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|  | <i>Technical Specification Document</i> |  | Issue: 01    |
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Attn: IT Personnel

Technical Specifications for MuniWare Software  
(Revised 2018)

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## Technical Specification for Production Environment

The MuniWare Momentum Suite of applications has been developed using the Microsoft .Net Framework with an SQL Server database

### Licensing Information

It is the responsibility of the municipality to ensure that all software used has the appropriate license. To use the MuniWare Suite of applications you will need to purchase / have licenses for the following products:

- Microsoft Windows Server 2008R2, **OR** Greater. (if a server is used)
- Windows 7 **OR** Greater
- Microsoft SQL Server Standard or Express
  - Refer to Microsoft for an explanation of the difference between Standard and Express
  - The versions supported for SQL Server are 2008R2 up to 2016 SP1
- Microsoft .Net Framework 3.5 – This windows feature must be installed on all computers that will have MuniWare installed

For detailed information please visit [www.microsoft.com](http://www.microsoft.com)

### Database Server - Tools and Technologies (Data Tier)

The following tools and technologies are required at data tier (database server):

- Microsoft SQL Server (Standard or Express) 2008R2 – 2016 SP1
- Microsoft .Net Framework 3.5
- Windows Server 2008R2 **OR** Greater
  - Can be run on a Windows 7 or greater workstation as well, but does not offer the resiliency of a server

#### Minimum Hardware requirements:

| <i>Machine</i>   | <i>Processor</i>   | <i>Operating System</i>             | <i>Memory</i> | <i>Storage</i> | <i>Protocol</i> |
|--|--------------------|-------------------------------------|---------------|----------------|-----------------|
| Data Tier  | 3.0 GHz Core 2 Duo | Windows Server<br>2008R2 or greater | 16 GB         | 500 GB         | TCP/IP          |
| *Processing speed, memory and storage requirements may vary depending upon the database size |                    |                                     |               |                |                 |

### Email – Required if installing Email modules

If you are installing any modules that send email from the MuniWare application, you will need to ensure that email can be reliably sent. There are two options for sending email:

- 1) Use Outlook – this will send email through the user’s installed Microsoft Outlook application
- 2) SMTP Server – email will be sent from MuniWare to the specified SMTP server

If you have more than 100 emails which will be sent at one time, it is suggested that you use an SMTP server that supports bulk email.

## Networking

The following must be in place unless the Data and Client Tiers are running on the same computer:

- Firewall on Data Tier must allow inbound ports 1433 (TCP) and 1434 (UDP)
- Ethernet connectivity with minimum Cat 5e cable (Cat 6 recommended)
- Gigabit network recommended
- WiFi connected clients may not perform as well as wired
- Reliable internet connection required to allow remote support

## Workstation - Tools and Technologies (Client Tier)

The following tools and technologies are required at client tier (desktop application):

- 1) Windows 7, **OR** Greater
- 2) Microsoft Office 2007 **OR** Greater
- 3) .Net Framework 3.5
- 4) Crystal Reports Redistributable – **SUPPLIED BY MUNIWARE**

### Minimum Hardware requirements:

| <i>Machine</i>   | <i>Processor</i> | <i>Operating System</i> | <i>Memory</i> | <i>Storage</i> | <i>Protocol</i> |
|--|------------------|-------------------------|---------------|----------------|-----------------|
| Client Tier  | 2.0 GHz          | Windows 7 or greater    | 4 GB          | 80 GB          | TCP/IP          |
| *Processing speed, memory and storage requirements may vary depending upon the database size |                  |                         |               |                |                 |

### Monitors

Preferred **19-inch** VGA **OR** higher resolution will be required

### Pointing Device(s)

Mouse **OR** compatible pointing device.

## Recommendations for Printer(s)

The following printer requirements are needed for the MuniWare suite of applications:

- Multifunction printer will suffice for forms and reports
  - **MICR** toner compatible laser printer for printing cheques
- The printer must support printing letter (8.5" x 11") and legal size (8.5" x 14") paper

## Logo Requirements

MuniWare forms are designed to work with the clients Logo, which takes away the requirement to have various preprinted forms. To ensure that the Logo prints properly on cheques, invoices, Utility Bills etc., the municipality will need to have their forms designed to the following specific requirements:

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- **Width 125 (pixels)**
- **Height 66 (pixels)**
- **96 dots per inch (dpi)**

Ideally Logos should be created in in Portable Network Graphics (.PNG) format (preferred) and submitted to MuniWare, but can also be in .JPEG / .JPG, OR standard Graphics Interchange Format (.GIF) file formats. These should be sent to MuniWare early in the project for adjustment and testing.