XPression™ Automation Gateway By Rascular®: Installation, Configuration, and Operation

The XPression Automation Gateway is a Windows® application which runs on the same PC as the XPression studio software. It communicates with XPression via the COM SDK, while receiving incoming commands from TCP/IP or serial ports using the Oxtel Imagestore Protocol.

This provides the following advantages:

- The XPression system can be controlled remotely without Distributed COM
- The Oxtel protocol is more powerful and expressive than Chyron CII
- The Oxtel protocol is widely supported by Broadcast Automation systems

Installation

The XPression Automation Gateway is supplied as a standard Windows program and must be installed directly on the same PC as XPression. Because the XPression Automation Gateway uses the XPression COM SDK, it requires either XPression Studio or XPression BlueBox.

The XPression Automation Gateway will work with any Windows-compatible COM ports installed on the system, including virtual COM ports and COM port redirectors.

To install the XPression Automation Gateway, run the XPression Automation Gateway installer application. You will be presented with a series of screens to confirm your acceptance of the EULA and offering you a choice for alternative installation locations.

You will have received a license file from Ross Video, usually called **XAG.lice**. This is normally emailed or provided on a separate CD to the main application software.

To install the license, place this file in the same directory as your copy of the XPression Automation Gateway. This is typically `C:\Program Files\Ross Video\XPression Automation Gateway`. You can tell if your version is correctly licensed from the **About Box**, which will display license information. If you have a temporary license installed, the expiry date will be shown.

Moving Licenses to Other PCs

XPression Automation Gateway licenses may be node-locked to a specific IP address. If you need to move these licenses to another XPression system, you will require a new license file.

Upgrading Software

If you install a newer version of the XPression Automation Gateway on top of an earlier version, all your licensing details will be preserved.

Configuration

When started, the XPression Automation Gateway will accept incoming Oxtel format Automation commands on TCP port 5006. Your firewall software will need to be configured to allow the XPression Automation Gateway to accept sessions on this port. Multiple simultaneous sessions are supported, and tallies are broadcast to all connected sessions that have enabled them.

As well as TCP sessions, the XPression Automation Gateway will accept serial connections on any number of serial ports. To select which serial ports are to be used, choose items from the **Ports** menu. This menu will automatically display all installed serial ports, including virtual ports and COM port redirectors. Serial port settings default to 38400 baud, 1 stop, no parity, but can be changed by editing the .INI file in V1.1.1 and later.

The .INI File

XPression Automation Gateway .INI files are used to hold configuration settings for the program. The normal location for this file on Windows 7 is:

```
C:\Users\<user>\AppData\Roaming\Ross Video\XPression Automation Gateway
```

- `<user>` is replaced with the name of the currently logged in user.

These .INI files are created and modified by the application to reflect changes to the configuration made by the GUI. They can also be edited manually for configuration changes that are not available from the GUI:

```
[MAIN]
Maximized=0
Left=2759
Top=788
Width=664
Height=449

[ScreenSetup]
TopSplit=123

[TCP]
AutomationPort=5016
OxSoxPort=5001

[XPression]
FrameBuffer=1

[Serial]
BaudRate=38400
Parity=NONE
```

The **Serial** section allows configuration of the serial port parameters. These are shared by all enabled ports.

The **TCP** section allows specification of the port numbers used by the automation and oxsox media management 'servers'. Setting these to zero disables the servers.

The **XPression** section allows the framebuffer associated with the gateway to be changed. Each gateway application controls a single framebuffer.

Specifying a .INI file

The XPression Automation Gateway can also be started with a user-specified .INI file using the '`-i`' command line switch. This is useful for multi-channel systems where multiple instances of the gateway can be started, each controlling a different framebuffer.

```
C:\> XPression Automation Gateway.exe -i MyFile.ini
```

Operation

The XPression Automation Gateway is designed to work without any operator intervention but includes a few debug tools. The eight DSK buttons correspond to the DSK layers 1 to 8. They can be pressed to turn DSKs on and off, and will tally the current state according to automation controls. The text box next to each DSK button will display the name of the currently loaded scene.

The logging window shows a variety of logging and error messages. Right-click inside this window to bring up a log management menu for saving and clearing the log window.

Scenes and Layers Versus Keyers and Logos

An XPression scene equates to a logo or image on an Imagestore. Each XPression layer maps to an Imagestore keyer, and can hold a single image/scene. As there's no Imagestore equivalent to an XPression project, the required project must be loaded manually in advance.

Data Source mapping

This is what happens when text is sent to a named data source:

1. All text objects whose name matches the data source name have their content changed to the new value.
2. Any material whose name matches the data source name have the filename of their first shader changed to the new value.

Supported Commands

The following commands are supported:

Code	Command	Notes
1	Fade Keyer Up/Down	—
3	Cut Keyer Up/Down	—
8	Load Image By Number	Loads a scene whose name matches the number. For example, 99.
A	Erase Store	—
B	Set Transition Duration	—
M	Enquire System Status	—
O	Enquire Image Loaded Status	—
j7	Audio Enquire	—
m0	Set Global Data Source	Updates named text objects and named material shader file.
R0	Load Image By Name	Loads the specified scene.
R3	Enquire File Info	Returns if scene exists.
R6	Enquire Extended File Information	Returns if scene exists.
R7	Preload Image	—
Ra	Image Count	—
S0	Start Animation	—
S1	Stop Animation	—
S2	Set Animation Frame	—
S4	Restart Animation	—
Ua	Enquire Mix Mode	—

Code	Command	Notes
W5	Enquire DVE Preset	Dummy response.
X1	Enquire License Code	Dummy response.
X2	Insert Log Message	—
X3	Enquire Command Availability	—
X5	Enquire Input Color Fields	Dummy response.
X6	Enquire Voltages	Dummy response.
X9	GPI Special	Dummy response.
Y6	Enable Video Tallies	—
Y7	Request Wakeup Packet	—
Y8	Enable Audio Tallies	—
YB	Enable Media Tallies	Dummy response.
Ya	Set Passive Mode	Dummy response.
Z0	Update Text Field	—
Z3	Render Box	—
Za	Enquire Text Box	—
Zb	Enquire Template	Dummy response.

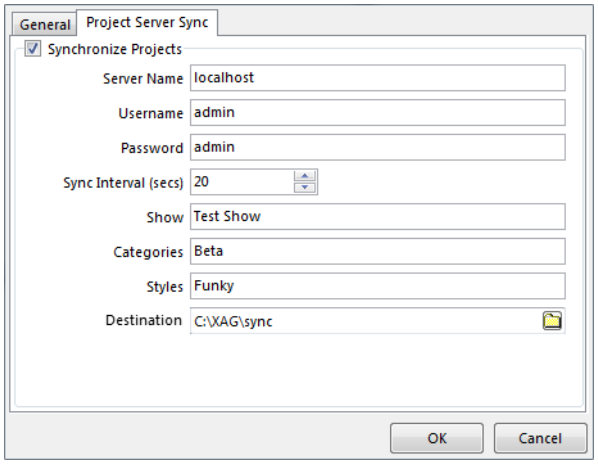
Project Server Integration (v2.0)

Version 2.0 introduces Project Server integration, Datalinq Integration, and UI configuration dialogs.

The XPression Automation Gateway can communicate with the XPression Project Server to automatically deploy new revisions to Xpression engines. The latest revisions of projects are automatically loaded and used when new scenes are requested. Once an older revision project is no longer used on air it is automatically unloaded and deleted from the XPression engine.

Configuration

The gateway configuration dialog allows Project Server integration to be configured.



Server Name — hostname or IP address of the Project Server system.

Username / **Password** — login credentials for the Project Server.

Sync Interval — how often the Project Server is polled for new revisions.

Show — name of the show on the Project Server to be synchronized. Only a single show can be synchronized.

Categories — categories to sync. Multiple categories can be specified by separating them with commas.

Styles — styles to sync. Multiple styles can be specified by separating them with commas.

Destination — folder where projects will be deployed to from the server. Ensure the file system has sufficient space for all required revisions here.

Workflow

Project Server integration is intended to operate in conjunction with systems loading scenes using automation gateway (oxtel) protocol.

The gateway maintains its own table of deployed show revisions. This is recreated when the gateway starts and used in later stages.

Every N seconds, the gateway performs the following tasks:

- **Stage 1: Project Deployment**

  The Project server is queried and the newest show revision with the specified show, category, and style will be downloaded if not already present.

  Revisions are downloaded into a folder constructed from the show and revision names:
  `<destination folder>/<show>/<revision number>`
- **Stage 2: Project Load**

  The latest revision of the show is loaded into the XPression Project Manager if it is not already present.
- **Stage 3: Project Unload and Purge**

  If any earlier revisions of the show are loaded in XPression, and none of their scenes are currently loaded into keyer layers, then they are unloaded from XPression. This only affects project revisions that have been loaded by the gateway. If the project has been loaded manually, the gateway will not unload it.
- **Stage 4: Project Purge**

  Finally, any old revisions which are not loaded in XPression are deleted from disk.

Interactions with Scene Load Commands

Previous gateway versions only supported a single project loaded. Now when a scene is requested the highest revision available is used first. This means that scenes from older revisions will be automatically replaced on air with newer revisions once automation reloads the scene. This in turn means that older project revisions have no active scenes and can then be unloaded and purged automatically by the gateway.

If the scene cannot be located in the newest revision, all other loaded projects are scanned for the scene, including any manually loaded projects.

DataLinq Integration (v2.0)

The XPression Automation Gateway supports DataLinq integration, where a request by automation to load a scene with a particular name format is mapped into a set of DataLinq keys to use with the scene. One of various separator characters can be chosen depending on the automation system capabilities. The following examples use the ‘pipe’ character “|” as the separator.

Example 1: No DataLinq

Automation loads logo **TEST**: gateway will load the scene **TEST**.

Example 2: Single DataLinq

Automation loads logo **TEST|ABC**: gateway will load the scene **TEST** and set the DataLinq key **GATEWAY1** to contain **ABC**.

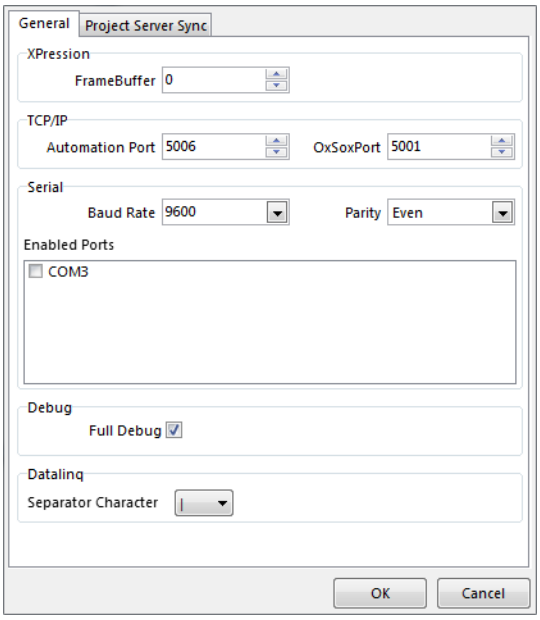
Example 3: Multiple DataLinqs

Automation loads logo **TEST|ABC|666|MONDAY**: gateway will load the scene **TEST** and set the following DataLinq keys:

- **GATEWAY1** to contain **ABC**
- **GATEWAY2** to contain **666**
- **GATEWAY3** to contain **MONDAY**

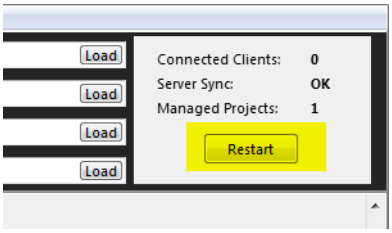
UI Configuration (v2.0)

The gateway now allows configuration settings to be changed directly from the UI, rather than manual editing of the .INI file. Use the **Edit/Configuration** menu to see the settings. Most settings are self-explanatory and relate to settings made in the .INI file in previous versions.



Restarting the Gateway

Previously, the entire gateway application had to be stopped and restarted following any configuration changes. This can now be done within the application. All client connections will be shut down and restarted.



INI File Changes (v2.0)

As version 2.0 introduces some new configuration settings, the .INI file has been extended. A sample of the new INI file is shown below. Older configurations are imported correctly.

```
[MAIN]
Maximized=0
Left=644
Top=122
Width=707
Height=596

[ScreenSetup]
TopSplit=123

[TCP]
AutomationPort=5006
OxSoxPort=5001<

[XPression]
FrameBuffer=0

[Serial]
BaudRate=38400
Parity=NONE

[Debug]
Level=3

[UpstreamDelay]
TimecodeFile=
MilliSeconds=0

[ServerSync]
Server=localhost
Username=admin
Password=admin
Interval=600
Destination=C:\XPression Gateway\
Keywords=
```