

Inference at * 1 0
of proof for Lemma equiv_rel_iff:

$\vdash \text{Refl}(\mathbb{P}; A, B. A \iff B) \ \& \ \text{Sym}(\mathbb{P}; A, B. A \iff B) \ \& \ \text{Trans}(\mathbb{P}; A, B. A \iff B)$
by PERMUTE{1:n,
 2:n,
 1:n,
 2:n,
 3:n,
 4:n,
 5:n,
 6:n,
 7:n,
 8:n,
 9:n,
 3:n,
 10:n,
 11:n,
 12:n,
 13:n,
 14:n,
 15:n,
 16:n,
 9:n,
 3:n}

1:

1. $a : \mathbb{P}$
2. a
 $\vdash a$

2:wf..... NILNIL

1. $a : \mathbb{P}$
 $\vdash a \in \mathbb{P}$

3:wf..... NILNIL

$\vdash \mathbb{P} \in \text{Type}$

4:

1. $a : \mathbb{P}$
2. $b : \mathbb{P}$
3. $a \iff b$
4. b

$\vdash a$
5:wf..... NILNIL

1. $a : \mathbb{P}$
2. $b : \mathbb{P}$
3. $a \iff b$
 $\vdash b \in \mathbb{P}$
6:

1. $a : \mathbb{P}$
2. $b : \mathbb{P}$
3. $a \iff b$
4. a
 $\vdash b$
7:wf..... NILNIL

1. $a : \mathbb{P}$
2. $b : \mathbb{P}$
3. $a \iff b$
 $\vdash a \in \mathbb{P}$
8:wf..... NILNIL

1. $a : \mathbb{P}$
2. $b : \mathbb{P}$
 $\vdash (a \iff b) \in \mathbb{P}$
9:wf..... NILNIL

1. $\mathbb{P}$
 $\vdash \mathbb{P} \in \text{Type}$
10:

1. $a : \mathbb{P}$
2. $b : \mathbb{P}$
3. $c : \mathbb{P}$
4. $a \iff b$
5. $b \iff c$
6. a
 $\vdash c$
11:wf..... NILNIL

1. $a : \mathbb{P}$
2. $b : \mathbb{P}$
3. $c : \mathbb{P}$
4. $a \iff b$
5. $b \iff c$
 $\vdash a \in \mathbb{P}$

12:

1. $a : \mathbb{P}$
 2. $b : \mathbb{P}$
 3. $c : \mathbb{P}$
 4. $a \iff b$
 5. $b \iff c$
 6. c
- $\vdash a$

13:wf..... NILNIL

1. $a : \mathbb{P}$
 2. $b : \mathbb{P}$
 3. $c : \mathbb{P}$
 4. $a \iff b$
 5. $b \iff c$
- $\vdash c \in \mathbb{P}$

14:wf..... NILNIL

1. $a : \mathbb{P}$
 2. $b : \mathbb{P}$
 3. $c : \mathbb{P}$
 4. $a \iff b$
- $\vdash (b \iff c) \in \mathbb{P}$

15:wf..... NILNIL

1. $a : \mathbb{P}$
 2. $b : \mathbb{P}$
 3. $\mathbb{P}$
- $\vdash (a \iff b) \in \mathbb{P}$

16:wf..... NILNIL

1. $\mathbb{P}$
 2. $\mathbb{P}$
- $\vdash \mathbb{P} \in \text{Type}$

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