Last
update:
2020/11/27
11:36

http_cookie

https://atl.kr/dokuwiki/doku.php/http_cookie%EC%99%80_%ED%86%B0%EC%BA%A3_%EB%B2%84%EC%A0%84%EB%B3%84_%EC%9D%B4%EC%8A%88

HTTP cookie

: <https://meetup.toast.com/posts/172>

HTTP

- HTTP   .
-
                       .

          (   )

- .   . 12 (DB   .)
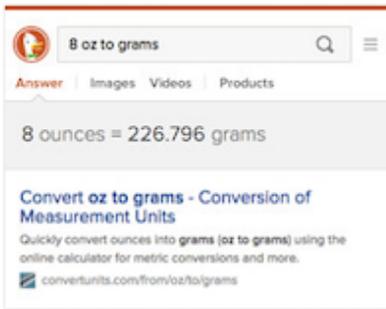-   UID(   )   .
-   UID

Name	Value	Domain	Path	Expires / Max-Age
JSESSIONID	564BEEA6D70D6851...	local-id.hangame.com	/	1969-12-31T23:59:59.000Z
LUT	W	.hangame.com	/	1969-12-31T23:59:59.000Z

Name	Value	Domain	Path	Expires / Max-Age
BID	B7OMN72YM6GFO38...	.hangame.com	/	2050-01-01T09:00:00.784Z
CAT	Y+1	.hangame.com	/	2018-11-21T00:37:34.514Z
HG_CP_LOGIN	"iNto0EJ2sxsKxoaitVu...	.hangame.com	/	1969-12-31T23:59:59.000Z
HG_JS	Y%5E27%5EM%5E%...	.hangame.com	/	1969-12-31T23:59:59.000Z
HG_LOGIN	c5U4eWNQ9GjS-_ouY...	.hangame.com	/	1969-12-31T23:59:59.000Z
HG_SP_LOGIN	"gYjFhmcAjqskoVTxfv...	.hangame.com	/	1969-12-31T23:59:59.000Z
LUT	W	.hangame.com	/	1969-12-31T23:59:59.000Z
NNB	LAS2L56ODPGVW	.hangame.com	/	2050-01-01T09:00:00.784Z
hgDomain	hangame	.hangame.com	/	1969-12-31T23:59:59.000Z
login	A08B6B53561B5A%2...	.hangame.com	/	1969-12-31T23:59:59.000Z

          (,   )

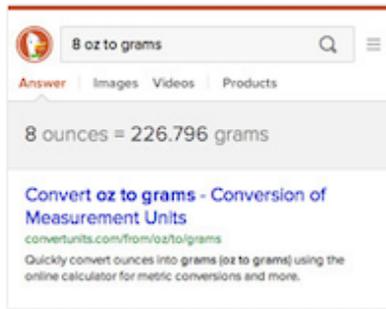-   .
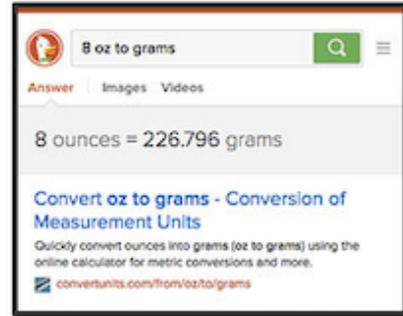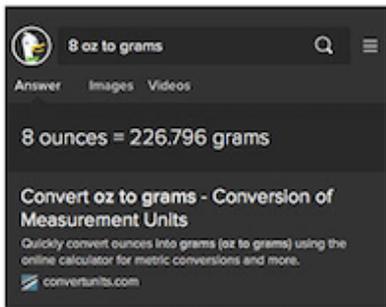-   , duckduckgo
          .

테마

기본값

기본

✓ 색상 대비

어둠
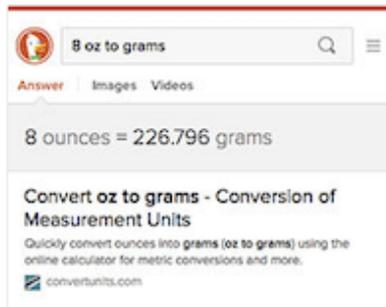
회색
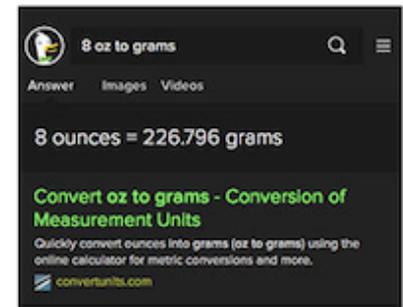
터미널

Name	Value	Domain	Path	Expires / Max-Age
ae	c	duckduckgo.com	/	2025-01-11T15:00:00.000Z

( )

-
  .
- ,
  .

.

```
GET /test HTTP/1.1
Host: localhost:8080
Cache-Control: max-age=0
Upgrade-Insecure-Requests: 1
User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10_14_0)
AppleWebKit/537.36 (KHTML, like Gecko) Chrome/70.0.3538.102 Safari/537.36
DNT: 1
Accept:
text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,
```

```
*/*;q=0.8
Accept-Encoding: gzip, deflate, br
Accept-Language: ko,en-US;q=0.9,en;q=0.8
```

Set-Cookie .

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
Set-Cookie: CookieName1=Example1; Expires=Tue, 27-Nov-2018 02:53:13 GMT
Set-Cookie: CookieName2=Example2; Expires=Tue, 27-Nov-2018 02:53:13 GMT
Set-Cookie: JSESSIONID=8EB8434C5776358C84017077E11A3300; Path=/
Content-Type: text/html;charset=ISO-8859-1
Content-Language: ko
Content-Length: 316
```

- Set-Cookie .
- name : value .

Set-Cookie .

Name	Value	Domain	Path	Expires / Max-Age
CookieName1	Example1	localhost	/	2018-11-27T02:57:08.663Z
CookieName2	Example2	localhost	/	2018-11-27T02:57:08.663Z
JSESSIONID	8EB8434C5776358C84017077E11A3300	localhost	/	1969-12-31T23:59:59.000Z

.

```
GET /test HTTP/1.1
Host: localhost:8080
Cache-Control: max-age=0
Upgrade-Insecure-Requests: 1
User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10_14_0)
AppleWebKit/537.36 (KHTML, like Gecko) Chrome/70.0.3538.102 Safari/537.36
DNT: 1
Accept:
text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,
*/*;q=0.8
Accept-Encoding: gzip, deflate, br
Accept-Language: ko,en-US;q=0.9,en;q=0.8
Cookie: JSESSIONID=8EB8434C5776358C84017077E11A3300; CookieName1=Example1;
CookieName2=Example2
```

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update:
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http_cookie
https://atl.kr/dokuwiki/doku.php/http_cookie%EC%99%80_%ED%86%B0%EC%BA%A3_%EB%B2%84%EC%A0%84%EB%B3%84_%EC%9D%B4%EC%8A%88

Domain

- Domain   .
-   .
  - EX) hangame.com   payco.com   .
-   .
- Domain   .
  - hangame.com   Domain
    - hangame.com   .
  - hangame.com   Domain   hangame.com
    - accounts.hangame.com   .

Path

- Domain
                        .
- Path   Path   .
- Path   Set-Cookie   .

Expires / Max-Age

- Expire   Max-Age   .
- Expire   .
- Max-Age
                .

Secure

- Secure   .
-   .

HttpOnly

- HttpOnly   HTTP   .
- HttpOnly   API   .

-   .
- Expires Max-Age
        .
-                Expires Max-Age
        .

- (HTTPS) .
- secure HTTPS
  .

Http-only

- API XSS
  .
- cross-site tracing (XST) cross-site request forgery (XSRF)
  .
- HttpOnly .

Same-site

- 51 .
- .

third-party

- .
-

  .

- .
- , HTML5 ,
  .

O, 1

- O Netscape 1 RFC 2109 .
- RFC 2109 Netscape [3]
-
  - Netscape Name, Value, Expires, Domain, Path, Secure, .
  - RFC 2109 Name, Value, Comment, Domain, Max-Age, Path, Secure, Version .
-
  - Netscape Expires
    RFC 2109 delta-seconds .
  - Netscape .
  - Netscape ; , ' ' RFC 2109

.

○ Netscape   -   "   , RFC 2109
.

○ Netscape   =   =   , RFC 2109
.

RFC 6265, RFC 2109   .

- RFC 2109   , RFC 6265
  .
- RFC 6265   RFC 2109   RFC 2965   .4
- Set-Cookie   .
- RFC 2109   Name, Value, Comment, Domain, Max-Age, Path, Secure,
  Version   .
- RFC 6265   Name, Value, Expires, Domain, Max-Age, Path, Secure,
  HttpOnly   .
- Comment   , Version
  .
- Expires   Date   , HttpOnly   HTTP
             . (API   )
-
  ○ RFC 2109   300   ,   4096   ,
                    20   .

```
* at least 300 cookies

* at least 4096 bytes per cookie (as measured by the size of the
  characters that comprise the cookie non-terminal in the syntax
  description of the Set-Cookie header)

* at least 20 cookies per unique host or domain name
```

- RFC 6265   3000   ,   4096   ,
      50   .

```
o  At least 4096 bytes per cookie (as measured by the sum of the
   length of the cookie's name, value, and attributes).

o  At least 50 cookies per domain.

o  At least 3000 cookies total.
```

- RFC 6265
          ""   .
- RFC 6265   Set-Cookie
  .
- javax.servlet.http.Cookie
-                          6265   .

> * This class supports both the RFC 2109 and the RFC 6265
> specifications. * By default, cookies are created using RFC

6265.

- setVersion   netscape, 2109   .

```
/**
* Sets the version of the cookie protocol this cookie complies with.
* Version 0 complies with the original Netscape cookie specification.
* Version 1 complies with RFC 2109.
* <p>
* Since RFC 2109 is still somewhat new, consider version 1 as experimental;
* do not use it yet on production sites.
*
* @param v
*            0 if the cookie should comply with the original Netscape
*            specification; 1 if the cookie should comply with RFC 2109
* @see #getVersion
*/
public void setVersion(int v) {
        version = v;
    }
```

- default   0 (netscape)   .
- RFC   6265   Expires   maxAge   .

```
private final String name;
private String value;

private int version = 0; // ;Version=1 ... means RFC 2109 style

//
// Attributes encoded in the header's cookie fields.
//
private String comment; // ;Comment=VALUE ... describes cookie's use
private String domain; // ;Domain=VALUE ... domain that sees cookie
private int maxAge = -1; // ;Max-Age=VALUE ... cookies auto-expire
private String path; // ;Path=VALUE ... URLs that see the cookie
private boolean secure; // ;Secure ... e.g. use SSL
private boolean httpOnly; // Not in cookie specs, but supported by browsers
```

- maxAge   Expires   .

Permanent Cookies	
▼ rfc6265	6265
Expires	Mon, 22-Oct-2018 00:21:45 GMT
Max Age	100
Domain	hangame.com

6.0~ 8.5   .

6.0

[6.0]

DIGEST   6.0.x Manager App   WWW-Authenticate

- https://bz.apache.org/bugzilla/show_bug.cgi?id=52983
-
    - 401   .

```
HTTP/1.1 401 Unauthorized
Pragma: No-cache
Cache-Control: no-cache
Expires: Thu, 01 Jan 1970 10:00:00 EST
WWW-Authenticate: Basic realm="Tomcat Manager Application"
Set-Cookie: JSESSIONID=****removed****; Path=/manager
WWW-AuthenticateREDUNDANT: Basic realm="Tomcat Manager Application"
Content-Type: text/html
Transfer-Encoding: chunked
Vary: Accept-Encoding
Date: Mon, 26 Mar 2012 03:39:09 GMT
Server: Coyote
```

-
    - 6.0.36   .
    - 401.jsp   . (.)
    -

    ""

- https://bz.apache.org/bugzilla/show_bug.cgi?id=57896
-
    -

```
Name: foo
Value: bar "baz"
```

-

```
Actual value:
[Cookie received: foo="bar "baz"\""]
Expected value:
[Cookie received: foo="bar \"baz\""]
```

-

- 6.0.45   .

7.0

7.0

JSESSIONID

- https://bz.apache.org/bugzilla/show_bug.cgi?id=60854
-
  -   .
  - JSESSIONID   .
  -                                 2   JSESSIONID   .
-
  - alwaysUseSession="true"   . (
)

ClusterSingleSignOn valve   SingleSignOnEntry

- https://bz.apache.org/bugzilla/show_bug.cgi?id=57338
-
  - 7.0.62   .

8.0 ~ 8.5

8.0 ~ 8.5

Domain   .

-
  - domain   .   .
    ```
    java.lang.IllegalArgumentException: An invalid domain [.hangame.com] was specified for this cookie
            at org.apache.tomcat.util.http.Rfc6265CookieProcessor.validateDomain(Rfc6265CookieProcessor.java:203)
            at org.apache.tomcat.util.http.Rfc6265CookieProcessor.generateHeader(Rfc6265CookieProcessor.java:145)
    ```
-
  - Domain   .   .
  -          LegacyCookieProcessor   context.xml   .

Request.parseCookies()   NullPointerException

- https://bz.apache.org/bugzilla/show_bug.cgi?id=58578
-
  - 8.0.29   .

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update:
2020/11/27
11:36

http_cookie
－

－
https://atl.kr/dokuwiki/doku.php/http_cookie%EC%99%80_%ED%86%B0%EC%BA%A3_%EB%B2%84%EC%A0%84%EB%B3%84_%EC%9D%B4%EC%8A%88

Rfc6265CookieProcessor

- https://bz.apache.org/bugzilla/show_bug.cgi?id=58445
-
  - 8.0.27   .

Rfc6265CookieProcessor

- https://bz.apache.org/bugzilla/show_bug.cgi?id=60627
-
  - 8.5.12   .
  - version   0   RFC6265   .

Set-Cookie   RFC

- https://bz.apache.org/bugzilla/show_bug.cgi?id=60876
-
  - 8.5.13   .

HTTP Status 500 - Request processing failed; nested exception is java.lang.IllegalAr cookie value or attribute.

type Exception report

message Request processing failed; nested exception is java.lang.IllegalArgumentException: Control character in cookie value or attribute.

description The server encountered an internal error that prevented it from fulfilling this request.

exception

```
org.springframework.web.util.NestedServletException: Request processing failed; nested exception is java.lang.IllegalAr
        org.springframework.web.servlet.FrameworkServlet.processRequest(FrameworkServlet.java:894)
        org.springframework.web.servlet.FrameworkServlet.doGet(FrameworkServlet.java:778)
        javax.servlet.http.HttpServlet.service(HttpServlet.java:618)
        javax.servlet.http.HttpServlet.service(HttpServlet.java:725)
        org.apache.tomcat.websocket.server.WsFilter.doFilter(WsFilter.java:52)
```

root cause

```
java.lang.IllegalArgumentException: Control character in cookie value or attribute.
        org.apache.tomcat.util.http.LegacyCookieProcessor.needsQuotes(LegacyCookieProcessor.java:431)
        org.apache.tomcat.util.http.LegacyCookieProcessor.generateHeader(LegacyCookieProcessor.java:303)
```

-
  - URLEncoder.encode   .

```
CookieController - ================================================
CookieController - Name : CookieName1 Value : %C7%D1%B1%DB%C5%D7%BD%BA%C6%AE1
CookieController - Name : CookieName2 Value : %22%C7%D1%B1%DB%C5%D7%BD%BA%C6%AE2%22
CookieController - Name : %C7%D1%B1%DB%C5%D7%BD%BA%C6%AE3 Value : Value3
CookieController - Name : CookieName4 Value : !@#$
CookieController - Name : JSESSIONID Value : EC15422CDCB16E4A7B15776C44ED6B41
CookieController - ================================================
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
Set-Cookie: CookieName1=%C7%D1%B1%DB%C5%D7%BD%BA%C6%AE1
Set-Cookie: CookieName2=%22%C7%D1%B1%DB%C5%D7%BD%BA%C6%AE2%22
Set-Cookie: %C7%D1%B1%DB%C5%D7%BD%BA%C6%AE3=Value3
Content-Type: text/html
```

  - Tomcat   8.5   .

```
CookieController - ============================================
CookieController - Name : CookieName1 Value : 한글테스트1
CookieController - Name : CookieName2 Value : 한글테스트2
CookieController - Name : %ED%95%9C%EA%B8%80%ED%85%8C%EC%8A%A4%ED%8A%B83 Value : Value3
CookieController - Name : JSESSIONID Value : EA7DD1577F4C3FACD984DCF3402C9E21
CookieController - ============================================
```

```
HTTP/1.1 200
Set-Cookie: CookieName1=한글테스트1
Set-Cookie: CookieName2="한글테스트2"
Set-Cookie: %ED%95%9C%EA%B8%80%ED%85%8C%EC%8A%A4%ED%8A%B83=Value3
Content-Type: text/html;charset=ISO-8859-1
```

=　　　　　　　=

```
CookieController - ============================================
CookieController - Name : CookieName1 Value : Before
CookieController - Name : CookieName2 Value : Before
CookieController - Name : JSESSIONID Value : 395EBD87DEB6B5A44E67DB1943D88E15
CookieController - ============================================
```

```
Accept-Encoding: gzip, deflate, br
Accept-Language: ko,en-US;q=0.9,en;q=0.8
Cookie: CookieName1=Before=After; CookieName2=Before==After; CookieName3============
==; JSESSIONID=395EBD87DEB6B5A44E67DB1943D88E15
```

-
  - 　　　　　　　　　　　＝　　　　　　　　　　　” “　　　　　　　　　.
  - org.apache.catalina.STRICT_SERVLET_COMPIANCE=true　　　　　　　＝
    ” “　　　　　　　　　.
-
  - catalina.properties
    org.apache.tomcat.util.http.ServerCookie.ALLOW_EQUALS_IN_VALUE=true　　　　　.

```
CookieController - ============================================
CookieController - Name : JSESSIONID Value : 95D054A9FE66C03204916CFA754F947C
CookieController - Name : CookieName1 Value : Before=After
CookieController - Name : CookieName2 Value : Before==After
CookieController - Name : CookieName3 Value : =============
CookieController - ============================================
```

```
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,
*/*;q=0.8
Accept-Encoding: gzip, deflate, br
Accept-Language: ko,en-US;q=0.9,en;q=0.8
Cookie: JSESSIONID=95D054A9FE66C03204916CFA754F947C; CookieName1=Before=After; Cooki
eName2=Before==After; CookieName3==============
```

  - URLEncoder.encode　　　　　　　　. (　　　　　　　Decoding　　　　　　.)

```
CookieController - ============================================
CookieController - Name : JSESSIONID Value : 95D054A9FE66C03204916CFA754F947C
CookieController - Name : CookieName1 Value : Before=After
CookieController - Name : CookieName2 Value : Before==After
CookieController - Name : CookieName3 Value : =============
CookieController - ============================================
```

```
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,
*/*;q=0.8
Accept-Encoding: gzip, deflate, br
Accept-Language: ko,en-US;q=0.9,en;q=0.8
Cookie: JSESSIONID=95D054A9FE66C03204916CFA754F947C; CookieName1=Before%3DAfter; Coo
kieName2=Before%3D%3DAfter; CookieName3=%3D%3D%3D%3D%3D%3D%3D%3D%3D%3D%3D%3D%3D
```

  - value　　　＝　　　　　　　　　　　　　　” “　　　　　.

　　　　　　　　　＠　　　　　　　　　　　＠

```
CookieController - ============================================
CookieController - Name : CookieName1 Value : Before
CookieController - Name : CookieName2 Value : Before
CookieController - Name : CookieName3 Value : Before
CookieController - Name : CookieName5 Value : Before
CookieController - Name : JSESSIONID Value : 991D95E8A3FE9CEA35C9D296ACD0516B
CookieController - ============================================
```

```
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,
*/*;q=0.8
Accept-Encoding: gzip, deflate, br
Accept-Language: ko,en-US;q=0.9,en;q=0.8
Cookie: CookieName1=Before@After; CookieName2=Before@@After; CookieName3=Before@@@@@
@@@; CookieName4=@@@@@@@@After; CookieName5=Before@@@@@After; JSESSIONID=991D95E8A3F
E9CEA35C9D296ACD0516B
```

-
  - 　　　　　　　　　　　＠　　　　　　　　　　” “　　　　　　　.
  - org.apache.catalina.STRICT_SERVLET_COMPLIANCE=true　　　　　　　　　＠
    ” “　　　　　　　.
-
  - catalina.properties
    org.apache.tomcat.util.http.ServerCookie.ALLOW_HTTP_SEPARATORS_IN_V0=true
    .
    - 　8.5

```
.CookieController - ============================================
.CookieController - Name : CookieName1 Value : Before@After
.CookieController - Name : CookieName2 Value : Before@@After
.CookieController - Name : CookieName3 Value : Before@@@@@@@@
.CookieController - Name : CookieName4 Value : @@@@@@@@After
.CookieController - Name : CookieName5 Value : Before@@@@@After
.CookieController - Name : JSESSIONID Value : C155C9C6F1DC33782D6CDB27A843C15D
.CookieController - ============================================
```

```
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,
*/*;q=0.8
Accept-Encoding: gzip, deflate, br
Accept-Language: ko,en-US;q=0.9,en;q=0.8
Cookie: CookieName1=Before@After; CookieName2=Before@@After; CookieName3=Before@@@@@
@@@; CookieName4=@@@@@@@@After; CookieName5=Before@@@@@After; JSESSIONID=27FBC1AC415
64E1EB7D136BBC73B2A59
```

    - 　7

```
.CookieController - ============================================
.CookieController - Name : CookieName1 Value : Before@After
.CookieController - Name : CookieName2 Value : Before@@After
.CookieController - Name : CookieName3 Value : Before@@@@@@@@
.CookieController - Name : CookieName4 Value : @@@@@@@@After
.CookieController - Name : CookieName5 Value : Before@@@@@After
.CookieController - Name : JSESSIONID Value : ADEA9B110739E0F276A0B50027984A02
.CookieController - ============================================
```

```
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,
*/*;q=0.8
Accept-Encoding: gzip, deflate, br
Accept-Language: ko,en-US;q=0.9,en;q=0.8
Cookie: CookieName1=Before@After; CookieName2=Before@@After; CookieName3=Before@@@@@
@@@; CookieName4=@@@@@@@@After; CookieName5=Before@@@@@After; JSESSIONID=ADEA9B11073
9E0F276A0B50027984A02
```

    - 　　　6 (　　　　　　　　)　　　　　　　7　　　　　　　　　　　　.
  - URLEncoder.encode　　　　　　　　. (　　　　　　　　Decoding　　　　　　)

```
CookieController - ====================================================
CookieController - Name : CookieName1 Value : Before@After
CookieController - Name : CookieName2 Value : Before@@After
CookieController - Name : CookieName3 Value : Before@@@@@@@@
CookieController - Name : CookieName4 Value : @@@@@@@@@After
CookieController - Name : CookieName5 Value : Before@@@@@After
CookieController - Name : JSESSIONID Value : 2141A6800CB6ABFB75CBE84A6B3E17B6
CookieController - ====================================================
```

```
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,
*/*;q=0.8
Accept-Encoding: gzip, deflate, br
Accept-Language: ko,en-US;q=0.9,en;q=0.8
Cookie: CookieName1=Before%40After; CookieName2=Before%40%40After; CookieName3=Befor
e%40%40%40%40%40%40%40%40; CookieName4=%40%40%40%40%40%40%40%40After; CookieName5=Be
fore%40%40%40%40%40After; JSESSIONID=2141A6800CB6ABFB75CBE84A6B3E17B6
```

- value   @   ” “   .

Value   +   " "(   )

-
  - Content-type   applicatoin/x-www-form-urlencoded   .
-
  - Url-safe base64 encode   . (Encoding   +   /   -   _   )

```java
        /**
         * This array is a lookup table that translates 6-bit
positive integer
         * index values into their "Base64 Alphabet" equivalents
as specified
         * in "Table 1: The Base64 Alphabet" of RFC 2045 (and RFC
4648).
         */
        private static final char[] toBase64 = {
            'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I', 'J', 'K',
'L', 'M',
            'N', 'O', 'P', 'Q', 'R', 'S', 'T', 'U', 'V', 'W', 'X',
'Y', 'Z',
            'a', 'b', 'c', 'd', 'e', 'f', 'g', 'h', 'i', 'j', 'k',
'l', 'm',
            'n', 'o', 'p', 'q', 'r', 's', 't', 'u', 'v', 'w', 'x',
'y', 'z',
            '0', '1', '2', '3', '4', '5', '6', '7', '8', '9', '+',
'/'
        };

        /**
         * It's the lookup table for "URL and Filename safe
Base64" as specified
         * in Table 2 of the RFC 4648, with the '+' and '/'
changed to '-' and
         * '_'. This table is used when BASE64_URL is specified.
         */
        private static final char[] toBase64URL = {
            'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I', 'J', 'K',
'L', 'M',
            'N', 'O', 'P', 'Q', 'R', 'S', 'T', 'U', 'V', 'W', 'X',
'Y', 'Z',
            'a', 'b', 'c', 'd', 'e', 'f', 'g', 'h', 'i', 'j', 'k',
'l', 'm',
            'n', 'o', 'p', 'q', 'r', 's', 't', 'u', 'v', 'w', 'x',
'y', 'z',
```

```
                    '0', '1', '2', '3', '4', '5', '6', '7', '8', '9', '-',
    '_'
            };
```

- Java 8 java.util.Base64 getUrlEncoder().encode .
- 8 org.apache.commons.codec.binary.Base64
  encodeBase64URLSafeString .

HTTP Status 500 – Internal Server Error

Type Exception Report

Message Request processing failed; nested exception is java.lang.IllegalArgumentException: Cookie name [(CookieName1)] is a reserved token

Description The server encountered an unexpected condition that prevented it from fulfilling the request.

Exception

```
org.springframework.web.util.NestedServletException: Request processing failed; nested exception is ja
        org.springframework.web.servlet.FrameworkServlet.processRequest(FrameworkServlet.java:894)
        org.springframework.web.servlet.FrameworkServlet.doGet(FrameworkServlet.java:778)
        javax.servlet.http.HttpServlet.service(HttpServlet.java:635)
        javax.servlet.http.HttpServlet.service(HttpServlet.java:742)
        org.apache.tomcat.websocket.server.WsFilter.doFilter(WsFilter.java:52)
```

-
  - .
    - Tomcat 6
      - value .
      - value .

```
            makeCookie(response, "(CookieName1)",
"Bracket");
            makeCookie(response, "{CookieName2}",
"Bracket");
            makeCookie(response, "[CookieName3]",
"Bracket");
            makeCookie(response, "CookieName4",
"(Bracket)");
            makeCookie(response, "CookieName5",
"{Bracket}");
            makeCookie(response, "CookieName6",
"[Bracket]");
```

```
.CookieController - =============================        Accept-Encoding: gzip, deflate, br
.CookieController - Name : CookieName1 Value :            Accept-Language: ko,en-US;q=0.9,en;q=0.8
.CookieController - Name : CookieName2 Value :            Cookie: (CookieName1)=Bracket; {CookieName2}=Bracket; [CookieName3]=Bracket; CookieN
.CookieController - Name : CookieName3 Value :            ame4=(Bracket); CookieName5={Bracket}; CookieName6=[Bracket]; JSESSIONID=5E4B1605129
.CookieController - Name : JSESSIONID Value : 5E4B160512920A4D213E5E2D8EFEEBCB   20A4D213E5E2D8EFEEBCB
.CookieController - =============================
```

- Tomcat 7

HTTP Status 500 – Internal Server Error

Type Exception Report

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        javax.servlet.http.HttpServlet.service(HttpServlet.java:742)
        org.apache.tomcat.websocket.server.WsFilter.doFilter(WsFilter.java:52)
```

-
  - URLEncoder.encode   . (Decoding   .)

```
CookieController - ============================================
CookieController - Name : (CookieName1) Value : Bracket
CookieController - Name : {CookieName2} Value : Bracket
CookieController - Name : [CookieName3] Value : Bracket
CookieController - Name : CookieName4 Value : (Bracket)
CookieController - Name : CookieName5 Value : {Bracket}
CookieController - Name : CookieName6 Value : [Bracket]
CookieController - Name : JSESSIONID Value : 5B0A4909254ED2D5897D9EBA5E937374
CookieController - ============================================
```

```
DNT: 1
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,
*/*;q=0.8
Accept-Encoding: gzip, deflate, br
Accept-Language: ko,en-US;q=0.9,en;q=0.8
Cookie: %28CookieName1%29=Bracket; %7BCookieName2%7D=Bracket; %5BCookieName3%5D=Brac
ket; CookieName4=%28Bracket%29; CookieName5=%7BBracket%7D; CookieName6=%5BBracket%5D
; JSESSIONID=5B0A4909254ED2D5897D9EBA5E937374
```

- [1]https://en.wikipedia.org/wiki/HTTP_cookie#History
- [2]http://web.archive.org/web/20020803110822/http://wp.netscape.com/newsref/std/cookie_spec.html
- [3]https://tools.ietf.org/html/rfc2109
- [4]https://tools.ietf.org/html/rfc6265