

JWT expression parser functions

Jira Workflow Toolbox uses powerful parser expressions for interpreting all kinds of data.

If you are new to JWT, we suggest starting with the [JWT expression editor](#) and [What is an expression?](#).



All available parser functions

Function name	Short description	Output	Label
abs()	Returns the absolute value of the input number.	NUMBER	
acos()	Returns the arccosine value of the input number.	NUMBER	
addDays()	Adds or subtracts days to or from any given date .	NUMBER	
addDaysSkippingWeekends()	Adds or subtracts natural days (or working days) to or from any given date.	NUMBER	STAFF PICK
addMonths()	Adds or subtracts months to from any given date.	NUMBER	
addTime()	Adds or subtracts days to or from any given timestamp based on a JWT calendar specification .	NUMBER	
addTimeSkippingWeekends()	Adds or subtracts time to or from any given date.	NUMBER	
addYears()	Adds or subtracts years to or from any given date.	NUMBER	
allAvailableItems()	This function returns all available options of selectable fields.	TEXT LIST	
allCommentCreators()	Returns all comment creators	TEXT LIST	
allCommentDates()	Returns the dates of specified comments	NUMBER LIST	
allCommenters()	Returns all comment authors and updaters	TEXT LIST	
allComments()	Returns defined comments	TEXT LIST	
allIssuesUnder()	Returns issues located in any level under a given parent issue according to Advanced Roadmaps hierarchy .	ISSUE LIST	STAFF PICK
append()	Combines the elements of two lists .	LIST	
archivedVersions()	Returns all archived versions .	TEXT LIST	
asin()	Returns the arcsine value of the input number.	NUMBER	
atan()	Returns the arctangent value of the input number.	NUMBER	
attachmentUrls()	Returns all attachment URLs of the given issue(s).	TEXT LIST	

availableItems()	Returns available options of selectable fields - disabled options will be ignored.	TEXT LIST	
avg()	Calculates the average values of a given number list.	NUMBER	
capitalizeWords()	Capitalizes a text, only updating the first letters .	TEXT	
capitalizeWordsFully()	Capitalizes an entire text.	TEXT	
cbrt()	Returns the cube root of the input number.	NUMBER	
ceil()	Returns the next higher integer .	NUMBER	
componentLeader()	Returns the user name(s) of specified component leads	TEXT	
componentLeads()	Returns the user name(s) of specified component leads	TEXT	
cos()	Returns the cosine of the given number.	NUMBER	
cosh()	Returns the hyperbolic cosine of the input number.	NUMBER	
count()	Returns the number of elements in a text, number or issue list.	NUMBER	STAFF PICK
datePart()	Returns the date part of any given timestamp .	NUMBER	STAFF PICK
dateTime()	Creates a timestamp based on input values.	NUMBER	
dateTimeToString()	Returns the timestamp of any given date in text form .	TEXT	STAFF PICK
dateToString()	Returns the timestamp of a date part of any given date in text form .	TEXT	STAFF PICK
dayOfMonth()	Returns the day of the month of any given timestamp .	NUMBER	
dayOfWeek()	Returns the day of the week of any given timestamp.	NUMBER	
dayOfWeekToString()	Returns the day of the week of any given timestamp in text form .	TEXT	
dayOfYear()	Returns the day of the year of any given timestamp .	NUMBER	
daysInTheMonth()	Returns the number of days in a month of any given timestamp .	NUMBER	
defaultUserForRole()	Returns the user name of the default project role user.	TEXT	
displayNameToUser()	Returns the user name for a given user.	TEXT	
distinct()	Removes all duplicates from a number, text, or issue list.	LIST	STAFF PICK
earliestUnreleasedUnarchivedVersion()	Returns the name of the earliest unreleased and unarchived version.	TEXT	
earliestUnreleasedVersion()	Returns the name of the earliest unreleased version.	TEXT	
epic()	Returns all epics linked to specified issues.	ISSUE LIST	
escapeHTML()	Replaces special characters with HTML entities.	TEXT	
except()	Removes certain elements from a list.	LIST	

executeRemoteAction()	Execute a JWT remote action .	TEXT	
fieldChangeTimes()	Returns the timestamps of when a field has changed satisfying a certain condition .	NUMBER LIST	
fieldHistory()	Returns all the values a field has ever had in the past for the current issue.	NUMBER LIST TEXT LIST	STAFF PICK
fieldValue()	Returns a number or text list with field values .	NUMBER LIST TEXT LIST	STAFF PICK
filledInTransitionScreen()	Checks whether a selected field has been populated on the transition screen.	BOOLEAN	
filterByCardinality()	Filters a given number, text, or issue list by the number of occurrence of elements .	LIST	
filterByFieldValue()	Filters an issue list using a given comparison for field values.	ISSUE LIST	
filterByIssueType()	Filters a given issue list by issue type .	ISSUE LIST	
filterByPredicate()	Filters a number, issue, or a text list by a given logical expression .	LIST	STAFF PICK
filterByProject()	Filters a given issue list by project .	ISSUE LIST	
filterByProjectCategory()	Filters a given issue list by project category .	ISSUE LIST	
filterByResolution()	Filters a given issue list by resolution .	ISSUE LIST	
filterByStatus()	Filters a given issue list by issue status .	ISSUE LIST	STAFF PICK
filterByStatusCategory()	Filters a given issue list by status category .	ISSUE LIST	
filterByValue()	Filters a number or text list using a given comparison .	LIST	STAFF PICK
findModify()	Replaces specific substrings matching a given regular expression .	TEXT	
findPattern()	Returns all substrings matching a given regular expression .	TEXT LIST	STAFF PICK
findPatternIgnoreCase()	Returns all substrings matching a given regular expression, ignoring the case .	TEXT LIST	
findReplaceAll()	Replaces all occurrences of a given substring with the given replacement.	TEXT	
findReplaceAllIgnoreCase()	Replaces all occurrences of a given substring with a given replacement, ignoring the case .	TEXT	
findReplaceFirst()	Replaces the first occurrence of a given substring with the given replacement.	TEXT	
findReplaceFirstIgnoreCase()	Replaces the first occurrence of a given substring with the given replacement, ignoring the case .	TEXT	
first()	Returns the first element of a number, text, or issue list .	NUMBER TEXT ISSUE LIST	STAFF PICK
floor()	Returns the the next lower integer .	NUMBER	
formatDuration()	Returns a duration in text form.	TEXT	

formatWorkDuration()	Returns a calculated duration using the workday and workweek defined at time tracking configuration.	TEXT	
fullNameToUser()	Returns the user name for a given user.	TEXT	
getAscii()	Returns the corresponding symbol of a given ASCII code .	TEXT	
getBoolean()	Returns a value stored in a boolean variable .	BOOLEAN	
getFromJSON()	Returns the result of a given JMESPath which is applied to a JSON	TEXT	
getIssueList()	Returns values stored in an issue list variable .	ISSUE LIST	
getIssuesFromProjects()	Returns all issues from specified projects.	ISSUE LIST	
getMatchingValue()	Returns a custom reference value for a given or text or number .	NUMBER TEXT	
getNumber()	Returns a value stored in a number variable .	NUMBER	
getNumberList()	Returns values stored in a number list variable .	NUMBER LIST	
getRemoteLinks()	Returns a list of remote links.	TEXT LIST	
getString()	Returns the value stored in an text variable .	TEXT	
getStringList()	Returns values stored in a text list variable .	TEXT LIST	
getUserKey()	Returns the user key of a given user.	TEXT	
groupsUserBelongsTo()	Returns all groups for given users.	TEXT LIST	
hasChanged()	Returns true only if the field has changed in the current transition.	BOOLEAN	STAFF PICK
hour()	Returns the hour part of any given timestamp .	NUMBER	
htmlToTxt()	Removes all HTML tags .	TEXT	
indexOf()	Returns the index / position of a specific element in a list.	NUMBER	
intersect()	Returns common elements of two lists.	LIST	
invertList()	Inverts the order of a given list.	LIST	
isAClone()	Checks whether an issue is a clone .	BOOLEAN	
isActive()	Checks whether users are active	BOOLEAN	
isBulkTriggeredTransition()	Checks whether a transition was executed by a bulk operation.	BOOLEAN	
isInGroup()	Checks whether users are a member of a specific group .	BOOLEAN	STAFF PICK
isInRole()	Checks whether users are a member of a specific project role .	BOOLEAN	
isJwtTriggeredTransition()	Checks whether a transition was executed by a JWT post function .	BOOLEAN	STAFF PICK
issueIDFromKey()	Returns the internal ID for given issue keys .	TEXT	

issueKeyFromID()	Returns the issue key for given issue IDs .	TEXT	
issueKeysToIssueList()	Converts a text containing issue keys into an issue list .	ISSUE LIST	
issuesAbove()	Returns all issues located in any level above a given parent issue according to Advanced Roadmaps hierarchy .	ISSUE LIST	STAFF PICK
issueSecurityLevel()	Returns the name of the issue security level with a given ID .	TEXT	
issuesFromJQL()	Returns a list of issues returned by a specified JQL query .	ISSUE LIST	STAFF PICK
issuesUnder()	Returns issues located in the level just under a given parent issue according to Advanced Roadmaps hierarchy .	ISSUE LIST	STAFF PICK
issuesUnderEpic()	Returns all issues linked to a given epic	ISSUE LIST	STAFF PICK
issueType()	Returns the name of the issue type with a given ID	TEXT	
last()	Returns the last element of a number , text , or issue list .	NUMBER TEXT ISSUE LIST	
lastAssigneeInRole()	Returns the user name of the last assignee in a given project role .	TEXT	
lastDayOfTheMonth()	Returns the last day of the month of a given timestamp.	NUMBER	
lastFieldChangeTime()	Returns the timestamp of the most recent value change of any given field.	NUMBER	STAFF PICK
latestReleasedUnarchivedVersion()	Returns the name of the latest released and unarchived version.	TEXT	
latestReleasedVersion()	Returns the name of the latest released version.	TEXT	
leastBusyUserInRole()	Returns the name of the user in a given project role with the lowest number of unresolved issues assigned .	TEXT	
length()	Returns the length any given text.	NUMBER	
linkedIssues()	Returns a list of issues linked .	ISSUE LIST	STAFF PICK
log10()	Returns the base 10 logarithm of the input number.	NUMBER	
log()	Returns the natural logarithm of the input number.	NUMBER	
matches()	Checks, if the given text matches the provided regular expression .	BOOLEAN	
mathOnIssueList()	Returns a number list with results of the given calculation performed for each issue in the specified list.	NUMBER LIST	
mathOnNumberList()	Returns a number list with results of the given calculation performed for each number in the specified list.	NUMBER LIST	
mathOnStringList()	Returns a number list with results of the given calculation performed for each text in the specified list.	NUMBER LIST	
max()	Returns the larger of two numeric values.	NUMBER	STAFF PICK
max(list)	Returns the highest value in a number list.	NUMBER	
min()	Returns the smaller of two numeric values.	NUMBER	STAFF PICK

<code>min(list)</code>	Returns the smallest value in a number list.	NUMBER	
<code>minute()</code>	Returns the minutes part of a given timestamp.	NUMBER	
<code>modulus()</code>	Returns the remainder after division of the dividend by the divisor.	NUMBER	
<code>month()</code>	Returns the month part of a given timestamp.	NUMBER	
<code>monthToString()</code>	Returns the name of the month for a given timestamp.	TEXT	
<code>nextDayOfTheWeek()</code>	Returns a timestamp for the next occurence of any given day.	NUMBER	
<code>nextTime()</code>	Returns the next possible timestamp based on a JWT calendar specification .	NUMBER	
<code>nextUserInGroup()</code>	Returns the name of the next active user in a group .	TEXT	
<code>nthElement()</code>	Returns the nth element of a number, string or issue list.	NUMBER TEXT ISSUE LIST	
<code>numberOfAvailableItems()</code>	Returns the number of available options of selectable fields.	NUMBER	
<code>numberOfRemoteIssueLinks()</code>	Returns the number of issue links to remote Jira instances	NUMBER	
<code>numberOfSelectedItems()</code>	Returns the number of selected items in a given selectable field .	NUMBER	
<code>option()</code>	Returns the name of a custom field option.	TEXT	
<code>parent()</code>	Returns the direct parent(s) of the given issue(s) according to Advanced Roadmaps hierarchy .	ISSUE LIST	STAFF PICK
<code>pow()</code>	Returns the exponentiation of two numbers.	NUMBER	
<code>previousValue()</code>	Returns the previous value of a field for the current issue.	TEXT NUMBER	STAFF PICK
<code>priority()</code>	Returns the name of the priority with a given ID .	TEXT	
<code>project()</code>	Returns the name of the project with a given ID .	TEXT	
<code>projectCategory()</code>	Returns the project category of a given project.	TEXT	
<code>projectIdFromKey()</code>	Returns the internal ID for given project keys .	TEXT	
<code>projectKey()</code>	Returns the project key from a given project.	TEXT	
<code>projectKeys()</code>	Returns specific project keys .	TEXT LIST	
<code>projectLead()</code>	Returns the project lead	TEXT	
<code>projectLeader()</code>	Returns the project lead	TEXT	
<code>projectName()</code>	Returns the name of a given project.	TEXT	
<code>projectProperty()</code>	Returns the value of a given project property .	TEXT	

projectPropertyExists()	Checks whether a project property exists.	BOOLEAN	
projectType()	Returns the type of a given project.	TEXT	
random()	Returns a number between 0 and 1.0 .	NUMBER	
releaseDates()	Returns a number list with version release dates .	NUMBER LIST	
releasedVersions()	Returns all released versions .	TEXT LIST	
releasedVersionsBySequence()	Returns all released versions sorted by default UI order .	TEXT LIST	
remainder()	Returns dividend - divisor * n , where n is the closest integer to dividend/divisor .	NUMBER	
replaceAll()	Replaces all substrings matching a regular expression with a given replacement .	TEXT	STAFF PICK
replaceFirst()	Replaces the first substring matching a given regular expression with a given replacement.	TEXT	
resolution()	Returns the name of the resolution with a given ID .	TEXT	
rolesUserPlays()	Returns all project roles for given users.	TEXT LIST	
round()	Returns the closest integer to the input number.	NUMBER	STAFF PICK
second()	Returns the second part of any given timestamp .	NUMBER	
setBoolean()	Creates a variable to temporarily store a boolean value	BOOLEAN	
setIssueList()	Creates a variable to temporarily store an issue list .	ISSUE LIST	
setNumber()	Creates a variable to temporarily store a number	NUMBER	STAFF PICK
setNumberList()	Creates a variable to temporarily store a number list .	NUMBER LIST	
setString()	Creates a variable to temporarily store a text .	TEXT	
setStringList()	Creates a variable to temporarily store a text list .	TEXT LIST	STAFF PICK
shortFormatDuration()	Returns a duration in short text form.	TEXT	
shortFormatWorkDuration()	Returns a calculated duration using the workday and workweek defined at time tracking configuration in a comprehensive form.	TEXT	
siblingIssues()	Returns all issues which are located directly under a given issue's parent according to Advanced Roadmaps hierarchy .	ISSUE LIST	STAFF PICK
siblingIssuesUnderEpic()	Returns all sibling issues linked to the same epic	ISSUE LIST	
siblingSubtasks()	Returns all sibling sub-tasks .	ISSUE LIST	
similarity()	Calculates the similarity between two texts.	NUMBER	
sin()	Returns the trigonometric sine of angle number expressed in radians .	NUMBER	
sinh()	Returns the hyperbolic sine of the input number.	NUMBER	

sort()	Sorts a given list in a specific order.	LIST	
sqrt()	Returns the square root of the input number.	NUMBER	
startDates()	Returns a number list with version start dates .	NUMBER LIST	
status()	Returns a status name .	TEXT	
stringToDate()	Converts a text into a date .	NUMBER	
sublist()	Returns a defined extract of a given list .	LIST	
substring()	Returns a specific part of a text.	TEXT	STAFF PICK
subtasks()	Returns sub-tasks of given issues.	ISSUE LIST	STAFF PICK
subtractDatesSkippingWeekends()	Subtracts two timestamps ignoring the weekends .	NUMBER	
sum()	Sums up all values in a given number list.	NUMBER	STAFF PICK
tan()	Returns the trigonometric tangent of angle number expressed in radians .	NUMBER	
tanh()	Returns the hyperbolic tangent of the input number.	NUMBER	
textOnIssueList()	Returns a text list in result of evaluating textExpression against each of the issues in argument issues .	TEXT LIST	
textOnNumberList()	Returns a text list in a result of evaluating text_expression against each of the numeric values in argument numbers .	TEXT LIST	
textOnNumberList()			
textOnStringList()	Matches elements of a text list against a text expression .	TEXT LIST	
timeDifference()	Subtracts two timestamps based on a JWT calendar specification .	NUMBER	
timeInStatus()	Returns the time the current issue has remained in a specific status .	NUMBER	STAFF PICK
timeInValue()	Returns the time an issue field has had a specific value .	NUMBER	STAFF PICK
timeLogged()	Returns the sum of all the time logged on issues .	NUMBER	
timePart()	Returns the time part of any given date.	NUMBER	
timesOfTransition()	Returns the timestamps of when a certain transition was executed.	NUMBER LIST	
timeZone()	Returns a time zone .	TIME ZONE	
toDegree()	Converts an angle measured in radians to an approximately equivalent angle measured in degrees .	NUMBER	
toInteger()	Converts text into an integer .	NUMBER	
toLowerCase()	Converts a given text with all its characters lower case .	TEXT	
toNumber()	Converts text into a number .	NUMBER	
toNumberList()	Converts text containing numbers into a number list .	NUMBER LIST	

toRadians()	Converts an angle measured in degrees to an approximately equivalent angle measured in radians .	NUMBER	
toString()	Converts numbers and lists into plain text .	TEXT	STAFF PICK
toStringList()	Converts text into a text list .	TEXT LIST	
toUpperCase()	Converts a given text with all characters to upper case .	TEXT	
transitionLinkedIssues()	Returns a list of all issues linked during the transition .	ISSUE LIST	
transitivelyLinkedIssues()	Returns issues that are directly or transitively linked to the current issue.	ISSUE LIST	
trim()	Removes leading and trailing blanks (white spaces and tabs) from a text.	TEXT	STAFF PICK
unescapeHTML()	Replaces HTML escapes with their corresponding Unicode characters.	TEXT	
union()	Returns distinct elements of two lists.	LIST	
unreleasedVersions()	Returns all unreleased versions .	TEXT LIST	
unreleasedVersionsBySequence()	Returns all unreleased versions sorted by default UI order	TEXT LIST	
userDisplayName()	Returns the full name of a given user.	TEXT TEXT LIST	
userEmail()	Returns the email address(es) of given users.	TEXT TEXT LIST	
userFullName()	Returns the full name of a given user.	TEXT TEXT LIST	
userProperty()	Returns the values of user properties .	TEXT	
usersInGroup()	Returns the user names of active users in a given group.	TEXT LIST	
usersInRole()	Returns members of a given project role .	TEXT LIST	STAFF PICK
usersWhoTransitioned()	Returns the names of the users who executed a certain transition .	TEXT LIST	
usersWithEmail()	Returns the user names of users matching a given email address .	TEXT LIST	
weekOfTheYear()	Returns the week of a year.	NUMBER	
wikiToHTML()	Converts rich text wiki content to HTML .	TEXT	
withinCalendar()	Checks whether a timestamp falls into a time frame defined in a JWT calendar specification .	BOOLEAN	STAFF PICK
year()	Returns the year part of a timestamp.	NUMBER	

If you still have questions, feel free to refer to our [support](#) team.