Http Talep Paketlerinde multipart/form-data ile Parametre Gönderimi

(+) Birebir denenmiştir ve başarıyla uygulanmıştır.

Gereksinimler

/var/www/formEncTypeTurleri/ // Ubuntu 18.04 LTS Ana Makina Web Dizini

Html <form alanları içerisinde yer alan girdi alanlarını (parametreleri) karşı sunucuya gönderirken <form alanı enctype attribute'una (özelliğine) konulacak üç farklı değerle <form alanındaki parametreleri üç farklı syntax'ta karşı sunucuya gönderebiliriz.

a) application/x-www-form-urlencoded (varsayılan)
b) multipart/form-data
c) text/plain

Html <form alanı enctype attribute'u (özelliği) totalde yukarıdaki üç yoldan birini alır ve <form alanında tanımlı girdiler http talep paketinde parametre ve değer olarak belirtilen yola göre bir yapıda (syntax'da) taşınır. Bu durumu gözlemlemek için şimdi sırasıyla 3 farklı dosyada html <form alanı oluşturalım ve üç farklı enctype attribute değerini koyarak form alanını submit ettiğimizde parametrelerin http talep paketinde nasıl gönderiliyor olduğuna bakalım.

a) application/x-www-form-urlencoded (varsayılan)

Html <form alanında enctype attribute'u belirtilmediğinde (veya enctype attribute'u değeri olarak application/x-www-form-urlencoded değeri belirtildiğinde) form alanının girdileri karşıya & ile ardarda gönderilirler. Örneğin;

HTML / PHP:

/var/www/formEncTypeTurleri/formAlani1.php:

```
<form action="formAlani1.php" method="POST" enctype="application/x-www-form-urlencoded">
    <input type="text" name="param1">
    <input type="text" name="param2">
    <input type="submit" value="Gonder"/>
</form>
```

Form alanı submit'lendiğinde şu http talep paketi karşıya gider.

Http Request:

```
POST /formEncTypeTurleri/formAlani1.php HTTP/1.1
Host: 172.16.4.225
Content-Length: 32
Cache-Control: max-age=0
Upgrade-Insecure-Requests: 1
Origin: http://172.16.4.225
Content-Type: application/x-www-form-urlencoded
User-Agent: Mozilla/5.0 (X11; Linux x86_64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/99.0.4844.82 Safari/537.36
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.9
Referer: http://172.16.4.225/formEncTypeTurleri/formAlani1.php
Accept-Encoding: gzip, deflate
Accept-Language: en-US,en;q=0.9,tr;q=0.8
Connection: close
```

param1=fatih123&param2=deneme123

Görüldüğü gibi html <form alanı enctype özelliği enctype="application/x-www-form-urlencoded" şeklinde olduğu için gönderilen http talep paketi Content-Type'ı application/x-www-form-urlencoded olmuştur ve bu nedenle gönderilen http talep paketi içerisindeki parametreler param1=value&param2=value şeklinde ardarda & (ampersand) ile gönderilmişlerdir.

b) multipart/form-data

Html <form alanında normal girdiler dışında "dosya girdisi" yer aldığı zaman bu türden girdinin application/x-www-form-urlencoded ile gönderimi yetersiz kalır. Çünkü bu girdiler büyük nicelikte binary veri veya ASCII olmayan karakter içeren veri gönderimi yapar. Bu durumda html <form alanında enctype özelliğine multipart/form-data değeri koyulur. Bu şekilde html <form alanında dosya içeren, yani ASCII olmayan veri içeren veya binary veri içeren girdilere sahip girdilerin submit'lenmesi mümkün hale gelir. Bu durumda html <form alanındaki girdilerin gönderiminde parametre ve değerler & yerine daha geniş ebatlı parametre değerlerini alabilen bloklar halinde alt alta gönderilirler. Örneğin;

HTML / PHP:

/var/www/formEncTypeTurleri/formAlani2.php:

```
<form action="formAlani2.php" method="POST" enctype="multipart/form-data">
    <input type="text" name="param1">
    <input type="text" name="param2">
    <input type="file" name="param3">
    <input type="submit" value="Gonder"/>
</form>
```

Form alanı submit'lendiğinde şu http talep paketi karşıya gider:

Http Request:

```
POST /formEncTypeTurleri/formAlani2.php HTTP/1.1
Host: 172.16.4.225
Content-Length: 23435
Cache-Control: max-age=0
Upgrade-Insecure-Requests: 1
Origin: http://172.16.4.225
Content-Type: multipart/form-data; boundary=----WebKitFormBoundarys89aFVifbfEYaKAp
User-Agent: Mozilla/5.0 (X11; Linux x86_64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/99.0.4844.82 Safari/537.36
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.9
Referer: http://172.16.4.225/formEncTypeTurleri/formAlani2.php
Accept-Encoding: gzip, deflate
Accept-Language: en-US,en;q=0.9,tr;q=0.8
Connection: close

------WebKitFormBoundarys89aFVifbfEYaKAp
Content-Disposition: form-data; name="param1"                    // Parametre Adı (*)

fatih123                                                        // Parametre Değeri
------WebKitFormBoundarys89aFVifbfEYaKAp
Content-Disposition: form-data; name="param2"                    // Parametre Adı (*)

deneme123                                                       // Parametre Değeri
------WebKitFormBoundarys89aFVifbfEYaKAp
Content-Disposition: form-data; name="param3"; filename="icon.png"   // Parametre Adı (*)
Content-Type: image/png
                                                                // Parametre Değeri
```

\89PNG#\00\00\00IHDR\00\00#\00\00\00#\00##\00\00\00\r\A8f\00\00\00pHYs\00\00##\00\00###\00\9A\9C#\
00\00BAiTXtXML:com.adobe.xmp\00\00\00\00\00<?xpacket begin="" id="W5M0MpCehiHzreSzNTczkc9d"?>
<x:xmpmeta xmlns:x="adobe:ns:meta/" x:xmptk="Adobe XMP Core 5.6-c014 79.156797, 2014/08/20-09:53:02">
  <rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#">
    <rdf:Description rdf:about=""
        xmlns:xmp="http://ns.adobe.com/xap/1.0/"
        xmlns:dc="http://purl.org/dc/elements/1.1/"
        xmlns:xmpMM="http://ns.adobe.com/xap/1.0/mm/"
        xmlns:stEvt="http://ns.adobe.com/xap/1.0/sType/ResourceEvent#"
        xmlns:stRef="http://ns.adobe.com/xap/1.0/sType/ResourceRef#"
        xmlns:photoshop="http://ns.adobe.com/photoshop/1.0/"
        xmlns:tiff="http://ns.adobe.com/tiff/1.0/"
        xmlns:exif="http://ns.adobe.com/exif/1.0/">
      <xmp:CreateDate>2015-11-21T10:16:55Z</xmp:CreateDate>
      <xmp:ModifyDate>2015-11-21T17:33:16+05:30</xmp:ModifyDate>
      <xmp:MetadataDate>2015-11-21T17:33:16+05:30</xmp:MetadataDate>
      <xmp:CreatorTool>Adobe Photoshop CC 2014 (Macintosh)</xmp:CreatorTool>
      <dc:format>image/png</dc:format>
      <xmpMM:History>
        <rdf:Seq>
          <rdf:li rdf:parseType="Resource">
            <stEvt:action>converted</stEvt:action>
            <stEvt:parameters>from image/png to application/vnd.adobe.photoshop</stEvt:parameters>
          </rdf:li>
          <rdf:li rdf:parseType="Resource">
            <stEvt:action>saved</stEvt:action>
            <stEvt:instanceID>xmp.iid:33380B0C1F20681183D198339A97386A</stEvt:instanceID>
            <stEvt:when>2015-11-21T16:00:27+05:30</stEvt:when>
            <stEvt:changed>/</stEvt:changed>
          </rdf:li>
          <rdf:li rdf:parseType="Resource">
            <stEvt:action>converted</stEvt:action>
            <stEvt:parameters>from image/png to application/vnd.adobe.photoshop</stEvt:parameters>
          </rdf:li>
          <rdf:li rdf:parseType="Resource">
            <stEvt:action>saved</stEvt:action>
            <stEvt:instanceID>xmp.iid:34380B0C1F20681183D198339A97386A</stEvt:instanceID>
            <stEvt:when>2015-11-21T16:00:27+05:30</stEvt:when>
            <stEvt:changed>/</stEvt:changed>
          </rdf:li>
          <rdf:li rdf:parseType="Resource">
            <stEvt:action>saved</stEvt:action>
                    <stEvt:instanceID>xmp.iid:5e3a38f5-78a2-45c3-aada-2da2597e41a3</stEvt:instanceID>
            <stEvt:when>2015-11-21T17:33:16+05:30</stEvt:when>
            <stEvt:softwareAgent>Adobe Photoshop CC 2014 (Macintosh)</stEvt:softwareAgent>
            <stEvt:changed>/</stEvt:changed>
          </rdf:li>
          <rdf:li rdf:parseType="Resource">
            <stEvt:action>converted</stEvt:action>
            <stEvt:parameters>from application/vnd.adobe.photoshop to image/png</stEvt:parameters>
          </rdf:li>
          <rdf:li rdf:parseType="Resource">
            <stEvt:action>derived</stEvt:action>
            <stEvt:parameters>converted from application/vnd.adobe.photoshop to image/png</stEvt:parameters>
          </rdf:li>
          <rdf:li rdf:parseType="Resource">
            <stEvt:action>saved</stEvt:action>
            <stEvt:instanceID>xmp.iid:f1945919-5f0f-47f0-ad3e-e894540d7ca1</stEvt:instanceID>
            <stEvt:when>2015-11-21T17:33:16+05:30</stEvt:when>
            <stEvt:softwareAgent>Adobe Photoshop CC 2014 (Macintosh)</stEvt:softwareAgent>
            <stEvt:changed>/</stEvt:changed>
          </rdf:li>
        </rdf:Seq>
      </xmpMM:History>
      <xmpMM:DerivedFrom rdf:parseType="Resource">
        <stRef:instanceID>xmp.iid:5e3a38f5-78a2-45c3-aada-2da2597e41a3</stRef:instanceID>
        <stRef:documentID>xmp.did:33380B0C1F20681183D198339A97386A</stRef:documentID>
        <stRef:originalDocumentID>xmp.did:33380B0C1F20681183D198339A97386A</stRef:originalDocumentID>
      </xmpMM:DerivedFrom>
      <xmpMM:DocumentID>adobe:docid:photoshop:45ed2120-d0d6-1178-9554-c050520b6f31</xmpMM:DocumentID>
      <xmpMM:InstanceID>xmp.iid:f1945919-5f0f-47f0-ad3e-e894540d7ca1</xmpMM:InstanceID>
      <xmpMM:OriginalDocumentID>xmp.did:33380B0C1F20681183D198339A97386A</xmpMM:OriginalDocumentID>
      <photoshop:ColorMode>3</photoshop:ColorMode>
      <tiff:Orientation>1</tiff:Orientation>
      <tiff:XResolution>720000/10000</tiff:XResolution>
      <tiff:YResolution>720000/10000</tiff:YResolution>
      <tiff:ResolutionUnit>2</tiff:ResolutionUnit>
      <exif:ColorSpace>65535</exif:ColorSpace>

<exif:PixelXDimension>256</exif:PixelXDimension>
<exif:PixelYDimension>256</exif:PixelYDimension>
</rdf:Description>
</rdf:RDF>
</x:xmpmeta>

<?xpacket end="w"?>#!\D1:\00\00\00 cHRM\00\00z%\00\00\80\83\00\00\F9\FF\00\00\80\E9\00\00u0\00\00\EA`\00\00:\98\00\00#o\92_\
C5F\00\00#BIDATx\DA\EC\9DytU\E5\B9\C6 \E7\E4\84#F"H\80F\900(#Z`\AD\AD8\B5#8\A0\A2#\DB{\97C\AFu\AC\B3uhqhK/\AE\
D5ZZK\D1#\A2\E2]V\A1\B5*T+*X\81@E#e#\88"\98\90\81\93\E4\DC?\F6#9\C3>\E7|{\EF\E7\B7\D6^#89g\9F\E7{\DFg\F3##qU\E1i\
F2\81#\E6\EA#\F4##6W\CF6W>P#D\CC\CF#\ED#h#\9A\81Z\F3\F3N\E0\F36W\8D\F9s#\B0#\F8¢Nx\94\88$\F0##\C0`\A0#j\92\BD\
BF\B9#u\F13\F6\99BY#\BF\F7\A91\83\8D\C0#\A0\DA\k\8D\A9##\80H\80"`4p,0####r,\BD\DFC\CDu|\BBo#\D6#\EF#\A5\C0\BB\
C0##\B1=\84\D4#\C8:\E5\C08`\AC\B9\86\FA\9B\81\D5\C0\EB\E6z\CD4'\84 0##\E3\81o\99kh\C0\F5\A8#^#\FE#,#\EA#"2\00\BF\
D1#8#8#\98\80\D3'\BEJ#\B0#\F8\B3\B96K##\80\97\AB\F6\E7#\E7#c\80\B0$I\88#\F060#\98#|,Id\00\B6\D3\C3$\FC$Ў Whg#K\809\E6\
DA)Id\00\D6hh\AA\F5S\81\B3\81<I\92V\9AL\AD`\A6i.(\80e\00Y\AB\E2O#\AE#*%GVX#\FC#\98\85F#\92BU\D4\C4##\CC#>#~\AE\
E4\CF*\95\A6>1e2B\92\C8\00\D2U\CD?#g\A8j#p1\90+Y\AC!ה\C9SF\A7\992#2\80\94#\EBr`#\B0\008Y\92X\CF\C9\C0#\A6\CC.\97Q\
CB\00\92M\FC\A9\C0#\C0#\80!\92\C4s1e\F7\81)K#\81 .=.#\D6\E0t.\F5\97$\9E\A7\BF)\CB5\A6l#\F32\80#\F9#\CE□∧ cĶT\9A\B2\
FD\A7)k!#\00\E0#`\A1\B9\86K#\DF3\ACMy#\96##\97\EE\C0\C3\C0\FBz"#\B6\C6\F7O##\DDe\00\C1!\843yg#p=\D0M\B9#X\BA\
99#Xgb"$#\F07\83p\A6\8F>\86\B3e\96#\98Xxg9\F2 #\80\FF\88\00\B7\E2t\F2\9D\A8x#\9D0\CE4#n% \BBe#\C1\00F#\FB\F9\EAF\98B\
B4'\DF\C4\CA2\9C\AD\D9d\00#~\EA\DF#\BC##\A9\B8#r$鑵\88\C0{m\FD7\81;\D1Ƨ"\B5\87ʒ&\96\8E\90#x\83)A\A9\BE\89\8C1#gG\
E3\CBe\00\F6R<#\FC\D1\FC,\84\DB\F1\F5##c\C52\00\BB#\BC#LV\9C\8A43\D9\C4Z\95\C0#&\99##\AC\D8##|\E0,5\B1'#\C8\E2\BD?\
00\CCU\95_d\A9I0\D7\C4`\8E \B3\94\00\CF#?A;\BF\88\EC#21\F8\BC\89I#@#\A8\00\DE\C0\D9\F6I##\98hb\B2B#\90^F\E3##\A1e\
BB\C26\86\9B\D8#-#H#\DF\C1Y\C8S\AEX#\96Rnb\F4T#\80\BB\\82sV\9C:\FB\84\ED#\9B>\81Ke\00\EEp-\CE\C1#\9A\D2+\BCB#gB
80\2 ڵ\98\8Ez\FA\85\F7#\99 ئ\DDv\A7\B2\95\FB\8C###\A8*]\C3q=\DFfX\F7U\F4+\FA\84\83\F3j(\8E\EC#\A0\AE\B9\88Ç\CA\
F8xO#\ABv\E3\ADƆK\DDU#\CD#\EE\C5Ybl\A5#\D8z6\E0ρ\9B#;\A9\91\97\D3Ĺ}\9F\E5\82~OqX\E1\E6\84~ws}#\E6~|#\CFl:\87\A6#\
9Dw\EA#I[d\00\F19\E6 髮\D4\F8f\AFW\B9\A1\EA#\CA#R;3s[C9#\AF\B9\9EW\B6\9F$Q ڽ\D5\DEa\D3\E5\94#{\B7M\F7s'p\97\E2$\
85#\B5\F0\93\A1ЁIn\F0t\8As\EBR~\BF\E2\DC:N9\F4o\F4\CC\DBѹ\CF\C6#\D3N\F2\A90\CE\FC\F9w#\C0W\B9#xP1\92<\E1P+#\8D\
BC\99\D3\FB,p\FD\BD\87\96Vsx¢\BC\BC\EDdb\EA\93M\85\F1\C0N\9C\C5D#KD\99\8C\D3c*R\E0ǐ\879\A9 ע\B4\BD\FFI\BD#qS\
D5C#:u\A6c\C9\D2u#`"\CEF#z\AC\A4\D2\E6/ \85#\FA=\95\F6\CF9\BF\DF<\BEY\FE\8A#O\8D\90\89\F93\83n\00_#\9EF\87s\
A4D~N#7U=\9C\B1ʍ\A9\EAar#$|jt#\E6\98##\A4#\F4ř\DE[\A8XH\8DI#OsH\FE\8E\8C}\DE!\F9;8\AF\E2#\9F:\85&#*\82f\00\A5\
C0\8B@\99b\C0##\E8\F7tV>3DL\E2\A7N#\F0\82j\8C\93\8D\99\8098#+jI\AF#)\AD\A6O\C1\96\B8_#m\CDe\FE\A6\EF\F1\E2:\AC\
AfuNA\AF,Y\CF\C4\DE#9\A7\EF|r\C3Oγ\C1#\AAJ\D7P\BD{\88!u\86#O#g#-~7\80;\81\D3U\E6\EEp\DC\C1o\C7\FD ڝ\A62~\B4\EC\
97_\99\E6\BBr\D7pV\EE#\CE\F3[\CE`\FA\A8\EB(\89\EB\FD\8E?\F8-#\80{\9CF#\E6\C1d\BAp:\96\F2\FC\A3\A3tU\\AF\DB\DB ڷ\C3\
E4o˚\DDU\FCh\D9/i\8E\C5\F7\#Z\BAZ#\E0.wd\FA\E1\98I##h\AA\FE#\EEs\91\BEE\9B\E2z\DD\FCM ok\81Ç\DDU<\B7\E9\BBq\
BDgE\9C\9F-\E2&dr\E4p\BF#@!0?[##~&\DE\EA\FA\82\AD#\E3~\CF#\B6\9C\E6\EAg\8B\84(#\9E#C\A3c\992\80|a*\DB48k\A4>\AE\
D7\FD\EB\CB\F8\8F\BD__#\DF#\A8\C8,'#\AE3\CC\E4L\DA\C9D'\E0e\E8Ğ\FD\AC8uTV>7\91\F9\FB\AD\B1\F8^\9B#jq\FD\FB\8C\\
B8LA\E20#x#gg!\CF\D6\00\8E\00\FEGe\99}#/\F90\EE\D7~\AD\F8#f#3H\F3\A9\C4\E94\80\`6\DA\C8\D3N\EB#\FF\C1\89\BD#J0;
(29\94\EBE#\B8#8Feh#\E7U<\C3\C08j##K>\E4÷g%\98=#C#7\C8I\97###ב\B2\B3\87n\E1\BD\CC#}\83J>8@\F2\AFc\C6\E8k\E8#\DE+\
C1\EC\E26\93S\AE\93\8EN\C0<\9C\A5\8E\DA\C6\DB2#\C9\DF\C1#c.\E5\E9O\CE\E5ŭ#\D9P7\00\80#\C5#8\AD\F7#Ÿx&\EE\A9\C0"\
A3 神##4\D9n\00\B7#CUfv\92#\8ErQ\FF9\\D4 \8E\C4\F0#Cq\A6\BB\BAS\B6\DBM\80aX\B8\F3\A9#>\E1F\^D\E7f\FC\964\F6Xf\A4\
AE#\DDJ~\ED\EB\E46\AC$\DC\C(\B0\CB =7^\E1\EA\FB\C5B#Z#eD#\86\D3X2\96\96\DC ←\AE\C0#\BF#\C6#\AD\B6#\C0\95\C0#\
AF*#\8AE)\DC9\8F\FC\BA\C5#kU&\FA\84P\AC\99\9C\E8\A7\E4D?%\BF\F6e#\8B\C7S\DFc#\B1\90g\9FScL\AE\FD&@w\9C\FD\
FC=#$%;~M~\ED\ABJ~?#k%\BF\F6UJv\FC\9AP\CCж\9D\F7\9A\9C\B3\C6\00\EE\C2û\FB#\EE|\8A.,j%H@\C8m\A8\A6p\E7</ \
852\9C#A+`0p\95\B7\DB\FC\8B\95###\BFv19ья^\FEW\9B\DC`#<\82\87;\FE\F2k_g\FE#\E1)ZM\D9{\B7"#<\9Cm#\F8#ξ\FE#\AE#\
AET.#\B6)\E0\F9\B2?\CD\E4`Vx\FE\98\98p\B36\B5#*9\FE(\FB\87R\C9\E3T\86#'\E3\83M>2>OW\A4# \CC\F1#frqv& #\B8G#\
94##WH#\E16\F7\00s\81\84\C76\93\AD:L##Hw!\AC`\80\C9R\F4#D\D0R_!l\E3\D6dj\F4\C94#.\FAxO\EF^L\9Dr#\A3F#\A1\B0\B0 \
B1_~\EFb\85\EA#x\F9\85\DF'\F4\FA\FA\FA#\96\AD\A8f\E6\ACg u{\D0k#\97\E2,#N[#\DC#\F4\E4\9F\F1\8B\DB#{¨ē_\
B8Naa#cO#Ō_\DCN\9F82\□.\C7\F5$x\EEF\A2#p#賠\A6N9\87\92b#hl#%N\y ٹA\97a\88\C9V#\C0\CDAWx\D4H\9D\85g+G\ABl \
C1\FD8#1\80\91\C0#U9U\ED\B7\B6l\F2%#\8C7\B9\EA\BA#\FCX\DA"\00W\A0#8_\BA\E1\CE79\EB\9A#\\86ƿ\FA#"@DL\CE\C6\
F5®##WHS\97#\F1\844#\99\E0`##K\B5#0\81\9EW.\84p\85Á\93\DCh#L\95\96Bx\B6#\90\92#\F4#Z\8EBx\92\B3M#'m\00\93p\8E\
FA#Bx\8F<\93\C3I#\C0E\D2P#O\93\B4#\F4#N\90~Bx\9Aq#`N\C0\81\E0<#\Y$\84\B0\8E\B0\C9\E5\84\E0\i'\84\BF\9B#\9D#\C0a\C0\
B1\D2M#_0\C6\E4t\DC#p\86\AA\FFB\F8\AA#pF"#p\8A4#\C2W|;^#\C8#N\96^B\F8\8Ao\D2\C1\9C\9Ep'\ED\85b\E9%\84\AF(\A6\83a\
FD\8E`\A2\B4# L\8C\C7\00\BE-\9D\84\F0%\A7te\00\BD\80\E1\D2I#_2\9Cv\B3#\DB#\C0\89\D2H#_3\EE@#0N\FA#\E1kN<\90#|C\
FA#\E1kN\E8\CC\00\8Aq\CE##B\F8\97a\B4#\E6ok\00G#9\D2G#_\93##ǎ#h\F1\8F#\C1`Tg5\00!\84\FF9\BA###)]\84###\DB#@#0P\
BA####\9A\9C\DFo\00\83Q#\A0#A!\C7\E4\FC~#\D0\C1\EAB#\8B\A1m`\A8\F4#"Pik\00\95\D2C\88@Q\D9\D6\00\D4#(D\B0#\A8#\
80#\AA#\D0#8Hz#7\89#c\DA\E6\BF\F2 觋%\86\9D##t\8F\00#\D2B\B8\C9\DEX3\B7l|\8E\85_\AC\DA\FFoW#:^\C2\D8GE#\E8+#\
84[Ω4r\CDGsy\BBv\C3\FE \9B\F1\E9"\99\80\9D\F4\8Dp\80\83#\85H\84m\D1/\F9\E1\87O\F0A\C3\F6\AF\FC\9FL\C0J\CAe\00\C2#\
D65\EC\E0#\EB\9F`\DB\DE ڠ\BEF&`\A7##"#D*\BCS\B7\91\AB\D7\CF\E5·\86._+#\B0\8A\B2#P&#D\B2,\FCb#\B7l|\8E\BD\B1\E6\
B8 G&`\97#t\97#"#\FE\B4\E3M\A6m\FE+\AD\C4#\FE]\99\80#\FC\87@$L\8C##n~\89?\EEX\92\F4{\84#Q#\EE&1\B3K\F7#P"#D\
BCt4Ө(9\A10\F7U\9C\C5w{\8E\90\A0 o8\82f#\8A8\E9h\8C?Q\F2ù\FCr\C0$I#\92\A0 ٧4#\E4K#\D1#ʹ\F2\83#g\B3\AEaG\D1V\C0o*'3\
A2Hs\CF,!/B#g\86#ix\C6\F8\BB\A2\BC[)3#\BF\84\CA|:YD~#\88H#\D1#Kk7r\CDG\F1\8D\F1wFe~#3#\BF\84\F2n\A5#\D4."#\A0H:\
88\8EHf\8C\BF=G##\C6o+'\D3=R(A\ED\A3HO \D1!\A9\8C\F1\EFc\DCA#\F9\D5\D7&Q\A0\E1>{\AB\00\92@\B4e\DF:\FEY;\DEL\
E9}\CE\ECq#\F7\F7;\8BHH\9BM\CB\00\84'pc\8C#\E0\F2^c\B8\B1\CF)\84#IT##@=\A0#Z\C0qc\8C?D\88#\FB\9C\C2\E5\BD\C6HPo\
B0'#D\A5C\B0qc\8C_\B3\FB<Is#h\92#v\B2o?\BDt.\98qc\8C_\B3\FB<Kc#h\94#v&\FF\BE#s\E92#7\C6\F85\BB\CF\D34E\80/\A5\83\
DDɟ\8E\A5\B3n\8C\F1kv\9F\E7\D9##j\A5\83\BDɟ##pc\8C_\B3\FB|A]#\D8%#\ECN~\B7L\C0\AD1\FE#\8B#\E3\B1ʋ)\8D#\A8м\CD.#\
80G\92?U#pk\8C_\B3\FB|\C5##\A0F:x#\F9\935#7\C6\F8A\B3\FB|HM#\D8!#\BC\93\FC\89\9A\80#c\FC\A0\D9}~6\80m\D2!{\C4R\
E8\88\EB\CA#\DC#\E3\D7\EC>_\B3M#\90e\AE>t\C2\FE\9A\80\9B&\E0\C6# N(\CC\FD\FD\CE\E2\AC##TP>6\80M\D2\C1_&\E0\
C6#\BFf\F7#\82M2\00\9F\99@IN^\CAc\FC\9A\DD##>\89\00_\E0\CC#\D4\EE\C0>1\81T\D0\EC\BE\C0\F0%\B0+l\FE\F2\91\F4\B0\
C7#\B2uZNe~#s#]\A1\E4##\EB#\F6#\C0#\D2#\D8&pT\D1a<9\E8M\ED#\EB\E0\DF;#\AD\97#\FEj#$\82f\F7#\B7#\B0\CF\00\AA\
A5G0M@\B3\FB#K\B5 \E0&\A0\D9}\81fu[#X#\B4\B6\E9##>6#\CD\EE# ←&\E7\F7'|=\EA#\B4\DE#\DC\E8#\CC\85\F9Y\FF\EF*\
F9\83\CD:\A0\81vO\FC#\D2\C5\DF&\90#\CEe\C6\D7.\D4\D4^\F1□#\DA#\C0r\E9\E2_#(\8D#\F0\F8\C0)\9A\DA+\00\96\ED\FB\A1\
ED\C1 K\A5\8B?\FB#4\BBO\B4cig#\B0#\D0`\B0\8FL@{\F7\89v\ECmk\00m\9B\00\8Dm\AB#\C2\FB\CD#\CD\EE##\B0\9C6G#\B4#\
F6["}\FCa#\E3##\C8\E3#\A7h\E3Nÿ7\DA\FE%|\A0\FF#\DE4\813{#ţ\95#jj\AF\E8\D2\00 ٹ#\FC#\E9\E3\ED>\81\FA\9A\DD'\926\80#`
%0\:y\D7#\84\E8\84U\B4\DB#\B8\A3\A9\BF/I'!|\C9_\DB\FFCG#\B0@:\E1K#\C4c\00o\00u\D2J#_QG#\9D\FC##@#\F0\8A\F4#\C2W\
BCjr\BBK#谭\84\F04 \E9\E8#;3\80?C\FBJ#!l\A2\D5\E4t\DC#\B0#-##\C2/,19#\B7#\00<+\F0#Ow\F6##2\80yj##\E1\8B\EA R#\F01Z#

```
\84\D7y\F84##\00\98+\FD\84\F04\F3#\F4\9F\F1#@\934#4#\A8\FA#\8F#|#\8EBx\92\F9\C0g\A9#\00\C0L\E9(\84'\F9}W/\88\
C7\00###JK!<\C5z\9C\E9\BF)#@,#'#BX\C5L\E2#Ə\F7(\B0?#Qi*\84'h69\8B[#\B0xJ\BA\E1\9E29\EB\9A#\00\FCB\BA\E1#\89\
F7\85\89#\C0`\B1\B4#\C2j#\93\C09\9F\89##\FEs\E9+\84\D5LK\E4'n#\C0K@\B54#\C2J\AAIp3\9FD \96H\FBB#\91\F1\B6   ,\9D#\00\
F0'`\83\B4#\C2*6\00\B3#\FD\A5d\A0#x@z#a#?#\89\B9:\E1$?l\96j#BX\F5\F4\9F\95\CC/&k\00Q\E0.\E9.\84#\DC#\EC#\00<\89s#"{\
AC2\B9H\A6\A0#\B8I\FA#\91Un4\B9\98q#\00X\88\CE##"[\BCH'#~d\CA\00\00\AEG+#\85\C84Q\E0\86T\DF\C4#X#<\AA\F2#"\
A3<jr/\EB#\00p#P\A32#"#Ԙ\9C\C3##\D8#ԓr#"#\DCar\CE##\00\F8#\CE#dB\88\F4\B1\C4\E4#\B6#@+\F0\9F\F8\BCC\B0\BE\BEA!h)\
8D\BE?\C2"\FC#)\FB\A5\D3\00\00V##\F9\B9#\96\BF\B7F\99f)\AF\F6\FBW|#x\DF\CD7\A7\E1&\F8\B6$f\CEz\86 ںze\9Be\D4\ED\
A9g\E6\ACg\FC\FC#W\9B\DC\C2v#h#\BE#\B4\F8\B1#6o\D9\CE\D5?\BE\8F   ,YN}C\A32/\DBM\B2\86F\FE\B1d9W]w#\9B\B7l\F7\
EB\D7l19\E5z#'\92\A6#^\8A\B3d##[\B6n\E7\EE#4\F5Ad\8C#LN\B9N8\8D7}/\F0\AE\CAN\88\94x\D7\E4#^3\80(p\B0Ge(DR\EC19#\
F5\A2#\803U\F1#\95\A3#Iq5.L\F7#\00<#V\E2PDa#Pb\E1<\9Bo\EF   \89\F3x/\DB\00`*\96n#\D2#)S&#\94\D6\C8\C1\B6\DE\DA*\E0\
CAL|P\A6\A0#8#\D8m\9B\D2т\E1ʆ\80#\CD#j\E3m\ED6\B9R\EF'#\00X#\J\82\FB\96\A7\9Bƒ\B1#\96A\D8A\BD]\AD#\93#\EB2\
A7Bfy#\B8Ẍ&@no#K\C6+##Fc\C9xZr{\DBv[\F7\9B#\C1\AF#\00\CE:\E6#mR\BD\BE\C7\F9D#\86(+\82R\F5/#B}\8FI\B6\DD\D6#\E0\
EE\CC:\B2\F0\D0#&\E3,#\B2\A3\DE#\8AP{ŋ4\96L\80\90\9A#\BE%#\A6\B1d#\B5\87\K,\94kӝ\AD#."#\D3\E7C#\AE\CAZ\93\BC#g\
96\93U\DD\F09ѩ\E4□Nn\C3\FB\E44\D7@\ACE\89\E3ab\A1<Z#=\89#\A3\B1d\AC\8D\D5\FE#\E0#\E0\E3\ACxb#\00\E0\EB\C0\
AB@\A1BU#\90z\E0$\E0\EDl\DD@\B6\EB\BBo##\E2æ\83Bt\D1#\BE0\9B\C9o\83#\80\D3\EBy9\96#\91Z\89\89\F9\E7\B3}#\B6\F4x\
CD#\FE[q!#\C2u$q\94\B7\9F\00\E0\D7da#D\88s70 9\ـB\B1m\CC\EB#\9C\C9#B\F8\91\FBqi?\BF#\00\C0\ED\C0\83\8A#\E13#4\
B1\8D\A0kn\C6\D9#I#?\F0\80\89id\00\F1s#p\A7bGx\9C\BBL,##H\9C{qF#4D(\BCF\CC\C4\EEOm\BEI/L|\9F#\#4+\A6\84Gh\C6#\
E7\9Fn\FB\8Dze\E5ˣ\80\B3\80:Ṛ\B0\9C=&Vgy\E1f\BD\B4\F4m#µ\E9\ED\8A1a)ە&V\91#\B8\CF;\C0\F1X\B4\94X#\C3J#\9B\EF 霏\B8\
F8}#p\82\97\V\F8\9E#&&7x\EDѣ\BA\FBE-p&0\8D#\88\EC#31x\A6\89Id\00\99\A3#\B8#\B8\00u#\8A\CCS\87\B3\9C\F7#<\BC\9C\
DD#\FB_\CD\C3\D9Xd\ADbRd\88\B5\C0q\C0S^\FF"~\D9\00\AF#g[\A5'#\9B"\CD<ibm\B5#\BE\8C\9Fv\C0\AC#.\C69Q\A5^q*\\A6#\
F8\81\891\DF49\FD\B8#\EEL`#\B0L1+\b\99\89\A9\DF\F9\ED\8B\F9u#\EC\B58c\B2\F7\A2)\C4"y\9AM#\8FO\FB\98\FC\BC~#g5\E1#\
E0}ŲH\90\F7q\C6\F6\EF4\B1\84\C0\9B\BC#\8C\C6Y\92 ʌ\B8#]J\B3q\C7h`\A9□lP\8E\C1\89\E2l\CA0#xM1.:\E15##\F7\FB\F9\
ƻ9#D#\D8ǿ\80\F1\C0#\81\CF#\EF\C2\F1&F#C###\8F##\81G\82\E2\F4\A2C\9AM41#\B8i\E5A>s#p\83\A9\F2\FDE\B9#8\
FE##eb`WPE\D0Q\B8\CE,\C2S˛Jr\F8\9E\D5m':\E8b\C8\00\BE\FAD\B8##.\EB#]\B2\C1\94 聶\F1\C9\00:\A3#\E7Ȧ\C18S\8Ae#\FEH\
FC+M\99\CE6e,d\00#d/Δ\E2#\80⊠\E8 ٦\DD\F7M#\CE4e*d\00####\86#\A7#\8B$\89\F5,2e5\9DFyd\00)##^\C4t4BP#\96]F=ŭ\CDI\A6\
AC\B4S\94 -,\C3Y#\DA#\F8\B0^\92d\8D\F5\C0\AD\A6,.B+@#&4\E2*#e\AA#\9A\A7\CET\E0{@\9E$I+M\C0\FF\99v\FD+zђFD#\B8\
D2<x\C5\=\81\F3\CD\F5h\\D5\F8MS\8B\A6q\AB#\E0###\CE#&\E1,I#I\92\84\93\FE]\E0Y\9C}#5$+#\F0,}q\8E\8B:#8#û$#\D2#\
FC#x#x#\F8D\92\C8\00\FCF#\CE\F1Q\DF2WU\C0\F5X#\FC\CD\\8Bp\CE\D6#2\80\C0P\8E\B3\E5\D4\A6\A90#\C8\F5\E9w\8D\E2\
F4Ꮞa\AE7\81m##\80\F87#\C6#\8E#F#G\E3,W\F5Z\87b+\B0#X#\AC\00\DE2m\FA##\B1=h#\C0>#\80\D7\CDû\D90\D84#\AA\80#8c\
DF#L"\9Bl#>#6\E2t1\D7ZU\E7e\00\C2#\F6\98\AA\F3\B2Nj\FB\A1#g(\B2\CC\FC\D9\F6\CA#JMM\E2  \A7\CD{\D4ピク\83\B36>f\FE\
FEy\BB\AB\C6\FC\B9\ADM\C2\EB\89\EEa\FE   \00\9E\BB\DCK\E7o 00\00\00\00\ـيIEND\AEB`\82
------WebKitFormBoundarys89aFVifbfEYaKAp--
```


Yani parametreler Content-Disposition başlığı blokları halinde alt alta şekilde gönderilmişlerdir. Aşağıda binary verinin özet haline taşındığı daha öz bir http talep paketi görüntüsü yer almaktadır.

```
POST /formEncTypeTurleri/formAlani2.php HTTP/1.1
Host: 172.16.4.225
Content-Length: 23435
…
Content-Type: multipart/form-data; boundary=----WebKitFormBoundarys89aFVifbfEYaKAp
…

------WebKitFormBoundarys89aFVifbfEYaKAp
Content-Disposition: form-data; name="param1"

fatih123
------WebKitFormBoundarys89aFVifbfEYaKAp
Content-Disposition: form-data; name="param2"

deneme123
------WebKitFormBoundarys89aFVifbfEYaKAp
Content-Disposition: form-data; name="param3"; filename="icon.png"
Content-Type: image/png

((( Resim Binary Verisi )))
```

Yukarıdaki parametre gönderim yapısına bakılacak olursa parametre isimleri Content-Disposition başlığında yer almaktadır ve parametre değerleri blokların içerisinde yer almaktadır.

Görüldüğü gibi html <form alanı enctype özelliği enctype="multipart/form-data" şeklinde olduğu için gönderilen http talep paketi Content-Type'ı multipart/form-data olmuştur ve bu nedenle gönderilen http talep paketi içerisindeki parametreler Content-Disposition başlığı halinde sıralı alt alta bloklar halinde gönderilmişlerdir.

Sonuç olarak parametre ve değerler multipart/form-data Content-Type'ında önceki & (ampersand) 'lı gönderime nazaran farklı bir syntax'la gönderilmişlerdir. Ancak farklı sytanx'da gönderilseler de sonuçta gönderilen şey parametre ve değerdir. Yani aynı şey karşıya gitmektedir. Fark mutlipart/form-data'da parametre değerleri büyük veri taşıyabileceğinden bloklar halinde verileri taşıma syntax'ına sahiptir. Yani sadece syntax'lar farklıdır.

c) text/plain

Html <form alanında girdiler gönderilirken gönderilen parametreleri debugging amaçlı kontrol etmek gerekebilir. Bu gibi durumlarda html <form alanının encType özelliğine text/plain konulur. Bu şekilde html <form alanının gönderdiği parametreler her biri ayrı satırda yer alacak şekilde alt alta gönderilirler. Örneğin;

HTML / PHP:

/var/www/formEncTypeTurleri/formAlani3.php:

```
<form action="formAlani3.php" method="POST" enctype="text/plain">
    <input type="text" name="param1">
    <input type="text" name="param2">
    <input type="submit" value="Gonder"/>
</form>
```

Form alanı submit'lendiğinde şu http talep paketi karşıya gider:

Http Request:

```
POST /formEncTypeTurleri/formAlani3.php HTTP/1.1
Host: 172.16.4.225
Content-Length: 35
Cache-Control: max-age=0
Upgrade-Insecure-Requests: 1
Origin: http://172.16.4.225
Content-Type: text/plain
User-Agent: Mozilla/5.0 (X11; Linux x86_64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/99.0.4844.82 Safari/537.36
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.9
Referer: http://172.16.4.225/formEncTypeTurleri/formAlani3.php
Accept-Encoding: gzip, deflate
Accept-Language: en-US,en;q=0.9,tr;q=0.8
Connection: close

param1=fatih123
param2=deneme123
```

Görüldüğü gibi html <form alanı enctype özelliği enctype="text/plain" şeklinde olduğu için gönderilen http talep paketi Content-Type'ı text/plain olmuştur ve bu nedenle gönderilen http talep paketi içerisindeki parametreler

```
param1=value
param2=value
```

şeklinde alt alta ayrı satırlar halinde gönderilmişlerdir.

Örneğin html <form'unda dosya girdisi de yer aldığında ve enctype'ı text/plain yapıldığında gönderilen parametreler yine her biri ayrı satırda yer alacak şekilde alt alta gönderilir.

HTML / PHP:

/var/www/formEncTypeTurleri/formAlani4.php:

```
<form action="formAlani4.php" method="POST" enctype="text/plain">
        <input type="text" name="param1">
        <input type="text" name="param2">
        <input type="file" name="param3">
        <input type="submit" value="Gonder"/>
</form>
```

Form alanı submit’lendiğinde şu http talep paketi karşıya gider:

Http Request:

```
POST /formEncTypeTurleri/formAlani4.php HTTP/1.1
Host: 172.16.4.225
Content-Length: 83
Cache-Control: max-age=0
Upgrade-Insecure-Requests: 1
Origin: http://172.16.4.225
Content-Type: text/plain
User-Agent: Mozilla/5.0 (X11; Linux x86_64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/99.0.4844.82 Safari/537.36
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.9
Referer: http://172.16.4.225/formEncTypeTurleri/formAlani4.php
Accept-Encoding: gzip, deflate
Accept-Language: en-US,en;q=0.9,tr;q=0.8
Connection: close

param1=fatih123
param2=deneme123
param3=Screenshot from 2022-04-18 15-36-19.png
```

Görüldüğü gibi html <form alanı enctype özelliği enctype="text/plain" şeklinde olduğu için gönderilen http talep paketi Content-Type’ı text/plain olmuştur ve bu nedenle gönderilen http talep paketi içerisindeki tüm parametreler

```
param1=value
param2=value
param3=value
```

şeklinde alt alta ayrı satırlar halinde gönderilmişlerdir.

Not:

Html <form alanında dosya girdisi gönderilirken debugging amaçlı encType’ı text/plain olduğunda dosya parametresinde gönderilen dosyanın içerisindeki veri yerine gönderilen dosyanın adı gönderilir.

Kaynaklar:

https://www.m5bilisim.com/webokulu/etiketler/ozellik-form-enctype.php
https://yazilimcorbasi.blogspot.com/2015/11/http-post-ve-multipartform-data.html
https://stackoverflow.com/questions/38017123/is-form-enctype-application-json-available
https://developer.mozilla.org/en-US/docs/Web/HTML/Element/form#attr-enctype
Paketleme İçin Gözden Geçirilecekler / WAP SAST Tool Nedir.docx
https://github.com/sqlmapproject/sqlmap/issues/4069
https://www.liquidmatrix.org/blog/sql-injection-using-sqlmap-multipartform-data-encoding/