

Using the TWCONFIG Utility

By Citrix Consulting Services

Citrix Systems, Inc.



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	Syed Ali, Jason Olenick	Version 1.0



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Overview

This white paper explains how to effectively use the TWCONFIG utility.

Use the TWCONFIG.exe utility installed with MetaFrame 1.8, Feature Release 1 to administer graphics resolution settings through ICA connections. This utility is installed in the MetaFrame server's system32 directory. TWCONFIG allows you to configure ICA display settings for graphics performance on a per-client connection basis.

Use the TWCONFIG utility to configure the following graphics settings for ICA connections:

- Discard redundant graphics operations
- Use improved bitmap caching method
- Use ThinWire 1 for compatibility in supported modes
- Set the maximum memory allotted per ICA connection to the server for graphic resolution and color
- Degrade either resolution or color (set in the client ICA connection) when the maximum memory limitation has been reached
- Notify the user that the video mode has been adjusted in the case that color or resolution has been degraded
- Reset settings to default values

Using the TWCONFIG utility

The TWCONFIG.exe utility is used at the command prompt and has the following parameters available for custom configuration:

- TWCONFIG /QUERY
/QUERY - Queries current settings
- TWCONFIG /RESET
/RESET - Resets TWCONFIG to all default values
- TWCONFIG
[/DISCARD:on|off]
/DISCARD:on|off - Discards redundant graphics operations when set to ON. The default value is ON.
[SUPERCACHE:on|off]
/SUPERCACHE:on|off - Uses improved bitmap caching method. The default value is ON.
[/MAXMEM:nnn]
/MAXMEM:nnn - Maximum memory (in bytes) to use for each ICA connection (nnn represents the number of bytes allowed for each session's graphics. For example TWCONFIG /MAXMEM:5000000 represents 5 MB. The minimum is 153600, or 150 KB). The default value is 5760000 = 5.76 MB.
[/DEGRADE:res|color]
/DEGRADE:res|color - When the MAXMEM limit is reached, based on the resolution and color specified in the Properties of the ICA connection, this parameter specifies to degrade either Resolution (res) or Color (color) first to decrease the amount of memory used for the ICA connection to equal or below the maximum memory (MAXMEM) allocated per ICA connection. The default value is RES.

[/NOTIFY:on|off]

/NOTIFY:on|off - Alerts user when MAXMEM limit is reached upon user logon to session. The default value is ON.

A user attempting to establish an ICA connection requiring more memory for graphics than specified in the MAXMEM variable on the server receives the following message:

The following requested video mode is not available: 1600 x 1200 x 8 BPP.

The video mode has been set to the following mode: 1280 x 1024 x 8 BPP.

Video mode restricted by system administrator.

The message above indicates that the resolution was degraded from 1600 x 1200 to 1280 x 1024. In this example, the /DEGRADE parameter was set to RES.

Note: These configuration settings apply only when the ICA connection is established to the published application or server. When the connection is established, settings are not modified for the existing connection.

Formulas and variables

To calculate the memory needed for graphics according to the settings of an ICA connection, use the properties of the ICA connection in the following formula:

$$MEM = oHRES * oVRES * \left(\frac{bpp}{8} \right)$$

To calculate the “set to” horizontal resolution that is determined by the MetaFrame server for an ICA connection, according to the memory specified in the /MAXMEM parameter, use the following formula:

$$nHRES = \sqrt{\frac{oHRES * MEM}{oVRES * \left(\frac{bpp}{8} \right)}}$$

To calculate the “set to” vertical resolution that is determined by the MetaFrame server for an ICA connection, according to the memory specified in the /MAXMEM parameter, use the following formula:

$$nVRES = nHRES * \left(\frac{oVRES}{oHRES} \right)$$

The variables in the formulas listed above are defined in the following table:

Variable	Description
<i>bpp</i>	Bits per pixel (see following table for values based upon client color settings)
<i>MEM</i>	The memory in bytes, used in the /MAXMEM parameter in TWCONFIG.
<i>nHRES</i>	The new horizontal resolution also referred to as the “set to” horizontal resolution. This is the actual horizontal resolution seen in the ICA session.
<i>oHRES</i>	The old horizontal resolution also referred to as the “requested” horizontal resolution. This is the horizontal resolution selected in the ICA Options tab.
<i>nVRES</i>	The new vertical resolution also referred to as the “set to” vertical resolution. This is the actual vertical resolution seen in the ICA session.
<i>oVRES</i>	The old vertical resolution also referred to as the “requested” vertical resolution. This is the vertical resolution selected in the ICA Options tab.

The values of bpp are listed the following table:

Client Setting	BPP
16 color	4
256 color	8
High Color	16
True Color	24

For example, if the ICA connection's properties specified a Window Size of 1600 x 1200 with 256 colors, the memory used for the connection = $(1600 \times 1200 \times 8) / 8 = 1920000 = 1.92 \text{ MB}$. Use this calculation to determine an appropriate MAXMEM value.



6400 NW 6th Way

Fort Lauderdale, FL 33309

954-267-3000

<http://www.citrix.com>



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