

CLAIMS

What is claimed is:

1. A computing device, comprising:
 - a processor configured with processor-executable instructions to perform operations comprising:
 - determining whether a description of a service includes an entity tag (ETag) value for a file in response to determining that byte-range file repair is needed to repair the file; and
 - generating a partial Hypertext Transfer Protocol (HTTP) GET request for byte-range file repair including the ETag value in an If-Match header element in response to determining that the description of the service includes the ETag value.
2. The computing device of claim 1, wherein the description of the service is a File Delivery Table (FDT).
3. The computing device of claim 1, wherein the description of the service is an Associated Delivery Procedure Description (ADPD) metadata fragment.
4. The computing device of claim 3, wherein the processor is configured with processor-executable instructions to perform operations further comprising:
 - determining whether an attribute of the ADPD metadata fragment indicates a server supports using an MD5 as the ETag value in response to determining that the ADPD metadata fragment does not include the ETag value; and
 - generating a partial HTTP GET request for byte-range file repair including the MD5 as the ETag value in an If-Match header element in response to determining that the attribute of the ADPD metadata fragment indicates the server supports using the MD5 as the ETag value.

5. The computing device of claim 4, wherein the processor is configured with processor-executable instructions to perform operations further comprising:
 - generating a partial HTTP GET request for byte-range file repair without including an If-Match header element in response to determining that the attribute of the ADPD metadata fragment does not indicate the server supports using the MD5 as the ETag value.
6. The computing device of claim 5, wherein the service is an evolved Multimedia Broadcast Multicast Service (eMBMS) service.
7. A method for byte-range file repair, comprising:
 - determining, at a computing device, whether a description of a service includes an entity tag (ETag) value for a file in response to determining that byte-range file repair is needed to repair the file by the computing device; and
 - generating, at the computing device, a partial Hypertext Transfer Protocol (HTTP) GET request for byte-range file repair including the ETag value in an If-Match header element in response to determining that the description of the service includes the ETag value.
8. The method of claim 7, wherein the description of the service is a File Delivery Table (FDT).
9. The method of claim 7, wherein the description of the service is an Associated Delivery Procedure Description (ADPD) metadata fragment.
10. The method of claim 9, further comprising:
 - determining whether an attribute of the ADPD metadata fragment indicates a server supports using an MD5 as the ETag value in response to determining that the ADPD metadata fragment does not include the ETag value; and

generating, at the computing device, a partial HTTP GET request for byte-range file repair including the MD5 as the ETag value in an If-Match header element in response to determining that the attribute of the ADPD metadata fragment indicates the server supports using the MD5 as the ETag.

11. The method of claim 10, further comprising:

generating, at the computing device, a partial HTTP GET request for byte-range file repair without including an If-Match header element in response to determining that the attribute of the ADPD metadata fragment does not indicate the server supports using the MD5 as the ETag.

12. The method of claim 11, wherein the service is an evolved Multimedia Broadcast Multicast Service (eMBMS) service.

13. A computing device, comprising:

means for determining whether a description of a service includes an entity tag (ETag) value for a file in response to determining that byte-range file repair is needed to repair the file; and

means for generating a partial Hypertext Transfer Protocol (HTTP) GET request for byte-range file repair including the ETag value in an If-Match header element in response to determining that the description of the service includes the ETag value.

14. The computing device of claim 13, wherein the description of the service is a File Delivery Table (FDT).

15. The computing device of claim 13, wherein the description of the service is an Associated Delivery Procedure Description (ADPD) metadata fragment.

16. The computing device of claim 15, further comprising:

means for determining whether an attribute of the ADPD metadata fragment indicates a server supports using an MD5 as the ETag value in response to determining that the ADPD metadata fragment does not include the ETag value; and

means for generating a partial HTTP GET request for byte-range file repair including the MD5 as the ETag value in an If-Match header element in response to determining that the attribute of the ADPD metadata fragment indicates the server supports using the MD5 as the ETag value.

17. The computing device of claim 16, further comprising:

means for generating a partial HTTP GET request for byte-range file repair without including an If-Match header element in response to determining that the attribute of the ADPD metadata fragment does not indicate the server supports using the MD5 as the ETag value.

18. The computing device of claim 17, wherein the service is an evolved Multimedia Broadcast Multicast Service (eMBMS) service.

19. A non-transitory processor-readable storage medium having stored thereon processor-executable instructions configured to cause a processor of a computing device to perform operations, comprising:

determining whether a description of a service includes an entity tag (ETag) value for a file in response to determining that byte-range file repair is needed to repair the file; and

generating a partial Hypertext Transfer Protocol (HTTP) GET request for byte-range file repair including the ETag value in an If-Match header element in response to determining that the description of the service includes the ETag value.

20. The non-transitory processor-readable storage medium of claim 19, wherein the stored processor-executable instructions are configured to cause a processor of a computing device to perform operations such that the description of the service is a File Delivery Table (FDT).

21. The non-transitory processor-readable storage medium of claim 19, wherein the stored processor-executable instructions are configured to cause a processor of a computing device to perform operations such that the description of the service is an Associated Delivery Procedure Description (ADPD) metadata fragment.

22. The non-transitory processor-readable storage medium of claim 21, wherein the stored processor-executable instructions are configured to cause a processor of a computing device to perform operations further comprising:

determining whether an attribute of the ADPD metadata fragment indicates a server supports using an MD5 as the ETag value in response to determining that the ADPD metadata fragment does not include the ETag value; and

generating a partial HTTP GET request for byte-range file repair including the MD5 as the ETag value in an If-Match header element in response to determining that the attribute of the ADPD metadata fragment indicates the server supports using the MD5 as the ETag value.

23. The non-transitory processor-readable storage medium of claim 22, wherein the stored processor-executable instructions are configured to cause a processor of a computing device to perform operations further comprising:

generating a partial HTTP GET request for byte-range file repair without including an If-Match header element in response to determining that the attribute of the ADPD metadata fragment does not indicate the server supports using the MD5 as the ETag value.

24. The non-transitory processor-readable storage medium of claim 23, wherein the stored processor-executable instructions are configured to cause a processor of a computing device to perform operations such that the service is an evolved Multimedia Broadcast Multicast Service (eMBMS) service.

25. A method for signaling a capability of a server, comprising:

generating a description of a service providing a file indicating a capability of a server hosting the file to use an entity tag (ETag) value; and

sending the description of the service to a computing device, the computing device configured to determine whether the description of the service includes the ETag value in response to determining that byte-range file repair is needed and the computing device configured to generate a partial Hypertext Transfer Protocol (HTTP) GET request for byte-range file repair including the ETag value in an If-Match header element in response to determining that the description of the service includes the ETag value.

26. The method of claim 25, wherein the description of the service further indicates a capability of the server hosting the file to use an MD5 as the Etag value and the computing device is configured to generate a partial HTTP GET request for byte-range file repair including the MD5 as the ETag value in an If-Match header element in response to determining that the description of the service indicates the server supports using the MD5 as the ETag value.

27. The method of claim 26, wherein the description of the service is a File Delivery Table (FDT).

28. A server, comprising:

a processor configured with processor-executable instructions to perform operations comprising:

generating a description of a service providing a file indicating a capability of a server hosting the file to use an entity tag (ETag) value; and sending the description of the service to a computing device, the computing device configured to determine whether the description of the service includes the ETag value in response to determining that byte-range file repair is needed and the computing device configured to generate a partial Hypertext Transfer Protocol (HTTP) GET request for byte-range file repair including the ETag value in an If-Match header element in response to determining that the description of the service includes the ETag value.

29. The server of claim 28, wherein the description of the service further indicates a capability of the server hosting the file to use an MD5 as the Etag value and the computing device is configured to generate a partial HTTP GET request for byte-range file repair including the MD5 as the ETag value in an If-Match header element in response to determining that the description of the service indicates the server supports using the MD5 as the ETag value.

30. The server of claim 29, wherein the description of the service is a File Delivery Table (FDT).

31. A server, comprising:

means for generating a description of a service providing a file indicating a capability of a server hosting the file to use an entity tag (ETag) value; and

means for sending the description of the service to a computing device, the computing device configured to determine whether the description of the service includes the ETag value in response to determining that byte-range file repair is needed and the computing device configured to generate a partial Hypertext Transfer Protocol (HTTP) GET request for byte-range file repair including the ETag value in

an If-Match header element in response to determining that the description of the service includes the ETag value.

32. The server of claim 31, wherein the description of the service further indicates a capability of the server hosting the file to use an MD5 as the Etag value and the computing device is configured to generate a partial HTTP GET request for byte-range file repair including the MD5 as the ETag value in an If-Match header element in response to determining that the description of the service indicates the server supports using the MD5 as the ETag value.

33. The server of claim 32, wherein the description of the service is a File Delivery Table (FDT).

34. A non-transitory processor-readable storage medium having stored thereon processor-executable instructions configured to cause a processor of a server to perform operations, comprising:

generating a description of a service providing a file indicating a capability of a server hosting the file to use an entity tag (ETag) value; and

sending the description of the service to a computing device, the computing device configured to determine whether the description of the service includes the ETag value in response to determining that byte-range file repair is needed and the computing device configured to generate a partial Hypertext Transfer Protocol (HTTP) GET request for byte-range file repair including the ETag value in an If-Match header element in response to determining that the description of the service includes the ETag value.

35. The non-transitory processor-readable storage medium of claim 34, wherein the stored processor-executable instructions are configured to cause a processor of a server to perform operations such that the description of the service further indicates a

capability of the server hosting the file to use an MD5 as the Etag value and the computing device is configured to generate a partial HTTP GET request for byte-range file repair including the MD5 as the ETag value in an If-Match header element in response to determining that the description of the service indicates the server supports using the MD5 as the ETag value.

36. The non-transitory processor-readable storage medium of claim 35, wherein the stored processor-executable instructions are configured to cause a processor of a server to perform operations such that the description of the service is a File Delivery Table (FDT).