

# Předdefinované hodnoty action!

Poznámka překladatele:

Tuto kapitolu prozatím nepřekládám, neboť v ní převládají nepřeložitelné termíny programovacího jazyka.

## Bitwise actions

### and~

USAGE:

```
AND~ value1 value2
```

DESCRIPTION:

Returns the first value ANDed with the second.  
AND~ is an action! value.

ARGUMENTS:

```
value1      [logic! integer! char! bitset! binary! typeset! pair! tuple!  
vector!]  
value2      [logic! integer! char! bitset! binary! typeset! pair! tuple!  
vector!]
```

RETURNS:

```
[logic! integer! char! bitset! binary! typeset! pair! tuple! vector!]
```

### complement

USAGE:

```
COMPLEMENT value
```

DESCRIPTION:

Returns the opposite (complementing) value of the input value.  
COMPLEMENT is an action! value.

ARGUMENTS:

```
value      [logic! integer! tuple! bitset! typeset! binary!]
```

RETURNS:

```
[logic! integer! tuple! bitset! typeset! binary!]
```

## or~

### USAGE:

OR~ value1 value2

### DESCRIPTION:

Returns the first value ORed with the second.

OR~ is an action! value.

### ARGUMENTS:

value1 [logic! integer! char! bitset! binary! typeset! pair! tuple!  
vector!]

value2 [logic! integer! char! bitset! binary! typeset! pair! tuple!  
vector!]

### RETURNS:

[logic! integer! char! bitset! binary! typeset! pair! tuple! vector!]

## xor~

### USAGE:

XOR~ value1 value2

### DESCRIPTION:

Returns the first value exclusive ORed with the second.

XOR~ is an action! value.

### ARGUMENTS:

value1 [logic! integer! char! bitset! binary! typeset! pair! tuple!  
vector!]

value2 [logic! integer! char! bitset! binary! typeset! pair! tuple!  
vector!]

### RETURNS:

[logic! integer! char! bitset! binary! typeset! pair! tuple! vector!]

## I/O actions

### close

USAGE:

CLOSE port

DESCRIPTION:

Closes a port.

CLOSE is an action! value.

ARGUMENTS:

port [port!]

## create

USAGE:

CREATE port

DESCRIPTION:

Send port a create request.

CREATE is an action! value.

ARGUMENTS:

port [port! file! url! block!]

## delete

USAGE:

DELETE file

DESCRIPTION:

Deletes the specified file or empty folder.

DELETE is an action! value.

ARGUMENTS:

file [file! port!]

## open

USAGE:

OPEN port

DESCRIPTION:

Opens a port; makes a new port from a specification if necessary.

OPEN is an action! value.

ARGUMENTS:

port [port! file! url! block!]

REFINEMENTS:

/new => Create new file - if it exists, deletes it.

/read => Open for read access.

/write => Open for write access.

/seek => Optimize for random access.

/allow => Specifies right access attributes.

access [block!]

## open?

USAGE:

OPEN? port

DESCRIPTION:

Returns TRUE if port is open.

OPEN? is an action! value.

ARGUMENTS:

port [port!]

## query

USAGE:

QUERY target

DESCRIPTION:

Returns information about a file.

QUERY is an action! value.

ARGUMENTS:

target [file! port!]

## read

**USAGE:**

READ source

**DESCRIPTION:**

Reads from a file, URL, or other port.

READ is an action! value.

**ARGUMENTS:**

source [file! url! port!]

**REFINEMENTS:**

/part => Partial read a given number of units (source relative).

length [number!]

/seek => Read from a specific position (source relative).

index [number!]

/binary => Preserves contents exactly.

/lines => Convert to block of strings.

/info =>

/as => Read with the specified encoding, default is 'UTF-8.

encoding [word!]

## rename

**USAGE:**

RENAME from to

**DESCRIPTION:**

Rename a file.

RENAME is an action! value.

**ARGUMENTS:**

from [port! file! url!]

to [port! file! url!]

## update

**USAGE:**

UPDATE port

**DESCRIPTION:**

Updates external and internal states (normally after read/write).

UPDATE is an action! value.

**ARGUMENTS:**

port [port!]

# write

## USAGE:

WRITE destination data

## DESCRIPTION:

Writes to a file, URL, or other port.

WRITE is an action! value.

## ARGUMENTS:

destination [file! url! port!]

data [any-type!]

## REFINEMENTS:

/binary => Preserves contents exactly.

/lines => Write each value in a block as a separate line.

/info =>

/append => Write data at end of file.

/part => Partial write a given number of units.

length [number!]

/seek => Write at a specific position.

index [number!]

/allow => Specifies protection attributes.

access [block!]

/as => Write with the specified encoding, default is 'UTF-8.

encoding [word!]

# General actions

## form

**USAGE:**

FORM value

**DESCRIPTION:**

Returns a user-friendly string representation of a value.

FORM is an action! value.

**ARGUMENTS:**

value           [any-type!]

**REFINEMENTS:**

/part           => Limit the length of the result.

limit           [integer!]

**RETURNS:**

[string!]

## make

**USAGE:**

MAKE type spec

**DESCRIPTION:**

Returns a new value made from a spec for that value's type.

MAKE is an action! value.

**ARGUMENTS:**

type           [any-type!] "The datatype, an example or prototype value."

spec           [any-type!] "The specification of the new value."

**RETURNS:**

Returns the specified datatype.

[any-type!]

## mold

**USAGE:**

MOLD value

**DESCRIPTION:**

Returns a source format string representation of a value.

MOLD is an action! value.

**ARGUMENTS:**

value           [any-type!]

**REFINEMENTS:**

/only           => Exclude outer brackets if value is a block.

/all            => TBD: Return value in loadable format.

/flat           => TBD: Exclude all indentation.

/part           => Limit the length of the result.

    limit       [integer!]

**RETURNS:**

[string!]

## random

**USAGE:**

RANDOM value

**DESCRIPTION:**

Returns a random value of the same datatype; or shuffles series.

RANDOM is an action! value.

**ARGUMENTS:**

value           "Maximum value of result (modified when series)."

**REFINEMENTS:**

/seed           => Restart or randomize.

/secure         => Returns a cryptographically secure random number.

/only           => Pick a random value from a series.

**RETURNS:**

[any-type!]

## reflect



**USAGE:**

REFLECT value field

**DESCRIPTION:**

Returns internal details about a value via reflection.

REFLECT is an action! value.

**ARGUMENTS:**

|       |   |
|-------|---|
| value | [any-type!]   |
| field | [word!] {spec, body, words, etc. Each datatype defines its own reflectors.} |

## to

**USAGE:**

TO type spec

**DESCRIPTION:**

Converts to a specified datatype.

TO is an action! value.

**ARGUMENTS:**

|      |  |
|------|--|
| type | [any-type!] "The datatype or example value."   |
| spec | [any-type!] "The attributes of the new value." |

## Series actions

### append

**USAGE:**

APPEND series value

**DESCRIPTION:**

Inserts value(s) at series tail; returns series head.

APPEND is an action! value.

**ARGUMENTS:**

|        |                         |
|--------|-------------------------|
| series | [series! bitset! port!] |
| value  | [any-type!]             |

**REFINEMENTS:**

|        |   |
|--------|---|
| /part  | => Limit the number of values inserted.                   |
| length | [number! series!]   |
| /only  | => Insert block types as single values (overrides /part). |
| /dup   | => Duplicate the inserted values.                         |
| count  | [integer!]  |

**RETURNS:**

[series! port! bitset!]

## at

**USAGE:**

AT series index

**DESCRIPTION:**

Returns a series at a given index.

AT is an action! value.

**ARGUMENTS:**

|        |                  |
|--------|------------------|
| series | [series! port!]  |
| index  | [integer! pair!] |

**RETURNS:**

[series! port!]

## back

**USAGE:**

BACK series

**DESCRIPTION:**

Returns a series at the previous index.

BACK is an action! value.

**ARGUMENTS:**

series [series! port!]

**RETURNS:**

[series! port!]

## change

**USAGE:**

CHANGE series value

**DESCRIPTION:**

Changes a value in a series and returns the series after the change.

CHANGE is an action! value.

**ARGUMENTS:**

series [series! port!] "Series at point to change."  
value [any-type!] "The new value."

**REFINEMENTS:**

/part => Limits the amount to change to a given length or position.  
range [number! series!]  
/only => Changes a series as a series.  
/dup => Duplicates the change a specified number of times.  
count [number!]

## clear

**USAGE:**

`CLEAR series`

**DESCRIPTION:**

Removes series values from current index to tail; returns new tail.  
CLEAR is an action! value.

**ARGUMENTS:**

`series`            `[series! port! bitset! map! none!]`

**RETURNS:**

`[series! port! bitset! map! none!]`

## copy

**USAGE:**

`COPY value`

**DESCRIPTION:**

Returns a copy of a non-scalar value.  
COPY is an action! value.

**ARGUMENTS:**

`value`            `[series! any-object! bitset! map!]`

**REFINEMENTS:**

|                     |   |
|---------------------|---|
| <code>/part</code>  | => Limit the length of the result.                |
| <code>length</code> | <code>[number! series! pair!]</code>              |
| <code>/deep</code>  | => Copy nested values.                            |
| <code>/types</code> | => Copy only specific types of non-scalar values. |
| <code>kind</code>   | <code>[datatype!]</code>                          |

**RETURNS:**

`[series! any-object! bitset! map!]`

## find

**USAGE:**

FIND series value

**DESCRIPTION:**

Returns the series where a value is found, or NONE.

FIND is an action! value.

**ARGUMENTS:**

|        |   |
|--------|---|
| series | [series! bitset! typeset! port! map! none!] |
| value  | [any-type!]                                 |

**REFINEMENTS:**

|          |   |
|----------|---|
| /part    | => Limit the length of the search.                            |
| length   | [number! series!]   |
| /only    | => Treat a series search value as a single value.             |
| /case    | => Perform a case-sensitive search.                           |
| /same    | => Use "same?" as comparator.                                 |
| /any     | => TBD: Use * and ? wildcards in string searches.             |
| /with    | => TBD: Use custom wildcards in place of * and ?.             |
| wild     | [string!]   |
| /skip    | => Treat the series as fixed size records.                    |
| size     | [integer!]  |
| /last    | => Find the last occurrence of value, from the tail.          |
| /reverse | => Find the last occurrence of value, from the current index. |
| /tail    | => Return the tail of the match found, rather than the head.  |
| /match   | => Match at current index only and return tail of match.      |

## head

**USAGE:**

HEAD series

**DESCRIPTION:**

Returns a series at its first index.

HEAD is an action! value.

**ARGUMENTS:**

|        |                 |
|--------|-----------------|
| series | [series! port!] |
|--------|-----------------|

**RETURNS:**

[series! port!]

## head?

USAGE:

HEAD? series

DESCRIPTION:

Returns true if a series is at its first index.  
HEAD? is an action! value.

ARGUMENTS:

series            [series! port!]

RETURNS:

[logic!]

## index?

USAGE:

INDEX? series

DESCRIPTION:

Returns the current index of series relative to the head, or of word in a context.  
INDEX? is an action! value.

ARGUMENTS:

series            [series! port! any-word!]

RETURNS:

[integer!]

## insert

**USAGE:**

INSERT series value

**DESCRIPTION:**

Inserts value(s) at series index; returns series past the insertion.

INSERT is an action! value.

**ARGUMENTS:**

|        |                         |
|--------|-------------------------|
| series | [series! port! bitset!] |
| value  | [any-type!]             |

**REFINEMENTS:**

|        |   |
|--------|---|
| /part  | => Limit the number of values inserted.                   |
| length | [number! series!]   |
| /only  | => Insert block types as single values (overrides /part). |
| /dup   | => Duplicate the inserted values.                         |
| count  | [integer!]  |

**RETURNS:**

[series! port! bitset!]

## length?

**USAGE:**

LENGTH? series

**DESCRIPTION:**

Returns the number of values in the series, from the current index to the tail.

LENGTH? is an action! value.

**ARGUMENTS:**

|        |   |
|--------|---|
| series | [series! port! bitset! map! tuple! none!] |
|--------|---|

**RETURNS:**

[integer! none!]

## move

**USAGE:**

MOVE origin target

**DESCRIPTION:**

Moves one or more elements from one series to another position or series.  
MOVE is an action! value.

**ARGUMENTS:**

|        |                 |
|--------|-----------------|
| origin | [series! port!] |
| target | [series! port!] |

**REFINEMENTS:**

|        |   |
|--------|---|
| /part  | => Limit the number of values inserted. |
| length | [integer!]                              |

**RETURNS:**

[series! port!]

## next

**USAGE:**

NEXT series

**DESCRIPTION:**

Returns a series at the next index.  
NEXT is an action! value.

**ARGUMENTS:**

|        |                 |
|--------|-----------------|
| series | [series! port!] |
|--------|-----------------|

**RETURNS:**

[series! port!]

## pick



**USAGE:**

PICK series index

**DESCRIPTION:**

Returns the series value at a given index.

PICK is an action! value.

**ARGUMENTS:**

series [series! port! bitset! pair! tuple! money! date! time!]

index [scalar! any-string! any-word! block! logic! time!]

**RETURNS:**

[any-type!]

## poke

**USAGE:**

POKE series index value

**DESCRIPTION:**

Replaces the series value at a given index, and returns the new value.

POKE is an action! value.

**ARGUMENTS:**

series [series! port! bitset!]

index [scalar! any-string! any-word! block! logic!]

value [any-type!]

**RETURNS:**

[series! port! bitset!]

## put

**USAGE:**

PUT series key value

**DESCRIPTION:**

Replaces the value following a key, and returns the new value.  
PUT is an action! value.

**ARGUMENTS:**

|        |   |
|--------|---|
| series | [series! port! map! object!]            |
| key    | [scalar! any-string! any-word! binary!] |
| value  | [any-type!]                             |

**REFINEMENTS:**

/case => Perform a case-sensitive search.

**RETURNS:**

[series! port! map! object!]

## remove

**USAGE:**

REMOVE series

**DESCRIPTION:**

Returns the series at the same index after removing a value.  
REMOVE is an action! value.

**ARGUMENTS:**

|        |                                    |
|--------|------------------------------------|
| series | [series! port! bitset! map! none!] |
|--------|------------------------------------|

**REFINEMENTS:**

/part => Removes a number of values, or values up to the given series index.

|         |  |
|---------|--|
| length  | [number! char! series!]                        |
| /key    | => Removes a key in map.                       |
| key-arg | [scalar! any-string! any-word! binary! block!] |

**RETURNS:**

[series! port! bitset! map! none!]

## reverse

**USAGE:**

REVERSE series

**DESCRIPTION:**

Reverses the order of elements; returns at same position.

REVERSE is an action! value.

**ARGUMENTS:**

series [series! port! pair! tuple!]

**REFINEMENTS:**

/part => Limits to a given length or position.

length [number! series!]

/skip => Treat the series as fixed size records.

size [integer!]

**RETURNS:**

[series! port! pair! tuple!]

## select

**USAGE:**

SELECT series value

**DESCRIPTION:**

Find a value in a series and return the next value, or NONE.

SELECT is an action! value.

**ARGUMENTS:**

series [series! any-object! map! none!]

value [any-type!]

**REFINEMENTS:**

/part => Limit the length of the search.

length [number! series!]

/only => Treat a series search value as a single value.

/case => Perform a case-sensitive search.

/same => Use "same?" as comparator.

/any => TBD: Use \* and ? wildcards in string searches.

/with => TBD: Use custom wildcards in place of \* and ?.

wild [string!]

/skip => Treat the series as fixed size records.

size [integer!]

/last => Find the last occurrence of value, from the tail.

/reverse => Find the last occurrence of value, from the current index.

## skip

### USAGE:

SKIP series offset

### DESCRIPTION:

Returns the series relative to the current index.  
SKIP is an action! value.

### ARGUMENTS:

|        |                  |
|--------|------------------|
| series | [series! port!]  |
| offset | [integer! pair!] |

### RETURNS:

[series! port!]

## sort

### USAGE:

SORT series

### DESCRIPTION:

Sorts a series (modified); default sort order is ascending.  
SORT is an action! value.

### ARGUMENTS:

|        |                 |
|--------|-----------------|
| series | [series! port!] |
|--------|-----------------|

### REFINEMENTS:

|            |  |
|------------|--|
| /case      | => Perform a case-sensitive sort.              |
| /skip      | => Treat the series as fixed size records.     |
| size       | [integer!]                                     |
| /compare   | => Comparator offset, block (TBD) or function. |
| comparator | [integer! block! any-function!]                |
| /part      | => Sort only part of a series.                 |
| length     | [number! series!]                              |
| /all       | => Compare all fields (used with /skip).       |
| /reverse   | => Reverse sort order.                         |
| /stable    | => Stable sorting.                             |

## swap

**USAGE:**

```
SWAP series1 series2
```

**DESCRIPTION:**

Swaps elements between two series or the same series.  
SWAP is an action! value.

**ARGUMENTS:**

```
series1      [series! port!]  
series2      [series! port!]
```

## tail

**USAGE:**

```
TAIL series
```

**DESCRIPTION:**

Returns a series at the index after its last value.  
TAIL is an action! value.

**ARGUMENTS:**

```
series      [series! port!]
```

**RETURNS:**

```
[series! port!]
```

## tail?

**USAGE:**

```
TAIL? series
```

**DESCRIPTION:**

Returns true if a series is past its last value.  
TAIL? is an action! value.

**ARGUMENTS:**

```
series      [series! port!]
```

**RETURNS:**

```
[logic!]
```

## take

**USAGE:**

TAKE series

**DESCRIPTION:**

Removes and returns one or more elements.

TAKE is an action! value.

**ARGUMENTS:**

series [series! port! none!]

**REFINEMENTS:**

/part => Specifies a length or end position.

length [number! series!]

/deep => Copy nested values.

/last => Take it from the tail end.

## trim

**USAGE:**

TRIM series

**DESCRIPTION:**

Removes space from a string or NONE from a block.

TRIM is an action! value.

**ARGUMENTS:**

series [series! port!]

**REFINEMENTS:**

/head => Removes only from the head.

/tail => Removes only from the tail.

/auto => Auto indents lines relative to first line.

/lines => Removes all line breaks and extra spaces.

/all => Removes all whitespace.

/with str => Same as /all, but removes characters in 'str'.  
[char! string! binary! integer!]

## Scalar actions

### absolute

USAGE:

ABSOLUTE value

DESCRIPTION:

Returns the non-negative value.

ABSOLUTE is an action! value.

ARGUMENTS:

value [number! money! char! pair! time!]

RETURNS:

[number! money! char! pair! time!]

## add

USAGE:

ADD value1 value2

DESCRIPTION:

Returns the sum of the two values.

ADD is an action! value.

ARGUMENTS:

value1 [scalar! vector!] "The augend."

value2 [scalar! vector!] "The addend."

RETURNS:

The sum.

[scalar! vector!]

## divide

**USAGE:**

DIVIDE value1 value2

**DESCRIPTION:**

Returns the quotient of two values.

DIVIDE is an action! value.

**ARGUMENTS:**

value1 [number! money! char! pair! tuple! vector! time!] "The dividend (numerator)."

value2 [number! money! char! pair! tuple! vector! time!] "The divisor (denominator)."

**RETURNS:**

The quotient.

[number! money! char! pair! tuple! vector! time!]

## multiply

**USAGE:**

MULTIPLY value1 value2

**DESCRIPTION:**

Returns the product of two values.

MULTIPLY is an action! value.

**ARGUMENTS:**

value1 [number! money! char! pair! tuple! vector! time!] "The multiplicand."

value2 [number! money! char! pair! tuple! vector! time!] "The multiplier."

**RETURNS:**

The product.

[number! money! char! pair! tuple! vector! time!]

## negate



**USAGE:**

NEGATE number

**DESCRIPTION:**

Returns the opposite (additive inverse) value.

NEGATE is an action! value.

**ARGUMENTS:**

number            [number! money! bitset! pair! time!]

**RETURNS:**

[number! money! bitset! pair! time!]

## power

**USAGE:**

POWER number exponent

**DESCRIPTION:**

Returns a number raised to a given power (exponent).

POWER is an action! value.

**ARGUMENTS:**

number            [number!] "Base value."

exponent          [integer! float!] "The power (index) to raise the base value by."

**RETURNS:**

[number!]

## remainder

**USAGE:**

REMAINDER value1 value2

**DESCRIPTION:**

Returns what is left over when one value is divided by another.

REMAINDER is an action! value.

**ARGUMENTS:**

value1 [number! money! char! pair! tuple! vector! time!] "The dividend (numerator)."

value2 [number! money! char! pair! tuple! vector! time!] "The divisor (denominator)."

**RETURNS:**

The remainder.

[number! money! char! pair! tuple! vector! time!]

## round

**USAGE:**

ROUND n

**DESCRIPTION:**

Returns the nearest integer. Halves round up (away from zero) by default.

ROUND is an action! value.

**ARGUMENTS:**

n [number! money! time! pair!]

**REFINEMENTS:**

/to => Return the nearest multiple of the scale parameter.

scale [number! money! time!] "Must be a non-zero value."

/even => Halves round toward even results.

/down => Round toward zero, ignoring discarded digits. (truncate).

/half-down => Halves round toward zero.

/floor => Round in negative direction.

/ceiling => Round in positive direction.

/half-ceiling => Halves round in positive direction.

## subtract

**USAGE:**

SUBTRACT value1 value2

**DESCRIPTION:**

Returns the difference between two values.

SUBTRACT is an action! value.

**ARGUMENTS:**

value1            [scalar! vector!] "The minuend."

value2            [scalar! vector!] "The subtrahend."

**RETURNS:**

The difference.

[scalar! vector!]

## even?

**USAGE:**

EVEN? number

**DESCRIPTION:**

Returns true if the number is evenly divisible by 2.

EVEN? is an action! value.

**ARGUMENTS:**

number            [number! money! char! time!]

**RETURNS:**

[logic!]

## odd?

**USAGE:**

ODD? number

**DESCRIPTION:**

Returns true if the number has a remainder of 1 when divided by 2.

ODD? is an action! value.

**ARGUMENTS:**

number            [number! money! char! time!]

**RETURNS:**

[logic!]