3rd i: Experiencialists in the field of Quality Assurance.

3rd i REVIEW OF SAMPLE COMPRESSION FILES

For the sake of comparison, a blu-ray retail version was ripped (from a consumer disc), and this was used as a source file, which was then compressed into later, smaller files. The initial three versions of the film Underworld that we had to view were taken from the blu-ray source, and were virtually indiscernible from that original source. They were crisp where they needed to be crisp, the blacks were uncorrupted (this is a typical problem in formats like digital satellite and streaming Internet video), and there was no noticeable loss of any digital information in fast action sequences such as strobing effects, gun shots, fast panning and chase scenes, where this would normally occur.

On a technical note, there are three principal areas of concern: the size of the file, the resolution, and the data rate or bitrate. With regard to file size, the first three film files that 3rd i viewed would only fit onto a blu-ray disc, due to the space limitations of the medium (standard definition DVD discs would be too small to fit these first three versions). The caveat here, as far as we can tell, is that file size would most likely be irrelevant if the video is streaming, provided the party streaming the video can handle the bandwidth/data transfer rate on their equipment. Concerning resolution (our findings showed even better results in the smaller files at smaller resolution), it was difficult to notice any real difference with the human eye, while watching the files in real time. Lastly, the data rate in conjunction with the higher-resolution files (1920 X 1072) did cause some dropped frames on a select few media players (for example, we found there were differences between WMP 11 and 6).

3rd i then took a look at another round of even more compressed files, where some minor problems were registered. This included highly difficult shots, however, and the amount of detail that was either lost or slightly corrupted was insignificant at best. For example, during the first 15 minutes of the film Underworld, there is an entire array of difficult cinematic images that would ordinarily be problematic for anyone attempting to compress the files into a smaller format. These images included: heavy down-pouring rain, reflections in water and glass, splashing, stone textures, facial hair and skin close-ups, fast action and slow motion, leaves moving on trees, CGI effects, gun shots, copious shadows and very deep blacks. One thing worth mentioning here is that even in the smallest versions of these compressed files where the deepest blacks would ordinarily show evidence of artifacting and macro-blocking (digital "pixels" being squared off where they should not otherwise be), 3rd i found the most impressive results during testing.

Several version of compressed files in this mid-range second group (these files would easily fit onto a dual-layer standard def DVD, while others were small enough to fit on a single-layer standard def DVD), were still of high quality, with only small examples of artifacting, that we would describe as "minor" to "mild" in nature, at best. This included minor loss of detail in difficult areas as aforementioned – facial close-ups, hair texture and leaves in trees. In our opinion, for streaming video and satellite television, these compressed files would be of a better quality than current formats.

5711 WEST SLAUSON AVENUE, SUITE 226, CULVER CITY, CA 90230
TEL 310.258.9444 FAX 310.693.0582 WWW.3RDIQC.COM

The last batch of smallest files that had undergone the highest levels of compression, while clearly not of as high a quality as the first two groups of files we reviewed, were still markedly better than most video that has been compressed for Internet use. This would include the better quality of videos featured on television websites such as Hulu (and by default, then, the highest quality videos that might be featured on a website such as Vimeo).

EQUIPMENT USED DURING 3RD i REVIEW: UNDERWORLD FILES

EMULATOR: Windows Media Player v6.4.09.1130
MONITOR: Samsung Series 7000 LED 50+in.
CONNECTION: HDMI

FIRST GROUP

FILE: 1080.00.05	SIZE: 48,740,705k	RES: 1920x1072
FILE: 720.00.05	SIZE: 26,310,465k	RES: 1280x720
FILE: 1080.03.01	SIZE: 13,585,239k	RES: 1920x1072

All three of these files are of excellent quality. Each is reflective of the source material. Texture definition is crisp and clear; no visible artifacting in the blacks; no visible artifacting during fast action/pans. Score: 10**

SECOND GROUP

FILE:720.02.02	SIZE: 5,661,365k	RES: 1280X720

This file is also an excellent representation of the source material, with minimal artifacting/blurring in the textures (fabric, stone pores, etc), but nothing really detectable during real-time viewing. Score: 9**

FILE: 1080.03.03	SIZE: 5631,656	RES: 1920X1072

Minor loss of detail (textures). Still an excellent representation of the source. Score: 8**

FILE: 1020.03.10	SIZE: 3,252,942	RES: 1920X1072
FILE: 720.02.10	SIZE: 2,557,472	RES: 1280X720

Mild artifacting & loss of detail visible during real-time viewing, most notably during fast pans/foreground action (ie: someone quickly passing between principle character & camera). The 1280x720 file looked a little cleaner during real-time playback. Acceptable quality for standard def DVD release. Score: 6**

THIRD GROUP

FILE: 720.02.24	SIZE: 1,291,671	RES: 1280x720
FILE: 720.02.28	SIZE: 1,152,662	RES: 1280X720

Mild/moderate artifacting & loss of detail during playback. Acceptable quality for standard def satellite tv events (movies, sports, etc). Score: 4**

FILE: 1080.03.20	SIZE: 1,243,333	SIZE: 1920X1072

Moderate artifacting & loss of detail during playback. Score: 3**

5711 WEST SLAUSON AVENUE, SUITE 226, CULVER CITY, CA 90230
TEL 310.258.9444 FAX 310.693.0582 WWW.3RDIQC.COM

EQUIPMENT USED DURING 3RD i REVIEW: THE MATRIX FILES

EMULATOR: Windows Media Player v6.4.09.1130
MONITOR: Samsung Series 7000 LED 50+in.
CONNECTION: HDMI

FIRST GROUP

FILE: 1080.00.05	SIZE: 44,328,966	RES: 1920X1072
FILE: 720.00.05	SIZE: 25,273,773	RES: 1280X720
FILE: 1080.03.00	SIZE: 13,234,228	RES: 1920X1072

All three of these files are of excellent quality. Each are reflective of the source material. Texture definition is crisp and clear; no visible artifacting in the blacks; no visible artifacting during fast action/pans. Score: 10**

FILE: 1080.02.20	SIZE: 3,374,185	RES: 1920X1072

Minor loss of detail (textures). Still an excellent representation of the source. Score: 8**

GENERAL NOTES (TO GO ALONG WITH TECHNICAL INFO ABOVE):

** *Context for scoring basis: Scoring is based on a 1-10 scale (from poor to excellent). All files were viewed on a very large consumer monitor. Given the size of the monitor, quality standards will be improved as the monitor decreases in size.*

While the "score" of 3 would normally speak to an inferior quality level, the scores applied to these reviews skewed generally higher than normal. That being said, even the lowest of the quality scores (a "3"), which was in reference to overall playback and look versus the source file (a ripped blu-ray), spoke to a consistently high quality file.

A lower score means that the file viewed contained just a little more artifacting than the files rated as "4", but would still be more than acceptable for smaller formats (ie: iPhone, personal media players, etc). This file also had a more problematic playback (lower framerate) than the other files, but 3rd I would attribute that to the codec and to the actual file size/datarate.

Either way, the compression being performed on these files is still miles above anything else we have seen with regards to streaming media.

Performance was still slightly hindered by low frame-rate playback on the larger resolution files (1920x1072); lowering screen resolution on the computer & upscaling via the Samsung improved playback.

UNDERWORLD: *The source material consisted of the first fifteen minutes, which contains quite a lot of difficult images to compress: deep blacks/shadows, numerous textured surfaces (stone, tile, facial hair/pores, etc), rain showers/downpour, puddles, reflections, gunfire, fast panning, slow-motion, and cgi effects. Other areas of the film were randomly selected & viewed for a duration of 5-7 minutes.*

THE MATRIX: *The source material consisted of the opening credits & fight scene, as well as the lobby gunfight/explosion (1:41:00). These areas contained examples of textured surfaces, dim lighting, shadows, gunfire, slow-motion debris, fast action, cgi effects, and a vibrant explosion (in slow-motion).*