

Magnus VLF

Configuring a Workstation for GMCE/TH3

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1. OVERVIEW

This document describes a high level procedure for installing and configuring all the different pieces of workstation hardware, software, and firmware required to upgrade a Magnus VLF with a TMCE board to a Magnus VLF with a GMCE board and a TH3. This document is primarily aimed at a clean install, but should also work for upgrades.

This document assumes some familiarity with the different components -- it is not intended to be a fully detailed step-by-step procedure (yet). It is hoped that this document will grow into or be superceded by the Controlled Release Installer.

This document assumes you know which versions to install. It references sub-directories relative to the folder structure under \\ccaeng1\Engineering\Projects\Manta\TH3\SoftwareInstall, but these directories may not necessarily be the most up-to-date.

2. REQUIREMENTS

In order to perform an upgrade, you will need the following:

- The relevant controlled release CD or equivalent set of software installers of the correct version
- The blue customer dongle
- A device license (xml file)
- A Prinergy Evo license (if you are installing Prinergy Evo)
- A network card (Intel Pro/1000 MT) or spare onboard Gigabit network adapter
- An ethernet cable (blue shielded cable)
- An optional USB cable for additional diagnostics

3. PREPARATION

3.1 NVS parameters

Before removing the TMCE, get a binary and text backup of the NVS parameters—in particular the ram parameters. Controlled Release (CR) 3 includes a utility to automatically migrate NVS parameters. See GMCE 5981 Product Firmware .

If a text backup is not available, specifically note the value of the following parameters, as they are not part of the GMCE NVS file, and thus they will not be migrated:

- set debris
- set prd SerialNumber
- set prd CustomerName
- set prd CanBaud

3.2 Media sizes

CR 3 will have an automatic migration tool for Print Console and Evo settings.

4. INSTALLATION PROCEDURE

4.1 Installing the Gigabit Ethernet Adapter

A Gigabit Ethernet adapter must be installed on the workstation, dedicated to GNCE communication. The recommended card is the Intel Pro/1000 MT (Intel Pro/1000 GT can also be used). The onboard adapter card on a Dell 2800 is also qualified. The recommended drivers can be found in the sub-directory **<GBE_Drivers\Intel Pro 1000 MT Desktop Adapter>**.

It is possible to use one of the onboard network ports on a Dell 2800 machine (this is also an Intel Pro/1000 card, and thus uses the same driver). However, because the 2nd port is disabled by default; you must enable it by going into the BIOS settings during system startup. Select **Integrated Devices**, then select **Embedded GbNIC2**, and set the 2nd card to **Enabled without PXE**. For standardization, it is recommended to use NIC#1 for the local network connection, and NIC#2 for the GMCE (confusingly, Dell has placed NIC#2 on the top and NIC#1 on the bottom) A similar procedure may apply if a workstation is shipped from production with a 2nd network card physically installed, but disabled.

After physically installing the card:

1. Cancel the Hardware Wizard when it comes up, run the installer in the above location, then select **Install Drivers** from the Intel dialog box. This should give you a driver version 8.4.21.0 (11/22/2004).

Note: The installation may take approximately two full minutes to complete and the Intel installer does not give any feedback during this time. Installing the new driver may also temporarily interrupt your connection to the LAN.

2. From Control Panel / Network Connections, right click on the newly installed Gigabit Ethernet connection and rename it to '**GMCE connection**'.

3. Select the connection, right click and select **Properties**. Give the network a static IP address, matching the entry IPADDR_BOOTP in the creobootp.ini file (default address is 192.168.100.209). Set the subnet mask to 255.255.255.128. The default gateway can be left blank.

4. Uncheck all the boxes in **This connection uses the following items:** except **Internet Protocol (TCP/IP)**.

5. Click **OK** to apply these settings (otherwise they may be lost), and then right click **Properties** again. Select **Configure** / **Advanced**. Set the **Frame Size** to 9014 bytes. This field is some times called 'Jumbo Frames'.

4.2 Installing the Feature Licensing Server

4.2.1 Creo Feature License

The installer for the Creo Feature Licensing (CFL) Server may be found in the sub-directory \Creo Feature Licensing. The installer will prompt you to remove all dongles before performing the installation.

Note: If you have installed a previous release of CFL, you must uninstall the old version before installing this version.

CFL requires the Microsoft Dot-Net framework to be installed. If this is not installed, CFL installer will ask to install Dot-Net, and then restart the CFL installation. The basic Dot-Net installation can be found in the sub-directory \Creo Feature Licensing\DotNet Framework, filename dotnetfx.exe (can also be downloaded from the Microsoft website at http://www.microsoft.com/downloads/details.aspx?FamilyID=262d25e3-f589-4842-8157-034d1e7cf3a3&displaylang=en . To save time, you can choose not to restart after the CFL Server installation, because you will also be asked to restart after installing the License Definition Files.

4.2.2 License Definition Files

License Definition Files (LDF) should also be installed. They are available in the Controlled Release sub-directory \Creo Feature Licensing.

To install the license:

1. Plug in the blue customer dongle into a USB port on the computer. Note that this is the same type of dongle as Prinergy/Evo, and it can be shared with Prinergy/Evo if the applications reside on the same computer.
2. If the license has not already been installed, install the license using the Creo License Manager application. You will need to obtain a license from the licensing website, or from your installation planner.
3. See the section GMCE 5981 product firmware for information on how to verify that the firmware can read the license successfully.

See the Feature Licensing page on TechPlanet for more information (http://techplanet.creo.com/output/service_tools/service_shell/nav/v2-x/feature_lic_info.htm). This includes a link to the license generation website.

4.2.3 GMCE Core Firmware, Xilinx and BootP Server

The installer and release notes may be found in the sub-directory \Firmware\Thermal_MCE\MCE and Satellite Core FW\MCE Core and Xilinx.

The installer copies the required files to the hard drive, and optionally downloads the core firmware directly to the GMCE. If you are setting up the machine for the first time, it is recommended to do the firmware download at a later stage (after Service Shell) – so select the **Windows software** option from the pull-down menu.

4.2.4 Service Shell 3.x

The Client and Host installer for the new Service Shell 3.x, as well as the README file, can be found in the Controlled Release sub-directory \ServiceShell\. Typically you will want to install both the client and the server (host). Note that you must have Service Shell 3.0 in order to talk to the GMCE.

Note: Earlier versions will not work with the GMCE.

In the future, Everest service tools will be integrated into the Service Shell installer and/or CR installer. Until this release, Everest service tools must be installed separately. These may be found in the sub-directory \ServiceShell\EverestStreamReceiver.

Configuring Service Host:

1. Select the Service Host icon in system tray – Host Configurations option
2. Select System: GMCE Based System
3. Select Device:
4. Select Device Type: Magnus (Thermal Head 3)
5. Head Type: Thermal Head 3
6. Device Options: VLF
7. GMCE System:
8. Device Control: Print Console 4.x
9. Bootp File: Use Browse (…) button to locate the file; typically located in C:\Creo\Firmware\ or D:\Creo\Firmware\. (this should be set automatically, but look out for any situation where you need to set it manually).
10. Ensure that the entry in the CreoBootp.ini file (e.g. [GMCE0]) matches the logical unit number of the GMCE board. If you are not sure, try [GMCE0]. If you edit the file, restart the bootp server (e.g. using the CBootP_Restart.Cmd script in c:\Creo\Firmware), and then reset the GMCE.
11. Create Serial connection: Unchecked

You should now be able to communicate with the GMCE via Service Shell. If this does not work, check the GMCE core release notes for more info and troubleshooting tips.

4.3 Plugging in the GMCE

At this point you can plug in the ethernet cable between the workstation and the GMCE board. You should be able to talk to the GMCE using the monitor applet in Service Shell and issue basic commands. The board may be in boot mode at this point ("GBoot" prompt).

4.3.1 Download the core firmware and Xilinx

If you did not install the core firmware and Xilinx, then re-run the core firmware installer to install these components.

4.3.2 USB ASCII Diagnostic Connection

This section is an optional additional step and is only required for advanced debugging and troubleshooting.

1. Install the bootp server (which will install the FTDI USB serial driver).
2. Plug the USB cable from the computer to the GMCE (connector J69 on the GMCE board, located below the Ethernet connector). When Windows asks you for the driver, tell it to use the FTDI_Driver folder installed with the bootp server (for example, \Creo\Firmware\GMCECore.V1.10\FTDI_Driver). It will install the driver (it may install 2 drivers – this is normal), and probably ask you to reboot.
3. After rebooting (if necessary), determine which virtual COM port is being used for the USB port: Control Panel>System>Hardware Tab>Device Manager>Ports (COM & LPT). Set up this port in the Service Host GMCE configuration wizard, under GMCE System, Create serial port.

Note: This port disappears from your system if the GMCE USB serial cable is not plugged in. The driver can only be installed after you have connected to a GMCE board.

4.3.3 GMCE 5981 Product Firmware

Run the GMCE (Magnus) product firmware installer from the Controlled Release sub-directory \Firmware\Thermal_MCE\MCE Main\ to <drive>\Creo\Firmware.

The installer will optionally allow you to set the configuration options for the GMCE. If the options are already set on this machine, and/or you are going to put in a new NVS file, you can (and should) skip this step.

The installer will automatically reset the GMCE; when the GMCE reboots, it will automatically connect to the bootp server in order to download product firmware and NVS. Need to specify how to verify this. It should also connect to the CFL Server and establish a license—this can be verified by typing `>>license` at the GMCE command prompt.

The product firmware installer includes a utility which can convert a NVS backup (RAM parameters) from an MCE (TMCE) board to a GMCE NVS file. The parameters can be converted as follows:

1. Copy the MCE binary NVS RAM file (typically the filename ends with _ram.nvsbin) to the product firmware directory (for example, \Creo\Firmware\Magnus VLF GMCE 1.14.xx).
2. Open a DOS command prompt and change to the above-mentioned product firmware directory.
3. Run the utility. You can type `>>nvsconvert` to display the help, or simply type `>>nvsconvert <MCE binary nvs RAM filename>` for the most common usage.
4. Copy the converted NVS file (for example, GMCENVS00.bin) to the \Creo\Firmware directory. Reset the GMCE. The bootp server will automatically pick up the new NVS values and download them to the GMCE.

The following parameters are not part of the GMCE NVS file, and thus they will not be migrated. You will need to type them in manually based on text backup from the original MCE parameters:

- set debris
- set prd SerialNumber
- set prd CustomerName
- set prd CanBaud

This is planned to be fixed in future – see OD PR 9704.

4.4 Installing the TH3 Head Firmware

The TH3 firmware is in the controlled release CD sub-directory \Firmware\Thermal3_Head.

You can simply run the head firmware installer – this loads the firmware for you.

4.5 Installing the DCAPI Server

This is only required for Print Console 4.3 or greater. It should not be installed if you are using Print Console 4.1 or 4.2. Simply run the DCAPI Server installer – the options are self-explanatory and can usually be left at the default values.

The DCAPI Server will install the Statistic Event Manager and Log Manager. If you are not installing the DCAPI Server, then you will need to install these components manually. This can be done as follows:

1. Locate the required components—these can be found in the directory \LogManagerEtc on the controlled release CD or network directory.
2. Copy LogManager.exe, StatisticEventManager.exe, and yohoConnector.properties to the \ServiceShell\bin\ directory.
3. Make a backup copy of the file LaunchServiceHost.inf in the \ServiceShell\bin directory. Then copy the LaunchServiceHost.inf file from the \LogManagerEtc directory, overwriting the original file.

4. Create directories for the log files; recommended locations to be compatible with Print Console 4.3 are:

   \Creo\PrintConsole4\Log and

   \Creo\PrintConsole4\EventLog

5. Use regedit to create corresponding registry keys, and set them to the corresponding directory names that you chose in the step above. The names of the registry keys are as follows:

   HKLM\Software\Creo\StatisticEventManager, key name StatEventLogFilePath

   HKLM\Software\Creo\LogManager, key name LogFilePath

   (note that these keys will be automatically created the first time the log servers run).

4.6 Installing Print Console 4.x

The installer for Print Console 4 is in the Controlled Release sub-directory \PrintConsole.

Note: Print Console 3 will not work with a GMCE system.

Print Console 4 can be safely installed on a Print Console 3 system. You will need to disable any auto-startup of Print Console 3 so they don't both try to run at the same time. It is also recommended to remove Print Console3 icons from the desktop and the Start/programs menu, in order to avoid accidental startup of Print Console 3.

Note: Do not uninstall Print Console 3 after installing Print Console 4 (at the current time, there is a bug which causes the Print Console 3 un-installer to damage the Print Console 4 installation).

If you are migrating from a Print Console 3 system, you will need to finish migrating the Print Console settings (possibly including the Evo settings). This functionality will be available partway through the Controlled Release 3 test cycle.

4.7 Configuring Prinergy

Consult the Prinergy installation documentation to install Prinergy on the workstation.

It should be noted that Prinergy uses the Path environment variable to determine where to load the GDAPI DLL. It is important that Prinergy loads the correct (Print Console 4) version of this DLL – especially on systems upgraded from Print Console 3 where there could be mismatch in the version of GDAPI DLL (accidentally loading the Print Console 3 version will cause every Prinergy image to hang forever).

In order to fix the problem, modify the Path variable as follows:

1. Go to My Computer>Properties>Advanced tab>Environment Variables and select the **Path** system variable.

2. Scroll to the beginning of the Path variable, and add the Print Console 4 bin directory (e.g. D:\Creo\PrintConsole4\bin, including semicolon to separate it from the next entry in the Path). Be careful not to make any other changes to the Path variable.

3. Save your changes and restart the Prinergy server.

In the future this will be fixed in the installer so this does not have to be done manually.

4.8 Configuring Prinergy Evo and TIFF Downloader

Print Console 4 does not include a TIFF Downloader. TIFF downloading functions are provided by Prinergy Evo. This section only applies to installations which require TIFF Downloading functionality.

Note that Prinergy Evo is not actually part of the controlled release; this section is included to help ease the transition of TIFF Downloading functions from Print Console 3 to Prinergy Evo. An applications specialist should typically be involved if the installation will involve more than Evo TIFF Downloader with a basic setup.

The installer for Prinergy Evo is available in the Controlled Release sub-directory \PrinergyEvo. There is both a client and a server installation. The server must be installed on the Print Console machine. The client can be installed on any machine on the network (clarify the number of client licenses), and can remotely connect to the server. There is also a Mac client but it is not included in this installation package -- this should be done by Prinergy Evo workflow specialists.

The Evo installer will ask you for account information for the Evo service. You should type in the desired Windows account username (e.g. creo) and password. After installing Prinergy Evo, install the Evo license keys. These should be supplied by the installation planner.

5. APPENDIX

This section contains miscellaneous notes, troubleshooting info, and issues pertaining to previous interim releases.

Previous versions of the CFL installer also required you to install Dot-Net SP1. Microsoft recommends that you download this from the Microsoft website at http://www.microsoft.com/downloads/details.aspx?FamilyID=A8F5654F-088E-40B2-BBDB-A83353618B38&displaylang=en .

Previous versions of CFL and DCAPI required you to edit the Hosts file as follows:

- Temporary: edit the **hosts** file (in \WINDOWS\system32\drivers\etc), and add the following line:

  <ip address> mce (substitute the real ip address. This must match the (specify which) entry in the bootp.ini file; the default is 192.168.100.193).

- Workaround for old versions of GMCE core firmware: If using the Intel PRO 1000 MT Desktop adapter, then the Interrupt Moderation Range has to be set to **Extreme** to prevent retrace. This field is found in the Performance Options>Properties>Interrupt Moderation Range>Advanced tab. Failure to do so will cause frequent retraces (every other swath). Note: this is no longer recommended.

- PSRM registry values which are now setup by the Service Shell installer:

Check the registry key value:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\AFD\Parameters \ FastSendDatagramThreshold. The value must be 10000 (or 2710 HEX). This key should be set when installing Service Shell. If not, perform the following steps to set it up.

1. Add a registry key:
   HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\AFD\Parameters by running the registry editor regedt32 from the command prompt.
2. Add a new REG_DWORD value FastSendDatagramThreshold under the created key and set its value to 10000. Save the registry.
3. Restart the workstation computer.