



## RELEASE NOTES

VibroSight® software  
version 2.11.1



**Meggitt SA**  
Route de Moncor 4  
PO Box 1616  
CH - 1701 Fribourg  
SWITZERLAND

## REVISION RECORD SHEET

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	Department	Name	Date	Signature
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	Product Management	A. Fernandez	03 February 2014	AF
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## PREFACE

### About these release notes

This document provides important information about the VibroSight® software from Meggitt Sensing Systems. It is applicable to all VibroSight-based condition monitoring and machinery protection systems using the versions of software described by this document, namely:

- VibroSight software version 2.11.1 (CD part number 609-004-000-021).

Where VibroSight software version 2.11.1 is used in this document, it refers to VibroSight software version 2.11.1, unless otherwise stated.

This document contains information about changes to the software since the previously released version (VibroSight 2.11.0), such as new features and improvements, solved problems and bug fixes, and hardware and software compatibility.

For more general information on the actual software, or the entire condition monitoring system (CMS), refer to the following Meggitt Sensing Systems (MSS) documentation:



*VibroSight software data sheet*  
(MSS document ref. 660-020-005-213A)



*Getting started with VibroSight installation guide*  
(MSS document ref. 660-010-006-216A)



*VibroSight help*



*XMV16 / XIO16T extended vibration monitoring card pair data sheet*  
(MSS document ref. 660-020-010-207A)










*VibroSight application notes and technical notes.*

Users who are familiar with VibroSight may also find it useful to refer to the release notes included in earlier versions of the software:

- VibroSight 2.9.0 (MSS document ref. VIBROSIGHT-RN/E)
- VibroSight 2.9.1 (MSS document ref. VIBROSIGHT-RN/E)
- VibroSight 2.9.2 (MSS document ref. VIBROSIGHT-RN/E)
- VibroSight 2.9.4 (MSS document ref. VIBROSIGHT-RN/E)
- VibroSight 2.9.5 (MSS document ref. VIBROSIGHT-RN/E)
- VibroSight 2.9.6 (MSS document ref. VIBROSIGHT-RN/E)
- VibroSight 2.9.7 (MSS document ref. VIBROSIGHT-RN/E)
- VibroSight 2.10.0 (MSS document ref. VIBROSIGHT-RN/E)
- VibroSight 2.10.1 (MSS document ref. 660-010-013-201A)
- VibroSight 2.11.0 (MSS document ref. 660-010-013-203A).

## Structure of the release notes

This document presents information in the following order: general items first, then in terms of the software modules that constitute VibroSight, such as  Configurator,  Event Viewer,  Mimic,  Scope,  Server,  System Manager and  Vision.

You should read those sections that are most relevant to you and then keep the document for future reference.

## Version identifiers

A complete VibroSight software product version number has four components x.x.x build x (or x.x.x.x) that provide the following information:

- Major release identifier: **x.x.x** build x (or **x.x.x.x**)
- Minor release identifier: x.**x.x** build x (or x.**x.x.x**)
- Update identifier: x.x.**x** build x (or x.x.**x.x**)
- Build identifier: x.x.x build **x** (or x.x.x.**x**)

The version identifiers for installed software appear in the Help About box (obtained using **Help > About ...** in any VibroSight software module).

## Terminology

To distinguish between the different Meggitt Sensing System products that can be used with the VibroSight software, the following terminology is used in this document:

- VM600 card – to refer to the VibroSight-software compatible cards that are installed in a VM600 rack. The currently available VM600 cards that are designed for operation with the VibroSight software are the XMx16 card pairs (XMC16 / XIO16T, XMV16 / XIO16T and XMVS16 / XIO16T) and the CPUR card (for configuration only).

Where XMx16 card is used in this document, it refers to XMC16 / XIO16T, XMV16 / XIO16T and XMVS16 / XIO16T cards, unless otherwise stated.

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## 1. Licensing

In general, the licence key required to enable purchased product options remains unchanged between update level releases. For example, from version 2.11.0 to version 2.11.1.

However, a new licence key is required for upgrades between major and minor version releases. For example, from version 2.10.x to version 2.11.x.

To obtain a new VibroSight licence key file or for further information on licence keys, contact Meggitt Sensing Systems customer support. See section 7 Customer support.

## 2. Features

### General

#### 2.1. VibroSight system operation without an NTP server

VibroSight 2.11.1 now supports a new mode of operation that does not require a network time protocol (NTP) server as a time reference (that is, NTP-free) in order to supplement the existing mode of operation that does require an NTP server. This means that, starting with VibroSight 2.11.1, VibroSight systems can now be deployed in one of two ways: either without or with an NTP server.

##### **VibroSight systems without an NTP server (NTP-free):**

- Uses the local clock of the host computer running the VibroSight Server as the time reference.
- Easy to deploy (reduced VibroSight system complexity and administrative burden).
- Synchronization:
  - Data correlation  $\leq 100$  ms for data from the same VM600 XMx16 card
  - Data correlation  $\leq 1$  s for data from different VM600 XMx16 cards.
- Recommended for the vast majority of machinery monitoring applications and should be used as the default mode of operation.

##### **VibroSight systems with an NTP server:**

- Uses an NTP server as the time reference (mandatory requirement).
- Less easy to deploy (increased VibroSight system complexity and administrative burden).
- Synchronization:
  - Data correlation  $< 100$  ms for data from the same VM600 XMx16 card
  - Data correlation  $< 100$  ms for data from different VM600 XMx16 cards.
- Recommended for machinery monitoring applications requiring more accurate data synchronization.

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**NOTE:** The highly configurable nature of the VibroSight software and VM600 XMx16 cards and the wide variation in machinery monitoring applications makes it impossible to define operating limits for VibroSight that are correct under all circumstances.

In practice, the correlation of data from the same VM600 XMx16 card is usually better than 100 ms, depending on the data type and certain configuration settings. For example, the sample-by-sample correlation of waveforms that are acquired with similar configuration parameters (such as bandwidth, filtering and reference speed) is possible to 1 ms, while the sample-by-sample correlation of trends and dynamic data is possible to 100 ms.

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## 2.1.1. VibroSight 2.11.0 and earlier

For VibroSight 2.11.0 and earlier, a VibroSight system required a network time protocol (NTP) server as a time reference. That is, VibroSight 2.11.0 and earlier implemented time based on absolute time for the communication between system components (VibroSight Server, VM600 XMx16 cards and so on). This makes the synchronisation of these components to a common time reference (NTP server) a mandatory requirement:

- A VibroSight Server (process) uses an NTP server of sufficient quality as the time reference for its Server time, which is used to request and collate data from VM600 XMx16 cards and to timestamp the data received over external interfaces (such as Modbus and OPC). However, if the NTP server becomes unavailable, then the host computer clock is used as the fallback time reference for the VibroSight Server's time.
- VM600 XMx16 cards required an NTP server of sufficient quality as the time reference for their card times as each card timestamped their data locally using the card time, which was the absolute time in the VibroSight system.  
If all the cards in a system used and remained synchronized to the same NTP server (absolute time), then the data could be easily correlated. However, if the NTP server became unavailable, then the cards local time may drift apart. While the data acquisition on the card would continue the retrieval of data from those cards to the server would potentially be impacted. As a result of which, the VibroSight system could become effectively inoperative.  
**NOTE:** Cards would not start data acquisition until they had established communication with an NTP server of sufficient quality (NTP stratum). With a low quality or missing NTP server, the card would repeatedly cycle through its configuration and not start operation.
- The VibroSight Server's time was used to request and collate the data from the VM600 XMx16 cards but the data was stored in the database using the data timestamps generated by the cards. (This allows for a certain transmission latency without losing correlatability of data once stored.)

**NOTE:** VibroSight 2.11.0 systems required an NTP server for the VM600 XMx16 cards primarily, as the VibroSight Server could use the host computer clock as its time reference.

Typically, where no external NTP reference could be guaranteed, a local ntp daemon running on the host computer such as Meinberg NTP for Windows was used for both server and cards, essentially running the System as an "island" that is synchronized within via NTP.

VibroSight 2.11.0 and earlier systems required sufficient synchronisation between VibroSight Servers and VM600 XMx16 cards in order to ensure that (i) a VibroSight Server's request for data from a VM600 XMx16 card corresponded to data that was available from the card and (ii) data remained intact and correlateable for durations corresponding to VM600 XMx16 card buffer sizes.

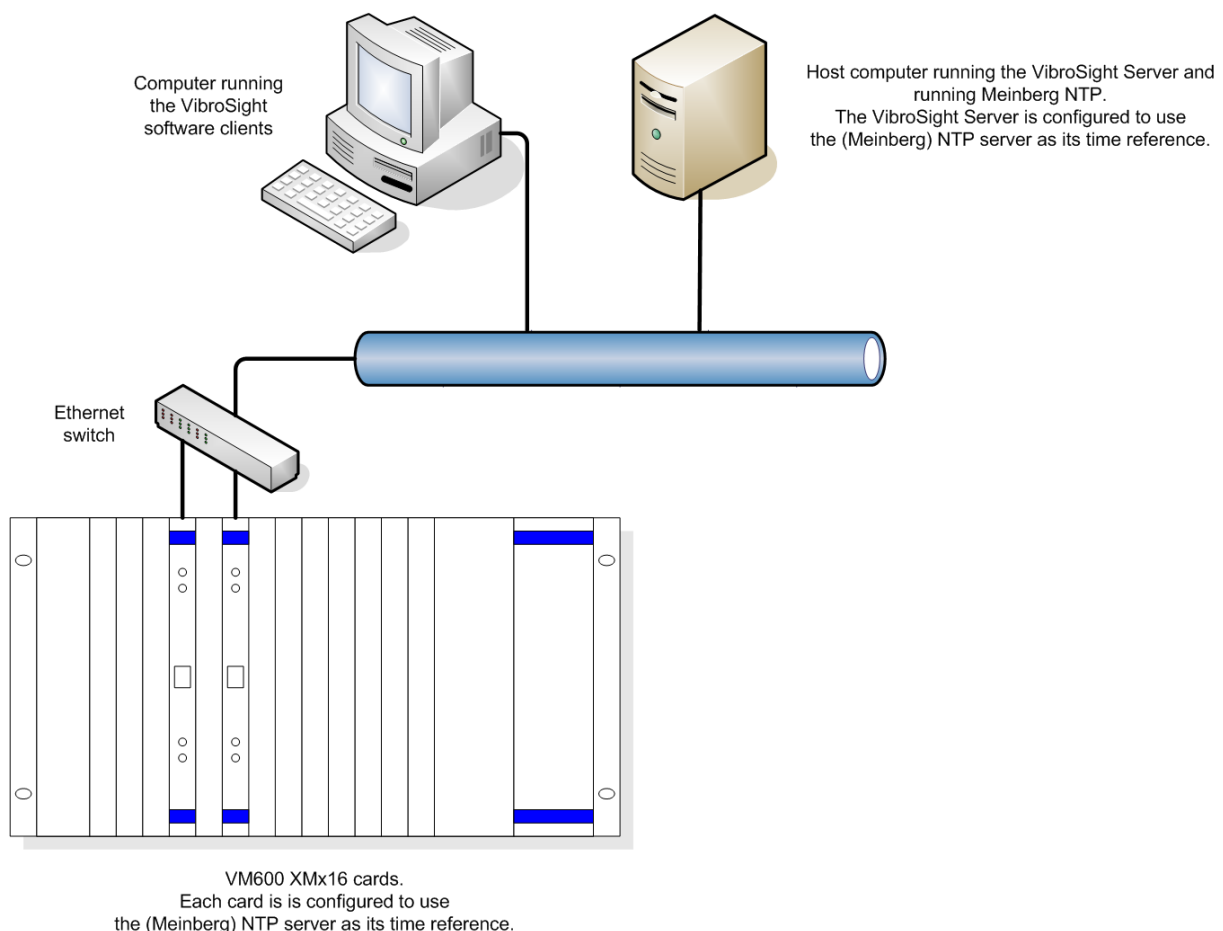
NOTE: In VibroSight 2.11.0 and earlier systems, a VibroSight Server and the VM600 XMx16 cards must have been configured to remain synchronous, which is usually achieved by using the same NTP server (time reference).

Monitoring systems using VibroSight 2.11.0 and earlier were always deployed with an NTP server, typically in one of two ways: either (1) using Meinberg NTP for Windows or (2) using an NTP server available on the network.

#### 2.1.1.1. VibroSight 2.11.0 and earlier operating with an NTP server – using Meinberg NTP for Windows

As shown in Figure 1, the host computer running the VibroSight software is also used to run the Meinberg NTP for Windows software, which allows the computer to act as an NTP server and provide the time reference required by the VM600 XMx16 cards (and optionally, the VibroSight Server).

NOTE: Meinberg NTP for Windows is usually configured to use a forced quality (NTP stratum) but rely on the host computer clock as a fallback, making it independent of any external references.



**Figure 1: VibroSight 2.11.0 operating with an NTP server – using Meinberg NTP for Windows**

## **Advantages**

No physical NTP server is required and the Meinberg NTP for Windows software is free to use.

Easier to deploy from a network management perspective (no special requirements).

## **Disadvantages**

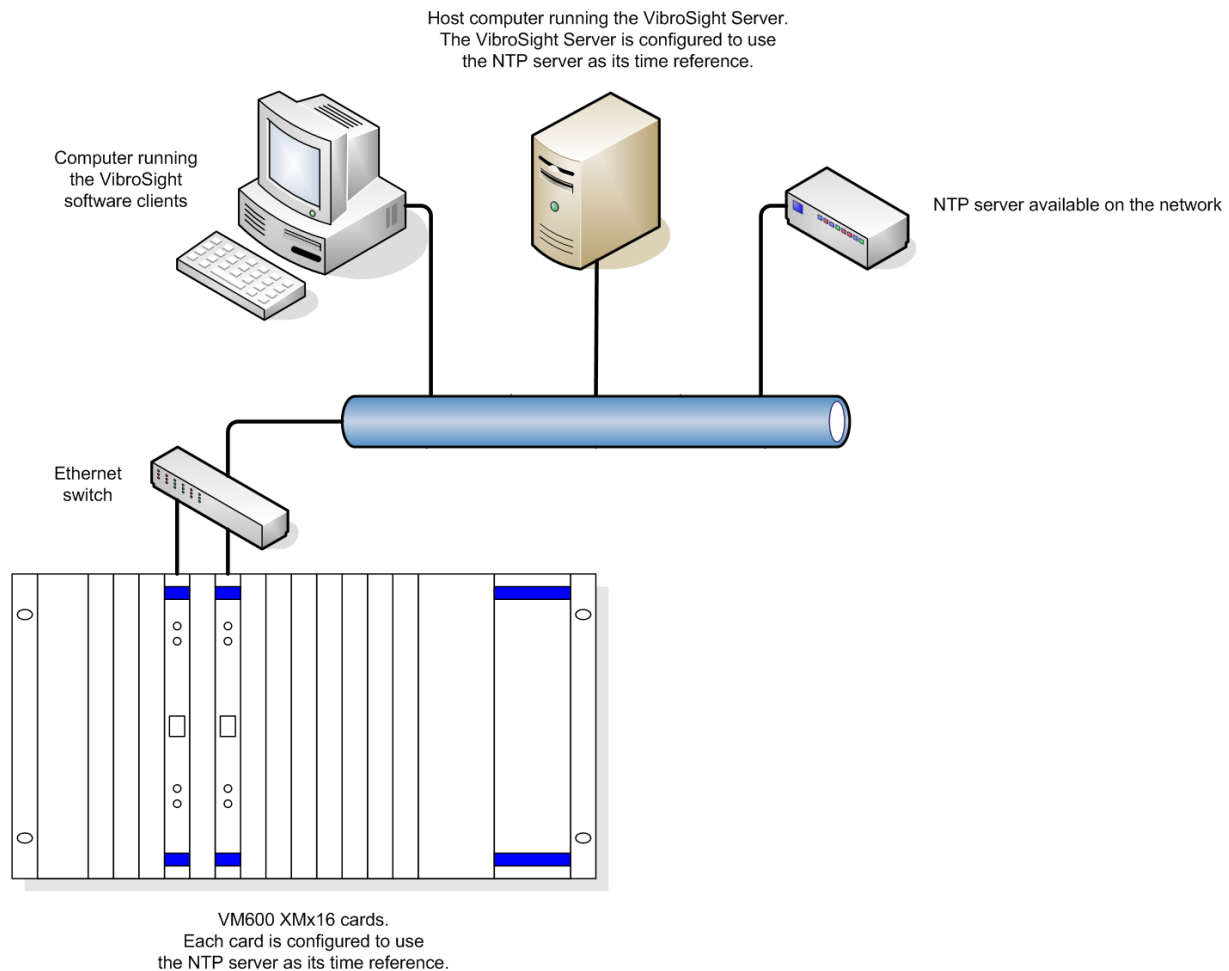
Administrative burden to install the Meinberg NTP for Windows software (that is, the local NTP server) which includes creating system users and modifying the Windows Firewall (potentially opening ports).

While the VibroSight system can stay synchronous with the host computer as the time reference, this may or may not be synchronised (that is, correlateable) with other on-site systems unless additional effort is deployed to achieve an “uplink” to this external source.

A local NTP server may not be available 100% of the time, thereby putting the system at risk of losing synchronisation.

### **2.1.1.2. VibroSight 2.11.0 and earlier operating with an NTP server – using an NTP server available on the network**

As shown in Figure 2, an NTP server is available on the network that is used by the VibroSight system, which provides the (absolute) time reference required by the VM600 XMx16 cards and the VibroSight Server.



**Figure 2: VibroSight 2.11.0 operating with an NTP server – using an NTP server available on the network**

## Advantages

NOTE: The physical NTP server (“uplink”) provides a high-quality time reference, which in addition to keeping the VibroSight system components synchronised and ensuring continuous operation, allows the correlation of data with other on-site systems (based on their absolute timestamps).

## Disadvantages

A physical NTP server is required (although, this is often available on the network).

More difficult to deploy from a network management perspective, depending on the network infrastructure as there may be special requirements. For example, a separate VibroSight network, control network and applications network might require network changes in order to allow the VibroSight network to access the NTP server.

If the NTP server becomes unavailable, the VM600 XMx16 cards no longer have the required NTP server and the VibroSight system may become inoperative: interruption to or permanent failure of the VibroSight Server to VM600 XMx16 card could result, leading to a potential loss of data.

If a host computer running a VibroSight Server becomes unavailable, only the VM600 XMx16 cards connected to that VibroSight Server become inoperative. Other VM600 XMx16 cards connected to other VibroSight Servers running on different host computers still have the NTP server and remain available.

## 2.1.2. VibroSight 2.11.1

Starting with VibroSight 2.11.1, an NTP server is no longer a mandatory requirement for a VibroSight system as two different modes of operation are now supported:

- Without an NTP server (NTP-free) – suitable for the vast majority of machinery monitoring applications.
- With an NTP server – suitable for machinery monitoring applications that require more accurate data synchronicity between VM600 XMx16 cards ( $\leq 100$  milliseconds).

To enable these different modes of operation, VibroSight 2.11.1 now implements time based on a combination of absolute time (for the VibroSight Server) and relative time (for the VM600 XMx16 cards), thereby making an NTP server an optional requirement:

- A VibroSight Server can use either the host computer clock or an NTP server as the time reference for its Server time, which is used to request and collate data from VM600 XMx16 cards and to timestamp both the data from the cards and the data received over external interfaces (such as Modbus and OPC).  
However, an NTP server must be used as the time reference for the VibroSight Server in applications demanding more accurate data synchronicity.  
NOTE: If a VibroSight Server is configured to use an NTP server as its time reference and the NTP server becomes unavailable, the VibroSight Server will automatically switch to and use the host computer clock as the fallback time reference.
- VM600 XMx16 cards no longer require an NTP server of a given quality as the time reference for their card times. Internally, each card continues to use the local clock as reference to acquire and to timestamp it locally as before. Each card's local clock time is monitored by the VibroSight Server, which periodically polls each card in order to establish and maintain the time difference (delta) between the VibroSight Server and a card.  
However, an NTP server must be used as the time reference for the cards in applications demanding more accurate data synchronicity.
- The VibroSight Server's time is used to request and collate the data from the VM600 XMx16 cards. Since the VibroSight Server knows the deltas between itself and each card, it correlates the data from each card by correcting for the card's specific delta (the delta to each card can be different) and the data is stored in the database using data timestamps that are calculated by the VibroSight Server using its Server time, each card's time and the known deltas to each card.

NOTE: All data (card and external interface) is stored in the database using timestamps generated by the VibroSight Server.

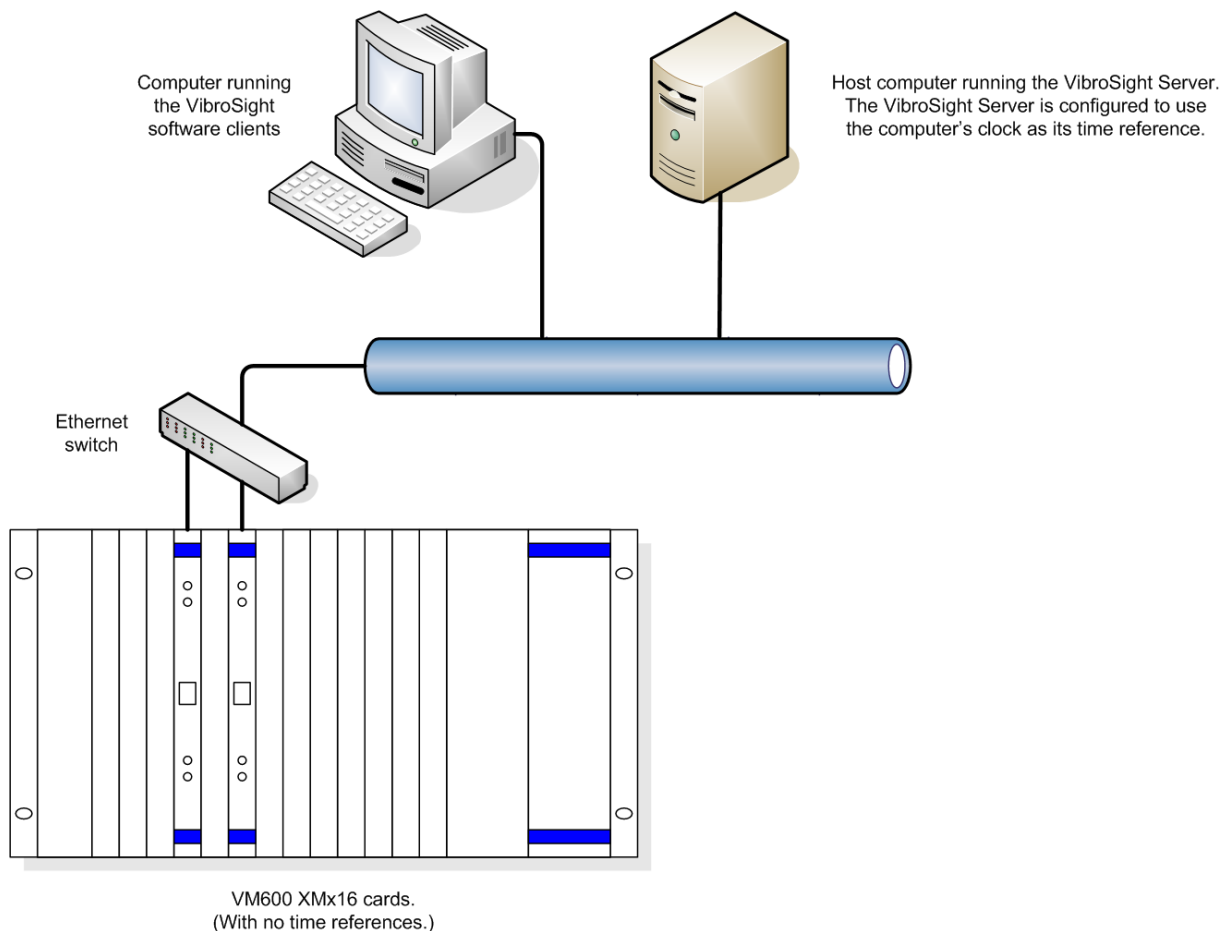
In general, VibroSight 2.11.1 systems do not require the same level of synchronisation between VibroSight Servers and VM600 XMx16 cards (compared to VibroSight 2.11.0 and earlier systems) because a VibroSight Server constantly monitors the time differences between itself and its cards.

However, a VibroSight Server's request for data from a VM600 XMx16 card must still correspond to data that is available from the card.

Monitoring systems using VibroSight 2.11.1 are recommended to be deployed in one of the following two ways: either (3) without an NTP server or (4) using an NTP server.

## 2.1.2.1. VibroSight 2.11.1 operating without an NTP server (NTP-free)

As shown in Figure 3, no NTP server is required (NTP-free operation) as the clock of the host computer running the VibroSight software is used as the (absolute) time reference for the VibroSight Server and the (relative) independent time of each VM600 XMx16 card is monitored by the VibroSight Server.



**Figure 3: VibroSight 2.11.1 operating without an NTP server (NTP-free)**

In VibroSight 2.11.1, the VibroSight Server time is used to collate and timestamp all data from VM600 XMx16 cards and external interfaces.

An NTP-free VibroSight system is characterized by a data synchronicity:

- $\leq 100$  milliseconds between data correlated from the same VM600 XMx16 card.
- $\leq 1$  second between data correlated from different VM600 XMx16 cards.



## **Advantages**

No NTP server required.

Easier to deploy from a network management perspective (no special requirements).

Suitable for the vast majority of machinery monitoring applications.

Less dependency and administrative burden.

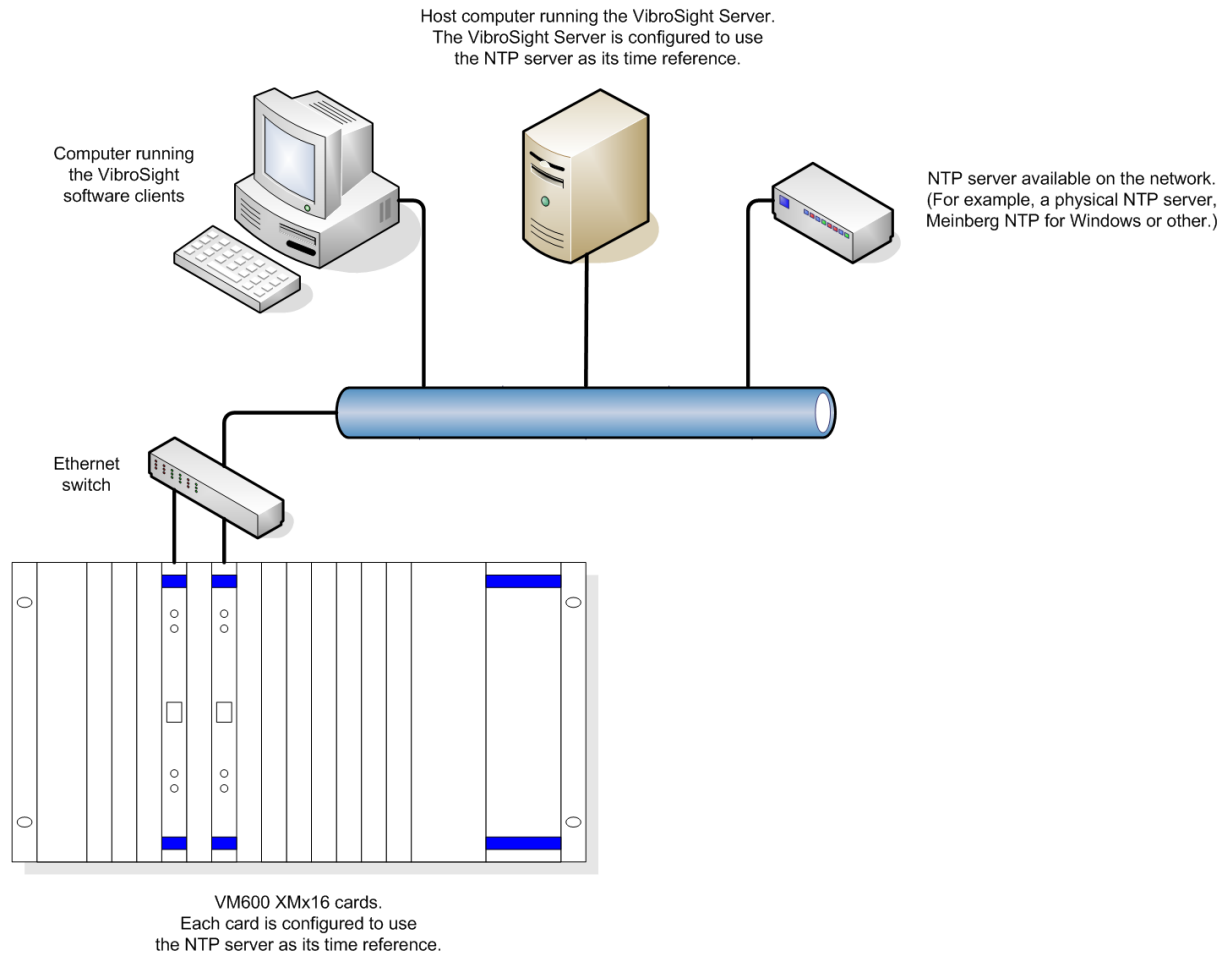
## **Disadvantages**

Not possible to guarantee data correlation from different VM600 XMx16 cards with a data-synchronisation accuracy of less than 1 second. This fulfills the requirements of the vast majority of machinery monitoring applications that work with long-term historical trends.

### **2.1.2.2. VibroSight 2.11.1 operating with an NTP server – using an NTP server**

As shown in Figure 4, an NTP server is required on the network that is used by the VibroSight system in order to provide a (absolute) time reference to be used by the VibroSight Server and the VM600 XMx16 cards. As with NTP-free operation, VibroSight Server monitors the (relative) independent time of each card and applies the specific delta when collating data from the cards.

NOTE: In VibroSight 2.11.1 systems that use an NTP server as a time reference, a VibroSight Server and the VM600 XMx16 cards must be configured to use the same NTP server. (As with VibroSight 2.11.1 systems, the NTP server can be a physical NTP server or a locally running NTP server such as Meinberg NTP for Windows.)



**Figure 4: VibroSight 2.11.1 operating with an NTP server – using an NTP server available on the network**

In VibroSight 2.11.1, the VibroSight Server time is used to collate and timestamp all data from VM600 XMx16 cards and external interfaces.

NOTE: The VibroSight system shown in Figure 4 looks the same as the VibroSight system shown in Figure 3 as the hardware (devices, network architecture and connections) is the same. However, as the VibroSight software and VM600 XMx16 card firmware are different, the VibroSight system operates differently: the timestamps for the data are calculated in a different way and the system is more robust to changes in the time reference.

A VibroSight system using an NTP server as the time reference for a VibroSight Server is characterized by a data synchronicity:

- $\leq 100$  milliseconds between data correlated from the same VM600 XMx16 card.
- $\leq 100$  milliseconds between data correlated from different VM600 XMx16 cards.

## Advantages

Possible to correlate data from different VM600 XMx16 cards in time with a data-synchronisation accuracy of less than 1 second, where required by machinery monitoring applications.

## Disadvantages

A physical NTP server is required (although, this is often available on the network).

More difficult to deploy from a network management perspective, depending on the network infrastructure as there may be special requirements. For example, a separate VibroSight network, control network and applications network might require network changes in order to allow the VibroSight network to access the NTP server.

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**NOTE:** In a VibroSight monitoring system deployed for operation with an NTP server, if the NTP server becomes unavailable, the VibroSight Server will automatically default to NTP-free operation (by switching the time reference for its Server time from the NTP server to the host computer clock) and then gradually correcting (“drifting”) the current VibroSight Server time to the new time reference value. If this happens, the user is informed by messages in the VibroSight Server window and events in the VibroSight Event Viewer. This system event information is also recorded in the (technical) log files for the relevant VibroSight software module.

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### 2.1.3. Changes to the VibroSight software and XMx16 card firmware to support NTP-free operation

To support the NTP-free mode of operation that is recommended for the majority of VibroSight monitoring system applications, the VM600 XMx16 card firmware and VibroSight software were modified as follows:

- VM600 XMx16 card firmware changed to implement time as an independent (relative) card time that is monitored and maintained by a VibroSight Server (relative to its own Server time), thereby eliminating the requirement for an NTP server for the cards.  
Also, cards no longer wait until they have established communication with an NTP server before starting data acquisition.
- VibroSight Server software changed to implement time using a combination of absolute time (for the VibroSight Server) and relative time (for the VM600 XMx16 cards) and to collate, correlate and timestamp all data (card and external interface) using timestamps that are calculated by the VibroSight Server using its Server time, each card’s time and the known deltas to each card.  
As before, either the host computer clock or an NTP server can be used as the time reference for the VibroSight Server time. Using the host computer clock is suitable for the vast majority of applications, while using an NTP server provides more accurate data synchronicity between cards, if required.

The VibroSight Server software was also modified for improved operation with time references:

- The current VibroSight Server time (**Server Time**) and the time difference (delta) between the current Server time and the time reference (**Delta to ref**) are displayed in the status bar at the bottom of the VibroSight Server window.
- Improved information concerning the time reference is displayed as messages in the VibroSight Server window, as events in the VibroSight Event Viewer and recorded in the technical log

files (\*.log and \*.xlog) for the relevant VibroSight software module.

In this way, the user is informed when there are changes to the time reference used by the VibroSight Server, such as switching between NTP-free operation and operation with an NTP server, when an NTP server being used becomes unavailable or as a result of (sudden) step changes to the time reference.

- Improved behaviour of VibroSight Server in response to changes to the time reference. For example, when operating with an NTP server, a VibroSight Server will retry communications with an NTP server a number of times before deciding it is unavailable (so short interruptions are tolerated) and automatically switching to NTP-free operation. A VibroSight Server also reacts more consistently and reliably to step changes to the time reference, and when converging (fixed slope) to the time reference.

The current VibroSight Server (**Server Time**) and the delta to the time reference (**Delta to ref**) displayed in the status bar at the bottom of the VibroSight Server window are colour-coded:

- Black text – indicates that the VibroSight Server time is synchronized to the time reference.
- Red text – indicates that the VibroSight Server time is not synchronized to the time reference. In this case, the **Delta to ref** should be seen to be slowly decreasing as the VibroSight Server time gradually converges to the time reference.

Improved behaviour of VibroSight Server in response to changes to the time reference includes:

- When operating with an NTP server, a VibroSight Server will retry communications with the NTP server a number of times (five) before deciding if it is unavailable and automatically switching to NTP-free operation.
- When there is a (sudden) step-change in the time reference, the behaviour of the VibroSight Server depends on the size of the step-change:
- If the change in the time reference is <1 day, the VibroSight Server will either speed up or slow down as necessary in order to gradually correct ("drift") the current VibroSight Server time to the new time reference value.  
In this case, the messages displayed in the VibroSight Server window (and VibroSight Event Viewer and the log files) inform the user, including the estimated time required to drift the current VibroSight Server time to the new time reference value.

NOTE: This gradual drift towards the time reference occurs at a slow rate in order to provide smooth and continuous system operation. For large corrections, the time required to reach a new time reference value can be long (for example, a factor of 20 times the required correction).

In addition, the current VibroSight Server (**Server Time**) and the delta to the time reference (**Delta to ref**) are displayed in red text in the VibroSight Server window until the VibroSight Server reaches the new time reference value.

- If the change in the time reference is >1 day, the VibroSight Server will switch the current VibroSight Server time to the new time reference value in one single step.  
In this case, the messages displayed in the VibroSight Server window (and VibroSight Event

Viewer and the log files) inform the user, including data loss warnings for overlapping time periods (for backward jumps).

---

**NOTE:** In VibroSight Vision, no information is displayed in plot documents corresponding to a potential gap in measurement data as a result of changes to a VibroSight Servers time reference. VibroSight Server, VibroSight Event Viewer and/or their log files record must be consulted to obtain such information.

---

When a VibroSight Server time is converging towards a new time, after a step-change to the time reference <1 day, the VibroSight Server timebase either accelerates or decelerates in order to run at a constant (fixed slope) rate and gradually converge to the time reference. In this way, the data capture and presentation by VibroSight remains continuous.

---

**NOTE:** Messages displayed in the VibroSight Server window (and VibroSight Event Viewer and the log files) inform the user when:

- A VibroSight Server timebase jumps forwards and gaps in data can be created.
- A VibroSight Server timebase jumps backwards and overlaps in data can be created that conflict with existing data having the same nominal timestamp.

---

## 2.1.4. Changes to the VibroSight 2.11.1 user interface to support NTP-free operation

### 2.1.4.1. VibroSight System Manager

There are changes to the VibroSight System Manager user interface related to the configuration of a VibroSight monitoring system.

In VibroSight System Manager, the **NTP Settings** command under **Configuration** in the **Actions** window now displays: a **Use NTP server** option button, a **NTP server** text box and a **Disabled** option button.

(In VibroSight 2.11.0 and earlier, only the **NTP Server** text box was displayed, as an NTP server was mandatory for all VM600 XMx16 cards in a VibroSight system.)

To configure a VM600 XMx16 card for NTP-free operation (suitable for the vast majority of machinery monitoring applications):

- Select the **Disabled** option button.  
The **Disabled** and **Use NTP server** option buttons are mutually exclusive, so **Use NTP server** is cleared and **NTP server** text box becomes unavailable (greyed out).
- Click the **Finish** button to apply the changes to the VM600 XMx16 card.

To configure a VM600 XMx16 card for operation with an NTP server (suitable for applications requiring more accurate data synchronisation):

- Select the **Use NTP server** option button.  
The **Use NTP server** and **Disabled** option buttons are mutually exclusive, so **Disabled** is cleared and **NTP server** text box becomes available.
- Enter the address of the NTP server in the **NTP server** text box, either as an IP address (dot-decimal notation) or a uniform resource identifier (domain name).
- Click the **Finish** button to apply the changes to the VM600 XMx16 card.

---

**NOTE:**

- When a VibroSight monitoring system is operating with an NTP server, the VM600 XMx16 cards and the VibroSight Server should be configured to use the same NTP server.

---

#### 2.1.4.2. VibroSight Server

There are no changes to the VibroSight Server user interface related to the configuration of a VibroSight monitoring system. Although more messages are now displayed in order to inform the user of changes to VibroSight system operation related to the time reference.

In VibroSight Server, the **Tools > Options** menu command displays the time reference configured for the server under **Environment \ Reference Clock Configuration**.

To configure a VibroSight Server for NTP-free operation (suitable for the vast majority of machinery monitoring applications):

- Clear the **Enabled** check box.  
The **NTP Server** text box becomes unavailable (greyed out).
- Click the **OK** button to apply the changes to the VibroSight Server.

To configure a VibroSight Server for operation with an NTP server (suitable for applications requiring more accurate data synchronisation):

- Select the **Enabled** check box.  
The **NTP Server** text box becomes available.
- Enter the address of the NTP server in the **NTP Server** text box, either as an IP address (dot-decimal notation) or a uniform resource identifier (domain name).
- Click the **OK** button to apply the changes to the VibroSight Server.

---

**NOTE:**

- When a VibroSight monitoring system is operating with an NTP server, the VM600 XMx16 cards and the VibroSight Server should be configured to use the same NTP server.

---

## 2.1.4.3. VibroSight Event Viewer

There are no changes to the VibroSight Event Viewer user interface related to the operation of a VibroSight monitoring system. Although more events are now available in order to inform the user of changes to VibroSight system operation related to the time reference.

In VibroSight Event Viewer, changes related to the time reference are displayed as System events. Like other system events, these can be displayed live or logged to a database for subsequent analysis.

---

**NOTE:** It is highly recommended to log time-reference related events to a database in order to allow the integrity of the data stored in a database to be known.

---

## 2.1.5. Implications for upgrading existing VibroSight 2.11.0 and earlier systems

Currently deployed VibroSight monitoring systems (that is, configured for operation with an NTP server) are compatible with and can be upgraded to VibroSight 2.11.1 for in order to take advantage of other improvements to the VibroSight software, such as improved operation with time references, solved problems and bug fixes.

## 2.1.6. Recommendations for VibroSight 2.11.1 systems

VibroSight monitoring systems now support two different modes of operation: NTP-free or with an NTP server.

- NTP-free operation is recommended for the vast majority of machinery monitoring applications that work with long-term historical trends (see Figure 3).
- Operation with an NTP server is recommended for those machinery monitoring applications that require data synchronicity <100 milliseconds (see Figure 4).

See also section 5.2.1 Firmware.

## 2.2. Unit preferences – new physical quantities and units

The default unit sets (Metric and Imperial) included in VibroSight have been updated to include new units related to the following physical quantities: conductivity, density, generic, heat rate, heat value by volume, heat value by mass, load gradient, mass concentration, mole fraction, power factor, pressure, volume concentration and volumetric flow rate.

To view the unit preferences, click **Tools > Unit Preferences** on the menu bar in a VibroSight software module, such as VibroSight Configurator, VibroSight Scope or VibroSight Vision.

### 3. Solved problems and bug fixes

#### General

#### 3.1. Improvements and bug fixes

General stability improvements and multiple bug fixes across the various VibroSight 2.11.1 software modules.

#### 3.2. VibroSight Server to VibroSight software module communications after configuration changes

After a configuration is changed and re-activated using VibroSight Configurator, the VibroSight Server automatically notifies all open VibroSight software modules (clients) with a connection to the Server of the changes to the configuration. This is necessary in order to ensure robust system operation.

However, the notification mechanism did not always work correctly with the result that configuration changes were not propagated throughout a VibroSight system. In general, this was characterised by issues such as activation errors (for example, the “Error while notifying a subscriber about modification of the active configuration” message in VibroSight Server) and VibroSight software modules (clients) that stopped updating their data. This bug has been corrected.

#### 3.3. Tachometer ratios for order-tracked measurements

When order-tracked measurements are used (Sampling Mode: Order Tracked), a tachometer input channel must be configured to provide the reference (Reference Speed) for the digital resampler.

However, if this tachometer input channel is configured with a non-integer ratio (Pulses Per Rev.), then the associated order-tracked measurements (such as waveforms and spectrums) do not work correctly as they are displayed in frequency. This bug in the VM600 XMx16 card firmware has been corrected.



#### VibroSight Server

#### 3.4. VibroSight Server stops responding when unit preferences being accessed

If unit preferences (unit sets) were being used by VibroSight software modules such as VibroSight Configurator, VibroSight Scope or VibroSight Vision at the same time that VibroSight Server tried to access unit preference files, an file access conflict (“unhandled exception”) could cause VibroSight Server to stop responding (crash). This bug has been corrected.



## VibroSight System Manager

### 3.5. Database copy operations

The behaviour of database copy operations appeared to be different depending on the options used and whether the command was run from VibroSight System Manager (Database Copy command) or from a command line (`VibroSightDataCopy.exe`).

In fact, the database copy command always ignores the `-t` option (“use timestamp”) if the `-odb` option (“overwrite an existing database”) or `-odsn` option (“overwrite an existing DSN”) is also used by the command.

In VibroSight System Manager, the Database Copy Wizard that is used when the Copy command is run displays **Overwrite database file** and **Use timestamp** as mutually exclusive check boxes, with a warning if the user tries to select both, so the underlying command cannot be run with `-t` and `-odb` or `-odsn`.

However, using the equivalent command-line tool, there are no such restrictions, so the copy command can be run with `-t` and `-odb` and `-odsn`. (although the `-t` option will be ignored).

To avoid confusion, the text displayed by the `VibroSightDataCopy.exe -Help` command and the VibroSight help have been updated with clearer explanations. In addition, if the copy command is run with `-t` and `-odb` or `-odsn` from a command-line, then a message is displayed to the user before the command is run:

Parameters Warning:

```
"The parameter -t will be ignored using the -odb or -odsn parameters."
```

### 3.6. Database purge operations

Under certain circumstances, scheduled database purge operations using the command-line `VibroSightDataPurge.exe` command did not delete the configuration associated with the purged data (even though the purge data and the truncate and reset transaction log operations were finished correctly) and reported “Error while deleting configuration”. This bug has been corrected.

## 4. Known issues

### 4.1. Changing a VibroSight Server's maximum RAM cache size when DSNs are not used

Since VibroSight 2.9.7, a VibroSight Server database no longer requires a data source name (DSN), so it is no longer required to use the ODBC Data Source Administrator to manage the underlying connection to the Sybase SQL Anywhere 11 database (which provided convenient access to the start line command that is used to start the SQL Anywhere 11 server).

---

**NOTE:** `dbeng11.exe -ch 600m` is the default command used to start the SQL Anywhere 11 server, where the `-ch 600m` option specifies that a maximum RAM cache size of 600 MB should be used. (This option limits the underlying SQL Anywhere's database server cache during automatic cache growth.)

However, for more complex machinery monitoring applications and larger databases, it is recommended that a maximum RAM cache size of 2000 MB (`-ch 2000m`) is used, in order to improve the overall performance of the VibroSight machinery monitoring system.

---

When a DSN is not used with a VibroSight Server database, the settings usually written to the DSN using the ODBC Data Source Administrator are managed by the VibroSight Server itself and stored in the VibroSight Server configuration file (`*.vssrvcfg`). However, this means that the specification of the maximum cache size to be used by the VibroSight Server database is not as convenient to access by the user.

Presently, the default command used to start the SQL Anywhere 11 server will be used unless:

- In VibroSight Configurator, when saving the configuration as a server / database, the Configure advanced settings option is used to enter a different SQL database start line command.
- In VibroSight System Manager, when copying the database, the Configure advanced settings option is used to enter a different SQL database start line command.

So when DSNs are not used with a VibroSight Server database, the VibroSight Server configuration file (`*.vssrvcfg`) must be edited manually if it is necessary to change the SQL database start line command after a VibroSight Server database has been created or copied:

1. Exit all VibroSight software modules (clients and servers) that use the VibroSight Server database to be modified.
2. Use a text editor program to open the VibroSight Server configuration file (`*.vssrvcfg`) and search for the text string `dbeng11.exe`.
3. Edit the `StartLine="dbeng11.exe -ch 600m"` command in the configuration file to use the new required maximum cache size.  
For example, `StartLine="dbeng11.exe -ch 2000m"`, then save the file.
4. Restart the VibroSight Server.

If the `StartLine="dbeng11.exe -ch 600m"` command cannot be found in the VibroSight Server configuration file being used, then a "dummy" copy of the VibroSight Server database should be

created using VibroSight System Manager's Database Copy command with the Configure advanced settings option selected. A "dummy" VibroSight Server configuration file created in this way will include the SQL database start line command and can be used as an example to edit the VibroSight Server configuration file being used. (After which, the "dummy" files should be deleted.)

---

**NOTE:** It is highly recommended to make a backup copy of the VibroSight Server configuration file being used before manually editing it.

Such manual edits must be done carefully in order to ensure that the tags and delimiters used in the VibroSight Server configuration file are used correctly.

---

## 4.2. Display of timestamps in VibroSight Vision

In VibroSight Vision, when the timestamps (date and time) are configured to be displayed as Site time or Local computer time and the site time or local computer time is subsequently changed on the relevant computer (for example, using Windows > Control Panel > Date and Time), this change is not reflected in the VibroSight Vision user interface until the user clicks on the **Timestamp** displayed in the VibroSight Vision status bar.

## 4.3. Small "holes" in plotted data for large VibroSight Vision projects when viewing live data

Depending on the complexity of a VibroSight application and the performance of the computer running the VibroSight software, the responsiveness of VibroSight Vision can decline under certain situations and affect the display of plots when viewing live data.

In particular, this performance issue has been seen with large VibroSight Vision projects containing many open plots using live data. It is typically characterised by plots being displayed with small "holes" in the data, corresponding to when the computer has reached its performance limits.

If this behaviour is seen, the recommended workaround is to:

- Reduce the number of active plots in the VibroSight Vision project in order to reduce the computational load, as only the currently displayed (foreground) plots are constantly refreshed. Plots that are hidden or minimized (background) are not active and will only be refreshed when they become visible again.
- If it is necessary to view historical data at the same time, consider using a separate VibroSight Vision session to work with the historical data, preferably on a different computer.

## 4.4. Missing data for XMV16 and XMVS16 cards

When the order-tracked sampling mode is being used, XMV16 and XMVS16 cards have been seen to disappear (drop out) and produce no data for periods of 10, 20 or 30 seconds. After which, the card usually reappears without any intervention and normal operation resumes.

This issue is being investigated and appears to be a XMV16 and XMVS16 card firmware problem that is related to transitions in the input speed signal from "zero speed" to "non-zero speeds".

#### **4.5. VibroSight Server and Host Service restart required after changes to network adapter**

If the configuration of a network adapter is changed (for example, enabled or disabled, connected or disconnected) on a computer running VibroSight, then the VibroSight Servers and Host Services running on the computer must be restarted in order for the network adapter to be recognized by the VibroSight discovery mechanism.

#### **4.6. Length limitation of VibroSight Server instance names**

Since VibroSight 2.9.6, VibroSight Server instance names are limited to 18 characters, whereas up to 27 characters were allowed in previous versions. This constraint is enforced during the creation of new server instances with VibroSight 2.9.6 or later.

However, existing server instances may be non-compliant (too long) and no longer run after an upgrade of the VibroSight software. In such cases, the server instance name should be manually edited in the VibroSight configuration file (`*.vssrvcfg` or `*.config`) to be 18 characters or less. Changes may also be required in any VibroSight software that references the server instance name, for example, associated VibroSight Vision Projects.

For automated database copies that append a timestamp (`_yyyyMMddHHmmss`) to the Server instance name, the number that remain available for VibroSight Server instance names is deduced to 3 characters. Alternatively, the server instance name can be shorted after the database copy is complete.

#### **4.7. VibroSight client connections to local and remote VibroSight Servers are mutually exclusive**

When a VibroSight Server is running on a (local) computer, a VibroSight client, such as VibroSight Configurator or VibroSight Vision running on the same (local) computer cannot connect to a VibroSight Server running on a different (remote) computer.

#### **4.8. VibroSight Servers listen to a single IP address**

VibroSight Servers use one specific IP address for connections to VibroSight clients. This IP address can be set to any of the available LAN adapters or logical addresses on the host computer, such that all traffic is directed through this address. However, this prevents concurrent connections from VibroSight clients running on other computers through different IP addresses.

#### **4.9. Gaps in logged Modbus data**

When data logging with pre-trigger is used (for example, a time-based data logging rule with Pre Logging selected) or database operations such as a database copy or a database purge command occur at the same time as standard data logging, gaps can appear in the Modbus data that has been logged at a standard rate.

These gaps in Modbus data are related to the computation of alarms when data is written to the database, which can be slow and can prevent some subsequent Modbus data from being handled correctly, especially when VibroSight Server is busy with other data intensive tasks.

## 4.10. Display of timestamps in VibroSight clients other than VibroSight Vision

Although VibroSight Vision now supports the display of timestamps (date and time) as either Site time, UTC time or Local computer time, all other VibroSight client software modules continue to display timestamps in local computer time only (that is, the date and time according to the local clock of the computer running the VibroSight software module).

## 4.11. Display of devices in VibroSight System Manager

In the System Explorer window of VibroSight System Manager, the Devices tree-view does not always update correctly to show all of the devices (VM600 cards) available on the network.

In particular, this has been seen when changing the firmware of a device, and can persist even after a refresh (using the **Refresh** toolbar button or **View > Refresh**).

If this behaviour is seen, the recommended workaround is to:

- Wait a few minutes and refresh again.
- Restart VibroSight System Manager.

### 4.11.1. VibroSight Mimic backwards compatibility

VibroSight 2.10.0 contained significant improvements and changes, including a separate VibroSight Mimic client software module for mimics (that were previously available in VibroSight Vision). As a result, VibroSight Vision mimics created with VibroSight 2.9.7 or earlier are not compatible with VibroSight 2.10.0 or later.

VibroSight 2.11.0 contained significant improvements and changes to the VibroSight Mimic client software module. As a result, VibroSight Vision mimics created with VibroSight 2.10.1 or earlier are not compatible with VibroSight 2.11.0 or later.

### 4.11.2. Changes to VibroSight configurations not being

Changes made to a VibroSight configuration are not always visible in other VibroSight software client software modules (depending on the changes made).



More specifically, if VibroSight client software modules are running (open) when changes to a configuration are saved and activated using VibroSight Configurator, the changes do not always become visible in the other VibroSight software modules.

If this behaviour is seen, the recommended workaround is to restart the affected VibroSight software modules. Note: This issue does not affect VibroSight Servers.

## 5. Compatibility

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**NOTE:**

Refer also to the latest version of the  *Getting started with VibroSight* installation guide or the  *VibroSight software* data sheet for further information on VibroSight's prerequisites and compatibility.



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As part of the VibroSight software installation process, the installation wizard will automatically check to see if the "Microsoft Visual C++ Redistributable Package" (see section 5.1.4) and the "OPC Core Components Redistributable (x86)" (see section 5.1.5) are available on the computer.

If these items have not previously been installed and they are required by the VibroSight installation's application, then the VibroSight installation wizard can be used to install them.

### 5.1. VibroSight software

VibroSight 2.11.1 is an update version release in the 2.x.x series and replaces VibroSight 2.11.0.

Compatibility with existing databases is achieved using the database  **Update** tool (from VibroSight System Manager's  **Database** tools) which supports the continued used of configurations and data from previous versions. See section 6.1.1 Updating the internal structure of a VibroSight database.

#### 5.1.1. Microsoft Windows operating systems

VibroSight 2.11.1 is compatible with 32-bit versions and 64-bit versions of Microsoft® Windows® operating systems.

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**NOTE:**

Since VibroSight 2.9.0, VibroSight can run on 64-bit versions of Windows in order to help eliminate memory and performance issues that can occur due to the limitations of the 32-bit memory space.

However, VibroSight 2.11.x remains 32-bit software that runs on x64 Windows in the same manner as it does on 32-bit windows, that is, VibroSight is "x64-compatible" software (not "native x64" software).

---

See the appendix of this document for detailed information on VibroSight software and Windows operating system compatibility.

## 5.1.2. Microsoft .NET Framework

For most Windows operating systems, VibroSight 2.11.1 requires that the Microsoft .NET Framework 4.5 is installed on the computer.

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**NOTE:** Microsoft .NET Framework 4.5 is required since VibroSight 2.9.4.  
 Microsoft .NET Framework 4 (Standalone Installer) is required for VibroSight 2.9.2 and 2.9.3.  
 Microsoft .NET Framework 3.5 SP1 is required for VibroSight 2.9.1 or earlier.

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See the appendix of this document for detailed information on VibroSight software's Microsoft .NET Framework requirements.

## 5.1.3. Sybase SQL Anywhere 11 software

VibroSight uses the Sybase® SQL Anywhere 11 database software in its standard configuration. VibroSight 2.11.1 remains compatible with the previously deployed version of SQL Anywhere, namely SQL Anywhere version 11.0.1.2044.

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**NOTE:** VibroSight requires the 32-bit version of SQL Anywhere 11 on both 32-bit and 64-bit Windows operating systems.  
 It is strongly recommended that only the 32-bit version of SQL Anywhere 11 is installed on the computer running VibroSight.

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**NOTE:** Updating SQL Anywhere to version 11.0.1.2867 is **mandatory** in order to avoid potential memory issues (fixed by Sybase). A software update (patch) included on the Sybase CD must be run in order to update Sybase SQL Anywhere from version 11.0.1 to version 11.0.1.2867: *SA11\_Full\_Win32+x64.1101\_2867\_EBF.exe*. See section 6.2 Upgrading the Sybase SQL Anywhere 11 software.

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#### 5.1.4. Microsoft Visual C++ Redistributable Package

The Microsoft Visual C++ Redistributable Package is required in order to install and register the Visual C++ libraries required by a VibroSight OPC server.

If this package does not already exist on the computer, then the VibroSight installation wizard will install it automatically. (The package is included in the ISSetupPrerequisites folder on the VibroSight CD.)

---

<b>NOTE:</b>	The Microsoft Visual C++ Redistributable Package is required since VibroSight 2.9.4, if VibroSight OPC servers are being used.
	The 32-bit version of the package ("vcredist_x86.exe") is installed on both 32-bit and 64-bit Windows operating systems, as the VibroSight OPC server is a 32-bit application.

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#### 5.1.5. OPC Foundation OPC Core Components Redistributable

The OPC Core Components Redistributable is required in order to configure and run VibroSight OPC clients and OPC servers correctly: the redistributable must be installed on OPC client computers in order to allow connections to remote OPC servers and it must be installed on OPC server computers in order to allow OPC clients to browse for running OPC servers.

If this redistributable does not already exist on the computer, then the VibroSight installation wizard will install it automatically. (The redistributable is included in the ISSetupPrerequisites folder on the VibroSight CD.)

---

<b>NOTE:</b>	The OPC Core Components Redistributable is required since VibroSight 2.9.4, if OPC clients or OPC servers are being used.
	The 32-bit version of the package ("OPC Core Components Redistributable (x86)") is installed on 32-bit Windows operating systems and the 64-bit version of the package ("OPC Core Components Redistributable (x64)") is installed on 64-bit Windows operating systems.

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## 5.2. VM600 cards

### 5.2.1. Firmware

There are firmware updates for some VM600 cards corresponding to VibroSight 2.11.1.

The latest firmware for the CPUR card remains:

- Applications: applications-640-012-001-003.tgz
- Base System: base-system-640-011-001-003.tgz.



The latest firmware for the XMC16, XMV16 and XMVS16 cards is now:

- Applications: applications-640-010-001-009.tgz
- Base System: base-system-640-003-001-010.tgz.

Therefore, for current versions of the VibroSight-compatible VM600 cards, firmware upgrades are required. See section 6.3 Updating the VibroSight hardware.

Improvements to this latest XMx16 card firmware includes support for the operation of a VibroSight system without an NTP server (see 2.1 VibroSight system operation without an NTP server) and a bug fix for order-tracked measurements with non-integer tachometer ratios (see 3.3 Tachometer ratios for order-tracked measurements).

## 6. Upgrade procedure

This section describes the procedure for upgrading a VibroSight system from a previous version. Perform the steps in the given sequence in order to complete a system upgrade.

---

**NOTE:** It is strongly recommended to verify the version of firmware running in the related hardware (XMx16 cards) before starting a VibroSight system upgrade, in order to establish if any firmware updates are also required. See section 6.3.2 Updating the firmware using VibroSight System Manager.

---

### 6.1. Upgrading the VibroSight software

---

**NOTE:** Since VibroSight 2.9.6, VibroSight Server instance names are limited to 18 characters (previously, it was 27). So VibroSight installations with VibroSight Server instance names of more than 18 characters will experience problems with VibroSight 2.11.x until the existing VibroSight Server instance names (and any references to them) are manually edited to be 18 characters or less. See section 4.6 Length limitation of VibroSight Server instance names.

---



1. If it is not necessary for the VibroSight-based system to remain operational during the upgrade procedure, back up any important (required) VibroSight databases in the following way:
  - Exit all VibroSight software modules (clients and servers) – no VibroSight software modules, such as Vision, Configurator or Server, should be running.
  - Copy the files (\*.vssrvdb, \*.vssrvcfg and optionally, \*.log) from the directory where your database files are located to another location, for example, to a specific backup directory.

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**NOTE:** The default data (data path) directory is C:\VibroSight Data




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Or if it is necessary for the VibroSight-based system to remain operational for as long as possible during the upgrade procedure, back up any important (required) VibroSight databases in the following way:

- Exit all VibroSight software modules (clients) – no VibroSight software modules, such as Vision or Configurator, should be running.
- Start VibroSight System Manager and use the database  **Backup** tool from VibroSight System Manager's  **Database** tools, and follow the instructions presented by the Database Backup Wizard.

---

**NOTE:** It is necessary to be logged in to System Manager as 'Admin' in order to have the user rights to access the database tools:

Select your  VibroSight Host (computer) in the System Explorer tree structure and click  **Login** (from VibroSight System Manager's  **Access Rights** tools).

Refer also to the *Backing up a database* topic in the  *VibroSight help*.

---

2. Make backup copies of any important (required) VibroSight Vision projects in the following way:


- Create an archive file (for example, \*.zip) containing all of the files (\*.xml and \*.xmsproj) in the directory where your project files are located.

---

**NOTE:** The default project directory is:  
C:\Documents and settings\username\My Documents  
\VibroSight\Projects

---


3. Ensure that no VibroSight software modules are running.

4. Remove the currently installed version of the VibroSight software (for example,  VibroSight Standard Edition) using Windows Add or Remove Programs, in one of the following ways:

- Click **Start > Settings > Control Panel** and then double-click **Add or Remove Programs**.
- Or click **Start**, click **Control Panel** and then double-click **Add or Remove Programs**.

5. Install the latest version of the VibroSight software by inserting the VibroSight CD into the CD/DVD drive of the computer and follow the instructions presented by the VibroSight installation wizard.

---

**NOTE:** Refer to the  *Getting started with VibroSight* installation guide for detailed information on installing the VibroSight software – including prerequisites and compatibility.

---

6. Restart VibroSight Server and ensure that the required communications are enabled. For example, enable card and module device drivers according to the hardware in the system:

- For example, click **Data > Acquisition > XMC16/XMV16 Card Driver**.



7. Restart VibroSight Vision and ensure that live data is being received from the hardware and displayed in Vision.

8. The VibroSight system is now up and running.

### 6.1.1. Updating the internal structure of a VibroSight database




When VibroSight Server is started, it checks the status of the database and will automatically inform the user if any internal structures of the database need to be updated before proceeding.

1. Update a VibroSight database in the following way:

- Start VibroSight System Manager and use the database  **Update** tool from VibroSight System Manager's  **Database** tools, and follow the instructions presented by the Database Update Wizard.

---

**NOTE:** It is necessary to be logged in to System Manager as 'Admin' in order to have the user rights to access the database tools:

Select your  VibroSight Host (computer) in the System Explorer tree structure and click  **Login** (from VibroSight System Manager's  **Access Rights** tools).

Refer also to the *Updating a database* topic in the  *VibroSight help*.

---

## 6.2. Upgrading the Sybase SQL Anywhere 11 software

VibroSight software is compatible (and extensively tested) with Sybase SQL Anywhere versions 11.0.0 and 11.0.1.

However, with the release of SQL Anywhere version 11.0.1.2867, Sybase has fixed some previously known memory issues. Therefore, it is **mandatory** to upgrade all VibroSight systems to this version of SQL Anywhere 11.

Determine the version of the SQL Anywhere 11 database engine installed on a computer in the following way:


1. From the Start menu, click **Start > All Programs > SQL Anywhere 11 > Sybase Central**.

The Sybase Central window appears. Sybase Central is a GUI-based management tool for Sybase products.

2. Click **Help > About Sybase Central**.

The About Sybase Central windows appears, displaying the version information for SQL Anywhere 11 (and any other installed Sybase products).

---

**NOTE:** Refer also to the *Determining the version of SQL Anywhere 11 installed on a computer* topic in the  *VibroSight help*.

---

If SQL Anywhere 11 version 11.0.0 is installed on the computer, it is necessary to first remove version 11.0.0, then install version 11.0.1 from the Sybase CD.


If SQL Anywhere 11 version 11.0.1 is installed on the computer, simply update to version 11.0.1.2867 by running the software update (patch) included on the Sybase CD.

When SQL Anywhere 11 software version 11.0.0 is installed on the computer:

---


**NOTE:** Do not use the SQL Anywhere 11.0.1 setup to upgrade directly to software version 11.0.1 from software version 11.0.0. Instead, it is necessary to upgrade the Sybase database software as follows:

1. Remove SQL Anywhere 11.0.0, using the Windows Add or Remove Programs tool.
2. Install SQL Anywhere 11.0.1, using the Sybase SQL Anywhere 11.0.1 CD.

Refer also to the  *Getting started with VibroSight* installation guide for information on installing the Sybase software.

---

1. Exit all VibroSight software modules (clients and servers) – no VibroSight software modules, such as Vision, Configurator or Server, should be running – as this also stops the SQL Anywhere 11 database engine.

The  lightning icon that appears in the notification area (at the far right of the task bar) to indicate that a Sybase database engine is running should no longer be shown.

2. Remove the currently installed version of Sybase SQL Anywhere 11 using Windows Add or Remove Programs, in one of the following ways:

- Click **Start > Settings > Control Panel**, then double-click **Add or Remove Programs**
- Or click **Start**, click **Control Panel** and then double-click **Add or Remove Programs**.

And remove  SQL Anywhere 11.

3. Restart the computer.
4. Install Sybase SQL Anywhere VibroSight 11.0.1.2044 by inserting the Sybase CD into the CD/DVD drive of the computer and following the instructions presented by the SQL Anywhere 11 installation wizard.
5. Restart the computer.

Without this final computer restart, VibroSight Server may not be able to start the SQL Anywhere 11 database engine.

When SQL Anywhere 11 software version 11.0.1 is installed on the computer:

1. Update to Sybase SQL Anywhere VibroSight 11.0.1.2867 by inserting the Sybase CD into the CD/DVD drive of the computer, running the *SA11\_Full\_Win32+x64.1101\_2867\_EBF.exe* software update (patch) and following the instructions presented by the SQL Anywhere 11 installation wizard.
2. Restart the computer.

### 6.3. Updating the VibroSight hardware

Appropriate files and tools are included in the installation package to allow VM600 cards (CPUR and XMx16) to be updated to the latest firmware, in order to take advantage of improvements to the VibroSight software.

Updating the firmware VM600 cards is a special task that can, if used unintentionally or incorrectly, lead to malfunctioning of the device and affect proper function of data acquisition.

During the firmware update of a device, the card or module being updated cannot provide its normal machinery monitoring functions because its outputs (alarms and relays) can go to undetermined states, irrespective of how they have been configured.

---

**NOTE:** It is highly recommended that firmware updates are only performed in accordance with the operating procedures for the machinery being monitored and that appropriate precautions are taken at the control system level (such as DCS or PLC).

For example, alarms and relay outputs should be ignored (bypassed or inhibited) in order to avoid false trips of the machinery being monitored.

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#### 6.3.1. VM600 card firmware

The latest VM600 card firmware files are copied to a directory on your computer as part of the VibroSight software installation process.

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**NOTE:** For example, the default firmware directory for VM600 cards is:

```
C:\Program Files\Meggitt\VibroSight 2\Firmware\VM600
```

---

The firmware files for a VM600 card can be found in the appropriate subfolder and identified by their .tgz file name extension. For example, the *XMV16* subfolder contains the applications and base system firmware for use by XMV16 cards. Any additional firmware updates received from Meggitt Sensing Systems should also be stored in these directories.

Table 1 shows the compatibility between VibroSight software and VM600 XMx16 card hardware (that is, XMC16, XMV16 and XMVS16 card pair firmware).

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**NOTE:** It is strongly recommended to use the most recent version of the VM600 XMx16 card firmware that is compatible with the version of VibroSight software being used.

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Table 1: VibroSight software and VM600 XMx16 card firmware compatibility

VibroSight software version  CD part number	VM600 XMx16 card firmware						
	Base-system (*.tgz)						
	640-003-001-004	640-003-001-005	640-003-001-006	640-003-001-007	640-003-001-008	640-003-001-009	640-003-001-010
	Applications (*.tgz)						
	640-010-001-003	640-010-001-004	640-010-001-005	640-010-001-006	640-010-001-007	640-010-001-008	640-010-001-009
<b>2.8.0</b> 609-004-000-007							
<b>2.9.0</b> 609-004-000-010	✓						
<b>2.9.1</b> 609-004-000-011		✓	✓	✓			
<b>2.9.2</b> 609-004-000-012		✓	✓	✓			
<b>2.9.3</b> 609-004-000-013		✓	✓	✓			
<b>2.9.4</b> 609-004-000-014		✓	✓	✓			
<b>2.9.5</b> 609-004-000-015		✓	✓	✓			
<b>2.9.6</b> 609-004-000-016		✓	✓	✓			
<b>2.9.7</b> 609-004-000-017					✓ See note 1		
<b>2.10.0</b> 609-004-000-018					✓ See note 1		
<b>2.10.1</b> 609-004-000-019					✓ See note 1		
<b>2.11.0</b> 609-004-000-020					✓ See note 1	✓ See notes 1 and 2	
<b>2.11.1</b> 609-004-000-021							✓ See note 3

**Notes for Table 1**

1. Updating to these versions of VM600 XMx16 card firmware requires a two step process: (i) VibroSight System Manager's Change Firmware command should be used to update the base-system firmware (640-003-001-00\*.tgz) only, then (ii) the Change Firmware command should be used again to update the applications firmware (640-010-001-00\*.tgz) only.
2. This version of VM600 XMx16 card firmware introduces support for the direct measurement mode that is used to acquire direct data (digitised waveform) before an event.
3. This version of VM600 XMx16 card firmware introduces support for the operation of a VibroSight system without an NTP server (NTP-free).



## 6.3.2. Updating the firmware using VibroSight System Manager

When performing VibroSight software upgrades, it is strongly recommended to systematically upgrade the firmware of VM600 XMx16 cards to the latest compatible version.


Failure to perform a necessary VibroSight-compatible VM600 card firmware update may lead to incoherent system behaviour and affect the proper functioning of data acquisition in a system. It is only in systems where the firmware running on the XMx16 cards already corresponds to the latest available version that no firmware update is required. Therefore, it is strongly recommended to verify the version of firmware running on the hardware before starting a VibroSight system upgrade, in order to establish if a firmware update is also required.

---

**NOTE:** Changing the firmware of the VibroSight hardware is a special administrative task that can – if performed unintentionally – affect the proper functioning of data acquisition in a system.

It is therefore strongly recommended to change the firmware of the VibroSight hardware only when it is necessary. For example, when the devices must be updated to be compatible with a VibroSight software upgrade.

---

Update the firmware on a VibroSight device using the  **Change Firmware** tool (from VibroSight System Manager's **Maintenance** tools):

1. Ensure that the computer running the VibroSight software is on the same network as the hardware (XMx16 card) to be updated.
2. Start VibroSight System Manager and navigate to the Devices tree structure in the System Explorer window.

The Devices tree lists all of the VibroSight compatible hardware that VibroSight can see on the network. If there are no XMx16 cards in the tree structure or some cards are missing, verify your network connections.

3. Select the card or device that requires its firmware to be changed.

The Actions tool window updates to show the available tools.

4. Click  **Change Firmware** in the Maintenance tools group of the Actions window.

The Change Firmware dialog box appears.

5. Click the **Add** button and select the new firmware files for the card or new firmware file for the device.

---

**NOTE:** The Change Firmware dialog box automatically opens the firmware folder corresponding to the VibroSight-compatible VM600 card selected.

.tgz files are for VM600 cards.

---


6. Click the **Finish** button to start the firmware upgrade process.

For XMx16 cards, the firmware upgrade process can take up to 5 minutes, during which:

- The IP address beside the device's serial number in the Devices tree structure can disappear.
- The LEDs on the front panel of the device can change to reflect the status of the upgrade.

7. Repeat steps 3 to 6 for each device that requires a firmware update.


---

**NOTE:** Although the firmware for each VibroSight device must be changed individually using the  **Change Firmware** tool, as each device updates its firmware independently of the VibroSight software (once the process has started), firmware updates can be performed on several devices in parallel.


---

8. After the firmware upgrade, verify that the VibroSight system is acquiring data from the cards.

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**NOTE:** Refer also to the *Changing the firmware* topics in the  *VibroSight* help.

---

The  **Change Firmware** tool can be used to load a VibroSight device with any version of firmware. It is therefore possible to change a device's firmware to any previously available version, as well as the latest update.

This feature can be useful in certain situations, for example, swapping spare VibroSight hardware between different VM600 racks, where systems are operating with different versions of VibroSight.

## 6.4. Final checks

After upgrading the VibroSight software, the following checks are recommended to ensure that VibroSight has not been inadvertently modified and that it continues to operate as expected:

- Use VibroSight Configurator to run a consistency check on the configuration in order to ensure that the configuration has not been modified by any changes to the VibroSight software, internal database structure and firmware for the hardware (VM600 cards).
- Use the VibroSight Server window to check that the data acquisition, data post-processing and data logging settings are as expected. (Click **Data > Acquisition**, **Data > Post-processing** and **Data > Logging** and disable/enable the drivers, processing managers and logging as required.)

## 7. Customer support

### 7.1. Contacting us

Meggitt Sensing Systems worldwide customer support network offers a range of support including Technical support and Sales and repairs support. For customer support, please contact your local Meggitt Sensing Systems representative. Alternatively, contact our main office:

Customer support  
Meggitt SA  
Route de Moncor 4  
PO Box 1616  
CH-1701 Fribourg  
Switzerland

Telephone: +41 (0) 26 407 11 11  
Email: [energysupport@ch.meggitt.com](mailto:energysupport@ch.meggitt.com)  
Web: [www.meggittsensingssystems.com](http://www.meggittsensingssystems.com)

### 7.2. Technical support

Meggitt Sensing Systems technical support team provide both pre-sales and post-sales technical support, including:

- General advice
- Technical advice
- Troubleshooting
- Site visits.

### 7.3. Sales and repairs support

Meggitt Sensing Systems sales team provide both pre-sales and post-sales support, including advice on:

- New products
- Spare parts
- Repairs.

## Appendix

### VibroSight software and Windows operating system compatibility

	Windows XP and Windows Server 2003 R2	Windows Vista and Windows Server 2008	Windows 7 and Windows Server 2008 R2	Windows 8 and Windows Server 2012
<b>VibroSight software compatible?</b>	Yes, but not recommended for new installations as Microsoft support for Windows XP SP3 ends on 08 April 2014	Yes, but not recommended. Windows Server 2008 R8 should be used instead of Windows Server 2008	Yes – recommended for new installations	To be announced

### Microsoft .NET Framework versions pre-installed on Windows operating systems

	Windows XP and Windows Server 2003 R2	Windows Vista and Windows Server 2008	Windows 7 and Windows Server 2008 R2	Windows 8 and Windows Server 2012
<b>Microsoft .NET Framework pre-installed on Windows operating system</b>	None on XP. .NET Framework 2.0 on Server 2003 R2	.NET Framework 3.0	.NET Framework 3.0 SP1	.NET Framework 4.5

### VibroSight software's Microsoft .NET Framework requirements

VibroSight software version	Windows XP and Windows Server 2003 R2	Windows Vista and Windows Server 2008	Windows 7 and Windows Server 2008 R2	Windows 8 and Windows Server 2012
VibroSight 2.9.1 or earlier	.NET Framework 3.5 SP1	.NET Framework 3.5 SP1	.NET Framework 3.5 SP1	.NET Framework 3.5 SP1
VibroSight 2.9.2 and 2.9.3	.NET Framework 4	.NET Framework 4	.NET Framework 4	.NET Framework 4
VibroSight 2.9.4 or later	.NET Framework 4 <sup>1</sup>	.NET Framework 4.5	.NET Framework 4.5	.NET Framework 4.5