assigned to and supports more actions on those work orders. It also supports creating work orders, part inventory transactions, assigning/changing part inventory locations, and receiving POs. Of course, all actions are subject to user security as defined in MaintScape Classic.

Most of this new functionality revolves are the following new "Hub" menu items:

- Work Order Hub
- Equipment Hub
- Location Hub
- Parts Hub

- PO Hub

Please see further below for detail on the new hubs.

General

- If you access a page (i.e. by URL) when not logged on, you will be redirected to the logon page. After successful logon, you will be redirected to the page you originally asked for.
- If you click a MaintScapeWeb link after MaintScapeWeb has timed out (due to a period of inactivity), you will be redirected to the logon page. After successful logon, you will be redirected to the page for the clicked link.
- At least one MaintScapeWeb query will not run with SQL Anywhere database version 11. This very old version should generally not be in use.

Scan to Logon

MaintScape Classic can now print barcodes for MaintScape users which they can scan to log on to MaintScapeWeb from a scanner enabled device. Scanning such a barcode will immediately log off the current MaintScapeWeb user and open a web page identifying the scanned user and asking for a logon PIN. The PIN must be defined for a MaintScape User in the MaintScape Classic Staff window, MaintScape Access page.

A user will be logged on to MaintScapeWeb once they scan their scan-to-logon barcode and correctly enter their PIN. A user can only scan to logon if they have a PIN.

Scan to Logon is useful when several users share a MaintScapeWeb scanner enabled device and pass it between themselves frequently. It is much quicker to scan a barcode and enter a pin than to enter a user ID and password, especially using a small device with a virtual or small keyboard.

If you use MaintScapeWeb Scan to Logon, you may want to shorten the MaintScapeWeb “idle timeout”, I.e. the length of inactivity after which the current MaintScapeWeb user is logged off.

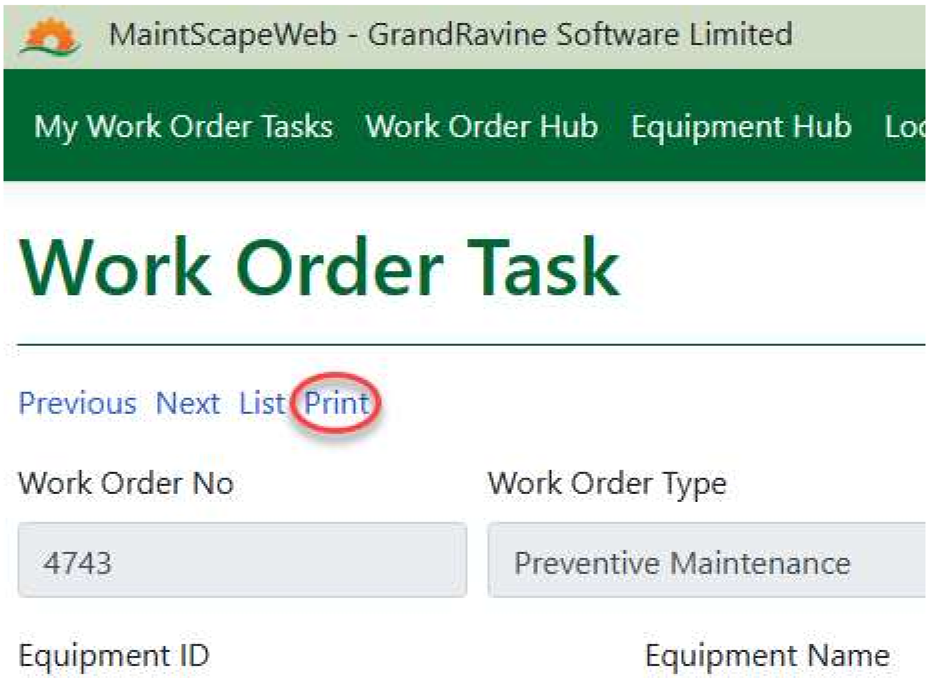
My Work Order Tasks Page

- Previously, work orders are shown starting from those due today. You would scroll backwards to see overdue work orders, and forward to see coming due work orders. There is now an option to show work orders starting from the earliest (e.g. most overdue).
- The work order subject (equipment or location) is now a link. Clicking the link will take you to either the new Equipment Hub or Location Hub, populated with the work order subject. You can then take further action on that equipment or location.

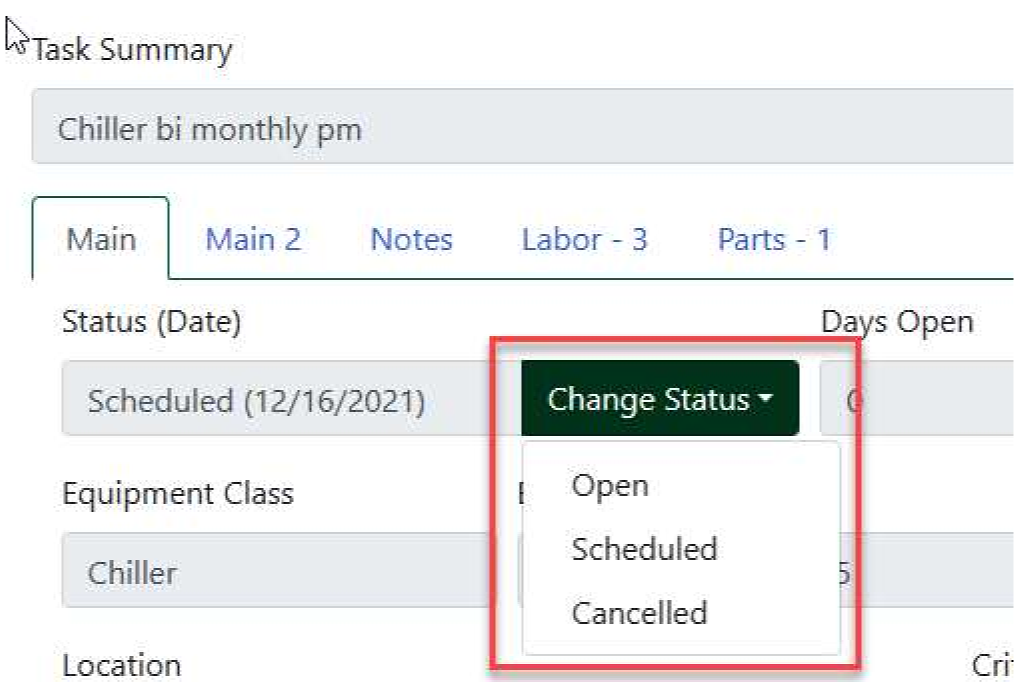
Work Order Task Page

- The work order subject (equipment or location) is now a link. Clicking the link will take you to either the new Equipment Hub or Location Hub, populated with the work order subject. You can then take further action on that equipment or location.
- Multi-task work orders show with the Task Summary field as a drop-down. Selecting a task in the drop-down refreshes the page with the selected task.

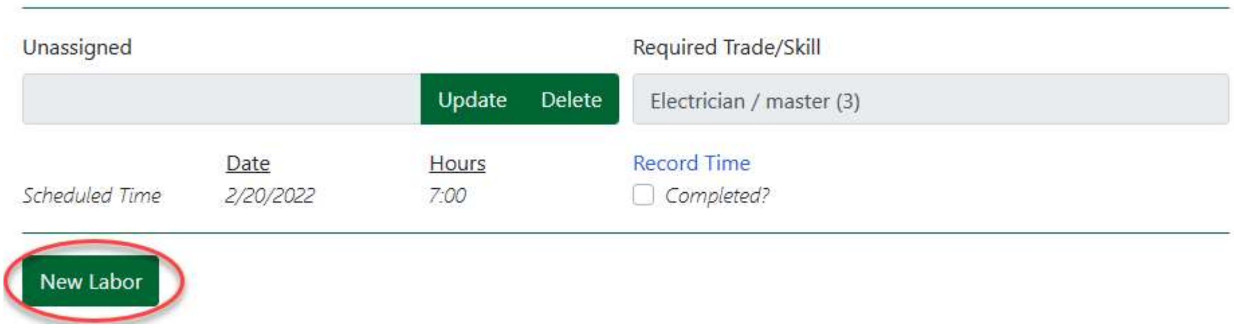
- There is now a Calibration tab for work orders of type calibration. This tab supports updating operable/in-tolerance as-found/as-left (subject to security permission).
- A printer friendly work order task page can now be accessed from a link on the regular Work Order Task page:



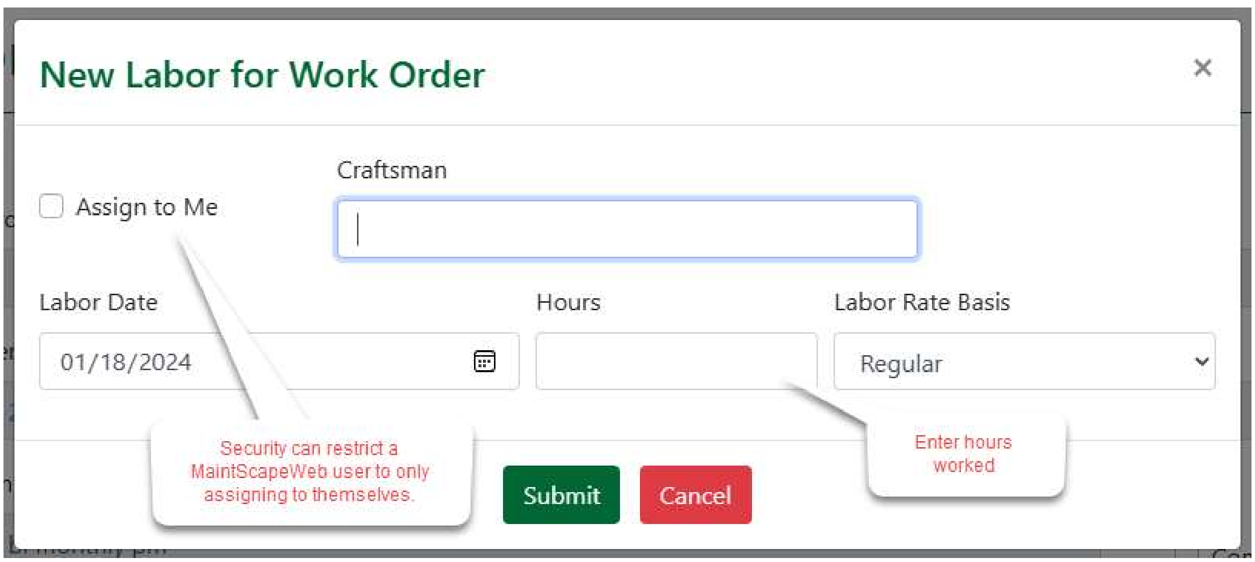
- You can now change a work order's status:



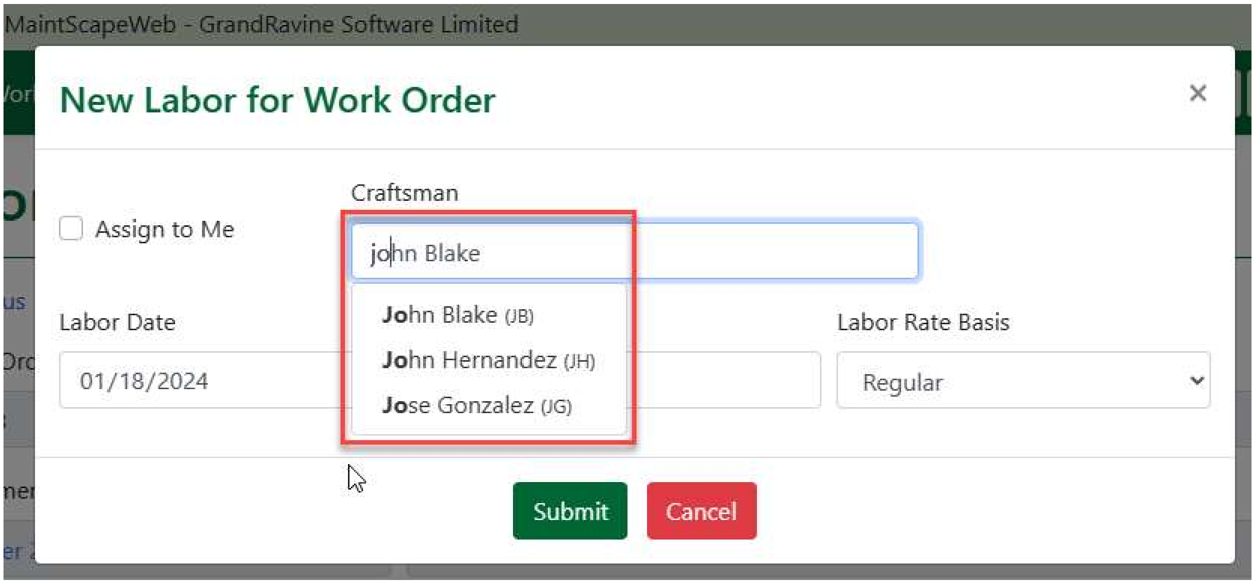
- A button is available on the Labor tab to add new labor to the displayed work order:



The following pop-up displays when the button is clicked:

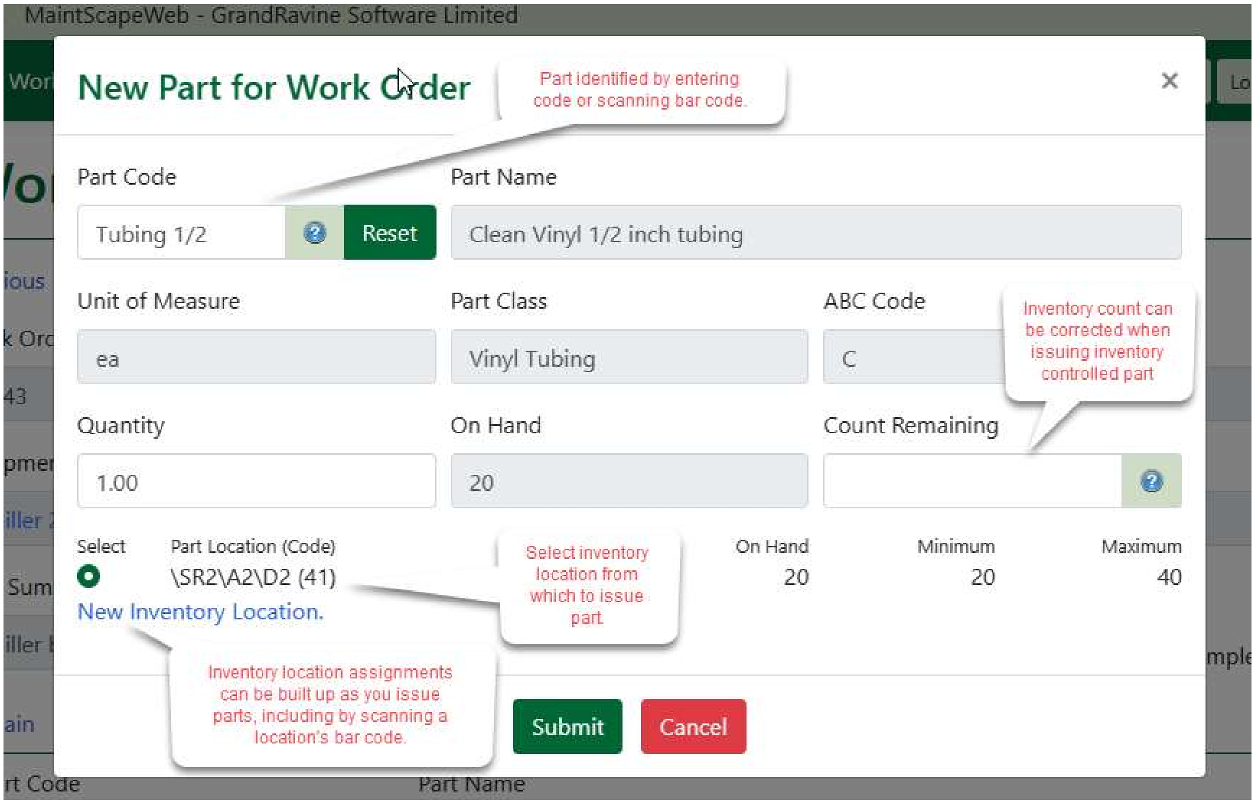


The field for identifying a Craftsman to add to the work order supports predictive typing and auto-filtering:



- A button is available on the Part tab to add a new part to the displayed work order:

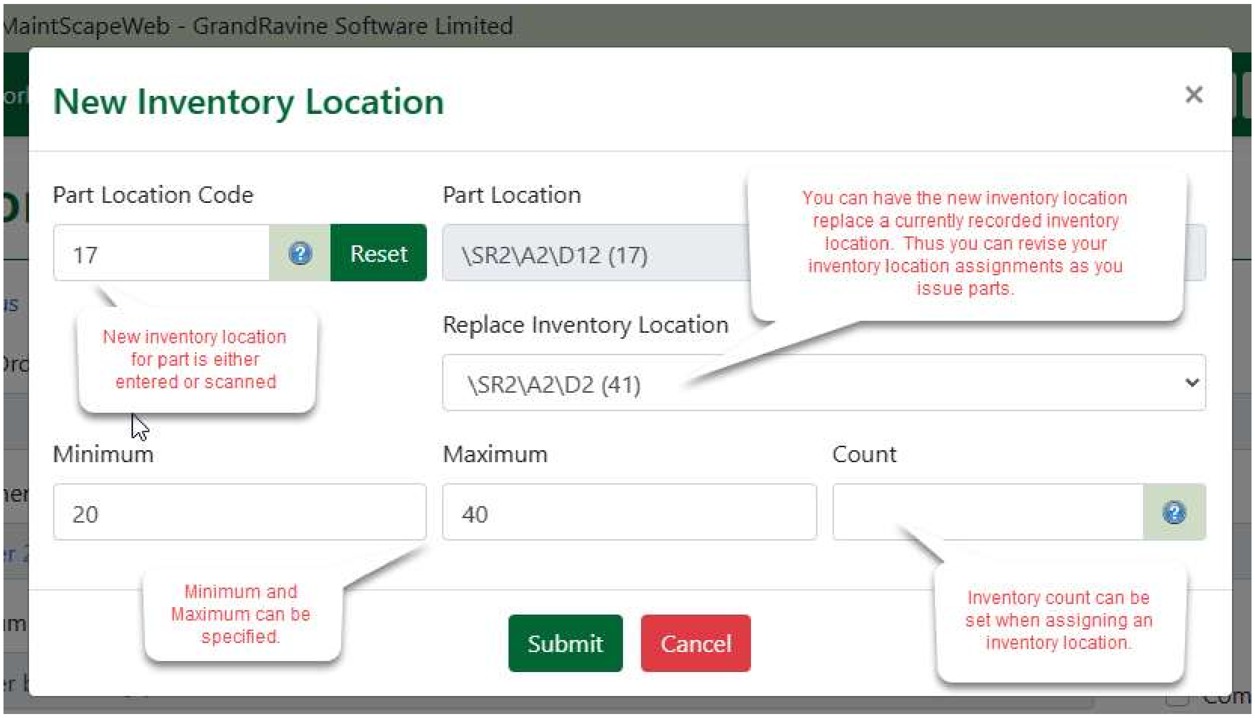
The following pop-up displays when the button is clicked:



The part specified in the screen print can be identified by scanning it's MaintScape barcode or typing in its code.

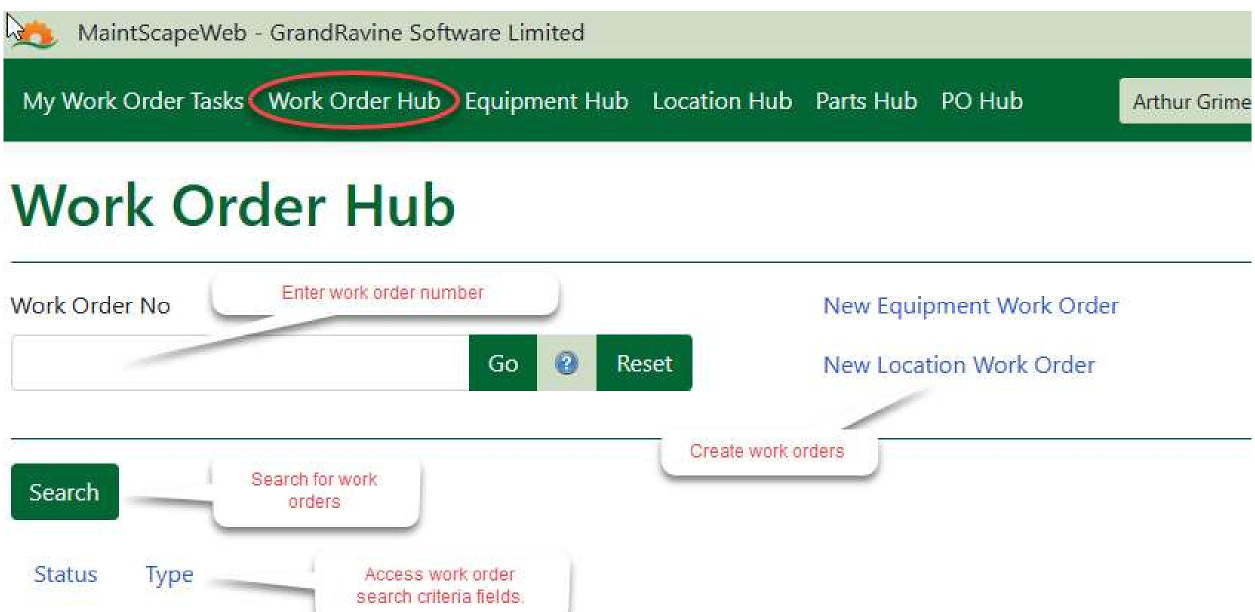
You don't need to click the "New Part" button to add a part to a work order – simply scan a part barcode at any time in the Work Order Task page.

You can revise a part's inventory location as you add the part to a work order by clicking the "New Inventory Location" link shown above. Doing so shows you the following pop-up to add a new inventory location for the part or change a current one. The Inventory Location can be identified by either entering its code or scanning a MaintScape part location barcode:



Work Order Hub

The new Work Order Hub page appears as follows:



Enter a work order number and click “Go” (or press <enter>) to view the work order in the Work Order Task page.

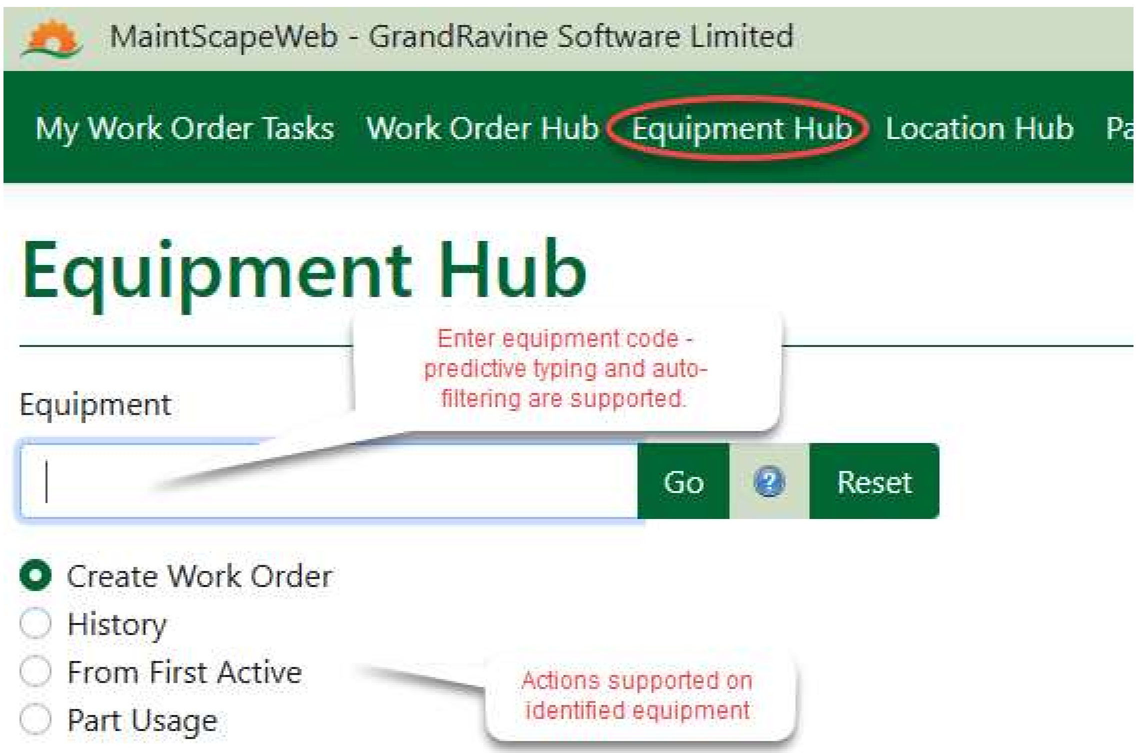
You can view any work order directly in the Work Order Task page by scanning a MaintScape work order bar code either within the Work Order Hub, or from almost any other page in MaintScapeWeb. Scannable barcodes are on MaintScape Classic printed work orders if the MaintScape Barcode module is enabled.

You can also search for work orders within the Work Order Hub using the supported search criteria. The supported search criteria are currently limited. The set of criteria will be augmented in subsequent releases, mostly per customer demand.

There are also links here to create work orders, which navigate to either the Equipment or Location hubs, which are described further below:

Equipment Hub

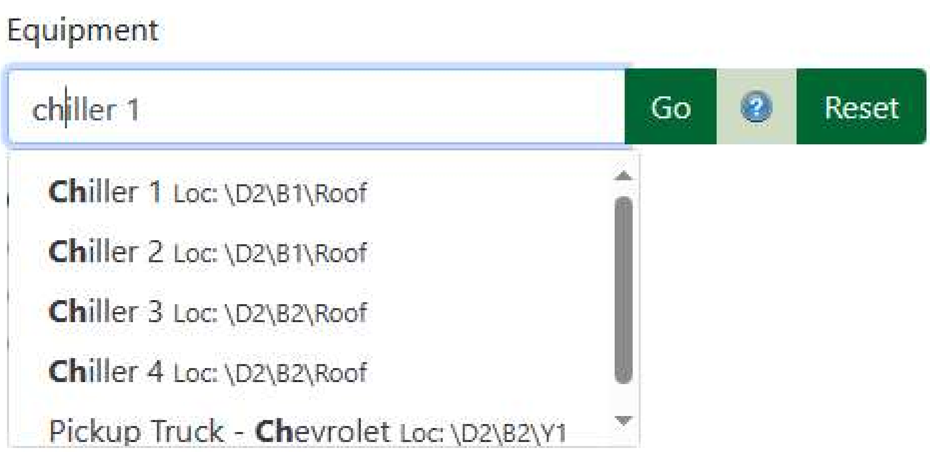
The new Equipment Hub page appears as follows:



You use the hub by entering an equipment code, selecting an action radio button, and then clicking "GO" (or pressing <enter>). This will take the selected action on the identified equipment.

You can scan a MaintScape Equipment bar code from almost any page in MaintScapeWeb to be taken to the Equipment Hub with that equipment's code filled in. You can then take a supported action on the scanned equipment.

The Equipment field supports predictive typing and auto-filtering based on characters in either the Equipment Name or it's Location:



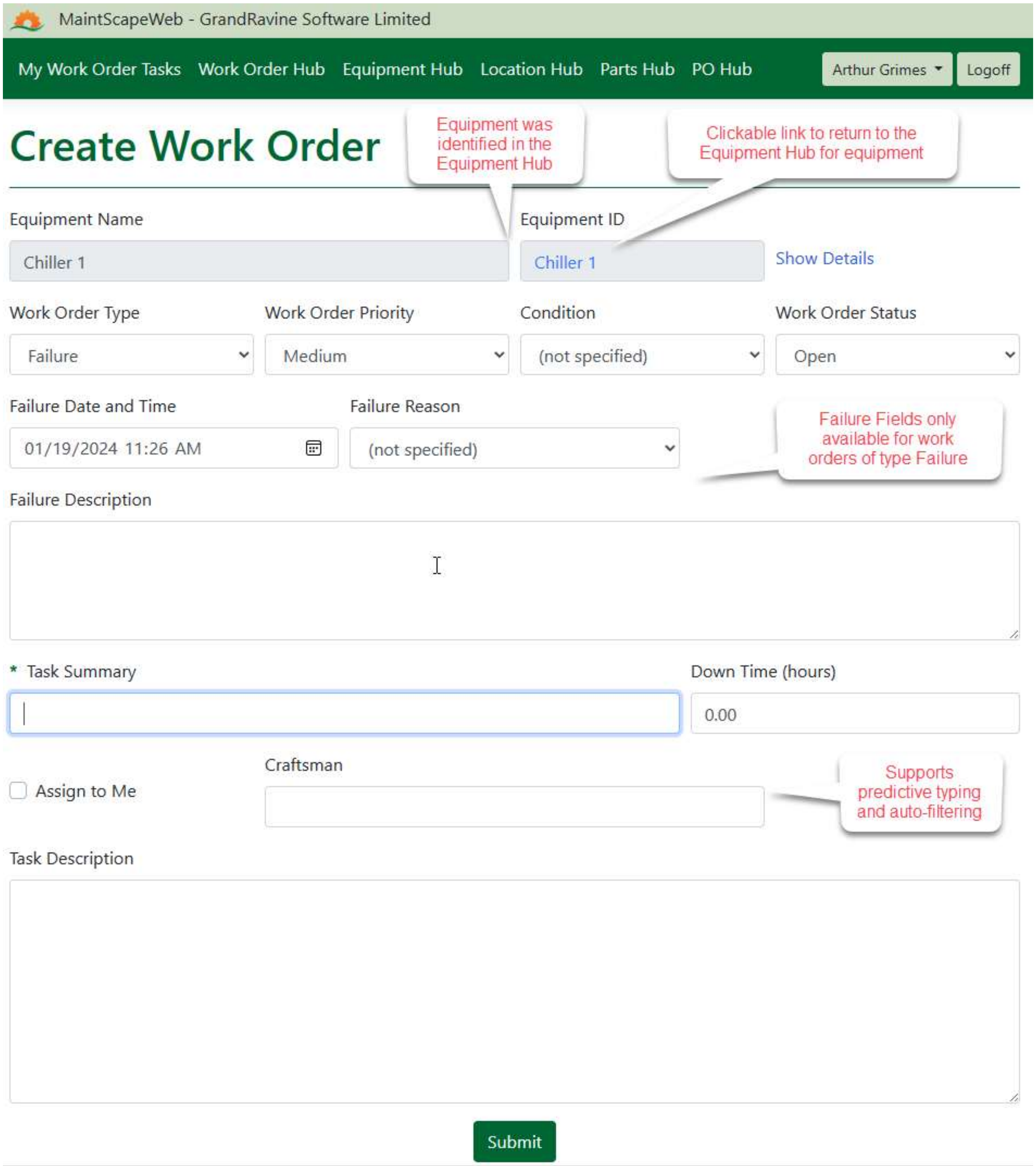
The Create Work Order action opens the Create Work Order page with the Hub selected equipment filled in. This page is documented below.

The History and From First Active actions take you to a page listing work orders, similar to the My Work Order Tasks page. However, the list here is either all work orders ever performed on the equipment (History), starting from the earliest and scrolling forward backward in time, or a list of work orders starting from the first active (From First Active) and scrolling forward in time. You will see historical work orders if you scroll backwards after landing in the list page using action From First Active.

The Parts Usage action is not yet operative.

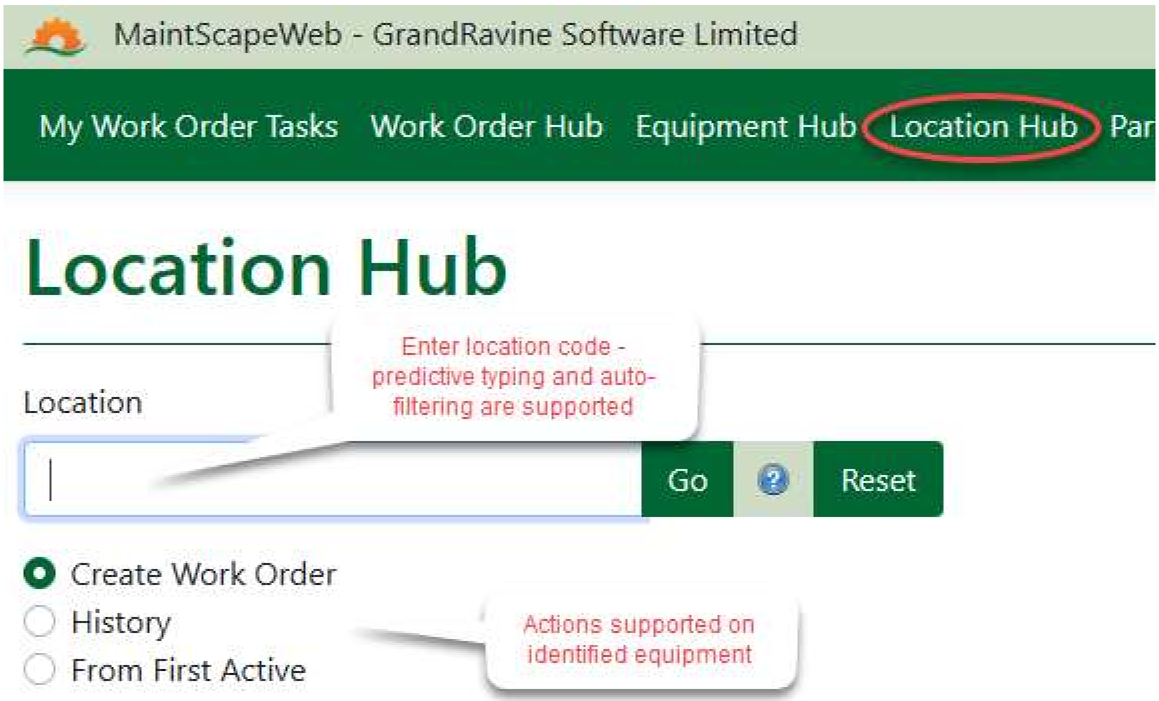
Create Work Order

The new Create Work Order page is reached from either the Equipment Hub or Location Hub, and the work order will be for the equipment or location identified within that hub:



Location Hub

The new Location Hub is analogous to the new Equipment Hub, except it works on Locations rather than Equipment. MaintScape work orders can be either for Equipment or Locations. The Location Hub appears as follows:



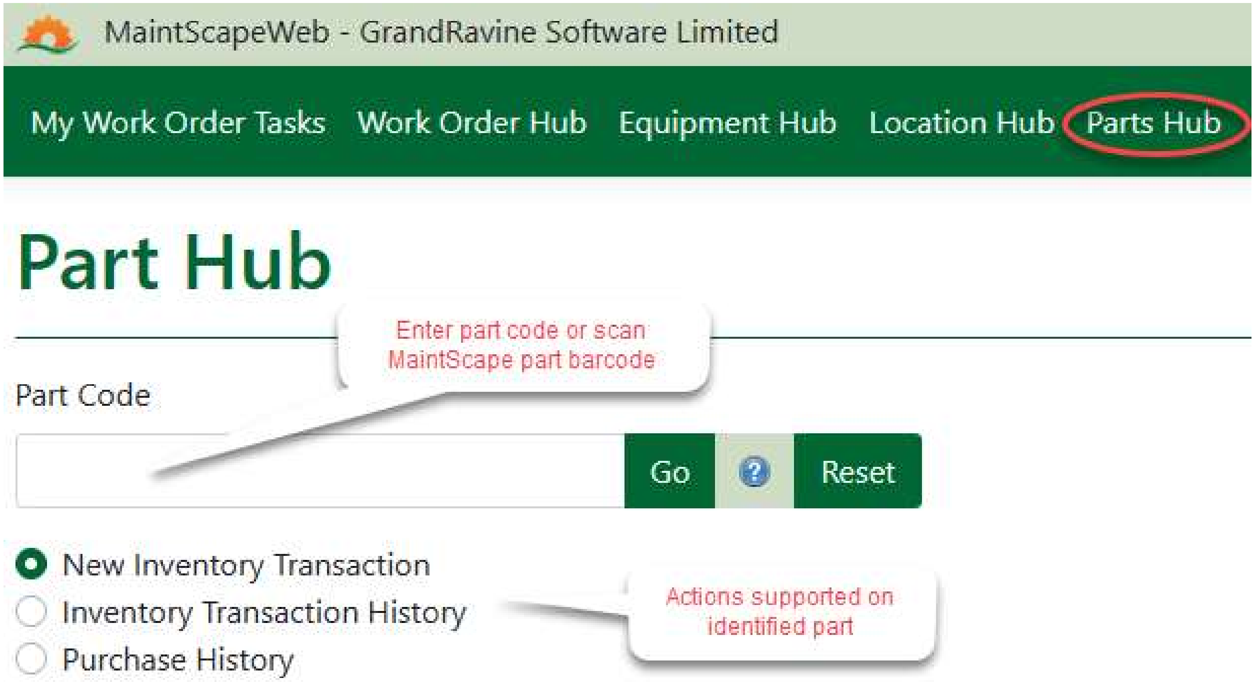
Please see notes on the Equipment Hub, above, regarding usage of the Location Hub.

You can scan a MaintScape Location bar code from almost any page in MaintScapeWeb to be taken to the Location Hub with that location's code filled in. You can then take a supported action on the scanned location.

The Location field supports predictive typing and auto-filtering:

Parts Hub

The new Parts Hub is analogous to the Equipment and Location Hub, and appears as follows:

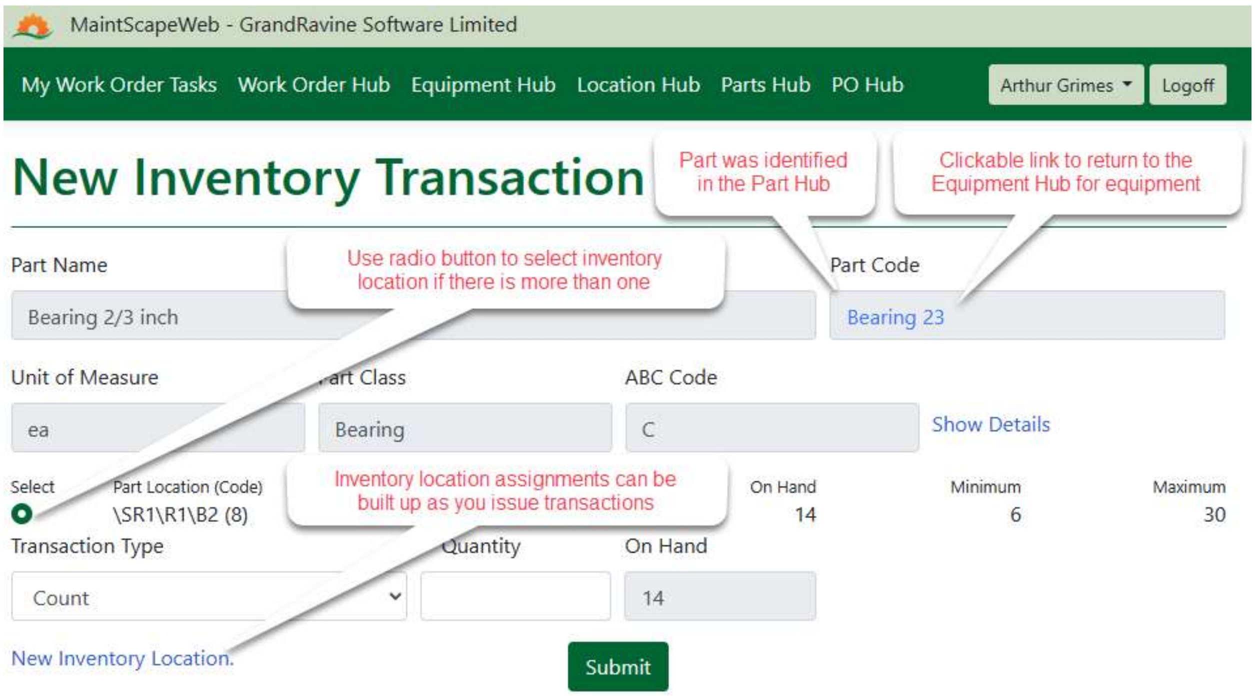


You can scan a MaintScape Part bar code from almost any page in MaintScapeWeb to be taken to the Part Hub with that part's code filled in, except, for example, within the Work Order Task page, where scanning a part barcode prompts to add the part to the displayed work order.

Within the Part Hub page, you can take a supported action on the scanned or data-entered part. Only the New Inventory Transaction action is currently operative, however it is quite powerful, and is described below.

New Inventory Transaction Page

The New Inventory Transaction page is reached from the Part Hub, and will be for the part it identified:



Three Transaction Types are currently supported:

Direct Issue:	Issue part from inventory but not to a particular work order or equipment.
Count:	I.e. Inventory count.
Issue to Work Order:	Selecting this transaction type will expose a field for accepting a work order number (a work order barcode could be scanned as well).
	Another way to issue parts to a work order in MaintScapeWeb is to view the work order in the Work Order Task page and then scan a part's barcode to add the part to the work order.

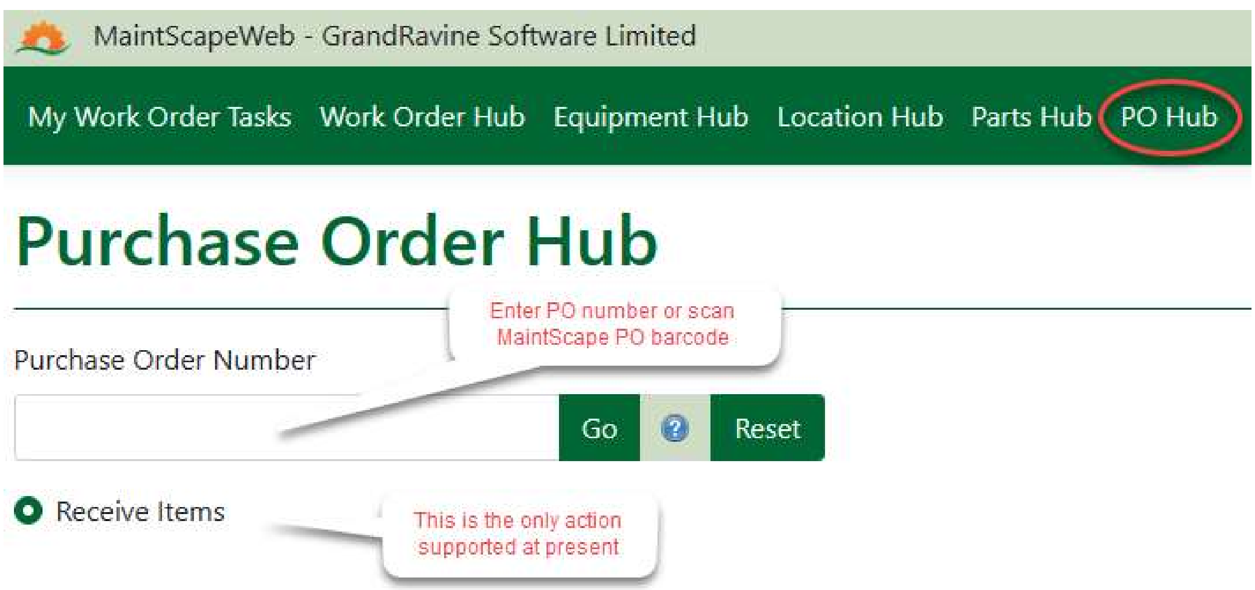
You can revise a part's inventory location as you create an inventory transaction by clicking the "New Inventory Location" link shown above. This could also be done when adding a part onto a work order. See a screen print of the New Inventory Location pop-up in the release notes on the Work Order Task Page, above.

The ability to add inventory locations as you create transactions lets you set up your inventory-controlled part rooms with a barcode scanner:

1. Add the parts into MaintScape using MaintScape Classic, but don't assign them a part location. Print MaintScape barcodes for your parts.
2. Set up the structure of your parts room in MaintScape Classic using MaintScape Explorer – e.g. Parts rooms, rows, shelves, bins, etc. Print MaintScape barcodes for your part locations.
3. Fix part location labels appropriately within your parts rooms (e.g. on bins).
4. When you store a part in a bin, attach the part barcode to the bin as well (you could attach barcodes to your individual parts too, if you like).
5. Scan the part barcode in MaintScapeWeb. If this brings you to the Parts Hub with the part filled in, select the New Inventory Transaction action.
6. Tap "New Inventory Location", then scan the part location (i.e. bin) barcode. You can specify a count when adding the inventory location to the part.
7. If you are meaning to take out units of the part now, you can continue by submitting an Issue transaction in the New Inventory Transaction page.

PO Hub

The new PO Hub appears as follows:

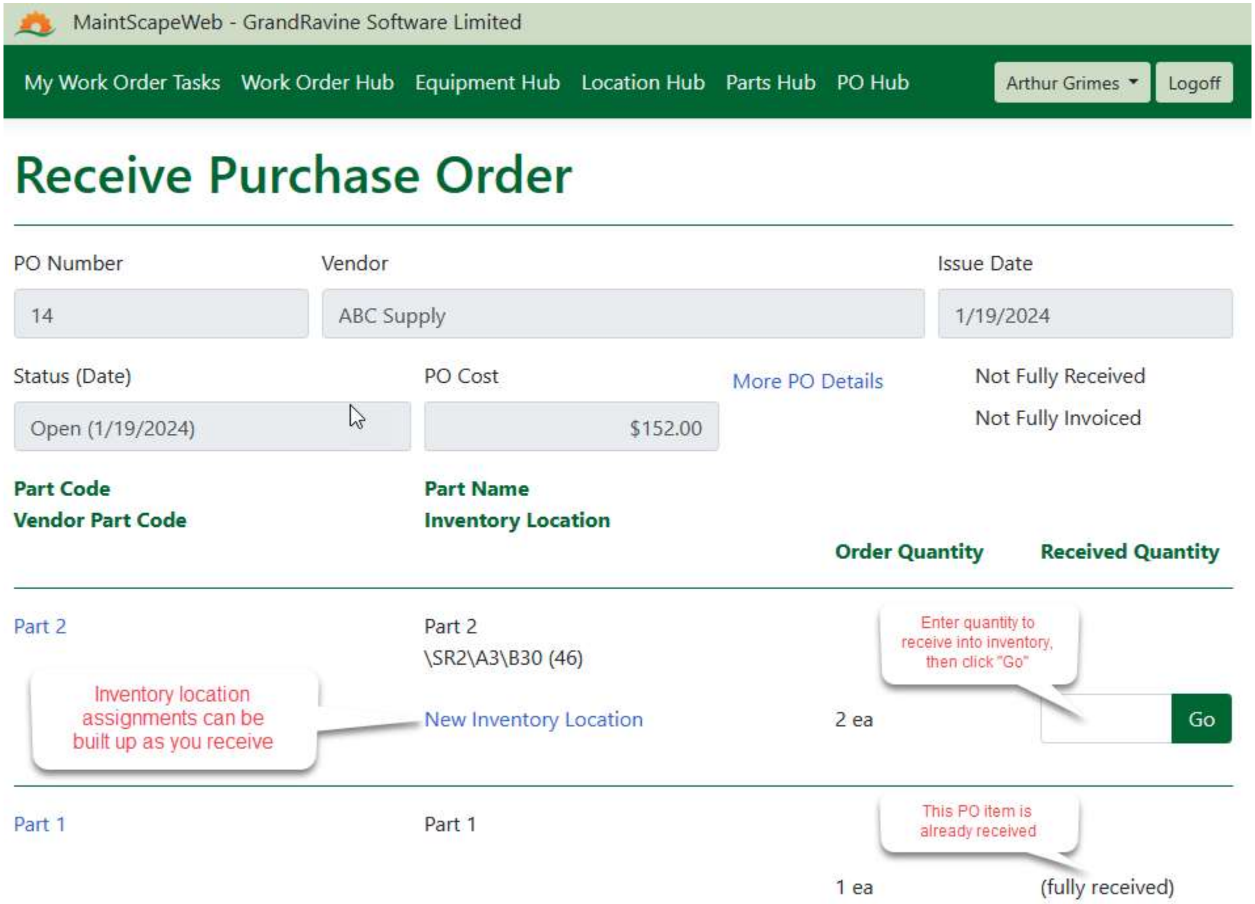


You can scan a MaintScape PO bar code from almost any page in MaintScapeWeb. Since the PO Hub currently supports only one action, MaintScapeWeb navigates you directly to the page for that one action for the scanned PO (receive items) rather than taking you to the PO Hub with that PO number filled in.

The Receive Items action navigates to the Receive Purchase Order page, described below.

Receive Purchase Order Page

The Receive Purchase Order page is reached from the PO Hub, and will be for the PO it identified:



Items will get marked "(fully received)" as you enter receipt quantities and click "Go" - assuming the full ordered quantity is received in this and potentially prior partial receipt transactions. The entire PO will be marked Fully Received once all PO Items are fully received.

You can revise a part's inventory location as you receive by clicking the "New Inventory Location" link associated with the part's PO line item. The pop-up for doing so is the same one as described previously.

MaintScapeWeb Original

MaintScapeWeb Original is the older MaintScape companion web application, mostly for non-maintenance personnel to submit service requests to MaintScape. This functionality will move into the new MaintScapeWeb in the near future, and then MaintScapeWeb Original will be deprecated.

The list of Service Requests now starts with the most recent Service Request rather than the oldest.

Build 143 (December 17, 2021)

The major enhancement of this release is our new MaintScapeWeb: A mobile web application for tablets and phones. Please the section immediately below for more details.

There are many and varied other enhancements in this release to the classic MaintScape – split between those requested by customers and those identified by us. They are also described in detail below, broken out by MaintScape module.

MaintScapeWeb - Mobile Web Application for Tablets and Phones

Our new generation MaintScapeWeb mobile web application, suitable for tablets and phones, is now freshly released. This first release is for use by craftsmen at their job site to review and carry out their work orders, including the following capabilities:

- Upon successful logon, a craftsman is presented with their outstanding work order tasks in due date order (the same username and password is used as for regular MaintScape).
- The craftsman can scroll through their tasks and/or search for tasks
- The craftsman can view details of any of their work order tasks, and take the following actions:
    - Issue parts from inventory.
    - Record labor hours and mark scheduled time as completed.
    - Record notes.
    - Mark work order tasks as Complete. The task completion indicator is a new MaintScape feature that is described in the “Work Order Enhancements” section, further below.

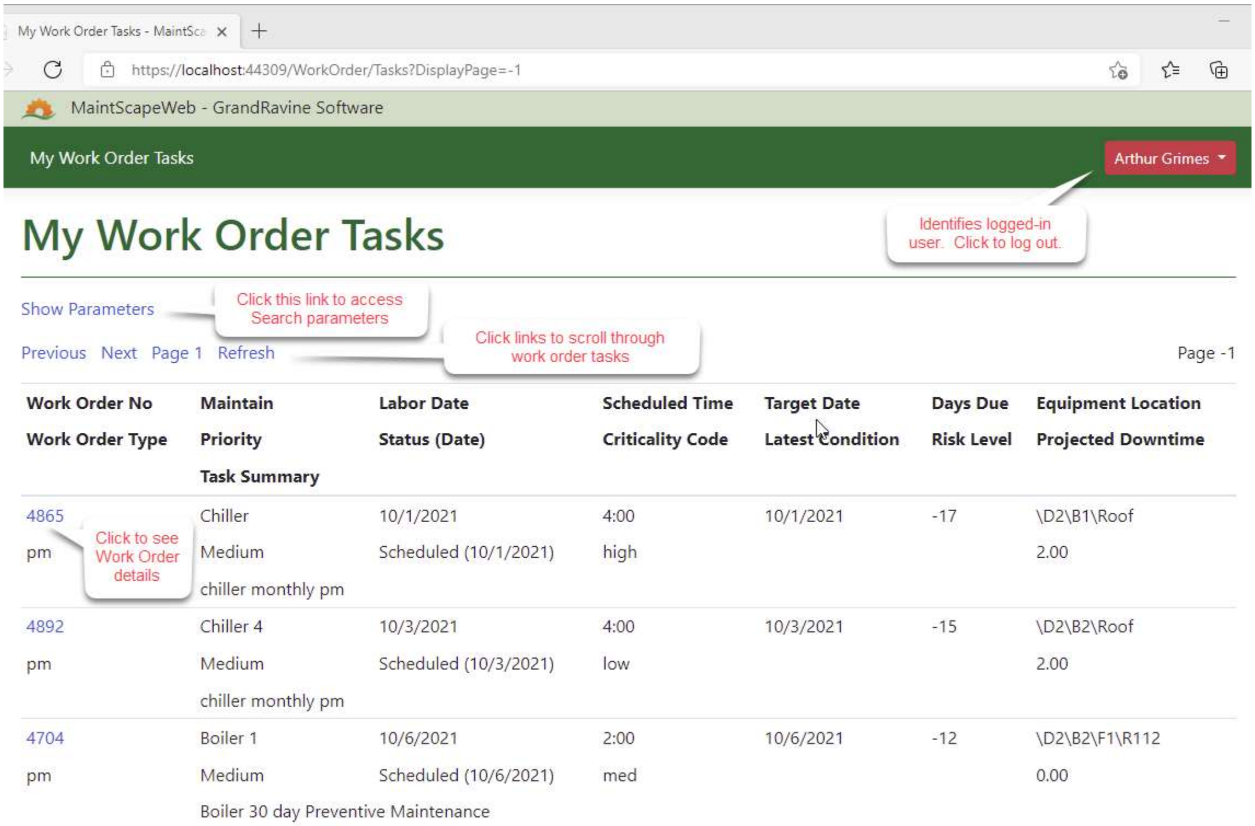
The older generation MaintScapeWeb, used for non-maintenance people to log and review Service Requests, is still available, however its functionality will get rolled into the new MaintScapeWeb over time. This new MaintScapeWeb will form the basis of much future and long-term development. For example, the next release is planned to support bar code scanning when MaintScapeWeb runs on supported Wi-Fi connected barcode scanners.

We look forward to partnering with customers to identify functionality to incorporate into the new MaintScapeWeb. Please don’t hesitate to reach out to us.

Technical Note: The new MaintScapeWeb applications consists of a Web application and a Web API application, the latter of which controls data access and updates. Both are built using Microsoft .NET Core functionality, and each may reside on the same or separate servers.

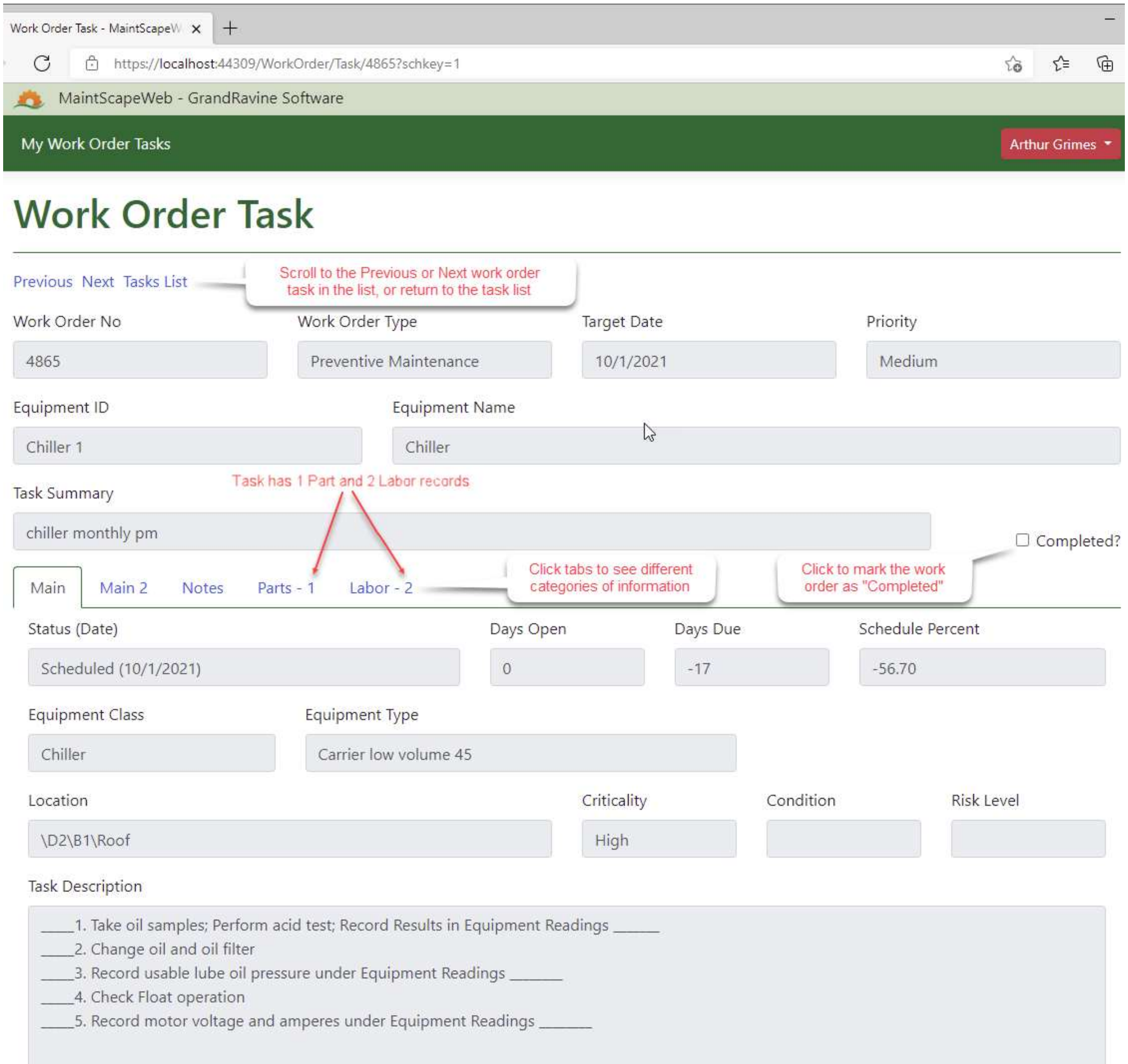
The rest of this section shows the capability and functionality of this first release of the new MaintScapeWeb.

Following is a page of work order tasks that a craftsman may see after logging in:

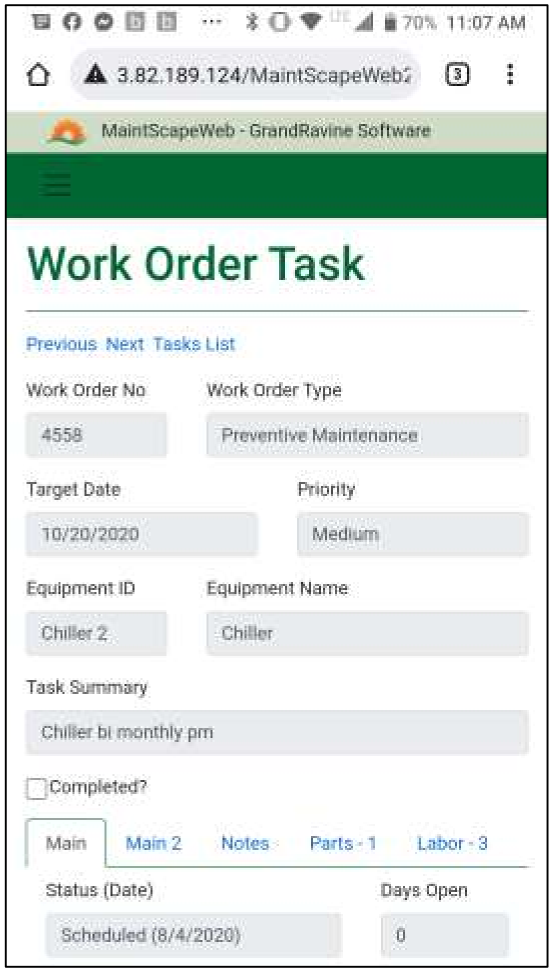


Tasks marked Complete do not appear in the tasks list by default, however this default can be overridden using the “Show Parameters” link shown above.

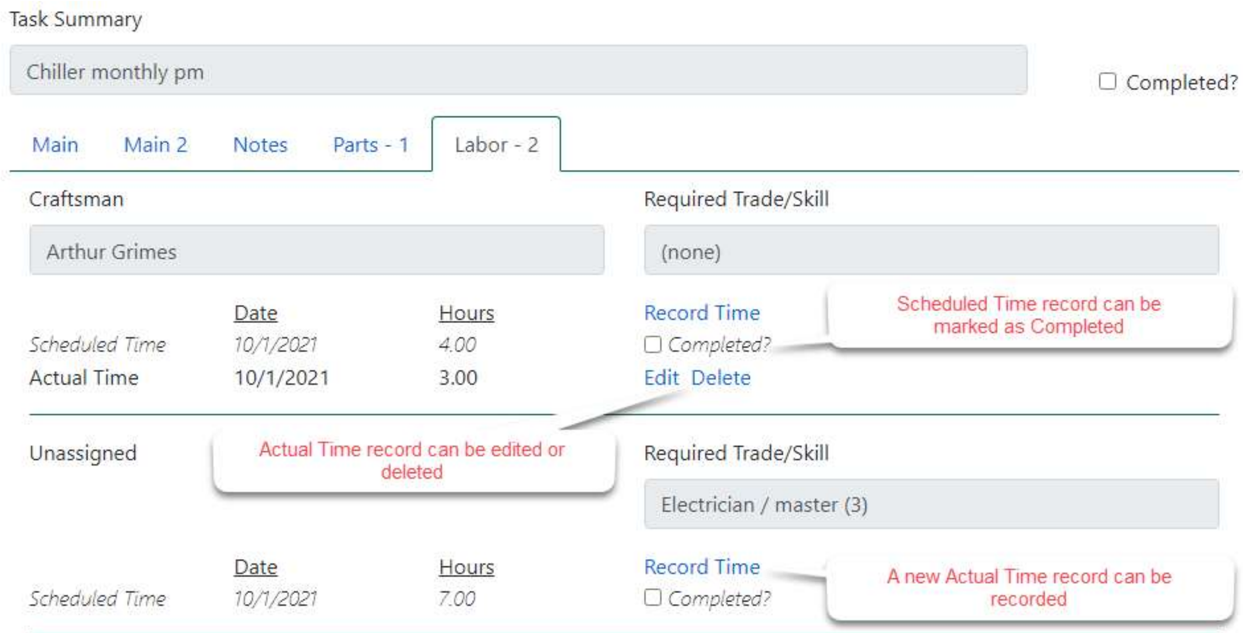
Any of the work order tasks may be seen in detail by clicking the link associated with the work order number:



MaintScapeWeb is a “responsive” web application. This means it re-arranges its layout to look good on different size screens, including phone size screens. Here is what the above layout looks like when viewed on a smart phone:



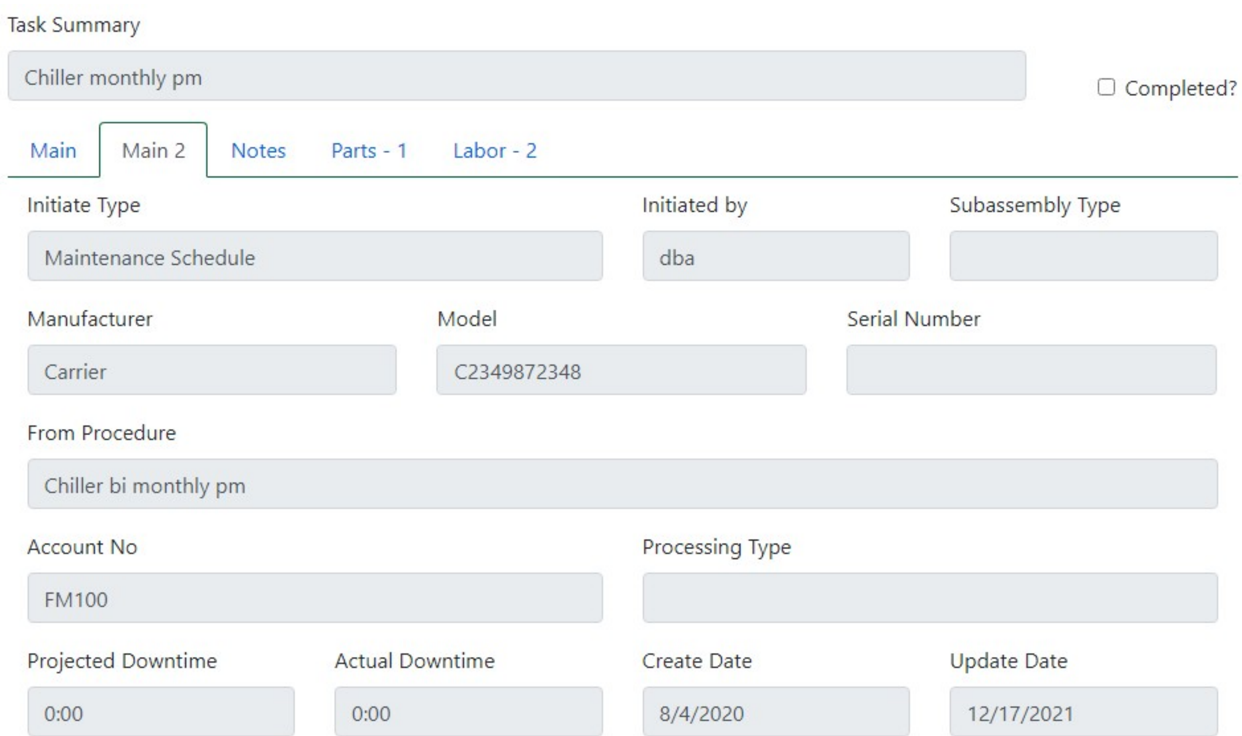
Other work order task detail tabs are shown below, including actions that can be taken. First, the Labor tab:



Parts tab:

Notes tab:

Main 2 tab (more work order task details):

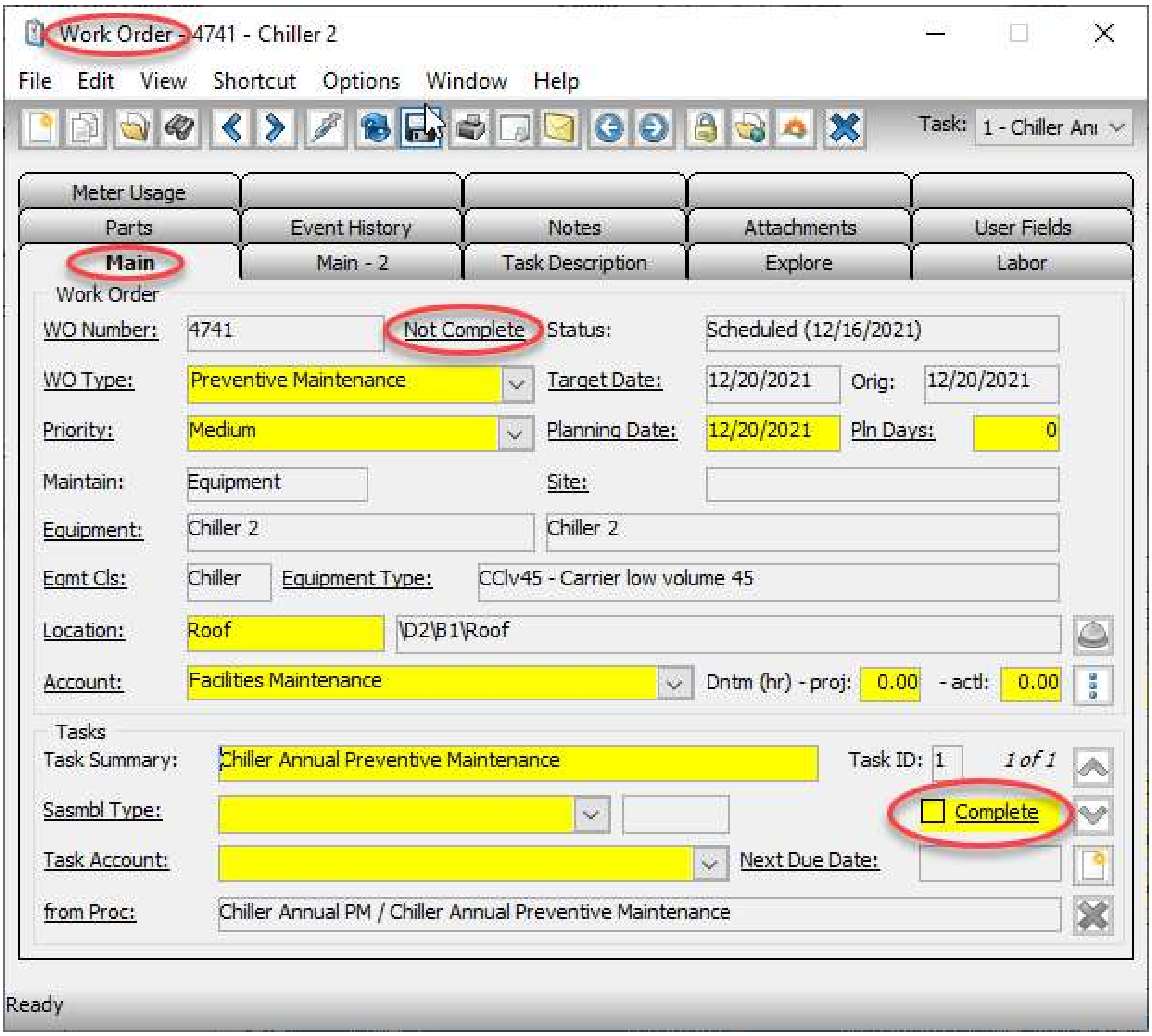


Work Order Enhancements

1. A new Completion indicator has been added to a Work Order Task. All tasks marked as Completed indicates the work order is ready to be closed (note that most MaintScape work orders are created with a single task record).

A Completion Status value also displays for the work order as a whole (i.e., all tasks). Completion Status is one of: Not Complete, Partially Complete, and Complete which respectively indicate no tasks are complete, some tasks are complete, all tasks are complete.

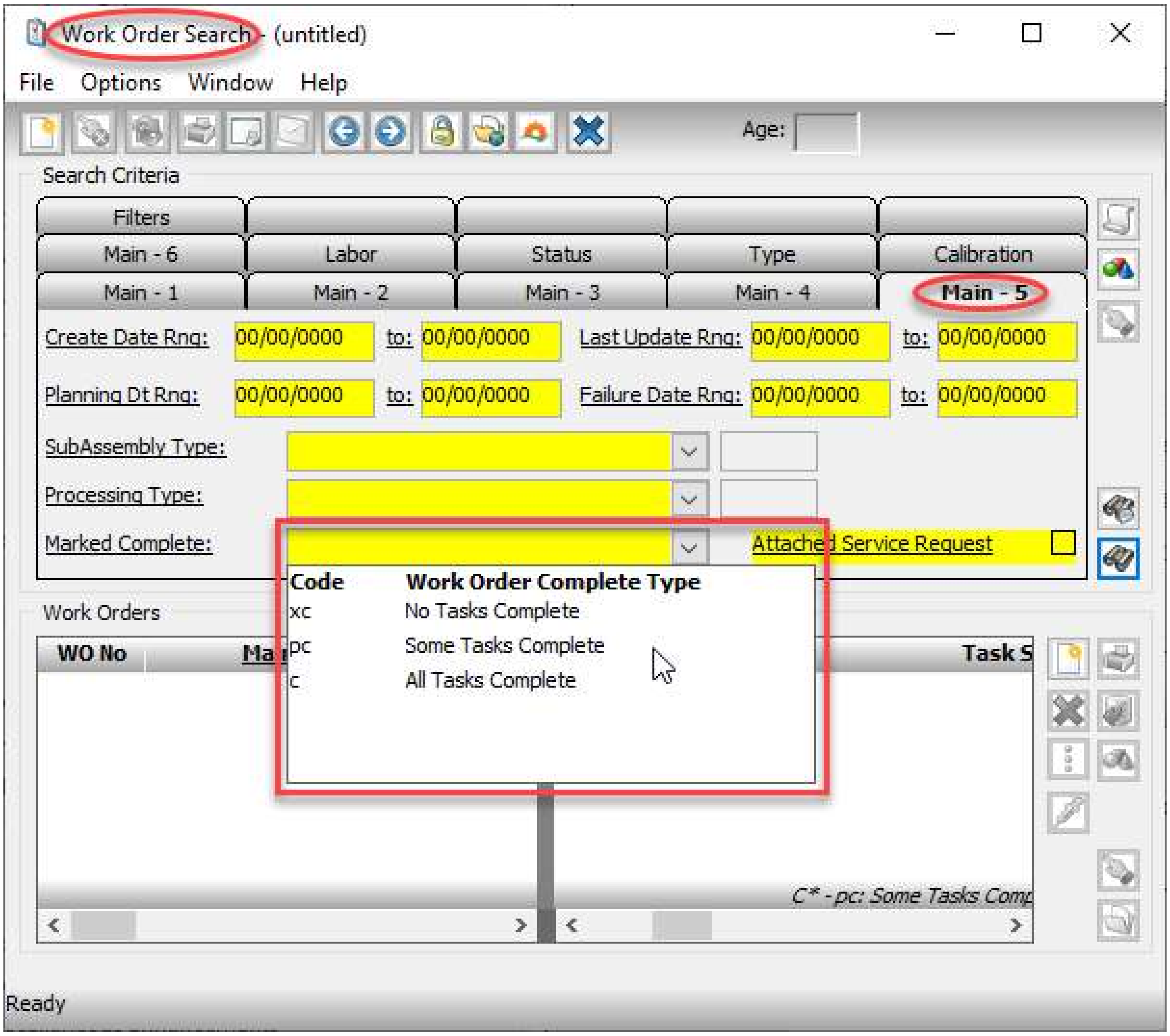
Both the Completion indicator and Completion Status are circled in the Work Order image below:



A work order task Completion indicator can also be set in the new MaintScapeWeb (please see description of this major enhancement, above).

The "Explore" tab of the Work Order window uses now different icons to represent Complete versus Partially/Not Complete tasks.

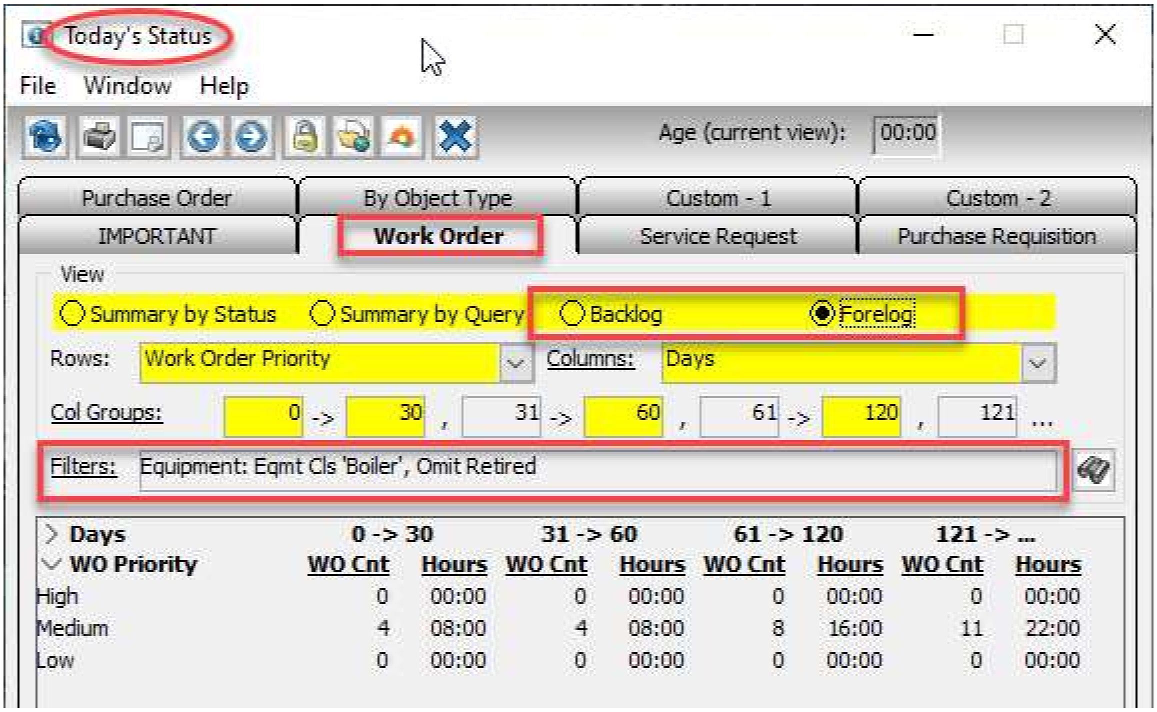
2. Work Orders can be searched by the new Completion indicator. This enables maintenance supervisors to find work orders marked Complete by craftsmen, review them, and close if appropriate:



Work Order Completion Status is displayed in the Work Order Search window results list and related reports.

The Work Order Today's Status default Collection of queries now includes a new query, "Active and Marked Completed". This query is useful for finding work orders that are candidates for being closed.

3. Filters are now supported in the Work Order Today's Status Backlog/Forelog views.



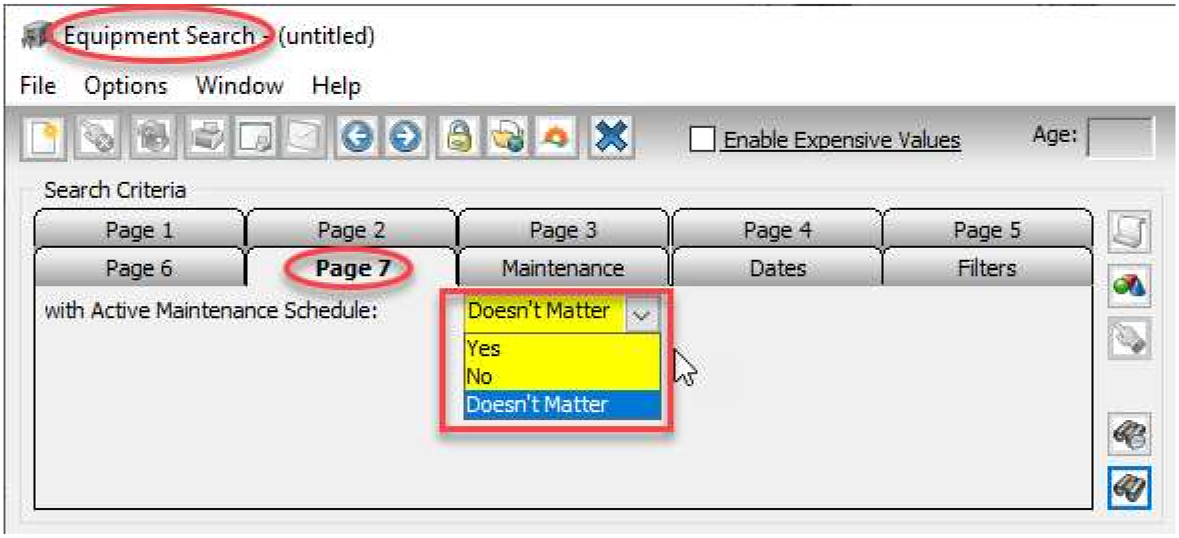
Filters restrict the data that is included in the Backlog/Forelog view. The following Filter types are supported:

- Work Order: For example, only include in the statistics work orders of type "Failure".
- Equipment: For example, only include in the statistics work orders for active equipment of class "Boiler" (this filter is shown above).
- Location: For example, only include in the statistics work orders within building "East Plant".

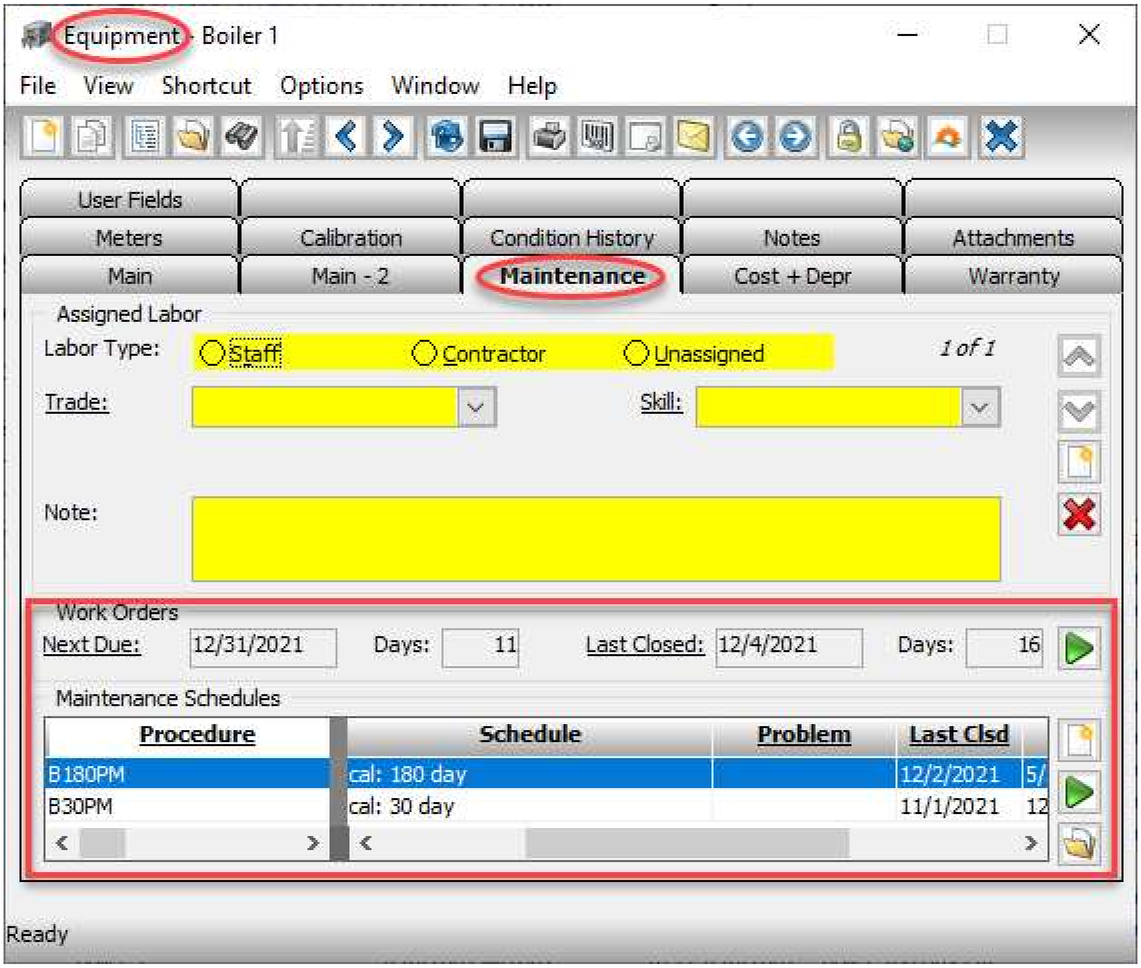
4. Work Order window, tab "Main – 2" now indicates when a work order was generated from a maintenance schedule and the triggering meter reading was subsequently deleted.
5. A note injected from Work Order Data Injector now has username logged in addition to date. This is the same behavior as when a note is injected from the new MaintScapeWeb.
6. "SR" is no longer displayed on the Work Order window, Main tab when the work order is linked to a Service Request. This can instead be inferred by the "Service Request" button being enabled.

Equipment Enhancements

1. Equipment can now be searched based on whether they have Maintenance Schedules:



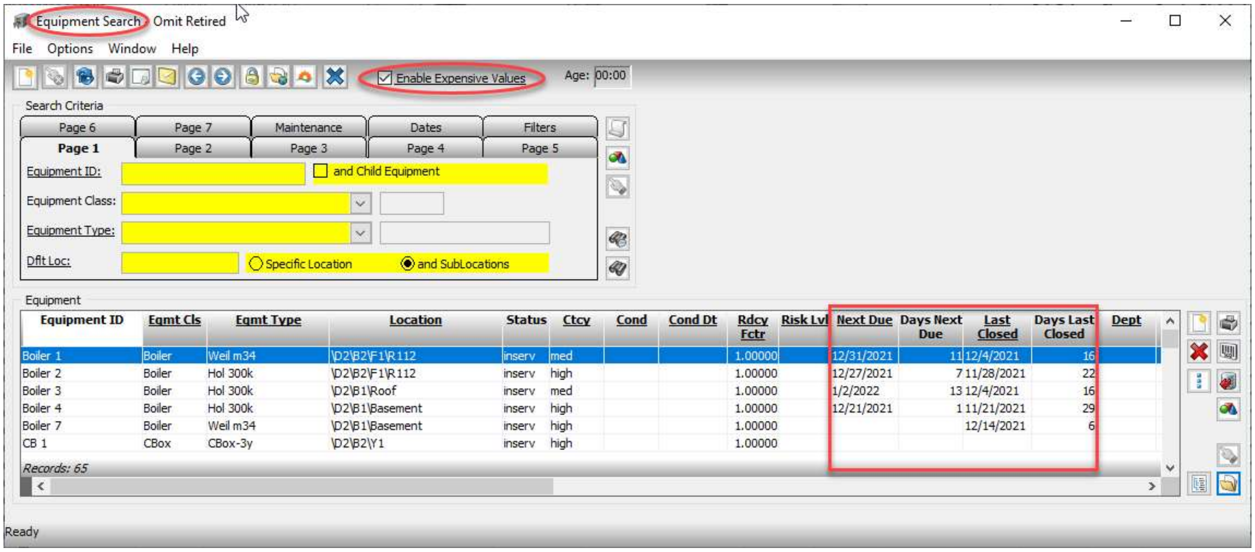
2. The Equipment window, Maintenance tab now displays next due and last closed work orders for an Equipment, as well as a summary of the equipment's maintenance schedules:



- You can right-mouse-click on the Next Due and Last Closed work order dates to navigate to those work orders.
- The "navigate" button to the right of the next due, last closed dates can display additional work orders for the Equipment in the Work Order Search window.
- Maintenance Schedule list actions:
    - Display any of the maintenance schedule records in the Maintenance Schedule window.
    - Create a new maintenance schedule for the Equipment.
    - Display the equipment's maintenance schedules in the Maintenance Schedule Search window where more actions can be taken.
    - Display work orders corresponding to the selected maintenance schedule in the Work Order Search window.

3. New Equipment Report: Equipment Depreciation.
4. Equipment Search window results list now contains columns indicating the date the last work order was closed for the equipment, and the date the next work order is due for the equipment.

Additional new columns indicate the number of days in the future/past corresponding to the next-due/last-closed work orders.



Values are not presented in these new fields by default because computing them can be expensive. The expense is not always warranted – for example, when using the Equipment Search window to find an equipment to include in a work order.

Data is presented in these new fields if you check new toolbar option, “Enable Expensive Values” (also circled in the above screen print). User can also enable/disable “Expensive Values” by right-mouse clicking on the new fields.

When values are presented in these new fields, you can use a right-mouse click action to navigate from the Last Closed or Next Due date to the work order.

5. Standard navigation actions from an equipment to a list of work orders for the equipment (displayed in the Work Order Search window) historically supported 3 search options: Open (status), Scheduled (status), All, All for Last Year. Now option “Active, to 3 Months after Today” is supported as well.

   This enhancement also applies to navigation actions from a location to a list of work orders for the location.

Equipment Type Enhancements

1. Standard navigation actions from an equipment type to a list of equipment of that type (displayed in the Equipment Search window) now display both retired and not-retired equipment. Previously, only non-retired equipment would be listed.
2. Equipment Type records can now be made Inactive.

   This had not been supported before because, if an equipment type record was no longer wanted, all equipment of that type could have their equipment type value changed, and then the equipment type record could be deleted. This is not always sufficient, however: You may want to keep an inactive equipment with its equipment type, but not use the equipment type value for other equipment going forward.

Equipment type records can now be searched by Active/Inactive/Doesn't-matter. Active indicator is shown in the Equipment Type search window results list and corresponding reports.

Maintenance Schedule Enhancements

1. The "Supplemental Task Description" tab of the Maintenance Schedule window has been renamed "Supplemental", and the "Account No. Override" field has moved onto this tab from the "Main – 2" tab.

   The purpose of the "Supplemental" tab is to accept values that override and extend values from the maintenance schedule's Procedure when generating work orders. For example, when specified:

   - The Account No. Override value is used for the generated work order's account instead of the procedure account value.
   - The Supplemental Task Description text is copied into a generated work order's task description, after the text copied in from the procedure task description.
2. You are now warned if you attempt to set a schedule or estimated schedule period of longer than 5 years. This is designed to prevent "typos" that result in unrealistically long schedule periods – such as "every 50 years" (or even longer).
3. Maintenance Schedules listed as search results in the Maintenance Schedule search window now sort more meaningfully by schedule period.

Parts Enhancements

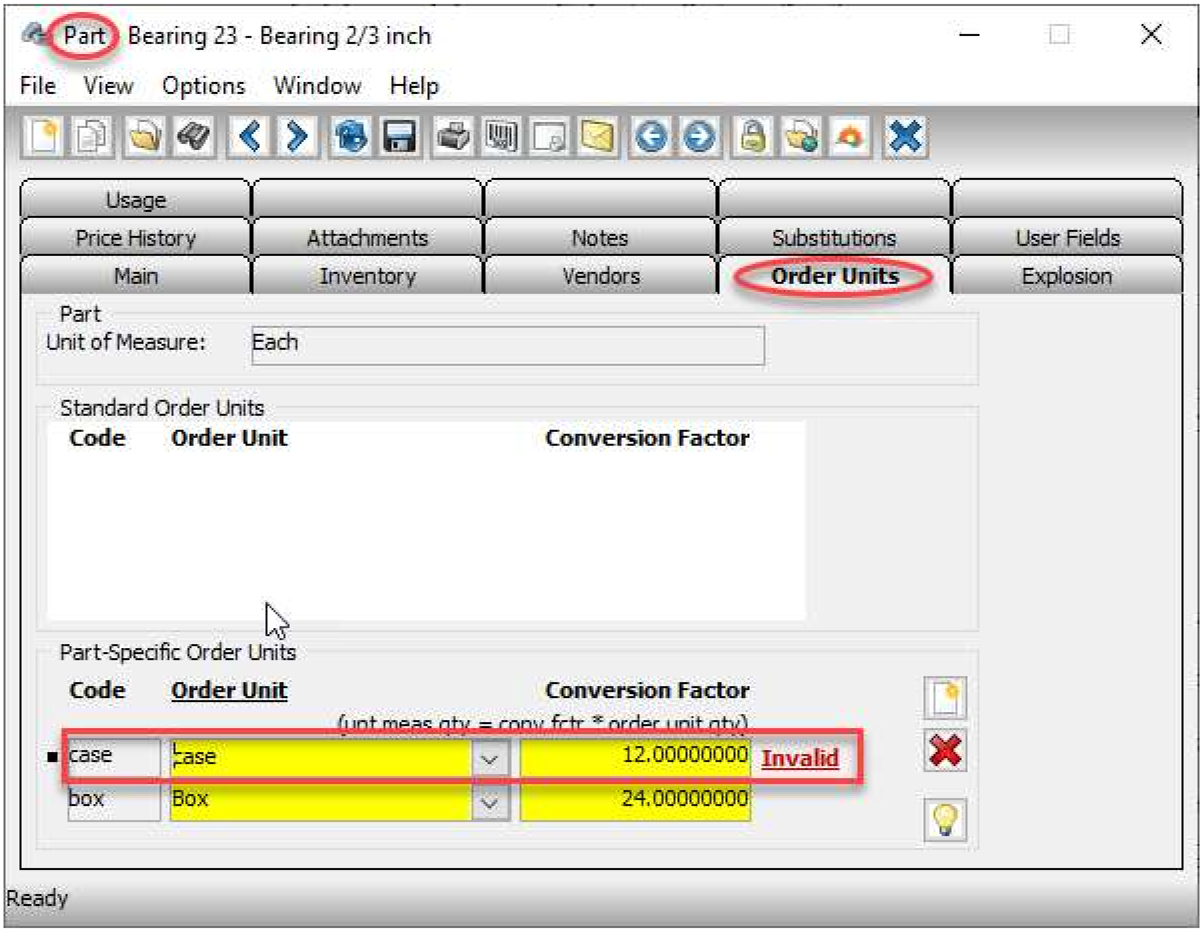
1. Invalid Order Unit enhancements:

   MaintScape has long had the ability to set up part-specific order unit equivalences. For example, a part may be used by the "Each" (unit of measure) and purchased by the "Case" (order unit). For a given part, a case may be defined as "10 Eaches" (this is a part-specific order unit equivalence).

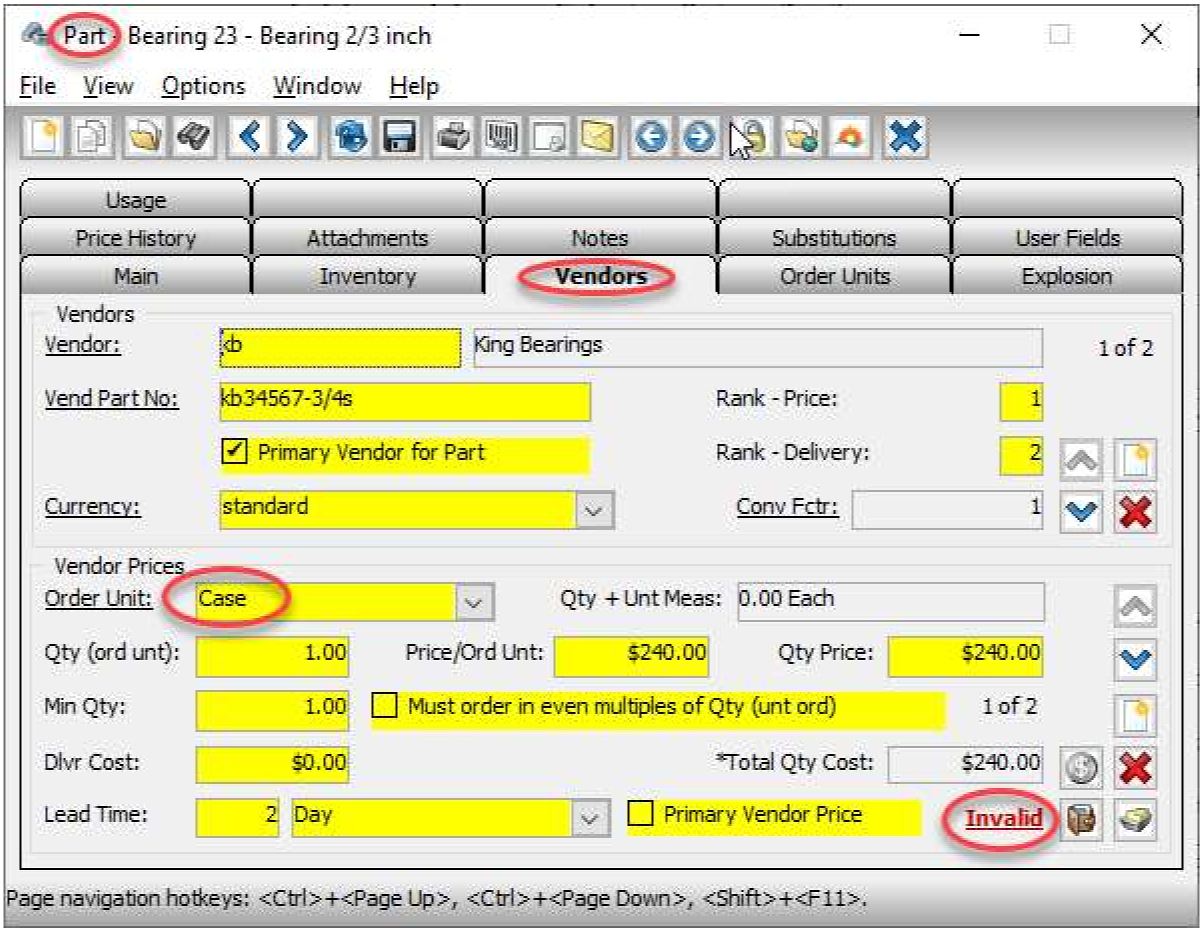
   Sometimes part-specific order unit equivalences are rendered invalid. This would happen in the above example if the equivalence between "Case" and "Each" were deleted (this would be done in the Code Tables window, for code table Unit of Measure).

   MaintScape has also long had a Part Order Unit Exception report, accessible from the Part Search window, that identifies parts with invalid part-specific order units. This report is now enhanced to be exportable to Excel, and to distinguish between Active and Inactive parts.

Further, you can now see in the Part window when a part uses an invalid part-specific order unit. First, you can see an invalid case where the part-specific order unit equivalence is set up:



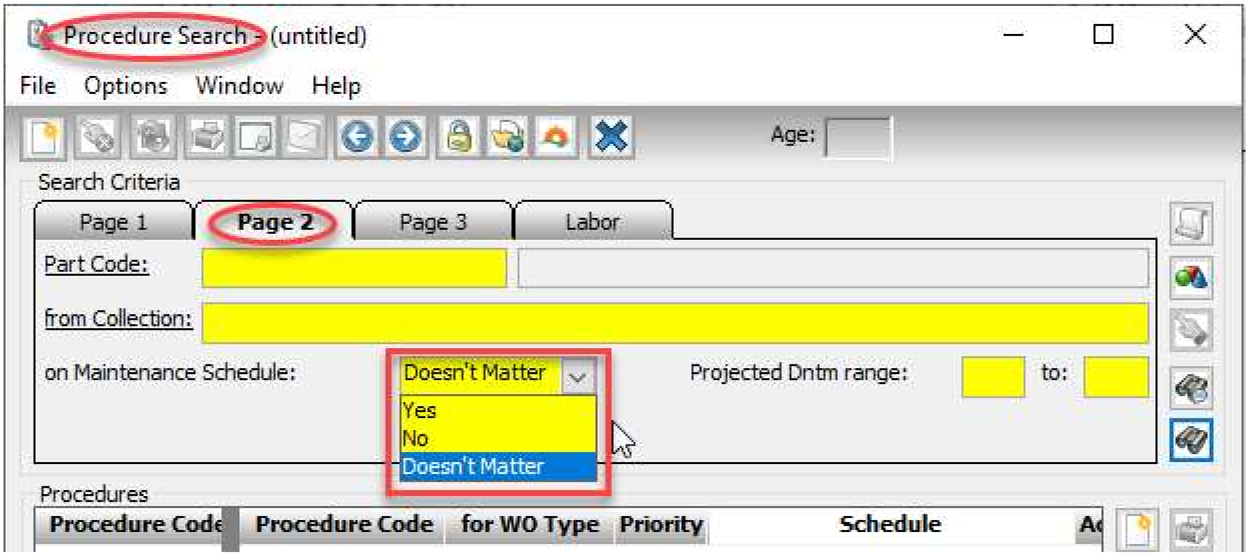
Second, you can see an invalid case where the part-specific order unit is used in a vendor's price:



2. "Part Last Used – by Part Code" report now shows part creation date.
3. Part Search window results list and corresponding reports now includes Unit of Measure.
4. User who creates a Part record is now recorded, and this information is displayed in the Part window on the Usage tab.
5. Part Inventory Transactions can now be searched for by Unit of Measure and by Order Unit.

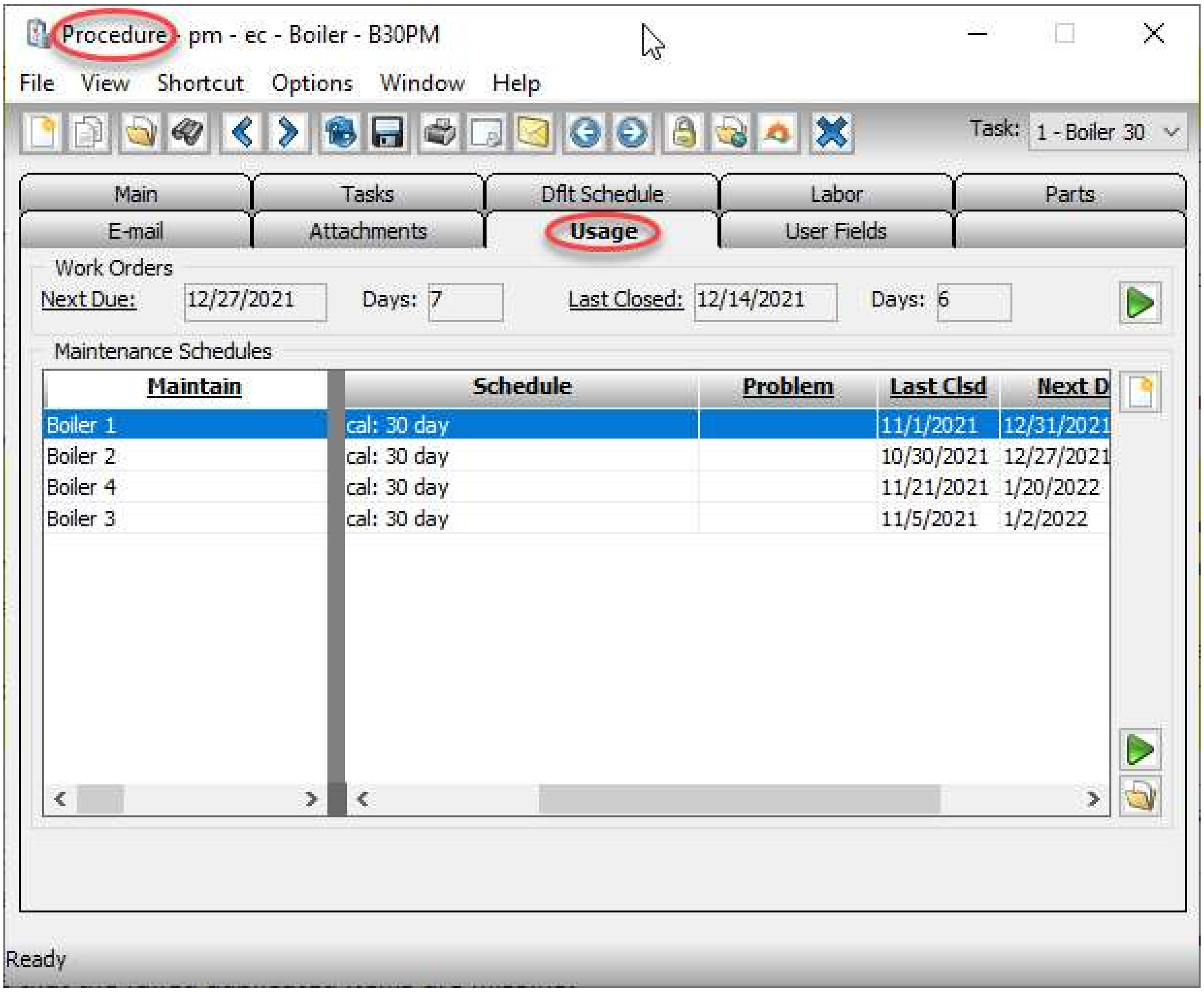
Procedures Enhancements

1. Procedure Search window now supports searching for Procedures based on whether they are used by a Maintenance Schedule:



2. The Procedure window has a new "Usage" tab which displays the next due and last closed work orders for the Procedure, as well as a summary of the maintenance schedules the Procedure takes

part in. When using the Maintscape Multi-Site module, the next-due/last-closed work orders identified and maintenance schedules listed are only those at your viewable sites.



- You can right-mouse-click on the Next Due and Last Closed work order dates to navigate to those work orders.
- The “navigate” button to the right of the next due, last closed dates can display additional work orders for the Procedure in the Work Order Search window.
- Maintenance Schedule list actions:
  - Display any of the maintenance schedule records in the Maintenance Schedule window.
  - Create a new maintenance schedule using the Procedure.
  - Display the procedure’s maintenance schedules in the Maintenance Schedule Search window where more actions can be taken.
  - Display work orders corresponding to the selected maintenance schedule in the Work Order Search window.

3. Procedures listed as search results in the Procedure search window now sort more meaningfully by schedule period.

4. Shortcuts are available from the Procedure window and Procedure Search window to create a new work order using the Procedure.

Purchasing Enhancements

1. The primary vendor has historically defaulted when assigning a Part to a PR item. However, now the order unit, price, and minimum quantity will also default to the primary price for that vendor for the part, assuming such is set up. This functionality was already in place when assigning a Part to a PO Item.
2. When creating a new PO from one or more PR Items within the PR window, Main tab:
   - The PR Due Date carries into PO Promise Date.
   - The PR Requested individual by carries into PO Requested by field.
3. The Purchase Order Invoice module now supports entering Credits:
   - The PO window “Invoices” tab has been renamed to “Invoice/Credit”. In general, all references to PO Invoices now refer to PO Invoices/Credits.
   - A Credit is represented as a PO Invoice with a negative amount.
   - PO Search: “No Invoices” search criteria renamed to “No Invoice Balance”.
4. The process of duplicating a Purchase Order or Purchase Requisition will continue when an error occurs duplicating a PO/PR component such as a PO/PR Item. You will be presented with a list of failed duplication components and error messages upon completion. You may continue with the duplication however you should be aware that the failed duplicated items will be missing.
5. PO Currency may now be changed for POs that are status Open.

Security Enhancements

1. A new security permission is supported for Equipment to control the ability to update an equipment’s location.
2. A new report is available from the Staff Search window when the Multi-Site module is enabled and the MaintScape Administrator is logged on (user “dba”): “Staff Site Access”. This report lists Site access permissions as shown and maintained in the Staff window, Multi-Site tab.

Miscellaneous Enhancements

1. Avery 60517 labels are now supported via two new Part/Part-Location barcode label reports, available from the Part Search window and the Label Printing Batch window (subject to the MaintScape Bar Coding module being enabled):
   - Part/Part Location Label – Avery 60517 – Bar Code – MaintScape Scanner
   - Part/Part Location Label – Avery 60517 – Small Bar Code – MaintScape Scanner

   Avery label 60517 is also available within the standard label printing window.
2. Code table records can now be sorted by either Code or Name value within the Code Tables window (Systems Administration). This Sort selection can be subordinate to Active Type, so that Active code values are more easily distinguished from Inactive values.

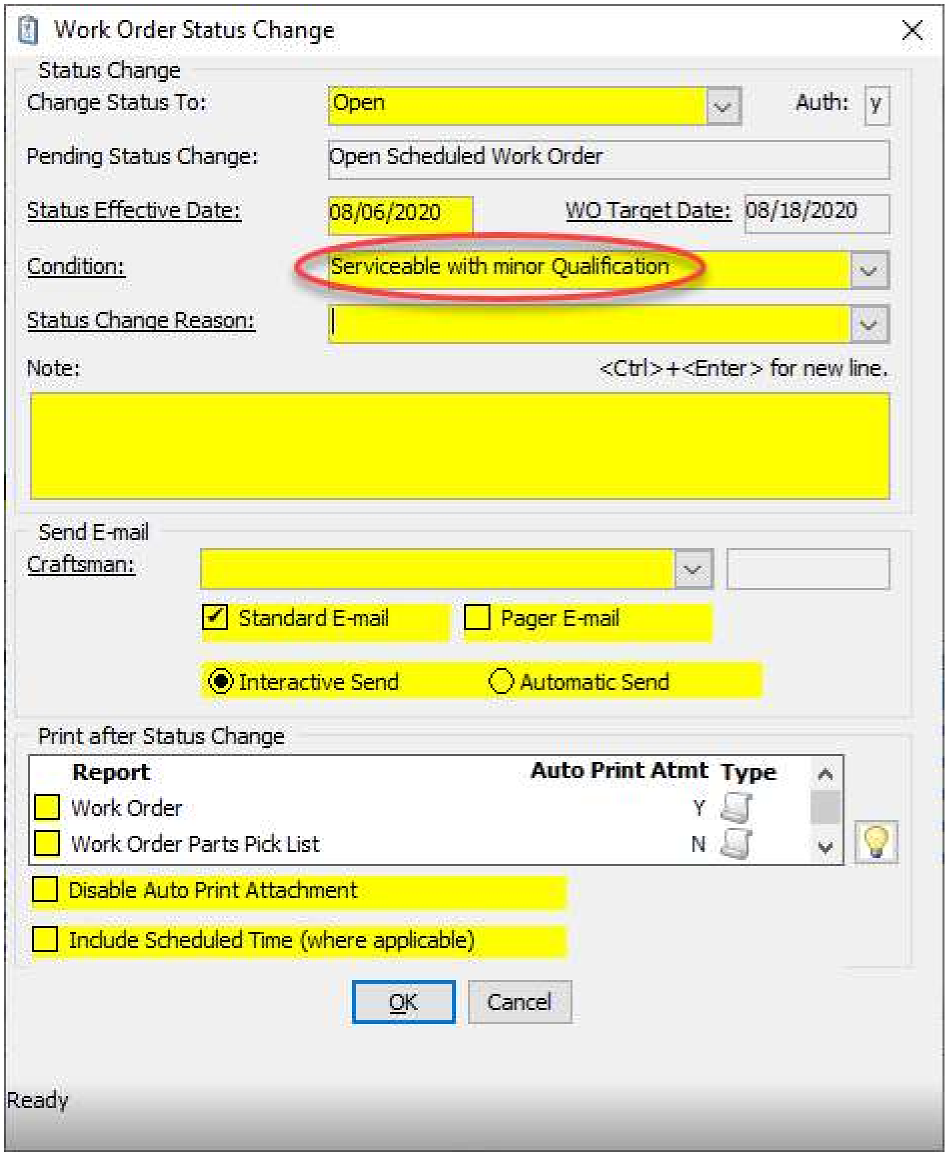
3. Attachment records could previously be searched by whether they were attached to MaintScape Objects. Now they can be searched by the type of MaintScape Object they are attached to – E.g., search for attachments attached to Equipment records.
4. Text Search is supported in most MaintScape Search windows, and this capability is now enhanced as follows:
   - Text search type "Not Pattern Match" is now available in addition to type "Pattern Match". For example, pattern match "c%" will match all values starting with "c". "Not Pattern Match" for same pattern will match all values NOT starting with "c".
   - A new "Advanced" text search type is available for both "Pattern Match" and "Not Pattern Match". The Regular and Advanced pattern matching search types have different capabilities, which can be more sophisticated for the Advanced type. Please see the updated Pattern Match documentation, which is accessed by right-mouse clicking on the drop-down field containing the search types.
5. Enabling/disabling horizontal scroll split was implemented in the last release for Search window results lists. This is now also supported in any list that has a horizontal scroll split by either right-mouse clicking either in blank space or on a field that does not have its own right-mouse click actions. The enable/disable choice is remembered going forward, however a choice for Search window results list "remembered" prior to upgrading to this Maintscape version will have been forgotten.
6. "Active MaintScape Users" list now shows what Application the connection is from. Most likely possibilities are
   - MaintScape
   - MscpApi: The Web API application that accesses and updates data for the new MaintScapeWeb
   - A SQL Anywhere administration utility such as "SQL Central" or "Interactive SQL"

Build 142 (August 4, 2020)

Key Performance Indicators (KPIs)

Condition Codes and Likelihood of Failure (LOF)

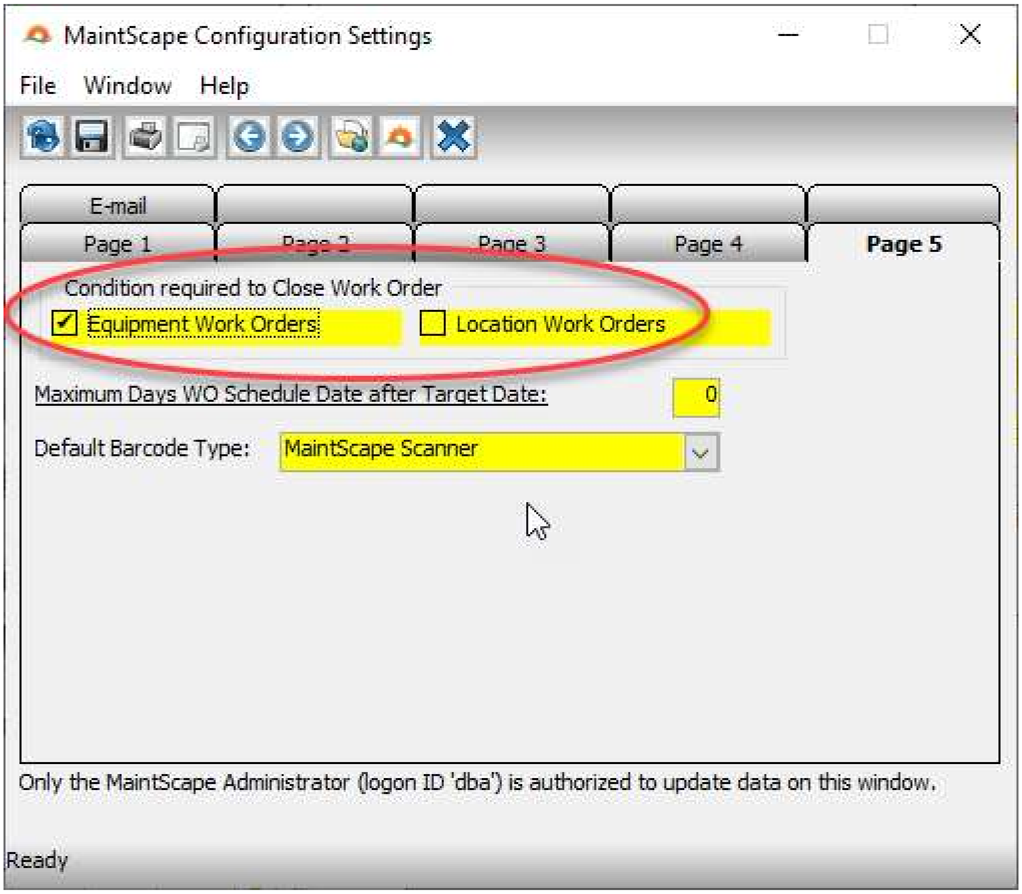
A Condition Code can now be specified whenever changing the status of a work order:



Condition codes can also be set when quick-closing a work order, or when creating a work order in the Quick Work Order window. Condition codes cannot be set when bulk-closing work orders because it is unlikely all bulk-closed work orders will have equipment in the same condition.

Condition Code values are user-defined and maintained in the Code Tables window (subject to user security settings). Each Condition Code value can be assigned a numeric Likelihood of Failure value (LOF), where a larger number indicates a higher likelihood of failure.

A new System Configuration setting is available requiring a Condition Code to be specified when closing a work order. Separate settings are available for closing Equipment versus Location work orders:



An equipment's current condition is displayed in:

- The results list of the Equipment Search window and other reports.
- Equipment window (main tab)

The Equipment window has a new tab, "Condition History", to show a history of condition changes. Each row represents a condition being set, with values: Condition Code, Date, Work Order that set the condition, and User who set condition. You can right-mouse-click to navigate from any Condition History record to the work order that set the Condition Code value.

Equipment can be searched by an exact Condition Code value, or additionally by Condition Codes with a lower/higher Likelihood of Failure value than the one specified. For example, search for Equipment with condition "Serviceable with Minor Qualification" and higher Likelihood of Failure (i.e. worse condition).

Work Orders can be searched by current equipment Condition Code value, just as Equipment can be searched as described just above. Condition codes recorded when a work order changes status changes can be viewed in the Work Order window, Event History tab.

The following new Equipment reports are available for Condition Code reporting:

- “Equipment Inventory – by Condition” lists equipment grouped by current condition.
- “Equipment Condition History” lists condition history by equipment. A report-specific criteria limits how far back history should be selected for inclusion.

The new Work Order Today’s Status Backlog/Forelog views can be broken out by current Condition Code – please see documentation on the Backlog/Forelog KPI, below.

Criticality Codes and Cost of Failure (COF)

The “Risk Level” field on the Equipment window (tab “Main – 2”) has been repurposed into a Condition Code selectable value and moved to the Main tab. If Risk Level values were currently in use, these values have migrated into Condition Codes.

Criticality Code values are user-defined and maintained in the Code Tables window (subject to user security settings). Each Criticality Code value can be assigned a numeric Cost of Failure value (COF), where a larger number indicates a higher cost of failure.

An equipment’s Criticality Code is displayed in the results list of the Equipment Search window and other reports.

Equipment can be searched by an exact Criticality Code value, or additionally by Criticality Codes with a lower/higher Cost of Failure value than the one specified. For example, search for Equipment of “Medium” criticality and higher Cost of Failure (i.e. more critical).

Work Orders can be searched by current equipment Criticality Code value, just as Equipment can be searched as described just above.

A new variation of the Equipment Inventory report is available, “Equipment Inventory – By Criticality”.

The new Work Order Today’s Status Backlog/Forelog views can be broken out by Criticality Code – please see documentation on the Backlog/Forelog KPI, below.

Redundancy Factor and Risk Level

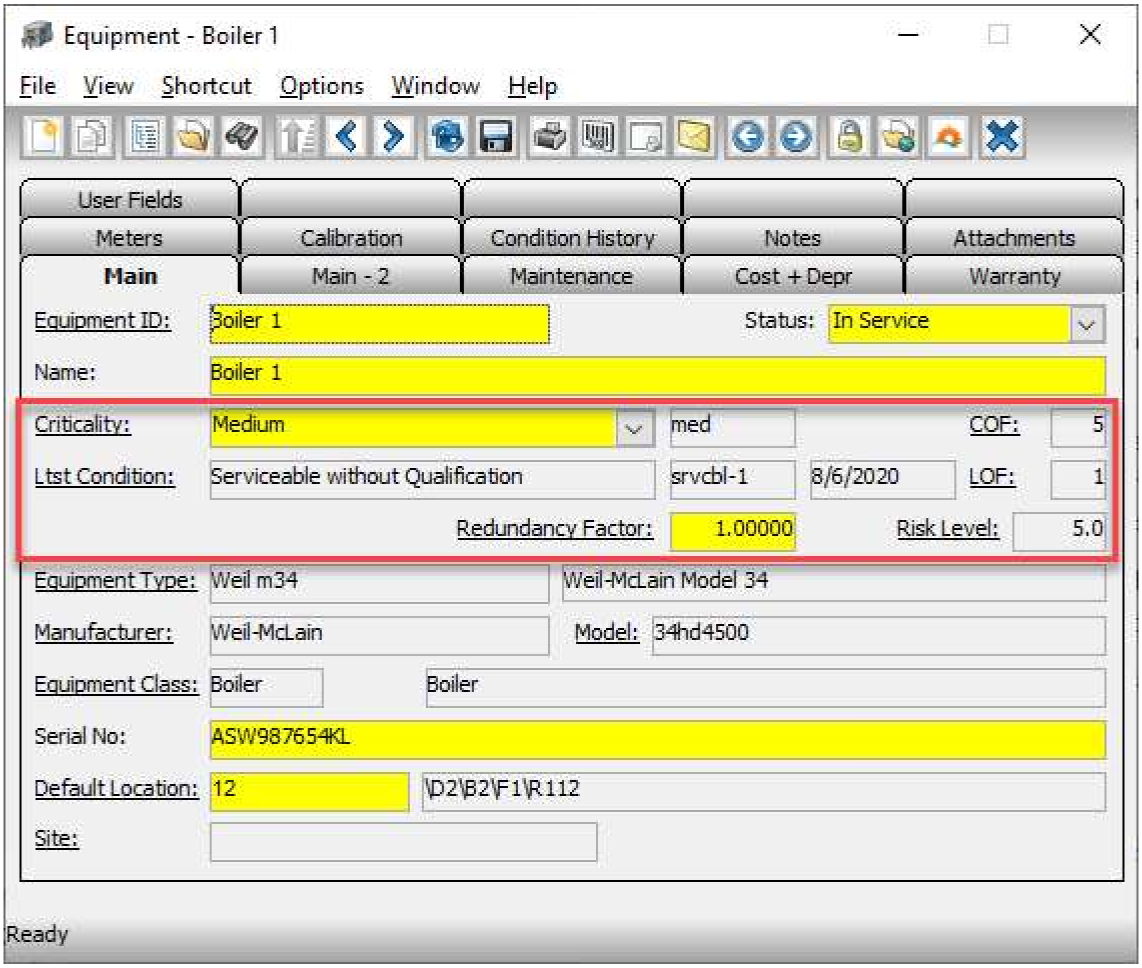
A Redundancy Factor can be assigned to Equipment, indicating how redundant an Equipment is. Values must be greater than 0 and less than or equal to 1. Value 1 means no redundancy – i.e. there is no backup if the equipment fails. The smaller the number, the greater the redundancy.

MaintScape computes the Risk Level for an Equipment as:

Risk Level = Likelihood of Failure (LOF) * Cost of Failure (COF) * Redundancy Factor

As described above, LOF derives from the current Condition, and COF derives from Criticality. Higher LOF and Higher COF imply higher Risk. Redundancy factor can reduce the Risk Level (by indicating presence of a backup) but cannot increase it.

All the factors just described are shown blocked-off in the sample screen print, below, of the updated Equipment window, Main tab layout:



If you need a reminder while using MaintScape of the meaning of most of the blocked-off fields, you can right-mouse click on most of them and select pop up action, “Quick Tip”. Please remember that MaintScape sprinkles right-mouse button Quick Tips liberally, especially for newer functionality.

An equipment’s Risk Level is displayed in the results list of the Equipment Search window and other reports.

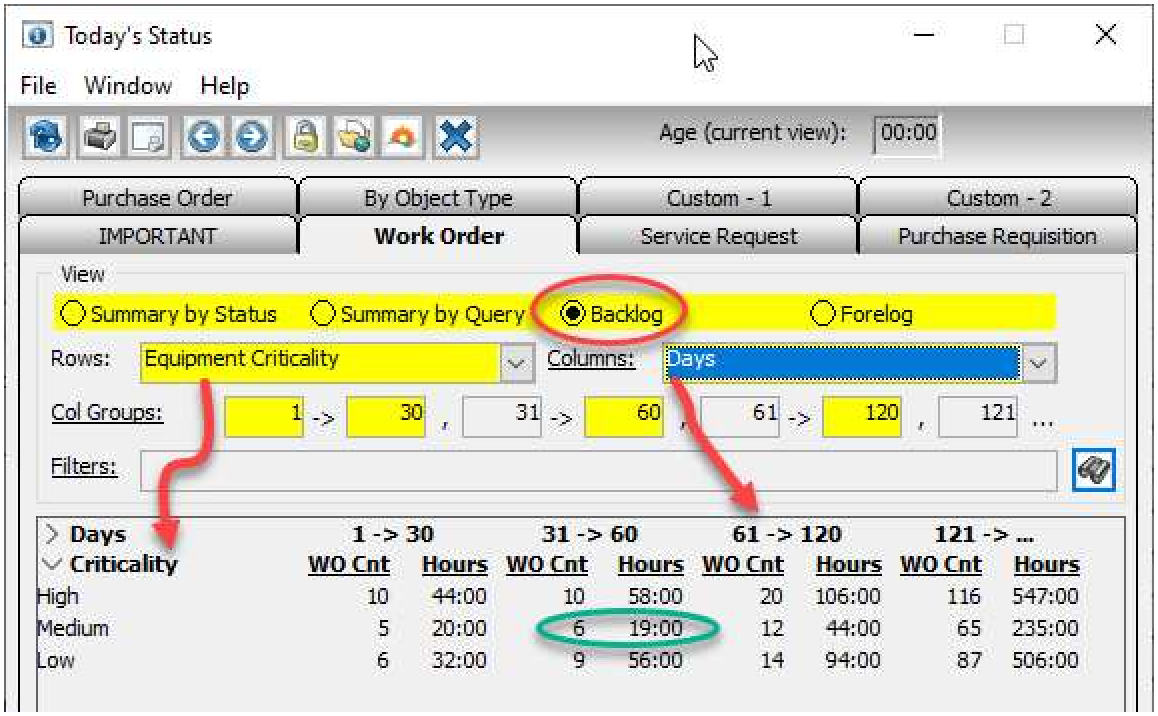
Equipment and Work Orders can be searched by a range of Risk Level values.

The new Work Order Today’s Status Backlog/Forelog views can be broken out by Risk Level – please see documentation on the Backlog/Forelog KPI, below.

Backlog/Forelog

The Work Order Today’s Status window has two new views: Backlog and Forelog. These views can show you the same work orders as the traditional views, however they show the work orders to you in new and useful ways.

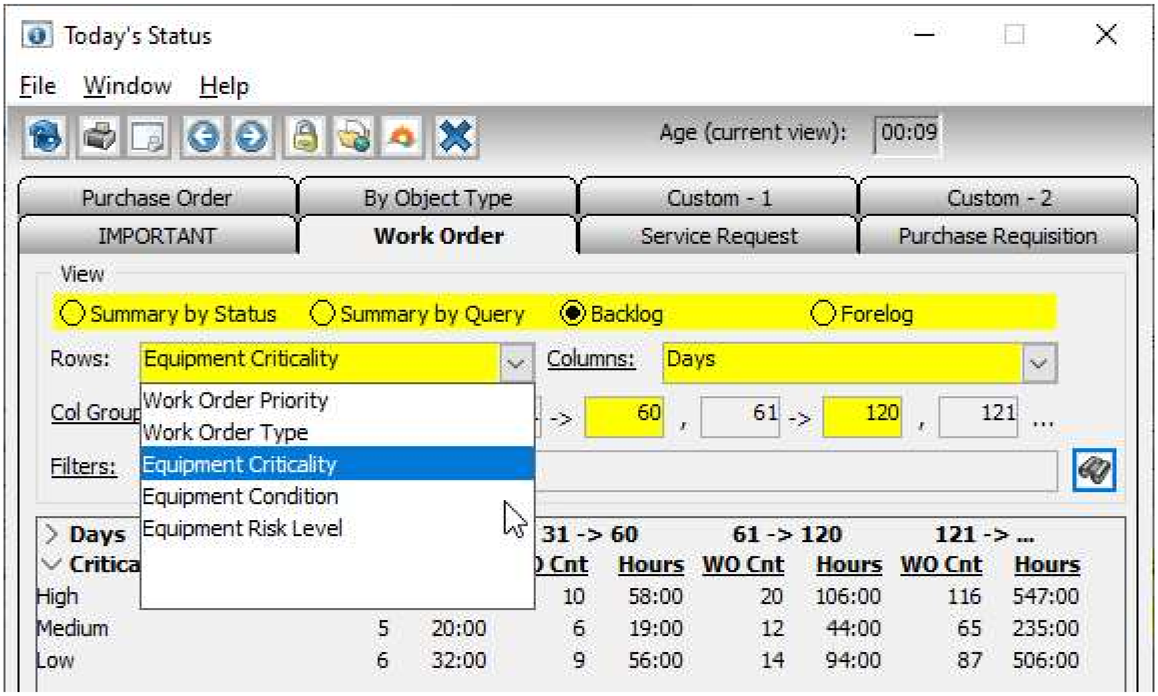
Backlog and Forelog views work similarly. The Backlog view is designed to show overdue work orders, and the Forelog view is designed to show coming due work orders[1]. Following is an example of the Backlog view:



Explaining by way of example, the green-circled numbers indicate that 6 work orders for Medium Criticality equipment are overdue by anywhere from 31 to 60 days. Scheduled time for these 6 work orders add up to 19 hours. As you would expect with MaintScape, you can right-click or double-click on the numbers to drill down to a list showing these 6 work orders.

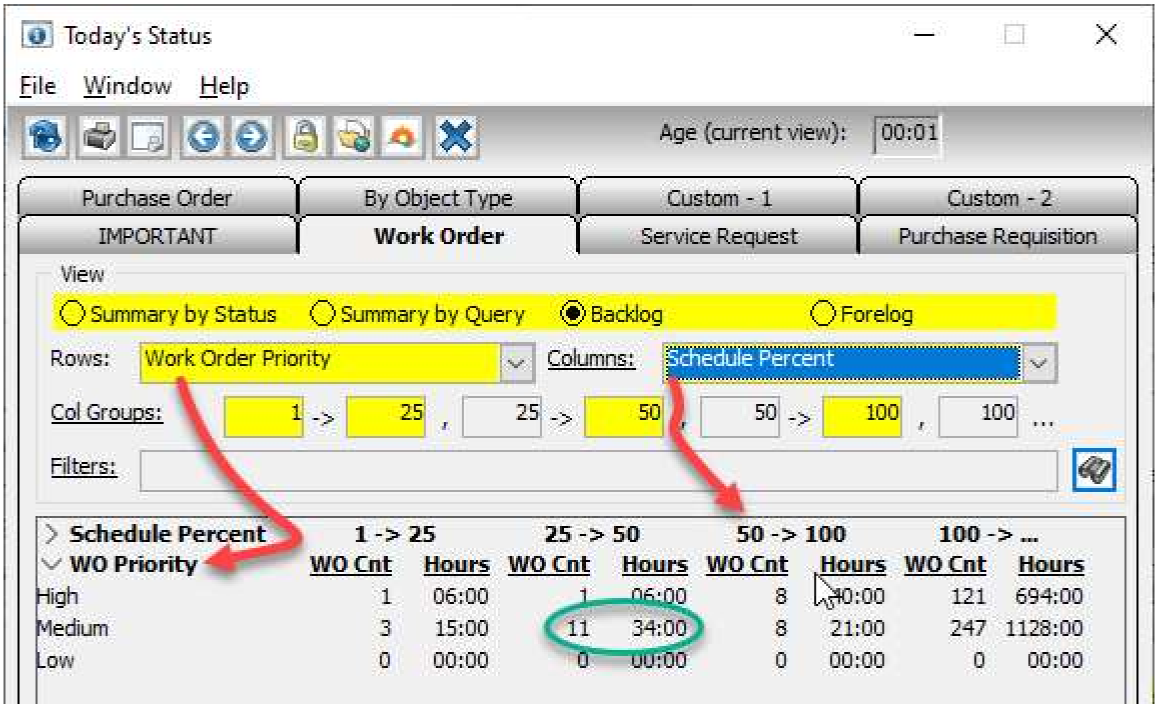
[1] If you wish to be creative, you can show both overdue and coming due work orders in the same view using negative and positive Column Group boundaries.

The above shows rows-breakout by Equipment Criticality (High, Medium, and Low). The other row breakout options are:



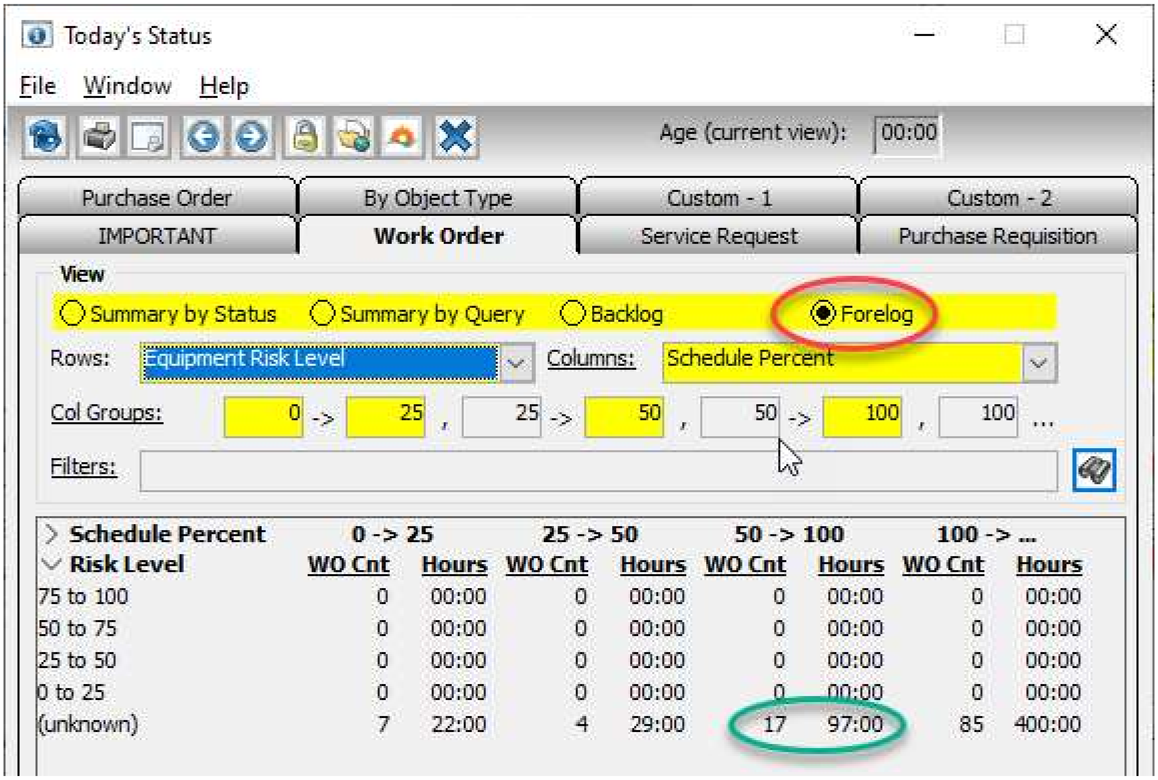
There is one option for column breakout other than “Days”: “Schedule Percent”. Schedule Percent only applies to work orders generated from maintenance schedules, and, for example, recognizes that of two work orders that are three weeks overdue, a weekly such work order is “more overdue” (300% of schedule) that an annual such work order (5.8% of schedule).

The following example shows row breakout by Work Order Priority and column breakout by Schedule %:



The green-circled numbers indicate that 11 work orders of Medium priority are overdue by anywhere from 25 to 50 percent of their schedule period. Scheduled time for these 11 work orders add up to 34 hours. Again, you can right-click or double-click on the numbers to drill down to a list showing these 11 work orders.

As mentioned, the Forelog view looks just like the Backlog view, except it looks at work orders coming due. For example

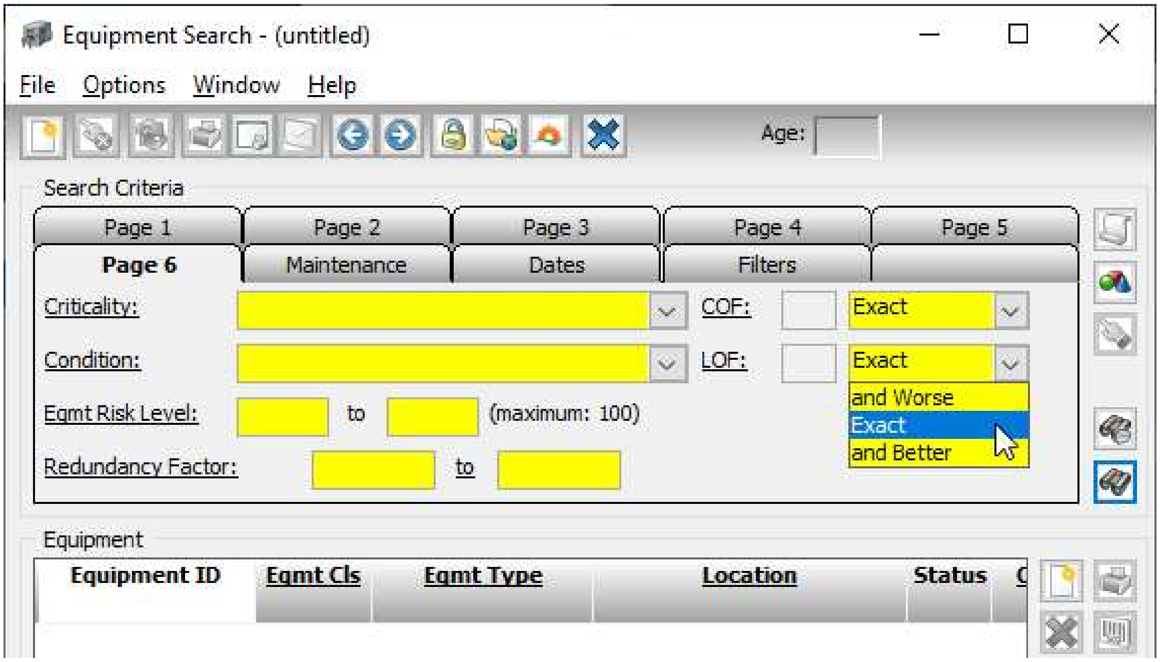


The green-circled numbers indicate that 17 work orders for equipment with unknown risk[2] are coming due by anywhere from 50 to 100 percent of their schedule period. Scheduled time for these 17 work orders add up to 97 hours.

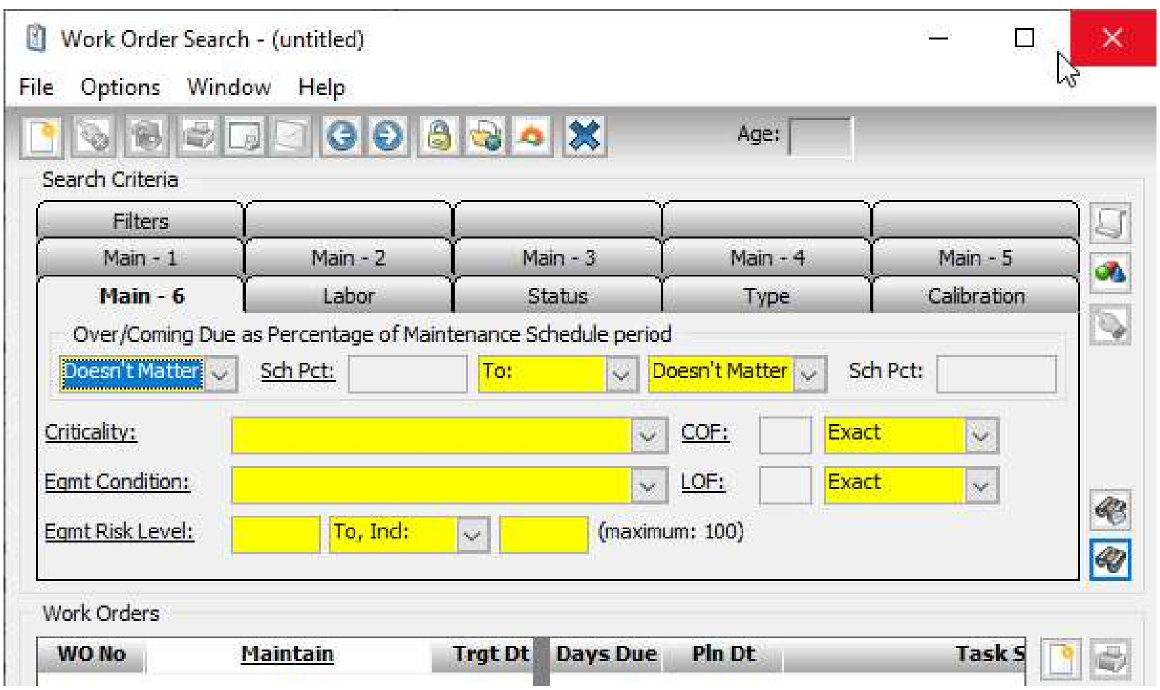
[2] The example only shows work orders with 'unknown risk': Risk is a factor of current condition, and as a new feature, equipment in this sample database do not yet have condition history. Equipment will classify into appropriate risk levels as condition history is developed.

Searching for Equipment, Work Orders by KPIs

The following screen print shows how equipment can be searched by all the KPI values described so far.



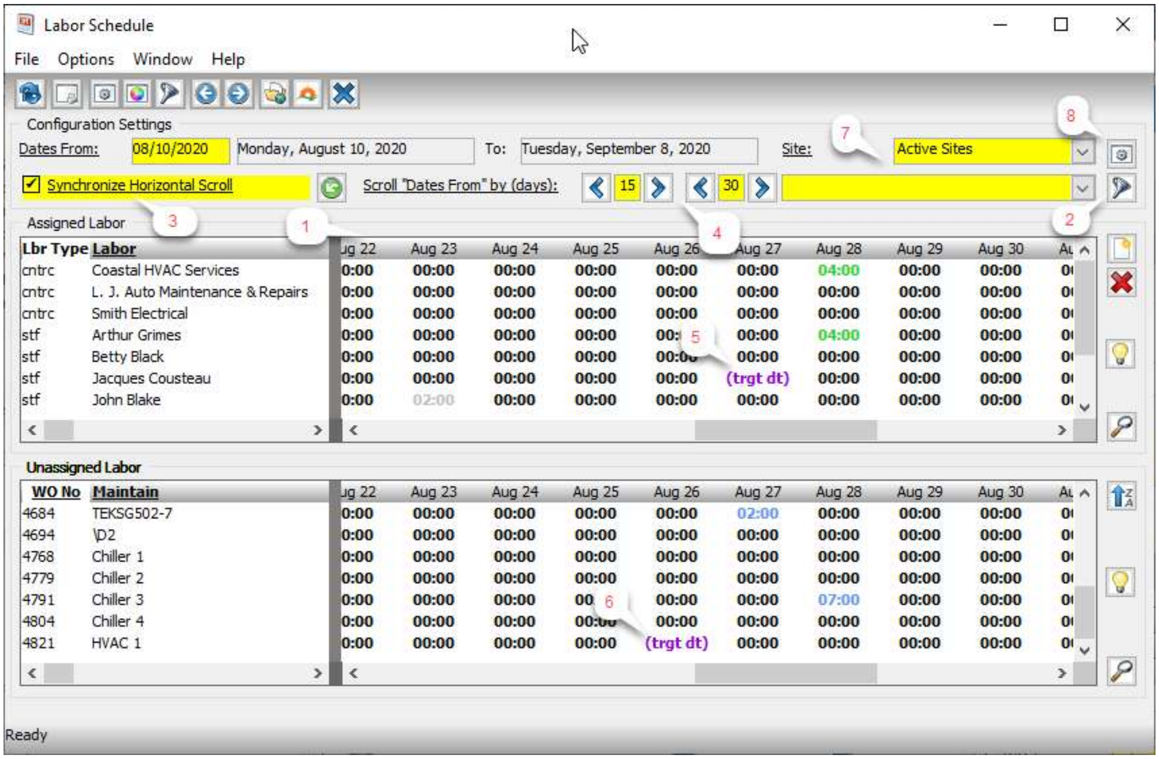
The following screen print shows how work orders can be searched by Equipment KPI values as well:



The "Over/Coming Due…" group of fields are primarily used when drilling down from the new Work Order Today's Status Backlog/Forelog views which break out scheduled work orders by "Percentage of Schedule" overdue or coming due.

Drag and Drop Labor Scheduler Overhaul

The Drag and Drop Labor Scheduler has been significantly overhauled and enhanced. The new main screen layout is shown below. Notes corresponding to the numbered markings follow the screen print:

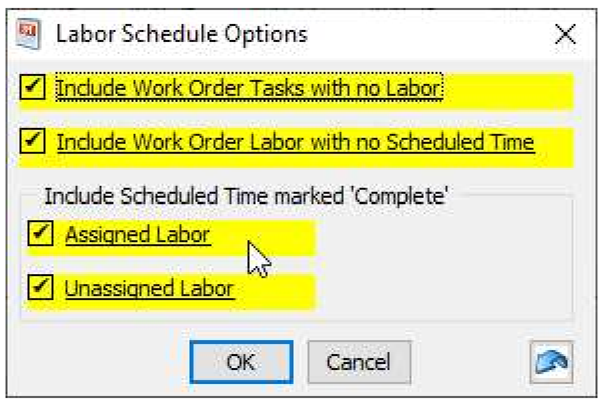


Notes for numbered markings:

1. The scheduler now displays 30 days at a time, up from 7. Either maximize or enlarge the window to see all 30.
2. Filters have been moved off the main screen to a pop-up window, providing more space for the schedule grids. Filters define which Craftsmen and/or Contractors appear in the Assigned Labor grid, and which Work Orders are represented in either grid. The presentation and updating of filters on the pop-up window are simplified and clearer.
3. When checked, horizontal scrolling of the Assigned and Unassigned Labor grids is synchronized so that the same dates always appear vertically aligned. Of course, horizontal scrolling is not necessary if the window is enlarged to the point that all 30 days are visible at once.
4. Two granularities of “Dates From” scrolling are supported rather than one. In the above example, one set of buttons will scroll the schedule dates forward/backward by 15 days, the other by 30 days.
5. The drag and drop labor scheduler used to only show work order Scheduled Time records. Now, subject to Settings (see note 8), the Scheduler can show work order tasks with no Labor and Labor with no Scheduled Time. In this Assigned Labor grid example, “(trgt dt)” means there is a work order task with Target Date August 27, assigned Labor Jacques Cousteau, and no Scheduled Time record. You can double-click to drill-down into this labor item and assign

Scheduled Time date or hours, or drag this item and drop it on another craftsman/contractor and/or date.

6. In this Unassigned Labor grid example, “(trgt dt)” means there is a work order task with Target Date August 26 and either: (1) no labor record, or (2) a labor record marked “unassigned” with no Scheduled Time record. You can assign this work order to labor and assign hours by drag-and-dropping it onto the Assigned Labor grid.
7. When Multi-Site functionality is enabled, data in the Drag and Drop Scheduler can now be easily filtered by the Sites you have View access to. With one or two clicks, you can switch the statistics to represent:
   - All sites you have Active Access to (i.e. can modify data at, subject to your security constraints).
   - All sites you have View Access to (i.e. can modify or view data at).
   - Any one site that you at least have View Access to.
8. Options are now available for what to include or not include in the Drag and Drop Labor Scheduler. These options are:

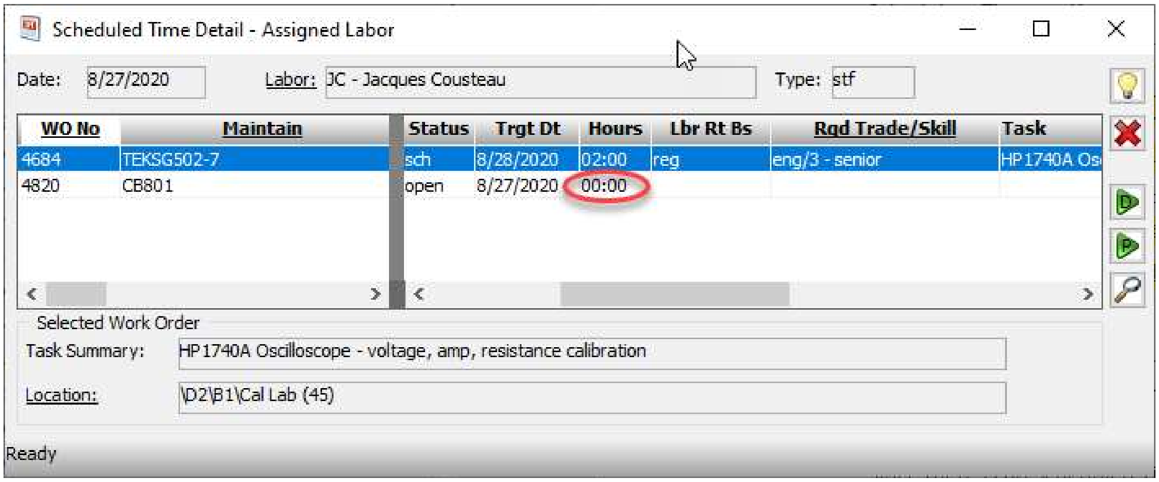


More on work order tasks with no Scheduled Time records represented in the Drag and Drop Scheduler:

Important: Work order tasks with no Scheduled Time that *do* have Actual Time recorded will *not* be represented in the Drag and Drop Labor Scheduler. This is done because MaintScape assumes the Task is done and no longer needs to be scheduled.

Since there is no Scheduled Time data available, when represented, the work order task is represented in the date column corresponding to the work order Target Date. You will see “(trgt dt)” in the Assigned Labor grid only if the craftsman/contractor has no other Scheduled Time on that date. If craftsman/contractor has other Scheduled Time, you will see the sum of

Scheduled Time as usual. However, you can always see the task with no Scheduled Time in the Scheduled Time Detail pop-up obtained by double-clicking the grid item:



In the above example, Jacques Cousteau has the following Assigned Labor items on August 27, 2020:

- Scheduled Time of 2 hours on work order 4684 to maintain equipment “TEKSG502-7”.
- Circled: No Scheduled Time on work order 4820 to maintain equipment “CB801” with Target Date August 27, 2020.

As usual, you can drag-and-drop either line item, above, onto the Assigned Labor grid, or you can double-click it to manipulate manually.

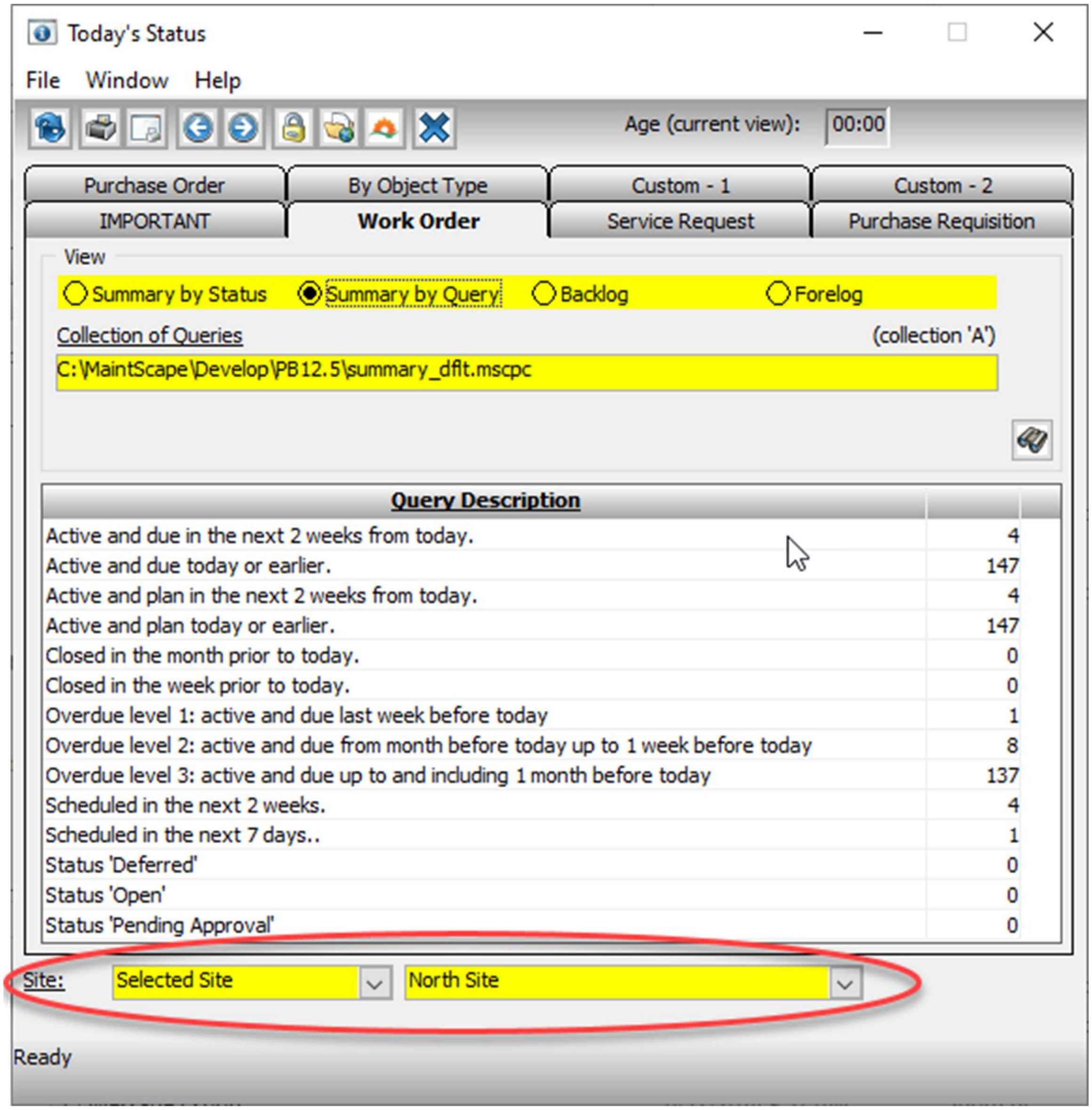
The Scheduled Time Detail pop-up (as shown above) has been enhanced to show detail for the selected item in the grid. I.e. You no longer need to scroll to the right to see the full work order Task Description.

Finally, sorting in the Assigned and Unassigned Labor grids has been enhanced. As usual, click on a column header to sort by that column. Now you get a visual cue of the sort column as is the case elsewhere in MaintScape (e.g. Search Window results list). Zero entries now sort to the bottom.

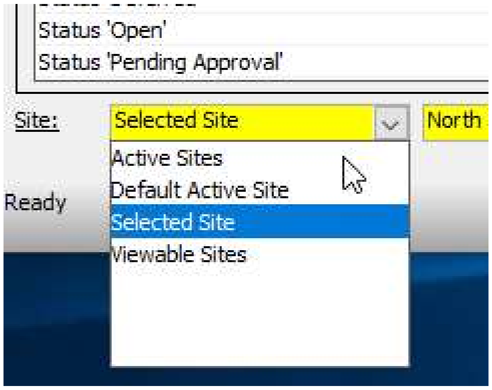
Multi-Site Enhancements

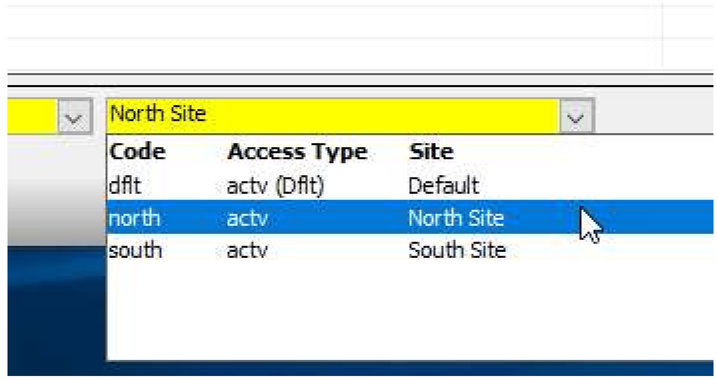
The enhancements described here only apply when MaintScape Multi-Site functionality is enabled.

Data in the MaintScape Today's Status window can now be easily filtered by the Sites you have View access to. In the example below, all statistics (work order counts) are for work orders at the North Site only:



Site Filter options are:





With one or two clicks you can use these options to switch the displayed statistics to represent:

- All sites you have Active Access to (i.e. can modify data at, subject to your security constraints).
- All sites you have View Access to (i.e. can modify or view data at).
- Any one site that you at least have View Access to.

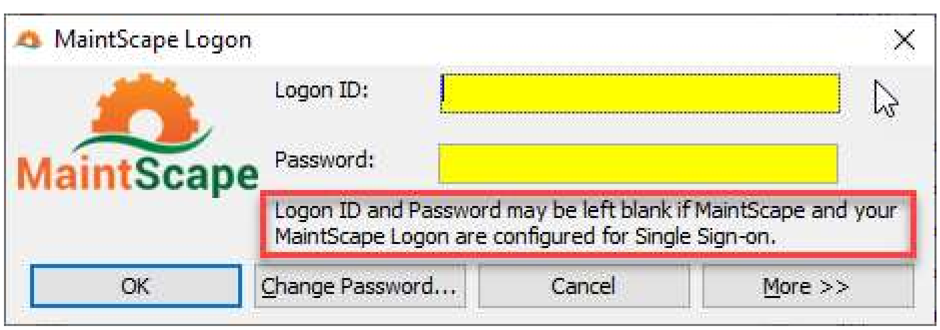
This new Site filtering capability works for all Today's Status views on all tab pages. The filter controls and functionality are like that found in the Part window to filter quantity levels by site (e.g. on hand, on order, etc.)

The Site filtering capability added here to Today's Status continues to reduce the need to restrict site visibility via the Main Menu window, Multi-Site tab, which then requires log off/on to take effect.

Other Multi-Site enhancements are described in the release notes under headings: Drag and Drop Labor Scheduler Overhaul and Part Searching Enhancements.

Single Sign-on

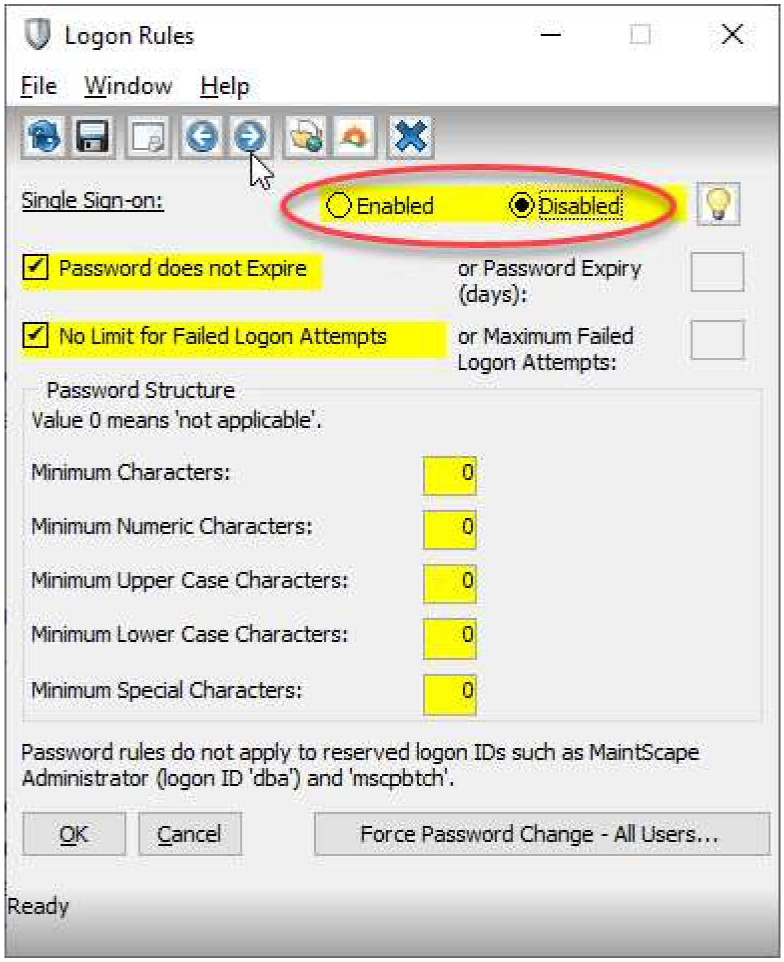
Users can now be authenticated to MaintScape based on their Windows credentials. This means they can log on to MaintScape without entering a User ID and Password. If set up as described here, the user can simply click "OK" (or press <Enter>) on the logon screen, leaving the User ID and Password fields blank. The Logon screen is updated to describe this, as shown in the text within the red box below:



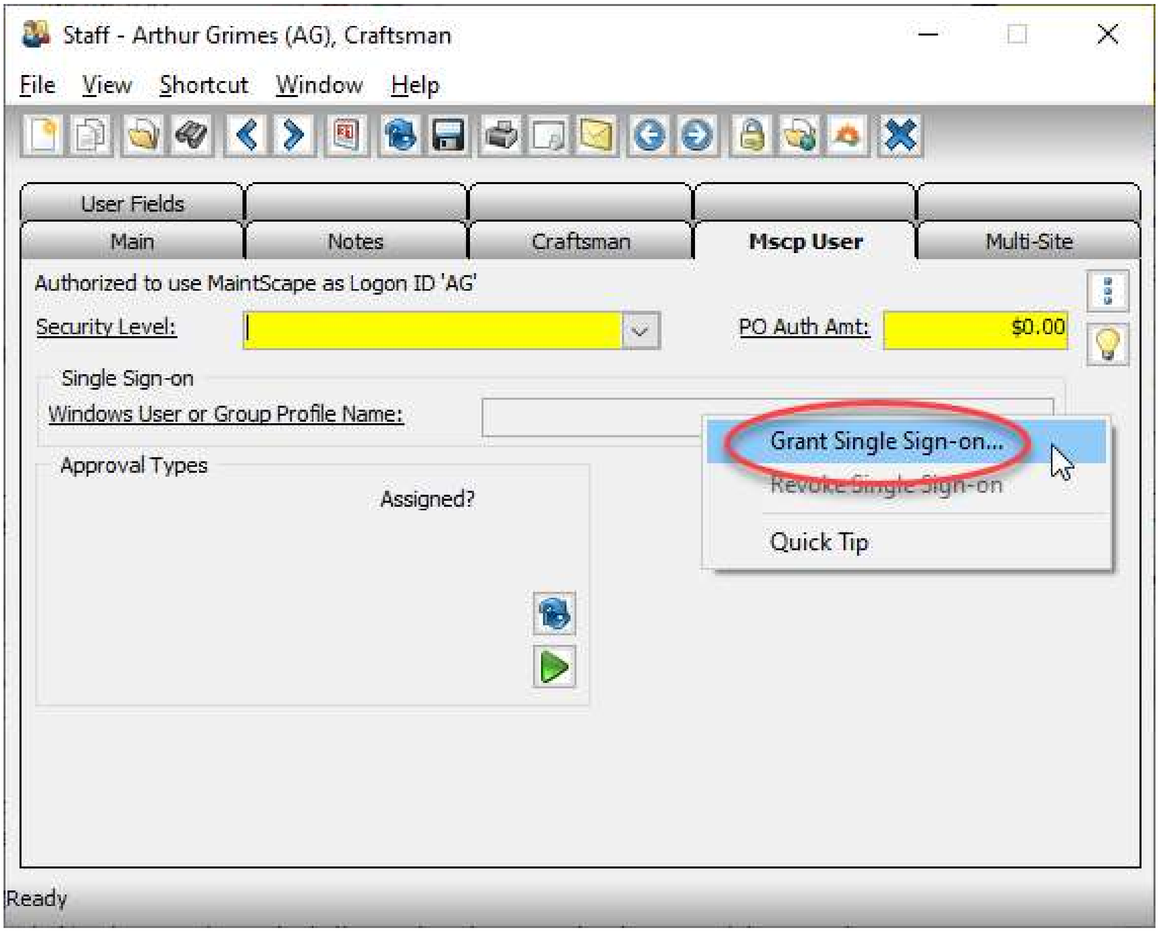
The first step to supporting Single Sign-on is to enable it:

1. Log on to MaintScape as the MaintScape Administrator (User ID "dba").

2. Click Main Menu icon “Security”, then action “Login Rules” (this action was formerly called “Password Rules”).
3. Enable Single Sign-on using the setting circled below:



Next, every MaintScape User, whether they use Single Sign-on or not, must be granted logon access to MaintScape by the Administrator the usual way: with a User ID and Password. Once granted access, right-click on the “Windows User or Group Profile Name” field shown below and click the circled action:



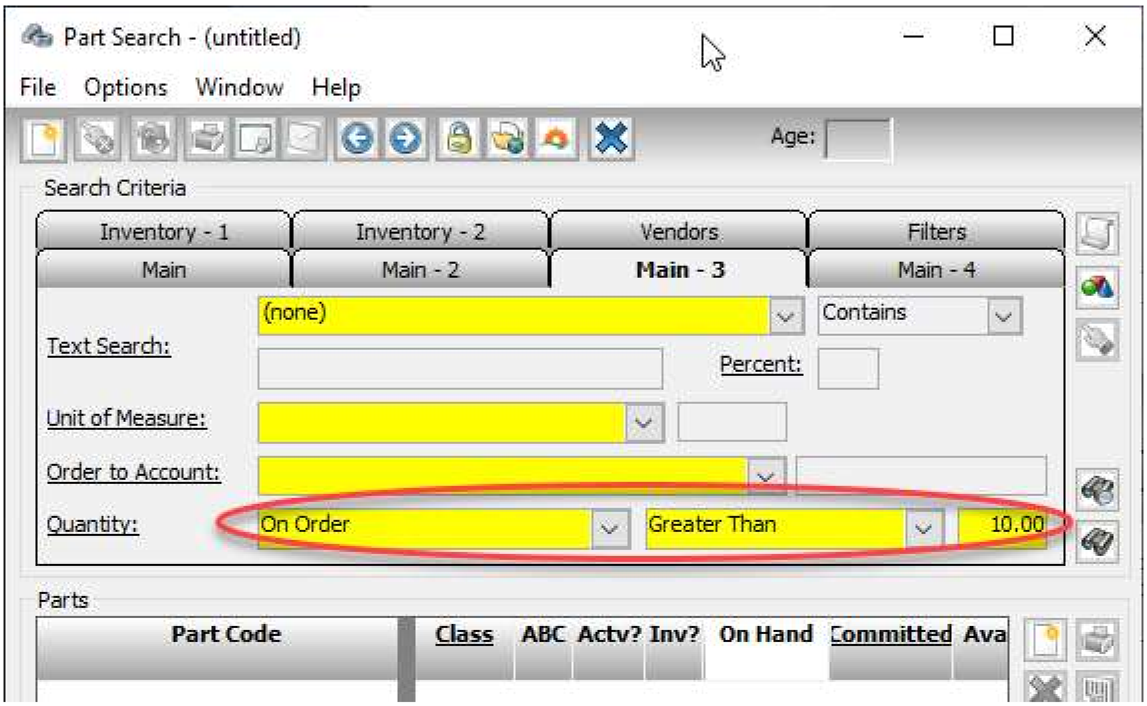
In the pop-up that follows, enter the Microsoft Windows Username corresponding to the MaintScape staff record. The value can be prefixed by a domain – e.g. “corp\arthur.grimes”. Click “OK” to set up that user for Single Sign-on.

Staff records can be text-searched by value of their Microsoft Windows Username.

Part Searching Enhancements

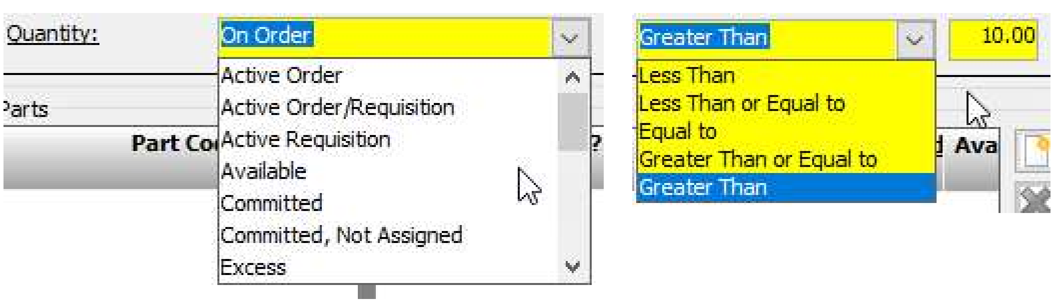
Search by Quantity

MaintScape now has improved ability to search for parts by various quantity types. For example:



The types of quantities available to searched on depend on the optional modules enabled in MaintScape – e.g. Parts Inventory Control, Purchase Orders, Purchase Requisitions, etc.

The condition types and some of the quantity types that can be search on are:

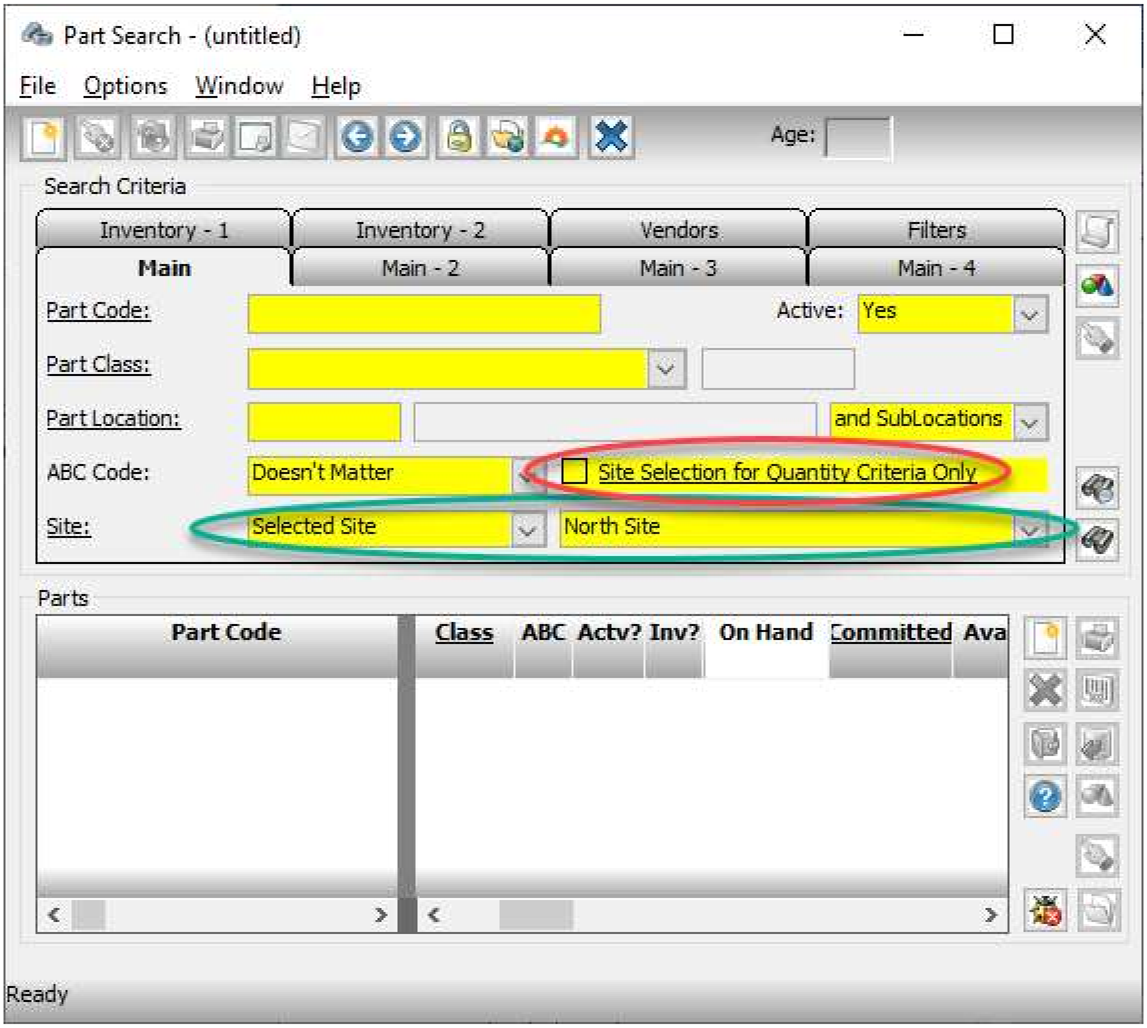


Definitions of the searchable Quantity Types are available by right-mouse clicking on the Quantity Type field, and then clicking pop-up action, “Part Quantity Summary Documentation”. This documentation is also available from the main menu window by clicking the “Parts” icon, and from other applicable right-mouse click contexts.

Multi-Site Searching and Parts Quantities

The enhancements described here only apply when MaintScape Multi-Site functionality is enabled.

MaintScape has had the ability to search for Parts by Inventory Location Site for quite some time. The green-circled selections in the example, below, searches for parts with an inventory location at site, "North Site":



This search criteria also constrains the quantities shown in queries and reports. Continuing the above example, any query or report based on the above would only show On Hand quantities at the North Site.

Having the Site criteria filter parts AND constrain quantities works fine for On Hand, because On Hand quantities are always at an Inventory Location. However, this situation does not work well for On Order quantities. A part can be on order at the North Site, even without an inventory location at the North Site. For example, the site selection criteria above, plus criteria "On Order greater than 0" will NOT find the part with an Order quantity at the North Site but no Inventory Location at that site. It would, however, find the part if the red-circled new criteria field were checked. When checked, the Site selection is not used to filter for parts with inventory locations at the selected site(s) but is used to constrain quantities and for criteria on those constrained quantities.

Reporting Enhancements

- New reports:
    - "External Resource Addresses" report accessible from the External Resource search window prints all addresses for External Resources.
    - New Equipment reports as described in the section of KPIs: "Equipment Inventory - by Condition", "Equipment Inventory - by Criticality", "Equipment Condition History".
- New columns added to Work Order search window results list and corresponding reports:
    - Days Due: Number of days to target date, negative means overdue.
    - Schedule Period Percentage: Applies to work orders generated from a maintenance schedule only – percentage of the schedule period that the work order is coming due or overdue.
- Part Inventory Transaction Running Balance report: Minor layout cleanup, now only includes transactions where part was under inventory control at the time of the transaction.
- Part Inventory Transaction List reports now indicate on a detail line whether the part is Non-Catalogued or not under Inventory Control.
- Minor layout changes to Equipment Inventory reports. Original value and Depreciation Amount fields removed from layout to make room for other fields. Current Value remains. Removed fields are still available in the data export.
- Equipment printout updated to include all available Equipment fields.
- Note Summary is now in the Location Search window results list and corresponding report.
- When the MaintScape Administrator (User ID "dba") is logged on, the Staff search window results list and its corresponding report includes Security Level and PO authorization limit fields.
- Task description is now included in the exportable data of the "Work Order – Performance" report.

Miscellaneous Enhancements

- All Search windows have a menu bar action under "Options" to enable or disable horizontal split scrolling in the results list.
- When clicking to sort on a column header in a search window results list, empty field values now sort to the bottom rather than the top.
- MaintScape traditionally has required any scheduled labor date to be no later than the work order target date. The target date would have to be extended, sometimes via a status change, if a later scheduled labor date were required. There is now a System Configuration setting specifying the number of days a scheduled labor date may come after the work order target date. This can reduce the number of work order status changes required when scheduling work forward in the Drag and Drop Labor Scheduler.
- A part can be selected from an equipment Bill of Material when creating a Direct Issue Part Inventory Transaction. This was already supported when assigning a part to a work order.
- The "Last Used" tab on the Part window has been renamed "Usage", and includes the following new functionality:
    - A Bill of Materials button that will show all Equipment or Equipment Types that contain the current part in their Bill of Material. A visual cue is given as to whether the current part is in a Bill of Material.

  - The "Last Used" list already had an action to open each identified "last usage" transaction – e.g. last work order, last receipt, etc. There is new functionality that lets you list all or selected instances of the transaction. For example, rather than just opening the last receipt transaction, you can now list all receipts that have ever been recorded for the part, or, for example, over the past year.
- Hours for a work order Scheduled Time record can no longer be set to 0.
- New right mouse button action on Procedure in Work Order window will display the Maintenance Schedule for the work order subject and procedure, if one is found. This is usually the Maintenance Schedule that generated the work order, or at the very least, is the maintenance schedule that will now generate similar work orders.
- Equipment window fields "Maintenance Account" and "Parent Equipment" moved to tab "Main – 2" (to make room for new KPI fields).
- When editing a Query collection item from the Collection window, the Send Query to Collection button in the editing search window will send the edited collection item back. The Select Query button was required to do this before, and will still work now. The Send Query to Collection button may be more intuitive, however.

Build 141 (May 6, 2019)

MaintScape Build 141 has many smaller improvements, many requested by customers, rather than one or two major new features. A primary focus of this release was to upgrade technologies used by MaintScape, some of which are under-the-covers, to keep pace with constantly evolving computing environments.

Technology Upgrades Visible to Users

- MaintScape uses a new Email software component for sending and receiving email. This component is friendlier with modern email technologies and security protocols.
- MaintScape now deploys using new Installer technology, resulting in a smoother install and upgrade, and supporting silent installation.
- SQL Anywhere database software version 9 is no longer supported by MaintScape. SQL Anywhere version 17 is newly supported, and versions 11 and 16 remain supported.

Reporting Enhancements

- New Reports:
  - "Part Inventory Transaction Running Balance" report accessible from the Part Inventory Transaction search window shows a running inventory balance of reported transactions.
  - "Equipment Types and Equipment" reports accessible from the Equipment Type search window show equipment for equipment types. The two variations of this report vary by sort order and are particularly useful for showing equipment types with no equipment.
  - "Purchase Order Summary – by Vendor" report accessible from the Purchase Order search window.

- Consistency improved between Maintenance Schedule reports:
  - “Maintenance Schedule – by Procedure” report accessible from the Procedure search window renamed to “Procedures and Maintenance Schedules”. This report is particularly useful for showing procedures with no maintenance schedules.
  - “Maintenance Schedule – by …” reports accessible from the Equipment search window renamed to “Equipment and Maintenance Schedules – by …”. These reports are particularly useful for showing equipment with no maintenance schedules.
  - “Maintenance Schedule – by Location” report accessible from the Location search window renamed to “Locations and Maintenance Schedules”. This report is particularly useful for showing locations with no maintenance schedules.
  - The above Maintenance Schedule reports are more consistent with each other, and similar reports accessible from the Maintenance Schedule search window.
- Miscellaneous minor enhancements to existing reports.

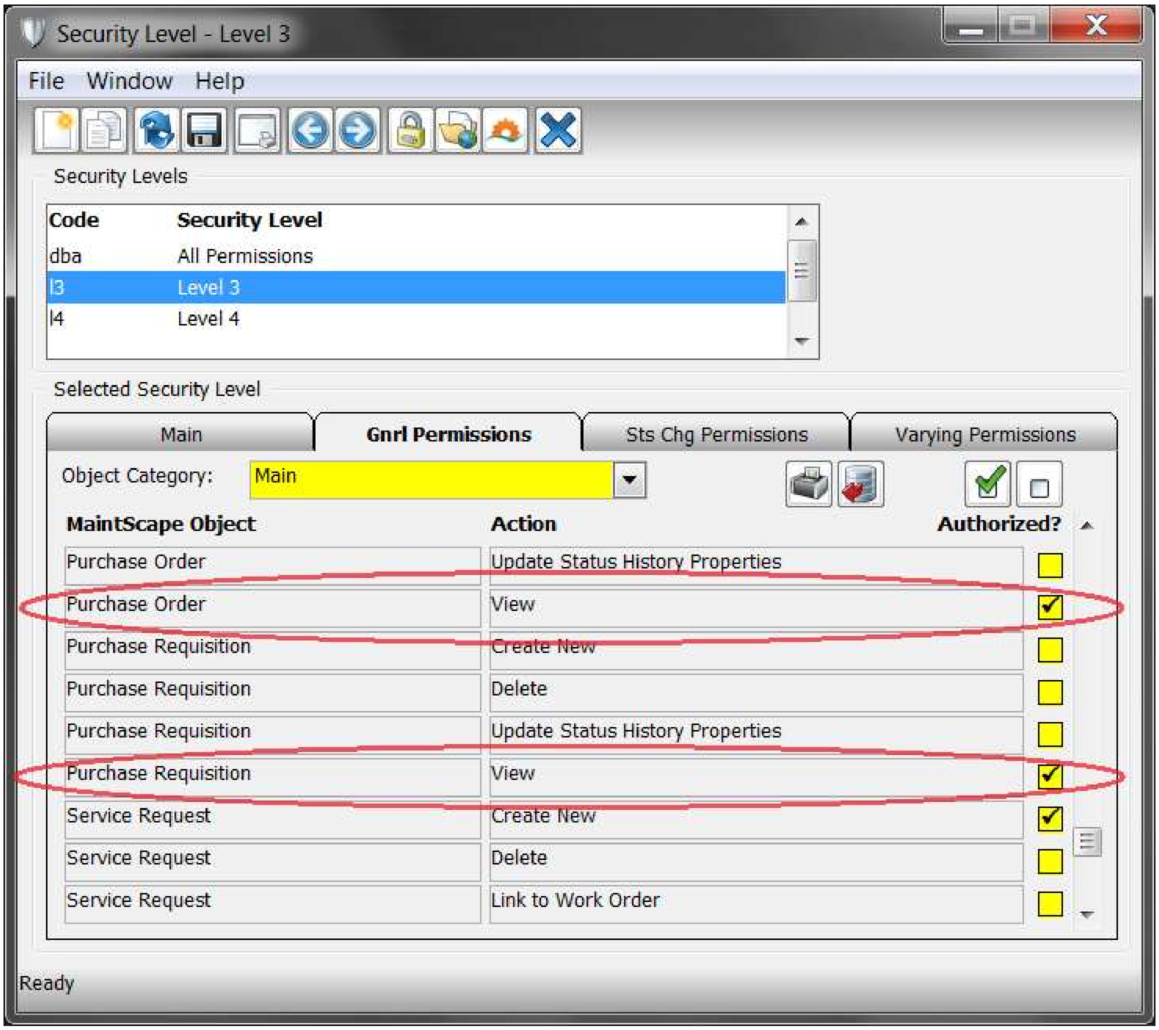
Miscellaneous Enhancements

- Queries stored in MaintScape Collections can now be directly edited. Modifying such a query has always been possible, however the process is now more direct and intuitive. For example, this will simplify the process of creating custom “Today’s Status” query sets for individual users or groups.
- Searching enhancements:
  - Part Inventory Transaction records can now be searched by Part Class directly. This was previously possible using a more complicated “Part Filter”.
  - Work Orders can now be searched for and reported on by Labor Rate Basis (e.g. overtime, weekend time).
- Error Reporting and Diagnostic Enhancements
  - A new “Debug File” action from Main Menu window icon “More Documents, Functions” enables/disables logging of debug information and assists with sending the information to GrandRavine Software for inspection.
  - The window advising of an “Unexpected MaintScape Error” now has a button, “Copy Error Information to Clipboard”. This information can then be pasted into an email to MaintScape support.
- Duplicate count transactions for a part and part location in a bar code batch are now flagged as a warning rather than an error.

Build 140 (December 20, 2017)

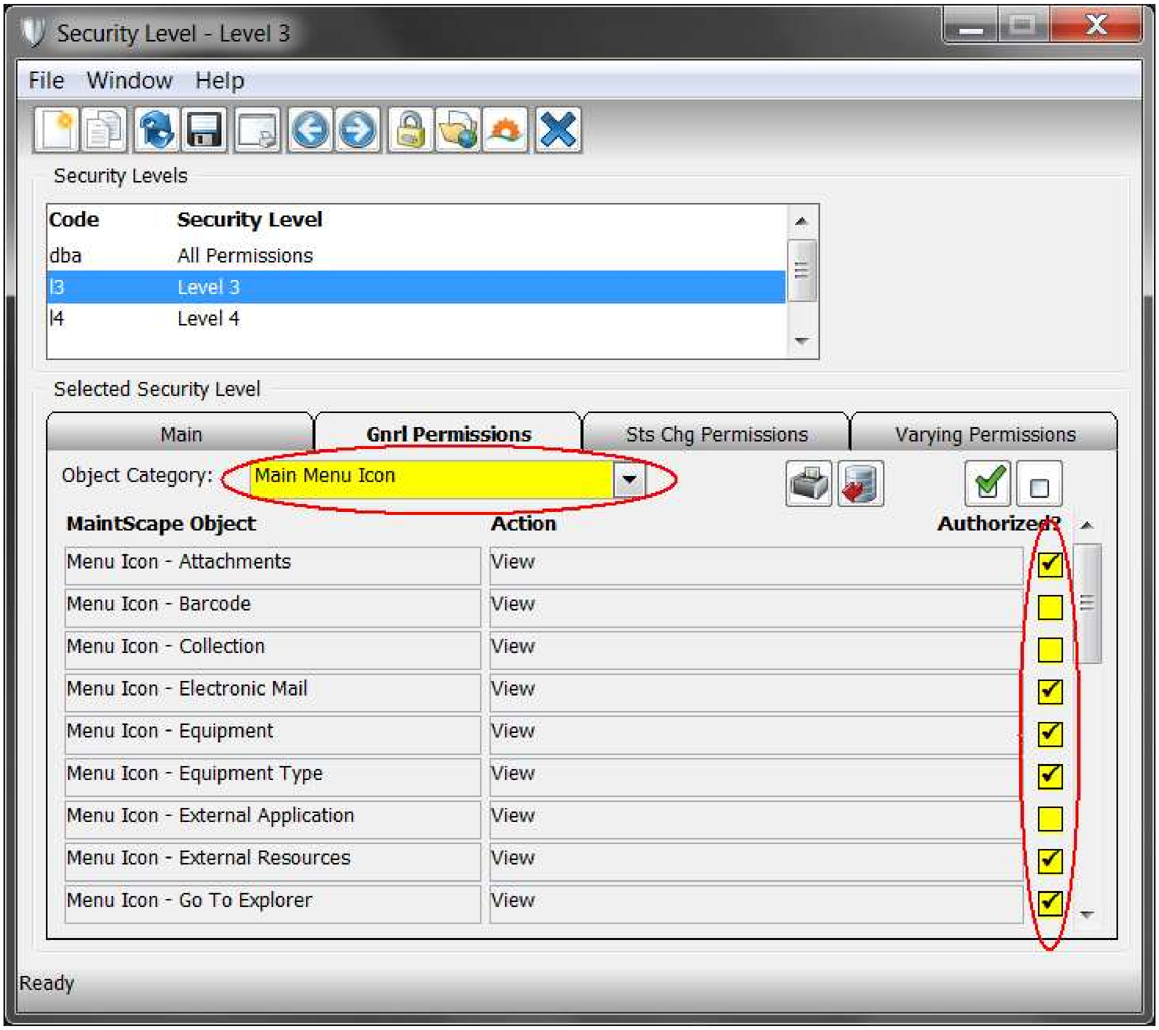
Security Enhancements

1. MaintScape Security has traditionally focussed on securing actions on data rather than viewing of data[3]. This new release of MaintScape permits viewing of data to be restricted as well. For example:

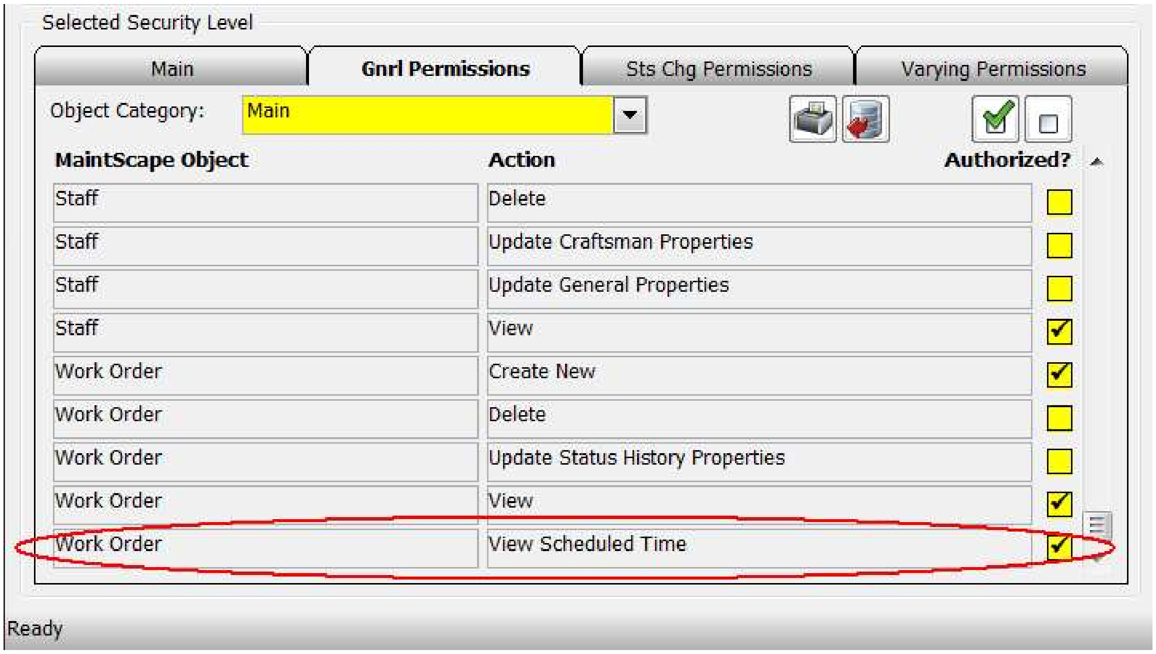


[3] MaintScape multi-site functionality has always restricted viewing of data in sites that a user does not have access to. This is separate from Security.

2. MaintScape Security now supports restricting which Main Menu window icons are shown to a user. This lets you simplify the MaintScape Main Menu for certain users, only presenting them with the icons they need. For example:



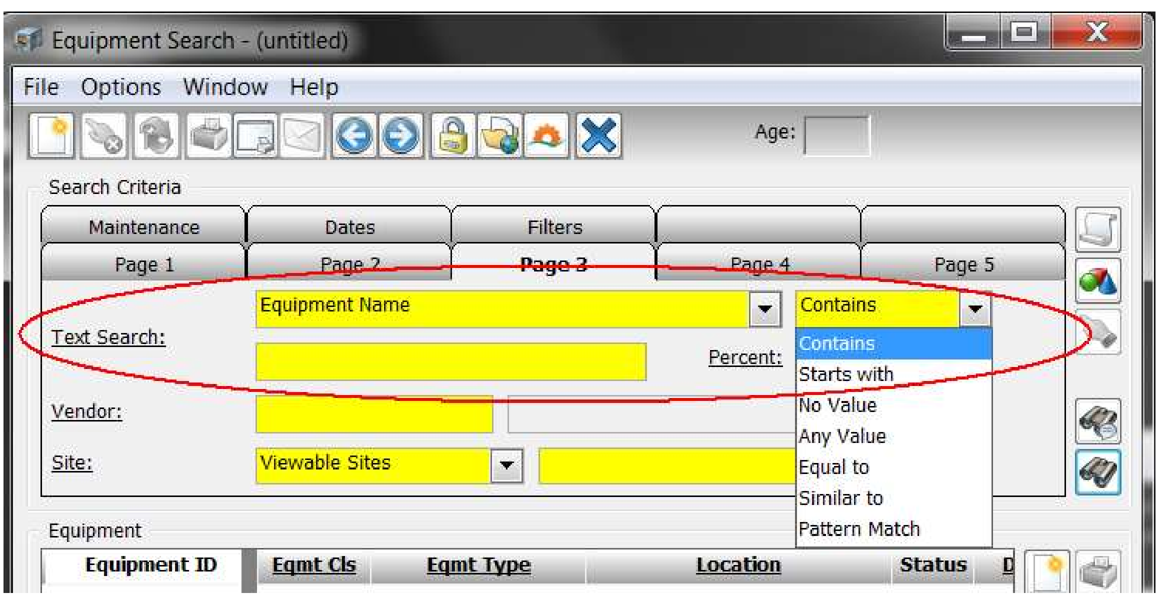
3. There is a new security permission that restricts a user from seeing Scheduled Time on a work order either online or when printed. This can make it harder for a user to simply record the scheduled time value as their actual time, thus improving actual time accuracy:



If a user has permission to view scheduled time, any window that controls printing a work order provides an option for the user to indicate whether or not they want scheduled time printed.

Text Searching Enhancements

MaintScape has supported text searching for a long time; however this release makes it more powerful. First, text searching fields in search windows have been relabelled from “Property Search” to “Text Search”. An example of the new layout is shown below, and text search options are described following:



Contains:	Finds records where the specified text appears ANYWHERE in the identified field. For example, Equipment records where Equipment Name contains text “lift”.
Starts with:	Finds records where the specified text appears AT THE BEGINNING OF the identified field. For example, Equipment records where Equipment Name starts with text “ba”.
No Value:	Finds records where the identified field is EMPTY. For example Equipment records where the Note field is empty.
Any Value:	Finds records where the identified field HAS ANY VALUE. For example Equipment records where the Note field is NOT empty.
Equal to:	Finds records where the identified field value is exactly the specified text.
Similar to:	Finds records where the identified field value is SIMILAR to the specified text by a specified percentage. “Similar to” text searches are useful to find records when a value varies from that expected by a typing error. For example, searching for equipment records where Equipment Serial Number is 60% similar to “brld” will find an Equipment record where the serial number is “brld2873”.
Pattern Match:	Very powerful text searches are possible using this option. For example, Equipment records with codes “1234a”, “1234b”, and “1234c” are found when pattern match searching for “1234[abc]”. To see documentation on pattern matching, right-mouse click on any of the Text Search fields and select pop-up action, “Pattern Match Documentation”.

Exporting Data from MaintScape

- The user now has an option to open an exported file immediately after it is created. For example, export to Excel and immediately open the spreadsheet.
- Export File Types have been updated. Most notably, Excel exports can now be created in “xlsx” format in addition to “xls” format. Excel “xlsx” format is now the default.

Miscellaneous Enhancements

- The pop-up window reporting, “Information displayed on window … has changed elsewhere within MaintScape and is no longer accurate” no longer appears. MaintScape presents a less intrusive message in the window status bar, but still prevents updating out-of-date data.
- MaintScapeWeb now has a configuration setting to supress the menu bar. This is useful when pages are navigated to directly, and user is not to navigate elsewhere.
- Parts can now be searched by Order Unit value specified for a Part Vendor Price.

- Drag-and-drop labor scheduler available colors have been expanded and should be more visible. Colors are used to at-a-glance determine how busy a technician is.
- Every MaintScape search window now makes available a “List” report that contains user fields in exportable data.
- PO window, Items tab now displays total item cost and received item cost below the items list.
- Work Order report “MTBF – by Equipment” now displays the work order Task Summary on a report line in place of Failure Reason if there is no Failure Reason specified.
- Meter Reading Batch window now supports exporting batch meter reading records to Excel (or another supported format).

Build 139 (June 19, 2017)

Issue Costs to a Work Order prior to Closure

Up until this release of MaintScape, work order costs were calculated and issued only when a work order was closed. “Issued” refers to a record being “finalized”, rendered no longer modifiable, and recorded into a permanent transaction.

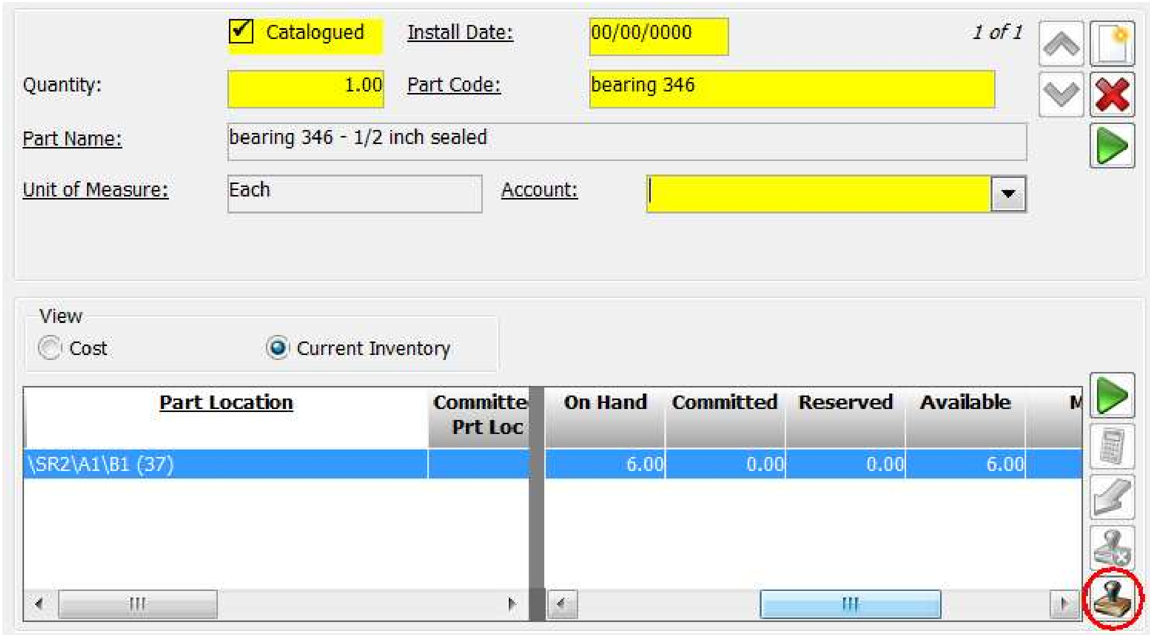
Issuing applies to the following three types of work order costs:

- Actual labor hours.
- Parts. Inventory controlled parts would also be issued from inventory via an “Issue to Work Order” part inventory transaction.
- Meter Usage[4].

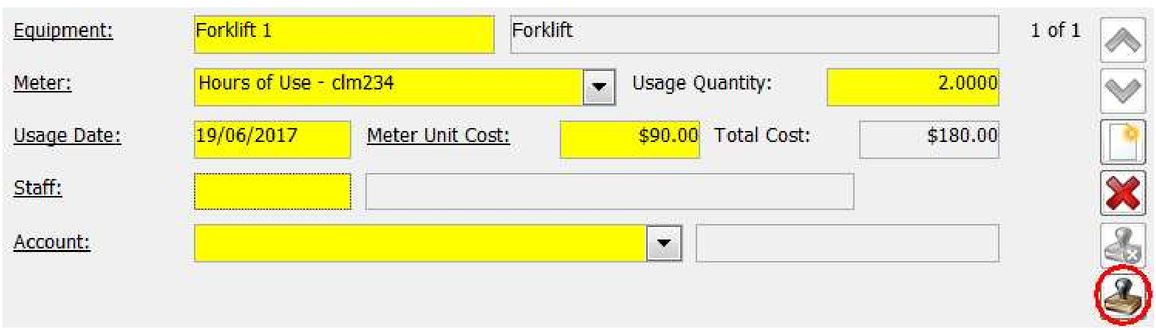
Now, subject to security permission, these costs can be issued to a work order prior to closure using the buttons circled in the screen excerpts below:

Issue Work Order Labor

[4] Meter Usage work order costs are less commonly used. They represent the cost of using another piece of equipment when carrying out a work order. For example, a work order to clear snow could record Meter Usage for 3 hours of use of a snow plow at $200 per hour.



Issue Part on Work Order



Issue Meter Usage on Work Order

When a work order is now closed, any not-yet-issued records will automatically be issued. As before, all issuable records on a work order must be issued when the work order is status closed. The work order will not close if any issuable records could not be issued.

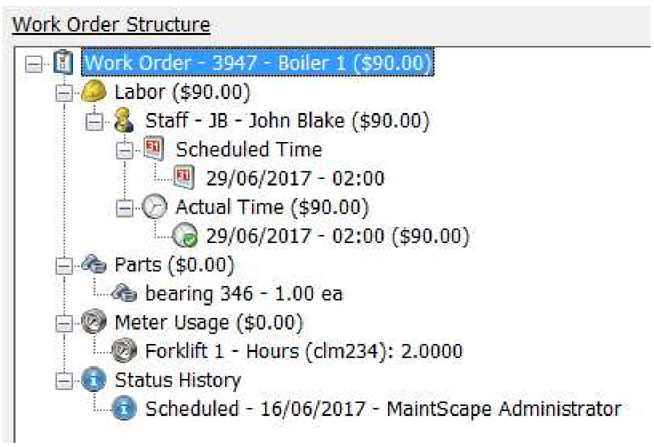
Up until this release of MaintScape, work order costs were un-issued automatically when a closed work order was re-opened. "Un-Issued" refers to a record being "un-finalized", changed from not modifiable to modifiable, and a Un-Issue permanent transaction record created to back out the original Issue transaction record.

Now issued costs remain issued when a closed work order is re-opened. Subject to security permission, issued costs can be un-issued manually as long as the work order is not status Closed or Cancelled.

For example, the button circled in the screen excerpt below will un-issue an issued work order labor record:

Un-Issue Work Order Labor

You can easily see which cost records are issued within the Work Order window, Explore tab, by a "check mark" on the icon beside the record. For example, in the screen excerpt below, the Labor Actual Time record for John Blake is issued, while neither the Part record nor Meter Usage record is issued.



Work Order Window, Explore Tab identifies Issued records

If you are not in the habit of using the Explore tab of the Work Order window, we recommend giving it a try. It shows you the entire structure of a work order in one glance. You can double-click on any node in the tree to navigate the Work Order window to that node's detail.

The Work Order window, Explore view also shows you work order costs rolled up to all levels. The ability to view labor costs here is subject to security permission. Further, the options for displaying costs here are improved in this release.

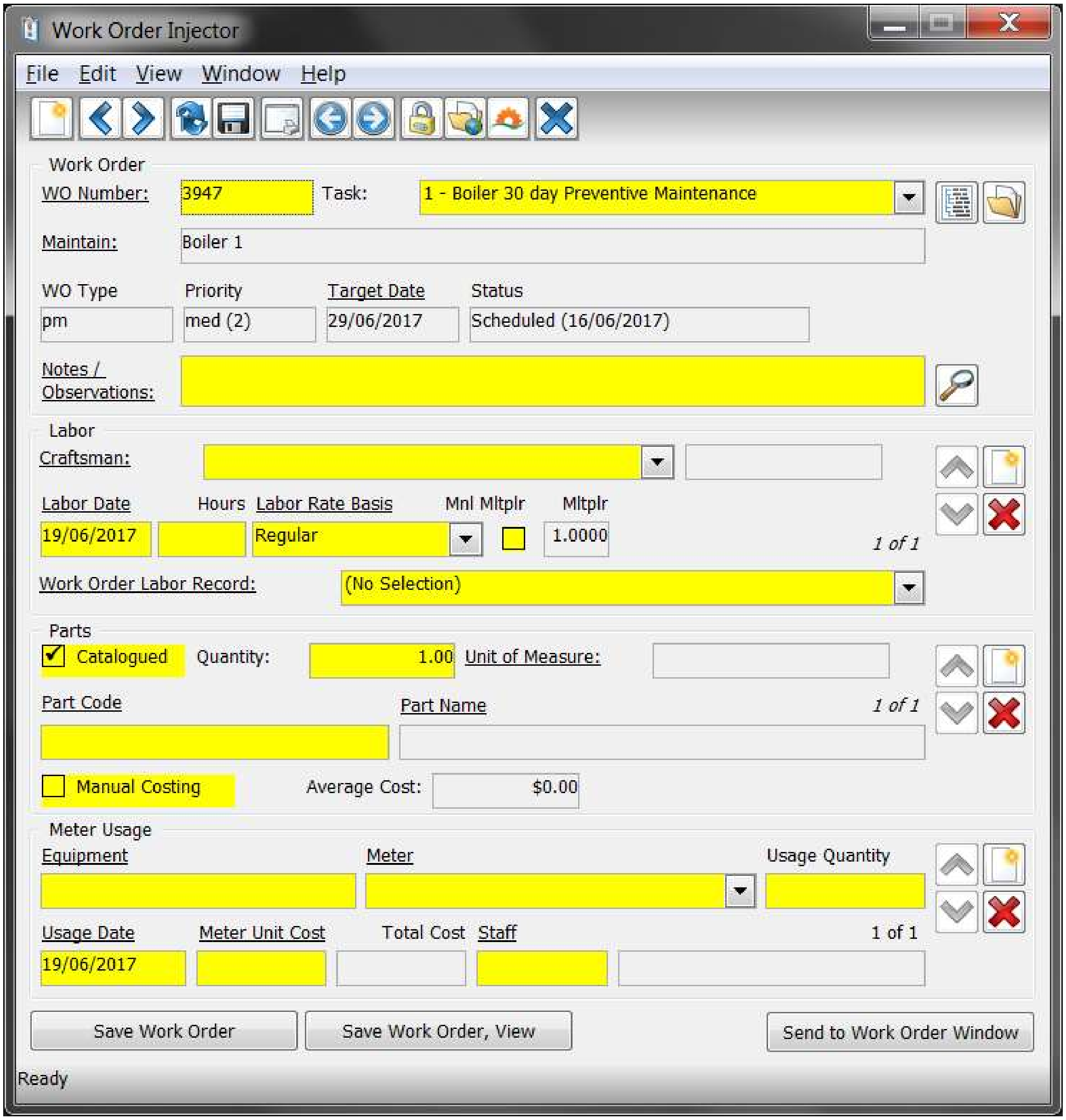
Finally, up until this release of MaintScape, work order reports that displayed costs only reported on status 'Closed' work orders. This requirement has been lifted for most reports because costs can now accrue to non-closed work orders. Only issued cost records will be included in cost reports – not yet issued records will be omitted.

Work Order Injector Window

A new Work Order Injector window is available for adding items to a work order, eliminating the need to navigate around the tabs of the regular work order window. The injector window is particularly useful if you want staff to be able to, for example, record labor or add parts to a work order without giving them the ability to edit items already on a work order.

Items that can be "injected" into a work order are: notes, actual labor hours, parts, and meter usage.

The Work Order Injector window looks as follows:



Work Order Injector Window

The "WO Number" field is used to identify the work order to inject into (3947 in this case). The Task dropdown applies to multi-task work orders, and is used to identify which task data entered below is injected into. Injectable data is the "Notes/Observations" field, and data in the Labor, Parts, and Meter Usage group boxes. Note that you can use the picture buttons at right to create multiple injectable records of any type – for example, inject multiple labor hours or parts at a time.

Important: Labor, Parts and Meter Usage injected into a work order are added to the work order and then immediately issued[5] – see section “Issue Costs to a Work Order prior to Closure”, above.

You can access the Work Order Injector window in MaintScape as follows:

- Click Main Menu icon “Work Order”, then click pop-up action “Data Injector…”.
- Select a work order record in the Work Order Search window results list, and then click the (Injector) picture button.
- Click the same Injector button as above in the toolbar of the Work Order window.
- From the Quick Work Order window using a new button labelled, “Save Work Order, Inject…”.

It is interesting to note that you can now avoid the MaintScape Work Order window in most cases by:

- Creating corrective work orders in the Quick Work Order window, then click “Save Work Order, Inject…” to immediately inject data into the new work order that is not supported on the Quick Work Order window – e.g. parts, labor.
- Adding parts, labor to work orders by selecting the work order in the Work Order search window, and clicking the (Injector) picture button to open it in the Work Order Injector window.
- Closing work orders from the Work Order search window rather than the Work Order window.

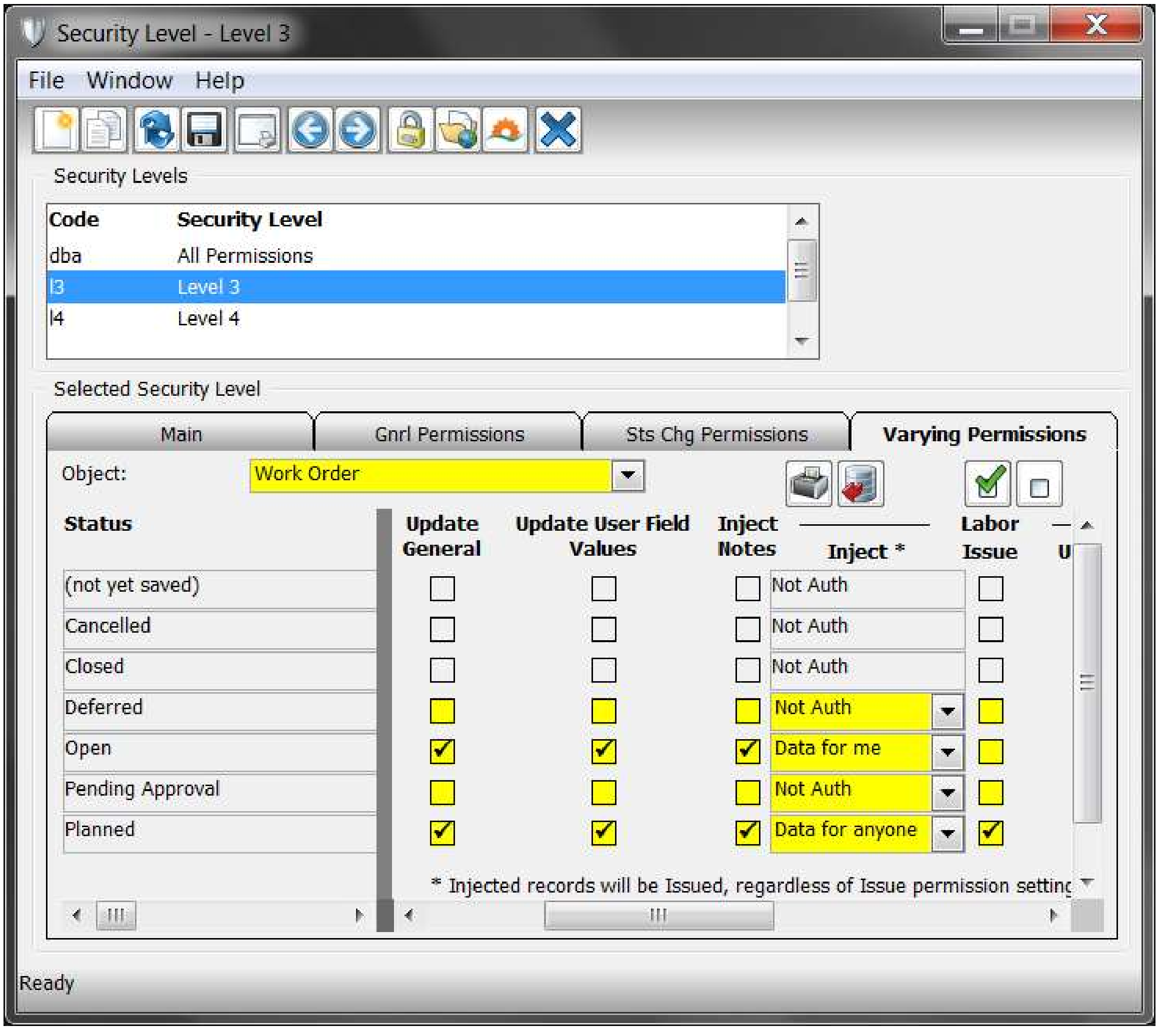
The MaintScape Work Order window will still be necessary to edit data that is already in place, to review the work order, or to perform any action that is not supported elsewhere.

Security Permissions for the Work Order Injector and Issuing Work Order Costs

Security Permissions for the Work Order Injector window and for manually[6] issuing/un-issuing costs to work orders are defined on the Varying Permissions tab of the Security Levels window as shown below:

[5] If you don’t want to inject data as Issued, then click the “Send to Work Order Window” button instead. The injectable data you enter will be populated into the work order window but not yet saved.

[6] These permissions are not needed when un-issued costs are issued automatically when a work order is closed. All that is needed for this is permission to Close a work order.



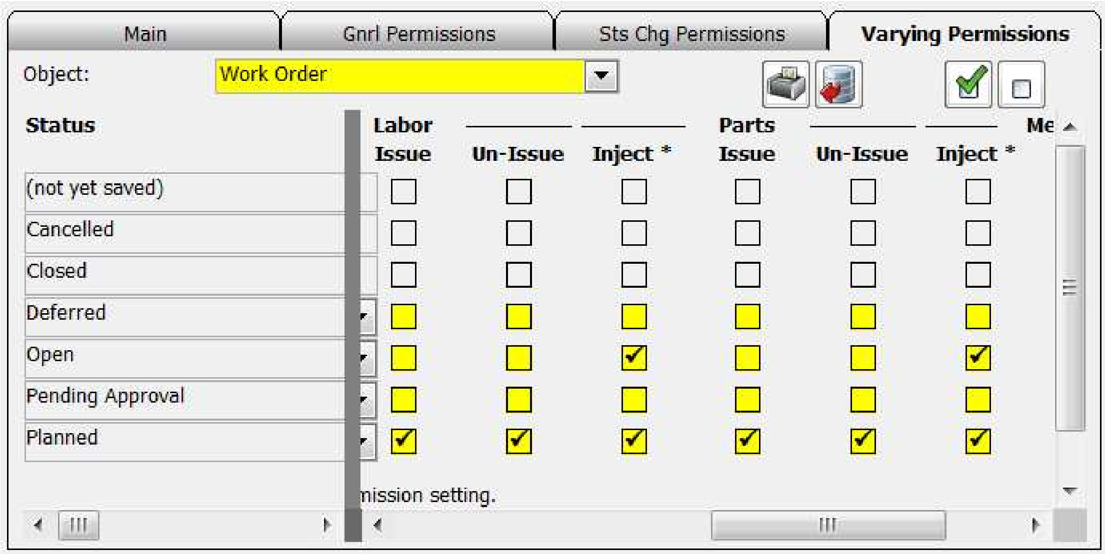
Security Permissions for Manually Issuing/Un-Issuing Work Order Costs, Injecting into a Work Order

The above example indicates a MaintScape user with the highlighted security level can inject Notes into work orders of status Open and Planned, but can only issue Labor on work orders of status Planned.

Inject permission for Labor is a bit more granular than yes/no. In the above example, a user of the highlighted security level can:

- Inject labor hours into work orders of status Open for him/herself ONLY.
- Inject labor hours into work orders of status Planned for any craftsman.
- Not inject labor hours into work orders of status Deferred or Pending Approval.

More permissions become accessible by scrolling the list to the right, as shown below:



More Work Order Varying Permissions for Issue/Un-Issue/Inject

The last permissions to become accessible by scrolling further to the right are Issue/Un-Issue Meter Usage.

Miscellaneous Enhancements

- Assigning a part to a work order using the MaintScape barcode scanner process now issues the part to the work order unless an issuing part location cannot be determined.
- Double-clicking an in-database attachment in the list of attachments for an object now makes it clear whether changes to the attachment document will be saved or not.
- Report selector window accessed from Search windows now makes it more clear when a report has report-specific criteria.
- Part create/last-update date now displays on “Last Used” tab of Part Window.
- A part's current average price now shows on the work order window when a part is added to a work order. As has occurred to date, this value will be recomputed when the part assignment record is issued.
- A new Part report is available: "Part Inventory Value Summary - by Part Location".
- The Service Request window, main tab, now shows Site when the multi-site module is active. Previously this information was only displayed via a pop-up menu.

Build 138 (July 21, 2016)

1. The MaintScape Attachments module has been significantly overhauled and enhanced:

   - The Attachment window has been simplified and more clearly represents the two ways an attachment document can be stored: in the MaintScape database, and externally stored as a file.
   - You can now drag a file from a Windows folder or Windows Explorer and drop it on the Attachment window to set the document for an attachment.
   - An attachment can be marked as "Copy to Work Order" if its document is stored in the MaintScape database. For example, a form can be attached to a Procedure, and when a work order is created from that Procedure via a maintenance schedule, then a copy of the form will be attached to the work order. The copy of the form attached to the work order can then be filled out and saved with the work order.

     "Copy to Work Order" attachments are copied to a work order if they are attached to any of the following that are included on the work order: Procedure, Equipment, Equipment Type, Location, or Part.
   - MaintScape now asks whether to delete directly linked attachments when deleting the object the attachment is linked to. This applies to copied-to-work-order attachments when deleting the work order they were copied to.
   - You can now edit and save changes to an In Database attachment document directly from the Attachments tab page of the window of the object it is attached to. There is a new security

permission that lets a user do this for attached-to objects the user has permission to update, regardless of whether the user has general permission to update Attachment records.

- Attachment search window criteria have been expanded, including an ability to search for orphan attachments that are not linked to any MaintScape object.

2. Files can be dragged from Windows Folders or Windows Explorer and dropped on MaintScape windows in the following cases:
   - A MaintScape Collection can be opened by drag and dropping it on the Collection window or the main menu window.
   - Any MaintScape window that imports data from files – for example, the Bar Code Transaction Batch window and the Predictive Maintenance Batch window.
   - The Attachment window, as described above, when assigning a document to an Attachment record.
3. Reporting enhancements:
   - A new Parts report variation is available: “Part Inventory Value – by Part Class”. Similar reports are more consistent with each other.
   - New Purchase Requisition report variations grouped by Vendor: “Purchase Requisition Item – by Vendor” and “Purchase Requisition Item – by Vendor (Wide)”.
   - New Work Order report variations grouped by Account: “Part Cost Detail – by Account”, “Actual Hours and Cost Detail – by Account, Subject”, and “Actual Hours and Cost Summary – by Account, Subject”
4. Miscellaneous enhancements:
   - Average Price and Inventory Value columns have been added to Parts Search window results list and corresponding reports.
   - Procedures can now be searched by labor attributes Required Trade and Maintenance Contractor. Labor search criteria are now consistent between searching for Work Orders, Equipment or Procedures.
   - Filter search criteria is now supported for Purchase Orders and Purchase Requisitions.

Build 137 (March 29, 2016)

1. The Parts Search window now supports searching for parts by MaintScape objects that reference parts. For example:
   - Search for parts on the Bill of Material of a particular Equipment or Equipment Type.
   - Search for parts used on a Work Order or listed on a Procedure.

- Search for parts included on a Purchase Requisition or Purchase Order.

  This new capability provides more detailed and current information on a set of parts than is available on the window where the set is defined, and also provides the ability to format the results using a standard parts report. MaintScape provides shortcuts to navigate to these searches from where the data is defined.

2. A new "Processing Type" code is available for work orders. Its original intention is to identify a user defined type of processing to be done on completed work orders; however it can be used for other purposes. A default value can be specified at the global, site (when multi-site functionality is enabled), and equipment level.
3. MaintScape now supports two different Barcode Types. The "MaintScape Scanner" type has been in MaintScape to date, and is designed to work with the MaintScape barcode program running on the Unitech scanner. A new barcode type, "Keyboard Wedge", encodes information which can be scanned by keyboard wedge scanners directly into MaintScape screen fields – for example: Part

Code, Work Order Number. The MaintScape Configuration Settings window can set the default barcode type, however a MaintScape user can change this setting for their session.

4. Miscellaneous enhancements:

    - Work orders can now be searched by Planning Date, and Planning Date is added to the search results list.
    - Procedures may now be made inactive.

Build 136 (December 9, 2015)

1. MaintScape now supports SQL Anywhere database version 16.
2. Create and last update dates are now more clearly tracked for status-changeable records. These include Work Orders, Purchase Requisitions, Purchase Orders, and Service Requests. Records can be searched by create and last update dates.
3. Concurrency control has been enhanced to protect against multiple users modifying the same status-changeable record at the same time. These include Work Orders, Purchase Requisitions, Purchase Orders, and Service Requests.
4. MaintScape now makes it easier to see when a part was last used. Last usages dates describe when a part was last:

    - Included on a work order.
    - Ordered or Requisitioned.
    - Included on an inventory transaction. Separate last used dates are provided for transaction types Adjustment, Count, Usage, Receiving, and Transfer.

    Last usage information is available on a new Part window tab “Last Used”, and on a new Part report, “Part Last Used – by Part Code”[7].

5. The Multi-Site module has been enhanced to make it easier for overseers to view what is going on site-by-site, and to operate within MaintScape site-by-site:

    - More control is available in the Part window to select which site(s) the following Part information is displayed for:

        - Inventory and Purchasing quantities on the Inventory tab.
        - Last used information on the new Last Used tab.

        Previously there was a toolbar dropdown to select whether quantities on the Inventory tab were for active sites or viewable sites. Now a user may also choose a specific site they wish to filter for, assuming the site is viewable for the user.

        Previously, and as documented, the “shortfall, excess, reorder” quantities on the Inventory tab would always be for active sites. Now these quantities are also dependent on the site selection criteria.

- Purchasing actions within both the Part window and Part Search window no longer require users to be viewing quantities for all active sites. For example, if a user has restricted their view to site “X”, then the default purchasing quantity suggested will be the re-order quantity for site “X”.

- Whenever a user selects they wish to view information for active or viewable sites, right-mouse clicking on the selection control will show which individual sites are included.

6. User logon security has been enhanced[8]:

- The MaintScape administrator can force any user to change their password the next time they log on. This can be done for existing users, and for new users who are given an initial password.
- The MaintScape administrator can open a new Password Rules window from the main menu window “Security” icon. This window supports the following:
  - Optionally set a number of days after which a password expires.
  - Optionally set a maximum number of consecutive failed logon attempts, after which a user becomes locked out of MaintScape. The MaintScape administrator unlocks a user by changing their password.
  - Optionally set password composition rules. Rule options include minimums for: password length, numeric characters, upper/lower case characters, and special characters.
  - Force password change for all users.

7. Reporting enhancements:

- A new Purchase Order report is available: “Purchase Order List - Wide”. This report is the same as the “PO Detail – by PO No” except PO line items are omitted.
- The Service Request printout is now stylistically similar to the Work Order printout.
- Part/Part Location Label enhancements:
  - Primary Vendor Part Code added to “Part/Part Location Label – Avery 5260 – small bar code”.
  - Manufacturer Part Number added to “Part/Part Location Label – Avery 5664”.
  - New label “Part/Part Location Label – Avery 5262 – small bar code”.

8. MaintScapeWeb enhancements:

- General:
  - The “Search for Work Orders” menu item may now be omitted.
  - Web page appearance can be customized, including colors.
- Submit New Service Request page:
  - The web page layout is more compact.
  - Field help tips now display below the fields they apply to and are less likely to be missed. Appearance of the tips can be modified.

    - The set of Priority codes available in the dropdown list can be restricted. This was already supported for Work Order Type codes.
    - Either of the Work Order Type or Priority dropdown fields will be omitted from the web page if only one value is selectable.
    - The Requested Completion Date and Problem Summary Code fields can be omitted from the web page.
    - A new Contact Information field is available next to the Requested By field. This new field can be configured to be mandatory, optional, or omitted from the web page.
    - The web page can be configured to default to either “Maintain Equipment” or “Maintain Location”.
    - The Requestor Location field has been renamed “Equipment Location”. Its purpose is to identify the location of equipment when the location is not necessarily clear – particularly for mobile equipment. The Equipment Location field can be omitted from the web page, or if included, may be made optional or mandatory. The value entered no longer needs to match a location in MaintScape. Configuration settings permit Equipment Location to be specified as either: (1) free-form text, (2) values from a single dropdown, and (3) values from two dropdowns where the first dropdown defines the contents of the second dropdown.
    - All field label terms are now customizable.

- Work Order display page:

    - The Failure Description and Work Order Task Notes text blocks no long display when blank.
    - The Note field for the latest status change now displays when not blank.

9. Miscellaneous enhancements:

    - MaintScape Explorer:

        - Right-clicking on an equipment or location item now provides an option to create a new work order by importing a procedure.
        - Location/Part Location copy process now supports replicating Code value patterns in the new hierarchy.

    - Security Level window: A new “Export” action on each tab page creates a spreadsheet listing a security permission per row. The spreadsheet includes a column for each security level, which

[8] Available only for SQL Anywhere database version 11 and later

will contain a "Y" if the permission is granted or be blank if not granted. This spreadsheet is much more useful for comparing permissions between security levels than the prior reports.

Build 135 (June 24, 2014)

1. The process for selecting a staff member or an external resource by role is now more flexible and convenient. If a staff member or external resource needs a particular role, MaintScape will offer to assign the role (subject to security authorization).
2. MaintScape Explorer enhancements:
    - MaintScape Explorer now supports copying location and part location hierarchies (right-mouse drag or click the root of the hierarchy to copy).
    - You can now right-mouse click on a part location node to add a new part into the location.
    - The name of the selected node in the Explorer hierarchy is less likely to be truncated.
3. A significant new piece of MaintScape documentation is now available describing parts inventory control and integrated purchasing functionality.
4. The MaintScape Purchase Order module now supports multi-level approvals. One or more approval types may be set up, each identifying a PO value threshold and a default approver. All approval types required by the PO amount must be approved by authorized approvers before the PO status can transition to Approved or Open. This process is fully described in the new Parts Inventory Control and Purchasing documentation.
5. MaintScapeWeb service request submission now supports an "Urgent" indicator. When checked, an email is sent when the service request is created.
6. Miscellaneous enhancements:
    - Temporary messages now display in a window's status bar when the message is not sufficiently urgent to warrant a pop-up window.
    - Staff search window supports new criteria relating to logon access and permissions.
    - A new command line parameter is available to automatically open a MaintScape Collection when MaintScape starts up. The startup collection could be, for example, a set of standard queries that the MaintScape user would run.
    - Highlighted text color is now user modifiable.

Build 134 (June 10, 2013)

1. MaintScape now tracks the number of days a work order has been open.
2. A new Part Inventory Status code is defined for Part records indicating:

- Quantities OK.
- Reorder full shortfall quantity (no current active purchase orders/purchase requisitions).
- Active Purchase Orders/Purchase Requisitions meet shortfall.
- Active Purchase Orders/Purchase Requisitions do not meet shortfall.
- Excess at one inventory location can offset shortfall at another.
- Excess at one or more inventory locations.
- Part not under inventory control.

3. Part searching by inventory related criteria has been significantly enhanced:
    - Parts may be searched by new part inventory status code.
    - The standard reorder query now searches by part inventory status. The original standard reorder query is still available for searching for parts less than minimum by a specified percentage.
    - Parts search by “Quantities at an Inventory Location” previously was relative to the location’s minimum quantity. Searches may now also be relative to the location’s maximum quantity, or relative to a specific quantity. Examples: “Find parts with inventory location quantity greater than maximum”, “Find parts with inventory location quantity less than 3.”
4. Other Parts module enhancements:
    - The ‘Main’ and ‘Inventory’ tabs of the part window have been restructured and compacted.
    - New fields are supported for the Part record:
        - “Order to Account” accepts an Account value that will carry through to a PO or PR item when the part is requisitioned or ordered.
        - “ABC Code” to classify parts as very important, important or marginally important.
    - Notable ‘Inventory’ tab enhancements:
        - Summary inventory and requisition/order quantities are now displayed more clearly in a tree structure hierarchy.
        - Part Inventory Status is clearly displayed with adjacent re-order functionality.
    - When multi-site functionality is enabled and site-dependent part quantities are displayed, it is now more clear what sites those quantities pertain to.
    - Some parts terminologies have been simplified. For example: “Available < Minimum” becomes “Shortfall”, “Available > Maximum” becomes “Excess”, and “Vendor Item” becomes “Vendor Price”.
5. Parts reporting enhancements:

- Part printout renovated and enhanced to display all inventory and requisition/order quantities visible on the part window in a similar format.
- New variation of the "Parts and Vendors" report is available sorted directly by Part. This is in addition to existing reports by Part Class and Vendor.
- Numerous Parts reports renovated.

6. The prior release of MaintScape introduced the updated MaintScape user interface. This new release adjusts and stabilizes this enhancement:
    - More window coloring options have been added, including the ability to specify colors for modifiable and protected fields. The default coloring is the same, except data trees and lists are displayed with a contrasting background.
    - The new MaintScape logo has been incorporated into MaintScape, a few new icons were replaced with better alternatives, and all original graphics and icons are now fully eliminated.
7. Most code tables now support Active, Inactive and Search-only indicators for code values. It is now possible to remove any obsolete code value from selection lists.
8. Miscellaneous enhancements
    - Meter Reading and Measurement Reading records may now be created by first duplicating existing records.
    - Procedure task summary now defaults to initial code or name values, eliminating a repetitive step often taken when creating new procedure records.
    - The Purchase Order attachments page shows attachments linked to Purchase Requisitions that are matched to the purchase order.
    - An external application integrated into MaintScape can be automatically started when MaintScape starts up (subject to availability of such an application).
9. Miscellaneous reporting enhancements:
    - Minor improvements to Purchase Order and Purchase Requisition Detail reports furthering the overhaul delivered in the prior release.
    - Improvements to the "Cost Summary" work order printout and to work order reports: "Maintenance History Detail", "Performance".
    - Equipment meter cost detail report now indicates when equipment does not have sufficient meter readings within the reporting range.
    - Users are no longer warned that some reports may not preview correctly.

Build 133 (July 20, 2012)

1. MaintScape user interface enhancements

    - All icons and button pictures have been upgraded to a modern collection.
    - Window appearance and color is now based on Windows 7 conventions. A single configurable "accent color" is used for emphasis.

      The accent color can be set in the command that runs MaintScape. This is useful for customers who have more than one MaintScape database, since they can configure a different accent color when connected to each.
    - MaintScape user interface elements are properly sized and positioned at both the "smaller" text size that was the default for Windows XP and prior, and the "medium" text size that is the default in newer versions of Microsoft Windows.

2. A MaintScape version compiled using updated programming tools is released for beta-test. The user interface enhancements look best with this version. In particular, the graphics are sharper, new "accent colors" are applied with a gradient, and picture button help appears as pop-up text rather than in the status bar.

3. Reporting enhancements:

    - The printed work order now shows the task description before other task data such as labor and parts. This will reduce the incidence of task descriptions split by a page break. A system configuration option is available to revert back to the original format.
    - Work order labor hours and costs reports have been overhauled and expanded. Previously there was one summary and one detail report. Now there are 3 variations of each. All reports begin with "Actual Hours and Cost Summary" or "Actual Hours and Cost Detail" in the work order reports list.
    - Purchase Order and Purchase Requisition Detail reports have been overhauled and expanded. There are more variations available, both in "wide" and "narrow" format, and support for reporting by purchased-for equipment or location. Availability of these reports is subject to the PO and/or PR modules being enabled.

4. Functionality is now available to import meter readings into MaintScape from a text file, triggering meter based maintenance schedules as appropriate. Microsoft Excel templates are available to simplify manually creating meter these import files.

5. Miscellaneous enhancements:

    - The Security Level window now supports 'check all' and 'uncheck all' for the displayed set of permissions, as well as a 'duplicate security level' function.
    - Vendor specific print-on-PO text may now be specified by vendor in the External Resource window (subject to PO module being enabled).

- Improved capability to search for and report on equipment by warranty data.
- An improved printer selection and configuration window is now presented each time before a report prints, or once before a batch of reports print.
- Equipment name displays on work order window, main tab, in addition to equipment code.

Build 132 (Sept 12, 2011)

1. The printer selection and configuration dialog is now presented each time before a report prints, or once before a batch of reports print. This eliminates the need to use the "Print Setup" function to change printers or printer properties.
2. Attachments related enhancements:
   - Attachments may now be directly associated with work orders. Prior to this release, attachments were indirectly associated to a work order through its equipment, location, procedures, etc.
   - Attachments may now be associated with Purchase Requisitions.
   - The Purchase Order and Purchase Requisition "Attachments" tab pages now show attachments associated with any of the line item parts as well as those associated with the PO or PR themselves. A new menu bar option provides the following options when printing a PO or PR: (1) only print PO or PR auto-print attachments, and (2) also print part auto-print attachments.
   - Attachment code now defaults if not specified when saving a new attachment. This should be especially useful for attachments directly attached to work orders.
3. A new window and process is provided for batch printing part/part-location labels, barcoded and otherwise. It permits a number of labels-to-print to be accumulated, including when receiving parts, and then printed in batches on label sheets using standard printers.
   - The new label batch printing window is accessed from the main menu "Part" icon by clicking the new "Part/Part Location Label Printing Batch" action. The window includes features to avoid waste due to partially printed sheets.
   - Labels can be batched for printing when receiving parts on a PO. This is particularly useful when operating procedures require labels to be affixed to parts as they are received.

     Labels can also be batched for printing directly from the Part Inventory Transaction window. This is useful, for example, when there is a need to print labels from non-receipt transactions, or when the receipt was not initiated from a PO, or when a user forgot to batch labels when receiving from a PO.
   - Labels can be batched for printing on an ad hoc basis using a new button next to the inventory locations list on the Part window, Inventory tab.
4. MaintScapeWeb Enhancements:

(MaintScapeWeb is the companion web application to MaintScape implementing functionality used by non-maintenance personnel – in particular, Service Request submission and inquiry.)

- The web page appearance has been enhanced, and the internals upgraded to support the latest Microsoft .NET framework version 4.
- MaintScapeWeb now supports searching for work orders and display a subset of work order information.
- A service request listed following a search includes a link if the service request is linked to a work order. Clicking on the link will show the associated work order(s).
- Requested completion date is no longer required when submitting a service request.
- The Service Request Search page requires at least one search criteria field to be populated rather than "requested by" being a mandatory field.
- Configuration options are now supported to:
    - Restrict the set of permitted work order types when creating a service request and when searching for work orders.
    - Include a "Requestor Location" field on the "New Service Request" and "Search for Service Requests" pages. This field can be set to optional, mandatory, or omitted (not included on the page).
    - Require users to search for work orders by Location.

5. Reporting enhancements:
    - A new bar code label report is available from the Part Search window: "Part/Part Location Label - Avery 5260 - small bar code". This label format is also usable from the new Label Batch Printing Window (described above).
    - The layout of the Part Count Sheet report has been updated, and the following new fields appear on the detail line: available quantity, minimum quantity, maximum quantity.
    - A new equipment report is provided: "Equipment Meter Cost Summary - By Equipment Class". This report summarizes information in the already available "Equipment Meter Cost" report.
    - A new work order report is provided: "Task – by Work Order". This report is similar to a work order list report, except it prints a line for each task. Therefore this report is most useful to list multi-task work orders.
    - Account level and grand totals for receipt cost added to part inventory transaction report, "Receipt Report - by Receipt Account".
6. Miscellaneous enhancements:
    - Code table data may now be exported to an external file (e.g. Excel spreadsheet) from the system administration "Code Tables" window.

- The process of creating a work order from a service request can now first transition the service request to status 'Open' rather than requiring the user to do this in a prior step.
- Service Request can now be directly status transitioned from "planned" to "open" (subject to security).
- The "Status" tab of the work order search window now supports searching for work orders by status change reason. You can search for work orders where any of its status change specifies a particular reason, or where only the latest status change specifies a particular reason.
- MaintScape now prohibits direct issuing parts to equipment that is retired. User must now confirm direct issuing parts to equipment that is out of service.
- The PO window "invoice" tab no longer incorrectly warns "fully invoiced" or "over invoiced" as a result of decimal point rounding errors. The same applies to a number of PO Detail reports.
- In addition to specifying standard text to print on Purchase Orders in both the Configuration Settings window and Site Configuration window, a user can now specify the font point size to use when printing the text. The applicable point size default value is copied into a PO record when a PO is created, and can be subsequently modified for the PO.
- A user is considered to be the 'Approved By' individual for a PO when a Pending Approval PO is changed to status Open, or the status of a PO is changed from any status to Approved. Previously the 'Approved By' individual was only set when a Pending Approval PO was changed to status Open or Approved.
- System configuration setting for email integration now supports SMTP Server Port.

7. MaintScape configuration settings and file directory usage has been overhauled to be more native to newer versions of Microsoft Windows and more compatible with Terminal Server deployments:

- The MaintScape configuration file ("maintscp.ini") has been split into separate application and user configuration files. Each computer running MaintScape will have one application configuration file, however each computer user will have their own user configuration file. As a result, each user will have their own settings. When upgrading MaintScape, the prior configuration file will become a user's initial configuration file, and thus prior settings should remain in place.

  This enhancement is particularly valuable when MaintScape is running in a Terminal Server environment. Each terminal server user will now have their own settings.
- Some MaintScape customers have more than one production database, and create separate shortcuts to connect to one or the other. They often use different window color schemes to make it clear which database MaintScape is connected to. The MaintScape configuration file split makes the usual way to implement this not practical. Therefore MaintScape now supports a shortcut command line parameter to specify toolbar color. This parameter, along with new

override parameters for application and user configuration files, is described in the latest MaintScape Installation Instructions document.

- MaintScape now writes files into a “MaintScape” folder within the user’s “My Documents” folder. For example, reports requested when bulk generating work orders from maintenance schedules or when performing bulk work order status changes.
- These configurations settings and file directory usage enhancements will eliminate problems that occurred in Windows Vista and Windows 7 when a MaintScape user did not have permission to the MaintScape file write folder.

Build 131 (July 8, 2010)

1. MaintScape support for the Sybase SQL Anywhere version 11 database engine is now fully released.
2. Part and Part Location enhancements:
3. You can now change a part’s location in MaintScape Explorer using drag and drop.
4. MaintScape Explorer now supports right mouse actions on parts within part locations such as: create a new inventory transaction, change part location, and view a history of inventory transactions and/or purchases for the part (subject to optional module availability).
5. You can now more easily change a part’s location within the Part window, “Inventory” tab.
6. The Part Inventory Transaction window for ‘transfer’ transactions now makes it easy to change a part’s inventory location. This capability is used by the above described simplified actions in MaintScape Explorer and in the Part window.
7. A new Part label report is available for continuous Avery 4013 labels.
8. Purchasing enhancements:
9. Tax rules can now be specified for a PO item as well as for a PO as a whole. PO item tax rules can either be in addition to or instead of PO tax rules.
10. A new Purchase Requisition report is available: “Purchase Requisition Detail – by PR Number”.
11. A new variation of the printed PO is now available which displays an item’s account value. A system Configuration option “Account Code on default PO Printout” determines which variation is the default.
12. The “MTBF – by Equipment” report now uses the newly supported failure start/end date search criteria to mark the reporting period when computing mean time between failures. If the failure start date is not specified, the equipment install date is used instead, if available, otherwise the first found failure date is used. If the failure end date is not specified, the equipment retire date is used, if available, otherwise the current date is used. In all cases, the report itself identifies the MTBF reporting period.

Build 130 (November 30, 2009)

1. MaintScape database engine support:
    - Support for Sybase SQL Anywhere version 11 is now released for beta test.
    - Sybase SQL Anywhere version 7 is no longer supported by MaintScape. This version has not been supported by Sybase for quite some time. We are pleased to help you upgrade.
    - Support for Sybase SQL Anywhere version 9 continues for the foreseeable future.
2. MaintScape now issues a friendly error message when it loses its connection to the database, and then closes down gracefully. Such cases are no longer reported as “unexpected errors” nor logged to the error log file.
3. Work Order enhancements:
    - The Labor tab on the work order window now shows both scheduled and actual time at once. Previously a user would flip from one view to another. This could result in a user mistakenly entering actual time as scheduled time or vice versa.
    - Date defaulting for work order actual time record has changed to be more intuitive.
    - The “Quick Close” action to close a newly entered or non-open work order is updated to be more efficient.
    - Work orders can now be searched by more than one work order type at once. This is similar to existing capability for searching by work order status.
4. Equipment enhancements:
    - Equipment records can now record the staff member the equipment is assigned to. This is not necessarily the individual maintaining the equipment – such information is already supported on the “Maintenance” tab page. Equipment can also be searched by assigned staff.
    - Equipment records can now be searched by install date and retired date.
5. Parts enhancements:
    - The parts standard re-order query is now directly accessible from the “Parts” and “Purchasing” main menu icons (the parts inventory control module must be enabled).
    - Parts records can now be searched by their taxable status, record creation date, and last update date.
6. Backdated meter readings can now be added as long as the meter reading value is not less than the immediately prior reading or greater than the immediately next reading.
7. Reporting enhancements:
    - The report selection window accessed from search windows is no longer modal. This means you can switch to other MaintScape windows when the report selection window is displayed.

MaintScape also no longer needs to close the report selection window when previewing a report.

- The report selection window now supports filters for reports where appropriate. For example, you can filter the work orders and inventory transactions that contribute to the costs listed in the Equipment Cost reports. Per the usual MaintScape convention, filters are composed in MaintScape search windows.

8. Report enhancements:
   - The “Equipment List – Full” report has been reformatted and additional fields are printed.
   - New equipment report “Equipment Meter Cost Summary - By Equipment Class/Type” summarizes information in the already available “Equipment Meter Cost” reports.
   - New equipment report “Equipment Cost Detail - By Equipment” is much more concise than the report it replaces. The prior “Equipment Cost Detail…” reports are now named “Equipment Cost Analysis…”.
   - Parts create/update dates now print on “Part – by … (Full)” reports, and therefore are available for export.
   - Totaling enhanced in report, “Purchase Order Detail – by Account”.
   - PO Item Receipt Detail report layouts have been improved and now display PO promise date.
   - New purchase order reports “Purchase Order Detail – by Part” and “Purchase Order Summary – by Part” are useful for reviewing purchasing history of parts.
9. MaintScape supports the Unitech HT630 bar code scanner. This is the successor to the PT600 and PT630 scanners.
10. MaintScape email records now may be permanently saved when linked to locations, purchase requisitions or purchase orders. Previously, only email records linked to work orders, equipment, or service requests could be saved.
11. Miscellaneous enhancements:
    - Work order and purchase order comment fields now support right-mouse button clipboard actions in addition to the customer MaintScape actions.
    - Record creation and update time stamps have been added to a number of MaintScape records. This is particularly useful to customers who integrate MaintScape with other systems.
    - MaintScape external application extension support has been enhanced. This functionality lets a third party write program extensions to MaintScape that can reference MaintScape programming objects and can be launched from MaintScape’s main menu.

Build 129 (January 13, 2009) and prior

Please contact GrandRavine Software Limited for release notes.