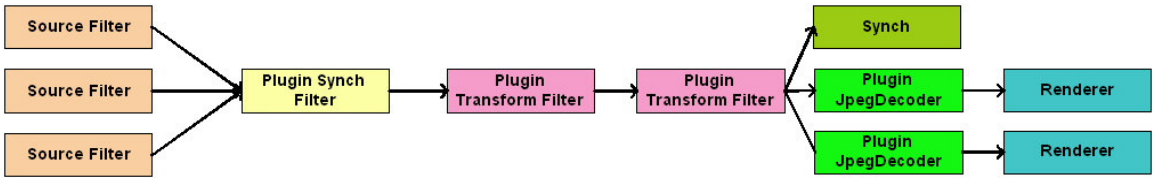
# Coral

Mamigo Coral is a cross-platform media management framework that provides kernel level functions for developers to quickly build video applications. Much like Direct Show, Coral provides a pipeline with modular filters for capturing/sourcing imagery, transforming imagery, and sinking output results for display, recording, or transmission. The framework is well-suited for multi-processor hardware architectures. Coral libraries are available for both Linux and Microsoft operating systems.




*Coral creates a processing pipeline with pluggable filters supporting multiple input and outputs.*

Coral comes pre-built with several useful filters. These include (a) source filters for reading variety of video file formats, interfacing with a variety of analog, Firewire and IP cameras, and filters for receiving control data over IP connections, (b) highly optimized transform filters for decoding and encoding video, format and color conversion, and (c) sink filters for rendering video, writing AVI files or sending output over IP networks. In addition, its Open API, enables developers to create custom plug-in filters to perform application specific video management tasks. Coral is compatible with Intel's Image Processing libraries and OpenCV.

Coral employs a managed streaming model for communicating data between different filters. The data is transmitted through the pipeline using "packets", which eliminates need for data copying between filters. A number of basic packet types such as compressed images, color (interleaved and planar) images, and matrices are in-built. Custom packet types can be readily added as plug-ins. The allocation, movement and de-allocation of the data packets are managed internally by the Coral framework. The packets are allocated from memory pools to control the memory footprint, improve cache performance, and provide a memory-leak-proof architecture.

All filters (in-built and future plug-ins) integrally support threading with input and output queue management, health monitoring and logging. Integrated queuing enables the application to tolerate variability in processing times. The filters integrally support XML based configuration.

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## Feature Summary:

- Modular plug-n-play architecture
- XML based configuration of processing pipeline
- C++ development environment support for Microsoft Visual Studio and Eclipse.
- Integrated memory management, multi-threading, processor affinity assignment, health monitoring and logging.
- Compatible with Intel IPP and OpenCV
- Open-API for custom plug-ins
- Cross-Compatible with Linux and Microsoft operating systems
- Efficient utilization of multi-processor/multi-core hardware architectures

## Baseline Filter Support:

| *Source* | *Transform* | *Sink* | *Control* |
|---|---|---|---|
| File Source | JPEG, JPEG2000, | MJPEG Streaming | IP Control Server |
| Image File Source | MPEG2, MPEG4 | RTSP Streaming | Packet Mux |
| AVI File Source | H.261, H.264 | AVI Writer | |
| RTSP Source | Format Conversion | IP Sink | |
| HTTP Source | Bayer Conversion | HTTP Sink | |
| IP Data Source | Color Conversion | | |

## Advanced Filter Support:

Additional libraries of filters compatible with Coral are available for more advanced image and video processing applications. These include: Motion Detection, Image Fusion, Image Alignment, Face Detection, Multi-resolution Pyramids, Video Stabilization, Color Correction, Image Blending, Mosaicing and View Synthesis

Mamigo can also undertake development of custom filters compatible with Coral.

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