Web-Optimized Report

EDITION	CAPABILITY	SIGNATURE	STANDARDS	GENERATED
Core	Linearized output	—	ISO 32000-2	2026-07-14

Executive summary

This report ships as a **linearized PDF** — also called **Fast Web View** in desktop readers. A linearized file places a small linearization parameter dictionary as its very first object, followed by everything a viewer needs to paint page one, so a browser or reader can begin displaying content while the rest of the file is still arriving over the network. For a short brief like this one the difference is barely perceptible; for the multi-hundred-page manuals, statements, and archival bundles NextPDF renders in production, it is the difference between an instant first page and a multi-second blank-screen wait.

How Fast Web View streaming works

ISO 32000-2 Annex F defines the linearized file structure precisely so that any conforming reader can exploit it, without vendor-specific tricks:

- The `/Linearized` dictionary is the first object in the file and declares the byte offset of the last page's cross-reference section, so a reader can confirm the file is genuinely linearized in a single read.
- A primary **hint stream** immediately follows, encoding compact per-page and per-object byte offsets and lengths — the reader's map for jumping straight to any page without parsing the whole file.
- Page 1's objects, and only page 1's objects, are placed next, ahead of every later page, so the first page is fully paintable from the leading bytes alone.
- A first-page cross-reference table follows page 1's objects, letting a reader resolve page-1 references before the rest of the file's main cross-reference table exists.
- Remaining pages are then reorganized in reading order, each reachable via the hint stream's offsets, enabling true byte-range, page-by-page delivery over HTTP.

Time to first page by connection profile

Measured against a representative 220-page NextPDF statement bundle, serving over HTTP byte-range requests instead of waiting for the complete download:

Connection profile	Without linearization	With Fast Web View	Improvement
Fiber / office LAN	340 ms	85 ms	4.0× faster
Home broadband	1.1 s	190 ms	5.8× faster
4G mobile	2.6 s	340 ms	7.6× faster
Congested public Wi-Fi	6.4 s	510 ms	12.5× faster

Figures are illustrative reference measurements for a 220-page bundle; actual gains scale with document size and shrink toward zero on very short documents like this sample.

When to enable it

Turn linearization on for anything a person opens directly in a browser tab or a desktop reader over a network link — statements, contracts, manuals, and reports delivered by URL rather than as an email attachment already

on disk. It costs a small amount of extra writer time and a marginally larger file (the hint stream and duplicated first-page cross-reference entries add a few hundred bytes to a few kilobytes), which is a good trade for documents users expect to open instantly. Because the technique reorders objects and injects a plaintext hint stream, it is **mutually exclusive with encryption and digital signatures** in this engine: encrypt or sign a document, or linearize it, not both in the same file. Skip it for documents that are always fully downloaded before opening, such as files delivered over internal batch transfer or archived directly to disk.

Reader & delivery compatibility

Linearization is a hint, not a requirement — every reader can still open a linearized file the ordinary way, and only readers plus delivery paths that support HTTP byte-range requests actually see the fast first page:

Delivery path	Range-request support	First-page benefit
Browser built-in viewer (Chrome, Edge, Firefox)	Native	Immediate
Adobe Acrobat / Reader opening a URL	Native	Immediate
Object storage or CDN in front of the file (R2, S3, Fastly, Cloudflare)	Passthrough	Immediate
Legacy proxy or gateway that buffers the full response	None	None — behaves like an unlinearized file
Email attachment or a copy already on local disk	Not applicable	None needed — the file is already fully present

Verifying a linearized file

Two independent signals confirm linearization took effect: a structural check that the file's first object is a valid `/Linearized` dictionary whose `/L` value matches the file's true byte length, and a visual check in any PDF reader that supports progressive rendering — the page count and first page appear before a large file finishes downloading. NextPDF's own release pipeline runs both checks, plus a third-party `qpdf --check` pass, on every linearized sample before publication.

Bottom line

Fast Web View changes byte layout, not appearance: the rendered page is pixel-identical to an unlinearized file, and every viewer path in the compatibility table above still opens it correctly. In NextPDF the whole optimization is one call — `$doc->enableLinearization();` before `$doc->save();` — provided the document carries no encryption or PAdES signature, since the engine rejects combining either with linearization. For any report, statement, or manual served by URL to a browser or a network-attached reader, that one line is worth calling on every render.