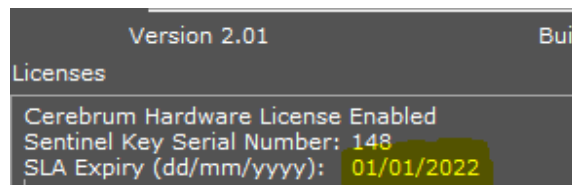


EVS Cerebrum V2.01 Release Update

The latest version of Cerebrum has been released and is now available from the EVS website. This release can be used for upgrading Cerebrum and Cortex installations and the installation of new Cerebrum systems.

There are several benefits to upgrading an existing system to this version and include taking advantage of the improved features for the purchased licensed options, additional and improved third party protocols available and support for all the latest Axon product releases.

Please note that you should only upgrade to this version if the systems support / SLA date is after the 23rd December 2020, to see the support date of your system please go to the About Box of the application and check the SLA Expiry date at the top of the licenses text (see below).



If you would like to extend the SLA on the system or discuss your on-going Cerebrum product support, then please contact your EVS sales representative or member of EVS sales team.

Installation

Before installing this version over a previous released version of the application it is recommended that the Cerebrum SQL data is backed up. This can be achieved by going to the View menu selecting the Engineering option and then selecting the Backup User Tables option and saving the data to a suitably named file and location. Please note this will not back up the log file data, if a full backup is required then please use the SQL Server Management Studio application or take a copy of the database files.

Changes have been made to the SQL database to include the IP Routing configuration, this is backward compatible, but any IP Routing configuration xml files will need the data re-formatting for V2.1.

If you have any doubts on upgrading or downgrading a Cerebrum system, please contact EVS Media Infrastructure support (mi.support@evs.com) ideally before carrying out the change.

IMPORTANT NOTES:

SQL Redundant SQL systems using SQL Server 2016 and 2017 should be updated to the latest update to prevent the possibility of a suspended database.

[Download SQL Server® 2017 for Microsoft® Windows Latest Cumulative Update from Official Microsoft Download Center](#)

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The following changes have been made to the application since the V2.00 release.

IP Routing License

The IP Routing option configuration has now been moved into SQL. Please note that all IP routing configuration from V2.00 will require re-factoring when upgrading the system (contact support for assistance if required). The Configuration options for senders/receivers/SDPs has been moved to a new IP Routing tab in the Tally and Router configuration view. SDP templates and examples have been supplied for different stream types and formats and can be found in the ..\Configuration\SDP Files sub-folder

Support has been added for third party NMS systems, LLDP/ NMS UUID parameters (such as EVS IP Core / Arista MCS / SDNSquare GRID), configuration options for NMS senders/receivers have been added to the system. The status of an IP Router receiver is now created from both the end point configuration and the NMS route when available.

Receivers now support Make Before Break (MBB) and Break Before Make (BBM) functionality when using NMS/SDN applications and have the configuration option to be set to either.

The NMOS IS-04 implementation has been improved and extended to allow Nodes/Devices/Senders/Receivers to have a configured/persistent username when the names from devices are not meaningful or duplicated.

New Cerebrum Service Manager Option

Cerebrum now has a new licensed option to connect either to local or remote Cerebrum service managers. These managers can host one or more services in order to distribute initially the device drivers for the application, this may be desirable to either distribute the processing/memory for the system or to host devices in locations remotely from where the main servers are located.

The Cerebrum Service Manager (Cerebrum Service.exe) can be installed or uninstalled using the supplied batch files. When installed the service will automatically startup when the server is started and will start any protocols added to the device service last time it was run. There is no dependency on a connection to the API and will connect to the server using a protected HTTP and UDP connection like the client C-Link protocol.

The User Interface for the Service Manager can be accessed from the device view of the Cerebrum server. Each licensed server can add the Service managers to the system and then can choose to add devices locally or remote via the connected Service managers.

Note: There are some protocols that cannot be hosted using the Cerebrum service manager, but most routing and generic protocols can. SNMP devices cannot currently be hosted in Device Service, however an SNMP device 'wrapped' as a generic device can.

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New Cerebrum Scheduling Option

This release contains the first release of the Cerebrum scheduling option. A system can be licensed with a number of timelines. Each timeline allows several events to be added to the system which can overlap in time or not as required. Each event has up to six time triggers which are announced to the system and can optionally carry out pre-determined actions added to the event. These six time triggers in sequence order are the start pre-roll, start, start post-roll, stop pre-roll, stop and stop post-roll.

The events can either be defined as a single event or a repeated (hourly, daily, weekly) event with optional stop time/date.

Each timeline can be independently be enabled/disabled (run/paused). When enabled a timeline will carry out any actions associated with the events as they run.

There is a new tab in the Cerebrum device view for the configuration and viewing of the timelines and their events. There are configuration items for how many days events persist historically and events are shown in the future

It is recommended to lock the servers time to NTP when using this option. Time accuracy for these event triggers can only be guaranteed to ~40ms so it is not intended to be used for high accuracy automation tasks.

The next version of the application will extend the license capability to load and save the timeline schedules to/from an external file.

New Cerebrum Watchdog Application

This release sees the introduction of the Cerebrum Watchdog application. This application will monitor if either the server or client application is running and will then attempt to restart the found application IF it stops for any reason. This application was added to the system as the internal applications watchdog will now purposefully exit the application if the memory usage is very high or the internal message queue has stopped for a long period of time.

Application

- **64 bit application builds**

All Cerebrum applications can be supplied as a 64 bit build (by request). The main reason for using these builds would be to extend the amount of memory that the applications can use beyond the 32 bit build limit of ~3.5GB which is required for some medium to large systems. The standard V2.01 installation is still supplied with 32bit builds. V2.2 will be supplied as standard only as a 64bit build and the 32bit build will be available by request.

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- **Manual Server File Synchronisation**

A new operation has been added so that in a redundant system an engineer can choose to manually push the Cerebrum files from the active server to the inactive server, previously the files could be synchronised by using an external file synchronisation application such as Sync Toy and in some cases a customer may prefer to keep this method. Note this is not an automatic or periodic synchronisation of files.

- **Reload CGD option**

The application now has an option to reload the CGD files from the file system when a user has manually edited and added a file to the system, this prevents the need to either failover or restart the application to reload these files.

- **Multiple Routers/Generic devices using the same IP Address**

This new option gets around the current restriction of the system only allowing an IP address to be associated with a single router, a generic device and SNMP device at the same address. This restriction is not normally a problem, but for some devices where the same protocol is used by a single IP address on multiple ports this option can be used to avoid this problem. Routing and generic devices now have a new configuration option to use a “real” IP address configuration. Devices can be added at a pseudo IP address in the system and then their communication (tx/rx) will use the Real IP address configured.

- **Generic Devices Virtual Objects**

Virtual objects can now be manually added to generic devices assigned to a protocol, this allows macros to manipulate ‘real’ protocol objects into a more useable form against the device itself. One example for a use of this is the Axia IP edge device where an object it returns is a combination of the multicast IP address, port and channel count, virtual objects were then created to separate the IP address and port so the device could then be used with the IP Router.

- **Generic Devices Licensing**

A change of licensing for generic devices has been implemented in V2.01. The weighted licensing of a single protocol for generic devices has been capped at 400 GD points, beyond this adding a device using the same protocol only takes 1 GD point. For example, a Panasonic PTZ camera uses 5 GD points, so 80 cameras would take 400 GD points, so 85 cameras would use 405 GD points.

- **New Timeline Control**

Horizontal linear timeline control to support showing events or durations to be displayed in a linear way with optional timescales and display times. The control takes in a CSV of quintuplet data including a UI, start, stop, pre-roll, post-roll time (all should be internal epoch time in ms). The control will then show the appropriate events given the start and stop time of the control encompasses these events. If more than one event overlaps, then the control will split the event bars vertically.

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Cerebrum Macro Language

New Events

Scheduler events

New Actions

Scheduler actions

New Functions

A number of new macro functions have been added in this version. A precis of the new functions is shown below. The example UI's supplied with the application give an example for each function available in the system, the designer will list all the functions available in the current version.

CSV Functions:

Get differences:	Compares two csv lists and gets different elements
Get common elements:	Compares two csv lists and gets common elements
Filter list:	Uses a RegEx filter to filter a list and returns matching list items.

Datastore functions:

Path exists:	Returns true if the element or attribute exists
Sort:	Sorts an XML element list based on up to three attributes
Attribute List:	Returns a list of attribute fields from the given element
Attribute Values:	Returns a list of attribute values from the given element
Element List:	Returns a list of element names from the given path
Element Attribute Values:	Returns a list of attribute values from any element within the given path

String Functions:

Set json object:	When input conforms to a json structure, sets object value
Delete json object:	When input conforms to a json structure, deletes object value
Retrieve json object:	When input conforms to a json structure, lists object values
Set Character in pos:	Sets specific character at a position in the string
Get Character in pos:	Returns the character at a position in the string

Maths Functions:

Log, Log10:	Log functions
Exp and Power:	Anti-log functions

Python Function:

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Run Script: Allows a .py script to be run with up to 10 arguments and will return a single value

Signal Path Functions:

get linked destination: Function to get linked destination from a source for re-entrant or cabled devices

get linked receiver: Function for IP devices which returns the associated receiver from a source

IP Sender get fed by: Function for IP devices which returns the associated destination from an IP sender

Timeline functions:

These functions manipulate a csv list of quintuplet fields that are treated in the system as a list of events and are commonly used in connection with the new timeline control. The timeline functions assume data is in the following format:

```
<UID>|<START>|<STOP>|<PRE-ROLL>|<POST-ROLL>,  
<UID>|<START>|<STOP>|<PRE-ROLL>|<POST-ROLL>,
```

Add: Adds an event to the list, sorted on start time
Delete: Deletes an event from the list based on its UID
Modify: Modifies an event from the list based on its UID
InUse: Will return true if there is an event at this time
IsFree: Will return true if there is not an event at this time

Variable Datastore Functions:

A duplicate of all the existing local/global datastore functions are now present in the system and will work in the same way but expect the XML formatted data structure to be in the contents of a variable. Please note that these functions are only designed to work with Local / Panel / Row/Column variables – (there is intentionally no support for View/Application/Global/For loop variables).

This allows structured data to be manipulated in memory perhaps before setting it in a datastore element/path. As they are held in memory, they are more efficient than datastores but of course volatile.

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Routing Option

- Router grid
 - Can now select and control multiple levels to switch
 - Optionally can show alternate mnemonics
 - RegEx used on the filtering of the grid sources/destinations
 - Display of Invalid Route support
- Routemaster level can drive an 'n-n' (tally) destination - as a 1-N mode destination - Allows Riedel Intercom routing to be directly controlled
- Virtual Router - new 1-1 mode support, last one wins
- Routemaster RegEx Search/Find windows for Source/Destinations
- Jupiter ASCII - allows an all level crosspoint take
- GV NV00017 - allows an all level take crosspoint command / supports extended mnemonics (support for GV Orbit)
- Quartz RCP-01 protocol max size extended to 65K
- Leitch Passthrough - handles echo mode being turned on
- Snell SWP08 - option to ignore checksum on server TCP interface - a difference of opinion from another control system vendor.

Tally and Mnemonic Management Option

- New Virtual Routed GPI device - can be used for Joystick overrides where GPIs need to be routed to Virtual GPI's
- GPIO Router Devices 1-1 blocking and non-blocking modes added
- New UMD Mode - Destination Mnemonic / Routed Source Tally

SNMP Option

- SNMP Walk now has option to directly save to a file
- SNMP dynamic tables would grow over time when using traps as there is no notification for a entry to be removed, for correct size to be maintained poll for the OIDs required periodically

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New / Improved Device API's

- ACP2 support of dynamic object attributes (like r/w access specifiers)
- Andrew APC100 Antenna controller
- Arista MCS - first pass
- Arkona / Lawo v_Matrix native API
- Dante - NC (no connection) source added for disconnecting a receiver
- Direct Montone.42 - stream label/status added
- Ember+ support for BES format - will create IP senders/receivers on creation of CGD
- EVS Overcam
- EVS XT Server - LinX API
- EVS X ONE Server Tally / BFE Tally link
- GV K Frame CPL SDK – IP routing / Keyer transitions / EMEMs / Macros
- GV K Frame Ethernet tally - UMDs added to change engineering and logical names
- GV Kaleido - setKChannel now working
- Harmonic Channelport - Oxtel Automation changes to support this / Audio input profiles added
- Imagine CCS - scalable points implemented / various small fixes
- Imagine SNP Rest API
- Lawo RemoteMNOPL - increased size of GPIOs
- Nevia Virtuoso – RestAPI
- NewTek NDI routing – virtual NDI router
- Oxtel Automation - Audio shuffling / Logo retrieval added
- Panasonic Controller camera selection API
- Panasonic Camera / Controller improvements
 - support for HE42/UE150 cameras, support for RP120/150 (may need firmware change to stop TCP retries to work wel)
 - gain/pedestal improvements, Color Temperature / errors added, pan-tilt absolute corrected.
 - configurable pre/post switch stops
 - supports option to use combined PTS speed commands
- Panasonic AV HS7300 Tally / Routing
- Plura Studio Timer – SPT interface
- Python API driver - allows independent development of Cerebrum APIs
- Raw HTTP device – save data to file / send data from file (XML/json/raw)
- Raw devices can have Cerebrum object types in CGD (GPIOs/UMD/Signal Paths)
- Riedel Artist - V2 driver
 - Configurable xpt volumes to control/monitor
 - Option to poll aliases
 - IFBs index changes
 - Expansion panel, Virtual function, key label and marker support
 - 2 wire I/O changes
- Riedel MuON (Embrionix) Rest API
- Ross Acuity – Uses TSL V5
- Ross openGear - now using scalable points
- Ross Xpression
- RTS AZEdit - IFB special list problem resolved
- SDNsquare Grid – RestAPI – IP routing license required
- Snell Rollcall - improvements (mainly card/frame loss reconnection) 16 bit command improvements, extra slots (17-20) in sub-devices
- SNMP wrapped as a generic device (2GD points)

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- Sony Visca over IP - corrected incorrect payload type
- Stagetec Nexus DSP control and Routing (as GD)
- TAG multiviewer native API – IP routing
- Tektronix Prism API - IP stream / gen settings
- Tallylink V3.1/5 - support for redundancy on both UDP and TCP
 - Rx only option so for a TSL sink rather than bi-directional
 - receive delay - allow sync of tally to delayed video/audio delays
- VizRT MSE RestAPI
- VizRT MSE PbListener API
- Wake on LAN (WoL) protocol added – wake up remote devices (2 GD)

Third Party Hardware Panel Support

Support for CCP-6002B and 8002B panel types
Skaarhoj RCPV2 panel added
Support for Evertz CP3201E and CP2048E panels with S7 firmware

Improvements

- Timed event can now use variables for the time/date - allowing some level of programmability to the event
- Hover tips attribute added on edit / label / button / combo box controls
- Global row/column height/width on repeated row grids
- Macro Event/Action logging improved
- Customised User/Group configuration CLF
- Customised CLF in hardware panel device view
- System view icon shown on virtualised devices (v)
- Internal watchdog, in redundant mode forces a failover when memory usage is very high, or message queue has stopped
- Cerebrum application will exit/quit if the application runs out of memory or if the internal message queue has stopped
- Large (>100K) Routemaster performance improvements
- General HTTP improvements

Form designer

- A new "Find" function has been added in the designer to allow you to search for all occurrences of a string in the current document, useful when
- Set Variable popup allows return on the variable name to close the dialog
- Copy/Paste of templates now supported
- SNMP table values can now be viewed from the System View when connected to the server.
- Function editor selection improvements

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Fixes

- Device status severities on GD devices that change their device name, Riedel MediorNet, Neuron, iControl were not working correctly in V2.00
- Synapse additional CGD files moved to Generic Devices folder
- Drawing speed improvements - will check to see if parameters have changed before refreshing the view
- Sub-Panel size/resize issue resolved
- Option to disable application creating a crash dump - Windows then can create one

Form designer

- Comments added to the script will now work as a child or after else in logic block

Finally

We always value feedback on the applications features so if you would like to see something in the next release of Cerebrum then please contact our Product Management team to let us know.