0\F04D6-K*1k IPv6 <+F0@_Dj5!G=$N8z2LE*$J;HMQK!

?@ L@ C# :H[†] 0KF# =c0lO[††] 3Q @n =! 6a[†††]

IPv6 GO!$6aNYC5:w (Neighbor Discovery) 5!G=$rMxMQ$7$F%[%9%H$N%M%C%H%o!<%/@_Dj$r<+F02=$7$F $$$k$,!$$3$N5!G=$K$O0\F04D6-$H$NAj@-$N4QE@$+$iLdBj$,$"$k!%6qBNE*$K$O!$0\F0A0$K@_Dj$5l?%M%C%H %o!<%/%W%l%U%#%/%9$NM-8z4|8B$,D9$$$?aK!$0\F08e$K$b0JA0$N%M%C%H%o!<%/$K@\B3$7$F$$$k$+$Nh&$K U$k$^$CF7$^$&$H$$$&3H$,$"2ilk!%K\9FGO!$%W%l%U%#%/%9$rDLCN7?%k!<%?XNE~C#@-$r3NG' 9k3H$G!$0\F0A0$N%W%l%U%#%/%9$N8m;HMQrKI0$H$$$&3HD%$rDs0F$9$k!%$^$?!$$3$N3HD%$N<B:]$N%7%9 %F%`$X$N<BAu$H$=$N8z2LKD$$$F$b<($9!%

An effective method of using IPv6 auto configuration under mobile environments

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An IPv6-capable host can configure itself using Neighbor Discovery protocol, but it is not designed with mobility so well. For example, since the default lifetime of network prefix defined by IPv6 specification is relatively long for mobile hosts, a mobile host sometimes behaves as if it is connected with an old network after moving from the network. This paper describes an extension, in which a host associates a network prefix with routers that advertise the prefix so that it can detect its movement from a network and do not use the prefix of the old network. Implementation and effectiveness of the extension is also shown.

1. $O $8 $a $K

IPv6 !JIP version6!K[1] $O!$8=:_%$%s%?!<%M%C%H$N I8=`$H$7$F;HMQ$5$l$F$$$k IPv4 $N8e7Q$H$7$F IETF !JInternet Engineering Task Force!K$GI8=`2=$,?J$a il$F$$$k<!@$Be%M%C%H%o!<%/%W%m%H%3%k$G$"$k!%

IPv6 $NFCD'$NRHDK!$6aNYC5:w!JNeighbor Discovery!K%W%m%H%3%k[2]Kh$k%[%9%H$N<+F0@_Dj5!G=$,$"$k!%$?H($P!$%[%9%H$N IPv6 %"%I%l%9$O!$%k!<%?$+$iDj4|E*$KDLCN5l$k%M%C%H%o!<%/%W%l%U%#%/%9$H%[%9%H<+?H$N8GM->pJsH+$i<+F0E*$K@8@.5l$k!%

%k!<%?$+$iDLCN5l$k%M%C%H%o!<%/%W%l%U%#%/%9KO$=$N>pJs$N0lIt$H7FM-8z4|8B!Jlifetime!K$,@_Dj$5lF$$$k!%3NM-8z4|8B$,@Z$l$?%W%l%U%#%/%9$O$=$NE|@s%/GOL58zH_J5$l!$$^$?$=$N%W%l%U%#%/%9$rMQ$$$F@8@.7?%"%I%l%9$O;HMQIT2DG=$HJk!%3N5!G=$rMQ$$$F!$$?H($P%M%C%H%o!<%/$N%j%J%s%P%j%s%0$r%f!<%6$K0U<1$5$;$:$K<B;\$G$-$k!%3NM-8z4|8B$O8GDjE*$J4D6-$rA[Dj$7$F$$$k$?$a!$DL>oHf3SE*D9$$CM$K@_Dj$5lk!%0\F04D6-K*$$$F<+F0@_Dj5!G=$rMxMQ$9$k:]$K$O!$$3$NM-8z4|8B$ND9$5$K5/0x9kLdBj$,@8$8k3H,$"$k!%$?$H$($P!$0\F0A0$K@_Dj7?%"%I%l%9$O0\F0@h$G$O0lHL$KL58zG"k,!$;EMM$K=>$($P3N%"%I%l%9$O4|8B$,@Zlk$^$G$OM-8z$H$_$J5l$k!%$3N?$a!$0\F0A0$N%"%I%l%9$,0\F0@hK*1kDL?.$N%=!<%9%"%I%l%9$H7F8mCF;HMQ5l$k2DG=@-$,$"$k!%

K\9FGO!$%W%l%U%#%/%9$H$=$l$rDLCN$7$?%k!<%?$H$r4XO"IU$1!$%k!<%?$NE~C#2DG=@-$+$i8E$$%W%l%U%#%/%9r9P7$FGS=|$9kH$$$&J}K!$rDs0F$9$k!%$^$:2@a$G<+F0@_Dj5!G=$N35MW$r=R$Y!$B3$/3@a$G0\F04D6-K*1kLdBj$r6qBNE*$K@bL@9k!%4@aGODs0F9k2r7hK!$r>\$7$/@bL@$7!$5@a$G$=$N<BAu$H<B:]$N0\F04D6-GN8z2L$r<($9!%:G8e$K!$;D$k2]Bj$r6@a$G354Q$9$k!%

J*!$K\9F$G=RYk8&5f$O!$ IPv6 $N4pK\E*$J5!G=$N<BAu$H$=$N8!>Z$rL\E*$H9k KAME %W%m%8%'%/%H[†] 0l4DH7$F9T$C$?$bNG$"$k!%5@a$G<($9<BAu$O KAME

† El<G 8&5f3+H/%;%s%?!<
Research and Development Center, Toshiba Corporation
†† %$%s%?!<%M%C%H%$%K%7%"%F%#%V 5;=Q8&5f=j
Research Laboratory, Internet Initiative Japan Inc.
††† F|N)@=:n=j %5!<%P3+H/K\It
Server & Network Development Division, Hitachi, Ltd.

†y http://www.kame.net/

%W%m%8%'%/%H$N@.2LJ*$H7F8x3+5l$F$$$k!%

2. IPv6 $N<+F0@_Dj5!G=

K\@aGO!$ IPv6 $N6aNYC5:w5!G=$Khk%[%9%H$N<+F0@_Dj5!G=$K$D$$$F@bL@9k!%J*!$K\@a0J9_!$%k!<%?$H%[%9%H$r6hJL9kI,MWNJ$$>lLLK*$$$F!$%M%C%H%o!<%/5!4o0lHL$r;X7F%N!<%I Hh$V!%

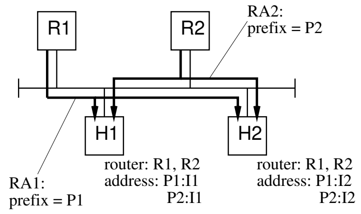
IPv6 BP1~%k!<%?$O!$@\B3$9$k%$%s%?%U%'!<%9>e$NA4%N!<%I%^%k%A%-%c%9%H%"%I%l%9!JAll-Nodes Multicast Address!K[4] 08$K%k!<%?DLCN!Jrouter advertisement!K%a%C%;!<%8$r0lDj4V3V$GAw?.9k!%DL>o!$%k!<%?DLCN%a%C%;!<%8$K$O%W%l%U%#%/%9>pJs%*%W%7%g%s!Jprefix information option!K$,4^$^lk!%3N%*%W%7%g%sKO$=$N%j%s%/>e$GM-8z$J IPv6 %"%I%l%9$N%W%l%U%#%/%9$,3JG<5lF*$j!$%[%9%HO3lrMQ$$$F<+?H$N@_Dj$r9T$&!%

6qBNE*KO!$%W%l%U%#%/%9>pJs%*%W%7%g%s$GM?$(il$?%W%l%U%#%/%9$K!$%[%9%H<+?H$,;}$D<1JL;R$rIU$12C$($F IPv6 %"%I%l%9$r@8@.9k!%3N<1JL;R$O!$DL>o$$$%5%M%C%H$N MAC %"%I%l%9$Nh&$J0l0U@-$N9b$$$bNrbH$K@8@.$9$k!%$5iK%[%9%H$O!$M?$($il?%W%l%U%#%/%9$r;}$D%"%I%l%9$O<+?H$HF1$8%j%s%/$K@\B3$5$l$F$$$kbNH_J7!$$=$N%"%I%l%9$X$NDL?.$N:]KO%k!<%?rr2p5:$K%j%s%/AX%"%I%l%9$N2r7h$rD>@\;n$_$k!%

%[%9%HO^$?!$%k!<%?DLCN%a%C%;!<%8$N%=!<%9%"%I%l%9$r%G%U%)%k%H%k!<%H$N%M%/%9%H%[%C%W$H7FMxMQ9k!%%j%s%/30$N%"%I%l%9!$$9Jo$A!$%W%l%U%#%/%9>pJs%*%W%7%g%s$GM?$(il$?%W%l%U%#%/%9$KE,9g7J$$%"%I%l%9XN%Q%1%C%H$O!$$^$:$3$N%k!<%?$XAwil$k!%

F1$8%j%s%/>e$KJ#?t$N%k!<%?$,B8:_9k>l9g!$$=l>lN%k!<%?$,8DJL$K%k!<%?DLCN%a%C%;!<%8$rAw?.$7Fh$$!%3NH-!$%[%9%H$O$=$liNJ#?t$N%a%C%;!<%8$9YF$r@_DjMQ$N>pJsH7$FMxMQ$9$k!%$H$/$K!$3F%a%C%;!<%8$N%=!<%9%"%I%l%9$r%j%9%H$K7F4IM}$7!$3F%M%/%9%H%[%C%WH7$FMxMQ2DG=$J%k!<%?H_J9!%3N%k!<%?$r%G%U%)%k%H%k!<%?$HhS!$$3$N%j%9%H$r%G%U%)%k%H%k!<%?%j%9%H!Jdefault routerlist!KHh$V!%

0J>e$N2aDx$rLO<0E*$K<($7$?$bN,?^ 1G"$k!% ?^ 1$K$*$$$F!$ R1 $*$h$S R2 $O%k!<%?!$ H1 $*$h$S H2 $O%[%9%H$G$"$k!% R1, R2 $,Aw?.$9$k%k!<%?DLCN%a%C%;!<%8$r$=$l$>$l RA1, RA2 $GI=$9!%$=$l$>$l$N%a%C%;!<%8$K$O%W%l%U%#%/%9>pJs%*%W%7%g%s$, 1 D:$D4^^lF*$j!$$=$N%W%l%U%#%/%9$O$=$l$>$l P1, P2 G"$k!% R1!$ R2 $,Aw?.$7$?%k!<%?DLCN%a%C%;!<%8$O%j%s%/>e$K%^%k%A%-%c%9%H$5lk!%A4%N!<%I%^%k%A%-%c%9%H%"%I%l%9KO9YFN IPv6 %N!<%I$,;22C$7$F$$$k



?^ 1 %k!<%?DLCN%a%C%;!<%8Kh$k IPv6 $N%[%9%H<+F0@_Dj
Fig. 1 IPv6 host autoconfiguration using a router advertisement message

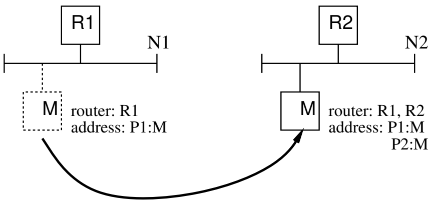
$?$,CF!$ H1!$ H2 OHbK RA1!$ RA2 $r<u?.$7!$3F!9$N%G%U%)%k%H%k!<%?%j%9%H$K R1!$ R2 $,IU$12C$($ilk!%$^$?!$ H1 $O8GM-$N<1JL;RH7$F I1 $r;}$A!$%W%l%U%#%/%9>pJs%*%W%7%g%sKhCFM?$($il?%W%l%U%#%/%9 P1, P2 $K I1 rIU12C$($F%0%m!<%P%k%"%I%l%9 P1:I1 $*$h$S P2:I1 $r@8@.$9$k!% H2 $bF1MM$K P1:I2 $*$h$S P2:I2 $r@8@.$9$k!%

DL>o!$%k!<%?DLCN%a%C%;!<%8$O 10 J,DxEY$N4V3V$r$*$$$FAw?.5l$k!%%V!<%HD>8e!$$"$k$$$O0\F0D>8eJI!$%[%9%H$,?7$?$K%j%s%/$K@\B3$7$?>l9g!$$3$N4V3V$rBT$?$:$K@_Dj$G$-$kh&!$%[%9%H$O%k!<%?MW@A!Jrouter solicitation!K%a%C%;!<%8$rAw?.$7$F%k!<%?DLCN$rB%$9$3H,G-$k!%$3$N%a%C%;!<%8$OA4%k!<%?%^%k%A%-%c%9%H%"%I%l%9!JAll-Routers Multicast Address!K[4] 08$KAw?.$5lk!%MW@A$r<u$1<hC?%k!<%?O?$@$A$K%k!<%?DLCN$rJV$9!%%[%9%H$O$=$N%k!<%?DLCN$r<u?.$7$F>e=R$N@_Dj$r9T$&!%

%k!<%?DLCN%a%C%;!<%8<+?H$H%W%l%U%#%/%9>pJs%*%W%7%g%sKO!$$=l>$l>pJs$NM-8z4|8B$r<($9%U%#!<%k%I$,4^$^lF$$$k!%%[%9%H$O%k!<%?DLCN%a%C%;!<%8$r<u1k$?$S$K%k!<%?$d%W%l%U%#%/%9$NM-8z4|8B$r99?7$9$k!%2?i+$NM}M3$Khj%k!<%?DLCN%a%C%;!<%8$,M-8z4|8B$rD6$($FES@d$($?>l9gKO!$BP1~$9$k%k!<%?$d%W%l%U%#%/%9$OL58z$HJk!%%k!<%?$,L58z$KJC$?>l9g$KO=$NBP1~$9$k%k!<%?$O%G%U%)%k%H%k!<%?%j%9%H$+$i:o=|5l$k!%$^$?!$%W%l%U%#%/%9$,L58z$KJC$?>l9g$K$O!$$=$N%W%l%U%#%/%9$+$i@8@.$7$?%"%I%l%9$bL58zHJ$j!$$=$N%W%l%U%#%/%9$KE,9g9k%"%I%l%9$O%j%s%/30$NbNH_J5lk!%

3. 0\F04D6-K*1kLdBjE@

K\@a$G=R$Y$?<+F0@_Dj$O!$0\F0%[%9%H$N0\F0@hGN%M%C%H%o!<%/@_DjKbMQ$$$k3H$,$G$-$k!%9JoA!$0\F0@h$N%M%C%H%o!<%/$K@\B3$7$?8e!$$^$:%k!<%?MW@A%a%C%;!<%8$rAw?.9k!%$=$N1~EzH7$F0\F0@h$N%k!<%?$+$i%k!<%?DLCN$r<u$1!$$=$NFbMF$KbH$E$$$F?7$7$$%"



?^ **2** 0\F0%[%9%H$N<+F0@_Dj
Fig. 2 Autoconfiguration for a mobile host

%I%l%9$H%G%U%)%k%H%k!<%?$r@_Dj9lPh$$!%

$?$@$7$3$N>l9g!$0\F0A0$N%"%I%l%9$d%G%U%)%k%H%k!<%?r=N^$^;HMQ$7B3$1$k3HNJ$$$h$&$KCm0U7J1lPJiJ$$!%3N3H$r6qBNE*$JNc$G<($9!%

$$$^!$0\F0%[%9%H M $,%M%C%H%o!<%/ N1 $+$iJL$N%M%C%H%o!<%/ N2 $K0\F0$7$?$H9k!J?^ 2;2>H!K!%

0\F0A0KO!$ M KO N1 Fb$N%k!<%? R1 Kh$k%k!<%?DLCNKhCF%"%I%l%9 P1:M $,@_Dj$5$l!$$^$? M $N%G%U%)%k%H%k!<%?%j%9%H$K$O R1 $,4^$^lF$$$k!%0\F0KO N2 Fb$N%k!<%? R2 $+$i$N%k!<%?DLCN$KhC$F%"%I%l%9 P2:M $,DI2C$5$l!$ R2 $, M $N%G%U%)%k%H%k!<%?%j%9%H$KDI2C5l$k!%$3NH$-!$ R1 $*$h$S P1 $,$HbKM-8z4|8BFbG"kH9k$H!$0\F08e$NDL?.$K$*$$$F0J2<Nh$&$JLdBj$,5/$3$jF@$k!%

(1) N2 30$N%N!<%I$X%Q%1%C%H$rAw?.$9$k:]$K!$%G%U%)%k%H%k!<%?$H7F R1 $,;HMQ$5lk2DG=@-$,$"$k!% R1 $O N2 KOB8:_7J$$$N$G!$DL?.$O@.8y$7$J$$!%

(2) N2 30$N%N!<%I$X%Q%1%C%H$rAw?.$9$k:]$K!$%=!<%9%"%I%l%9$H7F P1:M $,;HMQ$5lk2DG=@-$,$"$k!%$3Nh$&$J%Q%1%C%H$OESCf$N%k!<%?$N@_Dj$KhCFO%U%#%k%?%j%s%0$NBP>]$KJk!%$^$?!$2>$KG[Aw5l$?$H7F$b!$$=$N1~Ez%Q%1%C%H$ODL>o P1:M 08KAwilk$?$a!$0\F0@h$G$O<u?.$G$-$J$$!%H/$K!$ ACK %Q%1%C%H$r<u$1<hlJ$$$?$a TCP Kh$kDL?.$,IT2DG=HJ$k!%

(3) %W%l%U%#%/%9 P1 $KE,9g$9$k%"%I%l%9$OF10l%j%s%/FbK"kHH=CG5lk?$a!$$=Nh$&$J%"%I%l%9XN%Q%1%C%H$O%k!<%?$KOAwil:!$ N2 GO%"%I%l%92r7h$NBP>]$HJk!%7k2LH7$FDL?.$O@.8y7J$$!%

0J>e$NLdBj$N$&$A!$ 1KD$$$F$O IPv6 $N6aNYC5:w5!G=$K4^$^$l$kE~C#ITG=8!=P!JNeighbor Unreachability Detection, NUD[2]!K$N;EAH$_KhCF2r7hG-$k!%$D$^$j!$0\F0D>8e$O8E$$%k!<%? R1 $r;HMQ$9$k2DG=@-$,$"$k$,!$$=$N;~E@$G R1 $,E~C#ITG=$G$"$k3H$r8!=P$7!$$=$l0J8e$OE~C#2DG=G"$k R2 $,M%@h$5lkh&KJ$k!%

$a!$LdBj$O2r>C$9$k!%

$^$?!$6aNYC5:w%W%m%H%3%k$N;EMMGDjail$F$$$k%G%U%)%k%H$N%k!<%?M-8z4|8B$O 30 J,G"$j!$?t;~4VC10LGN0\F0$N8e$G$O!$0\F0A0$N%k!<%?$O9G$K4|8B@Z$lHJCF$$$k3H$b4|BT$G$-$k!%

0lJ}!$ 2$*$h$S 3$KBP7F$O!$%W%l%U%#%/%9 P1 KBP9$kM-8z4|8B$,@ZlJ$$8B$j2r7h$G$-$J$$!%M?$($il?%W%l%U%#%/%9$,L58z$KJkNO$=$NM-8z4|8B$,@Z$l$?$H$-$@1@$+$iG"$k!%$7$+$7!$6aNYC5:w%W%m%H%3%k$N;EMMGDjail$F$$$k%G%U%)%k%H$NM-8z4|8B$O 30 F|G"$k!%$$=$N4|8B$rBTDN$O0lHLE*$J0\F04D6-KBP7FO8=<BGO$J$$!%0lJ}!$M-8z4|8B$rI,MW0J>e$KC;$/@_Dj9k$H!$0\F0$7$J$$4D6-K*$$$F0l;~E*$J%k!<%?$NITNIN?aK%"%I%l%9$,:o=|$5lF7^$&$H$$$C$?ITET9g$r@8$`!%$^$?!$0\F0@hK*$$$FM-8z4|8B$r<+M3$K@_DjG-kH$$$&J]>ZbJ$$!%

0\F0D>8e$K%W%l%U%#%/%9$r6/@)E*$KL58z$K9k$H$$$&0\F08e!$b9M$(ilk,!$$3$NJ}K!$K$O0J2<$N 2 DNLdBj$,$"$k:

- "0\F0D>8e" $H$$$&>uBV$NH=JL$,:FqG$"$k!%3Nh&$JH=CG$N4p=`H7FO$?$H$($P!$%5%9%Z%s%I>uBV$+iNI|5"$d%$%s%?%U%'!<%9$N%-%c%j%"8!=P$JI,5s2ilk!%7+$7!$A0<T$O;j6a5wN%$G$N0\F0$G%5%9%Z%s%I$r9T$o$J$$$h$&$J>l9g$K8!=PITG=$HJk!%$^$?!$8e<T$O%$%s%?%U%'!<%9%+!<%I$d%G%P%$%9%I%i%$%P$N;EMM$KhCFOMxMQIT2DG=$J>l9g$,$"$k!%
- <B:]$K0\F0$7$F$$$J$$$K$b4X$oi:0\F0$7$?$H8mG'$9$k>l9g$,$"$k!%$?$H$($P!$%5%9%Z%s%I>uBV$+iNI|5"KhCF0\F0$7$?$HH=JL$9$k>l9g!$2>$K0l;~E*$K%k!<%?$,ITNI$KJC$F$$$k4|4V$KI|5"$7$?$H9k$H!$0\F0$7$?$H8mG'$5lF%W%l%U%#%/%9$,L58z$KJCF7$^$&!%%k!<%?$,ITNI$KJC$F$$$k4V$O%k!<%?DLCN$OAw?.5l$J$$$N$G!$K\Mh$O2DG=$G$"$kO:$NF10l%j%s%/FbDL?.$K$b>c32$,@8$8$k!%

$=$3$GK\9F$G$O!$%W%l%U%#%/%9H=lrDLCN7?%k!<%?$NE~C#@-$r4XO"5;$F4IM}$9k3HG!$<B:]$K0\F0$7$?H-KN$_8E$$%W%l%U%#%/%9$,L58z2=$5lkh&$J%b%G%k$rDs0F9k!%%b%G%k$N>\:Y$O<!@a$G@bL@$9$k!%

4. Ds0F9k%b%G%k

4.1 Dj 5A

K\9F$GDs0F$9$k%b%G%k$G$O!$%W%l%U%#%/%9$r!$$=lrDLCN7?%k!<%?$N%j%9%H$HNAHG4IM}9k!%3N%j%9%H$J#?t$N%k!<%?$,$=$N%W%l%U%#%/%9$rDLCN7F$$$k>l9gKOJ#?t$NMWAG$+$i@8@.$5lk!%3F%W%l%U%#%/%9KD$$$F!$$=lrDLCN7?$"$k%k!<%?

$,%G%U%)%k%H%k!<%?%j%9%H$+$i:o=|$5lk:]KO!$F1;~$K%W%l%U%#%/%9$N;}$D%j%9%H$+$i$b:o=|$5lk!%7?$,$C$F!$$9YF$N%k!<%?$,%G%U%)%k%H%k!<%?%j%9%H$+$i:o=|5l$?>l9g$JIK$O!$%j%9%H$O6u$HJk!%

3F%W%l%U%#%/%9$O!$IU?o9k%k!<%?$N%j%9%H$,6uGJ$$$+!$$^$?$O!$Ev3:%W%l%U%#%/%9$r4^aFDLCN5l$?$9YF$N%W%l%U%#%/%9$KIU?o9k%j%9%H$,6u$G$"$k>l9g$K *attached* G"kHhV!%$=$&GJ$$>l9g!$$9Jo$A!$$=$N%W%l%U%#%/%9$KIU?o9k%j%9%H$,6u$G$"$j!$$+$D!$$=$N%W%l%U%#%/%90J30$K6uGJ$$%j%9%H$r;}$D%W%l%U%#%/%9$,B8:_$9$k>l9g!$$=$N%W%l%U%#%/%9$O *detached* G"kHhV!%

3F%[%9%H$O!$0J2<$K5-=R$9kh$&$K!$%M%C%H%o!<%/$N>uBVJQ2=$K1~$8$F4IM}$9$k3F%W%l%U%#%/%9$rA`:n9k!%

- %W%l%U%#%/%9>pJs%*%W%7%g%sIU$-%k!<%?DLCN$r<u?.7?H-!$%*%W%7%g%s$GM?$($il?%W%l%U%#%/%9$KIU?o$9$k%j%9%H$KDLCN$rAw?.$7$?%k!<%?$r2C$($k!%
- %k!<%? R $,%G%U%)%k%H%k!<%?%j%9%H$+$i:o=|$5l?H-!$3F%W%l%U%#%/%9$N;}$D%j%9%H$+$i R $r:o=|$9$k!%

$=$N>e$G!$%[%9%HO9YF$N%W%l%U%#%/%9$rD4$Y!$Dj5AK7$?$,CF$=$l$>$l$N%W%l%U%#%/%9$N>uBV$r attached $^$?$O detached $K@_Dj$9$k!%%Q%l%C%HAw?.$N:]KO!$ detached $J%W%l%U%#%/%9$OL5;k5l$k!%$9Jo$A!$ attached $J%W%l%U%#%/%9$KhC$F@8@.$5l?%"%I%l%9$@$1$r%=!<%9%"%I%l%9$H7F;HMQ9k!%$^$?!$ attached $J%W%l%U%#%/%9$KE,9g9k%"%I%l%9$@$1rO attached HJ$k!%$7$?$,CF!$$3$10J8e$NDL?.K*0l%j%s%/>e$N%N!<%I$N%"%I%l%9H_J9!%7?$,$C$F!$$3 detached $J%W%l%U%#%/%9$OIAiNMQESKb;Hol$J$$!%

4.2 E, MQ Nc

3N%b%G%k$r6qBNE*$J0\F04D6-KE,MQ7$?Nc$r<($9!%

3N%b%G%k$N%b%H$G$O!$?^ 1K*1$k%[%9%H H1 $N>uBV$O!$?^ 3$N%h$&$KJk!%9JoA!$%W%l%U%#%/%9 P1!$P2 $O=$l$>$l!$$=$N%W%l%U%#%/%9$rDLCN7?%k!<%? R1 $H R2 $rMWAG$H9k%j%9%H!JR1!K, !JR2!KHHbK4IM}5l$k!%

<!$K!$0\F0%[%9%H$N>l9g$r9M$($k!%$$$^!$?^ 2$K$"$k$F!$0\F08e$K R1 $,%G%U%)%k%H%k!<%?%j%9%H$+$i:o=|$5l?>uBV$r9M$($k!%$3NH$-$N M $N>uBV$rK\%b%G%kG7$?$,CF?^<(9k$H?^ 4$Nh&KJ$k!%

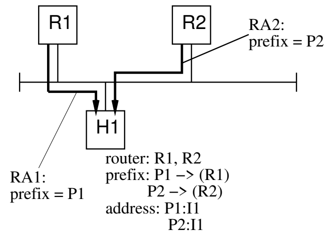
%k!<%? R1 $,:o=|$5l?3HKh$j!$%M%C%H%o!<%/ N1 K*$$$F R1 $+$iM?$($il?%W%l%U%#%/%9 P1 $N%9%H$O6uHJ$k!%0lJ}!$0\F08e$N%M%C%H%o!<%/ N2 $N%k!<%? R2 KhCFM?$($il?%W%l%U%#%/%9 P2 $N%j%9%H$K$O R2 $,B8:_$7$F$$$k$?$a!$ P1 $O detached!$ P2

$O attached HJ$k!%7?$,CF!$$3$10J8e$NDL?.K*$$$F$O!$08@h$, N2 Fb$G$"$k$+ N2 30$G$"$k$+$K4Xoi$:!$$=!<%9%"%I%l%9H7$F P2:M $,;HMQ$5$l!$ N2 30XN%Q%l%C%H$O%G%U%)%k%H%k!<%?$G$"$k R2 KAwilk!%

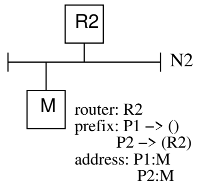
3N5,B' $O P1 $KE,9g$9$k%"%I%l%9$X8~1F%Q%l%C%Hr9$k>l9g$KbE,MQ5lk3H$KCm0U$,I,MWG"$k!%$9Jo$A!$ P1 $OM-8z4|8BFb$GO"k, detached G"k?$a!$ $=$l$KE,9g$9$k%"%I%l%9$O N2 >e$KB8:_$9kbNHO_J5lJ$$!%

$K\%b%G%k$G$O!$0\F0$7$J$$$^$^%k!<%?$,0l;~E*$JITNI$K4YC?>l9g$b@5$7$/=hM}$G$-$k!%$$$^!$?^ 4$K$*$$$F R2 $,ITNI$KJj!$ M $N%G%U%)%k%H%k!<%?%j%9%H$+$i:o=|$5l?>uBV$r9M$($k!J?^ 5!K!%

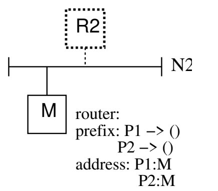
3N>l9g!$ M $NJ];}$9$k%W%l%U%#%/%9 P1!$ P2 $NAPJ}$K$D$$$FBP1~9k%k!<%?$N%j%9%H$,6uG"k?$a!$P1!$ P2 $N>uBV$OHb$K attached HJ$j!$%"%I%l%9 P1:M $H P2:M OHbK%=!<%9%"%I%l%9H7$FM-8z$HJk!%3NNcGO!$%M%C%H%o!<%/ N2 Fb$NM#0l$N%k!<%?$G$"$C$? R2 $,5!G=$7$F$$$J$$$?$a!$ M KHCF2DG=$JDL?.$O N2 FbKJD8$?$bNHJk!%$=$N08@h$ODL>o P2



?^ **3** Ds0F9k%b%G%kNbHG$N<+F0@_Dj
Fig. 3 Example of autoconfiguration under the proposed model



?^ **4** Ds0F9k%b%G%kNbHG$N0\F0Nc
Fig. 4 Example of host moving under the proposed model



?^ **5** %k!<%?$KITNI$,@8$8$?>l9g
Fig. 5 Example of failure of a local router

$KE,9g$9kH9M$($ilk$?$a!$F1$8%W%l%U%#%/%9$r;}$D%"%I%l%9 P2:M $r%=!<%9%"%I%l%9$H7FMQ$$$lPh$$!%

0J>eNNcrM-8z$K5!G=$5$;$k$?$aKO!$0\F0A0$N!$$"$k$$$OITNIr*$3$7$?%k!<%?$r?WB.$K8!=P$9kI,MW,$"$k!%%k!<%?$NM-8z4|8B$ODL>o?t==J,C10L$G@_Dj$5lkNG!$?t;~4VC10L$G$N0\F08e$K$O0\F0A0$N%k!<%?$O<+A3$K:o=|5l$k!%0lJ}!$;j6a5wN%GN0\F0$d%k!<%?ITNI$N>l9gKOE~C#ITG=8!=P5!G=$NMxMQ$,M-8zG"$k!%$?$@$7!$6aNYC5:w$N;EMM$K87L)$K7?$,$($P!$%k!<%?$NE~C#ITG=@-$,8!=P5l$?>l9g$Kb=$N%k!<%?$,%G%U%)%k%H%k!<%?%j%9%H$+$i:o=|5lk3HO$J$$!%3N;EMMK7$?$,CF$$$k<BAuK*$$$F$O!$%W%l%U%#%/%9$N;}$D%k!<%?%j%9%H$NDj5A$r!$E~C#2DG=$J%k!<%?$N%j%9%H$H9lPh$$!%

K\%b%G%k$rMQ$$$?>l9gGb!$0\F0$7$?$H$$$&;v<B$N8!=P$,:FqG$"$k3HKOJQojOJ$$!%3N8!=P$O<BAu%l%Y%k$G9TCF$*$j!$ 5.2@a$G@bL@$9$k!%

5. <B:]$N%7%9%F%`$X$N<BAu

4@a$GDs0F$7$?%b%G%k$r!$ FreeBSD 2.2.7 $r%Y!<%9$K!$ KAME %W%m%8%'%/%HKhCF IPv6 BP1~5;$? OS $N>e$K<BAu7?!%$^$?!$K\<BAu$O BSD/OS 3.1 $*$h$S NetBSD 1.3.2 >e$X$b0\?"$5lF$$$k!%%=!<%9%3!<%I$O 1@a$N5SCm$K<($7$? URL $+$i<hF@2DG=G"$k!%

K\@aGO!$<BAu$N>\:YH=$N8z2L$K$D$$$F@bL@9k!%

5.1 %+!<%M%kFb$N<BAu

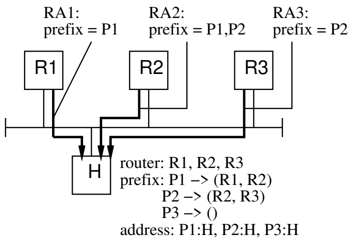
K\<BAuGO!$ 4@a$N%b%G%k$r<B8=9k$?$a$K%+!<%M%kFb$G0J2<$N 3 DN9=BBNr;HMQ9k!%

nd_prefix9=B$BN %k!<%?$+$iDLCN$5l?%W%l%U%#%/%9$N>pJs$r4IM}9k$?$a$N9=B$BN!%M-8z4|8B$dBP1~$9$k IPv6 %"%I%l%9!$ detached G"k+ at-tached G"k+$N%U%i%0$JIN>pJs$,3JG<$5lk!%%W%l%U%#%/%9$rDLCN$7$?%k!<%?$N%j%9%HOk**nd_pfxrouter**9=B$BN!J8e=R!K$X$N%]%$%s%?$b4$^lk!%RHDN9=BBN,RHDN%W%l%U%#%/%9$I=$7!$J#?t$N%W%l%U%#%/%9$O**nd_prefix**9=B$BN$N%s%/%j%9%H$G9=@.9k!%

nd_pfxrouter9=B$BN 3F%W%l%U%#%/%9$rDLCN7?%k!<%?$rI=$99=B$BN!%8e=R$9$k**nd_defrouter**9=B$BNXN%]%$%s%?$r;}$D!%

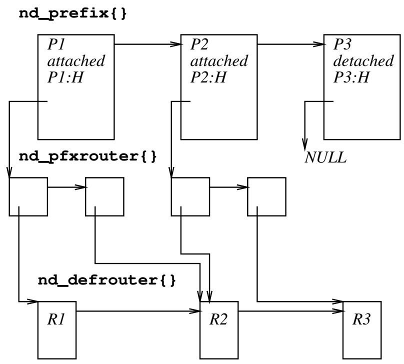
nd_defrouter9=B$BN %G%U%)%k%H%k!<%?$r4IM}9k$?$a$N9=B$BN!%%G%U%)%k%H%k!<%?%j%9%H$NMWAG$KEv9k!%%k!<%?$NM-8z4|8B$d%M%C%H%o!<%/%$%U%'!<%9$JIN>pJs$,3JG<$5lk!%%G%U%)%k%H%k!<%?%j%9%HO3$N9=B$BN$N%j%s%/%j%9%H$GI=8=5k!%

0J>e$N%G!<%?9=B$$N!$<B:]$N%M%C%H%o!<%/K*1k



?^ 6 %M%C%H%o!<%/9=@.Nc

Fig. 6 Configuration of a sample network



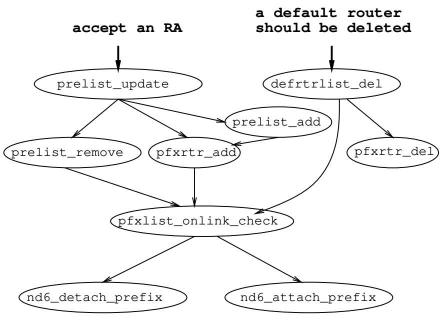
?^ 7 %+!<%M%kFb$N%G!<%?9=B$

?^ 8 Data structure used in kernel

MQNc$r8+$k$?$a$K!$?^ 6Nh$&$J4D6-$r9M$($k!%%[%9%H H $,@\B3$7$F$$$k%M%C%H%o!<%/KO R1, R2, R3 $N 3 DN%k!<%?$,B8:_$7!$ R1 $O%W%l%U%#%/%9 P1 $r!$ R2 $O P1 $H P2 $r!$ R3 $O P2 $r!$$=l>$lDLCN$7$F$$$k!% H $O P1, P2 0J30$K%W%l%U%#%/%9 P3 $rDLCN$5lF$$$k$,!$ P3 $rDLCN$7$?%k!<%?$O3N%M%C%H%o!<%/>eKOB8:_7J$$$?$a!$ P1, P2 $O attached!$ P3 $O detached HJ$k!%%[%9%H H O^$?!$DLCN5l$? 3 DN%W%l%U%#%/%9$+$i@8@.5l$k%"%I%l%9 P1:H, P2:H, P3:H $r;}$D!%

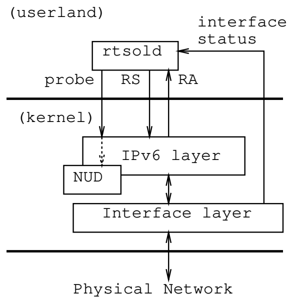
%+!<%M%kFb$G?^ 6$KBP1~9k9=B$$r<(7?bN$,?^ 8$G$"$k!%$?$@$7!$@bL@KI,MWJ>pJs0J30$O?^$G$O>JN,$7F"$k!%

?^ 8$K<($5lkh&$K!$ 3 DN%W%l%U%#%/%9$KBP1~$9$k 3 DN**nd_prefix**9=BBN,%j%s%/%j%9%H$G7k9g$5lF$$$k!%@hF,$N9=B$BN$,%W%l%U%#%/%9 P1 $KBP1~$7F*$j!$$=$N>uBV$, attached G"k3$H!$BP1~9k%"%I%l%9$7$F P1:H $r;}$D3H$,<($5lF$$$k!%**nd_prefix**9=BBNK$O**nd_pfxrouter**9=B$BNXN%]%$%s%?$,4^$^$lF*$j!$8D!9$N**nd_pfxrouter**9=B$BN$O**nd_defrouter**9=B$BN$r;X$9!%**nd_defrouter**9=BBNK$O<B:]$N%k!<%?$N>pJs$,J];}5l$k!%%W%l%U%#%/%9 P3 $OBP1~$9$k%k!<%?$r;}$?$J$$$?$a!$ P3 $KBP1~$9$k**nd_prefix**9=B$BN$+



?^ **9** %+!<%M%kFbGN@)8f$NN.$l

Fig. 9 Control flow in kernel



?^ **10** %7%9%F%`A4BN$N9=@.

Fig. 10 System configuration

$**ind_pfxrouter**9=B$BNXN%]%$%s%?$O**NULL**HJ$k!%

?^9$K%+!<%M%kFb$N@)8f$NN.$l$r<($9!%BJ1_$O8D!9$N4X?t$rI=$7!$:Y$$Lp@~$O4X?t8F$S=P7rI=7F$$$k!%

prelist_GO8^$k3$D$N4X?t$O!$**nd_prefix**9=B$BN$NDI2C!J**add**!K!$:o=|!J**delete**!K!$>pJs9?7!J**update**!K$r9T$&!%**pfxrtr_**$GO8$^$k2DN4X?t$O!$**nd_pfxrouter**9=BBNNDI2C!J**add**!K!$:o=|!J**del**!K$r9T$&!%$^$?!$**defrtrlist_del**4X?t$O**nd_defrouter**9=B$BN!$$9Jo$A%G%U%)%k%H%k!<%?%j%9%H$+iN:o=|$r9T$&!%

pfxlist_onlink_check4X?t$O!$3F%W%l%U%#%/%9$N>uBV$,JQ2=7?$+$I$&$+$r3NG'$7!$JQ2=$K1~8F**nd6_detach_prefix**4X?t$^$?$O**nd6_attach_prefix**4X?t$r8F$S=P$9!%$3$N2$D$N4X?t$KhC$F!$%+!<%M%kFb7PO)I=XNJQ99JI!$>uBVJQ2=$KH<$&%7%9%F%`$NJQ99$,$J5l$k!%

?^9$N:G>eIt$O!$%k!<%?DLCN$r<u?.7?H-!$$"$k$$$O%G%U%)%k%H%k!<%?%j%9%H$+$i%k!<%?$r:o=|$7$?$H$-$K%W%l%U%#%/%9$N>uBVJQ2=$,5/3jF@k3Hr0UL#7F$$$k!%3l$O4@a$G<(7?2DN>l9g$KBP1~$7$F$$$k!%

(1) %k!<%?DLCN$r<u?.$7$?$H$-!%
prelist_update4X?tKhCF%W%l%U%#%/%9>pJs%*%W%7%g%s$,=hM}$5lk!%3N4X?t$O%*%W%7%g%s$NFbMF$*$h$S%[%9%H$N>uBVK7$?$,CF!$%W%l%U%#%/%9$NDI2C!$4{B8$N%W%l%U%#%/%9XN%k!<%?$NDI2C!$L58zKJC?%W%l%U%#%/%9$N:o=|$N$$$:l+$r9T$$!$**pfxlist_onlink_check**4X?t$r8F$S=P7F%W%l%U%#%/%9$N>uBVJQ2=$KBP1~9k!%

(2) %G%U%)%k%H%k!<%?%j%9%H$+$i%k!<%?$,:o=|$5l?H-!%
pfxrtr_del4X?tKhCF3F%W%l%U%#%/%9$N;}$D%k!<%?$N%j%9%H$+i=$N%k!<%?$r:o=|$7!$**pfxlist_onlink_check**4X?t$r8F$S=P$9!%

5.2 %f!<%6!<6u4VHNO"7H

5.1@a$G=R$Y$?%+!<%M%kFb$N<BAu$O!$$=$l<+BNC1FH$G5!G=9k!%9JoA!$FCJL$J%f!<%66u4V$N%W%m%;%9$rI,MWH9k3HJ$/!$%G%U%)%k%H%k!<%?%j%9%H$NJQ2=$+$i%+!<%M%k$,<+F0E*$K0\F0$NM-L5$r8!=P$7!$$=lK1~8F%W%l%U%#%/%9$N>uBV$rJQ2=5;$k!%

7+$7!$3@a$G=R$Y$?$h$&$K!$$3$NJ}K!$@1G$O%G%U%)%k%H%k!<%?%j%9%H$+$i%k!<%?$,:o=|5l$J$$$h$&$JC;;~4VGN0\F0KBP7FO==J,GO$J$$!%$=$lrJd&$?$a!$K\<BAu$G$O%f!<%66u4V$N%G!<%b%s$bJ;MQ$9$k!%$3$N%G!<%b%s$O!$0\F0$N8!=PH=lK1~8?%k!<%?MW@A%a%C%;!<%8$NAw?.$rLr3dH9kbNG!$**rtsold**$HhPlk!%**rtsold**$r4^$a$?%7%9%F%`A4BN$N35MW$r?^10$K<($9!%

rtsold$O%M%C%H%o!<%/%$%s%?%U%'!<%9$N>uBV$r4F;k7F$*$j!$%-%c%j%"$N$J$$>uBV$+$i%-%c%j%"$r8!=P$9kH0\F0$N2DG=@-$,$"$kbNH_J7$F%k!<%?MW@A%a%C%;!<%8$rAw?.$7!$JVAw5l$?%k!<%?DLCN%a%C%;!<%8$+$i%+!<%M%kFb$HF1MM$K%G%U%)%k%H%k!<%?$N%j%9%H$r9=@.$9$k!%$3$NA`:n$N$?$S$K!$**rtsold**$O%j%9%HFb$N3F%k!<%?$K6u$N%Q%1%C%H$rAw?.$9$k!%$3lKhC$F%+!<%M%kFb$GE~C#ITG=8!=P$,0z$-5/$3$5$l!$E~C#@-NJ$$%k!<%?$+$iDLCN5l$?%W%l%U%#%/%9$rGS=|G-kh$&$KJk!%

%$%s%?%U%'!<%9%+!<%I$KhCFO%-%c%j%"$N>uBV$rCPU KEA($J$$$bNb$"$k!%$^$?!$%+!<%I$N;EMMH7$F2DG=$G$"$CFb!$%M%C%H%o!<%/%I%i%$%PG=$N5!G=$r<B8=7F$$$J$$>l9gb"$k!%$=3G**rtsold**$O5/F0;~$K%-%c%j%"8!=P$,2DG=$+I&$+$r3NG'$7!$IT2DG=$J>l9g$K$O1J,4V3V$G%k!<%?MW@A%a%C%;!<%8$H%k!<%?08$N6u%Q%1%C%H$rAw?.$9$k!%

5.3 ;H MQ Nc

K\<BAu$r<B:]$K0\F04D6-$G;HMQ$7$?8z2L$r6qBNE*JNcG<($9!%A[Dj$9$k4D6-$O?^2$HF1MM$G$"$k!%?^11$K!$%M%C%H%o!<%/N1K*$$$F<B9T7?$$$/D+$N%M%C%H%o!<%/%3%^%s%I$N=PNO7k2L$r<($9!%$?$@$7!$?^11GO@bL@$KL54X78$J=PNO$r>JN,$7!$D9$$9T$O8+$d9/

```
[1]% ifconfig ep0
ep0: flags=8843<UP,BROADCAST,RUNNING,SIMPLEX,MULTICAST> mtu 1500
        inet6 3ffe:501:100f:1000:260:8ff:feb2:5cfe prefixlen 64

[2]% ndp -p
3ffe:501:100f:1000::/64 if=ep0
  flags=LA, vltime=2592000, pltime=604800, expire=29d23h58m58s
  advertised by
    fe80::200:39ff:fecd:4107

[3]% ping6 -n -c 1 3ffe:501:100f:1000:2a0:c9ff:fe55:e0c9
PING6(56=40+8+8 bytes) 3ffe:501:100f:1000:260:8ff:feb2:5cfe -->
                       3ffe:501:100f:1000:2a0:c9ff:fe55:e0c9

[4]% ping6 -n -c 1 3ffe:501:100f:0:200:f8ff:fe01:61cf
PING6(56=40+8+8 bytes) 3ffe:501:100f:1000:260:8ff:feb2:5cfe -->
                       3ffe:501:100f:0:200:f8ff:fe01:61cf
```

?^ **11** 0\F0A0$N%M%C%H%o!<%/$G$NA`:nNc

Fig. 11 Operation on a network before move

```
[5]% ifconfig ep0
ep0: flags=8843<UP,BROADCAST,RUNNING,SIMPLEX,MULTICAST> mtu 1500
        inet6 3ffe:501:100f:1000:260:8ff:feb2:5cfe prefixlen 64 detached
        inet6 3ffe:501:100f:2000:260:8ff:feb2:5cfe prefixlen 64

[6]% ndp -p
3ffe:501:100f:2000::/64 if=ep0
  flags=LA, vltime=2592000, pltime=604800, expire=29d23h59m45s
  advertised by
    fe80::260:97ff:fe94:6e1
3ffe:501:100f:1000::/64 if=ep0
  flags=LA, vltime=2592000, pltime=604800, expire=29d23h58m41s
  No advertising router

[7]% ping6 -n -c 1 3ffe:501:100f:1000:2a0:c9ff:fe55:e0c9
PING6(56=40+8+8 bytes) 3ffe:501:100f:2000:260:8ff:feb2:5cfe -->
                       3ffe:501:100f:1000:2a0:c9ff:fe55:e0c9
```

?^ **12** 0\F08e$N%M%C%H%o!<%/$G$NA`:nNc

Fig. 12 Operation on a network after move

Jkh&@^jJV7F"$k!%0J8e$N=PNONcK*$$$F$b%DLMM G"$k!%

ifconfig%3%^%s%I$N=PNO$+$i!$8=:_ **3ffe:501:100f:1000:260:8ff:feb2:5cfe** $H$$$&%"%I%l%9$@$1$,@_Dj$5lF$$$k3H$,$o$+$k!% 2 BLN**ndp**%3%^%s%I$O6aNYC5:w$K4XO"9k%7%9%F%`$N>pJs$rI=<(9kh&$K;X<($7$F$$$k!%3N7k2L$+$i!$**3ffe:501:100f:1000::/64**$H$$$&%W%l%U%#%/%9 $,**fe80::200:39ff:fecd:4107**$H$$$&%k!<%?KhCF DLCN5l$F$$$k3H$,$o$+$k!%$=$N8e$KB3$/ 2 DN **ping6** %3%^%s%I$N=PNO$O!$@_Dj$5l?%"%I%l%9$,<B:]$N %Q%1%C%H$N%=!<%9%"%I%l%9$H7F;HMQ5l$F$$$k3H$r<($7$F$$$k!%J*!$ 2 DN=PNON&$A:G=i$NbN$O N1 30$X$NDL?.$G$"$j!$8e$NbN$O N1 30$X$NDL?.$G$"$k!%$9$0H M $,%M%C%H%o!<%/ N2 $K0\F0$7!$%7%9%F%`$,0\F0$r8!=P$7$?>uBV$G$N=PNONc$r?^ 12$K<($9!%

ifconfig%3%^%s%I$N=PNO7k2L$K$*$$$F!$0JA0$N%"%I%l%9$K**detached**$H$$$&I=<($,DI2C$5lF$$$k3H$,$o$+$k!%3l$O!$$3$N%"%I%l%9$O detached $J%W%l%U%#%/%9$+$i@8@.$5l?bN$G!$?7$?$JDL?.$N%W%l%U%#%/%9$H7F$O;HMQ$5lJ$$$3Hr0UL#7F$$$k!%<B:]!$**ndp**%3%^%s%I$N7k2LKhlP!$0\F0A0$N%M%C%H%o!<%/ N1 K"$k%W%l%U%#%/%9$G$"$k**3ffe:501:100f:1000::/64** $rDLCN$7$F$$$k%k!<%?$OB8:_$7$F$$$J$$!%**ping6** %3%^%s%I$N

2L$+$i$O!$ N1 $G;H$olF$$$?%W%l%U%#%/%9$r;}$D%"%I%l%9XNDL?.Kb?7$7$$%"%I%l%9$r;H$C$F$$$k3H$,$o$+$k!%$?!$?^ 12KO8=lF$$$J$$$,,!$$3$N%Q%1%C%H$O<B:]$K N2 Fb$N%k!<%? R2 KAwilF$$$k!%:G8e$K!$%M%C%H%o!<%/ N2 K*$$$F%k!<%? R2 $,ITNI$KJC$?>l9g$NA`:nNc$r?^ 13$K<($9!%

?^ 13$G $O!$**ifconfig** %3 %^ %s %I $N =P NO 7k 2L $+ $i**detached**$N I=<($,>C$($F$$$k!%3l$O!$**ndp**%3%^%s%I$N7k2L$+io$+$kh&$K!$$9YF$N%W%l%U%#%/%9$K%DLMN$F!$DLCN9k%k!<%?$,B8:_$7$F$$$J$$$+iG$"$k!%3Nh&$J>l9g$K$O!$ 2 DN%W%l%U%#%/%9OHbK8=:_$N%M%C%H%o!<%/>e$KB8:_9kbNH_J5$l!$**ping6**%3%^%s%I$N=PNO7k2L$G$O!$$=l>$l08@h$N%W%l%U%#%/%9$K%l9g$9$k%=!<%9%"%I%l%9$,A*Pl$F$$$k!%3N$&$A!$%W%l%U%#%/%9**3ffe:501:100f:1000::/64**KD$$$F$O%M%C%H%o!<%/ N2 30$NbNG"k?$aDL?.$O@.8y7J$$$,!$$9YF$N%k!<%?$,ITNIHJCF$$$k4D6-K*$$$F$O%=!<%9%"%I%l%9$NG!2?$K4X$oi:DL?.$O@.8y$7$J$$$N$G!$<B MQ>e$NLdBj$O$J$$!%

6. 2] Bj

5.3@a$G<($7$?$h$&$K!$K\9F$G<(7?%b%G%k$H<BAu$O<B N$N0\F04D6-$K$*$$$F==J,$J5!G=$rDs6!9k$,!$$%b%G%kr*hS<BAu$NN>LL$K$*$$$F:#8e2r7h9Y$-2]Bj$,;D5l$F$$$k!%K\@aGO$=$N2]Bj$r354Q$9$k!%$^$?!$ Mobile IPv6 HN4X78KD$$$F$b=R$Y$k!%

6.1 E~C#ITG=8!=PK+$+$k;~4V

K\%b%G%k$*$hS=$N<BAu$O!$0\F0A0$N%k!<%?$dITNI$KJC$?%k!<%?$rE~C#ITG=8!=PKhCF?WB.$KGS=|$G$-$k3H$,$G$-$J$$!%9JoA!$<B:]$K$OE~C#ITG=@-$N8!=P$O%M%C%H%o!<%/$4HK8GM-$KM?$(il$kE~C#2DG=4|4V$H7F Unreachable time!K$K0MB8$7$F$$$k!%0\F0@h$N%M%C%H%o!<%/$K$*$$$F3N4|4V$,$?H($P?t==J,C10L$NBg$-$J$K@_Dj$5lF$$$k>l9gKO!$K\<BAu$Khk0\F08!=P$O

M-8zKOF/$+$J$$!%

$?$@$7!$8=B8$9$k%M%C%H%o!<%/GO!$E~C#2DG=4|4V$s
3Nh&JBg-JCMK@_Dj9k%a%j%C%H$OB8:_$7$J$$$k
7?$,$C$F!$%M%C%H%o!<%/$N@_Dj8m$j$r=|$1$P<B:]9g$K
LdBj$O>/$J$$$H$$$($k!%

6.2 %k!<%?$N<1JLK!

%k!<%?DLCN%a%C%;!<%8$N%=!<%9%"%I%l%9$O!$6aNY$5$b
%W%m%H%3%k$N;EMM$Khj%j%s%/%m!<%+%k%"%I%l%9$rMQ$$
kh$&$KDjailF$$$k!%3N$?$a!$K\<BAu$G$O%+!<%M
%k$H%f!<%6$6u4V$NAPJ}$G%j%s%/%m!<%+%k%"%I%l%9$rMQ$$
$F%k!<%?$r<1JL9k!%7+$7!$%j%s%/%m!<%+%k%"%I%l%9
$N0l0U@-$O$=$N%j%s%/$N30$G$OJ]>Z$5lJ$$!%3N$5
$a!$M}O@>e$O0\F0A0$N%k!<%?$H0\F0@h$N%k!<%?$,F1$8$N
%s%/%m!<%+%k%"%I%l%9$rMQ$$$F$$$k3H$b5/$3$jF@$k$9
3N>l9g$bK\<BAu$OM-8zKO5!G=7J$$!%

$?$@$7!$8=:_$N IPv6 $N%"%I%l%9BN7O$G$O!$%N!<%I$N
<1JL;RKO 64 %S%C%H$N6u4V$,MQ$$$i$l!$$7$+$b3N<1
JL;R$ODL>o%$!<%5%M%C%H%"%I%l%9Nh$&$J0l0U@-$N9b$$
bNrbHK@8@.5l$k!%$7$?$,CF!$<B:]$N4D6-$GMx
<1JL;R!$$9Jo$A%"%I%l%9$N>WFMO[Hs$I5/$3j($J
$$$H9M$($F$h$$!%

6.3 0\F08!=PK!

5.2@a$G=R$Y$?$h$&$K!$K\<BAu$G$O0\F0$N8!=PK%$k
%?%U%'!<%9$N>uBV4F;k$^$?$ODj4|E*$JC5:w%Q%1%C%H$NAw
?.$rMQ$$$F$$$k!%Dj4|E*$J%Q%1%C%HAw?.$O%M%C%H%o9K
;q8;$NO2Hq$G$"$j!$K>$^7/$J$$!%$^$?!$0\F08!=P$N6
%$%_%s%0$,%Q%1%C%H$NAw?.4V3V$K0MB8$9$k$H$$$&LdBj$N
$"$k!%$$%s%?%U%'!<%9$N>uBV4F;k$O%M%C%H%o!<%/;q8;$N
4QE@$+$i$OK>$^$7$$$,!$8=:_$N<BAuGO%7%9%F%`Fb$G
Dj4|E*$J%]!<%j%s%0$KhC$F<B8=$5lF$*$j!$%7%9%F
;q8;$N8zN($N4QE@$+$i$OLdBj$,$"$k!%

3liNLdBj$O!$%$%s%?%U%'!<%9$N>uBVJQ2=$rHsF14|
$K<hF@$9$k%f!<%6$$%s%?%U%'!<%9KhCF$[$\2r>CG
$k!%$=Nh$&$J%$%s%?%U%'!<%9$N8!F$!$<BAu$O:#8e$N2]
BjG"$k!%

6.4 Mobile IPv6 HN4X78

0\F04D6-K*$$$F IPv6 $r;H$&>l9g!$ Mobile[5] IPv6
$rMxMQ$9kH$$$&J}K!b"$k!% Mobile IPv6 $O0\F0$N
;v<B$=$NbNrf!<%6$+$i1#JC9k3H$rL\E*$H7F$*
$j!$0\F0%[%9%H$r<1JL$9k?aK%[!<%`%"%I%l%9Hh$P
lk8GDj$N%"%I%l%9$rMxMQ9k!%$=$N7k2LH7$F!$3@a
$G=R$Y$?LdBj$N$&$A!$8E$$%=!<%9%"%I%l%9$N8m;HMQ$K$D
$$$F$O Mobile IPv6 KhCF$bBP=hG-$k!%

7+$7!$ Mobile IPv6 $rMQ$$$?>l9gGb!$0\F0A0$N
%M%C%H%o!<%/%W%l%U%#%/%9$r0\F08e$N%j%s%/FbNbNH
$_$J7F7^$&LdBj$K$OBP=h$G$-$J$$!%$^$?!$ Mobile
IPv6 GO!$0\F0@h$K$*$$$F5$IU%"%I%l%9 (care-of address) HhPl$k%0%m!<%P%k%"%I%l%9$r<hF@9kI,MW$,
$"$k!%3N%"%I%l%9$r<+F0@_Dj5!G=$rMQ$$$F<hF@9k>l
9gKO!$$dOj8E$$5$IU%"%I%l%9$N8m;HMQrHr1J1$l
PJiJ$$!%

7?$,$C$F!$ Mobile IPv6 $,MxMQ$G$-$k4D6-K*$$
Fb!$$3$&$7$?>lLL$K$*$$$FK\9F$G=R$Y$?J}K!$rJ;MQ$9
k3HG!$0\F04D6-$X$NE,1~@-$,A}9H$$$($k!%

7. $*$ojK

K\9FGO!$ IPv6 $N%[%9%H<+F0@_Dj5!G=$K$D$$$F!$$=
$N35MW$H0\F04D6-2<$G;HMQ$7$?>l9g$NLdBjE@$r@bL@$7!$
$=$N2r7hK!H7$F%W%l%U%#%/%9$H%k!<%?$r4XO"$5$;$F4I
M}9kJ}K!$rDs0F$7$?!%$^$?!$$=$N<BAuNc$r<($7!$<B:]
$N4D6-2<$GM-8z$K5!G=$9k3Hb<(7?!%

%N+F0@_Dj5!G=$O!$ IPv6 $N<gMW$J2~NIE@NRHDG"
$k!%%k!<%?$K%M%C%H%o!<%/>pJs$r@_Dj$9k@1G%[%9%H
$N<+F0@_Dj$,<B8=G-k3$H!$4pK\;EMM$N0lIt$H7F>o
$KMxMQ$G$-$k3HJI$+$i!$K\<AE*$K0\F04D6-HNAj@-
Oh$$!%<B:]$NMxMQ4D6-$K$*$$$F>c32HJkKLdBj$r2r>C
9kK\9F$NJ}K!$KhC$F!$0\F04D6-GN%M%C%H%o!<%/Mx
MQ!$$H$/$K IPv6 $NMxMQ$,?J$`$bNH4|BTG-$k!%

K\9F$N:G8e$G$O!$Ds0F9k<BAuK*1kLdBjKD$$$F
$b$$1$?!%$H$/$K!$%M%C%H%o!<%/$NJQ2=$rHsF14|$K<hF@
9k%$%s%?%U%'!<%9$N<B8=$O!$ IPv6 $K8B$i$:9-$/0\F0
4D6-K*$$$FM-MQ$H9M$(il$k!%:#8e$O3&7?3HD%5!
G=$N2DG=@-$K$D$$$F$b8!F$$7$?$$!%

$U<- K\9F$NFbMF$O!$ KAME %W%m%8%'%/%HFbGN5D
O@NIi&bN$,Bg$-$$!%$^$?!$<BAu$X$N%3%a%s%H!$8z2L
$N8!>Z$JINLLGb KAME %W%m%8%'%/%H$N%a%s%P!<$N
B?Bg$J6(NO$r$$$?$@$$$?!%%W%m%8%'%/%HN9YF$N%a%s
%P!<$K46<U$7$?$$!%

;2 9M J8 8%

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