

util-vserver (libvserver)  
0.30.215+svn2847

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# 1 Module Index

## 1.1 Modules

Here is a list of all modules:

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## 2 Data Structure Index

### 2.1 Data Structures

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## 3 File Index

### 3.1 File List

Here is a list of all documented files with brief descriptions:

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## 4 Module Documentation

### 4.1 Syscall wrappers

#### Functions

- `int vc_syscall (uint32_t cmd, xid\_t xid, void *data)`  
*The generic vserver syscall*  
*This function executes the generic vserver syscall. It uses the correct syscallnumber (which may differ between the different architectures).*
- `int vc\_get\_version ()`  
*Returns the version of the current kernel API.*
- `vc\_vci\_t vc\_get\_vci ()`  
*Returns the kernel configuration bits.*
- `xid\_t vc\_new\_s\_context (xid\_t ctx, unsigned int remove_cap, unsigned int flags)`  
*Moves current process into a context*  
*Puts current process into context ctx, removes the capabilities given in remove\_cap and sets flags.*
- `int vc\_set\_ipv4root (uint32_t beast, size_t nb, struct vc\_ip\_mask\_pair const *ips) VC_ATTR_NONNULL((3))`  
*Sets the ipv4root information.*
- `xid\_t vc\_ctx\_create (xid\_t xid, struct vc\_ctx\_flags *flags)`  
*Creates a context without starting it.*  
*This functions initializes a new context. When already in a freshly created context, this old context will be discarded.*
- `int vc\_ctx\_migrate (xid\_t xid, uint_least64_t flags)`  
*Moves the current process into the specified context.*
- `int vc\_ctx\_stat (xid\_t xid, struct vc\_ctx\_stat *stat) VC_ATTR_NONNULL((2))`  
*Get some statistics about a context.*
- `int vc\_virt\_stat (xid\_t xid, struct vc\_virt\_stat *stat) VC_ATTR_NONNULL((2))`  
*Get more statistics about a context.*
- `int vc\_ctx\_kill (xid\_t ctx, pid\_t pid, int sig)`  
*Sends a signal to a context/pid*  
*Special values for pid are:*
  - -1 which means every process in ctx except the init-process
  - 0 which means every process in ctx inclusive the init-process.
- `xid\_t vc\_get\_task\_xid (pid\_t pid)`  
*Returns the context of the given process.*
- `int vc\_wait\_exit (xid\_t xid)`  
*Waits for the end of a context.*

- `int vc_get_rlimit (xid_t xid, int resource, struct vc_rlimit *lim) VC_ATTR_NONNULL((3))`  
*Returns the limits of resource.*
- `int vc_set_rlimit (xid_t xid, int resource, struct vc_rlimit const *lim) VC_ATTR_NONNULL((3))`  
*Sets the limits of resource.*
- `int vc_rlimit_stat (xid_t xid, int resource, struct vc_rlimit_stat *stat) VC_ATTR_NONNULL((3))`  
*Returns the current stats of resource.*
- `int vc_reset_minmax (xid_t xid)`  
*Resets the minimum and maximum observed values of all resources.*
- `int vc_get_iattr (char const *filename, xid_t *xid, uint_least32_t *flags, uint_least32_t *mask) VC_ATTR_NONNULL((1))`  
*Returns information about attributes and assigned context of a file.  
This function returns the VC\_IATTR\_XXX flags and about the assigned context of a file. To request an information, the appropriate bit in mask must be set and the corresponding parameter (xid or flags) must not be NULL.*
- `xid_t vc_getfilecontext (char const *filename) VC_ATTR_NONNULL((1))`  
*Returns the context of filename  
This function calls vc\_get\_iattr() with appropriate arguments to determine the context of filename. In error-case or when no context is assigned, VC\_NOCTX will be returned. To differ between both cases, errno must be examined.*

### 4.1.1 Detailed Description

Functions which are calling the vserver syscall directly.

### 4.1.2 Function Documentation

#### 4.1.2.1 `xid_t vc_ctx_create (xid_t xid, struct vc_ctx_flags *flags)`

Creates a context without starting it.

This functions initializes a new context. When already in a freshly created context, this old context will be discarded.

#### Parameters:

*xid* The new context; special values are:

- VC\_DYNAMIC\_XID which means to create a dynamic context

#### Returns:

the xid of the created context, or VC\_NOCTX on errors. `errno` will be set appropriately.

#### 4.1.2.2 int vc\_ctx\_migrate (xid\_t *xid*, uint\_least64\_t *flags*)

Moves the current process into the specified context.

**Parameters:**

*xid* The new context

*flags* The flags, see VC\_VXM\_\*

**Returns:**

0 on success, -1 on errors

#### 4.1.2.3 int vc\_ctx\_stat (xid\_t *xid*, struct vc\_ctx\_stat \* *stat*)

Get some statistics about a context.

**Parameters:**

*xid* The context to get stats about

*stat* Where to store the result

**Returns:**

0 on success, -1 on errors.

#### 4.1.2.4 int vc\_get\_iattr (char const \* *filename*, xid\_t \* *xid*, uint\_least32\_t \* *flags*, uint\_least32\_t \* *mask*)

Returns information about attributes and assigned context of a file.

This function returns the VC\_IATTR\_XXX flags and about the assigned context of a file. To request an information, the appropriate bit in *mask* must be set and the corresponding parameter (*xid* or *flags*) must not be NULL. E.g. to receive the assigned context, the VC\_IATTR\_XID bit must be set in *mask*, and *xid* must point to valid memory.

Possible flags are VC\_IATTR\_ADMIN, VC\_IATTR\_WATCH , VC\_IATTR\_HIDE, VC\_IATTR\_BARRIER, VC\_IATTR\_IUNLINK and VC\_IATTR\_IMMUTABLE.

**Parameters:**

*filename* The name of the file whose attributes shall be determined.

*xid* When non-zero and the VC\_IATTR\_XID bit is set in *mask*, the assigned context of *filename* will be stored there.

*flags* When non-zero, a bitmask of current attributes will be stored there. These attributes must be requested explicitly by setting the appropriate bit in *mask*

*mask* Points to a bitmask which tells which attributes shall be determined. On return, it will masquerade the attributes which were determined.

**Precondition:**

```
mask!=0 && !((*mask&VC_IATTR_XID) && xid==0) && !((*mask&~VC_IATTR_XID) && flags==0)
```

**4.1.2.5 int vc\_get\_rlimit (xid\_t *xid*, int *resource*, struct vc\_rlimit \* *lim*)**

Returns the limits of *resource*.

**Parameters:**

*xid* The id of the context

*resource* The resource which will be queried

*lim* The result which will be filled with the limits

**Returns:**

0 on success, and -1 on errors.

**4.1.2.6 xid\_t vc\_get\_task\_xid (pid\_t *pid*)**

Returns the context of the given process.

**Parameters:**

*pid* the process-id whose xid shall be determined; pid==0 means the current process.

**Returns:**

the xid of process *pid* or -1 on errors

**4.1.2.7 vc\_vci\_t vc\_get\_vci ()**

Returns the kernel configuration bits.

**Returns:**

The kernel configuration bits

**4.1.2.8 int vc\_get\_version ()**

Returns the version of the current kernel API.

**Returns:**

The versionnumber of the kernel API



#### 4.1.2.9 `xid_t vc_getfilecontext (char const *filename)`

Returns the context of *filename*

This function calls `vc_get_iattr()` with appropriate arguments to determine the context of *filename*. In error-case or when no context is assigned, `VC_NOCTX` will be returned. To differ between both cases, `errno` must be examined. **WARNING:** this function can modify `errno` although no error happened.

**Parameters:**

*filename* The file to check

**Returns:**

The assigned context, or `VC_NOCTX` when an error occurred or no such assignment exists. `errno` will be 0 in the latter case

#### 4.1.2.10 `xid_t vc_new_s_context (xid_t ctx, unsigned int remove_cap, unsigned int flags)`

Moves current process into a context

Puts current process into context *ctx*, removes the capabilities given in *remove\_cap* and sets *flags*.

**Parameters:**

*ctx* The new context; special values for are

- `VC_SAMECTX` which means the current context (just for changing caps and flags)
- `VC_DYNAMIC_XID` which means the next free context; this value can be used by ordinary users also

*remove\_cap* The linux capabilities which will be **removed**.

*flags* Special flags which will be set.

**Returns:**

The new context-id, or `VC_NOCTX` on errors; `errno` will be set appropriately

See <http://vserver.13thfloor.at/Stuff/Logic.txt> for details

#### 4.1.2.11 `int vc_reset_minmax (xid_t xid)`

Resets the minimum and maximum observed values of all resources.

**Parameters:**

*xid* The id of the context

**Returns:**

0 on success, and -1 on errors.

**4.1.2.12** `int vc_rlimit_stat (xid_t xid, int resource, struct vc_rlimit_stat * stat)`

Returns the current stats of *resource*.

**Parameters:**

*xid* The id of the context  
*resource* The resource which will be queried  
*stat* The result which will be filled with the stats

**Returns:**

0 on success, and -1 on errors.

**4.1.2.13** `int vc_set_ipv4root (uint32_t bcast, size_t nb, struct vc_ip_mask_pair const * ips)`

Sets the ipv4root information.

**Precondition:**

$nb < \text{NB\_IPV4ROOT}$  &&  $ips \neq 0$

**4.1.2.14** `int vc_set_rlimit (xid_t xid, int resource, struct vc_rlimit const * lim)`

Sets the limits of *resource*.

**Parameters:**

*xid* The id of the context  
*resource* The resource which will be queried  
*lim* The new limits

**Returns:**

0 on success, and -1 on errors.

**4.1.2.15** `int vc_syscall (uint32_t cmd, xid_t xid, void * data)`

The generic vserver syscall

This function executes the generic vserver syscall. It uses the correct syscallnumber (which may differ between the different architectures).

**Parameters:**

*cmd* the command to be executed

*xid* the xid on which the cmd shall be applied

*data* additional arguments; depends on cmd

**Returns:**

depends on cmd; usually, -1 stands for an error

#### 4.1.2.16 int vc\_virt\_stat (xid\_t xid, struct vc\_virt\_stat \* stat)

Get more statistics about a context.

**Parameters:**

*xid* The context to get stats about

*stat* Where to store the result

**Returns:**

0 on success, -1 on errors.

## 4.2 Helper functions

### Data Structures

- struct [vc\\_err\\_listparser](#)  
*Information about parsing errors.*

### Functions

- size\_t [vc\\_get\\_nb\\_ipv4root](#) () VC\_ATTR\_CONST VC\_ATTR\_PURE  
*Returns the value of NB\_IPV4ROOT.  
This function returns the value of NB\_IPV4ROOT which was used when the library was built, but **not** the value which is used by the currently running kernel.*
- bool [vc\\_parseLimit](#) (char const \*str, vc\_limit\_t \*res) VC\_ATTR\_NONNULL((1)  
*Parses a string describing a limit  
This function parses str and interprets special words like "inf" or suffixes. Valid suffixes are*
  - k ... 1000
  - m ... 1000000
  - K ... 1024
  - M ... 1048576.
- uint\_least64\_t [vc\\_text2bcap](#) (char const \*str, size\_t len)  
*Converts a single string into bcapability.*
- char const \* [vc\\_lobcap2text](#) (uint\_least64\_t \*val) VC\_ATTR\_NONNULL((1))  
*Converts the lowest bit of a bcapability or the entire value (when possible) to a textual representation.*

- `int vc_list2bcap (char const *str, size_t len, struct vc_err_listparser *err, struct vc_ctx_caps *cap)`  
`VC_ATTR_NONNULL((1`

*Converts a string into a bcapability-bitmask*

*Syntax of str:.*

### 4.2.1 Detailed Description

Functions which are doing general helper tasks like parameter parsing.

### 4.2.2 Function Documentation

#### 4.2.2.1 `int vc_list2bcap (char const * str, size_t len, struct vc_err_listparser * err, struct vc_ctx_caps * cap)`

Converts a string into a bcapability-bitmask

Syntax of *str*:.  

```

LIST    <- ELEM | ELEM '~' LIST
ELEM    <- '~' ELEM | MASK | NAME
MASK    <- NUMBER | '^' NUMBER
NUMBER  <- 0[0-7]* | [1-9][0-9]* | 0x[0-9,a-f]+
NAME    <- <literal name> | "all" | "any" | "none"
```

When the '~' prefix is used, the bits will be unset and a '~' after another '~' will cancel both ones. The '^' prefix specifies a bitnumber instead of a bitmask.

"literal name" is everything which will be accepted by the `vc_text2bcap()` function. The special values for NAME will be recognized case insensitively

#### Parameters:

**str** The string to be parsed

**len** The length of the string, or 0 for automatic detection

**err** Pointer to a structure for error-information, or NULL.

**cap** Pointer to a `vc_ctx_caps` structure holding the results; only the *bcaps* and *bmask* fields will be changed and already set values will not be honored. When an error occurred, *cap* will have the value of all processed valid BCAP parts.

#### Returns:

0 on success, -1 on error. In error case, *err* will hold position and length of the first not understood BCAP part

#### Precondition:

*str* != 0 && *cap* != 0; *cap->bcaps* and *cap->bmask* must be initialized

**4.2.2.2 char const\* vc\_lobcap2text (uint\_least64\_t \* val)**

Converts the lowest bit of a bcapability or the entire value (when possible) to a textual representation.

**Parameters:**

*val* The string to be converted; on success, the detected bit(s) will be unset, in errorcase only the lowest set bit

**Returns:**

A textual representation of *val* resp. of its lowest set bit; or NULL in errorcase.

**Precondition:**

*val*!=0

**Postcondition:**

$*val_{old} \neq 0 \iff *val_{old} > *val_{new}$   
 $*val_{old} == 0 \iff result == 0$

**4.2.2.3 bool vc\_parseLimit (char const \* str, vc\_limit\_t \* res)**

Parses a string describing a limit

This function parses *str* and interprets special words like "inf" or suffixes. Valid suffixes are

- k ... 1000
- m ... 1000000
- K ... 1024
- M ... 1048576.

**Parameters:**

*str* The string which shall be parsed

*res* Will be filled with the interpreted value; in errorcase, this value is undefined.

**Returns:**

*true*, iff the string *str* could be parsed. *res* will be filled with the interpreted value in this case.

**Precondition:**

*str*!=0 && *res*!=0

#### 4.2.2.4 uint\_least64\_t vc\_text2bcap (char const \* *str*, size\_t *len*)

Converts a single string into bcapability.

**Parameters:**

*str* The string to be parsed; both "CAP\_XXX" and "XXX" will be accepted

*len* The length of the string, or 0 for automatic detection

**Returns:**

0 on error; a bitmask on success

**Precondition:**

*str* != 0

## 5 Data Structure Documentation

### 5.1 Mapping\_uint32 Struct Reference

**Data Fields**

- char const \*const **id**
- size\_t **len**
- uint\_least32\_t **val**

#### 5.1.1 Detailed Description

Definition at line 80 of file internal.h.

The documentation for this struct was generated from the following file:

- [internal.h](#)

### 5.2 Mapping\_uint64 Struct Reference

**Data Fields**

- char const \*const **id**
- size\_t **len**
- uint\_least64\_t **val**

#### 5.2.1 Detailed Description

Definition at line 86 of file internal.h.

The documentation for this struct was generated from the following file:

- [internal.h](#)

## 5.3 vc\_ctx\_caps Struct Reference

Capabilities of process-contexts.

```
#include <vserver.h>
```

### Data Fields

- `uint_least64_t bcaps`  
*Mask of set common system capabilities.*
- `uint_least64_t bmask`  
*Mask of set and unset common system capabilities when used by set operations, or the modifiable capabilities when used by get operations.*
- `uint_least64_t ccaps`  
*Mask of set process context capabilities.*
- `uint_least64_t cmask`  
*Mask of set and unset process context capabilities when used by set operations, or the modifiable capabilities when used by get operations.*

### 5.3.1 Detailed Description

Capabilities of process-contexts.

Definition at line 498 of file `vserver.h`.

The documentation for this struct was generated from the following file:

- [vserver.h](#)

## 5.4 vc\_ctx\_dlimit Struct Reference

### Data Fields

- `uint_least32_t space_used`
- `uint_least32_t space_total`
- `uint_least32_t inodes_used`
- `uint_least32_t inodes_total`
- `uint_least32_t reserved`

### 5.4.1 Detailed Description

Definition at line 775 of file `vserver.h`.

The documentation for this struct was generated from the following file:

- [vserver.h](#)

## 5.5 vc\_ctx\_flags Struct Reference

Flags of process-contexts.

```
#include <vserver.h>
```

### Data Fields

- `uint_least64_t` [flagword](#)  
*Mask of set context flags.*
- `uint_least64_t` [mask](#)  
*Mask of set and unset context flags when used by set operations, or modifiable flags when used by get operations.*

### 5.5.1 Detailed Description

Flags of process-contexts.

Definition at line 420 of file `vserver.h`.

The documentation for this struct was generated from the following file:

- [vserver.h](#)

## 5.6 vc\_ctx\_stat Struct Reference

Statistics about a context.

```
#include <vserver.h>
```

### Data Fields

- `uint_least32_t` [usecnt](#)  
*number of uses*
- `uint_least32_t` [tasks](#)  
*number of tasks*

### 5.6.1 Detailed Description

Statistics about a context.

Definition at line 451 of file `vserver.h`.

The documentation for this struct was generated from the following file:

- [vserver.h](#)



## 5.7 vc\_err\_listparser Struct Reference

Information about parsing errors.

```
#include <vserver.h>
```

### Data Fields

- `char const * ptr`  
*Pointer to the first character of an erroneous string.*
- `size_t len`  
*Length of the erroneous string.*

### 5.7.1 Detailed Description

Information about parsing errors.

Definition at line 850 of file `vserver.h`.

The documentation for this struct was generated from the following file:

- [vserver.h](#)

## 5.8 vc\_ip\_mask\_pair Struct Reference

### Data Fields

- `uint32_t ip`
- `uint32_t mask`

### 5.8.1 Detailed Description

Definition at line 398 of file `vserver.h`.

The documentation for this struct was generated from the following file:

- [vserver.h](#)

## 5.9 vc\_net\_addr Struct Reference

### Data Fields

- `uint16_t vna_type`
- `uint16_t vna_flags`
- `uint16_t vna_prefix`
- `uint16_t vna_parent`

- struct {  
    union {  
        struct in\_addr **v4**  
        struct in6\_addr **v6**  
    } **ip**  
    union {  
        struct in\_addr **v4**  
        struct in6\_addr **v6**  
    } **ip2**  
    union {  
        struct in\_addr **v4**  
        struct in6\_addr **v6**  
    } **mask**  
} **s**

### 5.9.1 Detailed Description

Definition at line 648 of file vserver.h.

The documentation for this struct was generated from the following file:

- [vserver.h](#)

## 5.10 vc\_net\_caps Struct Reference

### Data Fields

- uint\_least64\_t **ncaps**
- uint\_least64\_t **cmask**

### 5.10.1 Detailed Description

Definition at line 689 of file vserver.h.

The documentation for this struct was generated from the following file:

- [vserver.h](#)

## 5.11 vc\_net\_flags Struct Reference

### Data Fields

- uint\_least64\_t **flagword**
- uint\_least64\_t **mask**

### 5.11.1 Detailed Description

Definition at line 675 of file vserver.h.

The documentation for this struct was generated from the following file:

- [vserver.h](#)

## 5.12 `vc_nx_info` Struct Reference

### Data Fields

- `nid_t nid`

### 5.12.1 Detailed Description

Definition at line 641 of file `vserver.h`.

The documentation for this struct was generated from the following file:

- [vserver.h](#)

## 5.13 `vc_rlimit` Struct Reference

The limits of a resources.

```
#include <vserver.h>
```

### Data Fields

- [vc\\_limit\\_t min](#)  
*the guaranteed minimum of a resources*
- [vc\\_limit\\_t soft](#)  
*the softlimit of a resource*
- [vc\\_limit\\_t hard](#)  
*the absolute hardlimit of a resource*

### 5.13.1 Detailed Description

The limits of a resources. This is a triple consisting of a minimum, soft and hardlimit.

Definition at line 564 of file `vserver.h`.

The documentation for this struct was generated from the following file:

- [vserver.h](#)

## 5.14 `vc_rlimit_mask` Struct Reference

Masks describing the supported limits.

```
#include <vserver.h>
```

### Data Fields

- `uint_least32_t min`  
*masks the resources supporting a minimum limit*
- `uint_least32_t soft`  
*masks the resources supporting a soft limit*
- `uint_least32_t hard`  
*masks the resources supporting a hard limit*

#### 5.14.1 Detailed Description

Masks describing the supported limits.

Definition at line 551 of file `vserver.h`.

The documentation for this struct was generated from the following file:

- [vserver.h](#)

## 5.15 `vc_rlimit_stat` Struct Reference

Statistics for a resource limit.

```
#include <vserver.h>
```

### Data Fields

- `uint_least32_t hits`  
*number of hits on the limit*
- `vc_limit_t value`  
*current value*
- `vc_limit_t minimum`  
*minimum value observed*
- `vc_limit_t maximum`  
*maximum value observed*

#### 5.15.1 Detailed Description

Statistics for a resource limit.

Definition at line 592 of file `vserver.h`.

The documentation for this struct was generated from the following file:

- [vserver.h](#)

## 5.16 vc\_sched\_info Struct Reference

### Data Fields

- int\_least32\_t **cpu\_id**
- int\_least32\_t **bucket\_id**
- uint\_least64\_t **user\_msec**
- uint\_least64\_t **sys\_msec**
- uint\_least64\_t **hold\_msec**
- uint\_least32\_t **token\_usec**
- int\_least32\_t **vavavoom**

### 5.16.1 Detailed Description

Definition at line 827 of file vserver.h.

The documentation for this struct was generated from the following file:

- [vserver.h](#)

## 5.17 vc\_set\_sched Struct Reference

### Data Fields

- uint\_least32\_t **set\_mask**
- int\_least32\_t **fill\_rate**
- int\_least32\_t **interval**
- int\_least32\_t **fill\_rate2**
- int\_least32\_t **interval2**
- int\_least32\_t **tokens**
- int\_least32\_t **tokens\_min**
- int\_least32\_t **tokens\_max**
- int\_least32\_t **priority\_bias**
- int\_least32\_t **cpu\_id**
- int\_least32\_t **bucket\_id**

### 5.17.1 Detailed Description

Definition at line 810 of file vserver.h.

The documentation for this struct was generated from the following file:

- [vserver.h](#)

## 5.18 vc\_virt\_stat Struct Reference

Contains further statistics about a context.

```
#include <vserver.h>
```

### Data Fields

- `uint_least64_t offset`
- `uint_least64_t uptime`
- `uint_least32_t nr_threads`
- `uint_least32_t nr_running`
- `uint_least32_t nr_uninterruptible`
- `uint_least32_t nr_onhold`
- `uint_least32_t nr_forks`
- `uint_least32_t load [3]`

#### 5.18.1 Detailed Description

Contains further statistics about a context.

Definition at line 466 of file `vserver.h`.

The documentation for this struct was generated from the following file:

- [vserver.h](#)

## 5.19 vc\_vx\_info Struct Reference

### Data Fields

- `xid_t xid`
- `pid_t initpid`

#### 5.19.1 Detailed Description

Definition at line 516 of file `vserver.h`.

The documentation for this struct was generated from the following file:

- [vserver.h](#)

## 6 File Documentation

### 6.1 internal.h File Reference

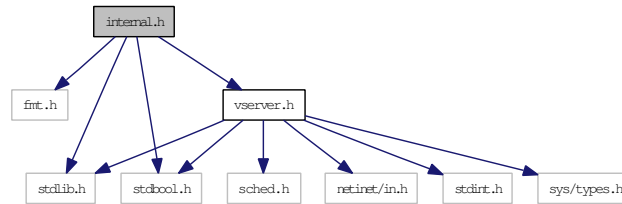
Declarations which are used by util-vserver internally. `#include "fmt.h"`

```
#include "vserver.h"
```

```
#include <stdlib.h>
```

```
#include <stdbool.h>
```

Include dependency graph for internal.h:



## Data Structures

- struct [Mapping\\_uint32](#)
- struct [Mapping\\_uint64](#)

## Defines

- `#define _symbol_version(real, name, version)`
- `#define _default_symbol_version(real, name, version) extern __typeof (real) name __attribute__((alias (#name)))`
- `#define symbol_version(real, name, version) _symbol_version(real, name, version)`
- `#define default_symbol_version(real, name, version) _default_symbol_version(real, name, version)`

## Functions

- `char * vc_getVserverByCtx_Internal (xid_t ctx, vcCfgStyle *style, char const *revdir, bool validate_result)`
- `int utilvserver_checkCompatVersion ()`
- `uint_least32_t utilvserver_checkCompatConfig ()`
- `bool utilvserver_isDirectory (char const *path, bool follow_link)`
- `bool utilvserver_isFile (char const *path, bool follow_link)`
- `bool utilvserver_isLink (char const *path)`
- `int utilvserver_listparser_uint32 (char const *str, size_t len, char const **err_ptr, size_t *err_len, uint_least32_t *flag, uint_least32_t *mask, uint_least32_t(*func)(char const *, size_t, bool *))` `NONNULL((1`
- `int utilvserver_listparser_uint64 (char const *str, size_t len, char const **err_ptr, size_t *err_len, uint_least64_t *flag, uint_least64_t *mask, uint_least64_t(*func)(char const *, size_t, bool *))` `NONNULL((1`
- `ssize_t utilvserver_value2text_uint32 (char const *str, size_t len, struct Mapping\_uint32 const *map, size_t map_len)` `NONNULL((1`
- `ssize_t utilvserver_value2text_uint64 (char const *str, size_t len, struct Mapping\_uint64 const *map, size_t map_len)` `NONNULL((1`
- `ssize_t utilvserver_text2value_uint32 (uint_least32_t *val, struct Mapping\_uint32 const *map, size_t map_len)` `NONNULL((1`
- `ssize_t utilvserver_text2value_uint64 (uint_least64_t *val, struct Mapping\_uint64 const *map, size_t map_len)` `NONNULL((1`

### 6.1.1 Detailed Description

Declarations which are used by util-vserver internally.

Definition in file [internal.h](#).

## 6.2 vserver.h File Reference

The public interface of the the libvserver library. `#include <stdint.h>`

`#include <stdlib.h>`

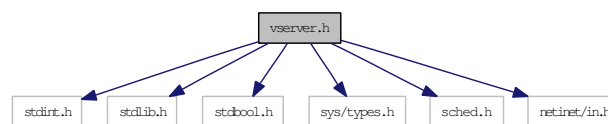
`#include <stdbool.h>`

`#include <sys/types.h>`

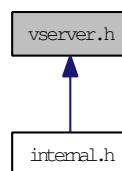
`#include <sched.h>`

`#include <netinet/in.h>`

Include dependency graph for vserver.h:



This graph shows which files directly or indirectly include this file:



### Data Structures

- struct [vc\\_ip\\_mask\\_pair](#)
- struct [vc\\_ctx\\_flags](#)  
*Flags of process-contexts.*
- struct [vc\\_ctx\\_stat](#)  
*Statistics about a context.*
- struct [vc\\_virt\\_stat](#)  
*Contains further statistics about a context.*
- struct [vc\\_ctx\\_caps](#)  
*Capabilities of process-contexts.*
- struct [vc\\_vx\\_info](#)
- struct [vc\\_rlimit\\_mask](#)



*Masks describing the supported limits.*

- struct [vc\\_rlimit](#)  
*The limits of a resources.*

- struct [vc\\_rlimit\\_stat](#)  
*Statistics for a resource limit.*

- struct [vc\\_nx\\_info](#)
- struct [vc\\_net\\_addr](#)
- struct [vc\\_net\\_flags](#)
- struct [vc\\_net\\_caps](#)
- struct [vc\\_ctx\\_dlimit](#)
- struct [vc\\_set\\_sched](#)
- struct [vc\\_sched\\_info](#)
- struct [vc\\_err\\_listparser](#)

*Information about parsing errors.*

## Defines

- #define [VC\\_NOCTX](#) ((xid\_t)(-1))
- #define [VC\\_NOXID](#) ((xid\_t)(-1))
- #define [VC\\_DYNAMIC\\_XID](#) ((xid\_t)(-1))
- #define [VC\\_SAMECTX](#) ((xid\_t)(-2))
- #define [VC\\_NONID](#) ((nid\_t)(-1))
- #define [VC\\_DYNAMIC\\_NID](#) ((nid\_t)(-1))
- #define [VC\\_LIM\\_INFINITY](#) (~0ULL)
- #define [VC\\_LIM\\_KEEP](#) (~1ULL)
- #define [VC\\_CDLIM\\_UNSET](#) (0U)
- #define [VC\\_CDLIM\\_INFINITY](#) (~0U)
- #define [VC\\_CDLIM\\_KEEP](#) (~1U)
- #define [VC\\_CAP\\_CHOWN](#) 0
- #define [VC\\_CAP\\_DAC\\_OVERRIDE](#) 1
- #define [VC\\_CAP\\_DAC\\_READ\\_SEARCH](#) 2
- #define [VC\\_CAP\\_FOWNER](#) 3
- #define [VC\\_CAP\\_FSETID](#) 4
- #define [VC\\_CAP\\_KILL](#) 5
- #define [VC\\_CAP\\_SETGID](#) 6
- #define [VC\\_CAP\\_SETUID](#) 7
- #define [VC\\_CAP\\_SETPCAP](#) 8
- #define [VC\\_CAP\\_LINUX\\_IMMUTABLE](#) 9
- #define [VC\\_CAP\\_NET\\_BIND\\_SERVICE](#) 10
- #define [VC\\_CAP\\_NET\\_BROADCAST](#) 11
- #define [VC\\_CAP\\_NET\\_ADMIN](#) 12
- #define [VC\\_CAP\\_NET\\_RAW](#) 13
- #define [VC\\_CAP\\_IPC\\_LOCK](#) 14
- #define [VC\\_CAP\\_IPC\\_OWNER](#) 15
- #define [VC\\_CAP\\_SYS\\_MODULE](#) 16
- #define [VC\\_CAP\\_SYS\\_RAWIO](#) 17

- `#define VC_CAP_SYS_CHROOT 18`
- `#define VC_CAP_SYS_PTRACE 19`
- `#define VC_CAP_SYS_PACCT 20`
- `#define VC_CAP_SYS_ADMIN 21`
- `#define VC_CAP_SYS_BOOT 22`
- `#define VC_CAP_SYS_NICE 23`
- `#define VC_CAP_SYS_RESOURCE 24`
- `#define VC_CAP_SYS_TIME 25`
- `#define VC_CAP_SYS_TTY_CONFIG 26`
- `#define VC_CAP_MKNOD 27`
- `#define VC_CAP_LEASE 28`
- `#define VC_CAP_AUDIT_WRITE 29`
- `#define VC_CAP_AUDIT_CONTROL 30`
- `#define VC_CAP_SETFCAP 31`
- `#define VC_CAP_MAC_OVERRIDE 32`
- `#define VC_CAP_MAC_ADMIN 33`
- `#define VC_IMMUTABLE_FILE_FL 0x0000010lu`
- `#define VC_IMMUTABLE_LINK_FL 0x0008000lu`
- `#define VC_IMMUTABLE_ALL (VC_IMMUTABLE_LINK_FL|VC_IMMUTABLE_FILE_FL)`
- `#define VC_IATTR_XID 0x01000000u`
- `#define VC_IATTR_ADMIN 0x00000001u`
- `#define VC_IATTR_WATCH 0x00000002u`
- `#define VC_IATTR_HIDE 0x00000004u`
- `#define VC_IATTR_WRITE 0x00000008u`
- `#define VC_IATTR_FLAGS 0x0000000fu`
- `#define VC_IATTR_BARRIER 0x00010000u`
- `#define VC_IATTR_IUNLINK 0x00020000u`
- `#define VC_IATTR_IMMUTABLE 0x00040000u`
- `#define VC_VXF_INFO_LOCK 0x00000001ull`
- `#define VC_VXF_INFO_NPROC 0x00000004ull`
- `#define VC_VXF_INFO_PRIVATE 0x00000008ull`
- `#define VC_VXF_INFO_INIT 0x00000010ull`
- `#define VC_VXF_INFO_HIDEINFO 0x00000020ull`
- `#define VC_VXF_INFO_ULIMIT 0x00000040ull`
- `#define VC_VXF_INFO_NAMESPACE 0x00000080ull`
- `#define VC_VXF_SCHED_HARD 0x00000100ull`
- `#define VC_VXF_SCHED_PRIO 0x00000200ull`
- `#define VC_VXF_SCHED_PAUSE 0x00000400ull`
- `#define VC_VXF_VIRT_MEM 0x00010000ull`
- `#define VC_VXF_VIRT_UPTIME 0x00020000ull`
- `#define VC_VXF_VIRT_CPU 0x00040000ull`
- `#define VC_VXF_VIRT_LOAD 0x00080000ull`
- `#define VC_VXF_VIRT_TIME 0x00100000ull`
- `#define VC_VXF_HIDE_MOUNT 0x01000000ull`
- `#define VC_VXF_HIDE_NETIF 0x02000000ull`
- `#define VC_VXF_HIDE_VINFO 0x04000000ull`
- `#define VC_VXF_STATE_SETUP (1ULL<<32)`
- `#define VC_VXF_STATE_INIT (1ULL<<33)`
- `#define VC_VXF_STATE_ADMIN (1ULL<<34)`
- `#define VC_VXF_SC_HELPER (1ULL<<36)`

- `#define VC_VXF_REBOOT_KILL (1ULL<<37)`
- `#define VC_VXF_PERSISTENT (1ULL<<38)`
- `#define VC_VXF_FORK_RSS (1ULL<<48)`
- `#define VC_VXF_PROLIFIC (1ULL<<49)`
- `#define VC_VXF_IGNEG_NICE (1ULL<<52)`
- `#define VC_VXF_IGNEG_IONICE (1ULL<<53)`
- `#define VC_VXC_SET_UTSNAME 0x00000001ull`
- `#define VC_VXC_SET_RLIMIT 0x00000002ull`
- `#define VC_VXC_RAW_ICMP 0x00000100ull`
- `#define VC_VXC_SYSLOG 0x00001000ull`
- `#define VC_VXC_SECURE_MOUNT 0x00010000ull`
- `#define VC_VXC_SECURE_REMOUNT 0x00020000ull`
- `#define VC_VXC_BINARY_MOUNT 0x00040000ull`
- `#define VC_VXC_QUOTA_CTL 0x00100000ull`
- `#define VC_VXC_ADMIN_MAPPER 0x00200000ull`
- `#define VC_VXC_ADMIN_CLOOP 0x00400000ull`
- `#define VC_VXC_KTHREAD 0x01000000ull`
- `#define VC_VXSM_FILL_RATE 0x0001`
- `#define VC_VXSM_INTERVAL 0x0002`
- `#define VC_VXSM_FILL_RATE2 0x0004`
- `#define VC_VXSM_INTERVAL2 0x0008`
- `#define VC_VXSM_TOKENS 0x0010`
- `#define VC_VXSM_TOKENS_MIN 0x0020`
- `#define VC_VXSM_TOKENS_MAX 0x0040`
- `#define VC_VXSM_PRIO_BIAS 0x0100`
- `#define VC_VXSM_CPU_ID 0x1000`
- `#define VC_VXSM_BUCKET_ID 0x2000`
- `#define VC_VXSM_IDLE_TIME 0x0200`
- `#define VC_VXSM_FORCE 0x0400`
- `#define VC_VXSM_MSEC 0x4000`
- `#define VC_VXSM_V3_MASK 0x0173`
- `#define VC_NXF_INFO_LOCK 0x00000001ull`
- `#define VC_NXF_INFO_PRIVATE 0x00000008ull`
- `#define VC_NXF_SINGLE_IP 0x00000100ull`
- `#define VC_NXF_LBACK_REMAP 0x00000200ull`
- `#define VC_NXF_LBACK_ALLOW 0x00000400ull`
- `#define VC_NXF_HIDE_NETIF 0x02000000ull`
- `#define VC_NXF_HIDE_LBACK 0x04000000ull`
- `#define VC_NXF_STATE_SETUP (1ULL<<32)`
- `#define VC_NXF_STATE_ADMIN (1ULL<<34)`
- `#define VC_NXF_SC_HELPER (1ULL<<36)`
- `#define VC_NXF_PERSISTENT (1ULL<<38)`
- `#define VC_NXC_TUN_CREATE 0x00000001ull`
- `#define VC_NXC_RAW_ICMP 0x00000100ull`
- `#define VC_VLIMIT_NSOCK 16`
- `#define VC_VLIMIT_OPENFD 17`
- `#define VC_VLIMIT_ANON 18`
- `#define VC_VLIMIT_SHMEM 19`
- `#define VC_VLIMIT_SEMARY 20`
- `#define VC_VLIMIT_NSEMS 21`

- `#define VC_VLIMIT_DENTRY 22`
- `#define VC_VLIMIT_MAPPED 23`
- `#define VC_VCI_NO_DYNAMIC (1 << 0)`
- `#define VC_VCI_SPACES (1 << 10)`
- `#define VC_VCI_NETV2 (1 << 11)`
- `#define VC_VCI_PPTAG (1 << 28)`
- `#define VC_DATTR_CREATE 0x00000001`
- `#define VC_DATTR_OPEN 0x00000002`
- `#define VC_DATTR_REMAP 0x00000010`
- `#define VC_VXM_SET_INIT 0x00000001`
- `#define VC_VXM_SET_REAPER 0x00000002`
- `#define VC_NXA_TYPE_IPV4 0x0001`
- `#define VC_NXA_TYPE_IPV6 0x0002`
- `#define VC_NXA_TYPE_NONE 0x0000`
- `#define VC_NXA_TYPE_ANY 0x00FF`
- `#define VC_NXA_TYPE_ADDR 0x0010`
- `#define VC_NXA_TYPE_MASK 0x0020`
- `#define VC_NXA_TYPE_RANGE 0x0040`
- `#define VC_NXA_MOD_BCAST 0x0100`
- `#define VC_NXA_MOD_LBACK 0x0200`
- `#define VC_BAD_PERSONALITY ((uint_least32_t)(-1))`
- `#define vna_v4_ip s.ip.v4`
- `#define vna_v4_ip2 s.ip2.v4`
- `#define vna_v4_mask s.mask.v4`
- `#define vna_v6_ip s.ip.v6`
- `#define vna_v6_ip2 s.ip2.v6`
- `#define vna_v6_mask s.mask.v6`
- `#define VC_LIMIT_VSERVER_NAME_LEN 1024`
- `#define vcSKEL_INTERFACES 1u`
- `#define vcSKEL_PKGMGMT 2u`
- `#define vcSKEL_FILESYSTEM 4u`

### Typedefs

- `typedef an_unsigned_integer_type xid\_t`
- `typedef an_unsigned_integer_type nid_t`
- `typedef an_unsigned_integer_type tag_t`
- `typedef uint64_t vc_vci_t`
- `typedef uint_least64_t vc\_limit\_t`

*The type which is used for a single limit value.*

### Enumerations

- `enum vc_uts_type {`  
`vcVHI_CONTEXT, vcVHI_SYSNAME, vcVHI_NODENAME, vcVHI_RELEASE,`  
`vcVHI_VERSION, vcVHI_MACHINE, vcVHI_DOMAINNAME }`

- enum **vcFeatureSet** {  
**vcFEATURE\_VKILL**,    **vcFEATURE\_IATTR**,    **vcFEATURE\_RLIMIT**,    **vcFEATURE\_-COMPAT**,  
**vcFEATURE\_MIGRATE**,            **vcFEATURE\_NAMESPACE**,            **vcFEATURE\_SCHED**,  
**vcFEATURE\_VINFO**,  
**vcFEATURE\_VHI**, **vcFEATURE\_VSHELPER0**, **vcFEATURE\_VSHELPER**, **vcFEATURE\_-VWAIT**,  
**vcFEATURE\_VNET**,    **vcFEATURE\_VSTAT**,    **vcFEATURE\_PPTAG**,    **vcFEATURE\_-PIDSPACE**,  
**vcFEATURE\_SPACES**, **vcFEATURE\_PERSISTENT**, **vcFEATURE\_PIVOT\_ROOT** }
- enum **vcXidType** {  
**vcTYPE\_INVALID**, **vcTYPE\_MAIN**, **vcTYPE\_WATCH**, **vcTYPE\_STATIC**,  
**vcTYPE\_DYNAMIC** }
- enum **vcCfgStyle** {  
**vcCFG\_NONE**, **vcCFG\_AUTO**, **vcCFG\_LEGACY**, **vcCFG\_RECENT\_SHORT**,  
**vcCFG\_RECENT\_FULL** }
- enum **vcCtxType** { **vcCTX\_XID** = 1, **vcCTX\_NID**, **vcCTX\_TAG** }

## Functions

- int **vc\_syscall** (uint32\_t cmd, xid\_t xid, void \*data)  
*The generic vserver syscall*  
*This function executes the generic vserver syscall. It uses the correct syscallnumber (which may differ between the different architectures).*
- int **vc\_get\_version** ()  
*Returns the version of the current kernel API.*
- vc\_vci\_t **vc\_get\_vci** ()  
*Returns the kernel configuration bits.*
- xid\_t **vc\_new\_s\_context** (xid\_t ctx, unsigned int remove\_cap, unsigned int flags)  
*Moves current process into a context*  
*Puts current process into context ctx, removes the capabilities given in remove\_cap and sets flags.*
- int **vc\_set\_ipv4root** (uint32\_t bcast, size\_t nb, struct **vc\_ip\_mask\_pair** const \*ips) VC\_ATTR\_-NONNULL((3))  
*Sets the ipv4root information.*
- size\_t **vc\_get\_nb\_ipv4root** () VC\_ATTR\_CONST VC\_ATTR\_PURE  
*Returns the value of NB\_IPV4ROOT.*  
*This function returns the value of NB\_IPV4ROOT which was used when the library was built, but **not** the value which is used by the currently running kernel.*
- xid\_t **vc\_ctx\_create** (xid\_t xid, struct **vc\_ctx\_flags** \*flags)  
*Creates a context without starting it.*  
*This functions initializes a new context. When already in a freshly created context, this old context will be discarded.*

- `int vc_ctx_migrate (xid_t xid, uint_least64_t flags)`  
*Moves the current process into the specified context.*
- `int vc_ctx_stat (xid_t xid, struct vc_ctx_stat *stat) VC_ATTR_NONNULL((2))`  
*Get some statistics about a context.*
- `int vc_virt_stat (xid_t xid, struct vc_virt_stat *stat) VC_ATTR_NONNULL((2))`  
*Get more statistics about a context.*
- `int vc_ctx_kill (xid_t ctx, pid_t pid, int sig)`  
*Sends a signal to a context/pid*  
*Special values for pid are:*
  - `-1` which means every process in `ctx` except the `init-process`
  - `0` which means every process in `ctx` inclusive the `init-process`.
- `int vc_get_cflags (xid_t xid, struct vc_ctx_flags *) VC_ATTR_NONNULL((2))`
- `int vc_set_cflags (xid_t xid, struct vc_ctx_flags const *) VC_ATTR_NONNULL((2))`
- `int vc_get_ccaps (xid_t xid, struct vc_ctx_caps *)`
- `int vc_set_ccaps (xid_t xid, struct vc_ctx_caps const *)`
- `int vc_get_vx_info (xid_t xid, struct vc_vx_info *info) VC_ATTR_NONNULL((2))`
- `xid_t vc_get_task_xid (pid_t pid)`  
*Returns the context of the given process.*
- `int vc_wait_exit (xid_t xid)`  
*Waits for the end of a context.*
- `int vc_get_rlimit_mask (xid_t xid, struct vc_rlimit_mask *lim) VC_ATTR_NONNULL((2))`  
*Returns the limits supported by the kernel.*
- `int vc_get_rlimit (xid_t xid, int resource, struct vc_rlimit *lim) VC_ATTR_NONNULL((3))`  
*Returns the limits of resource.*
- `int vc_set_rlimit (xid_t xid, int resource, struct vc_rlimit const *lim) VC_ATTR_NONNULL((3))`  
*Sets the limits of resource.*
- `int vc_rlimit_stat (xid_t xid, int resource, struct vc_rlimit_stat *stat) VC_ATTR_NONNULL((3))`  
*Returns the current stats of resource.*
- `int vc_reset_minmax (xid_t xid)`  
*Resets the minimum and maximum observed values of all resources.*
- `bool vc_parseLimit (char const *str, vc_limit_t *res) VC_ATTR_NONNULL((1))`  
*Parses a string describing a limit*  
*This function parses `str` and interprets special words like `"inf"` or suffixes. Valid suffixes are*
  - `k ... 1000`
  - `m ... 1000000`
  - `K ... 1024`
  - `M ... 1048576`.
- `nid_t vc_get_task_nid (pid_t pid)`

- `int vc_get_nx_info (nid_t nid, struct vc\_nx\_info *) VC_ATTR_NONNULL((2))`
- `int vc_net_create (nid_t nid)`
- `int vc_net_migrate (nid_t nid)`
- `int vc_net_add (nid_t nid, struct vc\_net\_addr const *info)`
- `int vc_net_remove (nid_t nid, struct vc\_net\_addr const *info)`
- `int vc_get_nflags (nid_t, struct vc\_net\_flags *)`
- `int vc_set_nflags (nid_t, struct vc\_net\_flags const *)`
- `int vc_get_ncaps (nid_t, struct vc\_net\_caps *)`
- `int vc_set_ncaps (nid_t, struct vc\_net\_caps const *)`
- `int vc_set_iattr (char const *filename, xid\_t xid, uint_least32_t flags, uint_least32_t mask) VC_ATTR_NONNULL((1))`
- `int vc_fset_iattr (int fd, xid\_t xid, uint_least32_t flags, uint_least32_t mask)`
- `int vc_get_iattr (char const *filename, xid\_t *xid, uint_least32_t *flags, uint_least32_t *mask) VC_ATTR_NONNULL((1))`

*Returns information about attributes and assigned context of a file.*

*This function returns the VC\_IATTR\_XXX flags and about the assigned context of a file. To request an information, the appropriate bit in mask must be set and the corresponding parameter (xid or flags) must not be NULL.*

- `int vc_fget_iattr (int fd, xid\_t *xid, uint_least32_t *flags, uint_least32_t *mask) VC_ATTR_NONNULL((4))`
- `xid\_t vc_getfilecontext (char const *filename) VC_ATTR_NONNULL((1))`

*Returns the context of filename*

*This function calls [vc\\_get\\_iattr\(\)](#) with appropriate arguments to determine the context of filename. In error-case or when no context is assigned, VC\_NOCTX will be returned. To differ between both cases, *errno* must be examined.*

- `int vc_set_vhi_name (xid\_t xid, vc_uts_type type, char const *val, size_t len) VC_ATTR_NONNULL((3))`
- `int vc_get_vhi_name (xid\_t xid, vc_uts_type type, char *val, size_t len) VC_ATTR_NONNULL((3))`
- `int vc_enter_namespace (xid\_t xid, uint_least64_t mask, uint32_t index)`
- `int vc_set_namespace (xid\_t xid, uint_least64_t mask, uint32_t index)`
- `int vc_cleanup_namespace (void)`
- `uint_least64_t vc_get_space_mask (void)`
- `uint_least64_t vc_get_space_default (void)`
- `int vc_add_dlimit (char const *filename, xid\_t xid, uint_least32_t flags) VC_ATTR_NONNULL((1))`
- `int vc_rem_dlimit (char const *filename, xid\_t xid, uint_least32_t flags) VC_ATTR_NONNULL((1))`
- `int vc_set_dlimit (char const *filename, xid\_t xid, uint_least32_t flags, struct vc\_ctx\_dlimit const *limits) VC_ATTR_NONNULL((1))`
- `int vc_get_dlimit (char const *filename, xid\_t xid, uint_least32_t flags, struct vc\_ctx\_dlimit *limits) VC_ATTR_NONNULL((1))`
- `tag_t vc_get_task_tag (pid_t pid)`
- `int vc_tag_create (tag_t tag)`
- `int vc_tag_migrate (tag_t tag)`
- `int vc_set_sched (xid\_t xid, struct vc\_set\_sched const *) VC_ATTR_NONNULL((2))`
- `int vc_get_sched (xid\_t xid, struct vc\_set\_sched *) VC_ATTR_NONNULL((2))`
- `int vc_sched_info (xid\_t xid, struct vc\_sched\_info *info) VC_ATTR_NONNULL((2))`
- `int vc_set_mapping (xid\_t xid, const char *device, const char *target, uint32_t flags)`
- `int vc_unset_mapping (xid\_t xid, const char *device, const char *target, uint32_t flags)`

- int **vc\_get\_badness** (xid\_t xid, int64\_t \*badness)
- int **vc\_set\_badness** (xid\_t xid, int64\_t badness)
- uint\_least64\_t **vc\_text2bcap** (char const \*str, size\_t len)  
*Converts a single string into bcapability.*
- char const \* **vc\_lobcap2text** (uint\_least64\_t \*val) VC\_ATTR\_NONNULL((1))  
*Converts the lowest bit of a bcapability or the entire value (when possible) to a textual representation.*
- int **vc\_list2bcap** (char const \*str, size\_t len, struct **vc\_err\_listparser** \*err, struct **vc\_ctx\_caps** \*cap) VC\_ATTR\_NONNULL((1)  
*Converts a string into a bcapability-bitmask*  
*Syntax of str:.*
- int uint\_least64\_t **vc\_text2ccap** (char const \*, size\_t len)
- char const \* **vc\_loccap2text** (uint\_least64\_t \*)
- int **vc\_list2ccap** (char const \*, size\_t len, struct **vc\_err\_listparser** \*err, struct **vc\_ctx\_caps** \*)
- int **vc\_list2cflag** (char const \*, size\_t len, struct **vc\_err\_listparser** \*err, struct **vc\_ctx\_flags** \*flags)
- uint\_least64\_t **vc\_text2cflag** (char const \*, size\_t len)
- char const \* **vc\_locflag2text** (uint\_least64\_t \*)
- uint\_least32\_t **vc\_list2cflag\_compat** (char const \*, size\_t len, struct **vc\_err\_listparser** \*err)
- uint\_least32\_t **vc\_text2cflag\_compat** (char const \*, size\_t len)
- char const \* **vc\_hicflag2text\_compat** (uint\_least32\_t \*)
- int **vc\_text2cap** (char const \*)
- char const \* **vc\_cap2text** (unsigned int)
- int **vc\_list2nflag** (char const \*, size\_t len, struct **vc\_err\_listparser** \*err, struct **vc\_net\_flags** \*flags)
- uint\_least64\_t **vc\_text2nflag** (char const \*, size\_t len)
- char const \* **vc\_lonflag2text** (uint\_least64\_t \*)
- uint\_least64\_t **vc\_text2ncap** (char const \*, size\_t len)
- char const \* **vc\_loncap2text** (uint\_least64\_t \*)
- int **vc\_list2ncap** (char const \*, size\_t len, struct **vc\_err\_listparser** \*err, struct **vc\_net\_caps** \*)
- uint\_least64\_t **vc\_get\_insecurebcaps** () VC\_ATTR\_CONST
- uint\_least32\_t **vc\_text2personalityflag** (char const \*str, size\_t len) VC\_ATTR\_NONNULL((1))
- char const \* **vc\_lopersonality2text** (uint\_least32\_t \*) VC\_ATTR\_NONNULL((1))
- int **vc\_list2personalityflag** (char const \*, size\_t len, uint\_least32\_t \*personality, struct **vc\_err\_listparser** \*err) VC\_ATTR\_NONNULL((1)
- int uint\_least32\_t **vc\_str2personalitytype** (char const \*, size\_t len) VC\_ATTR\_NONNULL((1))
- bool **vc\_isSupported** (vcFeatureSet) VC\_ATTR\_CONST
- bool **vc\_isSupportedString** (char const \*)
- vcXidType **vc\_getXIDType** (xid\_t xid) VC\_ATTR\_CONST
- bool **vc\_is\_dynamic\_xid** (xid\_t xid)
- xid\_t **vc\_xidopt2xid** (char const \*, bool honor\_static, char const \*\*err\_info)
- nid\_t **vc\_nidopt2nid** (char const \*, bool honor\_static, char const \*\*err\_info)
- tag\_t **vc\_tagopt2tag** (char const \*, bool honor\_static, char const \*\*err\_info)
- vcCfgStyle **vc\_getVserverCfgStyle** (char const \*id)
- char \* **vc\_getVserverName** (char const \*id, vcCfgStyle style)
- char \* **vc\_getVserverCfgDir** (char const \*id, vcCfgStyle style)
- char \* **vc\_getVserverAppDir** (char const \*id, vcCfgStyle style, char const \*app)
- char \* **vc\_getVserverVdir** (char const \*id, vcCfgStyle style, bool physical)
- xid\_t **vc\_getVserverCtx** (char const \*id, vcCfgStyle style, bool honor\_static, bool \*is\_running, vcCtxType type)



- char \* [vc\\_getVserverByCtx](#) (xid\_t ctx, vcCfgStyle \*style, char const \*revdir)
- int [vc\\_compareVserverById](#) (char const \*lhs, vcCfgStyle lhs\_style, char const \*rhs, vcCfgStyle rhs\_style)
- void [vc\\_exitLikeProcess](#) (int pid, int ret) VC\_ATTR\_NORETURN
- int [vc\\_createSkeleton](#) (char const \*id, vcCfgStyle style, int flags)

### 6.2.1 Detailed Description

The public interface of the the libvserver library.

Definition in file [vserver.h](#).

### 6.2.2 Define Documentation

#### 6.2.2.1 #define VC\_DYNAMIC\_XID ((xid\_t)(-1))

the value which means a random (the next free) ctx

Definition at line 67 of file vserver.h.

#### 6.2.2.2 #define VC\_NOCTX ((xid\_t)(-1))

the value which is returned in error-case (no ctx found)

Definition at line 64 of file vserver.h.

#### 6.2.2.3 #define VC\_SAMECTX ((xid\_t)(-2))

the value which means the current ctx

Definition at line 69 of file vserver.h.

### 6.2.3 Typedef Documentation

#### 6.2.3.1 typedef uint\_least64\_t vc\_limit\_t

The type which is used for a single limit value. Special values are

- VC\_LIM\_INFINITY ... which is the infinite value
- VC\_LIM\_KEEP ... which is used to mark values which shall not be modified by the [vc\\_set\\_rlimit\(\)](#) operation.

Else, the interpretation of the value depends on the corresponding resource; it might be bytes, pages, seconds or litres of beer.

Definition at line 548 of file vserver.h.

**6.2.3.2 an\_unsigned\_integer\_type xid\_t**

The identifier of a context.

Definition at line 343 of file vserver.h.

**6.2.4 Function Documentation****6.2.4.1 int vc\_add\_dlimit (char const \* *filename*, xid\_t *xid*, uint\_least32\_t *flags*)**

Add a disk limit to a file system.

**6.2.4.2 int vc\_createSkeleton (char const \* *id*, vcCfgStyle *style*, int *flags*)**

Create a basic configuration skeleton for a vserver plus toplevel directories for pkgmanagemt and filesystem (when requested).

**6.2.4.3 int int vc\_get\_dlimit (char const \* *filename*, xid\_t *xid*, uint\_least32\_t *flags*, struct vc\_ctx\_dlimit \* *limits*)**

Get a disk limit.

**6.2.4.4 tag\_t vc\_get\_task\_tag (pid\_t *pid*)**

Get the filesystem tag for a process.

**6.2.4.5 char\* vc\_getVserverAppDir (char const \* *id*, vcCfgStyle *style*, char const \* *app*)**

Returns the path of the configuration directory for the given application. The result will be allocated and must be freed by the caller.

**6.2.4.6 char\* vc\_getVserverByCtx (xid\_t *ctx*, vcCfgStyle \* *style*, char const \* *revdir*)**

Resolves the cfg-path of the vserver owning the given ctx. 'revdir' will be used as the directory holding the mapping-links; when NULL, the default value will be assumed. The result will be allocated and must be freed by the caller.

**6.2.4.7 char\* vc\_getVserverCfgDir (char const \* *id*, vcCfgStyle *style*)**

Returns the path of the vserver configuration directory. When the given vserver does not exist, or when it does not have such a directory, NULL will be returned. Else, the result will be allocated and must be freed by the caller.

**6.2.4.8 xid\_t vc\_getVserverCtx (char const \* *id*, vcCfgStyle *style*, bool *honor\_static*, bool \* *is\_running*, vcCtxType *type*)**

Returns the ctx of the given vserver. When vserver is not running and 'honor\_static' is false, VC\_NOCTX will be returned. Else, when 'honor\_static' is true and a static assignment exists, those value will be returned. Else, the result will be VC\_NOCTX.

When 'is\_running' is not null, the status of the vserver will be assigned to this variable.

#### 6.2.4.9 char\* vc\_getVserverName (char const \* *id*, vcCfgStyle *style*)

Resolves the name of the vserver. The result will be allocated and must be freed by the caller.

#### 6.2.4.10 char\* vc\_getVserverVdir (char const \* *id*, vcCfgStyle *style*, bool *physical*)

Returns the path to the vserver root-directory. The result will be allocated and must be freed by the caller.

#### 6.2.4.11 bool vc\_is\_dynamic\_xid (xid\_t *xid*)

Returns true iff *xid* is a dynamic xid

#### 6.2.4.12 nid\_t vc\_nidopt2nid (char const \*, bool *honor\_static*, char const \*\* *err\_info*)

Maps a nid given at '--nid' options to a nid\_t

#### 6.2.4.13 int vc\_rem\_dlimit (char const \* *filename*, xid\_t *xid*, uint\_least32\_t *flags*)

Remove a disk limit from a file system.

#### 6.2.4.14 int vc\_set\_dlimit (char const \* *filename*, xid\_t *xid*, uint\_least32\_t *flags*, struct vc\_ctx\_dlimit const \* *limits*)

Set a disk limit.

#### 6.2.4.15 int vc\_tag\_create (tag\_t *tag*)

Create a new filesystem tag space.

#### 6.2.4.16 int vc\_tag\_migrate (tag\_t *tag*)

Migrate to an existing filesystem tag space.

#### 6.2.4.17 tag\_t vc\_tagopt2tag (char const \*, bool *honor\_static*, char const \*\* *err\_info*)

Maps a tag given at '--tag' options to a tag\_t

#### 6.2.4.18 xid\_t vc\_xidopt2xid (char const \*, bool *honor\_static*, char const \*\* *err\_info*)

Maps an xid given at '--xid' options to an xid\_t

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