```
en_ubound  THM

⊢  ∀n:ℕ, l:ℕn*. en(l)<(n↑||l||)
| by UnivCD THEN ListInd 2 THEN Reduce 0
|
|\
| 1. n : ℕ
| 2. ℕn*
| ⊢  en(nil)<(n↑0)
|   by RecUnfold `en` 0 THEN RecUnfold `exp` 0 THEN Reduce 0
|
.\
. 1. n : ℕ
. 2. ℕn*
. 3. u : ℕn
. 4. v : ℕn*
. 5. en(v)<(n↑||v||)
. ⊢  en(u.v)<(n↑||v||+1)  by RecUnfold `en` 0 THEN Reduce 0
. |
. ⊢  u+en(v)·n<(n↑||v||+1)  by RecUnfold `exp` 0 THEN SplitOnConclITE
. |
. |\
. | .....truecase .....
. | 6. ||v||+1 = 0
. | ⊢  u+en(v)·n<1  by Auto
. |
. .\
. . .....falsecase .....
. . 6. ¬||v||+1 = 0
. . ⊢  u+en(v)·n<n·(n↑||v||+1-1)  by Assert (||v||+1-1 = ||v||)
. . |
. . 7. ||v||+1-1 = ||v||
. . ⊢   by RWH (HypC 7) 0
. . |
. . ⊢  u+en(v)·n<n·(n↑||v||)
. . | by RWH (LemmaC Thm* ∀i,j:ℤ. i<j ⟺ i+1≤j    {lt_to_le_rw}) 5
. . |
. . 5. en(v)+1≤(n↑||v||)
. . 6. ¬||v||+1 = 0
. . 7. ||v||+1-1 = ||v||
. . ⊢
. . | by Inst Thm* ∀a,b:ℤ, n:ℕ. a≤b ⇒ n·a≤n·b    {mul_preserves_le}
. . |     [en(v)+1;(n↑||v||);n]
. . |
. . 8. n·(en(v)+1)≤n·(n↑||v||)
. . ⊢   by Auto
END
```