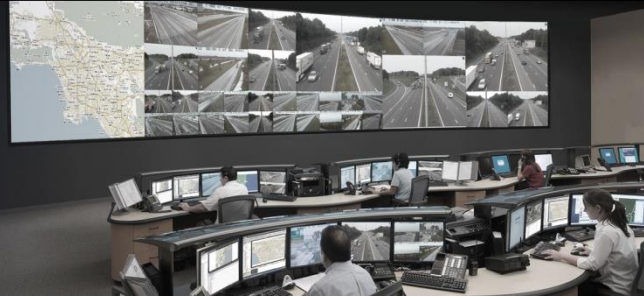


March Networks Command



A Whole World of Integration



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1 Document Versions

Version	Date	Name	Change
1.0	2018-02-08	MK	Document Created.
1.1	2018-10-16	MK	Talk Channel support added, Video Operator Actions section added.
1.2	2018-01-06	GD	Added new Client Cookie Check Interval to CES device properties.

2 Referenced Documents

Document	Version	Description
Driver Project Requirements (DDK-PR)	1.0	The March Networks March Networks CES driver must conform to all the requirements detailed in this document.
Driver Connection and Online States Requirements (DDK-DC)	1.0	The March Networks March Networks CES driver must conform to all requirements in this document detailed in the section: Device Connection and Online States
Driver Video Requirements (DDK-VID)	1.0	The March Networks March Networks CES driver must conform to all requirements in this document detailed in the section: Video

3 Manufacturer

Name March Networks



Website <http://www.marchnetworks.com>

Description March Networks VMS

4 IPSecurityCenter Versions

The driver must be compatible with the following IPSecurityCenter versions:

IPSecurityCenter Version	Supported
DDK 3.5	<input checked="" type="checkbox"/>

5 Operating Systems

5.1 Client Side Functionality

Operating Systems	Supported
Windows 7 64 bit	<input checked="" type="checkbox"/>

5.2 Server Side Functionality

Operating Systems	Supported
Windows Server 2008 R2	<input checked="" type="checkbox"/>
Windows Server 2012	<input checked="" type="checkbox"/>

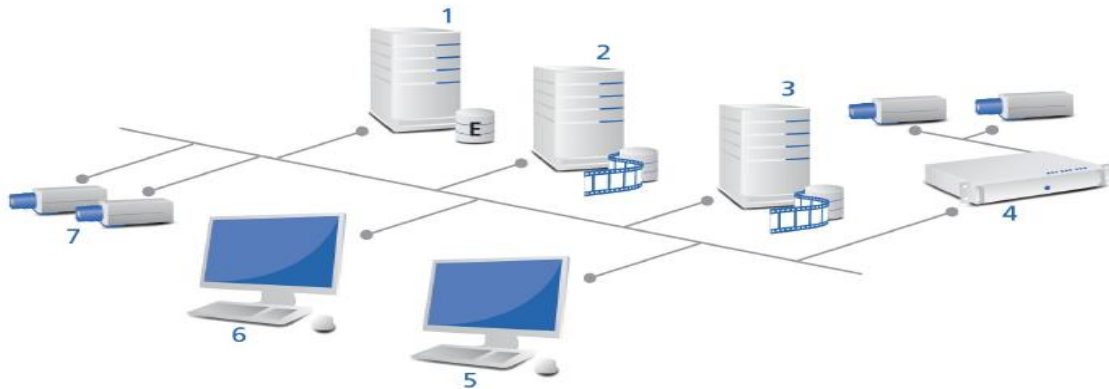
6 Models / Firmware Versions

Model	Versions	SDK
NVR 8000 Series		
NVR 7000 Series		
March CES	Software versions: 2.2.5	2.7.2.19

7 Hardware Configurations

Command Enterprise Solution Diagram

The following illustration identifies the components of Command Enterprise.



Command Enterprise Component Legend

- 1 Enterprise Server Software (including SQL Server)
- 2 Command Recording Server (Primary)
- 3 Command Recording Server (Failover/Redundant)
- 4 March Networks Hybrid Network Video Recorder (NVR) with Analog Cameras and/or IP cameras
 - 8000 Series Hybrid NVR
 - 6000 Series Hybrid NVR
 - 7532 Hybrid NVR (Enterprise only)
 - 3000/4000 Series recorder (Enterprise only)
 - RideSafe GT Series NVR (mobile NVR for transportation)
 - 5000 Series recorder (Enterprise only, mobile recorder for transportation)
- 5 Command Client and Command Config
- 6 Optional SiteManager Software
- 7 IP Edge Devices (Encoders and IP Cameras)

8 Driver Package




The driver package is named: CNL.IPSecurityCenter.Driver.MarchNetworks.Command.Version.
[BUILD-VERSION] .ipscdriver

9 Driver Features

9.1 March Networks CES

9.1.1 Device Connection and Online States

The full requirements for these features can be found in the [Device Connection and Online States Requirements](#)

State	Icon	Meaning
Online		Logged in to CES
Populating Devices		Populating child devices
Failure		Lost connection or cannot log in to CES

9.1.2 Video

This device does not support video.

9.1.3 Properties

General requirements for properties can be found in [Driver Project Requirements](#).

Name	Type	Description	Default Value & Ranges
SSL Support	bool	When set to True uses SSL encrypted connection, otherwise standard HTTP connection is used.	Default: true Min: Max:
SDK Connection Timeout	int	Maximum time interval in seconds to wait for Command SDK to connect.	Default: 20 Min: 5 Max: 120
Last Alarm Time	DateTime	The time of the latest Alarm received. When re-connected to CES, all the Alarms earlier than this time will not be reported.	Default: 3 days back Min: Max:
Last Alert Time	DateTime	The time of the latest Health Alert received. When re-connected to CES, all the Health Alerts earlier than this time will not be reported.	Default: 3 days back Min: Max:
Maximum Historic Alarms	int	Maximum number of historic Alarms to retrieve from CES when connecting.	Default: 50 Min: 10 Max:
Play Before Pausing	int	Time in milliseconds video plays before pausing (without the pause no video is shown when Seeking in Paused mode).	Default: 500 Min: 0 Max:

Load Video Timeout	int	The maximum time in seconds to load a new video stream: if no video is loaded during this time - error message is displayed.	Default: 15 Min: 1 Max:
Keep Alive Interval	int	Time interval in seconds between checking the CES is reachable.	Default: Min: 3 Max:
Connection Reuse Timeout	int	The maximum time in seconds to keep CES connection open after the last video tile was closed and disconnect after that time if no new tiles are open. Set to 0 to disconnect immediately after the last tile closure.	Default: 10 Min: 0 Max:
Device StateUpdate Delay	int	Time delay in milliseconds needed when setting CES device state.	Default: 2000 Min: 1000 Max:
Export Format	MarchVideoFormat	Video format the video footage is exported with.	Default: MP4 Possible values: MP4, CME
Export Frame Width	int	The frame width in pixels of exported video.	Default: 640 Min: 200 Max:
Export Frame Height	int	The frame height in pixels of exported video.	Default: 480 Min: 200 Max:
Maximum Reconnects	int	Maximum reconnect retries, when the maximum is reached, the device will stop re-connecting and go to Offline state.	Default: 3 Min: 1 Max:
Auto Connect	bool	When set to true, IPSecurityCenter Client will automatically connect to this CES on startup.	Default: True Min: Max:
Client Cookie Check Interval	int	IPSC client connects to March CES using a cookie obtained by the server login. IPSC client cannot connect to March CES if IPSC does not have a cookie available. Interval (in seconds) at which client will check for server cookie availability in order to attempt reconnection to March CES.	Default: 5 Min: Max:

9.1.4 Methods

General requirements for methods can be found in [Driver Project Requirements](#).

9.1.4.1 Handle Alarm

Mark the alarm as handled in CES.

Returns bool.

Performance

The method must complete within 2 seconds.

Parameters

Name	Type	Description	Default Value and Ranges
Alarm Identifier	int	Alarm Identifier	Default: 1 Min: 1 Max:

9.1.4.2 Acknowledge Alarm

Acknowledge the Alarm, so it will be removed from the Alarms list CES.

Returns bool.

Performance

The method must complete within 2 seconds.

Parameters

Name	Type	Description	Default Value and Ranges
Alarm Identifier	int	Alarm Identifier	Default: 1 Min: 1 Max:

9.1.4.3 Close Alert

Close the Health Alert. The Alert will be removed from the Alert list in CES.

Returns bool.

Performance

The method must complete within 2 seconds.

Parameters

Name	Type	Description	Default Value and Ranges
Alert Identifier	int	Alert Identifier	Default: 1 Min: 1 Max:

9.1.5 Events

General requirements for events can be found in [Driver Project Requirements](#).

9.1.5.1 Alarm

Generic alarm.

Performance

The driver must be able to handle 4000 events per hour.

Event Properties

Name	Type	Description
Alarm ID	int	ID of the Alarm.
First Instance Time	DateTime	Time of the first instance of the alarm.
Last Instance Time	DateTime	Last instance time of the Alarm.
Details	string	Description of the alarm circumstances.
IsOpen	bool	True if the Alarm is Open, False otherwise.
Description	string	Alarm type description.
Recorder ID	int	The Recorder ID on which the alarm was triggered.
Channel ID	int	The channel ID on which the alarm was triggered.
Alarm State	CNL.IPSecurityCenter.Driver.MarchNetworks.Command.AlarmStatus	Shows whether the Alarm was created, updated or deleted.
Alarm State	CNL.IPSecurityCenter.Driver.MarchNetworks.CommandApi.MarchAlarmState	Current alarm state.

9.1.5.2 Health Alert

Health alert, fired when there is a CES alert or an alert on device which is not found in IPSC.

Performance

The driver must be able to handle 4000 events per hour.

Event Properties



Name	Type	Description
ID	int	ID of the alert.

Last Instance Time	DateTime	Last instance time of the Alarm.
Count	int	Number of alerts of this type.
Resolved Time	DateTime	The time the alert was resolved.
State	CNL.IPSecurityCenter.Driver. MarchNetworks.CommandA pi.AlertState	The Alert state.
Category	CNL.IPSecurityCenter.Driver. MarchNetworks.CommandA pi.AlertCategory	The alert category.
Alert Name	string	Description of the alert.
Recorder ID	int	Recorder ID, will be set to 0 for CES Alerts.
Channel ID	int	The channel ID, will be set to 0 for CES Alerts.
Switch ID	int	The switch ID, will be set to 0 for CES/CRS Alerts.
Threshold Duration Count	long	Total count of duration threshold crossed.
Threshold Frequency Count	long	Total count of frequency threshold crossed.
Extra Information	string	List of name-value pairs in format: name1:value1,name2:value2, etc
Device Name	string	Device on which the alert is raised - this can be a recorder name, camera name or a peripheral name depending on the alert type.
Type	CNL.IPSecurityCenter.Driver. MarchNetworks.CommandA pi.CesAlertType	The alert type.

9.2 March Networks Camera

9.2.1 Device Connection and Online States

The full requirements for these features can be found in the [Device Connection and Online States Requirements](#)

State	Icon	Meaning
Online		Camera is online
Disconnected		Camera is disconnected

9.2.2 Video

The full requirements for these features can be found in the [Driver Video Requirements](#).

Feature	
VID1.0 Camera Population	<input checked="" type="checkbox"/> None
VID2.0 Live Video	
VID2.1 Display Live Video	<input checked="" type="checkbox"/>
VID2.2 Snapshot	<input checked="" type="checkbox"/>
VID2.3 PTZ	<input checked="" type="checkbox"/>
VID2.4 Set Preset	<input type="checkbox"/>
VID2.5 Get Preset	<input type="checkbox"/>
VID3.0 Recorded Video	
VID3.1 Display Recorded Video	<input checked="" type="checkbox"/>
VID3.2 Seek	<input checked="" type="checkbox"/>
VID3.3 Pause	<input checked="" type="checkbox"/>
VID3.4 Snapshot	<input checked="" type="checkbox"/>
VID3.5 Fast Forward/Rewind	<input checked="" type="checkbox"/> <i>Play Speeds:</i> -32,-16,-8,-4,-2,-1 1,2,4,8,16,32
VID3.6 Slow Motion	<input checked="" type="checkbox"/> <i>Play Speeds:</i> 1
	Implemented as Next Frame Video Operator Action
VID3.7 Time Bar Population	None

VID4.0 Video Export



VID5.0 Web Client Support



9.2.3 Properties

General requirements for properties can be found in [Driver Project Requirements](#).

Name	Type	Description	Default Value & Ranges
Id	int	ID	Default: Min: Max:
Recorder ID	int	The recorder ID	Default: Min: Max:
Default Video Resolution	CNL.IPSecurityCenter.Driver.MarchNetworks.CommandApi.VideoResolution	The video resolution which will be used by default unless set differently in the video tile menu.	Default: High Possible values: High, Medium, Low
Talk Channel	CommandApi.TalkChannelInfo	CES Talk Channel associated with the camera. Used to configure <i>Toggle Talk Channel</i> Video Operator Action. Press “...” button to select from the available channels list.	Default: none
Retry Timeout (seconds)	int	This property is used to wait for errors upon losing camera feed and trying to re-display. Enter seconds	Default: 10

9.2.4 Methods

General requirements for methods can be found in [Driver Project Requirements](#).

9.2.5 Events

General requirements for events can be found in [Driver Project Requirements](#).

9.2.5.1 Analytics Alarm

Video analytics alarm

Performance

The driver must be able to handle 4000 events per hour.

Event Properties

Name	Type	Description
Alarm ID	int	ID of the Alarm.

First Instance Time	DateTime	Time of the first instance of the alarm.
Last Instance Time	DateTime	Last instance time of the Alarm.
Details	string	Description of the alarm circumstances.
IsOpen	bool	True if the Alarm is Open, False otherwise.
Type	CNL.IPSecurityCenter.Driver.MarchNetworks.CommandApi.AnalyticsAlarmTypes.AnalyticsAlarmType	Alarm type.
Description	string	Alarm type description.
Alarm State	AlarmStatus	Shows whether the Alarm was created, updated or deleted.
Alarm State	CNL.IPSecurityCenter.Driver.MarchNetworks.CommandApi.MarchAlarmState	Current alarm state.

9.2.5.2 Health Alert

Health alert.

Performance

The driver must be able to handle 4000 events per hour.

Event Properties





Name	Type	Description
ID	int	ID of the alert.
Last Instance Time	DateTime	Last instance time of the Alarm.
Count	int	Number of alerts of this type.
Resolved Time	DateTime	The time the alert was resolved.
State	CNL.IPSecurityCenter.Driver.MarchNetworks.CommandApi.AlertState	The Alert state.
Category	CNL.IPSecurityCenter.Driver.MarchNetworks.CommandApi.AlertCategory	The alert category.
Alert Name	string	Description of the alert.
Threshold Duration Count	long	Total count of duration threshold crossed.

Threshold Frequency Count	long	Total count of frequency threshold crossed.
Extra Information	string	List of name-value pairs in format: name1:value1,name2:value2, etc
Type	CNL.IPSecurityCenter.Driver.March Networks.CommandApi.CameraAlertType	The alert type.

9.3 March Networks Alarm Source

9.3.1 Device Connection and Online States

The full requirements for these features can be found in the [Device Connection and Online States Requirements](#)

State	Icon	Meaning
Active		Alarm Source is On (an Alarm is in progress)
Inactive		Alarm state is Off (no Alarms in progress)
Disabled		Alarm Source disabled
Not Ready		Alarm Source not ready

9.3.2 Video

This device does not support video.

9.3.3 Properties

General requirements for properties can be found in [Driver Project Requirements](#).

Name	Type	Description	Default Value & Ranges
Id	int	ID	Default: Min: Max:
Recorder ID	int	The recorder ID	Default: Min: Max:

9.3.4 Methods

General requirements for methods can be found in [Driver Project Requirements](#).

9.3.5 Events

General requirements for events can be found in [Driver Project Requirements](#).

9.3.5.1 Physical Alarm

Alarm on a physical input device.

Performance

The driver must be able to handle 4000 events per hour.







Event Properties

Name	Type	Description
Alarm ID	int	ID of the Alarm.
First Instance Time	DateTime	Time of the first instance of the alarm.
Last Instance Time	DateTime	Last instance time of the Alarm.
Details	string	Description of the alarm circumstances.
IsOpen	bool	Is the Alarm open.
Type	CNL.IPSecurityCenter.Driver. MarchNetworks.CommandApi .PhysicalAlarmTypes.PhysicalA larmType	Alarm type.
Description	string	Alarm type description.
Alarm State	CNL.IPSecurityCenter.Driver. MarchNetworks.Command.AI armStatus	Shows whether the Alarm was created, updated or deleted.
Alarm State	CNL.IPSecurityCenter.Driver. MarchNetworks.CommandApi .MarchAlarmState	Current alarm state.

9.4 March Networks Switch

9.4.1 Device Connection and Online States

The full requirements for these features can be found in the [Device Connection and Online States Requirements](#)

State	Icon	Meaning
On		Switch is On (Manual or Auto)
Off		Switch is Off (Manual or Auto)
Disabled		Switch is disabled
Disconnected		Switch is disconnected
Not Ready		Switch is not ready
Unknown		Switch state is unknown

9.4.2 Video

This device does not support video.

9.4.3 Properties

General requirements for properties can be found in [Driver Project Requirements](#).


Name	Type	Description	Default Value & Ranges
Id	int	ID	Default: Min: Max:
Reorder ID	int	The recorder ID	Default: Min: Max:

9.4.4 Methods

General requirements for methods can be found in [Driver Project Requirements](#).

9.4.4.1 Activate

Sets the Switch to Manual On state.

This method is exposed as an Operator Action:  **Activate**


Returns True if the Activate command is successfully sent to CES, False otherwise.

Performance

The method usually completes within 2 seconds, the Switch state changes within about 5 seconds.

9.4.4.2 *Deactivate*

Sets the Switch to Manual Off state.

This method is exposed as an Operator Action:  Deactivate

Returns True if the Deactivate command is successfully sent to CES, False otherwise.

Performance

The method usually completes within 2 seconds, the Switch state changes within about 5 seconds.

9.4.5 Events

General requirements for events can be found in [Driver Project Requirements](#).

9.4.5.1 Health Alert

Health alert.

Performance

The driver must be able to handle 4000 events per hour.



Event Properties

Name	Type	Description
ID	int	ID of the alert.
Last Instance Time	DateTime	Last instance time of the Alarm.
Count	int	Number of alerts of this type.
Resolved Time	DateTime	The time the alert was resolved.
State	CNL.IPSecurityCenter.Driver.MarchNetworks.CommandApi.AlertState	The Alert state.
Category	CNL.IPSecurityCenter.Driver.MarchNetworks.CommandApi.AlertCategory	The alert category.
Alert Name	string	Description of the alert.
Threshold Duration Count	long	Total count of duration threshold crossed.
Threshold Frequency Count	long	Total count of frequency threshold crossed.
Extra Information	string	List of name-value pairs in format: name1:value1,name2:value2, etc

9.5 March Networks CRS

9.5.1 Device Connection and Online States

The full requirements for these features can be found in the [Device Connection and Online States Requirements](#)

State	Icon	Meaning
Online		Recorder is online
Disconnected		Recorder is disconnected

9.5.2 Video

This device does not support video.

9.5.3 Properties

General requirements for properties can be found in [Driver Project Requirements](#).

Name	Type	Description	Default Value & Ranges
ID	int	ID	Default: Min: Max:
Recorder ID	string	The recorder name	Default: Min: Max:
Model	string	The recorder model	Default: Min: Max:

9.5.4 Methods

General requirements for methods can be found in [Driver Project Requirements](#).

9.5.5 Events

General requirements for events can be found in [Driver Project Requirements](#).

9.5.5.1 Health Alert

Health alert.

Performance

The driver must be able to handle 4000 events per hour.

Event Properties

Name	Type	Description
ID	int	ID of the alert.
Last Instance Time	DateTime	Last instance time of the Alarm.
Count	int	Number of alerts of this type.
Resolved Time	DateTime	The time the alert was resolved.
State	CNL.IPSecurityCenter.Driver. MarchNetworks. CommandApi.AlertState	The Alert state.
Category	CNL.IPSecurityCenter.Driver. MarchNetworks. CommandApi.AlertCategory	The alert category.
Alert Name	string	Description of the alert.
Threshold Duration Count	long	Total count of duration threshold crossed.
Threshold Frequency Count	long	Total count of frequency threshold crossed.
Extra Information	string	List of name-value pairs in format: name1:value1,name2:value2, etc
Device Name	string	Device on which the alert is raised - this can be a recorder name, camera name or a peripheral name depending on the alert type.
Type	CNL.IPSecurityCenter.Driver. MarchNetworks. CommandApi.RecorderAlert Type	The alert type.
Channel ID	int	The channel ID, will be set to 0 for CRS Alerts.

Switch ID	int	The switch ID, will be set to 0 for CRS Alerts.
------------------	-----	---

9.5.5.2 Recorder Alarm

Recorder Alarm

Performance

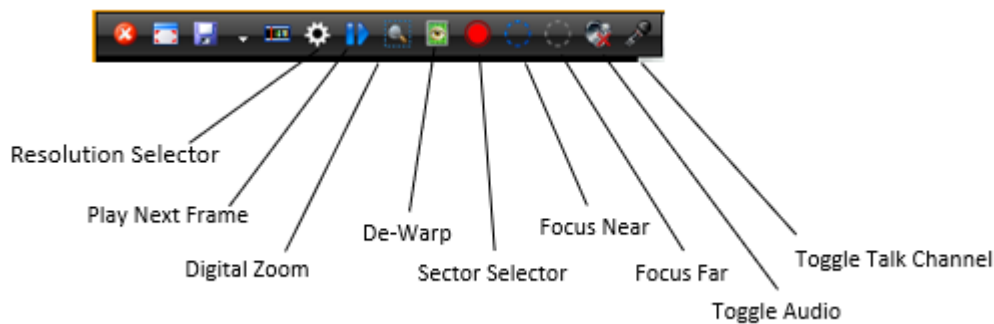
The driver must be able to handle 4000 events per hour.

Event Properties

Name	Type	Description
Alarm ID	int	ID of the Alarm.
First Instance Time	DateTime	Time of the first instance of the alarm.
Last Instance Time	DateTime	Last instance time of the Alarm.
Details	string	Description of the alarm circumstances.
IsOpen	bool	True if the Alarm is Open, False otherwise.
Description	string	Alarm type description.
Alarm State	CNL.IPSecurityCenter.Driver.MarchNetworks.Command.AlarmStatus	Shows whether the Alarm was created, updated or deleted.
Alarm State	CNL.IPSecurityCenter.Driver.MarchNetworks.CommandApi.MarchAlarmState	Current alarm state.
Channel ID	int	The channel ID, will be set to 0 if this is not a channel alarm.

9.6 Video Operator Actions

The following operations are available in the video tile when a camera is displayed (in addition to the standard buttons of Close, Full Screen, Save Screenshot and Playback):



Operation Action	Mode Available	Meaning
Resolution Selector	Live	Select video stream quality
Play Next Frame	Playback	Play the next frame on paused playback
Digital Zoom	Live and Playback	Toggle Digital Zoom mode
De-Warp	Live and Playback	Toggle De-Warp mode on 360° cameras
Sector Selector	Playback	Select recording sector to search playback footage on
Focus Near	Live	Focus near on PTZ cameras
Focus Far	Live	Focus far on PTZ cameras
Toggle Audio	Live and Playback	Toggle incoming audio (mute or unmute)
Toggle Talk Channel	Live	Toggle Talk Channel associated with the camera via <i>Talk Channel</i> property

10 Installation

10.1 Prerequisites

Command SDK prerequisites:

- DirectX 11
- [Visual C++ Redistributable for Visual Studio 2015 \(x86\)](#)
- [Visual C++ Redistributable for Visual Studio 2015 \(x64\)](#)

Command SDK is automatically installed with the driver on all machines running the following services / software:

- Client
- Video Export Server
- Connection Manager

10.2 Driver Installation

- Start the IPSecurityCenter™ client and any supporting services
- Open the Device Driver Manager from the System Configuration
- Click the **Install** button
- Select the March Networks March Networks CES Driver Package in the Open file dialog
- Wait for the driver to be uploaded

10.2.1 SDK License

Command SDK License is set up I the XML file **command_center_appId.xml**, which is located in the Extracted Packages folder:

```
C:\ProgramData\CNL Software\IPSecurityCenter\Extracted Packages\CNL.IPSecurityCenter.Driver.MarchNetworks.Command.Version.[BUILD VERSION].ipsedriver
```

The file format:

```
<?xml version="1.0" encoding="UTF-8"?>
  <appIdIdentityToken>
    <AppId> the APP ID</AppId>
    <signature> the signature </signature>
  </appIdIdentityToken>
```

To update the licence: edit and save the file, then restart the IPSC Client and the services.

10.2.2 Device Configuration

- Right click in a folder (e.g. Devices) in the System Configuration: **New** → **Device On** → **Server**
- Click **Next** on the introduction
- Select **March Networks** in the **Device Manufacturer** list
- Select **March Networks CES** in the Available Devices list

- Click **Next** to enter the device details: Enter the March Networks March Networks CES hostname or IP address, the port (use 0 to use the default port), and user name and password if integrated security is not being used.
- Click **Next** and **Finish** to add the device.
- Enable the device to bring it online.

10.2.3 Driver Compatibility

The following devices are known to be incompatible with the March Networks March Networks CES.

Model	Details
Recorders 8704S, 8708S	Rewinding playback on recorders with an older Firmware versions can cause disconnection

11 Known Issues and Limitations

11.1 Connectivity

- 1) After CES is restarted it can take several minutes until the driver can reconnect to CES.
- 2) Make sure the **Port** property is set according to the **SSL Support** property setting:

Typical values:

SSL Support	Port
True	443
False	80

- 3) Connection to CES via HTTP (**SSL Support** = False) is intermittent - many attempts end up with *Host State Changed event, new state: Disconnected (error: UnknownError)* fired right after the *Connecting* state.

Solution: always connect via HTTPS by setting the **SSL Support** property to True and port - to 443

- 4) To change connection settings, need to close all video tiles in the Client
- 5) After login in to IPSC Client, the driver automatically connects to any CES server where Auto Connect set to True and the CES device is Enabled. The auto-connection is there to speed up SDK initialization prior to displaying video in IPSC Client. (Enabling CES devices doesn't cause IPSC Client to connect to the CES, the devices must be Enabled prior to IPSC Client start up)

- 6) Video tiles don't display an error message if a camera is disconnected: this is due to the SDK limitation: the SDK Media Control does not raise *PropertyChanged* event when a camera signal is lost or restored – also see details in DAD-4353.

11.2 Device Population

- 7) Because device population takes a lot of time in large scale CES servers, CES device goes to temporary Custom state - *Populating Devices*. Before going to *Populating Devices*, CES briefly goes to *Online* State to prevent Connection Manager from Time out and re-connect. To prevent possible CES device state race condition, **Device State Update Delay** property must be set to the right value (typically 2000 msec. is enough).
- 8) When the same physical device is re-added in CES it might get a different unique ID which means IPSC will add a new device, and the old device will stay in Failed state with description 'Device not found in CES'
- 9) When CES device is Enabled in the first time – only CRS devices are populated in Disabled state.
When CRS device is Enabled, the cameras, switches, and Alarm Source devices belonging to this CRS are populated.

11.3 PTZ/Presets

- 10) When a PTZ camera is displayed in the first time the Presets are not populated, also this first time display may take a longer time: this is an SDK/DDK limitation.
- 11) When a PTZ camera is being controlled from the native software, the PTZ will not be controllable in IPSC. This is correct behaviour as two clients should not be able to control the PTZ at the same time.

11.4 Alarms and Alerts

- 12) Some commands can be raised on specific device models, for example some Alerts will only appear on R5 recorders
- 13) Alarms and Health Alerts are not saved in the driver while disconnected from CES.
Instead the driver saves the timestamp of the last Alarm received and the timestamp of the last Alert received.

11.5 Audio

- 14) If *Talk Channel* property is set while a camera is displayed already, the behaviour of the *Toggle Talk Channel* button will not change until the camera is re-displayed

11.6 Misc.

- 15) If a camera is disabled - Playback is still allowed as there may be footage available before the camera was disabled

- 16) The driver doesn't report on currently existing alarms and alerts when re-connected to CES, instead it starts polling for Alarms and Alerts occurred since the **Last Alarm Time** and **Last Alert Time** saved.
- 17) Recorder online state is reported with a delay of few minutes by the SDK, can be also observed in Command Client.
- 18) Playback rewind does not work on some CRSs, it may cause disconnection from CES. This is a recorder issue confirmed by March Networks. So far detected on CRS models: 8704S, 8708S. This has been fixed with firmware updates.
- 19) **Previous Frame** Video Operator Action is currently hidden as the corresponding SDK method does not work.
- 20) Command SDK has a memory leak: about 1-3 Mbyte is gained each time disconnecting and re-connecting to CES. The leak was tested both in IPSC and in MediaViewer sample application. This should be fixed in the latest SDK.
- 21) When number of failed connection attempts reaches Maximum Reconnects value, The CES device goes to Online state (to stop connection Manager connection timer), and then - to Offline state.
- 22) While a camera device is in **Digital Zoom** mode or in **De-Warp** mode, user cannot drag another camera on top of it (the drag & drop operation will be ignored), this is because the mouse events are routed directly into the March video control to operate De-Warp or Digital Zoom, so these events cannot be handled by the tile.
- 23) Re-enabling a camera from disabled state will still show the error message and will not auto-reconnect due to driver limitation.