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**HTTP/1.1: Range Responses of Indeterminate Length**  
**draft-combs-http-indeterminate-range-01**

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## Abstract

The Hypertext Transfer Protocol (HTTP) is an application-level protocol for distributed, collaborative, hypermedia information systems. HTTP has been in use by the World Wide Web global information initiative since 1990. This document updates [RFC 7233](#), Part 5 of the eight-part specification that defines the protocol referred to as "HTTP/1.1". Part 5 defines range-specific requests and the rules for constructing and combining responses to those requests. This document improves support for responding to range requests for resources of indeterminate size.

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## 1. Introduction

This document will define changes to [RFC 7233](#) HTTP/1.1 designed to allow range requests to be used to retrieve parts of resources whose lengths are unknown at the time of the first request.

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [\[RFC 2119\]](#).

## 2. Header Field Definitions

This section defines the syntax and semantics of all standard HTTP/1.1 header fields. For entity-header fields, both sender and recipient refer to either the client or the server, depending on who sends and who receives the entity.

### 2.1. Accept-Indefinite-Ranges

The Accept-Indefinite-Ranges request-header field allows the client to indicate its acceptance of indefinite-sized range requests for a resource:

Accept-Indefinite-Ranges = "Accept-Indefinite-Ranges" ":" "1"

Servers MUST NOT generate indefinite-sized byte-range replies without having received this header, with the value "1", for the resource involved.

### 2.2. Content-Range

The Content-Range entity-header is sent with a partial entity-body to specify where in the full entity-body the partial body should be applied. This section updates [Section 4.2 of RFC 7233](#).

Content-Range           = byte-content-range  
                          / other-content-range

byte-content-range   = bytes-unit SP  
                          ( byte-range-resp / unsatisfied-range )

byte-range-resp       = byte-range "/" ( complete-length / "\*" )  
byte-range            = first-byte-pos "-" (last-byte-pos / "\*" )  
unsatisfied-range     = "\*" / ( complete-length / "\*" )

complete-length       = 1\*DIGIT

```
other-content-range = other-range-unit SP other-range-resp
other-range-resp     = *CHAR
```

For byte ranges, a sender SHOULD indicate the complete length of the representation from which the range has been extracted, unless the complete length is unknown or difficult to determine. An asterisk character ("\*") in place of the complete-length indicates that the representation length was unknown when the header field was generated.

An asterisk character in place of the last-byte-pos indicates that the response length was unknown when the header was generated, and that the entire requested range of the resource will be sent. An asterisk character may be used in place of the last-byte-pos ONLY if the Accept-Indefinite-Ranges header was sent, and requires use of the [RFC 7230](#) Chunked Transfer-Encoding

The following example illustrates when the complete length of the selected representation is known by the sender to be 1234 bytes:

```
Content-Range: bytes 42-1233/1234
```

and this second example illustrates when the complete length is unknown:

```
Content-Range: bytes 42-1233/*  
OR  
Content-Range: bytes 42-*/*  
(if the Accept-Indefinite-Ranges request header was sent)
```

Request and response range values for an example use-case, in which a growing media file is streamed to the client:

```
Client requests the whole stream:  
Range: 0-
```

```
Server begins a response of unknown size:  
bytes 0-*/*
```

```
User seeks in the stream; client closes previous connection and  
requests the seek offset (possibly repeating multiple times to  
find the desired offset):  
Range: 32768-
```

```
Server begins a response of unknown size, at the requested offset:  
bytes 32768-*/*
```

### **3. Security Considerations**

No additional security considerations have been identified beyond those applicable to HTTP range requests in general [[RFC 7233](#)].

### **4. IANA Considerations**

TBD

### **5. Acknowledgments**

Parts of this document are based on [[RFC 7233](#)] and its drafts.

### **6. References**

#### **6.1. Normative References**

- [RFC 2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), March 1997.
- [RFC 7233] Fielding, R., Ed., Lafon, Y., Ed., and J. Reschke, Ed., "Hypertext Transfer Protocol (HTTP/1.1): Range Requests", [RFC 7233](#), June 2014.

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