



**Regular Expressions Syntax** **Example: New domain**

^	Start of string
\$	End of string
.	Any single character
(a b)	a or b
(...)	Group section
[abc]	Item in range (a, b or c)
[^abc]	Not in range (not a, b or c)
\s	White space
a?	Zero or one of a
a*	Zero or more of a
a**	Zero or more of a, ungreedy
a+	One or more of a
a+?	One or more of a, ungreedy
a{3}	Exactly 3 of a
a{3,}	3 or more of a
a{3,6}	3 to 6 of a
a{3,6}?	3 to 6 of a, ungreedy
!(pattern)	"Not" prefix. Apply rule if pattern does not match.

```
# domain.com to domain2.com
RewriteCond %{HTTP_HOST} ^www\.domain\.com$ [NC]
RewriteRule ^(.*)$ http://www.domain2.com/$1 [R=301,L]
```

**Example: Page moved temporarily**

```
# domain.com/page.htm to domain.com/new_page.htm
RewriteRule ^page.htm$ new_page.htm [R,NC,L]
```

**Example: Nice looking URLs (no querystring)**

```
# domain.com/category-name/ to domain.com/categories.php?name=category-name
RewriteRule ^([A-Za-z0-9-]+)/?$ categories.php?name=$1 [L]
```

**Example: Block Referrer Spam (where referring URL contains "viagra" or "xxx")**

```
RewriteCond %{HTTP_REFERER} (viagra) [NC,OR]
RewriteCond %{HTTP_REFERER} (xxx) [NC]
RewriteRule .* - [F]
```

**RewriteRule Flags**

R[=code]	Redirect to new URL, with optional code (see below).
F	Forbidden (sends 403 header)
G	Gone (no longer exists)
P	Proxy
L	Last Rule
N	Next (i.e. restart rules)
C	Chain
T=mime-type	Set Mime Type
NS	Skip if internal sub-request
NC	Case insensitive
QSA	Append query string
NE	Do not escape output
PT	Pass through
S=x	Skip next x rules
E=var:value	Set environmental variable "var" to "value".

**Server Variables: HTTP Headers**

%{HTTP_USER_AGENT}
%{HTTP_REFERER}
%{HTTP_COOKIE}
%{HTTP_FORWARDED}
%{HTTP_HOST}
%{HTTP_PROXY_CONNECTION}
%{HTTP_ACCEPT}

**Server Variables: Time**

%{TIME_YEAR}
%{TIME_MON}
%{TIME_DAY}
%{TIME_HOUR}
%{TIME_MIN}
%{TIME_SEC}
%{TIME_WDAY}
%{TIME}

**Server Variables: Request**

%{REMOTE_ADDR}
%{REMOTE_HOST}
%{REMOTE_USER}
%{REMOTE_IDENT}
%{REQUEST_METHOD}
%{SCRIPT_FILENAME}
%{PATH_INFO}
%{QUERY_STRING}
%{AUTH_TYPE}

**Server Variables: Special**

%{API_VERSION}
%{THE_REQUEST}
%{REQUEST_URI}
%{REQUEST_FILENAME}
%{IS_SUBREQ}

**RewriteCond Flags**

NC	Case insensitive
OR	Combines rules with logical "or" instead of "and".

**Server Variables: HTTP Headers**

%{DOCUMENT_ROOT}
%{SERVER_ADMIN}
%{SERVER_NAME}
%{SERVER_ADDR}
%{SERVER_PORT}
%{SERVER_PROTOCOL}
%{SERVER_SOFTWARE}

**Directives**

RewriteEngine
RewriteOptions
RewriteLog
RewriteLogLevel
RewriteLock
RewriteMap
RewriteBase
RewriteCond
RewriteRule

**Redirection Header Codes**

301	Moved permanently
302	Moved temporarily
403	Forbidden
404	Not Found
410	Gone

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Anchors	
^	Start of string
\A	Start of string
\$	End of string
\Z	End of string
\b	Word boundary
\B	Not word boundary
\<	Start of word
\>	End of word

Character Classes	
\c	Control character
\s	White space
\S	Not white space
\d	Digit
\D	Not digit
\w	Word
\W	Not word
\x	Hexadecimal digit
\O	Octal digit

POSIX	
[ :upper: ]	Upper case letters
[ :lower: ]	Lower case letters
[ :alpha: ]	All letters
[ :alnum: ]	Digits and letters
[ :digit: ]	Digits
[ :xdigit: ]	Hexadecimal digits
[ :punct: ]	Punctuation
[ :blank: ]	Space and tab
[ :space: ]	Blank characters
[ :cntrl: ]	Control characters
[ :graph: ]	Printed characters
[ :print: ]	Printed characters and spaces
[ :word: ]	Digits, letters and underscore

Assertions	
?=	Lookahead assertion
?!	Negative lookahead
?<=	Lookbehind assertion
?!= or ?<!	Negative lookbehind
?>	Once-only Subexpression
?()	Condition [if then]
?()	Condition [if then else]
?#	Comment

Quantifiers	
*	0 or more
+	1 or more
?	0 or 1
{3}	Exactly 3
{3,}	3 or more
{3,5}	3, 4 or 5

Quantifier Modifiers	
<i>"x" below represents a quantifier</i>	
x?	Ungreedy version of "x"

Escape Character	
\	Escape Character

Metacharacters (must be escaped)		
^	[	.
\$	{	*
(	\	+
)		?
<	>	

Special Characters	
\n	New line
\r	Carriage return
\t	Tab
\v	Vertical tab
\f	Form feed
\xxx	Octal character xxx
\xhh	Hex character hh

Sample Patterns	
<i>Pattern</i>	<i>Will Match</i>
([A-Za-z0-9-]+)	Letters, numbers and hyphens
(\d{1,2}\d{1,2}\d{4})	Date (e.g. 21/3/2006)
([^\s]+(?:=\.(jpg gif png))\.\2)	jpg, gif or png image
(^[1-9]{1}\$ ^[1-4]{1}[0-9]{1}\$ ^50\$)	Any number from 1 to 50 inclusive
(#?([A-Fa-f0-9]){3}((([A-Fa-f0-9]){3})?))	Valid hexadecimal colour code
((?=[*\d])(?=[*a-z])(?=[*A-Z]).{8,15})	String with at least one upper case letter, one lower case letter, and one digit (useful for passwords).
(\w+@[a-zA-Z_]+?\.[a-zA-Z]{2,6})	Email addresses
(\</?[\^\\>+])\>	HTML Tags
<i>Note: These patterns are intended for reference purposes and have not been extensively tested. Please use with caution and test thoroughly before use.</i>	

Groups and Ranges	
.	Any character except new line (\n)
(a b)	a or b
(...)	Group
(?:...)	Passive Group
[abc]	Range (a or b or c)
[^abc]	Not a or b or c
[a-q]	Letter between a and q
[A-Q]	Upper case letter between A and Q
[0-7]	Digit between 0 and 7
\n	nth group/subpattern
<i>Note: Ranges are inclusive.</i>	

Pattern Modifiers	
g	Global match
i	Case-insensitive
m	Multiple lines
s	Treat string as single line
x	Allow comments and white space in pattern
e	Evaluate replacement
U	Ungreedy pattern

String Replacement (Backreferences)	
\$n	nth non-passive group
\$2	"xyz" in /^(abc(xyz))\$/
\$1	"xyz" in /^(?:abc)(xyz)\$/
\$`	Before matched string
\$'	After matched string
\$+	Last matched string
\$&	Entire matched string

iCalendar
BEGIN:VCALENDAR
BEGIN:VEVENT
UID: <i>guid-1.host1.com</i>
DTSTAMP: <i>19980309T231000Z</i>
DESCRIPTION: <i>Project XYZ Meeting</i>
SUMMARY: <i>XYZ Project Review</i>
DTSTART: <i>19980312T133000Z</i>
DTEND: <i>19980312T143000Z</i>
LOCATION: <i>1CP Conference Room 4350</i>
END:VEVENT
END:VCALENDAR

hCalendar
<pre>&lt;div class="vevent"&gt;   &lt;h3 class="summary"&gt;XYZ Project Review&lt;/h3&gt;   &lt;p class="description"&gt;Project XYZ Meeting&lt;/p&gt;   &lt;p&gt;&lt;abbr class="dtstart" title="1998-03-12T08:30:00-05:00"&gt;12 March 1998, 8:30am EST&lt;/abbr&gt;   until &lt;abbr class="dtend" title="1998-03-12T09:30:00-05:00"&gt;9:30am EST&lt;/abbr&gt;&lt;/p&gt;   &lt;p&gt;Location: &lt;span class="location"&gt;1CP Conference Room 4350&lt;/span&gt;&lt;/p&gt;   &lt;small&gt;Booked by: &lt;span class="uid"&gt;guid.host1.com&lt;/span&gt;   on &lt;abbr class="dtstamp" title="19980309T231000Z"&gt;9 Mar 1998 6:00pm&lt;/abbr&gt;&lt;/small&gt; &lt;/div&gt;</pre>

hReview
<pre>&lt;div class="hreview"&gt;   &lt;span&gt;&lt;span class="rating"&gt;5&lt;/span&gt; out of 5&lt;/span&gt;   &lt;h3 class="summary"&gt;Review Summary&lt;/h3&gt;   &lt;span class="reviewer vcard"&gt;By: &lt;span class="fn"&gt;FirstName LastName&lt;/span&gt; -   &lt;abbr class="dtreviewed" title="19700101T0100-0200"&gt;January 1, 1970&lt;/abbr&gt;   &lt;/span&gt;   &lt;div class="description"&gt;Review Text&lt;/div&gt; &lt;/div&gt;</pre>

Further Information and Specifications
<a href="http://microformats.org">http://microformats.org</a>

Format Note
Data is denoted in <i>italic green</i> .

vCard
BEGIN:VCARD
VERSION:3.0
N: <i>LastName;FirstName</i>
FN: <i>FirstName LastName</i>
NICKNAME: <i>NickName</i>
TITLE: <i>JobTitle</i>
ORG: <i>CompanyName;DepartmentName</i>
TEL;type=WORK: <i>WorkPhone</i>
TEL;type=CELL: <i>MobilePhone</i>
TEL;type=HOME: <i>HomePhone</i>
EMAIL;type=INTERNET;type=WORK: <i>WorkEmail</i>
EMAIL;type=INTERNET;type=HOME: <i>HomeEmail</i>
URL;type=HOME: <i>http://www.url.com</i>
BDAY;value=date: <i>1970-01-01</i>
END:VCARD

hCard
<pre>&lt;div class="vcard"&gt;   &lt;a class="url fn" href="http://www.url.com"&gt;Firstname Lastname&lt;/a&gt;   &lt;a class="email" href="mailto:..."&gt;email@domain.com&lt;/a&gt;   &lt;div class="title"&gt;JobTitle&lt;/div&gt;   &lt;div class="org"&gt;Company&lt;/div&gt;   &lt;div class="adr"&gt;     &lt;span class="type"&gt;home&lt;/span&gt;     address:     &lt;div class="street-address"&gt;123 Fake Street&lt;/div&gt;,     &lt;span class="locality"&gt;Town&lt;/span&gt;,     &lt;span class="region"&gt;       &lt;span class="County/State"&gt;         &lt;span class="postal-code"&gt;90210&lt;/span&gt;.       &lt;/span&gt;     &lt;div class="country-name"&gt;Country&lt;/div&gt;   &lt;/div&gt; &lt;/div&gt;</pre>

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RelTag
<a href="http://technorati.com/tag/tagname" rel="tag">tagname</a>

XFN Format
<a href="http://www.domain.com" rel="friend, met, colleague">Friend Name</a>
"friend, met, colleague" should be a comma-separated selection from the values below.

XFN Values	
acquaintance	kin
child	me
co-resident	met
co-worker	muse
colleague	neighbor
contact	parent
crush	sibling
date	spouse
friend	sweetheart

Dates: ISO 8601	
2006	2006
2006-01	January 2006
2006-01-15	15th January 2006
20060115	15th January 2006
2006-042	Day 42 of 2006
2006-W05	Week 5 of 2006
2006-W05-4	Thursday (day 4), Week 5, 2006
23:59:59	One second to midnight
235959	One second to midnight
23:59	One minute to midnight
23	11pm (23:00)
(DATE)T(TIME)	"T" separates date and time where both are present.
(DATETIME)Z	"Z" at end indicates UTC time.
0800-0500	Equivalent to 13:00 UTC. This means "08:00 in location where time zone if 5 hours behind UTC".

String Functions	
<b>Exact Numerics</b>	
bit	decimal
tinyint	money
smallint	numeric
bigint	
<b>Approximate Numerics</b>	
float	real
<b>Date and Time</b>	
smalldatetime	timestamp
datetime	
<b>Strings</b>	
char	text
varchar	
<b>Unicode Strings</b>	
nchar	ntext
nvarchar	
<b>Binary Strings</b>	
binary	image
varbinary	
<b>Miscellaneous</b>	
cursor	table
sql_variant	xml

Type Conversion
CAST (expression AS datatype)
CONVERT (datatype, expression)

Ranking Functions	
RANK	NTILE
DENSE_RANK	ROW_NUMBER

Grouping (Aggregate) Functions	
AVG	MAX
BINARY_CHECKSUM	MIN
CHECKSUM	SUM
CHECKSUM_AVG	STDEV
COUNT	STDEVP
COUNT_BIG	VAR
GROUPING	VARP

Table Functions	
ALTER	DROP
CREATE	TRUNCATE

Date Functions
DATEADD (datepart, number, date)
DATEDIFF (datepart, start, end)
DATENAME (datepart, date)
DATEPART (datepart, date)
DAY (date)
GETDATE()
GETUTCDATE()
MONTH (date)
YEAR (date)

Dateparts	
Year	yy, yyyy
Quarter	qq, q
Month	mm, m
Day of Year	dy, y
Day	dd, d
Week	wk, ww
Hour	hh
Minute	mi, n
Second	ss, s
Millisecond	ms

Mathematical Functions	
ABS	LOG10
ACOS	PI
ASIN	POWER
ATAN	RADIANS
ATN2	RAND
CEILING	ROUND
COS	SIGN
COT	SIN
DEGREES	SQUARE
EXP	SQRT
FLOOR	TAN
LOG	

String Functions	
ASCII	REPLICATE
CHAR	REVERSE
CHARINDEX	RIGHT
DIFFERENCE	RTRIM
LEFT	SOUNDEX
LEN	SPACE
LOWER	STR
LTRIM	STUFF
NCHAR	SUBSTRING
PATINDEX	UNICODE
REPLACE	UPPER
QUOTENAME	

Create a Stored Procedure
CREATE PROCEDURE name
@variable AS datatype = value
AS
-- Comments
SELECT * FROM table
GO

Create a Trigger
CREATE TRIGGER name
ON
table
FOR
DELETE, INSERT, UPDATE
AS
-- Comments
SELECT * FROM table
GO

Create a View
CREATE VIEW name
AS
-- Comments
SELECT * FROM table
GO

Create an Index
CREATE UNIQUE INDEX name
ON
table (columns)

Create a Function
CREATE FUNCTION name
(@variable datatype(length))
RETURNS
datatype(length)
AS
BEGIN
DECLARE @return datatype(length)
SELECT @return = CASE @variable
WHEN 'a' THEN 'return a'
WHEN 'b' THEN 'return b'
ELSE 'return c'
RETURN @return
END