

1. Copyright.

Copyright © Dave Bone 1998 - 2015

2. *rc_phrase_th* Thread.

Parse raw-char-symbols phrase. The *Rc_phrase* terminal keeps its own local symbol table: map and list. It calls the common backend *term_def_ph* thread extractor of symbol definition.

Example of a raw character vocabulary to parse:

```

/*
file: rcsym.txt
Why: raw character symbols vocabulary to parse.
Note: raw-characters is shown for clarity. It is the keyword trigger
      that calls this grammar. Parsed is comments onwards.
*/
raw-characters
// comments
(file-name o2_chars,name-space NS_o2_chars) {
// 7 bit char set
"x00" (sym-class raw_nul{
  user-declaration
  public:
  raw_nul(INT Ext_file,size_t Pos);
  ***
  user-implementation
  raw_nul::raw_nul(INT Ext_file,size_t Pos){
    T_CTOR_RW("x00",T_raw_nul_,false,false,Ext_file,Pos)}
  ***
}
)
      ....
"! " (sym-class raw_exclam{
  user-declaration
  public:
  raw_exclam(INT Ext_file,size_t Pos);
  ***
  user-implementation
  raw_exclam::raw_exclam(INT Ext_file,size_t Pos){
    T_CTOR_RW("! ",T_raw_exclam_,false,false,Ext_file,Pos)}
  ***
}
)
      ....
// 8 bit char set
"xff" (sym-class raw_xff{
  user-declaration
  public:
  raw_xff(INT Ext_file,size_t Pos);
  ***
  user-implementation
  raw_xff::raw_xff(INT Ext_file,size_t Pos){
    T_CTOR_RW("xff",T_raw_xff_,false,false,Ext_file,Pos)}
  ***
}
}

```

3. Fsm Crc_phrase_th class.

4. Crc_phrase_th constructor directive.

⟨Crc_phrase_th constructor directive 4⟩ ≡

```
rc_phrase_ = 0;
```

5. Crc_phrase_th op directive.

⟨Crc_phrase_th op directive 5⟩ ≡

```
if (rc_phrase_ ≠ 0) {
  delete rc_phrase_;
  rc_phrase_ = 0;
}
rc_phrase_ = new T_rc_phrase;
rc_phrase_→set_rc(*parser_→start_token_, __FILE__, __LINE__);
AST * t = new AST(*rc_phrase_);
rc_phrase_→phrase_tree(t);
```

6. Crc_phrase_th user-declaration directive.

⟨Crc_phrase_th user-declaration directive 6⟩ ≡

```
public: T_rc_phrase * rc_phrase_;
```

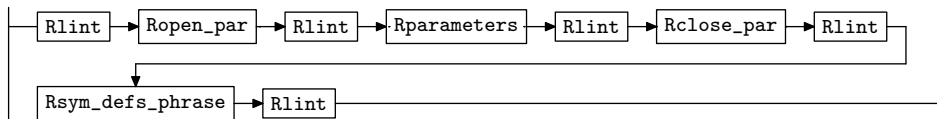
7. Crc_phrase_th user-prefix-declaration directive.

⟨Crc_phrase_th user-prefix-declaration directive 7⟩ ≡

```
#include "lint_balls.h"
#include "identifier.h"
#include "term_def_ph.h"
#include "c_string.h"
```

8. Rrc_phrase rule.

Rrc_phrase

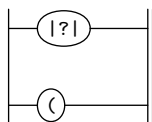


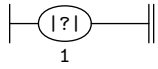
⟨Rrc_phrase subrule 1 op directive 8⟩ ≡

```
Crc_phrase_th * fsm = ( Crc_phrase_th * ) rule_info_...parser_→fsm_tbl_;
RSVP(fsm-rc_phrase_);
fsm-rc_phrase_ = 0;
```

9. Ropen_par rule.

Ropen_par

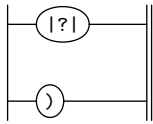
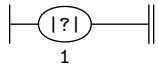


10. *Ropen_par*'s subrule 1.

⟨*Ropen_par* subrule 1 op directive 10⟩ ≡
`CAbs_lr1_sym * sym = new Err_no_open_parenthesis;`
`sym->set_rc(*rule_info->parser->current_token(), __FILE__, __LINE__);`
`RSVP(sym);`
`rule_info->parser->set_stop_parse(true);`

11. *Rclose_par* rule.

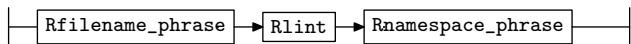
Rclose_par

12. *Rclose_par*'s subrule 1.

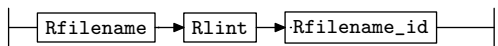
⟨*Rclose_par* subrule 1 op directive 12⟩ ≡
`CAbs_lr1_sym * sym = new Err_no_close_parenthesis;`
`sym->set_rc(*rule_info->parser->current_token(), __FILE__, __LINE__);`
`RSVP(sym);`
`rule_info->parser->set_stop_parse(true);`

13. *Rparameters* rule.

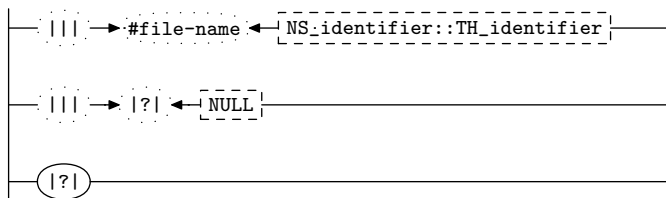
Rparameters

14. *Rfilename_phrase* rule.

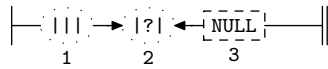
Rfilename_phrase

15. *Rfilename* rule.

Rfilename



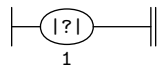
16. *Rfilename's subrule 2.*



```

⟨Rfilename subrule 2 op directive 16⟩ ≡
  sf→p2--set_auto_delete(true);
  CAbs_lr1_sym * sym = new Err_no_filename_present;
  sym→set_rc(*sf→p2--, __FILE__, __LINE__);
  RSVP(sym);
  rule_info...parser--set_stop_parse(true);
  
```

17. *Rfilename's subrule 3.*

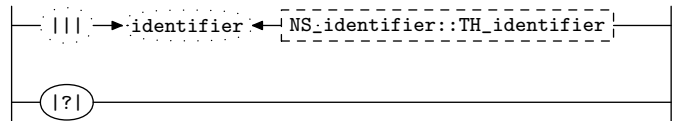


```

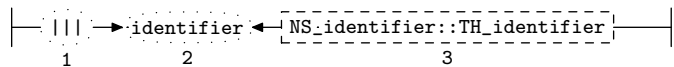
⟨Rfilename subrule 3 op directive 17⟩ ≡
  CAbs_lr1_sym * sym = new Err_no_filename_present;
  sym→set_rc(*rule_info...parser--current_token(), __FILE__, __LINE__);
  RSVP(sym);
  rule_info...parser--set_stop_parse(true);
  
```

18. *Rfilename_id rule.*

Rfilename_id



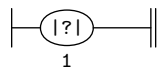
19. *Rfilename_id's subrule 1.*



```

⟨Rfilename_id subrule 1 op directive 19⟩ ≡
  Crc_phrase_th * fsm = ( Crc_phrase_th * ) rule_info...parser--fsm_tbl--;
  fsm→rc_phrase→filename_id(sf→p2--);
  
```

20. *Rfilename_id's subrule 2.*

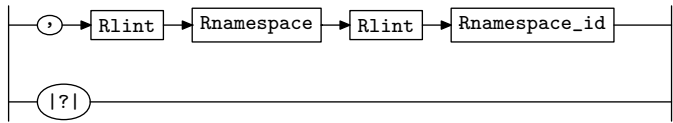
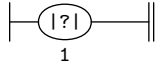


```

⟨Rfilename_id subrule 2 op directive 20⟩ ≡
  CAbs_lr1_sym * sym = new Err_no_filename_id_present;
  sym→set_rc(*rule_info...parser--current_token(), __FILE__, __LINE__);
  RSVP(sym);
  rule_info...parser--set_stop_parse(true);
  
```

21. Rnamespace_phrase rule.

Rnamespace_phrase

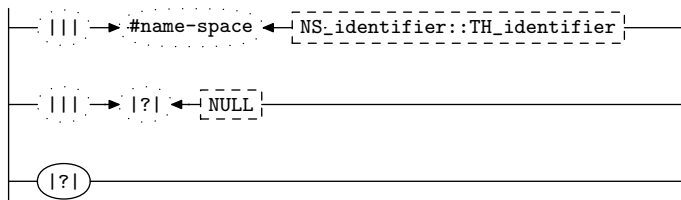
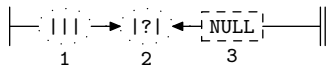
**22. Rnamespace_phrase's subrule 2.**

⟨ Rnamespace_phrase subrule 2 op directive 22 ⟩ ≡

```
CAbs_lr1_sym * sym = new Err_no_comma_present;
sym->set_rc(*rule_info_.parser->current_token(), __FILE__, __LINE__);
RSVP(sym);
rule_info_.parser->set_stop_parse(true);
```

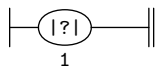
23. Rnamespace rule.

Rnamespace

**24. Rnamespace's subrule 2.**

⟨ Rnamespace subrule 2 op directive 24 ⟩ ≡

```
sf-p2->set_auto_delete(true);
CAbs_lr1_sym * sym = new Err_no_namespace_present;
sym->set_rc(*sf-p2--, __FILE__, __LINE__);
RSVP(sym);
rule_info_.parser->set_stop_parse(true);
```

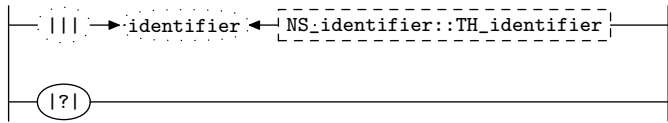
25. Rnamespace's subrule 3.

⟨ Rnamespace subrule 3 op directive 25 ⟩ ≡

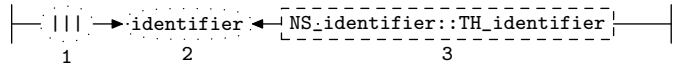
```
CAbs_lr1_sym * sym = new Err_no_namespace_present;
sym->set_rc(*rule_info_.parser->current_token(), __FILE__, __LINE__);
RSVP(sym);
rule_info_.parser->set_stop_parse(true);
```

26. Rnamespace_id rule.

Rnamespace_id

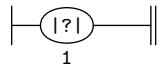


27. Rnamespace_id's subrule 1.



\langle Rnamespace_id subrule 1 op directive 27 $\rangle \equiv$
`Crc_phrase.th * fsm = (Crc_phrase.th *) rule_info...parser...fsm.tbl...;`
`fsm-rc_phrase...namespace_id(sf-p2...);`

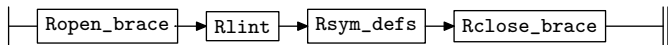
28. Rnamespace_id's subrule 2.



\langle Rnamespace_id subrule 2 op directive 28 $\rangle \equiv$
`CAbs_lr1_sym * sym = new Err_no_namespace_id_present;`
`sym-set_rc(*rule_info...parser...current_token(), __FILE__, __LINE__);`
`RSVP(sym);`
`rule_info...parser...set_stop_parse(true);`

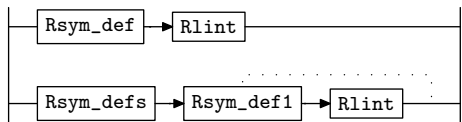
29. Rsym_defs_phrase rule.

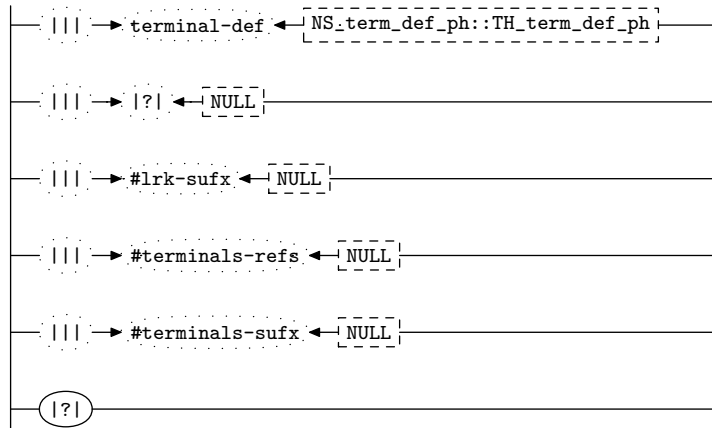
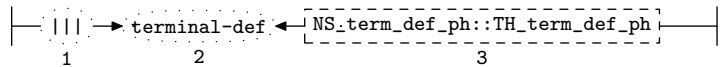
Rsym_defs_phrase



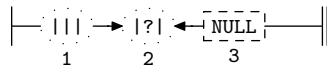
30. Rsym_defs rule.

Rsym_defs

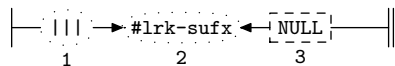


31. *Rsym_def* rule.*Rsym_def***32. *Rsym_def*'s subrule 1.**

⟨ *Rsym_def* subrule 1 op directive 32 ⟩ ≡
Crc_phrase_th * *fsm* = (*Crc_phrase_th* *) *rule_info__parser__fsm_tbl__*;
sf-p2__classification(*T_terminal_def* :: *rc*);
CAbs_lr1_sym * *r* = *fsm-rc_phrase-add_t_to_alphabet*(*sf-p2__*, *rule_info__parser__*);
if (*r* ≡ 0) **return**;
 RSVP(*r*);
rule_info__parser__set_stop_parse(*true*);

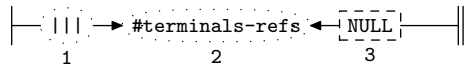
33. *Rsym_def*'s subrule 2.

⟨ *Rsym_def* subrule 2 op directive 33 ⟩ ≡
 RSVP(*sf-p2__*);
rule_info__parser__set_stop_parse(*true*);

34. *Rsym_def*'s subrule 3.

⟨ *Rsym_def* subrule 3 op directive 34 ⟩ ≡
sf-p2__set_auto_delete(*true*);
CAbs_lr1_sym * *sym* = **new** *Err_improper_directive*;
sym-set_rc(**sf-p2__*, __FILE__, __LINE__);
 RSVP(*sym*);
rule_info__parser__set_stop_parse(*true*);

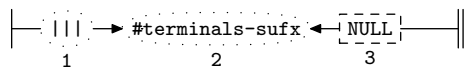
35. Rsym_def's subrule 4.



```

⟨Rsym_def subrule 4 op directive 35⟩ ≡
  sf→p2→set_auto_delete(true);
  CAbs_lr1_sym * sym = new Err_improper_directive;
  sym→set_rc(*sf→p2→, __FILE__, __LINE__);
  RSVP(sym);
  rule_info→.parser→set_stop_parse(true);
  
```

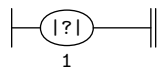
36. Rsym_def's subrule 5.



```

⟨Rsym_def subrule 5 op directive 36⟩ ≡
  sf→p2→set_auto_delete(true);
  CAbs_lr1_sym * sym = new Err_improper_directive;
  sym→set_rc(*sf→p2→, __FILE__, __LINE__);
  RSVP(sym);
  rule_info→.parser→set_stop_parse(true);
  
```

37. Rsym_def's subrule 6.

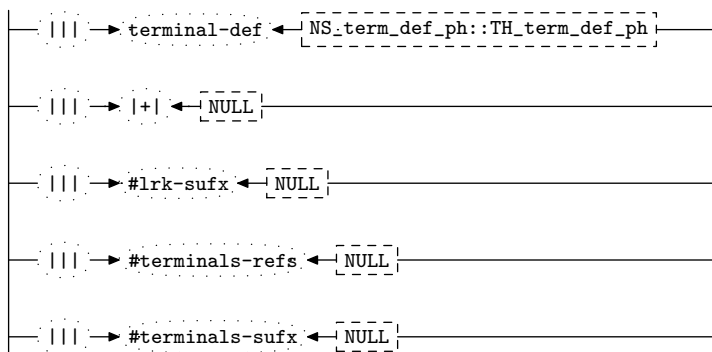


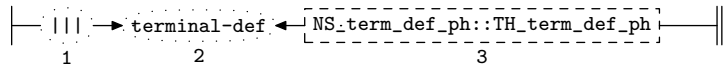
```

⟨Rsym_def subrule 6 op directive 37⟩ ≡
  CAbs_lr1_sym * sym = new Err_no_sym_defs_present;
  sym→set_rc(*rule_info→.parser→current_token(), __FILE__, __LINE__);
  RSVP(sym);
  rule_info→.parser→set_stop_parse(true);
  
```

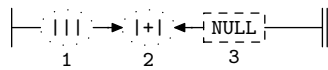
38. Rsym_def1 rule.

Rsym_def1

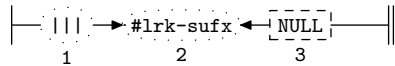


39. *Rsym_def1*'s subrule 1.

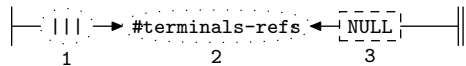
⟨*Rsym_def1* subrule 1 op directive 39⟩ ≡
Crc_phrase_th * *fsm* = (*Crc_phrase_th* *) *rule_info...**parser...**fsm_tbl...*;
*sf-p2...**classification*(*T_terminal_def* :: *rc*);
CAbs_lr1_sym * *r* = *fsm-rc_phrase-add_t_to_alphabet*(*sf-p2...*, *rule_info...**parser...*);
if (*r* ≡ 0) **return**;
RSVP(*r*);
*rule_info...**parser...**set_stop_parse*(*true*);

40. *Rsym_def1*'s subrule 2.

⟨*Rsym_def1* subrule 2 op directive 40⟩ ≡
RSVP(*sf-p2...*);
*rule_info...**parser...**set_stop_parse*(*true*);

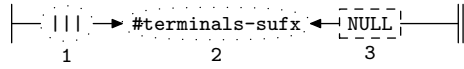
41. *Rsym_def1*'s subrule 3.

⟨*Rsym_def1* subrule 3 op directive 41⟩ ≡
*sf-p2...**set_auto_delete*(*true*);
CAbs_lr1_sym * *sym* = **new** *Err_improper_directive*;
sym-set_rc(**sf-p2...*, __FILE__, __LINE__);
RSVP(*sym*);
*rule_info...**parser...**set_stop_parse*(*true*);

42. *Rsym_def1*'s subrule 4.

⟨*Rsym_def1* subrule 4 op directive 42⟩ ≡
*sf-p2...**set_auto_delete*(*true*);
CAbs_lr1_sym * *sym* = **new** *Err_improper_directive*;
sym-set_rc(**sf-p2...*, __FILE__, __LINE__);
RSVP(*sym*);
*rule_info...**parser...**set_stop_parse*(*true*);

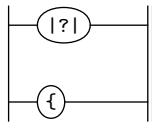
43. Rsym_def1's subrule 5.



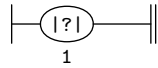
⟨Rsym_def1 subrule 5 op directive 43⟩ ≡
sf-p2--set_auto_delete(true);
*CAbs_lr1_sym * sym = new Err_improper_directive;*
*sym->set_rc(*sf-p2--, __FILE__, __LINE__);*
RSVP(sym);
rule_info...parser--set_stop_parse(true);

44. Ropen_brace rule.

Ropen_brace



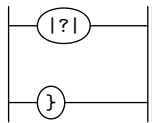
45. Ropen_brace's subrule 1.



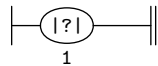
⟨Ropen_brace subrule 1 op directive 45⟩ ≡
*CAbs_lr1_sym * sym = new Err_no_open_brace;*
*sym->set_rc(*rule_info...parser--current_token(), __FILE__, __LINE__);*
RSVP(sym);
rule_info...parser--set_stop_parse(true);

46. Rclose_brace rule.

Rclose_brace



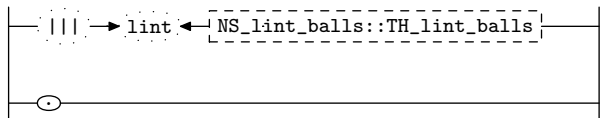
47. Rclose_brace's subrule 1.



⟨Rclose_brace subrule 1 op directive 47⟩ ≡
*CAbs_lr1_sym * sym = new Err_no_close_brace;*
*sym->set_rc(*rule_info...parser--current_token(), __FILE__, __LINE__);*
RSVP(sym);
rule_info...parser--set_stop_parse(true);

48. Rlint rule.

Rlint



49. First Set Language for O_2^{linker} .

```
/*
  File: rc_phrase_th.fsc
  Date and Time: Fri Jan  2 15:33:51 2015
*/
transitive      y
grammar-name    "rc_phrase_th"
name-space      "NS_rc_phrase_th"
thread-name     "TH_rc_phrase_th"
monolithic      n
file-name       "rc_phrase_th.fsc"
no-of-T         569
list-of-native-first-set-terminals 2
  LR1_questionable_shift_operator
  raw_open_bracket
end-list-of-native-first-set-terminals
list-of-transitive-threads 1
  NS_lint_balls::TH_lint_balls
end-list-of-transitive-threads
list-of-used-threads 3
  NS_identifier::TH_identifier
  NS_lint_balls::TH_lint_balls
  NS_term_def_ph::TH_term_def_ph
end-list-of-used-threads
fsm-comments
"Raw character vocabulary parser."
```

50. Lr1 State Network.

\Rightarrow					State: 1 state type: s/r			
\leftarrow	rule	\rightarrow	R# sr# Po	\leftarrow	subrule element	\rightarrow	Brn Gto Red LA	
c	Rlint		17 2 1	ϵ			1 0 1 1	
c	Rlint		17 1 1	lint NS_lint_balls::TH_lint_balls			1 2 3	
c	Rrc_phrase		1 1 1	Rlint <u>Ropen_par</u>			1 4 14	
\Rightarrow	arbitration-code: ϵ				State: 2 state type: s			
\leftarrow	rule	\rightarrow	R# sr# Po	\leftarrow	subrule element	\rightarrow	Brn Gto Red LA	
t	Rlint		17 1 2	lint			1 3 3	
\Rightarrow	lint				State: 3 state type: r			
\leftarrow	rule	\rightarrow	R# sr# Po	\leftarrow	subrule element	\rightarrow	Brn Gto Red LA	
t	Rlint		17 1 3				1 0 3 1	
\Rightarrow	Rlint				State: 4 state type: s			
\leftarrow	rule	\rightarrow	R# sr# Po	\leftarrow	subrule element	\rightarrow	Brn Gto Red LA	
c	Ropen_par		2 1 1	?			4 27 27	
c	Ropen_par		2 2 1	(4 28 28	
t	Rrc_phrase		1 1 2	Ropen_par <u>Rlint^{ϵ} Rparameters</u>			1 5 14	
\Rightarrow	Ropen_par				State: 5 state type: s/r			
\leftarrow	rule	\rightarrow	R# sr# Po	\leftarrow	subrule element	\rightarrow	Brn Gto Red LA	
c	Rlint		17 2 1	ϵ			5 0 5 2	
c	Rlint		17 1 1	lint NS_lint_balls::TH_lint_balls			5 2 3	
t	Rrc_phrase		1 1 3	Rlint <u>Rparameters</u>			1 6 14	
\Rightarrow	Rlint				State: 6 state type: s			
\leftarrow	rule	\rightarrow	R# sr# Po	\leftarrow	subrule element	\rightarrow	Brn Gto Red LA	
c	Rfilename		6 3 1	?			6 29 29	
c	Rfilename		6 1 1	# file-name NS_identifier::TH_identifier			6 30 32	
c	Rfilename		6 2 1	? NULL			6 30 31	
t	Rrc_phrase		1 1 4	Rparameters <u>Rlint^{ϵ} Rclose_par</u>			1 7 14	
c	Rparameters		4 1 1	Rfilename_phrase <u>Rlint^{ϵ} Rnamespace_phrase</u>			6 33 44	
c	Rfilename_phrase		5 1 1	Rfilename <u>Rlint^{ϵ} Rfilename_id</u>			6 45 50	
\Rightarrow	Rparameters				State: 7 state type: s/r			
\leftarrow	rule	\rightarrow	R# sr# Po	\leftarrow	subrule element	\rightarrow	Brn Gto Red LA	
c	Rlint		17 2 1	ϵ			7 0 7 3	
c	Rlint		17 1 1	lint NS_lint_balls::TH_lint_balls			7 2 3	
t	Rrc_phrase		1 1 5	Rlint <u>Rclose_par</u>			1 8 14	
\Rightarrow	Rlint				State: 8 state type: s			
\leftarrow	rule	\rightarrow	R# sr# Po	\leftarrow	subrule element	\rightarrow	Brn Gto Red LA	
c	Rclose_par		3 1 1	?			8 51 51	
c	Rclose_par		3 2 1)			8 52 52	
t	Rrc_phrase		1 1 6	Rclose_par <u>Rlint^{ϵ} Rsym_defs_phrase</u>			1 9 14	
\Rightarrow	Rclose_par				State: 9 state type: s/r			
\leftarrow	rule	\rightarrow	R# sr# Po	\leftarrow	subrule element	\rightarrow	Brn Gto Red LA	
c	Rlint		17 2 1	ϵ			9 0 9 4	

c Rlint	17	1	1	lint NS_lint_balls::TH_lint_balls	9	2	3
t Rrc_phrase	1	1	7	Rlint <u>Rsym_defs_phrase</u>	1	10	14
\Rightarrow <i>Rlint</i>				State: 10 state type: <i>s</i>			
← rule	→ R#	sr#	Po	← subrule element	→ Brn	Gto	Red LA
c Ropen_brace	15	1	1	?	10	11	11
c Ropen_brace	15	2	1	{	10	12	12
t Rrc_phrase	1	1	8	Rsym_defs_phrase <u>Rlint^ε</u>	1	13	14
c Rsym_defs_phrase	11	1	1	Ropen_brace <u>Rlint^ε Rsym_defs</u>	10	15	26
\Rightarrow <i> ? </i>				State: 11 state type: <i>r</i>			
← rule	→ R#	sr#	Po	← subrule element	→ Brn	Gto	Red LA
t Ropen_brace	15	1	2		10	0	11 2
\Rightarrow <i>{</i>				State: 12 state type: <i>r</i>			
← rule	→ R#	sr#	Po	← subrule element	→ Brn	Gto	Red LA
t Ropen_brace	15	2	2		10	0	12 2
\Rightarrow <u>Rsym_defs_phrase</u>				State: 13 state type: <i>s/r</i>			
← rule	→ R#	sr#	Po	← subrule element	→ Brn	Gto	Red LA
c Rlint	17	2	1	ε	13	0	13 1
c Rlint	17	1	1	lint NS_lint_balls::TH_lint_balls	13	2	3
t Rrc_phrase	1	1	9	Rlint	1	14	14
\Rightarrow <i>Rlint</i>				State: 14 state type: <i>r</i>			
← rule	→ R#	sr#	Po	← subrule element	→ Brn	Gto	Red LA
t Rrc_phrase	1	1	10		1	0	14 1
\Rightarrow <u>Ropen_brace</u>				State: 15 state type: <i>s/r</i>			
← rule	→ R#	sr#	Po	← subrule element	→ Brn	Gto	Red LA
c Rlint	17	2	1	ε	15	0	15 2
c Rlint	17	1	1	lint NS_lint_balls::TH_lint_balls	15	2	3
t Rsym_defs_phrase	11	1	2	Rlint <u>Rsym_defs</u>	10	16	26
\Rightarrow <i>Rlint</i>				State: 16 state type: <i>s</i>			
← rule	→ R#	sr#	Po	← subrule element	→ Brn	Gto	Red LA
c Rsym_def	13	6	1	?	16	53	53
c Rsym_def	13	1	1	terminal-def NS_term_def_ph::TH_term_def_ph	16	54	59
c Rsym_def	13	3	1	# lrk-suffix NULL	16	54	58
c Rsym_def	13	4	1	# terminals-refs NULL	16	54	56
c Rsym_def	13	2	1	? NULL	16	54	55
c Rsym_def	13	5	1	# terminals-suffix NULL	16	54	57
t Rsym_defs_phrase	11	1	3	Rsym_defs <u>Rclose_brace</u>	10	17	26
c Rsym_defs	12	2	1	Rsym_defs <u>Rsym_def1</u>	16	17	61
c Rsym_defs	12	1	1	Rsym_def <u>Rlint^ε</u>	16	62	63
\Rightarrow <u>Rsym_defs</u>				State: 17 state type: <i>s</i>			
← rule	→ R#	sr#	Po	← subrule element	→ Brn	Gto	Red LA
c Rclose_brace	16	1	1	?	17	18	18
c Rsym_def1	14	1	1	terminal-def NS_term_def_ph::TH_term_def_ph	17	19	24
c Rsym_def1	14	3	1	# lrk-suffix NULL	17	19	23
c Rsym_def1	14	5	1	# terminals-suffix NULL	17	19	22

c Rsym_def1	14	2	1	+ NULL	17	19	20
c Rsym_def1	14	4	1	# terminals-refs NULL	17	19	21
c Rclose_brace	16	2	1	}	17	25	25
t Rsym_defs	12	2	2	Rsym_def1 <i>Rlint</i> ^ε	16	60	61
t Rsym_defs_phrase	11	1	4	Rclose_brace	10	26	26
⇒ ? State: 18 state type: <i>r</i>							
← rule	→ R#	sr#	Po	← subrule element	→ Brn	Gto	Red LA
t Rclose_brace	16	1	2		17	0	18 1
⇒ <i>arbitration-code: ε</i> State: 19 state type: <i>s</i>							
← rule	→ R#	sr#	Po	← subrule element	→ Brn	Gto	Red LA
t Rsym_def1	14	2	2	+	17	20	20
t Rsym_def1	14	4	2	# terminals-refs	17	21	21
t Rsym_def1	14	5	2	# terminals-sufx	17	22	22
t Rsym_def1	14	3	2	# lrk-sufx	17	23	23
t Rsym_def1	14	1	2	terminal-def	17	24	24
⇒ + State: 20 state type: <i>r</i>							
← rule	→ R#	sr#	Po	← subrule element	→ Brn	Gto	Red LA
t Rsym_def1	14	2	3		17	0	20 5
⇒#terminals-refs State: 21 state type: <i>r</i>							
← rule	→ R#	sr#	Po	← subrule element	→ Brn	Gto	Red LA
t Rsym_def1	14	4	3		17	0	21 5
⇒#terminals-sufx State: 22 state type: <i>r</i>							
← rule	→ R#	sr#	Po	← subrule element	→ Brn	Gto	Red LA
t Rsym_def1	14	5	3		17	0	22 5
⇒#lrk-sufx State: 23 state type: <i>r</i>							
← rule	→ R#	sr#	Po	← subrule element	→ Brn	Gto	Red LA
t Rsym_def1	14	3	3		17	0	23 5
⇒terminal-def State: 24 state type: <i>r</i>							
← rule	→ R#	sr#	Po	← subrule element	→ Brn	Gto	Red LA
t Rsym_def1	14	1	3		17	0	24 5
⇒} State: 25 state type: <i>r</i>							
← rule	→ R#	sr#	Po	← subrule element	→ Brn	Gto	Red LA
t Rclose_brace	16	2	2		17	0	25 1
⇒Rclose_brace State: 26 state type: <i>r</i>							
← rule	→ R#	sr#	Po	← subrule element	→ Brn	Gto	Red LA
t Rsym_defs_phrase	11	1	5		10	0	26 1
⇒ ? State: 27 state type: <i>r</i>							
← rule	→ R#	sr#	Po	← subrule element	→ Brn	Gto	Red LA
t Ropen_par	2	1	2		4	0	27 2
⇒(State: 28 state type: <i>r</i>							
← rule	→ R#	sr#	Po	← subrule element	→ Brn	Gto	Red LA

t Ropen_par	2	2	2					4	0	28	2
⇒ ?											
← rule	→ R#	sr#	Po	←				→ Brn	Gto	Red	LA
t Rfilename	6	3	2					6	0	29	2
⇒ <i>arbitration-code</i> : ϵ											
← rule	→ R#	sr#	Po	←				→ Brn	Gto	Red	LA
t Rfilename	6	2	2	?				6	31	31	
t Rfilename	6	1	2	# file-name				6	32	32	
⇒ ?											
← rule	→ R#	sr#	Po	←				→ Brn	Gto	Red	LA
t Rfilename	6	2	3					6	0	31	2
⇒# <i>file-name</i>											
← rule	→ R#	sr#	Po	←				→ Brn	Gto	Red	LA
t Rfilename	6	1	3					6	0	32	2
⇒ <i>Rfilename_phrase</i>											
← rule	→ R#	sr#	Po	←				→ Brn	Gto	Red	LA
c Rlint	17	2	1	ϵ				33	0	33	6
c Rlint	17	1	1	lint NS_lint_balls::TH_lint_balls				33	2	3	
t Rparameters	4	1	2	Rlint <u><i>Rnamespace_phrase</i></u>				6	34	44	
⇒ <i>Rlint</i>											
← rule	→ R#	sr#	Po	←				→ Brn	Gto	Red	LA
c Rnamespace_phrase	8	2	1	?				34	35	35	
c Rnamespace_phrase	8	1	1	,				34	36	43	
t Rparameters	4	1	3	Rnamespace_phrase				6	44	44	
⇒ ?											
← rule	→ R#	sr#	Po	←				→ Brn	Gto	Red	LA
t Rnamespace_phrase	8	2	2					34	0	35	7
⇒'											
← rule	→ R#	sr#	Po	←				→ Brn	Gto	Red	LA
c Rlint	17	2	1	ϵ				36	0	36	2
c Rlint	17	1	1	lint NS_lint_balls::TH_lint_balls				36	2	3	
t Rnamespace_phrase	8	1	2	Rlint <u><i>Rnamespace</i></u>				34	37	43	
⇒ <i>Rlint</i>											
← rule	→ R#	sr#	Po	←				→ Brn	Gto	Red	LA
c Rnamespace	9	3	1	?				37	64	64	
c Rnamespace	9	1	1	# name-space NS_identifier::TH_identifier				37	65	67	
c Rnamespace	9	2	1	? NULL				37	65	66	
t Rnamespace_phrase	8	1	3	Rnamespace <u><i>Rlint</i></u> ^{ϵ} <u><i>Rnamespace_id</i></u>				34	38	43	
⇒ <i>Rnamespace</i>											
← rule	→ R#	sr#	Po	←				→ Brn	Gto	Red	LA
c Rlint	17	2	1	ϵ				38	0	38	2
c Rlint	17	1	1	lint NS_lint_balls::TH_lint_balls				38	2	3	

t Rnamespace_phrase	8	1	4	Rlint <u>Rnamespace_id</u>	34	39	43
\Rightarrow <i>Rlint</i>				State: 39 state type: <i>s</i>			
← rule	→ R#	sr#	Po	← subrule element	→ Brn	Gto	Red LA
c Rnamespace_id	10	2	1	?	39	40	40
c Rnamespace_id	10	1	1	identifier NS_identifier::TH_identifier	39	41	42
t Rnamespace_phrase	8	1	5	Rnamespace_id	34	43	43
\Rightarrow <i> ? </i>				State: 40 state type: <i>r</i>			
← rule	→ R#	sr#	Po	← subrule element	→ Brn	Gto	Red LA
t Rnamespace_id	10	2	2		39	0	40 7
\Rightarrow <i> arbitration-code: ϵ</i>				State: 41 state type: <i>s</i>			
← rule	→ R#	sr#	Po	← subrule element	→ Brn	Gto	Red LA
t Rnamespace_id	10	1	2	identifier	39	42	42
\Rightarrow <i>identifier</i>				State: 42 state type: <i>r</i>			
← rule	→ R#	sr#	Po	← subrule element	→ Brn	Gto	Red LA
t Rnamespace_id	10	1	3		39	0	42 7
\Rightarrow <i>Rnamespace_id</i>				State: 43 state type: <i>r</i>			
← rule	→ R#	sr#	Po	← subrule element	→ Brn	Gto	Red LA
t Rnamespace_phrase	8	1	6		34	0	43 7
\Rightarrow <i>Rnamespace_phrase</i>				State: 44 state type: <i>r</i>			
← rule	→ R#	sr#	Po	← subrule element	→ Brn	Gto	Red LA
t Rparameters	4	1	4		6	0	44 7
\Rightarrow <i>Rfilename</i>				State: 45 state type: <i>s/r</i>			
← rule	→ R#	sr#	Po	← subrule element	→ Brn	Gto	Red LA
c Rlint	17	2	1	ϵ	45	0	45 2
c Rlint	17	1	1	lint NS lint_balls::TH lint_balls	45	2	3
t Rfilename_phrase	5	1	2	Rlint <u>Rfilename_id</u>	6	46	50
\Rightarrow <i>Rlint</i>				State: 46 state type: <i>s</i>			
← rule	→ R#	sr#	Po	← subrule element	→ Brn	Gto	Red LA
c Rfilename_id	7	2	1	?	46	47	47
c Rfilename_id	7	1	1	identifier NS_identifier::TH_identifier	46	48	49
t Rfilename_phrase	5	1	3	Rfilename_id	6	50	50
\Rightarrow <i> ? </i>				State: 47 state type: <i>r</i>			
← rule	→ R#	sr#	Po	← subrule element	→ Brn	Gto	Red LA
t Rfilename_id	7	2	2		46	0	47 8
\Rightarrow <i> arbitration-code: ϵ</i>				State: 48 state type: <i>s</i>			
← rule	→ R#	sr#	Po	← subrule element	→ Brn	Gto	Red LA
t Rfilename_id	7	1	2	identifier	46	49	49
\Rightarrow <i>identifier</i>				State: 49 state type: <i>r</i>			
← rule	→ R#	sr#	Po	← subrule element	→ Brn	Gto	Red LA
t Rfilename_id	7	1	3		46	0	49 8

\Rightarrow <i>Rfilename_id</i>		State: 50 state type: <i>r</i>	
← rule	→ R# sr# Po ←	subrule element	→ Brn Gto Red LA
t Rfilename_phrase	5 1 4		6 0 50 8
\Rightarrow <i> ? </i>		State: 51 state type: <i>r</i>	
← rule	→ R# sr# Po ←	subrule element	→ Brn Gto Red LA
t Rclose_par	3 1 2		8 0 51 9
\Rightarrow <i>)</i>		State: 52 state type: <i>r</i>	
← rule	→ R# sr# Po ←	subrule element	→ Brn Gto Red LA
t Rclose_par	3 2 2		8 0 52 9
\Rightarrow <i> ? </i>		State: 53 state type: <i>r</i>	
← rule	→ R# sr# Po ←	subrule element	→ Brn Gto Red LA
t Rsym_def	13 6 2		16 0 53 5
\Rightarrow <i> arbitration-code: ε</i>		State: 54 state type: <i>s</i>	
← rule	→ R# sr# Po ←	subrule element	→ Brn Gto Red LA
t Rsym_def	13 2 2 <i> ? </i>		16 55 55
t Rsym_def	13 4 2 <i># terminals-refs</i>		16 56 56
t Rsym_def	13 5 2 <i># terminals-suffix</i>		16 57 57
t Rsym_def	13 3 2 <i># lrk-suffix</i>		16 58 58
t Rsym_def	13 1 2 <i>terminal-def</i>		16 59 59
\Rightarrow <i> ? </i>		State: 55 state type: <i>r</i>	
← rule	→ R# sr# Po ←	subrule element	→ Brn Gto Red LA
t Rsym_def	13 2 3		16 0 55 5
\Rightarrow <i>#terminals-refs</i>		State: 56 state type: <i>r</i>	
← rule	→ R# sr# Po ←	subrule element	→ Brn Gto Red LA
t Rsym_def	13 4 3		16 0 56 5
\Rightarrow <i>#terminals-suffix</i>		State: 57 state type: <i>r</i>	
← rule	→ R# sr# Po ←	subrule element	→ Brn Gto Red LA
t Rsym_def	13 5 3		16 0 57 5
\Rightarrow <i>#lrk-suffix</i>		State: 58 state type: <i>r</i>	
← rule	→ R# sr# Po ←	subrule element	→ Brn Gto Red LA
t Rsym_def	13 3 3		16 0 58 5
\Rightarrow <i>terminal-def</i>		State: 59 state type: <i>r</i>	
← rule	→ R# sr# Po ←	subrule element	→ Brn Gto Red LA
t Rsym_def	13 1 3		16 0 59 5
\Rightarrow <i>Rsym_def1</i>		State: 60 state type: <i>s/r</i>	
← rule	→ R# sr# Po ←	subrule element	→ Brn Gto Red LA
c Rlint	17 2 1 <i>ε</i>		60 0 60 5
c Rlint	17 1 1 <i> lint NS_lint_balls::TH_lint_balls</i>		60 2 3
t Rsym_defs	12 2 3 <i>Rlint</i>		16 61 61
\Rightarrow <i>Rlint</i>		State: 61 state type: <i>r</i>	

← rule	→ R# sr# Po ←	subrule element	→ Brn Gto Red LA
t Rsym_defs	12 2 4		16 0 61 5
⇒ <i>Rsym_def</i> State: 62 state type: <i>s/r</i>			
← rule	→ R# sr# Po ←	subrule element	→ Brn Gto Red LA
c Rlint	17 2 1 ε		62 0 62 5
c Rlint	17 1 1 lint NS_lint_balls::TH_lint_balls		62 2 3
t Rsym_defs	12 1 2 Rlint		16 63 63
⇒ <i>Rlint</i> State: 63 state type: <i>r</i>			
← rule	→ R# sr# Po ←	subrule element	→ Brn Gto Red LA
t Rsym_defs	12 1 3		16 0 63 5
⇒ <i> ? </i> State: 64 state type: <i>r</i>			
← rule	→ R# sr# Po ←	subrule element	→ Brn Gto Red LA
t Rnamespace	9 3 2		37 0 64 2
⇒ <i> arbitration-code: ε</i> State: 65 state type: <i>s</i>			
← rule	→ R# sr# Po ←	subrule element	→ Brn Gto Red LA
t Rnamespace	9 2 2 <i> ? </i>		37 66 66
t Rnamespace	9 1 2 # name-space		37 67 67
⇒ <i> ? </i> State: 66 state type: <i>r</i>			
← rule	→ R# sr# Po ←	subrule element	→ Brn Gto Red LA
t Rnamespace	9 2 3		37 0 66 2
⇒ <i>#name-space</i> State: 67 state type: <i>r</i>			
← rule	→ R# sr# Po ←	subrule element	→ Brn Gto Red LA
t Rnamespace	9 1 3		37 0 67 2

51. Index.

|+|: 38.
 € : 48.
 # file-name: 15.
 # lrk-suffix: 31, 38.
 # name-space: 23.
 # terminals-refs: 31, 38.
 # terminals-suffix: 31, 38.
 |||: 15, 18, 23, 26, 31, 38, 48.
 |?|: 9, 11, 15, 18, 21, 23, 26, 31, 44, 46.
 __FILE__: 5, 10, 12, 16, 17, 20, 22, 24, 25, 28, 34,
 35, 36, 37, 41, 42, 43, 45, 47.
 __LINE__: 5, 10, 12, 16, 17, 20, 22, 24, 25, 28, 34,
 35, 36, 37, 41, 42, 43, 45, 47.
 add_t_to_alphabet: 32, 39.
 AST: 5.
 CAbs_lr1_sym: 10, 12, 16, 17, 20, 22, 24, 25, 28,
 32, 34, 35, 36, 37, 39, 41, 42, 43, 45, 47.
 classification: 32, 39.
 Crc_phrase_th: 8, 19, 27, 32, 39.
 current_token: 10, 12, 17, 20, 22, 25, 28, 37, 45, 47.
 Err_improper_directive: 34, 35, 36, 41, 42, 43.
 Err_no_close_brace: 47.
 Err_no_close_parenthesis: 12.
 Err_no_comma_present: 22.
 Err_no_filename_id_present: 20.
 Err_no_filename_present: 16, 17.
 Err_no_namespace_id_present: 28.
 Err_no_namespace_present: 24, 25.
 Err_no_open_brace: 45.
 Err_no_open_parenthesis: 10.
 Err_no_sym_defs_present: 37.
 filename_id: 19.
 fsm: 8, 19, 27, 32, 39.
 fsm_tbl_: 8, 19, 27, 32, 39.
 identifier: 18, 26.
 lint: 48.
 namespace_id: 27.
 NS_identifier::TH_identifier: 15, 18, 23, 26.
 NS_lint_balls::TH_lint_balls: 48.
 NS_term_def_ph::TH_term_def_ph: 31, 38.
 NULL: 15, 23, 31, 38.
 parser_: 5, 8, 10, 12, 16, 17, 19, 20, 22, 24,
 25, 27, 28, 32, 33, 34, 35, 36, 37, 39, 40,
 41, 42, 43, 45, 47.
 phrase_tree: 5.
 p2_: 16, 19, 24, 27, 32, 33, 34, 35, 36, 39,
 40, 41, 42, 43.
 rc: 32, 39.
 Rc_phrase: 2.
 rc_phrase_: 4, 5, 6, 8, 19, 27, 32, 39.
 rc_phrase_th: 2.
 Rclose_brace: 29.
 Rclose_par: 8.
 Rclose_brace: 46, 47.
 Rclose_par: 11, 12.
 Rfilename: 15, 16, 17.
 Rfilename: 14.
 Rfilename_id: 14.
 Rfilename_phrase: 13.
 Rfilename_id: 18, 19, 20.
 Rfilename_phrase: 14.
 Rlint: 48.
 Rlint: 8, 13, 14, 21, 29, 30.
 Rnamespace: 21.
 Rnamespace: 23, 24, 25.
 Rnamespace_id: 21.
 Rnamespace_phrase: 13.
 Rnamespace_id: 26, 27, 28.
 Rnamespace_phrase: 21, 22.
 Ropen_brace: 29.
 Ropen_par: 8.
 Ropen_brace: 44, 45.
 Ropen_par: 9, 10.
 Rparameters: 13.
 Rparameters: 8.
 Rrc_phrase: 8.
 RSVP: 8, 10, 12, 16, 17, 20, 22, 24, 25, 28, 32, 33,
 34, 35, 36, 37, 39, 40, 41, 42, 43, 45, 47.
 Rsym_def: 30.
 Rsym_defs: 29, 30.
 Rsym_defs_phrase: 8.
 Rsym_def1: 30.
 Rsym_def: 31, 32, 33, 34, 35, 36, 37.
 Rsym_defs: 30.
 Rsym_defs_phrase: 29.
 Rsym_def1: 38, 39, 40, 41, 42, 43.
 rule_info_: 8, 10, 12, 16, 17, 19, 20, 22, 24,
 25, 27, 28, 32, 33, 34, 35, 36, 37, 39, 40,
 41, 42, 43, 45, 47.
 set_auto_delete: 16, 24, 34, 35, 36, 41, 42, 43.
 set_rc: 5, 10, 12, 16, 17, 20, 22, 24, 25, 28, 34,
 35, 36, 37, 41, 42, 43, 45, 47.
 set_stop_parse: 10, 12, 16, 17, 20, 22, 24, 25, 28,
 32, 33, 34, 35, 36, 37, 39, 40, 41, 42, 43, 45, 47.
 sf: 16, 19, 24, 27, 32, 33, 34, 35, 36, 39, 40,
 41, 42, 43.
 start_token_: 5.
 sym: 10, 12, 16, 17, 20, 22, 24, 25, 28, 34, 35,
 36, 37, 41, 42, 43, 45, 47.
 T_rc_phrase: 5, 6.
 T_terminal_def: 32, 39.
 term_def_ph: 2.

terminal-def: 31, 38.

true: 10, 12, 16, 17, 20, 22, 24, 25, 28, 32, 33, 34,
35, 36, 37, 39, 40, 41, 42, 43, 45, 47.

[〈 Crc_phrase.th constructor directive 4 〉](#)
[〈 Crc_phrase.th op directive 5 〉](#)
[〈 Crc_phrase.th user-declaration directive 6 〉](#)
[〈 Crc_phrase.th user-prefix-declaration directive 7 〉](#)
[〈 Rclose_brace subrule 1 op directive 47 〉](#)
[〈 Rclose_par subrule 1 op directive 12 〉](#)
[〈 Rfilename subrule 2 op directive 16 〉](#)
[〈 Rfilename subrule 3 op directive 17 〉](#)
[〈 Rfilename_id subrule 1 op directive 19 〉](#)
[〈 Rfilename_id subrule 2 op directive 20 〉](#)
[〈 Rnamespace subrule 2 op directive 24 〉](#)
[〈 Rnamespace subrule 3 op directive 25 〉](#)
[〈 Rnamespace_id subrule 1 op directive 27 〉](#)
[〈 Rnamespace_id subrule 2 op directive 28 〉](#)
[〈 Rnamespace_phrase subrule 2 op directive 22 〉](#)
[〈 Ropen_brace subrule 1 op directive 45 〉](#)
[〈 Ropen_par subrule 1 op directive 10 〉](#)
[〈 Rrc_phrase subrule 1 op directive 8 〉](#)
[〈 Rsym_def subrule 1 op directive 32 〉](#)
[〈 Rsym_def subrule 2 op directive 33 〉](#)
[〈 Rsym_def subrule 3 op directive 34 〉](#)
[〈 Rsym_def subrule 4 op directive 35 〉](#)
[〈 Rsym_def subrule 5 op directive 36 〉](#)
[〈 Rsym_def subrule 6 op directive 37 〉](#)
[〈 Rsym_def1 subrule 1 op directive 39 〉](#)
[〈 Rsym_def1 subrule 2 op directive 40 〉](#)
[〈 Rsym_def1 subrule 3 op directive 41 〉](#)
[〈 Rsym_def1 subrule 4 op directive 42 〉](#)
[〈 Rsym_def1 subrule 5 op directive 43 〉](#)

rc_phrase_th Grammar

Date: January 2, 2015 at 15:38

File: rc_phrase_th.lex Ns: NS_rc_phrase_th

Version: 1.0 Debug: false

Grammar Comments: Type: Thread

Raw character vocabulary parser.

1 element(s) in Lookahead Expression below

eolr

<i>rc_phrase.th</i> Thread	2	2
Fsm Crc_phrase.th class	3	3
Crc_phrase.th constructor directive	4	3
Crc_phrase.th op directive	5	3
Crc_phrase.th user-declaration directive	6	3
Crc_phrase.th user-prefix-declaration directive	7	3
<i>Rrc_phrase</i> rule	8	3
<i>Ropen_par</i> rule	9	3
<i>Ropen_par</i> 's subrule 1	10	4
<i>Rclose_par</i> rule	11	4
<i>Rclose_par</i> 's subrule 1	12	4
<i>Rparameters</i> rule	13	4
<i>Rfilename_phrase</i> rule	14	4
<i>Rfilename</i> rule	15	4
<i>Rfilename</i> 's subrule 2	16	5
<i>Rfilename</i> 's subrule 3	17	5
<i>Rfilename_id</i> rule	18	5
<i>Rfilename_id</i> 's subrule 1	19	5
<i>Rfilename_id</i> 's subrule 2	20	5
<i>Rnamespace_phrase</i> rule	21	6
<i>Rnamespace_phrase</i> 's subrule 2	22	6
<i>Rnamespace</i> rule	23	6
<i>Rnamespace</i> 's subrule 2	24	6
<i>Rnamespace</i> 's subrule 3	25	6
<i>Rnamespace_id</i> rule	26	7
<i>Rnamespace_id</i> 's subrule 1	27	7
<i>Rnamespace_id</i> 's subrule 2	28	7
<i>Rsym_defs_phrase</i> rule	29	7
<i>Rsym_defs</i> rule	30	7
<i>Rsym_def</i> rule	31	8
<i>Rsym_def</i> 's subrule 1	32	8
<i>Rsym_def</i> 's subrule 2	33	8
<i>Rsym_def</i> 's subrule 3	34	8
<i>Rsym_def</i> 's subrule 4	35	9
<i>Rsym_def</i> 's subrule 5	36	9
<i>Rsym_def</i> 's subrule 6	37	9
<i>Rsym_def1</i> rule	38	9
<i>Rsym_def1</i> 's subrule 1	39	10
<i>Rsym_def1</i> 's subrule 2	40	10
<i>Rsym_def1</i> 's subrule 3	41	10
<i>Rsym_def1</i> 's subrule 4	42	10
<i>Rsym_def1</i> 's subrule 5	43	11
<i>Ropen_brace</i> rule	44	11
<i>Ropen_brace</i> 's subrule 1	45	11
<i>Rclose_brace</i> rule	46	11
<i>Rclose_brace</i> 's subrule 1	47	11
<i>Rlint</i> rule	48	11
First Set Language for O_2^{linker}	49	12
Lr1 State Network	50	13
Index	51	20