With respect to video surveillance, compression is the reduction of data transmitted between devices. In analog surveillance, this compression occurs in DVRs. In network surveillance, this compression occurs in the network cameras and associated recording and viewing devices.

<table>
<thead>
<tr>
<th>Compression Standard</th>
<th>Data Reduction Method</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MJPEG</td>
<td>Intraframe*</td>
<td>Minimal bandwidth variation regardless of motion</td>
</tr>
<tr>
<td>H.264 (MPEG-4, AVC Advanced Video Coding)</td>
<td>Interframe**</td>
<td>Reduces bandwidth and storage by up to 80% compared to MJPEG</td>
</tr>
<tr>
<td>H.265 (High Efficiency Video Coding HEVC)</td>
<td>Interframe**</td>
<td>Reduces bandwidth and storage by up to 40% compared to H.264</td>
</tr>
</tbody>
</table>

* Intraframe:
  Compares frames of video and identifies if each particular pixel has changed. Uses more data by transmitting each pixel within the frame.

** Interframe:
  Where adjacent pixels are the same color, the software groups these pixels into blocks which allows less individual data to be transmitted for each pixel. Uses less data by transmitting groups of pixels within the frame.

Why is it important?
Each available compression method reduces bandwidth requirements in different ways and provides flexibility in designing a system to best fit the needs of the application. Accurately identifying the compression method required for a particular device makes sure the following happens:

- The level of detail that needs to be reproduced is done accurately.
- Data traffic on the network is at a manageable level.
- Storage costs are controlled.
- There is greater network stability.
- Servers manage and process the data generated by the device. Servers also organize the storage locations within the available hardware.

In order to view a video with full image integrity, workstation video cards and processors need the ability to decode the chosen compression method. Without compression of surveillance video, the data traffic generated would be extremely large and could overwhelm most networks, which dramatically increases storage needs and costs.
> VIDEO INFRASTRUCTURE CONSIDERATIONS

**Storage**
Video storage requirements may increase or decrease depending upon the compression chosen.

**Workstations**
Workstations require faster processors and more recent quality video cards when higher compression methods are chosen.

**Switches**
Switches need the appropriate bandwidth between devices (cameras/encoders) as well as aggregated uplink bandwidth to servers.

**Servers**
Servers will have reduced camera capacity when using multiple or more recent compression methods within the system. Both H.264 and H.265 compression algorithms require more processing capacity, which limits the number of functions that the server may be able to perform concurrently.

> WHY ANIXTER?

- Our staff of experienced security experts can help guide you through technology selection and deployment to minimize risk.
- With a technical sales force and experts in our Technology Support Services team, we are devoted to cabling and security solutions.
- We have the broadest infrastructure offerings to fit your current and future industrial communication and control, network cabling, security application, data center and enterprise cabling needs.
- Our footprint supports our customers’ and suppliers’ operations around the globe.

> APPLICABLE INDUSTRY STANDARDS

- ITU-T (Telecommunication Standardization Sector of the International Telecommunications Union)
- SG16/Q.6 Video Coding Experts Group
- ISO/IEC JTC 1 is a joint technical committee of the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC).
- JTC1/SC 29/WG 11 Moving Picture Experts Group (MJPEG)

**Technical Expertise**

**PARTICIPATION ON STANDARDS AND INDUSTRY COMMITTEES**

- ASIS
- SIA
- ONVIF
- ESA
- BICSI

**PROOF OF CONCEPT TESTING**

**INTEROPERABILITY TESTING**

**TECHNICAL TRAINING COURSES**

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Is your video infrastructure prepared to handle different compression algorithms? **Contact an Anixter security expert** or your local Anixter sales rep to determine the right solution for your needs.

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