```
ma-single-effect0-feasible  THM

⊢  ∀x:Id, k:Knd, A,T:Type, f:(A→T→A).
|  A ⇒ T ⇒ Feasible(ma-single-effect0(x;A;k;T;f))
| by Auto THEN AssertBY (x : A ∈ x:Id fp-> Type) Auto
|    THEN
|    AssertBY (k : T ∈ x:Knd fp-> Type) Auto
|    THEN
|    Unfold ‘ma-single-effect0‘ 0
|    THEN
|    BackThru
|    Thm* ∀x:Id, k:Knd, ds:x:Id fp-> Type, da:a:Knd fp-> Type,
|          f:(State(ds)→ma-valtype(da; k)→ds(x)?Void).
|         ∀x∈dom(ds). A=ds(x) ⇒  A
|         ⇒
|         ∀k∈dom(da). A=da(k) ⇒  A
|         ⇒
|         Feasible(ma-single-effect(ds; da; k; x; f))
|    {ma_DASH_single_DASH_effect_DASH_feasible}
|    THEN
|    Try (Complete Auto)
|
|\
| .....wf .....
| 1. x : Id
| 2. k : Knd
| 3. A : Type
| 4. T : Type
| 5. f : A→T→A
| 6. A
| 7. T
| 8. x : A ∈ x:Id fp-> Type
| 9. k : T ∈ x:Knd fp-> Type
| ⊢  (λs,v. f(s(x),v))
| |  ∈ State(x : A)→ma-valtype(k : T; k)→x : A(x)?Void  by Auto
| |
| |\
| | .....subterm .....
| | 1. x : Id
| | 2. k : Knd
| | 3. A : Type
| | 4. T : Type
| | 5. A→T→A
| | 6. A
| | 7. T
| | 8. x : A ∈ x:Id fp-> Type
| | 9. k : T ∈ x:Knd fp-> Type
| | 10. s : State(x : A)
| | 11. ma-valtype(k : T; k)
| | ⊢  s ∈ x@0:Id→x : A(x@0)?Top  by Fold ‘ma-state‘ 0
| |
| .\
| . .....subterm .....
| . 1. x : Id
| . 2. k : Knd
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| . 3. A : Type
| . 4. T : Type
| . 5. A→T→A
| . 6. A
| . 7. T
| . 8. x : A ∈ x:Id fp-> Type
| . 9. k : T ∈ x:Knd fp-> Type
| . 10. State(x : A)
| . 11. v : ma-valtype(k : T; k)
| . ⊢  v ∈ T  by Unfold ‘ma-valtype‘ -1 THEN Reduce -1
|
|\
| 1. x : Id
| 2. k : Knd
| 3. A : Type
| 4. T : Type
| 5. A→T→A
| 6. A
| 7. T
| 8. x : A ∈ x:Id fp-> Type
| 9. k : T ∈ x:Knd fp-> Type
| ⊢  ∀x∈dom(x : A). A=x : A(x) ⇒  A
|   by Repeat (Unfolds [‘fpf-all‘;‘fpf-dom‘;‘fpf-single‘;‘fpf-ap‘] 0)
|      THEN
|      Reduce 0
|
.\
. 1. x : Id
. 2. k : Knd
. 3. A : Type
. 4. T : Type
. 5. A→T→A
. 6. A
. 7. T
. 8. x : A ∈ x:Id fp-> Type
. 9. k : T ∈ x:Knd fp-> Type
. ⊢  ∀k∈dom(k : T). A=k : T(k) ⇒  A
.   by Repeat (Unfolds [‘fpf-all‘;‘fpf-dom‘;‘fpf-single‘;‘fpf-ap‘] 0)
.      THEN
.      Reduce 0
END
```