```
rel_mng_nil  THM

⊢  ∀r:rel(), te:(Label→Label→𝔹), rho,ds,da,de,e,s,a:Top.
|  [[r]] rho ds da de e s a mk_trace_env(nil,
|                          te) ∼ [[r]] rho ds da de e s a niltrace()
| by D 0 THENA Auto THEN D 1 THEN Unfold ‘rel_mng‘ 0 THEN

|       Reduce 0 THEN
|  Assert ∀te:(Label→Label→𝔹)
|    , rho,ds,da,de,e,s,a,x:Top.
|    list_accum(x,t.x
|                   ([[t]] 1of(e) s a mk_trace_env(nil,
|                                    te));x;r1) ∼ ...
|
|\
| .....assertion .....
| 1. relname()
| 2. r1 : Term List
| ⊢  ∀te:(Label→Label→𝔹), rho,ds,da,de,e,s,a,x:Top.
| |  list_accum(x,t.x
| |                 ([[t]] 1of(e) s a mk_trace_env(nil,
| |                                  te));x;r1) ∼ ...
| | by ListInd (-1) THEN All (Fold ‘mk_rel‘)
|
| |       THEN All (Unfold ‘rel_mng‘) THEN All Reduce
|
| |       THEN Try (Complete Auto)
| |
| 1. relname()
| 2. Term List
| 3. u : Term
| 4. v : Term List
| 5. ∀te:(Label→Label→𝔹), rho,ds,da,de,e,s,a,x:Top.
| |  list_accum(x,t.x
| |                 ([[t]] 1of(e) s a mk_trace_env(nil,
| |                                  te));x;v) ∼ ...
| ⊢  ∀te:(Label→Label→𝔹), rho,ds,da,de,e,s,a,x:Top.
| |  list_accum(x,t.x
| |                 ([[t]] 1of(e) s a mk_trace_env(nil,
| |                                  te));...;v) ∼ ...
| | by ...
| |
| 1. relname()
| 2. Term List
| 3. u : Term
| 4. v : Term List
| 5. te : Label→Label→𝔹
| 6. Top
| 7. Top
| 8. Top
| 9. Top
| 10. e : Top
| 11. s : Top
| 12. a : Top
| 13. ∀x:Top.
```

```
|     list_accum(x,t.x
|                    ([[t]] 1of(e) s a mk_trace_env(nil,
|                                      te));x;v) ~ ...
| 14. x : Top
| ⊢  list_accum(x,t.x
|                   ([[t]] 1of(e) s a mk_trace_env(nil,
|                                     te));...;v) ~ ...
|   by Subst [[u]] 1of(e) s a mk_trace_env(nil,
|                           te) ~ [[u]] 1of(e) s a niltrace()
|       0 THEN Easy
|
.\
. 1. name : relname()
. 2. r1 : Term List
. 3. ∀te:(Label→Label→𝔹), rho,ds,da,de,e,s,a,x:Top.
.    list_accum(x,t.x
.                   ([[t]] 1of(e) s a mk_trace_env(nil,
.                                     te));x;r1) ~ ...
. ⊢  ∀te:(Label→Label→𝔹), rho,ds,da,de,e,s,a:Top.
.    list_accum(x,t.x
.                   ([[t]] 1of(e) s a mk_trace_env(nil,
.                                     te));[[name]] rho ... ;r1) ~ ...
.   by Repeat (ParallelOp (-1) THEN Thin (-3))
.
.        THEN SimpleInstHyp [[name]] rho 2of(e)
.       (-1) THENA Auto THEN NthHyp (-1)
END
```