Container	Operation		Short Description
	Category	Function-like Macros Prototype	
CCXLL	Create	**CCXLL** ccxll (TYPE) list;	Create a ccxll container `list` of type `TYPE`. This is implemented by a C struct to construct a list container.
		CCXLL ccxll_pckd (TYPE) list;	Create a packed ccxll container `list` of type `TYPE`. This is implemented by an aligned C struct to construct a list container.
		CCXLL ccxll_extd (TYPE, unsigned *num*, *align*) list;	Create a ccxll container `list` of type `TYPE` with *num* iterators. The container is packed when *align* is `PACKED`. Otherwise, set `NORMAL` for default.
	Initialize	void ccxll_init (CCXLL);	Initialize the ccxll container. Every container must be initialized right after its creation.
		void ccxll_iter_init (ITER, CCXLL);	Initialize the iterator for the ccxll container. Every iterator is implicitly initialized when the container it belongs to is initialized.
	Destroy	*stat* ccxll_free (CCXLL);	Deallocate all elements in the container manually. Every container should be destroyed before the program terminates.
	Access	**TYPE&** ccxll_[front|back] (CCXLL);	Return a reference to the first/last element. It's an undefined behavior if the container is empty.
	Capacity	int ccxll_size (CCXLL);	Return the number of the elements in the container. Return 0 if the container is empty.
		int ccxll_empty (CCXLL);	Check whether the container is empty. Return 1 if the container is empty, and return 0 if it is not.
	Modifiers	*stat* ccxll_push_[front|back] (CCXLL, TYPE *value*);	Insert an element at the beginning/end. This makes a copy of *value* into the container.
		stat ccxll_pop_[front|back] (CCXLL);	Remove the first/last element. There is nothing modified if the container is empty.
		stat ccxll_insert (ITER, TYPE *value*);	Insert an element at the position where the iterator points. This makes a copy of *value* into the container.
		stat ccxll_erase (ITER);	Erase an element at the position where the iterator points. There is nothing modified if the container is empty.
		stat ccxll_swap (CCXLL *a*, CCXLL *b*);	Swap two containers of the same type. It may cause unexpected errors if two containers are of different types.
		stat ccxll_resize (CCXLL, int *num*, TYPE *value*);	Resize the container to contain *num* elements. If the current size is smaller than *num* elements, then fills with *value*. Otherwise, it truncates.
		stat ccxll_clear (CCXLL);	Remove all elements in the container. This does not deallocate all elements in the container.
	Operations	*stat* ccxll_move_range (ITER *pos*, ITER *left*, ITER *right*);	Move the elements in the range [*left*, *right*) to position where *pos* points. These three iterators should be affiliated to the same ccxll container.
		stat ccxll_merge[_extd] (CCXLL *dst*, CCXLL *src* [, (*LEQ)()]);	Merge two sorted lists from *src* into *dst*. Merge with the default comparator `XLEQ` if `_extd` postfix is not specified.
		stat ccxll_sort[_extd] (CCXLL[, (*LEQ)()]);	Sort all elements in the list. Sort with the default comparator `XLEQ` if `_extd` postfix is not specified.
		stat ccxll_reverse_range (ITER *left*, ITER *right*);	Reverse the elements in the range [*left*, *right*]. This performs in constant time no matter how large the range is.
	Comparators	**LEQ** CCXLL_LEQ_COMPAR (ITER *a*, ITER *b*); (abbrev. XLEQ)	Compare values by passing and dereferencing two iterators for sorting algorithms. Return 1 iff the value pointed by *a* is not greater than the value pointed by *b*. Otherwise, return 0.
	Iterators	**ITER** ITER[_NTH] (CCXLL [, unsigned *num*]);	Return the *num*-th iterator of the list. Return the zero-th iterator if `_NTH` postfix is not specified.
		TYPE& DREF (ITER);	Return a reference to the element. It's an undefined behavior if the iterator is not (semi-)valid.
		TYPE& DREF_[PREV|NEXT] (ITER);	Return a reference to the previous/next element. It's an undefined behavior if the iterator is not valid.
		void ccxll_iter_copy (ITER *dst*, ITER *src*);	Copy the iterator from *src* to *dst*. It's not acceptable to assign the iterator by assignment operator.
		void ccxll_iter_[head|tail] (ITER);	Set the iterator to the head/tail of the container. The head/tail of the container is the sentinel node pointing to the first/last element.
		void ccxll_iter_[begin|end] (ITER);	Set the iterator to the first/last element usaully. Set the iterator to the tail/head if the container is empty.
		int ccxll_iter_at_[head|tail] (ITER);	Check whether the iterator points to the head/tail of the container. Return 1 if it is true. Otherwise, return 0.
		int ccxll_iter_at_[begin|end] (ITER);	Check whether the iterator points to the first/last element. Return 1 if it is true. Otherwise, return 0.
		void* ccxll_iter_[incr|decr] (ITER);	Move the iterator forward/backward by one element. Return NULL iff the iterator doesn't point to any element before and after moving.
		stat ccxll_iter_advance (ITER, int *diff*);	Move the iterator by *diff* element(s). (regard forward as positive) The iterator will stop at the sentinel node if there is no element left to iterate over.
		stat ccxll_iter_distance (ITER *a*, ITER *b*, *int *dist);*	Return the distance between *a* and *b* through *dist*. Return 0 if the distance between them cannot be determined.
	Traversal	*loop* CCXLL_[INCR|DECR] (ITER) *stat*;	Traverse all elements forward/backward. This is implemented by a single for statement.
		loop CCXLL_[INCR|DECR]_DREF (TYPE *pval, CCXLL) *stat*;	Traverse all elements forward/backward, and set the address of each element into *pval*. This macro will not be activated if `CCC_STRICT` is defined.