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APPENDIX A: SYSTEM REQUIREMENTS

A. Overview

1. Will I need a new computer to support ICMS?
   If you have an older computer, use the System Requirements table in this
   appendix to determine if your system can run ICMS. If your system does
   not meet the minimum requirements, you will have to upgrade.

2. Will I be able to use my ICMS computer for other functions?
   You can use your ICMS computer for all your computer needs. Just make
   sure that your system has enough memory and a large enough hard drive to
   meet all your needs. Hard drive storage space and random access memory
   are relatively inexpensive. Buying extra storage space and memory will pay
   off in the end. Your system will function more efficiently and allow you to
   expand without upgrading immediately.

3. Do I need any other software to run ICMS?
   Yes. You must have Internet Explorer 6.0 or greater installed on your
   computer. Your computer does not have to be connected to the internet, but
   the web browser software must be installed. (Note: The installation for
   Internet Explorer 6.0 is included in the Prerequisites folder on the installation
   CD, if needed.) Also, make sure that your word processor is installed on the
   same computer. The system automatically accesses your word processor in
   order to print some of the Bureau forms.

   SQL Server 2008 R2 Express Edition is included with the ICMS 8.20
   installation package. If you wish to use a different version or edition of SQL
   Server, you must obtain, install, and configure that SQL instance separately.
   Using SQL Server Standard Edition is recommended for sites with very large
   collections and/or 6 or more concurrent users of ICMS.

   Your bureau may already have a license and/or preferred version of SQL
   Server Standard Edition you can use. To use a version of SQL Server
   other than that provided with the ICMS installation, contact your bureau
   or regional IT specialist.

B. System Requirements

1. What are the minimum system requirements for running the ICMS program?
   The System Requirements table on the next page in this appendix lists the
   minimum and recommended system requirements. Check to make sure that
   your current system meets at least the minimum requirements. The
   minimum requirements are the lowest specifications that your system can
   meet for ICMS to run. It’s fine if your system exceeds the recommended
   requirements.

   Note: You should always refer to the system requirements for the current
   version of ICMS; these are for version 8.20.
# System Requirements

## ICMS Version 8.20

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Minimum</th>
<th>Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Workstation</strong></td>
<td>Windows XP Professional SP2*</td>
<td>Windows 7*</td>
</tr>
<tr>
<td><strong>Server</strong></td>
<td>Windows XP Professional SP2*, long filename support required</td>
<td>Windows 2008 Server or later*</td>
</tr>
</tbody>
</table>

## Hardware

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Minimum</th>
<th>Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Workstation</strong></td>
<td>CPU: Pentium IV, 1 GHz or faster RAM: 1 GB** Monitor: 17 inch super VGA Video: 1024 x 768 x 32 bit</td>
<td>CPU: Intel Quad Core, 3.0 GHz or faster RAM: 6 GB** or more Monitor: 20” widescreen Video: 1024 x 768 x 32 bit</td>
</tr>
<tr>
<td><strong>Server</strong></td>
<td>CPU: Pentium IV or compatible RAM: 4 GB</td>
<td>CPU: Intel Quad Core, 4.0 GHz or faster RAM: 12 GB or more</td>
</tr>
</tbody>
</table>

## Disk Storage

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Minimum</th>
<th>Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Workstation</strong></td>
<td>500 MB available (use server specs if a stand-alone installation)</td>
<td>1 GB available (use server specs if a stand-alone installation)</td>
</tr>
<tr>
<td><strong>Server</strong></td>
<td>1.5 GB available (plus 25-100 KB per record, figure does not include storage of attached images and multimedia files)</td>
<td>2 GB available (plus 25-100 KB per record, figure does not include storage of attached images and multimedia files)</td>
</tr>
</tbody>
</table>

## Software

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Minimum</th>
<th>Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>.Net Framework</td>
<td>Microsoft .Net Framework 4.0 (included on installation DVD)</td>
<td>Microsoft .Net Framework 4.0 or higher</td>
</tr>
<tr>
<td>Web Browser</td>
<td>Internet Explorer 6 SP 1 or greater (required for SQL Server 2008 installation)</td>
<td>Internet Explorer 6 SP 1 or greater (required for SQL Server 2008 installation)</td>
</tr>
<tr>
<td>SQL Server</td>
<td>SQL Server 2008 R2 Express Edition (Included on the installation DVD. For large network installations, we recommend SQL Server Standard Edition or better***.)</td>
<td>SQL Server 2008 Standard Edition or better*** (Purchased separately by client. Recommended for large network installations.)</td>
</tr>
<tr>
<td>Windows PowerShell</td>
<td>Version depends on Operating System</td>
<td>Version depends on Operating System</td>
</tr>
</tbody>
</table>

## Network (for multi-user installations)

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Minimum</th>
<th>Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LAN</strong></td>
<td>Speed: 10 Mbps File Sharing: Standard Windows file sharing (SMB)</td>
<td>Speed: 100 Mbps or greater File Sharing: Standard Windows file sharing (SMB)</td>
</tr>
<tr>
<td><strong>WAN</strong></td>
<td>Low-bandwidth environments (&lt;10Mbps) require the use of a remote application delivery system such as Remote Desktop Connection or Terminal Server.</td>
<td>Low-bandwidth environments (&lt;10Mbps) require the use of a remote application delivery system such as Remote Desktop Connection or Terminal Server.</td>
</tr>
</tbody>
</table>

*ICMS is compatible with Windows XP, 7, 8, Windows Server 2003, 2008, 2008 R2, and 2012. Windows 2012 Server does not support SQL Server 2005 so you must use SQL Server 2008 or better. In some cases, Windows Vista is not compatible with ICMS.

**SQL Server 2008 Express supports 1 physical processor, 1GB of memory, and 10GB of storage per database. Such limits do not exist for SQL Server Standard Edition or higher.

2. What is the maximum amount of disk storage space that my ICMS data will require?

We can’t tell you how large your system can become. There are many unlimited fields in ICMS. You can scan or cut and paste information or images from other programs into those large fields. In order to store all this additional information, you’ll need plenty of hard drive space. The size you need depends on how much data you wish to store. There are no limits on the amount of information that you can store.

3. Must I store my digital image files in the program on my hard drive?

Yes. The program is configured to store both the image and thumbnail in the same location as the program. You cannot change this location.

There are several reasons that the images are now stored within the system instead of externally managed.

- The backup options now include the ability to backup images with the data. To perform this function, the images must be accessible and stored in a consistent location.

- The Web Catalog data transfer process needs reliable access to images.

- Image loss due to renaming or moving of folders will be prevented.

**Note:** You can change the location where multimedia files are stored however. See Chapter 9, Section VII.B.

4. How do I estimate how much hard drive disk space I need for ICMS?

Use the formula in the box to estimate the minimum amount of disk space on your hard drive you’ll need for ICMS.

\[2 \text{ GB} + (25 \times \# \text{ of records}) \text{KB} + (300 \times \# \text{ of images}) \text{KB} = \text{estimated disk space needed for ICMS}\]

Each catalog record uses an average of 25KB and each image uses an average of 300KB. So you must multiply the total number of catalog records you have in each directory by 25, then multiply the number of images you have attached by 300. Add these two figures to 2,000,000 KB (2 GB). The answer will be the minimum hard drive space that you need for ICMS.

Example:

*Add your records from each directory together*

<table>
<thead>
<tr>
<th>Directory</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR PARK</td>
<td>35,245</td>
</tr>
<tr>
<td>NH PARK</td>
<td>7,123</td>
</tr>
<tr>
<td>AR PARK</td>
<td>1,512  (all levels)</td>
</tr>
<tr>
<td></td>
<td>43,880</td>
</tr>
</tbody>
</table>

*Multiply that number by 25*

\[43,880 \times 25 = 1,097,000 \text{ KB} \ (1,097 \text{ MB})\]

*Multiply the number of images by 300.*

\[325 \text{ images} \times 300 = 97,500 \text{ KB} \ (97.5 \text{ MB})\]
Add these two numbers plus 2,000 MB (2 GB) needed for the program and lexicons

1,097 MB + 97.5 MB + 2,000 MB = 3194.5 MB (3.2 GB) disk space needed for your ICMS.

Note: Windows requires disk space for swap files. You should not allow your disk space to drop below 500 MB. If you have less than 500 MB available in the drive where ICMS resides, you should try to free up disk space, or upgrade your hard drive.

See Appendix B: Installation and Setup for instructions on configuring your system. Refer to Appendix G: Imaging and Multimedia for more information on imaging.