Installation Guide and FAQ for Condition Monitoring

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Introduction

This document is a short introduction to the “Condition Monitoring” web client of expansion stage 3 (Version 3.0.0). In addition to new features of Condition Monitoring, this also includes user administration and licensing for all extended features.

Requirements

The following is necessary to install the software package:

- testControl II (tCII) machine electronics
- testXpert III V1.6 and higher versions
- PC: Intel I5 (or comparable) with at least 8GB RAM
- Operating system Windows 10 64bit
- Hard disk as large as possible (recommended: 2TB), since the database (testXpert Storage) is installed locally on the test computer.
- Admin rights for installation
- Supported web browsers: Microsoft Edge, Google Chrome

Installation

The installation of all necessary components (testXpertIII, testXpert Storage, API-Gateway, Authetifizierungsserver and Condition Monitoring) is handled directly by the testXpert III installation DVD since the version V1.7. Please make sure that you activate the control box "Install Storage" while selecting the installation options during the installation of testXpert III.
The setup for the "Condition Monitoring" web client and all the necessary components themselves are located in the "Support\Storage" subfolder of the testXpert installation DVD. From testXpert III V1.7 onwards, all necessary setups are executed directly from the testXpert setup and the web client for "Condition Monitoring" is installed along with it.

If the Install Storage checkbox is forgotten during the installation of testXpert III, all necessary components can also be installed subsequently. To do this, simply execute the setup files SetupStorageUploadService.exe and testXpert Analytics.exe one after the other. The testXpert Analytics.exe will install all necessary components (Storage V2.1.1, ApiXpert V2.11.9, Authentication-Server V3.0.15 and Condition Monitoring V3.0.0). The individual components are located in the subdirectory products:

You can also execute these components one after the other, but then you should keep the following sequence:

1. ApiXpert V2.11.9
2. Authentication Server V3.015 (see in subfolder authentication-server-3.0.15)
3. Storage V2.1.1
4. Condition Monitoring V3.0.0
During the separate installation of the "Authentication Server" you will be prompted to change the password for the "Zwick Authentication Server" admin.

In case you don't do this, the default master password for the "Authentication Server" remains:

   Me#F#R3wr,nayUg9

If you change the password during the installation, remember it well, because you need it for the administration of the "Authentication Server" and otherwise you will not have access to the administration.

Please also note that the admin of the "Authentication Server" is not the same user as the user "admin" for logging into "Condition Monitoring". These are two different areas within the "Authentication Server" (see User administration).
Important directories

<table>
<thead>
<tr>
<th>Directory</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>C:\ProgramData\zwick\testXpert III\StorageExport</td>
<td>Directory for the export files from testXpert III to testXpert Storage</td>
</tr>
<tr>
<td>C:\ProgramData\Zwick\testXpert III:StorageExport\Failed</td>
<td>Path of export files that could not be imported into testXpert Storage</td>
</tr>
<tr>
<td>C:\ProgramData\Zwick\storage\2.xx.yy.zz\logfiles</td>
<td>Log files of testXpert Storage (import and export)</td>
</tr>
<tr>
<td>C:\Program Files\Zwick\Condition Monitoring</td>
<td>Installation path of Condition Monitoring</td>
</tr>
<tr>
<td>C:\ProgramData\Zwick&lt;ZwickRoell Produkt&gt;\</td>
<td>General directory for all ZwickRoell product configurations and log files</td>
</tr>
</tbody>
</table>

Installed services

By installing the Storage and Condition Monitoring web client, different services are installed on the PC. These services can be viewed via the task manager and can be restarted and stopped with the appropriate rights. This can be very helpful for test purposes.

<table>
<thead>
<tr>
<th>Service</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage</td>
<td>Service for accessing testXpert Storage</td>
</tr>
<tr>
<td>StorageUploadService</td>
<td>This service is responsible for importing the export files of testXpert III, which are generated after each test</td>
</tr>
<tr>
<td>ConditionMonitoring</td>
<td>Server service for preparing the storage data for display in the Condition Monitoring client</td>
</tr>
<tr>
<td>ZwickRoell apiXpert Gateway</td>
<td>Service for managing requests to ZwickRoell services.</td>
</tr>
<tr>
<td>ZwickRoell apiXpert ServiceRegistry</td>
<td>Assistance service of the apiXpert Gateway.</td>
</tr>
<tr>
<td>ZwickRoell apiXpert ServiceRegistryTemplat</td>
<td>Assistance service of the apiXpert Gateway.</td>
</tr>
<tr>
<td>ZwickRoell Import Export Service</td>
<td>Assistance service of the apiXpert Gateway.</td>
</tr>
<tr>
<td>ZwickRoell Authentication Server</td>
<td>Service for managing user rights.</td>
</tr>
</tbody>
</table>

Services overview of all installed services for Condition Monitoring
Functions

Starting the client
After starting an Internet browser (Microsoft Edge, Google Chrome), the Condition Monitoring client can be accessed simply by entering the address http://127.0.0.1:3200. In addition, a testXpert Analytics program group is created during installation with a link to Condition Monitoring.

http://127.0.0.1:3200/

Login

The expansion stage 3 of Condition Monitoring also includes a simple user authentication requirement. The user "admin" also belongs to the user group "Admin" and therefore has all available rights (also: roles). Due to these comprehensive rights, creating a secure password is of high importance and should always be the first step. The default password is also "admin".

In the standard configuration, the following users are created in the user administration for ZwickRoell Products:

- admin
- labmanager
- tester

The password is the same as the user's name. Remember that you will be asked to enter your own password the first time you log in. Remember this password well, otherwise you will not be able to log in to Condition Monitoring without changing the password via the "Administration Console" (see User administration).

Please note that for these 3 standard users the following roles are assigned:

<table>
<thead>
<tr>
<th>User</th>
<th>Level</th>
<th>Role</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>admin</td>
<td>Level 3</td>
<td>Role_Admin</td>
<td>Role with unlimited authorization</td>
</tr>
<tr>
<td>labmanager</td>
<td>Level 2</td>
<td>Role_Lab_Manager</td>
<td>Role with limited authorization</td>
</tr>
<tr>
<td>tester</td>
<td>Level 1</td>
<td>Role_Tester</td>
<td>Role with basic authorization</td>
</tr>
</tbody>
</table>

In addition to the machine status display, Condition Monitoring also contains many extended features, which can only be executed with extended rights under the existing license. For this, you need the role "Role_Lab_Manager" at a minimum. This means that at least user level 2 is required to use the advanced Condition Monitoring features. The role "Role_Admin" (Level 3) is intended for future administrative functions and features of Condition Monitoring, but can already be used now.
Licensing and user permissions

The following table gives an overview of the basic features (machine status display), the advanced features (condition monitoring) and the necessary user permissions.

<table>
<thead>
<tr>
<th>General Settings</th>
<th>Machine status</th>
<th>Condition Monitoring 2022</th>
<th>Userright</th>
</tr>
</thead>
<tbody>
<tr>
<td>Editable machine name</td>
<td>x</td>
<td>x</td>
<td>Level 2</td>
</tr>
<tr>
<td>Dossier number</td>
<td>x</td>
<td>x</td>
<td>Level 2</td>
</tr>
<tr>
<td>E-mail messaging</td>
<td>0</td>
<td>x</td>
<td>Level 2</td>
</tr>
<tr>
<td>Service interval configuration manager (import / export)</td>
<td>0</td>
<td>x</td>
<td>Level 2</td>
</tr>
<tr>
<td>Language DE / EN</td>
<td>x</td>
<td>x</td>
<td>Level 1</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Machine Status</th>
<th>Machine status</th>
<th>Condition Monitoring 2022</th>
<th>Userright</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calibration</td>
<td>x</td>
<td>x</td>
<td>Level 1</td>
</tr>
<tr>
<td>Overload</td>
<td>x</td>
<td>x</td>
<td>Level 1</td>
</tr>
<tr>
<td>Overload trend</td>
<td>o</td>
<td>x</td>
<td>Level 1</td>
</tr>
<tr>
<td>Hours of operation</td>
<td>x</td>
<td>x</td>
<td>Level 1</td>
</tr>
<tr>
<td>Test duration</td>
<td>x</td>
<td>x</td>
<td>Level 1</td>
</tr>
<tr>
<td>Test duration trend</td>
<td>o</td>
<td>x</td>
<td>Level 1</td>
</tr>
<tr>
<td>Tests</td>
<td>x</td>
<td>x</td>
<td>Level 1</td>
</tr>
<tr>
<td>Tests trend</td>
<td>o</td>
<td>x</td>
<td>Level 1</td>
</tr>
<tr>
<td>Compression tests</td>
<td>x</td>
<td>x</td>
<td>Level 1</td>
</tr>
<tr>
<td>Compression tests trend</td>
<td>o</td>
<td>x</td>
<td>Level 1</td>
</tr>
<tr>
<td>Tensile tests</td>
<td>x</td>
<td>x</td>
<td>Level 1</td>
</tr>
<tr>
<td>Tensile tests trend</td>
<td>o</td>
<td>x</td>
<td>Level 1</td>
</tr>
<tr>
<td>Average test time</td>
<td>x</td>
<td>x</td>
<td>Level 1</td>
</tr>
<tr>
<td>Crosshead travel</td>
<td>x</td>
<td>x</td>
<td>Level 1</td>
</tr>
<tr>
<td>Crosshead travel trend</td>
<td>o</td>
<td>x</td>
<td>Level 1</td>
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<tr>
<td>Machine status CSV export</td>
<td>o</td>
<td>x</td>
<td>Level 1</td>
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<th>Userright</th>
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<td>x</td>
<td>Level 1</td>
</tr>
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<td>Maintenance notifications acknowledgment</td>
<td>x</td>
<td>x</td>
<td>Level 1</td>
</tr>
<tr>
<td>Editable maintenance notifications time intervals</td>
<td>x</td>
<td>x</td>
<td>Level 1</td>
</tr>
<tr>
<td>Maintenance notifications can be deactivated / text can be edited + activation Messaging</td>
<td>o</td>
<td>x</td>
<td>Level 2</td>
</tr>
<tr>
<td>Upcoming maintenance notifications, 365 days</td>
<td>o</td>
<td>x</td>
<td>Level 2</td>
</tr>
<tr>
<td>Maintenance notifications date filter</td>
<td>o</td>
<td>x</td>
<td>Level 2</td>
</tr>
<tr>
<td>Maintenance notifications CSV export</td>
<td>o</td>
<td>x</td>
<td>Level 1</td>
</tr>
<tr>
<td>Maintenance log entry</td>
<td>o</td>
<td>x</td>
<td>Level 2</td>
</tr>
<tr>
<td>Customised combined maintenance instructions</td>
<td>o</td>
<td>x</td>
<td>Level 2</td>
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<table>
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<th>Userright</th>
</tr>
</thead>
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<td>x</td>
<td>x</td>
<td>Level 1</td>
</tr>
<tr>
<td>Accessory-specific condition information</td>
<td>x</td>
<td>x</td>
<td>Level 1</td>
</tr>
<tr>
<td>Load cell gross force trend</td>
<td>o</td>
<td>x</td>
<td>Level 1</td>
</tr>
<tr>
<td>Accessories information for historic accessories / sensors</td>
<td>o</td>
<td>x</td>
<td>Level 1</td>
</tr>
<tr>
<td>Accessories / sensors CSV export</td>
<td>o</td>
<td>x</td>
<td>Level 1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Overview (..overview)</th>
<th>Machine status</th>
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<th>Userright</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generall</td>
<td>x</td>
<td>x</td>
<td>Level 1</td>
</tr>
<tr>
<td>Edit Machine List</td>
<td>x</td>
<td>x</td>
<td>Level 2</td>
</tr>
</tbody>
</table>
User administration

If you want to make further configurations to the existing roles or create new users, you can open the user administration via the following link:

http://127.0.0.1:3080/auth/

This will take you to the user management start screen with Keycloak:

By selecting the menu item "Administration Console", you can log into the administration of the user management.

Here you must log in with the admin of the "Zwick Authentication Server" admin (see also Installation). If you changed the password for the "Authentication Server" during installation, you must enter the changed password here. Otherwise you must enter the default master password "Me#F#R3wr,nayUg9" here.
Under the menu item "Users" you can create and modify new users. When creating a user, access data must still be assigned to this user. To do this, you must navigate to the "Credentials" tab for the newly created user and set the password. If the "Temporary" option is enabled, the user must set a new password when logging in for the first time. If this is not done, the new user will not be able to log in.

**LDAP Anbindung**

If your company already uses LDAP authentication, your IT can help you to set it up for ZwickRoell products.

To do this, please select the "User Federation" option after logging into the user administration and you can set up access in accordance with your IT policies. Afterwards, the users available in the company network can be displayed and assigned to the corresponding roles.

To associate an LDAP role with a ZwickRoell user role, proceed as follows: Create a new LDAP mapper.

Assign a name and select "group-ldap-mapper". The configuration of the other values may have to be carried out by your IT department.
You can then select the available groups in the group view:

```
User Groups

Groups

Search...

Groups
- Skype_ZE
- ZUE_Data_Dr-sdk
- ZUE_ZE
- ZUE_ZE_Abteilungsleitung
- ZUE_ZE_Admins
- ZUE_ZE_BigData
- ZUE_ZE_atlassian_users
- ZUE_ZE_bamboo-admin
- ZUE_ZE_test0pert
```

Now you can assign a user role to an LDAP group, click on the corresponding group and then select the desired ZwickRoell user role in the "Role assignment" tab.
Dashboard
The dashboard of the web client for Condition Monitoring consists of 3 main areas:

Machine Status:
All status information of the current machine is displayed here. This includes:

- Calibration status of the active sensor system (crosshead travel and all external sensors)
- Overloads (load cell or load frame)
- Runtimes (total runtime, test time, average test time)
- Number of tests (by test type and total)
- Total travel of the machine

Maintenance notifications:
All maintenance notifications (active and acknowledged) are displayed here. The active notifications are always displayed on the left with a red border, and the already confirmed maintenance notifications are displayed on the right. Maintenance notifications with a clock symbol ( ), are predictive maintenance notifications. They have a yellow border. They can be activated through the advanced features, and the number of days for the predictive notifications can be set. Maintenance notifications can and should be acknowledged via the "Action performed" button. Acknowledged maintenance notifications are shaded with a green border and are displayed with the date and time stamp of the acknowledgement. As of version 3.0 of Condition Monitoring, a user management function is also integrated, so that the user who has acknowledged the maintenance notification is also logged.

Dashboard Overview
Machine Status

Maintenance instructions

Sensor and accessory information

Maintenance Information

- Calibration
- Emergency stop
- Limit switch
- Cable channel
- Cable cover
- Spindle and spindle nut

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Sensor and accessories information:

All active sensors and active electronic accessories are displayed here with their respective information. This will enable the display of all sensors or accessories ever connected to the machine. If, for example, a load cell is only occasionally connected to a machine, it will still be displayed even if it is no longer connected. This also provides information (e.g. about the calibration date) even if the load cell is not currently used on this machine.

<table>
<thead>
<tr>
<th>Accessories/Sensors Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current sensors</strong></td>
</tr>
<tr>
<td><strong>Historically used sensors</strong></td>
</tr>
</tbody>
</table>
Settings menu

Adjust maintenance intervals

The “Settings” button can be used to access advanced functions and, among other things, to configure all service intervals available for the machine for maintenance instructions.

After selecting this menu item "Adjust intervals", the following Settings menu is displayed:

Here, the maintenance intervals for the machine and all connected components and sensors can now be customized to the user. For this purpose, each component or rubric can be extended via the + button and configured accordingly.

Default values are taken from the operating manual of the corresponding machine type, component, or sensor. Use the back arrow to reset the default value at any time. Maintenance notifications that are not safety relevant can also be deactivated by an Admin. For this purpose, the slide control button of the corresponding maintenance notification must be deactivated. This is not possible for safety-relevant maintenance notifications, such as overload or expired calibration date.
With the advanced *Messaging* functionality, all maintenance notifications can also be configured to be sent to a recipient via email. More about this in the section *General Settings*.

**Customized combined maintenance instructions**

At the end of the maintenance instructions settings, you will see an area where you can create customized maintenance instructions - also combined maintenance instructions (similar to a car: maintenance after 1 year or every 15,000 km). You can adapt these specifically for your application.

![Combined Service Intervals](image)

After pressing the button "New combined service interval" you can select any parameter from the machine hour counters and select an area for your maintenance notification:

- **Simply select the desired parameter of the machine hour counter and set the desired interval:**

  ![Time interval daily](image)

  By selecting another parameter of the machine hour counter, a combined maintenance note can be generated in a simple way.

- **Via the linkage type**

  ![Or-Connected](image)

  you can decide whether the individual criteria of your generated maintenance note are and- or or-linked.

As with all maintenance notifications, you can enter a heading and a notification text. In addition, you can also configure the notification so that it is also sent by email via the messaging function as soon as the corresponding criteria are met.
General settings

Using the “General settings” item in the “Advanced” menu, you can establish general settings for critical maintenance email notifications (sender, receiver, optional receiver and e-Mail Server settings), set a date filter for maintenance notifications, activate the predictive maintenance notifications, and add a customized name for your machine.
Backup and restore configuration

After calling up the menu item *Backup and restore configuration*, you can save your personalized settings (*Export configuration*) for maintenance notifications, maintenance intervals and your general settings or also import them again or transfer your settings to another machine (*Import configuration*).

Via the *Reset Condition Monitoring* button, you can reset all service intervals and the advanced settings to the factory defaults.

**Note:** All adjustments to the service intervals and advanced settings for Condition Monitoring will be lost if you have not saved the configuration.

Trend display

Condition Monitoring with extended functionality includes machine status display and other advanced features. These include the trend display of the machine status and as of testXpert III Version 1.6 also a total force progression curve if the gross force check has been activated in testXpert. The symbol

in the corresponding machine status or in the gross force parameter of the sensor information for a load cell makes the progression easily recognizable:
Machine status trend progressions

By double-clicking the icon at the corresponding machine status, a trend curve of the selected machine status is displayed.

Example Trend: Number of tensile tests in a specified week

The following display formats of the trends are available via the selection menu (top left):

- Current week: The trend is displayed in a daily view of the current week.
- Last 30 days: The trend is displayed in a daily view dating back 30 days.
- Calendar weeks per month: The trend is displayed in calendar weeks of the current month.
- Last 12 weeks: Display of the last 12 calendar weeks dating back from today.
- Current year: Monthly view for the current calendar year.
- Last 12 months: Monthly view of the last 12 months dating back from today.
Gross force progression
As of testXpert III V1.6 on, a gross force check will be included in testXpert, which can be activated for certain test environments. If it is active, after setting a total force reference value for a load cell, the gross force can be checked in certain time intervals (e.g. daily, weekly). This is then exported to testXpert Storage with the reference value of the corresponding load cell and system configuration. A trend curve of the deviation from the reference value can then be displayed.

In the gross force trend, in addition to the selection of the trend view, there is also the selection of the test environment at which the gross force check was performed. This can be accessed at the top right of the trend diagram and here the various test environments can be selected.
Export functions and Logbook entries for the electronic maintenance guide

Condition Monitoring with advanced functionality includes export functions that allow the machine status, maintenance notifications and sensor and accessory information to be exported in CSV format.

The export function is easily recognizable by the export symbol next to each section:

Export of the machine status

When exporting the machine status information, all machine status displays are exported to a CSV export file. This file contains the customer-specific machine name, the serial number, a date stamp and all machine status values.

<table>
<thead>
<tr>
<th>Machine status from ZwickRoell Condition Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine name</td>
</tr>
<tr>
<td>Serial number</td>
</tr>
<tr>
<td>Date</td>
</tr>
<tr>
<td>stateType</td>
</tr>
<tr>
<td>Calibration</td>
</tr>
<tr>
<td>Overload</td>
</tr>
<tr>
<td>Operating hours</td>
</tr>
<tr>
<td>Test duration</td>
</tr>
<tr>
<td>Total tests</td>
</tr>
<tr>
<td>Compression tests</td>
</tr>
<tr>
<td>Tensile tests</td>
</tr>
<tr>
<td>Average test time</td>
</tr>
<tr>
<td>Crosshead path</td>
</tr>
</tbody>
</table>
Export of the maintenance notifications

The export function of the maintenance notifications can be used to forward open maintenance notifications to the maintenance department or organization. The csv export file contains all information necessary for the maintenance, such as machine name, sensor type and the maintenance notification itself. The columns "acknowledgedOn" and "acknowledgedBy" can be used to filter exactly which maintenance notifications are to be edited or corrected.

The export of all maintenance instructions corresponds to an "electronic maintenance manual" and thus all maintenance work that has been carried out on the machine can be traced.

Export of sensor and accessory information

The CSV file of the sensor and accessory information export function contains the customer-specific machine designation, the serial number, a date stamp and all sensor information from the sensor and accessory overview.

Accessory information from ZwickRoell Condition Monitoring

<table>
<thead>
<tr>
<th>Machine name</th>
<th>Serial number</th>
<th>Date</th>
<th>categoryName</th>
<th>typeName</th>
<th>id</th>
<th>inactive</th>
<th>dataType</th>
<th>label</th>
<th>value</th>
<th>unit</th>
</tr>
</thead>
</table>
| Load frame  | Zwicki        | 257128 | xPlII_Sensor  | false    | serialNumber | serialNumber | 257128 | 16390 Article Number 91310  
|              |               | 16415 Overload 0 x  
| Crosshead   | Zwicki        | 257128 | xPlII_Sensor  | false    | serialNumber | serialNumber | 257128 | 16390 Article Number 91310  
|              |               | 28675 Crosshead range Jan 17 m  
| Load cell   | Zwicki        | 751303 | xPlII_Sensor  | false    | serialNumber | serialNumber | 751303 | 16390 Article Number 66134  
|              |               | 28675 Nom. Force Tensile 1000 N  
|              |               | 28675 Nom. Force Compression -1000 N  
|              |               | 36866 Calibration -99 d  
|              |               | 16391 Overload tensile 0 x  
|              |               | 16393 Overload compression 0 x  
|              |               | 36866 Calibration -16 d  

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Logbook entries for the electronic maintenance guide

With version 3.0 of Condition Monitoring, the extended function "Machine logbook entry" is available to round off the "electronic maintenance guide". This can be accessed via the + button on the right above the maintenance notifications.

After clicking the button, an input menu opens for selecting maintenance and service work performed (e.g. also replacement of a component).

Log entry

Here you can log information relevant to you if required

**Date / Time:**

16.03.2022 11:21

**Select main component:**

- [ ] Machine

**Select sub component:**

- [ ] Complete electronics

**Select action:**

- [ ] Maintenance

**Description:**

Please add more information

After saving a logbook entry, these are displayed together with the maintenance notification with a special icon.

Extensive maintenance and repair work can now be documented and saved in this dialog. For this purpose, a main component and a sub-component can be selected and also a corresponding standard action (e.g. replacement, inspection). A description as free text entry completes the logbook entry.
Machine overview

As of version 3.0 of Condition Monitoring, the extended functionality makes it possible to display a machine overview of all machines in the company network. To use this for the respective machine, the corresponding testXpert Storage option and the corresponding services of the machine computer must be made visible in the company network, as Condition Monitoring can only be accessed via the local test computer (http://localhost:3200 or http://127.0.0.1:3200) by default.

Making machine computers visible via the company network

By adapting the configuration files, access is also possible via the company network.

To use computer names - "Full Qualified Domain Name" (FQDN full computer name with domain) - in the configuration files, a local DNS server with IP address must be specified in the configuration file of the API Gateway (see point 2). Otherwise, only IP addresses are to be used for configuration.

For this purpose, the following adjustments must be made on the test computer:

1. Make testXpert Storage available on the network:
   - Add the following yellow marked lines and set the IP address or computer name in "C:\Program Files\zwick\storage2.yy.zz\storage\src\config\env\production.js" :

     ```javascript
     module.exports = {
         host: "0.0.0.0",
         port: 3001,
         publicBaseURL: "<Hostname oder IP des Maschinenrechners>:3001",
         // z.B. publicBaseURL:"10.2.3.98:3001" or „zue-h-16868.test.muster.com:3001”,
         ...
     };
     ```

   To deactivate the remote functionality this configuration file can also be reset.

     ```javascript
     module.exports = {
         host: "127.0.0.1",
         port: 3001,
         ...
     };
     ```

   2. Make API gateway callable via the network:

     ```sh
     server {
         ...
         listen 127.0.0.1:3080 so_keepalive=on;
         ...
     };
     ```

     Change to

     ```sh
     server {
         ...
         resolver 172.30.xx.yy // (IP address of the local DMS server)
         listen 0.0.0.0:3080 so_keepalive=on;
     };
     ```
3. Make Authentication Server of the user administration visible in the network:

- Adjust "C:\Program Files\Zwick\Condition Monitoring\client\dist\assets\config\config.json":

```
"authConfig": {
  "authorization": "Basic RtaW46c2VjcmV0",
  "authenticationServerHostname": "127.0.0.1"
},
```

- Change to:

```
"authConfig": {
  "authorization": "Basic RtaW46c2VjcmV0",
  "authenticationServerHostname": "<Hostname oder IP des Maschinenrechners>"
  // z.B. „10.2.3.98“ or „zue-h-16868.test.muster.com"
},
```

4. Adjust settings of the Authentication Server. To do this, enter the following at the prompt:

```
   cd \n
   cd "C:\Program Files\Zwick\AuthenticationServer"

   \nssm\nssm.exe edit authentication-server
```

-> NSSM service editor is startet:

```
   \n
   In NSSM service editor on tab "Environment" (second last tab) the following line

   JAVA_OPTS=-Dkeycloak.frontendUrl=http://127.0.0.1:3080/auth

   change to:

   JAVA_OPTS=-Dkeycloak.frontendUrl=http://zue-h-16868.test.muster.com:3080/auth

   Then close NSSM Service Editor by clicking the "Edit service" button.
```

To edit and save the configuration files, admin rights may be required, depending on the user rights on your test computer. For this purpose, it is necessary to execute a suitable editor with admin rights so that the files can also be saved.
After these changes, all services (API-Gateway, Authentication Server, Storage and Condition Monitoring) should be restarted in the Task Manager or restart your computer.

After these changes, Condition Monitoring is also accessible under the configured computer name without domain specification in the company network. In the above example with the "Full Qualified Domain Name" (FQDN full computer name with domain) "zue-h-16868.test.muster.com", i.e. under:

![Diagram](attachment:image_url)
Accessing the machine overview

The overview page can be accessed via the Overview* Button in the Condition Monitoring Dashboard toolbar:

After that, a dashboard of all machine statuses appears:

Using the Edit button (top right), additional test computers can also be added to the individual test machine with test computer by Adding the corresponding computer name or IP address.

For this purpose, only a computer name or IP address of a test computer has to be entered in the input lines for machine 2, etc. All machine names or IP addresses to be used here must be configured beforehand for access via the company network (see Making machine computers visible via the company network).

After confirming with the “Save” button all machine statuses are displayed in the overview.
Machines or test computers that are not active at this time (shut down or disconnected from the company network) are displayed with the message:

Machines that do not have a license for the extended functions of Condition Monitoring are shown in the overview as follows:

By clicking on the overview of a machine, you can then easily switch to the single dashboard of Condition Monitoring.

This will then be displayed in a new tab in the browser.
### Backup and recovery of testXpert Storage

testXpert Storage does not currently offer a GUI for a complete backup. However, for Condition Monitoring, a data backup of all relevant testXpert Storage data can still be created manually and can later be restored manually. If the testXpert Storage installation is no longer executable, such a backup can be used to import all the data required for Condition Monitoring into a new testXpert Storage installation, thus maintaining the original state of this data.

The tools `mongodump` and `mongorestore` can be used to back up and restore testXpert Storage and the MongoDB used. These are located in the bin directory of the MongoDB installation (e.g. `C:\Program Files\MongoDB\Server\3.6\bin`).

#### Backup

Since the MongoDB used by Storage runs on the standard port, a `dump` can be performed as shown in the example. In this example, the archive argument is used to create an archive.

```bash
### mongodump: Create a dump of the whole MongoDB

```cd "Program Files\Zwick\storage"

```nodejs\bin\node.exe .\storage\scripts\prod\storageDump.js "C:\Program Files\MongoDB\Server\3.6\bin\mongodump" c:\temp\MongoDump```

#### Restore

The following command line can be used with the Microsoft Windows command line to restore a backup of the data, back into Storage and the associated MongoDB:

```bash
### mongorestore: Use dump for restore

```cd "Program Files\Zwick\storage"

```nodejs\bin\node.exe .\storage\scripts\prod\storageRestore.js "C:\Program Files\MongoDB\Server\3.6\bin\mongorestore" c:\temp\MongoDump```

---

**Note:**
- `cd:"Program Files\Zwick\storage"`: Change the directory to the location where MongoDB is installed.
- `nodejs\bin\node.exe`: Executable for Node.js.
- `storage\scripts\prod\storageDump.js`: Script for dumping MongoDB.
- `storage\scripts\prod\storageRestore.js`: Script for restoring MongoDB.
Firewall rules

The „Condition Monitoring“ client is communicating with testXpert Storage via the network. The following program and port exceptions must be set up in the firewall. As a rule, these are set up by the installation routine of the overall package (testXpert III V1.7, Storage V2.1.1 with API Gateway and Condition Monitoring V3.0.0), but must be checked and possibly set up manually.

testXpert Storage

- node.exe (C:\Program Files\Zwick\storage X.Y.Z\nodejs\bin)
  - Port 3001
  - Port 3030
  - Port 3031

- mongod.exe (C:\Program Files\MongoDB\Server\X.X\bin)
  - Port 27017 (MongoDB)

ZwickRoell Authentication Server

- java.exe (C:\Program Files\Zwick\AuthenticationServer\openjdk\bin)
  - Port 8080
  - Port 3090

ZwickRoell Service Registry

- consul.exe (C:\Program Files\Zwick\apiXpert\serviceRegistry\consul)
  - Port 8300
  - Port 8500

API Gateway

- nginx.exe (c:\Program Files\Zwick\apiXpert\gateway\openresty)
  - Port 3080

Condition Monitoring client

- node.exe (C:\Program Files (x86)\Zwick\Condition Monitoring X.XX.X.X \nodejs\bin)
  - Port 3200
  - Port 3001
  - Port 3030
FAQ

Q: Is the message "Storage Export" normal after the test or can I prevent the message from generating?

A: The message is normal after activation of the Storage export and cannot be disabled.

Q: Can I disable the testXpert Storage export function?
A: Yes, you can activate and deactivate the testXpert Storage export function via the menu item "testXpert Storage..." in the Settings menu in testXpert III.

Q: When I open the Condition Monitoring Client, I get the following error message:

A: If this error message or note appears, no data has yet been imported into the storage and the storage does not contain any machine data for a machine. For a display in the Condition Monitoring Client, at least one test must be performed with an activated storage export (see above).
Q: Can I deactivate individual maintenance notifications?

A: With the advanced functionality of Condition Monitoring, it is now possible to deactivate all non-safety related maintenance notifications, so that the user and operator are not overwhelmed with maintenance instructions for less relevant tasks, e.g. "cleaning of anodized surfaces". This is not possible for safety related maintenance notifications.

Q: How do I proceed in case of error?
A1: First, check that all relevant services (StorageUploadService, Storage, and ConditionMonitoring) are running. If not, restart them or restart the computer.

A2: If you receive the following error message when starting testXpert,

```
testXpert III

TestXpert III error no. 56501:
Not all imports into testXpert Storage have been run yet.
Maybe the service "StorageUploadService" is not started.
The connection to testXpert Storage is disturbed.
Check the LOG file (C:\ProgramData\Zwick\testXpert III\V1.5\Log\StorageUpload.log).
```

the directory "C:\ProgramData\Zwick\testXpert III\StorageExport\Failed" contains Export files from testXpert III, which could not be imported into testXpert Storage. For analysis, send these export files and the log files from the folder "C:\ProgramData\Zwick\storage\2.xx.yy.zz\logfiles" via email.