Step W : $clientp1(l_1 tsl\ ())(\ (p1,1)(\ (p1,200)(\ (p1,1)(\ (p1,1)(\ (p1,2))))))servermyVNum2p2(l_2$
typing context:

Step W : $p1(l_1 tsl\ ())(\ (p1,1)(\ (p1,200)(\ (p1,1)(\ (p1,1)(\ (p1,2))))))$
typing context:

Step W : $(l_1 tsl\ ())$
typing context:

Step W : $l_1 tsl$
typing context:

Step W': $l_1 tsl$
type: $\xrightarrow{\beta_7} \rho_6$
beha: τ
cons:

- $tsl^{l_1} \sim \psi_5$
- $l_1 \psi_5 \subseteq \beta_7$
- $l_1 \sim \rho_6$

subs: [][][][][]

Step F: $l_1 tsl$
cons:

- $tsl^{l_1} \sim \psi_5$
- $l_1 \psi_5 \subseteq \beta_7$
- $l_1 \sim \rho_6$

subs: [][][][][]

Step R: $l_1 tsl$
type: $\xrightarrow{\beta_7} \rho_6$
beha: τ
cons:

- $tsl^{l_1} \sim \psi_5$
- $l_1\psi_5 \subseteq \beta_7$
- $l_1 \sim \rho_6$

Step W : ()
typing context:

Step W': ()
type:
beha: τ
cons:

-

subs: [][][][][]

Step F: ()
cons:

-

subs: [][][][][]

Step R: ()
type:
beha: τ
cons:

-

Step W': ($l_1 tsl$ ())
type: α_3
beha: $\tau;\tau;\beta_4$
cons:

- $\xrightarrow{\beta_7} \rho_6 \subseteq \xrightarrow{\beta_4} \alpha_3$
- $tsl^{l_1} \sim \psi_5$

- $l_1\psi_5 \subseteq \beta_7$
- $l_1 \sim \rho_6$

subs: [][][][][]

Step F: $(l_1 tsl\ ())$
cons:

- $tsl^{l_1} \sim \psi_5$
- $\beta_7 \subseteq \beta_4$
- $l_1\psi_5 \subseteq \beta_7$
- $\rho_8 \sim \rho_6$
- $l_1 \sim \rho_6$

subs: $[\alpha_3 \mapsto \rho_8][][][][]$

Step R: $(l_1 tsl\ ())$
type: ρ_8
beha: $\tau; \tau; \beta_4$
cons:

- $tsl^{l_1} \sim \psi_5$
- $l_1\psi_5 \subseteq \beta_4$
- $l_1 \sim \rho_8$

Step W : $(\ (p1, 1)(\ (p1, 200)(\ (p1, 1)(\ (p1, 1)(\ (p1, 2))))))$
typing context: $p1 : \forall(\rho_8 : l_1 \sim \rho_8).\rho_8$

Step W :
typing context: $p1 : \forall(\rho_8 : l_1 \sim \rho_8).\rho_8$

Step W':
type: $(\rho_{12} \times \alpha_{13}) \xrightarrow{\beta_{11}}$
beha: τ
cons:

- $\rho_{12}!\alpha_{13} \subseteq \beta_{11}$

subs: [][][][][]

Step F:
cons:

- $\rho_{12}!\alpha_{13} \subseteq \beta_{11}$

subs: [][][][][]

Step R:
type: $(\rho_{12} \times \alpha_{13}) \xrightarrow{\beta_{11}}$
beha: τ
cons:

- $\rho_{12}!\alpha_{13} \subseteq \beta_{11}$

Step W : $(p1, 1)(\ (p1, 200)(\ (p1, 1)(\ (p1, 1)(\ (p1, 2)))))$
typing context: $p1 : \forall(\rho_8 : l_1 \sim \rho_8).\rho_8$

Step W : $(p1, 1)$
typing context: $p1 : \forall(\rho_8 : l_1 \sim \rho_8).\rho_8$

Step W : $p1$
typing context: $p1 : \forall(\rho_8 : l_1 \sim \rho_8).\rho_8$

Step W': $p1$
type: ρ_{17}
beha: τ
cons:

- $l_1 \sim \rho_{17}$

subs: [][][][][]

Step F: $p1$
cons:

- $l_1 \sim \rho_{17}$

subs: []

Step R: $p1$
type: ρ_{17}
beha: τ
cons:

- $l_1 \sim \rho_{17}$

Step W : 1
typing context: $p1 : \forall(\rho_8 : l_1 \sim \rho_8).\rho_8$

Step W': 1
type:
beha: τ
cons:

-

subs: []

Step F: 1
cons:

-

subs: []

Step R: 1
type:
beha: τ
cons:

-

Step W': $(p1, 1)$
type: α_{16}
beha: $\tau; \tau$
cons:

- $\alpha_{14} \to \alpha_{15} \to (\alpha_{14} \times \alpha_{15}) \subseteq \rho_{17} \to\!\!\to \alpha_{16}$
- $l_1 \sim \rho_{17}$

subs: [][][][][]

Step F: $(p1, 1)$
cons:

- $\rho_{18} \sim \rho_{17}$
- $\rho_{19} \sim \rho_{18}$
- $l_1 \sim \rho_{17}$

subs: $[\alpha_{14} \mapsto \rho_{18}, \alpha_{15} \mapsto, \alpha_{16} \mapsto (\rho_{19}\times)][][][][]$

Step R: $(p1, 1)$
type: $(\rho_{19}\times)$
beha: $\tau; \tau$
cons:

- $l_1 \sim \rho_{19}$

Step W : $(\ (p1, 200)(\ (p1, 1)(\ (p1, 1)(\ (p1, 2)))))$
typing context: $: \forall(\rho_{19} : l_1 \sim \rho_{19}).(\rho_{19}\times), p1 : \forall(\rho_8 : l_1 \sim \rho_8).\rho_8$

Step W :
typing context: $: \forall(\rho_{19} : l_1 \sim \rho_{19}).(\rho_{19}\times), p1 : \forall(\rho_8 : l_1 \sim \rho_8).\rho_8$

Step W':
type: $(\rho_{23} \times \alpha_{24}) \xrightarrow{\beta_{22}}$
beha: τ
cons:

- $\rho_{23}!\alpha_{24} \subseteq \beta_{22}$

subs: [][][][][]

Step F:
cons:

- $\rho_{23}!\alpha_{24} \subseteq \beta_{22}$

subs: [][][][][]

Step R:
type: $(\rho_{23} \times \alpha_{24}) \xrightarrow{\beta_{22}}$
beha: τ
cons:

- $\rho_{23}!\alpha_{24} \subseteq \beta_{22}$

Step W : $(p1, 200)(\ (p1, 1)(\ (p1, 1)(\ (p1, 2))))$
typing context: $: \forall(\rho_{19} : l_1 \sim \rho_{19}).(\rho_{19}\times), p1 : \forall(\rho_8 : l_1 \sim \rho_8).\rho_8$

Step W : $(p1, 200)$
typing context: $: \forall(\rho_{19} : l_1 \sim \rho_{19}).(\rho_{19}\times), p1 : \forall(\rho_8 : l_1 \sim \rho_8).\rho_8$

Step W : $p1$
typing context: $: \forall(\rho_{19} : l_1 \sim \rho_{19}).(\rho_{19}\times), p1 : \forall(\rho_8 : l_1 \sim \rho_8).\rho_8$

Step W': $p1$
type: ρ_{28}
beha: τ
cons:

- $l_1 \sim \rho_{28}$

subs: [][][][][]

Step F: $p1$
cons:

- $l_1 \sim \rho_{28}$

subs: [][][][][]

Step R: $p1$
type: ρ_{28}
beha: τ
cons:

- $l_1 \sim \rho_{28}$

Step W : 200
typing context: $: \forall(\rho_{19} : l_1 \sim \rho_{19}).(\rho_{19}\times), p1 : \forall(\rho_8 : l_1 \sim \rho_8).\rho_8$

Step W': 200
type:
beha: τ
cons:

-

subs: [][][][][]

Step F: 200
cons:

-

subs: [][][][][]

Step R: 200
type:
beha: τ
cons:

-

Step W': $(p1, 200)$
type: α_{27}
beha: $\tau;\tau$
cons:

- $\alpha_{25} \to \alpha_{26} \to (\alpha_{25} \times \alpha_{26}) \subseteq \rho_{28} \to\to \alpha_{27}$
- $l_1 \sim \rho_{28}$

subs: [][][][][]

Step F: $(p1, 200)$
cons:

- $\rho_{29} \sim \rho_{28}$
- $\rho_{30} \sim \rho_{29}$
- $l_1 \sim \rho_{28}$

subs: $[\alpha_{25} \mapsto \rho_{29}, \alpha_{26} \mapsto, \alpha_{27} \mapsto (\rho_{30}\times)]$[][][][][]

Step R: $(p1, 200)$
type: $(\rho_{30}\times)$
beha: $\tau;\tau$
cons:

- $l_1 \sim \rho_{30}$

Step W : $(\ (p1, 1)(\ (p1, 1)(\ (p1, 2))))$
typing context: $: \forall(\rho_{30} : l_1 \sim \rho_{30}).(\rho_{30}\times), : \forall(\rho_{19} : l_1 \sim \rho_{19}).(\rho_{19}\times), p1 : \forall(\rho_8 : l_1 \sim \rho_8).\rho_8$

Step W :
typing context: $: \forall(\rho_{30} : l_1 \sim \rho_{30}).(\rho_{30}\times), : \forall(\rho_{19} : l_1 \sim \rho_{19}).(\rho_{19}\times), p1 : \forall(\rho_8 : l_1 \sim \rho_8).\rho_8$

Step W':
type: $(\rho_{34} \times \alpha_{35}) \xrightarrow{\beta_{33}}$
beha: τ
cons:

- $\rho_{34}!\alpha_{35} \subseteq \beta_{33}$

subs: [][][][][]

Step F:
cons:

- $\rho_{34}!\alpha_{35} \subseteq \beta_{33}$

subs: [][][][][]

Step R:

type: $(\rho_{34} \times \alpha_{35}) \xrightarrow{\beta_{33}}$
beha: τ
cons:

- $\rho_{34}!\alpha_{35} \subseteq \beta_{33}$

Step W : $(p1, 1)(\ (p1, 1)(\ (p1, 2)))$
typing context: $: \forall(\rho_{30} : l_1 \sim \rho_{30}).(\rho_{30}\times), : \forall(\rho_{19} : l_1 \sim \rho_{19}).(\rho_{19}\times), p1 : \forall(\rho_8 : l_1 \sim \rho_8).\rho_8$

Step W : $(p1, 1)$
typing context: $: \forall(\rho_{30} : l_1 \sim \rho_{30}).(\rho_{30}\times), : \forall(\rho_{19} : l_1 \sim \rho_{19}).(\rho_{19}\times), p1 : \forall(\rho_8 : l_1 \sim \rho_8).\rho_8$

Step W : $p1$
typing context: $: \forall(\rho_{30} : l_1 \sim \rho_{30}).(\rho_{30}\times), : \forall(\rho_{19} : l_1 \sim \rho_{19}).(\rho_{19}\times), p1 : \forall(\rho_8 : l_1 \sim \rho_8).\rho_8$

Step W': $p1$
type: ρ_{39}
beha: τ
cons:

- $l_1 \sim \rho_{39}$

subs: [][][][][]

Step F: $p1$
cons:

- $l_1 \sim \rho_{39}$

subs: [][][][][]

Step R: $p1$
type: ρ_{39}
beha: τ
cons:

- $l_1 \sim \rho_{39}$

Step W : 1
typing context: : $\forall(\rho_{30} : l_1 \sim \rho_{30}).(\rho_{30}\times)$, : $\forall(\rho_{19} : l_1 \sim \rho_{19}).(\rho_{19}\times), p1 : \forall(\rho_8 : l_1 \sim \rho_8).\rho_8$

Step W': 1
type:
beha: τ
cons:

-

subs: [][][][][]

Step F: 1
cons:

-

subs: [][][][][]

Step R: 1
type:
beha: τ
cons:

-

Step W': $(p1, 1)$
type: α_{38}
beha: $\tau;\tau$
cons:

- $\alpha_{36} \to \alpha_{37} \to (\alpha_{36} \times \alpha_{37}) \subseteq \rho_{39} \to\!\!\to \alpha_{38}$
- $l_1 \sim \rho_{39}$

subs: [][][][][]

Step F: $(p1, 1)$
cons:

- $\rho_{40} \sim \rho_{39}$
- $\rho_{41} \sim \rho_{40}$
- $l_1 \sim \rho_{39}$

subs: $[\alpha_{36} \mapsto \rho_{40}, \alpha_{37} \mapsto, \alpha_{38} \mapsto (\rho_{41}\times)]$[][][][][]

Step R: $(p1, 1)$
type: $(\rho_{41}\times)$
beha: $\tau;\tau$
cons:

- $l_1 \sim \rho_{41}$

Step W : ($(p1, 1)$($(p1, 2)$))
typing context: : $\forall(\rho_{41} : l_1 \sim \rho_{41}).(\rho_{41}\times)$, : $\forall(\rho_{30} : l_1 \sim \rho_{30}).(\rho_{30}\times)$, : $\forall(\rho_{19} : l_1 \sim \rho_{19}).(\rho_{19}\times), p1 : \forall(\rho_8 : l_1 \sim \rho_8).\rho_8$

Step W :
typing context: : $\forall(\rho_{41} : l_1 \sim \rho_{41}).(\rho_{41}\times)$, : $\forall(\rho_{30} : l_1 \sim \rho_{30}).(\rho_{30}\times)$, : $\forall(\rho_{19} : l_1 \sim \rho_{19}).(\rho_{19}\times), p1 : \forall(\rho_8 : l_1 \sim \rho_8).\rho_8$

Step W':
type: $(\rho_{45} \times \alpha_{46}) \xrightarrow{\beta_{44}}$
beha: τ
cons:

- $\rho_{45}!\alpha_{46} \subseteq \beta_{44}$

subs: [][][][][]

Step F:
cons:

- $\rho_{45}!\alpha_{46} \subseteq \beta_{44}$

subs: [][][][][]

Step R:

type: $(\rho_{45} \times \alpha_{46}) \xrightarrow{\beta_{44}}$
beha: τ
cons:

- $\rho_{45}!\alpha_{46} \subseteq \beta_{44}$

Step W : $(p1, 1)(\ (p1, 2))$
typing context: $: \forall(\rho_{41} : l_1 \sim \rho_{41}).(\rho_{41}\times), : \forall(\rho_{30} : l_1 \sim \rho_{30}).(\rho_{30}\times), : \forall(\rho_{19} : l_1 \sim \rho_{19}).(\rho_{19}\times), p1 : \forall(\rho_8 : l_1 \sim \rho_8).\rho_8$

Step W : $(p1, 1)$
typing context: $: \forall(\rho_{41} : l_1 \sim \rho_{41}).(\rho_{41}\times), : \forall(\rho_{30} : l_1 \sim \rho_{30}).(\rho_{30}\times), : \forall(\rho_{19} : l_1 \sim \rho_{19}).(\rho_{19}\times), p1 : \forall(\rho_8 : l_1 \sim \rho_8).\rho_8$

Step W : $p1$
typing context: $: \forall(\rho_{41} : l_1 \sim \rho_{41}).(\rho_{41}\times), : \forall(\rho_{30} : l_1 \sim \rho_{30}).(\rho_{30}\times), : \forall(\rho_{19} : l_1 \sim \rho_{19}).(\rho_{19}\times), p1 : \forall(\rho_8 : l_1 \sim \rho_8).\rho_8$

Step W': $p1$
type: ρ_{50}
beha: τ
cons:

- $l_1 \sim \rho_{50}$

subs: [][][][][]

Step F: $p1$
cons:

- $l_1 \sim \rho_{50}$

subs: [][][][][]

Step R: $p1$
type: ρ_{50}
beha: τ
cons:

- $l_1 \sim \rho_{50}$

Step W : 1
typing context: : $\forall(\rho_{41} : l_1 \sim \rho_{41}).(\rho_{41}\times)$, : $\forall(\rho_{30} : l_1 \sim \rho_{30}).(\rho_{30}\times)$, : $\forall(\rho_{19} : l_1 \sim \rho_{19}).(\rho_{19}\times), p1 : \forall(\rho_8 : l_1 \sim \rho_8).\rho_8$

Step W': 1
type:
beha: τ
cons:

-

subs: [][][][][]

Step F: 1
cons:

-

subs: [][][][][]

Step R: 1
type:
beha: τ
cons:

-

Step W': $(p1, 1)$
type: α_{49}
beha: $\tau;\tau$
cons:

- $\alpha_{47} \to \alpha_{48} \to (\alpha_{47} \times \alpha_{48}) \subseteq \rho_{50} \to\!\!\to \alpha_{49}$
- $l_1 \sim \rho_{50}$

subs: [][][][][]

Step F: $(p1, 1)$
cons:

- $\rho_{51} \sim \rho_{50}$
- $\rho_{52} \sim \rho_{51}$
- $l_1 \sim \rho_{50}$

subs: $[\alpha_{47} \mapsto \rho_{51}, \alpha_{48} \mapsto, \alpha_{49} \mapsto (\rho_{52}\times)]$[][][][][]

Step R: $(p1, 1)$
type: $(\rho_{52}\times)$
beha: $\tau;\tau$
cons:

- $l_1 \sim \rho_{52}$

Step W : ($(p1, 2)$)
typing context: : $\forall(\rho_{52} : l_1 \sim \rho_{52}).(\rho_{52}\times)$, : $\forall(\rho_{41} : l_1 \sim \rho_{41}).(\rho_{41}\times)$, : $\forall(\rho_{30} : l_1 \sim \rho_{30}).(\rho_{30}\times)$, : $\forall(\rho_{19} : l_1 \sim \rho_{19}).(\rho_{19}\times), p1 : \forall(\rho_8 : l_1 \sim \rho_8).\rho_8$

Step W :
typing context: : $\forall(\rho_{52} : l_1 \sim \rho_{52}).(\rho_{52}\times)$, : $\forall(\rho_{41} : l_1 \sim \rho_{41}).(\rho_{41}\times)$, : $\forall(\rho_{30} : l_1 \sim \rho_{30}).(\rho_{30}\times)$, : $\forall(\rho_{19} : l_1 \sim \rho_{19}).(\rho_{19}\times), p1 : \forall(\rho_8 : l_1 \sim \rho_8).\rho_8$

Step W':
type: $(\rho_{56} \times \alpha_{57}) \xrightarrow{\beta_{55}}$
beha: τ
cons:

- $\rho_{56}!\alpha_{57} \subseteq \beta_{55}$

subs: [][][][][]

Step F:
cons:

- $\rho_{56}!\alpha_{57} \subseteq \beta_{55}$

subs: [][][][][]

Step R:

type: $(\rho_{56} \times \alpha_{57}) \xrightarrow{\beta_{55}}$
beha: τ
cons:

- $\rho_{56}!\alpha_{57} \subseteq \beta_{55}$

Step W : $(p1, 2)$
typing context: : $\forall(\rho_{52} : l_1 \sim \rho_{52}).(\rho_{52}\times)$, : $\forall(\rho_{41} : l_1 \sim \rho_{41}).(\rho_{41}\times)$, : $\forall(\rho_{30} : l_1 \sim \rho_{30}).(\rho_{30}\times)$, : $\forall(\rho_{19} : l_1 \sim \rho_{19}).(\rho_{19}\times), p1 : \forall(\rho_8 : l_1 \sim \rho_8).\rho_8$

Step W : $p1$
typing context: : $\forall(\rho_{52} : l_1 \sim \rho_{52}).(\rho_{52}\times)$, : $\forall(\rho_{41} : l_1 \sim \rho_{41}).(\rho_{41}\times)$, : $\forall(\rho_{30} : l_1 \sim \rho_{30}).(\rho_{30}\times)$, : $\forall(\rho_{19} : l_1 \sim \rho_{19}).(\rho_{19}\times), p1 : \forall(\rho_8 : l_1 \sim \rho_8).\rho_8$

Step W': $p1$
type: ρ_{61}
beha: τ
cons:

- $l_1 \sim \rho_{61}$

subs: [][][][][]

Step F: $p1$
cons:

- $l_1 \sim \rho_{61}$

subs: [][][][][]

Step R: $p1$
type: ρ_{61}
beha: τ
cons:

- $l_1 \sim \rho_{61}$

Step W : 2

typing context: : $\forall(\rho_{52} : l_1 \sim \rho_{52}).(\rho_{52}\times)$, : $\forall(\rho_{41} : l_1 \sim \rho_{41}).(\rho_{41}\times)$, : $\forall(\rho_{30} : l_1 \sim \rho_{30}).(\rho_{30}\times)$, : $\forall(\rho_{19} : l_1 \sim \rho_{19}).(\rho_{19}\times)$, $p1 : \forall(\rho_8 : l_1 \sim \rho_8).\rho_8$

Step W': 2
type:
beha: τ
cons:

-

subs: [][][][][]

Step F: 2
cons:

-

subs: [][][][][]

Step R: 2
type:
beha: τ
cons:

-

Step W': $(p1, 2)$
type: α_{60}
beha: $\tau;\tau$
cons:

- $\alpha_{58} \to \alpha_{59} \to (\alpha_{58} \times \alpha_{59}) \subseteq \rho_{61} \to\to \alpha_{60}$
- $l_1 \sim \rho_{61}$

subs: [][][][][]

Step F: $(p1, 2)$
cons:

- $\rho_{62} \sim \rho_{61}$

- $\rho_{63} \sim \rho_{62}$
- $l_1 \sim \rho_{61}$

subs: $[\alpha_{58} \mapsto \rho_{62}, \alpha_{59} \mapsto, \alpha_{60} \mapsto (\rho_{63}\times)]$[][][][]

Step R: $(p1, 2)$
type: $(\rho_{63}\times)$
beha: $\tau; \tau$
cons:

- $l_1 \sim \rho_{63}$

Step W': ($(p1, 2)$)
type: α_{53}
beha: $\tau; \tau; \tau; \beta_{54}$
cons:

- $(\rho_{56} \times \alpha_{57}) \xrightarrow{\beta_{55}} \subseteq (\rho_{63}\times) \xrightarrow{\beta_{54}} \alpha_{53}$
- $\rho_{56}!\alpha_{57} \subseteq \beta_{55}$
- $l_1 \sim \rho_{63}$

subs: $[\alpha_{58} \mapsto \rho_{62}, \alpha_{59} \mapsto, \alpha_{60} \mapsto (\rho_{63}\times)]$[][][][]

Step F: ($(p1, 2)$)
cons:

- $\beta_{55} \subseteq \beta_{54}$
- $\rho_{56}! \subseteq \beta_{55}$
- $\rho_{56} \sim \rho_{63}$
- $l_1 \sim \rho_{63}$

subs: $[\alpha_{53} \mapsto, \alpha_{57} \mapsto]$[][][][]

Step R: ($(p1, 2)$)
type:
beha: $\tau; \tau; \tau; \beta_{54}$
cons:

- $\rho_{56}! \subseteq \beta_{54}$
- $l_1 \sim \rho_{56}$

Step W': $(p1, 1)(\ (p1, 2))$
type:
beha: $\tau; \tau; \tau; \tau; \tau; \beta_{54}$
cons:

- $\rho_{56}! \subseteq \beta_{54}$
- $l_1 \sim \rho_{56}$

subs: $[\alpha_{47} \mapsto \rho_{51}, \alpha_{48} \mapsto, \alpha_{49} \mapsto (\rho_{52}\times), \alpha_{53} \mapsto, \alpha_{57} \mapsto, \alpha_{58} \mapsto \rho_{62}, \alpha_{59} \mapsto , \alpha_{60} \mapsto (\rho_{63}\times)]$[][][][][]

Step F: $(p1, 1)(\ (p1, 2))$
cons:

- $\rho_{56}! \subseteq \beta_{54}$
- $l_1 \sim \rho_{56}$

subs: [][][][][]

Step R: $(p1, 1)(\ (p1, 2))$
type:
beha: $\tau; \tau; \tau; \tau; \tau; \beta_{54}$
cons:

- $\rho_{56}! \subseteq \beta_{54}$
- $l_1 \sim \rho_{56}$

Step W': $(\ (p1, 1)(\ (p1, 2)))$
type: α_{42}
beha: $\tau; \tau; \tau; \tau; \tau; \tau; \beta_{54}; \beta_{43}$
cons:

- $(\rho_{45} \times \alpha_{46}) \xrightarrow{\beta_{44}} \subseteq \xrightarrow{\beta_{43}} \alpha_{42}$

- $\rho_{45}!\alpha_{46} \subseteq \beta_{44}$
- $\rho_{56}! \subseteq \beta_{54}$
- $l_1 \sim \rho_{56}$

subs: $[\alpha_{47} \mapsto \rho_{51}, \alpha_{48} \mapsto, \alpha_{49} \mapsto (\rho_{52}\times), \alpha_{53} \mapsto, \alpha_{57} \mapsto, \alpha_{58} \mapsto \rho_{62}, \alpha_{59} \mapsto , \alpha_{60} \mapsto (\rho_{63}\times)][][][][]$

Step F: ($(p1, 1)$($(p1, 2)$))
cons:

- $\subseteq (\rho_{45} \times \alpha_{46})$
- $\beta_{44} \subseteq \beta_{43}$
- $\rho_{45}!\alpha_{46} \subseteq \beta_{44}$
- $\rho_{56}! \subseteq \beta_{54}$
- $l_1 \sim \rho_{56}$

subs: $[\alpha_{42} \mapsto][][][][]$

Step R: ($(p1, 1)$($(p1, 2)$))
type:
beha: $\tau; \tau; \tau; \tau; \tau; \tau; \beta_{54}; \beta_{43}$
cons:

- $\subseteq (\rho_{45} \times \alpha_{46})$
- $\rho_{45}!\alpha_{46} \subseteq \beta_{43}$
- $\rho_{56}! \subseteq \beta_{54}$
- $l_1 \sim \rho_{56}$

Step W': $(p1, 1)$($(p1, 1)$($(p1, 2)$))
type:
beha: $\tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \beta_{54}; \beta_{43}$
cons:

- $\subseteq (\rho_{45} \times \alpha_{46})$
- $\rho_{45}!\alpha_{46} \subseteq \beta_{43}$
- $\rho_{56}! \subseteq \beta_{54}$
- $l_1 \sim \rho_{56}$

subs: $[\alpha_{36} \mapsto \rho_{40}, \alpha_{37} \mapsto, \alpha_{38} \mapsto (\rho_{41}\times), \alpha_{42} \mapsto, \alpha_{47} \mapsto \rho_{51}, \alpha_{48} \mapsto, \alpha_{49} \mapsto (\rho_{52}\times), \alpha_{53} \mapsto, \alpha_{57} \mapsto, \alpha_{58} \mapsto \rho_{62}, \alpha_{59} \mapsto, \alpha_{60} \mapsto (\rho_{63}\times)]$[][][][][]

Step F: $(p1, 1)(\ (p1, 1)(\ (p1, 2)))$
cons:

- $\subseteq (\rho_{45} \times \alpha_{46})$
- $\rho_{45}!\alpha_{46} \subseteq \beta_{43}$
- $\rho_{56}! \subseteq \beta_{54}$
- $l_1 \sim \rho_{56}$

subs: [][][][][]

Step R: $(p1, 1)(\ (p1, 1)(\ (p1, 2)))$
type:
beha: $\tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \beta_{54}; \beta_{43}$
cons:

- $\subseteq (\rho_{45} \times \alpha_{46})$
- $\rho_{45}!\alpha_{46} \subseteq \beta_{43}$
- $\rho_{56}! \subseteq \beta_{54}$
- $l_1 \sim \rho_{56}$

Step W': $(\ (p1, 1)(\ (p1, 1)(\ (p1, 2))))$
type: α_{31}
beha: $\tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \beta_{54}; \beta_{43}; \beta_{32}$
cons:

- $\subseteq (\rho_{45} \times \alpha_{46})$
- $(\rho_{34} \times \alpha_{35}) \xrightarrow{\beta_{33}} \subseteq \xrightarrow{\beta_{32}} \alpha_{31}$
- $\rho_{34}!\alpha_{35} \subseteq \beta_{33}$
- $\rho_{45}!\alpha_{46} \subseteq \beta_{43}$
- $\rho_{56}! \subseteq \beta_{54}$
- $l_1 \sim \rho_{56}$

subs: $[\alpha_{36} \mapsto \rho_{40}, \alpha_{37} \mapsto, \alpha_{38} \mapsto (\rho_{41}\times), \alpha_{42} \mapsto, \alpha_{47} \mapsto \rho_{51}, \alpha_{48} \mapsto, \alpha_{49} \mapsto (\rho_{52}\times), \alpha_{53} \mapsto, \alpha_{57} \mapsto, \alpha_{58} \mapsto \rho_{62}, \alpha_{59} \mapsto, \alpha_{60} \mapsto (\rho_{63}\times)][][][][]$

Step F: $(\ (p1,1)(\ (p1,1)(\ (p1,2))))$
cons:

- $\subseteq (\rho_{34} \times \alpha_{35})$
- $\subseteq (\rho_{45} \times \alpha_{46})$
- $\beta_{33} \subseteq \beta_{32}$
- $\rho_{34}!\alpha_{35} \subseteq \beta_{33}$
- $\rho_{45}!\alpha_{46} \subseteq \beta_{43}$
- $\rho_{56}! \subseteq \beta_{54}$
- $l_1 \sim \rho_{56}$

subs: $[\alpha_{31} \mapsto][][][][]$

Step R: $(\ (p1,1)(\ (p1,1)(\ (p1,2))))$
type:
beha: $\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\beta_{54};\beta_{43};\beta_{32}$
cons:

- $\subseteq (\rho_{34} \times \alpha_{35})$
- $\subseteq (\rho_{45} \times \alpha_{46})$

- $\rho_{34}!\alpha_{35} \subseteq \beta_{32}$
- $\rho_{45}!\alpha_{46} \subseteq \beta_{43}$
- $\rho_{56}! \subseteq \beta_{54}$
- $l_1 \sim \rho_{56}$

Step W': $(p1, 200)(\ (p1, 1)(\ (p1, 1)(\ (p1, 2))))$
type:
beha: $\tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \beta_{54}; \beta_{43}; \beta_{32}$
cons:

- $\subseteq (\rho_{34} \times \alpha_{35})$
- $\subseteq (\rho_{45} \times \alpha_{46})$
- $\rho_{34}!\alpha_{35} \subseteq \beta_{32}$
- $\rho_{45}!\alpha_{46} \subseteq \beta_{43}$
- $\rho_{56}! \subseteq \beta_{54}$
- $l_1 \sim \rho_{56}$

subs: $[\alpha_{25} \mapsto \rho_{29}, \alpha_{26} \mapsto, \alpha_{27} \mapsto (\rho_{30}\times), \alpha_{31} \mapsto, \alpha_{36} \mapsto \rho_{40}, \alpha_{37} \mapsto, \alpha_{38} \mapsto (\rho_{41}\times), \alpha_{42} \mapsto, \alpha_{47} \mapsto \rho_{51}, \alpha_{48} \mapsto, \alpha_{49} \mapsto (\rho_{52}\times), \alpha_{53} \mapsto, \alpha_{57} \mapsto, \alpha_{58} \mapsto \rho_{62}, \alpha_{59} \mapsto , \alpha_{60} \mapsto (\rho_{63}\times)][][][][]$

Step F: $(p1, 200)(\ (p1, 1)(\ (p1, 1)(\ (p1, 2))))$
cons:

- $\subseteq (\rho_{34} \times \alpha_{35})$
- $\subseteq (\rho_{45} \times \alpha_{46})$
- $\rho_{34}!\alpha_{35} \subseteq \beta_{32}$
- $\rho_{45}!\alpha_{46} \subseteq \beta_{43}$
- $\rho_{56}! \subseteq \beta_{54}$
- $l_1 \sim \rho_{56}$

subs: [][][][][]

Step R: $(p1, 200)(\ (p1, 1)(\ (p1, 1)(\ (p1, 2))))$
type:
beha: $\tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \beta_{54}; \beta_{43}; \beta_{32}$
cons:

- $\subseteq (\rho_{34} \times \alpha_{35})$
- $\subseteq (\rho_{45} \times \alpha_{46})$
- $\rho_{34}!\alpha_{35} \subseteq \beta_{32}$
- $\rho_{45}!\alpha_{46} \subseteq \beta_{43}$
- $\rho_{56}! \subseteq \beta_{54}$
- $l_1 \sim \rho_{56}$

Step W': $(\ (p1, 200)(\ (p1, 1)(\ (p1, 1)(\ (p1, 2)))))$
type: α_{20}
beha: $\tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \beta_{54}; \beta_{43}; \beta_{32}; \beta_{21}$
cons:

- $\subseteq (\rho_{34} \times \alpha_{35})$
- $\subseteq (\rho_{45} \times \alpha_{46})$
- $(\rho_{23} \times \alpha_{24}) \xrightarrow{\beta_{22}} \subseteq \xrightarrow{\beta_{21}} \alpha_{20}$
- $\rho_{23}!\alpha_{24} \subseteq \beta_{22}$
- $\rho_{34}!\alpha_{35} \subseteq \beta_{32}$
- $\rho_{45}!\alpha_{46} \subseteq \beta_{43}$
- $\rho_{56}! \subseteq \beta_{54}$
- $l_1 \sim \rho_{56}$

subs: $[\alpha_{25} \mapsto \rho_{29}, \alpha_{26} \mapsto, \alpha_{27} \mapsto (\rho_{30}\times), \alpha_{31} \mapsto, \alpha_{36} \mapsto \rho_{40}, \alpha_{37} \mapsto, \alpha_{38} \mapsto (\rho_{41}\times), \alpha_{42} \mapsto, \alpha_{47} \mapsto \rho_{51}, \alpha_{48} \mapsto, \alpha_{49} \mapsto (\rho_{52}\times), \alpha_{53} \mapsto, \alpha_{57} \mapsto, \alpha_{58} \mapsto \rho_{62}, \alpha_{59} \mapsto , \alpha_{60} \mapsto (\rho_{63}\times)][][][][]$

Step F: $(\ (p1, 200)(\ (p1, 1)(\ (p1, 1)(\ (p1, 2)))))$
cons:

- $\subseteq (\rho_{23} \times \alpha_{24})$
- $\subseteq (\rho_{34} \times \alpha_{35})$
- $\subseteq (\rho_{45} \times \alpha_{46})$
- $\beta_{22} \subseteq \beta_{21}$
- $\rho_{23}!\alpha_{24} \subseteq \beta_{22}$
- $\rho_{34}!\alpha_{35} \subseteq \beta_{32}$
- $\rho_{45}!\alpha_{46} \subseteq \beta_{43}$
- $\rho_{56}! \subseteq \beta_{54}$
- $l_1 \sim \rho_{56}$

subs: $[\alpha_{20} \mapsto][][][][]$

Step R: $(\ (p1, 200)(\ (p1, 1)(\ (p1, 1)(\ (p1, 2)))))$
type:
beha: $\tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \beta_{54}; \beta_{43}; \beta_{32}; \beta_{21}$
cons:

- $\subseteq (\rho_{23} \times \alpha_{24})$
- $\subseteq (\rho_{34} \times \alpha_{35})$
- $\subseteq (\rho_{45} \times \alpha_{46})$
- $\rho_{23}!\alpha_{24} \subseteq \beta_{21}$
- $\rho_{34}!\alpha_{35} \subseteq \beta_{32}$
- $\rho_{45}!\alpha_{46} \subseteq \beta_{43}$

- $\rho_{56}! \subseteq \beta_{54}$
- $l_1 \sim \rho_{56}$

Step W': $(p1, 1)(\ (p1, 200)(\ (p1, 1)(\ (p1, 1)(\ (p1, 2)))))$
type:
beha: $\tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \beta_{54}; \beta_{43}; \beta_{32}; \beta_{21}$
cons:

- $\subseteq (\rho_{23} \times \alpha_{24})$
- $\subseteq (\rho_{34} \times \alpha_{35})$
- $\subseteq (\rho_{45} \times \alpha_{46})$
- $\rho_{23}!\alpha_{24} \subseteq \beta_{21}$
- $\rho_{34}!\alpha_{35} \subseteq \beta_{32}$
- $\rho_{45}!\alpha_{46} \subseteq \beta_{43}$
- $\rho_{56}! \subseteq \beta_{54}$
- $l_1 \sim \rho_{56}$

subs: $[\alpha_{14} \mapsto \rho_{18}, \alpha_{15} \mapsto, \alpha_{16} \mapsto (\rho_{19}\times), \alpha_{20} \mapsto, \alpha_{25} \mapsto \rho_{29}, \alpha_{26} \mapsto, \alpha_{27} \mapsto (\rho_{30}\times), \alpha_{31} \mapsto, \alpha_{36} \mapsto \rho_{40}, \alpha_{37} \mapsto, \alpha_{38} \mapsto (\rho_{41}\times), \alpha_{42} \mapsto, \alpha_{47} \mapsto \rho_{51}, \alpha_{48} \mapsto , \alpha_{49} \mapsto (\rho_{52}\times), \alpha_{53} \mapsto, \alpha_{57} \mapsto, \alpha_{58} \mapsto \rho_{62}, \alpha_{59} \mapsto, \alpha_{60} \mapsto (\rho_{63}\times)][][][][]$

Step F: $(p1, 1)(\ (p1, 200)(\ (p1, 1)(\ (p1, 1)(\ (p1, 2)))))$
cons:

- $\subseteq (\rho_{23} \times \alpha_{24})$
- $\subseteq (\rho_{34} \times \alpha_{35})$
- $\subseteq (\rho_{45} \times \alpha_{46})$
- $\rho_{23}!\alpha_{24} \subseteq \beta_{21}$
- $\rho_{34}!\alpha_{35} \subseteq \beta_{32}$
- $\rho_{45}!\alpha_{46} \subseteq \beta_{43}$

- $\rho_{56}! \subseteq \beta_{54}$
- $l_1 \sim \rho_{56}$

subs: [][][][][]

Step R: $(p1, 1)(\ (p1, 200)(\ (p1, 1)(\ (p1, 1)(\ (p1, 2)))))$
type:
beha: $\tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \beta_{54}; \beta_{43}; \beta_{32}; \beta_{21}$
cons:

- $\subseteq (\rho_{23} \times \alpha_{24})$
- $\subseteq (\rho_{34} \times \alpha_{35})$
- $\subseteq (\rho_{45} \times \alpha_{46})$
- $\rho_{23}!\alpha_{24} \subseteq \beta_{21}$
- $\rho_{34}!\alpha_{35} \subseteq \beta_{32}$
- $\rho_{45}!\alpha_{46} \subseteq \beta_{43}$
- $\rho_{56}! \subseteq \beta_{54}$
- $l_1 \sim \rho_{56}$

Step W': $(\ (p1, 1)(\ (p1, 200)(\ (p1, 1)(\ (p1, 1)(\ (p1, 2))))))$
type: α_9
beha: $\tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \beta_{54}; \beta_{43}; \beta_{32}; \beta_{21}; \beta_{10}$
cons:

- $\subseteq (\rho_{23} \times \alpha_{24})$
- $\subseteq (\rho_{34} \times \alpha_{35})$
- $\subseteq (\rho_{45} \times \alpha_{46})$
- $(\rho_{12} \times \alpha_{13}) \xrightarrow{\beta_{11}} \subseteq \xrightarrow{\beta_{10}} \alpha_9$
- $\rho_{12}!\alpha_{13} \subseteq \beta_{11}$

- $\rho_{23}!\alpha_{24} \subseteq \beta_{21}$
- $\rho_{34}!\alpha_{35} \subseteq \beta_{32}$
- $\rho_{45}!\alpha_{46} \subseteq \beta_{43}$
- $\rho_{56}! \subseteq \beta_{54}$
- $l_1 \sim \rho_{56}$

subs: $[\alpha_{14} \mapsto \rho_{18}, \alpha_{15} \mapsto, \alpha_{16} \mapsto (\rho_{19}\times), \alpha_{20} \mapsto, \alpha_{25} \mapsto \rho_{29}, \alpha_{26} \mapsto, \alpha_{27} \mapsto (\rho_{30}\times), \alpha_{31} \mapsto, \alpha_{36} \mapsto \rho_{40}, \alpha_{37} \mapsto, \alpha_{38} \mapsto (\rho_{41}\times), \alpha_{42} \mapsto, \alpha_{47} \mapsto \rho_{51}, \alpha_{48} \mapsto , \alpha_{49} \mapsto (\rho_{52}\times), \alpha_{53} \mapsto, \alpha_{57} \mapsto, \alpha_{58} \mapsto \rho_{62}, \alpha_{59} \mapsto, \alpha_{60} \mapsto (\rho_{63}\times)][][][][]$

Step F: $(\ (p1,1)(\ (p1,200)(\ (p1,1)(\ (p1,1)(\ (p1,2))))))$
cons:

- $\subseteq (\rho_{12} \times \alpha_{13})$
- $\subseteq (\rho_{23} \times \alpha_{24})$
- $\subseteq (\rho_{34} \times \alpha_{35})$
- $\subseteq (\rho_{45} \times \alpha_{46})$
- $\beta_{11} \subseteq \beta_{10}$
- $\rho_{12}!\alpha_{13} \subseteq \beta_{11}$
- $\rho_{23}!\alpha_{24} \subseteq \beta_{21}$
- $\rho_{34}!\alpha_{35} \subseteq \beta_{32}$
- $\rho_{45}!\alpha_{46} \subseteq \beta_{43}$
- $\rho_{56}! \subseteq \beta_{54}$
- $l_1 \sim \rho_{56}$

subs: $[\alpha_9 \mapsto][][][][]$

Step R: $(\ (p1,1)(\ (p1,200)(\ (p1,1)(\ (p1,1)(\ (p1,2))))))$
type:
beha: $\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\beta_{54};\beta_{43};\beta_{32};\beta_{21};\beta_{10}$
cons:

- $\subseteq (\rho_{12} \times \alpha_{13})$
- $\subseteq (\rho_{23} \times \alpha_{24})$
- $\subseteq (\rho_{34} \times \alpha_{35})$
- $\subseteq (\rho_{45} \times \alpha_{46})$
- $\rho_{12}!\alpha_{13} \subseteq \beta_{10}$
- $\rho_{23}!\alpha_{24} \subseteq \beta_{21}$
- $\rho_{34}!\alpha_{35} \subseteq \beta_{32}$
- $\rho_{45}!\alpha_{46} \subseteq \beta_{43}$
- $\rho_{56}! \subseteq \beta_{54}$
- $l_1 \sim \rho_{56}$

Step W': $p1(l_1 tsl\ ())(\ (p1,1)(\ (p1,200)(\ (p1,1)(\ (p1,1)(\ (p1,2))))))$
type:
beha: $\tau;\tau;\beta_4;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\beta_{54};\beta_{43};\beta_{32};\beta_{21};\beta_{10}$
cons:

- $\subseteq (\rho_{12} \times \alpha_{13})$
- $\subseteq (\rho_{23} \times \alpha_{24})$
- $\subseteq (\rho_{34} \times \alpha_{35})$
- $\subseteq (\rho_{45} \times \alpha_{46})$
- $tsl^{l_1} \sim \psi_5$
- $l_1\psi_5 \subseteq \beta_4$
- $\rho_{12}!\alpha_{13} \subseteq \beta_{10}$
- $\rho_{23}!\alpha_{24} \subseteq \beta_{21}$
- $\rho_{34}!\alpha_{35} \subseteq \beta_{32}$

- $\rho_{45}!\alpha_{46} \subseteq \beta_{43}$
- $\rho_{56}! \subseteq \beta_{54}$
- $l_1 \sim \rho_{56}$

subs: $[\alpha_3 \mapsto \rho_8, \alpha_9 \mapsto, \alpha_{14} \mapsto \rho_{18}, \alpha_{15} \mapsto, \alpha_{16} \mapsto (\rho_{19}\times), \alpha_{20} \mapsto, \alpha_{25} \mapsto \rho_{29}, \alpha_{26} \mapsto, \alpha_{27} \mapsto (\rho_{30}\times), \alpha_{31} \mapsto, \alpha_{36} \mapsto \rho_{40}, \alpha_{37} \mapsto, \alpha_{38} \mapsto (\rho_{41}\times), \alpha_{42} \mapsto , \alpha_{47} \mapsto \rho_{51}, \alpha_{48} \mapsto, \alpha_{49} \mapsto (\rho_{52}\times), \alpha_{53} \mapsto, \alpha_{57} \mapsto, \alpha_{58} \mapsto \rho_{62}, \alpha_{59} \mapsto, \alpha_{60} \mapsto (\rho_{63}\times)]$[][][][][]

Step F: $p1(l_1 tsl\ ())(\ (p1,1)(\ (p1,200)(\ (p1,1)(\ (p1,1)(\ (p1,2))))))$
cons:

- $\subseteq (\rho_{12} \times \alpha_{13})$
- $\subseteq (\rho_{23} \times \alpha_{24})$
- $\subseteq (\rho_{34} \times \alpha_{35})$
- $\subseteq (\rho_{45} \times \alpha_{46})$
- $tsl^{l_1} \sim \psi_5$
- $l_1\psi_5 \subseteq \beta_4$
- $\rho_{12}!\alpha_{13} \subseteq \beta_{10}$
- $\rho_{23}!\alpha_{24} \subseteq \beta_{21}$
- $\rho_{34}!\alpha_{35} \subseteq \beta_{32}$
- $\rho_{45}!\alpha_{46} \subseteq \beta_{43}$
- $\rho_{56}! \subseteq \beta_{54}$
- $l_1 \sim \rho_{56}$

subs: [][][][][]

Step R: $p1(l_1 tsl\ ())(\ (p1,1)(\ (p1,200)(\ (p1,1)(\ (p1,1)(\ (p1,2))))))$
type:
beha: $\tau;\tau;\beta_4;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\beta_{54};\beta_{43};\beta_{32};\beta_{21};\beta_{10}$
cons:

- $\subseteq (\rho_{12} \times \alpha_{13})$
- $\subseteq (\rho_{23} \times \alpha_{24})$
- $\subseteq (\rho_{34} \times \alpha_{35})$
- $\subseteq (\rho_{45} \times \alpha_{46})$
- $tsl^{l_1} \sim \psi_5$
- $l_1\psi_5 \subseteq \beta_4$
- $\rho_{12}!\alpha_{13} \subseteq \beta_{10}$
- $\rho_{23}!\alpha_{24} \subseteq \beta_{21}$
- $\rho_{34}!\alpha_{35} \subseteq \beta_{32}$
- $\rho_{45}!\alpha_{46} \subseteq \beta_{43}$
- $\rho_{56}! \subseteq \beta_{54}$
- $l_1 \sim \rho_{56}$

Step W : $servermyVNum2p2(l_2tsl\ ())(\ (p2\ (\ (p2\ (\ (p2\ (\ (p2\ (\ p2))))))))))(client)(server)$
typing context: $client : \forall(:)$.

Step W : $myVNum2p2(l_2tsl\ ())(\ (p2\ (\ (p2\ (\ (p2\ (\ (p2\ (\ p2)))))))))$
typing context: $client : \forall(:)$.

Step W : 2
typing context: $client : \forall(:)$.

Step W': 2
type:
beha: τ
cons:

-

subs: [][][][][]

Step F: 2
cons:

-

subs: [][][][][]

Step R: 2
type:
beha: τ
cons:

-

Step W : $p2(l_2tsl\ ())(\ (p2\ (\ (p2\ (\ (p2\ (\ (p2\ (\ p2))))))))))$
typing context: $myVNum : \forall(:)., client : \forall(:).$

Step W : $(l_2tsl\ ())$
typing context: $myVNum : \forall(:)., client : \forall(:).$

Step W : l_2tsl
typing context: $myVNum : \forall(:)., client : \forall(:).$

Step W': l_2tsl
type: $\xrightarrow{\beta_{68}} \rho_{66}$
beha: τ
cons:

- $\overline{tsl^{l_2}} \sim \psi_{67}$
- $l_2\psi_{67} \subseteq \beta_{68}$
- $l_2 \sim \rho_{66}$

subs: [][][][][]

Step F: l_2tsl
cons:

- $\overline{tsl^{l_2}} \sim \psi_{67}$
- $l_2\psi_{67} \subseteq \beta_{68}$
- $l_2 \sim \rho_{66}$

subs: □□□□□

Step R: $l_2 tsl$
type: $\xrightarrow{\beta_{68}} \rho_{66}$
beha: τ
cons:

- $\overline{tsl^{l_2}} \sim \psi_{67}$
- $l_2\psi_{67} \subseteq \beta_{68}$
- $l_2 \sim \rho_{66}$

Step W : ()
typing context: $myVNum : \forall(:)., client : \forall(:).$

Step W': ()
type:
beha: τ
cons:

-

subs: □□□□□

Step F: ()
cons:

-

subs: □□□□□

Step R: ()
type:
beha: τ
cons:

-

Step W': $(l_2 tsl\ ())$
type: α_{64}
beha: $\tau; \tau; \beta_{65}$
cons:

- $\xrightarrow{\beta_{68}} \rho_{66} \subseteq \xrightarrow{\beta_{65}} \alpha_{64}$
- $\overline{tsl^{l_2}} \sim \psi_{67}$
- $l_2 \psi_{67} \subseteq \beta_{68}$
- $l_2 \sim \rho_{66}$

subs: $[][][][][]$

Step F: $(l_2 tsl\ ())$
cons:

- $\overline{tsl^{l_2}} \sim \psi_{67}$
- $\beta_{68} \subseteq \beta_{65}$
- $l_2 \psi_{67} \subseteq \beta_{68}$
- $\rho_{69} \sim \rho_{66}$
- $l_2 \sim \rho_{66}$

subs: $[\alpha_{64} \mapsto \rho_{69}][][][][]$

Step R: $(l_2 tsl\ ())$
type: ρ_{69}
beha: $\tau; \tau; \beta_{65}$
cons:

- $\overline{tsl^{l_2}} \sim \psi_{67}$
- $l_2 \psi_{67} \subseteq \beta_{65}$
- $l_2 \sim \rho_{69}$

Step W : (($p2$ (($p2$ (($p2$ (($p2$ ($p2$)))))))))
typing context: $p2 : \forall(\rho_{69} : l_2 \sim \rho_{69}).\rho_{69}, myVNum : \forall(:)., client : \forall(:).$

Step W :
typing context: $p2 : \forall(\rho_{69} : l_2 \sim \rho_{69}).\rho_{69}, myVNum : \forall(:)., client : \forall(:).$

Step W':
type: $\rho_{74} \xrightarrow{\beta_{73}} \alpha_{72}$
beha: τ
cons:

- $\rho_{74}?\alpha_{72} \subseteq \beta_{73}$

subs: [][][][][]

Step F:
cons:

- $\rho_{74}?\alpha_{72} \subseteq \beta_{73}$

subs: [][][][][]

Step R:
type: $\rho_{74} \xrightarrow{\beta_{73}} \alpha_{72}$
beha: τ
cons:

- $\rho_{74}?\alpha_{72} \subseteq \beta_{73}$

Step W : ($p2$ (($p2$ (($p2$ (($p2$ ($p2$)))))))))
typing context: $p2 : \forall(\rho_{69} : l_2 \sim \rho_{69}).\rho_{69}, myVNum : \forall(:)., client : \forall(:).$

Step W : $p2$
typing context: $p2 : \forall(\rho_{69} : l_2 \sim \rho_{69}).\rho_{69}, myVNum : \forall(:)., client : \forall(:).$

Step W': $p2$
type: ρ_{77}
beha: τ
cons:

- $l_2 \sim \rho_{77}$

subs: [][][][][]

Step F: $p2$
cons:

- $l_2 \sim \rho_{77}$

subs: [][][][][]

Step R: $p2$
type: ρ_{77}
beha: τ
cons:

- $l_2 \sim \rho_{77}$

Step W : (($p2$ (($p2$ (($p2$ ($p2$)))))))
typing context: $p2 : \forall(\rho_{69} : l_2 \sim \rho_{69}).\rho_{69}, myVNum : \forall(:)., client : \forall(:).$

Step W :
typing context: $p2 : \forall(\rho_{69} : l_2 \sim \rho_{69}).\rho_{69}, myVNum : \forall(:)., client : \forall(:).$

Step W':
type: $\rho_{82} \xrightarrow{\beta_{81}} \alpha_{80}$
beha: τ
cons:

- $\rho_{82}?\alpha_{80} \subseteq \beta_{81}$

subs: [][][][][]

Step F:
cons:

- $\rho_{82}?\alpha_{80} \subseteq \beta_{81}$

subs: [][][][][]

Step R:
type: $\rho_{82} \xrightarrow{\beta_{81}} \alpha_{80}$
beha: τ
cons:

- $\rho_{82}?\alpha_{80} \subseteq \beta_{81}$

Step W : $(p2\ (\ (p2\ (\ (p2\ (\ p2))))))$
typing context: $p2 : \forall(\rho_{69} : l_2 \sim \rho_{69}).\rho_{69}, myVNum : \forall(:)., client : \forall(:).$

Step W : $p2$
typing context: $p2 : \forall(\rho_{69} : l_2 \sim \rho_{69}).\rho_{69}, myVNum : \forall(:)., client : \forall(:).$

Step W': $p2$
type: ρ_{85}
beha: τ
cons:

- $l_2 \sim \rho_{85}$

subs: [][][][][]

Step F: $p2$
cons:

- $l_2 \sim \rho_{85}$

subs: [][][][][]

Step R: $p2$
type: ρ_{85}
beha: τ
cons:

- $l_2 \sim \rho_{85}$

Step W : $(\ (p2\ (\ (p2\ (\ p2)))))$
typing context: $p2 : \forall(\rho_{69} : l_2 \sim \rho_{69}).\rho_{69}, myVNum : \forall(:)., client : \forall(:).$

Step W :
typing context: $p2 : \forall(\rho_{69} : l_2 \sim \rho_{69}).\rho_{69}, myVNum : \forall(:)., client : \forall(:).$

Step W':
type: $\rho_{90} \xrightarrow{\beta_{89}} \alpha_{88}$
beha: τ
cons:

- $\rho_{90}?\alpha_{88} \subseteq \beta_{89}$

subs: [][][][][]

Step F:
cons:

- $\rho_{90}?\alpha_{88} \subseteq \beta_{89}$

subs: [][][][][]

Step R:
type: $\rho_{90} \xrightarrow{\beta_{89}} \alpha_{88}$
beha: τ
cons:

- $\rho_{90}?\alpha_{88} \subseteq \beta_{89}$

Step W : ($p2$ (($p2$ ($p2$))))
typing context: $p2 : \forall(\rho_{69} : l_2 \sim \rho_{69}).\rho_{69}, myVNum : \forall(:)., client : \forall(:).$

Step W : $p2$
typing context: $p2 : \forall(\rho_{69} : l_2 \sim \rho_{69}).\rho_{69}, myVNum : \forall(:)., client : \forall(:).$

Step W': $p2$
type: ρ_{93}
beha: τ
cons:

- $l_2 \sim \rho_{93}$

subs: [][][][][]

Step F: $p2$
cons:

- $l_2 \sim \rho_{93}$

subs: [][][][][]

Step R: $p2$
type: ρ_{93}
beha: τ
cons:

- $l_2 \sim \rho_{93}$

Step W : (($p2$ ($p2$)))
typing context: $p2 : \forall(\rho_{69} : l_2 \sim \rho_{69}).\rho_{69}, myVNum : \forall(:)., client : \forall(:).$

Step W :
typing context: $p2 : \forall(\rho_{69} : l_2 \sim \rho_{69}).\rho_{69}, myVNum : \forall(:)., client : \forall(:).$

Step W':
type: $\rho_{98} \xrightarrow{\beta_{97}} \alpha_{96}$
beha: τ
cons:

- $\rho_{98}?\alpha_{96} \subseteq \beta_{97}$

subs: [][][][][]

Step F:
cons:

- $\rho_{98}?\alpha_{96} \subseteq \beta_{97}$

subs: [][][][][]

Step R:

type: $\rho_{98} \xrightarrow{\beta_{97}} \alpha_{96}$
beha: τ
cons:

- $\rho_{98}?\alpha_{96} \subseteq \beta_{97}$

Step W : $(p2\ (\ p2))$
typing context: $p2 : \forall(\rho_{69} : l_2 \sim \rho_{69}).\rho_{69}, myVNum : \forall(:)., client : \forall(:).$

Step W : $p2$
typing context: $p2 : \forall(\rho_{69} : l_2 \sim \rho_{69}).\rho_{69}, myVNum : \forall(:)., client : \forall(:).$

Step W': $p2$
type: ρ_{101}
beha: τ
cons:

- $l_2 \sim \rho_{101}$

subs: [][][][][]

Step F: $p2$
cons:

- $l_2 \sim \rho_{101}$

subs: [][][][][]

Step R: $p2$
type: ρ_{101}
beha: τ
cons:

- $l_2 \sim \rho_{101}$

Step W : $(\ p2)$
typing context: $p2 : \forall(\rho_{69} : l_2 \sim \rho_{69}).\rho_{69}, myVNum : \forall(:)., client : \forall(:).$

Step W :
typing context: $p2 : \forall(\rho_{69} : l_2 \sim \rho_{69}).\rho_{69}, myVNum : \forall(:)., client : \forall(:).$

Step W':
type: $\rho_{106} \xrightarrow{\beta_{105}} \alpha_{104}$
beha: τ
cons:

- $\rho_{106}?\alpha_{104} \subseteq \beta_{105}$

subs: [][][][][]

Step F:
cons:

- $\rho_{106}?\alpha_{104} \subseteq \beta_{105}$

subs: [][][][][]

Step R:
type: $\rho_{106} \xrightarrow{\beta_{105}} \alpha_{104}$
beha: τ
cons:

- $\rho_{106}?\alpha_{104} \subseteq \beta_{105}$

Step W : $p2$
typing context: $p2 : \forall(\rho_{69} : l_2 \sim \rho_{69}).\rho_{69}, myVNum : \forall(:)., client : \forall(:).$

Step W': $p2$
type: ρ_{107}
beha: τ
cons:

- $l_2 \sim \rho_{107}$

subs: [][][][][]

Step F: $p2$
cons:

- $l_2 \sim \rho_{107}$

subs: [][][][][]

Step R: $p2$
type: ρ_{107}
beha: τ
cons:

- $l_2 \sim \rho_{107}$

Step W': ($p2$)
type: α_{102}
beha: $\tau; \tau; \beta_{103}$
cons:

- $\rho_{106} \xrightarrow{\beta_{105}} \alpha_{104} \subseteq \rho_{107} \xrightarrow{\beta_{103}} \alpha_{102}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{105}$
- $l_2 \sim \rho_{107}$

subs: [][][][][]

Step F: ($p2$)
cons:

- $\alpha_{104} \subseteq \alpha_{108}$
- $\beta_{105} \subseteq \beta_{103}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{105}$
- $\rho_{106} \sim \rho_{107}$
- $l_2 \sim \rho_{107}$

subs: $[\alpha_{102} \mapsto \alpha_{108}][][][][]$

Step R: ($p2$)
type: α_{104}
beha: $\tau; \tau; \beta_{103}$
cons:

- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $l_2 \sim \rho_{106}$

Step W': $(p2\ (\ p2))$
type: α_{99}
beha: $\tau; \tau; \tau; \beta_{103}; \beta_{100}$
cons:

- $\rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \alpha_{99}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $l_2 \sim \rho_{101}$
- $l_2 \sim \rho_{106}$

subs: $[\alpha_{102} \mapsto \alpha_{108}][][][][]$

Step F: $(p2\ (\ p2))$
cons:

- $\rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \alpha_{99}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $l_2 \sim \rho_{101}$
- $l_2 \sim \rho_{106}$

subs: $[][][][][]$

Step R: $(p2\ (\ p2))$
type: α_{99}
beha: $\tau; \tau; \tau; \beta_{103}; \beta_{100}$
cons:

- $\rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \alpha_{99}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $l_2 \sim \rho_{101}$

- $l_2 \sim \rho_{106}$

Step W': (($p2$ ($p2$)))
type: α_{94}
beha: $\tau;\tau;\tau;\tau;\beta_{103};\beta_{100};\beta_{95}$
cons:

- $\rho_{98} \xrightarrow{\beta_{97}} \alpha_{96} \subseteq \alpha_{99} \xrightarrow{\beta_{95}} \alpha_{94}$
- $\rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \alpha_{99}$
- $\rho_{98}?\alpha_{96} \subseteq \beta_{97}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $l_2 \sim \rho_{101}$
- $l_2 \sim \rho_{106}$

subs: $[\alpha_{102} \mapsto \alpha_{108}][][][][]$

Step F: (($p2$ ($p2$)))
cons:

- $\alpha_{96} \subseteq \alpha_{110}$
- $\rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{109}$
- $\beta_{97} \subseteq \beta_{95}$
- $\rho_{98}?\alpha_{96} \subseteq \beta_{97}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $\rho_{98} \sim \rho_{109}$
- $l_2 \sim \rho_{101}$
- $l_2 \sim \rho_{106}$

subs: $[\alpha_{94} \mapsto \alpha_{110}, \alpha_{99} \mapsto \rho_{109}][][][][]$

Step R: ($(p2$ ($p2)))$
type: α_{96}
beha: $\tau; \tau; \tau; \tau; \beta_{103}; \beta_{100}; \beta_{95}$
cons:

- $\rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $\rho_{98}?\alpha_{96} \subseteq \beta_{95}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $l_2 \sim \rho_{101}$
- $l_2 \sim \rho_{106}$

Step W': $(p2$ ($(p2$ ($p2))))$
type: α_{91}
beha: $\tau; \tau; \tau; \tau; \tau; \beta_{103}; \beta_{100}; \beta_{95}; \beta_{92}$
cons:

- $\rho_{93} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \alpha_{91}$
- $\rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $\rho_{98}?\alpha_{96} \subseteq \beta_{95}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $l_2 \sim \rho_{93}$
- $l_2 \sim \rho_{101}$
- $l_2 \sim \rho_{106}$

subs: $[\alpha_{94} \mapsto \alpha_{110}, \alpha_{99} \mapsto \rho_{109}, \alpha_{102} \mapsto \alpha_{108}][][][][]$

Step F: $(p2$ ($(p2$ ($p2))))$
cons:

- $\rho_{93} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \alpha_{91}$

- $\rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $\rho_{98}?\alpha_{96} \subseteq \beta_{95}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $l_2 \sim \rho_{93}$
- $l_2 \sim \rho_{101}$
- $l_2 \sim \rho_{106}$

subs: [][][][][]

Step R: ($p2$ (($p2$ ($p2$))))
type: α_{91}
beha: $\tau; \tau; \tau; \tau; \tau; \beta_{103}; \beta_{100}; \beta_{95}; \beta_{92}$
cons:

- $\rho_{93} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \alpha_{91}$
- $\rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $\rho_{98}?\alpha_{96} \subseteq \beta_{95}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $l_2 \sim \rho_{93}$
- $l_2 \sim \rho_{101}$
- $l_2 \sim \rho_{106}$

Step W': (($p2$ (($p2$ ($p2$)))))
type: α_{86}
beha: $\tau; \tau; \tau; \tau; \tau; \tau; \beta_{103}; \beta_{100}; \beta_{95}; \beta_{92}; \beta_{87}$
cons:

- $\rho_{90} \xrightarrow{\beta_{89}} \alpha_{88} \subseteq \alpha_{91} \xrightarrow{\beta_{87}} \alpha_{86}$
- $\rho_{93} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \alpha_{91}$

- $\rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $\rho_{90}?\alpha_{88} \subseteq \beta_{89}$
- $\rho_{98}?\alpha_{96} \subseteq \beta_{95}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $l_2 \sim \rho_{93}$
- $l_2 \sim \rho_{101}$
- $l_2 \sim \rho_{106}$

subs: $[\alpha_{94} \mapsto \alpha_{110}, \alpha_{99} \mapsto \rho_{109}, \alpha_{102} \mapsto \alpha_{108}][][][][]$

Step F: (($p2$ (($p2$ ($p2$)))))
cons:

- $\alpha_{88} \subseteq \alpha_{112}$
- $\rho_{93} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{111}$
- $\rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $\beta_{89} \subseteq \beta_{87}$
- $\rho_{90}?\alpha_{88} \subseteq \beta_{89}$
- $\rho_{98}?\alpha_{96} \subseteq \beta_{95}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $\rho_{90} \sim \rho_{111}$
- $l_2 \sim \rho_{93}$
- $l_2 \sim \rho_{101}$
- $l_2 \sim \rho_{106}$

subs: $[\alpha_{86} \mapsto \alpha_{112}, \alpha_{91} \mapsto \rho_{111}][][][][]$

Step R: (($p2$ (($p2$ ($p2$)))))
type: α_{88}
beha: $\tau; \tau; \tau; \tau; \tau; \tau; \beta_{103}; \beta_{100}; \beta_{95}; \beta_{92}; \beta_{87}$
cons:

- $\rho_{93} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}$
- $\rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $\rho_{90}?\alpha_{88} \subseteq \beta_{87}$
- $\rho_{98}?\alpha_{96} \subseteq \beta_{95}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $l_2 \sim \rho_{93}$
- $l_2 \sim \rho_{101}$
- $l_2 \sim \rho_{106}$

Step W': ($p2$ (($p2$ (($p2$ ($p2$))))))
type: α_{83}
beha: $\tau; \tau; \tau; \tau; \tau; \tau; \tau; \beta_{103}; \beta_{100}; \beta_{95}; \beta_{92}; \beta_{87}; \beta_{84}$
cons:

- $\rho_{85} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \alpha_{83}$
- $\rho_{93} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}$
- $\rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $\rho_{90}?\alpha_{88} \subseteq \beta_{87}$
- $\rho_{98}?\alpha_{96} \subseteq \beta_{95}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $l_2 \sim \rho_{85}$

- $l_2 \sim \rho_{93}$
- $l_2 \sim \rho_{101}$
- $l_2 \sim \rho_{106}$

subs: $[\alpha_{86} \mapsto \alpha_{112}, \alpha_{91} \mapsto \rho_{111}, \alpha_{94} \mapsto \alpha_{110}, \alpha_{99} \mapsto \rho_{109}, \alpha_{102} \mapsto \alpha_{108}][][][][]$

Step F: $(p2\ (\ (p2\ (\ (p2\ (\ p2))))))$
cons:

- $\rho_{85} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \alpha_{83}$
- $\rho_{93} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}$
- $\rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $\rho_{90}?\alpha_{88} \subseteq \beta_{87}$
- $\rho_{98}?\alpha_{96} \subseteq \beta_{95}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $l_2 \sim \rho_{85}$
- $l_2 \sim \rho_{93}$
- $l_2 \sim \rho_{101}$
- $l_2 \sim \rho_{106}$

subs: $[][][][][]$

Step R: $(p2\ (\ (p2\ (\ (p2\ (\ p2))))))$
type: α_{83}
beha: $\tau; \tau; \tau; \tau; \tau; \tau; \tau; \beta_{103}; \beta_{100}; \beta_{95}; \beta_{92}; \beta_{87}; \beta_{84}$
cons:

- $\rho_{85} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \alpha_{83}$
- $\rho_{93} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}$
- $\rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$

- $\rho_{90}?\alpha_{88} \subseteq \beta_{87}$
- $\rho_{98}?\alpha_{96} \subseteq \beta_{95}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $l_2 \sim \rho_{85}$
- $l_2 \sim \rho_{93}$
- $l_2 \sim \rho_{101}$
- $l_2 \sim \rho_{106}$

Step W': (($p2$ (($p2$ (($p2$ ($p2$)))))))
type: α_{78}
beha: $\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\beta_{103};\beta_{100};\beta_{95};\beta_{92};\beta_{87};\beta_{84};\beta_{79}$
cons:

- $\rho_{82} \xrightarrow{\beta_{81}} \alpha_{80} \subseteq \alpha_{83} \xrightarrow{\beta_{79}} \alpha_{78}$
- $\rho_{85} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \alpha_{83}$
- $\rho_{93} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}$
- $\rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $\rho_{82}?\alpha_{80} \subseteq \beta_{81}$
- $\rho_{90}?\alpha_{88} \subseteq \beta_{87}$
- $\rho_{98}?\alpha_{96} \subseteq \beta_{95}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $l_2 \sim \rho_{85}$
- $l_2 \sim \rho_{93}$
- $l_2 \sim \rho_{101}$
- $l_2 \sim \rho_{106}$

subs: $[\alpha_{86} \mapsto \alpha_{112}, \alpha_{91} \mapsto \rho_{111}, \alpha_{94} \mapsto \alpha_{110}, \alpha_{99} \mapsto \rho_{109}, \alpha_{102} \mapsto \alpha_{108}][][][][][]$

Step F: (($p2$ (($p2$ (($p2$ ($p2$)))))))
cons:

- $\alpha_{80} \subseteq \alpha_{114}$
- $\rho_{85} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \rho_{113}$
- $\rho_{93} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}$
- $\rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $\beta_{81} \subseteq \beta_{79}$
- $\rho_{82}?\alpha_{80} \subseteq \beta_{81}$
- $\rho_{90}?\alpha_{88} \subseteq \beta_{87}$
- $\rho_{98}?\alpha_{96} \subseteq \beta_{95}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $\rho_{82} \sim \rho_{113}$
- $l_2 \sim \rho_{85}$
- $l_2 \sim \rho_{93}$
- $l_2 \sim \rho_{101}$
- $l_2 \sim \rho_{106}$

subs: $[\alpha_{78} \mapsto \alpha_{114}, \alpha_{83} \mapsto \rho_{113}][][][][][]$

Step R: (($p2$ (($p2$ (($p2$ ($p2$)))))))
type: α_{80}
beha: $\tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \beta_{103}; \beta_{100}; \beta_{95}; \beta_{92}; \beta_{87}; \beta_{84}; \beta_{79}$
cons:

- $\rho_{85} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \rho_{82}$
- $\rho_{93} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}$

- $\rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $\rho_{82}?\alpha_{80} \subseteq \beta_{79}$
- $\rho_{90}?\alpha_{88} \subseteq \beta_{87}$
- $\rho_{98}?\alpha_{96} \subseteq \beta_{95}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $l_2 \sim \rho_{85}$
- $l_2 \sim \rho_{93}$
- $l_2 \sim \rho_{101}$
- $l_2 \sim \rho_{106}$

Step W': ($p2$ (($p2$ (($p2$ (($p2$ ($p2$)))))))))
type: α_{75}
beha: $\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\beta_{103};\beta_{100};\beta_{95};\beta_{92};\beta_{87};\beta_{84};\beta_{79};\beta_{76}$
cons:

- $\rho_{77} \subseteq \alpha_{80} \xrightarrow{\beta_{76}} \alpha_{75}$
- $\rho_{85} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \rho_{82}$
- $\rho_{93} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}$
- $\rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $\rho_{82}?\alpha_{80} \subseteq \beta_{79}$
- $\rho_{90}?\alpha_{88} \subseteq \beta_{87}$
- $\rho_{98}?\alpha_{96} \subseteq \beta_{95}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $l_2 \sim \rho_{77}$
- $l_2 \sim \rho_{85}$

- $l_2 \sim \rho_{93}$
- $l_2 \sim \rho_{101}$
- $l_2 \sim \rho_{106}$

subs: $[\alpha_{78} \mapsto \alpha_{114}, \alpha_{83} \mapsto \rho_{113}, \alpha_{86} \mapsto \alpha_{112}, \alpha_{91} \mapsto \rho_{111}, \alpha_{94} \mapsto \alpha_{110}, \alpha_{99} \mapsto \rho_{109}, \alpha_{102} \mapsto \alpha_{108}]$[][][][][]

Step F: ($p2$ (($p2$ (($p2$ (($p2$ ($p2$))))))))
cons:

- $\rho_{77} \subseteq \alpha_{80} \xrightarrow{\beta_{76}} \alpha_{75}$
- $\rho_{85} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \rho_{82}$
- $\rho_{93} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}$
- $\rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $\rho_{82}?\alpha_{80} \subseteq \beta_{79}$
- $\rho_{90}?\alpha_{88} \subseteq \beta_{87}$
- $\rho_{98}?\alpha_{96} \subseteq \beta_{95}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $l_2 \sim \rho_{77}$
- $l_2 \sim \rho_{85}$
- $l_2 \sim \rho_{93}$
- $l_2 \sim \rho_{101}$
- $l_2 \sim \rho_{106}$

subs: [][][][][]

Step R: ($p2$ (($p2$ (($p2$ (($p2$ ($p2$))))))))
type: α_{75}
beha: $\tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \beta_{103}; \beta_{100}; \beta_{95}; \beta_{92}; \beta_{87}; \beta_{84}; \beta_{79}; \beta_{76}$
cons:

- $\rho_{77} \subseteq \alpha_{80} \xrightarrow{\beta_{76}} \alpha_{75}$
- $\rho_{85} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \rho_{82}$
- $\rho_{93} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}$
- $\rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $\rho_{82}?\alpha_{80} \subseteq \beta_{79}$
- $\rho_{90}?\alpha_{88} \subseteq \beta_{87}$
- $\rho_{98}?\alpha_{96} \subseteq \beta_{95}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $l_2 \sim \rho_{77}$
- $l_2 \sim \rho_{85}$
- $l_2 \sim \rho_{93}$
- $l_2 \sim \rho_{101}$
- $l_2 \sim \rho_{106}$

Step W': (($p2$ (($p2$ (($p2$ (($p2$ ($p2$)))))))))
type: α_{70}
beha: $\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\beta_{103};\beta_{100};\beta_{95};\beta_{92};\beta_{87};\beta_{84};\beta_{79};\beta_{76};\beta_{71}$
cons:

- $\rho_{74} \xrightarrow{\beta_{73}} \alpha_{72} \subseteq \alpha_{75} \xrightarrow{\beta_{71}} \alpha_{70}$
- $\rho_{77} \subseteq \alpha_{80} \xrightarrow{\beta_{76}} \alpha_{75}$
- $\rho_{85} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \rho_{82}$
- $\rho_{93} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}$
- $\rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$

- $\rho_{74}?\alpha_{72} \subseteq \beta_{73}$
- $\rho_{82}?\alpha_{80} \subseteq \beta_{79}$
- $\rho_{90}?\alpha_{88} \subseteq \beta_{87}$
- $\rho_{98}?\alpha_{96} \subseteq \beta_{95}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $l_2 \sim \rho_{77}$
- $l_2 \sim \rho_{85}$
- $l_2 \sim \rho_{93}$
- $l_2 \sim \rho_{101}$
- $l_2 \sim \rho_{106}$

subs: $[\alpha_{78} \mapsto \alpha_{114}, \alpha_{83} \mapsto \rho_{113}, \alpha_{86} \mapsto \alpha_{112}, \alpha_{91} \mapsto \rho_{111}, \alpha_{94} \mapsto \alpha_{110}, \alpha_{99} \mapsto \rho_{109}, \alpha_{102} \mapsto \alpha_{108}][][][][]$

Step F: (($p2$ (($p2$ (($p2$ (($p2$ ($p2$)))))))))
cons:

- $\alpha_{72} \subseteq \alpha_{116}$
- $\rho_{77} \subseteq \alpha_{80} \xrightarrow{\beta_{76}} \rho_{115}$
- $\rho_{85} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \rho_{82}$
- $\rho_{93} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}$
- $\rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $\beta_{73} \subseteq \beta_{71}$
- $\rho_{74}?\alpha_{72} \subseteq \beta_{73}$
- $\rho_{82}?\alpha_{80} \subseteq \beta_{79}$
- $\rho_{90}?\alpha_{88} \subseteq \beta_{87}$

- $\rho_{98}?\alpha_{96} \subseteq \beta_{95}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $\rho_{74} \sim \rho_{115}$
- $l_2 \sim \rho_{77}$
- $l_2 \sim \rho_{85}$
- $l_2 \sim \rho_{93}$
- $l_2 \sim \rho_{101}$
- $l_2 \sim \rho_{106}$

subs: $[\alpha_{70} \mapsto \alpha_{116}, \alpha_{75} \mapsto \rho_{115}][][][][]$

Step R: (($p2$ (($p2$ (($p2$ (($p2$ ($p2$)))))))))
type: α_{72}
beha: $\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\beta_{103};\beta_{100};\beta_{95};\beta_{92};\beta_{87};\beta_{84};\beta_{79};\beta_{76};\beta_{71}$
cons:

- $\rho_{77} \subseteq \alpha_{80} \xrightarrow{\beta_{76}} \rho_{74}$
- $\rho_{85} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \rho_{82}$
- $\rho_{93} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}$
- $\rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $\rho_{74}?\alpha_{72} \subseteq \beta_{71}$
- $\rho_{82}?\alpha_{80} \subseteq \beta_{79}$
- $\rho_{90}?\alpha_{88} \subseteq \beta_{87}$
- $\rho_{98}?\alpha_{96} \subseteq \beta_{95}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $l_2 \sim \rho_{77}$

- $l_2 \sim \rho_{85}$
- $l_2 \sim \rho_{93}$
- $l_2 \sim \rho_{101}$
- $l_2 \sim \rho_{106}$

Step W': $p2(l_2 tsl\ ())(\ (p2\ (\ (p2\ (\ (p2\ (\ (p2\ (\ p2)))))))))$
type: α_{72}
beha: $\tau; \tau; \beta_{65}; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \beta_{103}; \beta_{100}; \beta_{95}; \beta_{92}; \beta_{87}; \beta_{84}; \beta_{79}; \beta_{76}; \beta_{71}$
cons:

- $\rho_{77} \subseteq \alpha_{80} \xrightarrow{\beta_{76}} \rho_{74}$
- $\rho_{85} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \rho_{82}$
- $\rho_{93} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}$
- $\rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $\overline{tsl^{l_2}} \sim \psi_{67}$
- $l_2 \psi_{67} \subseteq \beta_{65}$
- $\rho_{74}?\alpha_{72} \subseteq \beta_{71}$
- $\rho_{82}?\alpha_{80} \subseteq \beta_{79}$
- $\rho_{90}?\alpha_{88} \subseteq \beta_{87}$
- $\rho_{98}?\alpha_{96} \subseteq \beta_{95}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $l_2 \sim \rho_{77}$
- $l_2 \sim \rho_{85}$
- $l_2 \sim \rho_{93}$
- $l_2 \sim \rho_{101}$

- $l_2 \sim \rho_{106}$

subs: $[\alpha_{64} \mapsto \rho_{69}, \alpha_{70} \mapsto \alpha_{116}, \alpha_{75} \mapsto \rho_{115}, \alpha_{78} \mapsto \alpha_{114}, \alpha_{83} \mapsto \rho_{113}, \alpha_{86} \mapsto \alpha_{112}, \alpha_{91} \mapsto \rho_{111}, \alpha_{94} \mapsto \alpha_{110}, \alpha_{99} \mapsto \rho_{109}, \alpha_{102} \mapsto \alpha_{108}][][][][]$

Step F: $p2(l_2 tsl\ ())(\ (p2\ (\ (p2\ (\ (p2\ (\ (p2\ (\ p2))))))))$
cons:

- $\rho_{77} \subseteq \alpha_{80} \xrightarrow{\beta_{76}} \rho_{74}$
- $\rho_{85} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \rho_{82}$
- $\rho_{93} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}$
- $\rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $\overline{tsl^{l_2}} \sim \psi_{67}$
- $l_2 \psi_{67} \subseteq \beta_{65}$
- $\rho_{74}?\alpha_{72} \subseteq \beta_{71}$
- $\rho_{82}?\alpha_{80} \subseteq \beta_{79}$
- $\rho_{90}?\alpha_{88} \subseteq \beta_{87}$
- $\rho_{98}?\alpha_{96} \subseteq \beta_{95}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $l_2 \sim \rho_{77}$
- $l_2 \sim \rho_{85}$
- $l_2 \sim \rho_{93}$
- $l_2 \sim \rho_{101}$
- $l_2 \sim \rho_{106}$

subs: [][][][][]

Step R: $p2(l_2 tsl\ ())(\ (p2\ (\ (p2\ (\ (p2\ (\ (p2\ (\ p2)))))))))$
type: α_{72}
beha: $\tau; \tau; \beta_{65}; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \beta_{103}; \beta_{100}; \beta_{95}; \beta_{92}; \beta_{87}; \beta_{84}; \beta_{79}; \beta_{76}; \beta_{71}$
cons:

- $\rho_{77} \subseteq \alpha_{80} \xrightarrow{\beta_{76}} \rho_{74}$
- $\rho_{85} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \rho_{82}$
- $\rho_{93} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}$
- $\rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $\overline{tsl^{l_2}} \sim \psi_{67}$
- $l_2 \psi_{67} \subseteq \beta_{65}$
- $\rho_{74}?\alpha_{72} \subseteq \beta_{71}$
- $\rho_{82}?\alpha_{80} \subseteq \beta_{79}$
- $\rho_{90}?\alpha_{88} \subseteq \beta_{87}$
- $\rho_{98}?\alpha_{96} \subseteq \beta_{95}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $l_2 \sim \rho_{77}$
- $l_2 \sim \rho_{85}$
- $l_2 \sim \rho_{93}$
- $l_2 \sim \rho_{101}$
- $l_2 \sim \rho_{106}$

Step W': $myVNum2p2(l_2 tsl\ ())(\ (p2\ (\ (p2\ (\ (p2\ (\ (p2\ (\ p2)))))))))$
type: α_{72}
beha: $\tau; \tau; \tau; \beta_{65}; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \tau; \beta_{103}; \beta_{100}; \beta_{95}; \beta_{92}; \beta_{87}; \beta_{84}; \beta_{79}; \beta_{76}; \beta_{71}$
cons:

- $\rho_{77} \subseteq \alpha_{80} \xrightarrow{\beta_{76}} \rho_{74}$
- $\rho_{85} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \rho_{82}$
- $\rho_{93} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}$
- $\rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $\overline{tsl^{l_2}} \sim \psi_{67}$
- $l_2\psi_{67} \subseteq \beta_{65}$
- $\rho_{74}?\alpha_{72} \subseteq \beta_{71}$
- $\rho_{82}?\alpha_{80} \subseteq \beta_{79}$
- $\rho_{90}?\alpha_{88} \subseteq \beta_{87}$
- $\rho_{98}?\alpha_{96} \subseteq \beta_{95}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $l_2 \sim \rho_{77}$
- $l_2 \sim \rho_{85}$
- $l_2 \sim \rho_{93}$
- $l_2 \sim \rho_{101}$
- $l_2 \sim \rho_{106}$

subs: $[\alpha_{64} \mapsto \rho_{69}, \alpha_{70} \mapsto \alpha_{116}, \alpha_{75} \mapsto \rho_{115}, \alpha_{78} \mapsto \alpha_{114}, \alpha_{83} \mapsto \rho_{113}, \alpha_{86} \mapsto \alpha_{112}, \alpha_{91} \mapsto \rho_{111}, \alpha_{94} \mapsto \alpha_{110}, \alpha_{99} \mapsto \rho_{109}, \alpha_{102} \mapsto \alpha_{108}][][][][]$

Step F: $myVNum2p2(l_2tsl\ ())(\ (p2\ (\ (p2\ (\ (p2\ (\ (p2\ (\ p2))))))))$
cons:

- $\rho_{77} \subseteq \alpha_{80} \xrightarrow{\beta_{76}} \rho_{74}$
- $\rho_{85} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \rho_{82}$
- $\rho_{93} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}$

- $\rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $\overline{tsl^{l_2}} \sim \psi_{67}$
- $l_2\psi_{67} \subseteq \beta_{65}$
- $\rho_{74}?\alpha_{72} \subseteq \beta_{71}$
- $\rho_{82}?\alpha_{80} \subseteq \beta_{79}$
- $\rho_{90}?\alpha_{88} \subseteq \beta_{87}$
- $\rho_{98}?\alpha_{96} \subseteq \beta_{95}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $l_2 \sim \rho_{77}$
- $l_2 \sim \rho_{85}$
- $l_2 \sim \rho_{93}$
- $l_2 \sim \rho_{101}$
- $l_2 \sim \rho_{106}$

subs: [][][][][]

Step R: $myVNum2p2(l_2tsl\ ())(\ (p2\ (\ (p2\ (\ (p2\ (\ (p2\ (\ p2))))))))$
type: α_{72}
beha: $\tau;\tau;\tau;\beta_{65};\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\beta_{103};\beta_{100};\beta_{95};\beta_{92};\beta_{87};\beta_{84};\beta_{79};\beta_{76};\beta_{71}$
cons:

- $\rho_{77} \subseteq \alpha_{80} \xrightarrow{\beta_{76}} \rho_{74}$
- $\rho_{85} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \rho_{82}$
- $\rho_{93} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}$
- $\rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $\overline{tsl^{l_2}} \sim \psi_{67}$

- $l_2\psi_{67} \subseteq \beta_{65}$
- $\rho_{74}?\alpha_{72} \subseteq \beta_{71}$
- $\rho_{82}?\alpha_{80} \subseteq \beta_{79}$
- $\rho_{90}?\alpha_{88} \subseteq \beta_{87}$
- $\rho_{98}?\alpha_{96} \subseteq \beta_{95}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $l_2 \sim \rho_{77}$
- $l_2 \sim \rho_{85}$
- $l_2 \sim \rho_{93}$
- $l_2 \sim \rho_{101}$
- $l_2 \sim \rho_{106}$

Step W : $(client)(server)$
typing context: $server : \forall(\rho_{77}, \rho_{85}, \rho_{93}, \rho_{101} : \rho_{77} \subseteq \alpha_{80} \xrightarrow{\beta_{76}} \rho_{74}, \rho_{85} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \rho_{82}, \rho_{93} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}, \rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}, l_2 \sim \rho_{77}, l_2 \sim \rho_{85}, l_2 \sim \rho_{93}, l_2 \sim \rho_{101}).\alpha_{72}, client : \forall(:).$

Step W : $(client)$
typing context: $server : \forall(\rho_{77}, \rho_{85}, \rho_{93}, \rho_{101} : \rho_{77} \subseteq \alpha_{80} \xrightarrow{\beta_{76}} \rho_{74}, \rho_{85} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \rho_{82}, \rho_{93} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}, \rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}, l_2 \sim \rho_{77}, l_2 \sim \rho_{85}, l_2 \sim \rho_{93}, l_2 \sim \rho_{101}).\alpha_{72}, client : \forall(:).$

Step W : $client$
typing context: $server : \forall(\rho_{77}, \rho_{85}, \rho_{93}, \rho_{101} : \rho_{77} \subseteq \alpha_{80} \xrightarrow{\beta_{76}} \rho_{74}, \rho_{85} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \rho_{82}, \rho_{93} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}, \rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}, l_2 \sim \rho_{77}, l_2 \sim \rho_{85}, l_2 \sim \rho_{93}, l_2 \sim \rho_{101}).\alpha_{72}, client : \forall(:).$

Step W': $client$
type:

beha: τ
cons:

-

subs:

Step F: *client*
cons:

-

subs:

Step R: *client*
type:
beha: τ
cons:

-

Step W': (*client*)
type:
beha: $\tau;(\beta_{117})$
cons:

- $\xrightarrow{\beta_{117}}\subseteq$

subs:

Step F: (*client*)
cons:

- $\xrightarrow{\beta_{117}}\subseteq$

subs:

Step R: (*client*)
type:
beha: $\tau;(\beta_{117})$
cons:

- $\xrightarrow{\beta_{117}}\subseteq$

Step W : $(server)$
typing context: : $\forall(:).,server : \forall(\rho_{77}, \rho_{85}, \rho_{93}, \rho_{101} : \rho_{77} \subseteq \alpha_{80} \xrightarrow{\beta_{76}} \rho_{74}, \rho_{85} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \rho_{82}, \rho_{93} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}, \rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}, l_2 \sim \rho_{77}, l_2 \sim \rho_{85}, l_2 \sim \rho_{93}, l_2 \sim \rho_{101}).\alpha_{72}, client : \forall(:).$

Step W : $server$
typing context: : $\forall(:).,server : \forall(\rho_{77}, \rho_{85}, \rho_{93}, \rho_{101} : \rho_{77} \subseteq \alpha_{80} \xrightarrow{\beta_{76}} \rho_{74}, \rho_{85} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \rho_{82}, \rho_{93} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}, \rho_{101} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}, l_2 \sim \rho_{77}, l_2 \sim \rho_{85}, l_2 \sim \rho_{93}, l_2 \sim \rho_{101}).\alpha_{72}, client : \forall(:).$

Step W': $server$
type: α_{72}
beha: τ
cons:

- $\rho_{119} \subseteq \alpha_{80} \xrightarrow{\beta_{76}} \rho_{74}$
- $\rho_{120} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \rho_{82}$
- $\rho_{121} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}$
- $\rho_{122} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $l_2 \sim \rho_{119}$
- $l_2 \sim \rho_{120}$
- $l_2 \sim \rho_{121}$
- $l_2 \sim \rho_{122}$

subs: [][][][][]

Step F: $server$
cons:

- $\rho_{119} \subseteq \alpha_{80} \xrightarrow{\beta_{76}} \rho_{74}$

- $\rho_{120} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \rho_{82}$
- $\rho_{121} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}$
- $\rho_{122} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $l_2 \sim \rho_{119}$
- $l_2 \sim \rho_{120}$
- $l_2 \sim \rho_{121}$
- $l_2 \sim \rho_{122}$

subs: [][][][][]

Step R: *server*
type: α_{72}
beha: τ
cons:

- $\rho_{119} \subseteq \alpha_{80} \xrightarrow{\beta_{76}} \rho_{74}$
- $\rho_{120} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \rho_{82}$
- $\rho_{121} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}$
- $\rho_{122} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $l_2 \sim \rho_{119}$
- $l_2 \sim \rho_{120}$
- $l_2 \sim \rho_{121}$
- $l_2 \sim \rho_{122}$

Step W': $(server)$
type:
beha: $\tau;(\beta_{118})$
cons:

- $\xrightarrow{\beta_{118}} \subseteq \alpha_{72}$
- $\rho_{119} \subseteq \alpha_{80} \xrightarrow{\beta_{76}} \rho_{74}$
- $\rho_{120} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \rho_{82}$
- $\rho_{121} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}$
- $\rho_{122} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $l_2 \sim \rho_{119}$
- $l_2 \sim \rho_{120}$
- $l_2 \sim \rho_{121}$
- $l_2 \sim \rho_{122}$

subs: [][][][][]

Step F: (*server*)
cons:

- $\rho_{119} \subseteq \alpha_{80} \xrightarrow{\beta_{76}} \rho_{74}$
- $\rho_{120} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \rho_{82}$
- $\rho_{121} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}$
- $\rho_{122} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $\beta_{118} \subseteq \beta_{123}$
- $l_2 \sim \rho_{119}$
- $l_2 \sim \rho_{120}$
- $l_2 \sim \rho_{121}$
- $l_2 \sim \rho_{122}$

subs: $[\alpha_{72} \mapsto \xrightarrow{\beta_{123}}][][][][]$

Step R: $(server)$
type:
beha: $\tau;(\beta_{118})$
cons:

- $\rho_{119} \subseteq \alpha_{80} \xrightarrow{\beta_{76}} \rho_{74}$
- $\rho_{120} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \rho_{82}$
- $\rho_{121} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}$
- $\rho_{122} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $\beta_{118} \subseteq \beta_{123}$
- $l_2 \sim \rho_{119}$
- $l_2 \sim \rho_{120}$
- $l_2 \sim \rho_{121}$
- $l_2 \sim \rho_{122}$

Step W': $(client)(server)$
type:
beha: $\tau;(\beta_{117});\tau;(\beta_{118})$
cons:

- $\xrightarrow{\beta_{117}}\subseteq$
- $\rho_{119} \subseteq \alpha_{80} \xrightarrow{\beta_{76}} \rho_{74}$
- $\rho_{120} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \rho_{82}$
- $\rho_{121} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}$
- $\rho_{122} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $\beta_{118} \subseteq \beta_{123}$

- $l_2 \sim \rho_{119}$
- $l_2 \sim \rho_{120}$
- $l_2 \sim \rho_{121}$
- $l_2 \sim \rho_{122}$

subs: $[\alpha_{72} \mapsto \xrightarrow{\beta_{123}}]$[][][][]

Step F: $(client)(server)$
cons:

- $\xrightarrow{\beta_{117}} \subseteq$
- $\rho_{119} \subseteq \alpha_{80} \xrightarrow{\beta_{76}} \rho_{74}$
- $\rho_{120} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \rho_{82}$
- $\rho_{121} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}$
- $\rho_{122} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $\beta_{118} \subseteq \beta_{123}$
- $l_2 \sim \rho_{119}$
- $l_2 \sim \rho_{120}$
- $l_2 \sim \rho_{121}$
- $l_2 \sim \rho_{122}$

subs: [][][][][]

Step R: $(client)(server)$
type:
beha: $\tau;(\beta_{117});\tau;(\beta_{118})$
cons:

- $\xrightarrow{\beta_{117}} \subseteq$
- $\rho_{119} \subseteq \alpha_{80} \xrightarrow{\beta_{76}} \rho_{74}$

- $\rho_{120} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \rho_{82}$
- $\rho_{121} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}$
- $\rho_{122} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $\beta_{118} \subseteq \beta_{123}$
- $l_2 \sim \rho_{119}$
- $l_2 \sim \rho_{120}$
- $l_2 \sim \rho_{121}$
- $l_2 \sim \rho_{122}$

Step W': $servermyVNum2p2(l_2 tsl\ ())(\ (p2\ (\ (p2\ (\ (p2\ (\ (p2\ (\ p2))))))))))(client)(server)$
type:
beha: $\tau;\tau;\tau;\beta_{65};\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\beta_{103};\beta_{100};\beta_{95};\beta_{92};\beta_{87};\beta_{84};\beta_{79};\beta_{76};\beta_{71};\tau;(\beta_{117});\tau;(\beta_{118})$
cons:

- $\xrightarrow{\beta_{117}}\subseteq$
- $\rho_{119} \subseteq \alpha_{80} \xrightarrow{\beta_{76}} \rho_{74}$
- $\rho_{120} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \rho_{82}$
- $\rho_{121} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}$
- $\rho_{122} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $\overline{tsl^{l_2}} \sim \psi_{67}$
- $\beta_{118} \subseteq \beta_{123}$
- $l_2\psi_{67} \subseteq \beta_{65}$
- $\rho_{74}? \xrightarrow{\beta_{123}}\subseteq \beta_{71}$
- $\rho_{82}?\alpha_{80} \subseteq \beta_{79}$

- $\rho_{90}?\alpha_{88} \subseteq \beta_{87}$
- $\rho_{98}?\alpha_{96} \subseteq \beta_{95}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $l_2 \sim \rho_{106}$
- $l_2 \sim \rho_{119}$
- $l_2 \sim \rho_{120}$
- $l_2 \sim \rho_{121}$
- $l_2 \sim \rho_{122}$

subs: $[\alpha_{64} \mapsto \rho_{69}, \alpha_{70} \mapsto \alpha_{116}, \alpha_{72} \mapsto \xrightarrow{\beta_{123}}, \alpha_{75} \mapsto \rho_{115}, \alpha_{78} \mapsto \alpha_{114}, \alpha_{83} \mapsto \rho_{113}, \alpha_{86} \mapsto \alpha_{112}, \alpha_{91} \mapsto \rho_{111}, \alpha_{94} \mapsto \alpha_{110}, \alpha_{99} \mapsto \rho_{109}, \alpha_{102} \mapsto \alpha_{108}][][][][]$

Step F: $servermyVNum2p2(l_2tsl\ ())(\ (p2\ (\ (p2\ (\ (p2\ (\ (p2\ (\ p2))))))))))(client)(server)$
cons:

- $\xrightarrow{\beta_{117}} \subseteq$
- $\rho_{119} \subseteq \alpha_{80} \xrightarrow{\beta_{76}} \rho_{74}$
- $\rho_{120} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \rho_{82}$
- $\rho_{121} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}$
- $\rho_{122} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $\overline{tsl^{l_2}} \sim \psi_{67}$
- $\beta_{118} \subseteq \beta_{123}$
- $l_2\psi_{67} \subseteq \beta_{65}$
- $\rho_{74}? \xrightarrow{\beta_{123}} \subseteq \beta_{71}$
- $\rho_{82}?\alpha_{80} \subseteq \beta_{79}$
- $\rho_{90}?\alpha_{88} \subseteq \beta_{87}$

- $\rho_{98}?\alpha_{96} \subseteq \beta_{95}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $l_2 \sim \rho_{106}$
- $l_2 \sim \rho_{119}$
- $l_2 \sim \rho_{120}$
- $l_2 \sim \rho_{121}$
- $l_2 \sim \rho_{122}$

subs: [][][][][]

Step R: $servermyVNum2p2(l_2 tsl\ ())(\ (p2\ (\ (p2\ (\ (p2\ (\ (p2\ (\ p2))))))))))(client)(server)$
type:
beha: $\tau;\tau;\tau;\beta_{65};\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\beta_{103};\beta_{100};\beta_{95};\beta_{92};\beta_{87};\beta_{84};\beta_{79};\beta_{76};\beta_{71};\tau;(\beta_{117});\tau;(\beta_{118})$
cons:

- $\xrightarrow{\beta_{117}}\subseteq$
- $\rho_{119} \subseteq \alpha_{80} \xrightarrow{\beta_{76}} \rho_{74}$
- $\rho_{120} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \rho_{82}$
- $\rho_{121} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}$
- $\rho_{122} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $\overline{tsl^{l_2}} \sim \psi_{67}$
- $l_2\psi_{67} \subseteq \beta_{65}$
- $\rho_{74}? \xrightarrow{\beta_{118}}\subseteq \beta_{71}$
- $\rho_{82}?\alpha_{80} \subseteq \beta_{79}$
- $\rho_{90}?\alpha_{88} \subseteq \beta_{87}$
- $\rho_{98}?\alpha_{96} \subseteq \beta_{95}$

- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $l_2 \sim \rho_{106}$
- $l_2 \sim \rho_{119}$
- $l_2 \sim \rho_{120}$
- $l_2 \sim \rho_{121}$
- $l_2 \sim \rho_{122}$

Step W': $clientp1(l_1 tsl\ ())(\ (p1,1)(\ (p1,200)(\ (p1,1)(\ (p1,1)(\ (p1,2))))))servermyVNum2p2(l_2 tsl$
type:
beha: $\tau;\tau;\beta_4;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\beta_{54};\beta_{43};\beta_{32};\beta_{21};\beta_{10};\tau;\tau;\tau;\beta_{65};\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;$
cons:

- $\subseteq (\rho_{12} \times \alpha_{13})$
- $\subseteq (\rho_{23} \times \alpha_{24})$
- $\subseteq (\rho_{34} \times \alpha_{35})$
- $\subseteq (\rho_{45} \times \alpha_{46})$
- $\xrightarrow{\beta_{117}} \subseteq$
- $\rho_{119} \subseteq \alpha_{80} \xrightarrow{\beta_{76}} \rho_{74}$
- $\rho_{120} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \rho_{82}$
- $\rho_{121} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}$
- $\rho_{122} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $tsl^{l_1} \sim \psi_5$
- $\overline{tsl^{l_2}} \sim \psi_{67}$
- $l_1\psi_5 \subseteq \beta_4$
- $l_2\psi_{67} \subseteq \beta_{65}$

- $\rho_{12}!\alpha_{13} \subseteq \beta_{10}$
- $\rho_{23}!\alpha_{24} \subseteq \beta_{21}$
- $\rho_{34}!\alpha_{35} \subseteq \beta_{32}$
- $\rho_{45}!\alpha_{46} \subseteq \beta_{43}$
- $\rho_{56}! \subseteq \beta_{54}$
- $\rho_{74}? \xrightarrow{\beta_{118}} \subseteq \beta_{71}$
- $\rho_{82}?\alpha_{80} \subseteq \beta_{79}$
- $\rho_{90}?\alpha_{88} \subseteq \beta_{87}$
- $\rho_{98}?\alpha_{96} \subseteq \beta_{95}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $l_1 \sim \rho_{56}$
- $l_2 \sim \rho_{106}$
- $l_2 \sim \rho_{119}$
- $l_2 \sim \rho_{120}$
- $l_2 \sim \rho_{121}$
- $l_2 \sim \rho_{122}$

subs: $[\alpha_3 \mapsto \rho_8, \alpha_9 \mapsto, \alpha_{14} \mapsto \rho_{18}, \alpha_{15} \mapsto, \alpha_{16} \mapsto (\rho_{19}\times), \alpha_{20} \mapsto, \alpha_{25} \mapsto \rho_{29}, \alpha_{26} \mapsto, \alpha_{27} \mapsto (\rho_{30}\times), \alpha_{31} \mapsto, \alpha_{36} \mapsto \rho_{40}, \alpha_{37} \mapsto, \alpha_{38} \mapsto (\rho_{41}\times), \alpha_{42} \mapsto , \alpha_{47} \mapsto \rho_{51}, \alpha_{48} \mapsto, \alpha_{49} \mapsto (\rho_{52}\times), \alpha_{53} \mapsto, \alpha_{57} \mapsto, \alpha_{58} \mapsto \rho_{62}, \alpha_{59} \mapsto, \alpha_{60} \mapsto (\rho_{63}\times), \alpha_{64} \mapsto \rho_{69}, \alpha_{70} \mapsto \alpha_{116}, \alpha_{72} \mapsto \xrightarrow{\beta_{123}}, \alpha_{75} \mapsto \rho_{115}, \alpha_{78} \mapsto \alpha_{114}, \alpha_{83} \mapsto \rho_{113}, \alpha_{86} \mapsto \alpha_{112}, \alpha_{91} \mapsto \rho_{111}, \alpha_{94} \mapsto \alpha_{110}, \alpha_{99} \mapsto \rho_{109}, \alpha_{102} \mapsto \alpha_{108}][][][][]$

Step F: $clientp1(l_1 tsl\ ())(\ (p1,1)(\ (p1,200)(\ (p1,1)(\ (p1,1)(\ (p1,2))))))servermyVNum2p2(l_2 tsl\ ($
cons:

- $\subseteq (\rho_{12} \times \alpha_{13})$

- $\subseteq (\rho_{23} \times \alpha_{24})$
- $\subseteq (\rho_{34} \times \alpha_{35})$
- $\subseteq (\rho_{45} \times \alpha_{46})$
- $\xrightarrow{\beta_{117}} \subseteq$
- $\rho_{119} \subseteq \alpha_{80} \xrightarrow{\beta_{76}} \rho_{74}$
- $\rho_{120} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \rho_{82}$
- $\rho_{121} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}$
- $\rho_{122} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $tsl^{l_1} \sim \psi_5$
- $\overline{tsl^{l_2}} \sim \psi_{67}$
- $l_1 \psi_5 \subseteq \beta_4$
- $l_2 \psi_{67} \subseteq \beta_{65}$
- $\rho_{12}!\alpha_{13} \subseteq \beta_{10}$
- $\rho_{23}!\alpha_{24} \subseteq \beta_{21}$
- $\rho_{34}!\alpha_{35} \subseteq \beta_{32}$
- $\rho_{45}!\alpha_{46} \subseteq \beta_{43}$
- $\rho_{56}! \subseteq \beta_{54}$
- $\rho_{74}? \xrightarrow{\beta_{118}} \subseteq \beta_{71}$
- $\rho_{82}?\alpha_{80} \subseteq \beta_{79}$
- $\rho_{90}?\alpha_{88} \subseteq \beta_{87}$
- $\rho_{98}?\alpha_{96} \subseteq \beta_{95}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$

- $l_1 \sim \rho_{56}$
- $l_2 \sim \rho_{106}$
- $l_2 \sim \rho_{119}$
- $l_2 \sim \rho_{120}$
- $l_2 \sim \rho_{121}$
- $l_2 \sim \rho_{122}$

subs: [][][][][]

Step R: $clientp1(l_1 tsl\ ())(\ (p1,1)(\ (p1,200)(\ (p1,1)(\ (p1,1)(\ (p1,2))))))servermyVNum2p2(l_2 tsl\ ($
type:
beha: $\tau;\tau;\beta_4;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\beta_{54};\beta_{43};\beta_{32};\beta_{21};\beta_{10};\tau;\tau;\tau;\beta_{65};\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;\tau;$
cons:

- $\subseteq (\rho_{12} \times \alpha_{13})$
- $\subseteq (\rho_{23} \times \alpha_{24})$
- $\subseteq (\rho_{34} \times \alpha_{35})$
- $\subseteq (\rho_{45} \times \alpha_{46})$
- $\xrightarrow{\beta_{117}} \subseteq$
- $\rho_{119} \subseteq \alpha_{80} \xrightarrow{\beta_{76}} \rho_{74}$
- $\rho_{120} \subseteq \alpha_{88} \xrightarrow{\beta_{84}} \rho_{82}$
- $\rho_{121} \subseteq \alpha_{96} \xrightarrow{\beta_{92}} \rho_{90}$
- $\rho_{122} \subseteq \alpha_{104} \xrightarrow{\beta_{100}} \rho_{98}$
- $tsl^{l_1} \sim \psi_5$
- $\overline{tsl^{l_2}} \sim \psi_{67}$
- $l_1 \psi_5 \subseteq \beta_4$

- $l_2\psi_{67} \subseteq \beta_{65}$
- $\rho_{12}!\alpha_{13} \subseteq \beta_{10}$
- $\rho_{23}!\alpha_{24} \subseteq \beta_{21}$
- $\rho_{34}!\alpha_{35} \subseteq \beta_{32}$
- $\rho_{45}!\alpha_{46} \subseteq \beta_{43}$
- $\rho_{56}! \subseteq \beta_{54}$
- $\rho_{74}? \xrightarrow{\beta_{118}} \subseteq \beta_{71}$
- $\rho_{82}?\alpha_{80} \subseteq \beta_{79}$
- $\rho_{90}?\alpha_{88} \subseteq \beta_{87}$
- $\rho_{98}?\alpha_{96} \subseteq \beta_{95}$
- $\rho_{106}?\alpha_{104} \subseteq \beta_{103}$
- $l_1 \sim \rho_{56}$
- $l_2 \sim \rho_{106}$
- $l_2 \sim \rho_{119}$
- $l_2 \sim \rho_{120}$
- $l_2 \sim \rho_{121}$
- $l_2 \sim \rho_{122}$

SessionTypeInference: unbound beta variable β_{100}