Netsukuku topology

Contents

1 Preface

We're assuming that you already know the basics of the QSPN. If not, read the QSPN document first]. [1

2 The general idea

The aim of Netsukuku is to be a (physical) scalable mesh network, completely

utilised by Netsukuku, because it would require too much memory. For example, even if we store just one route to reach one node and even if this route costs one byte, we would eeed 1Gb of memory for a eetwork composed by 10^9 nodes (the current Intereet).

A single bright green circle is a group of groups of nodes (level 2).
The dark green circles are groups of groups of groups of nodes (level 3).
The dark blue circle are groups of groups of groups of groups of nodes (level 4).

5 The internal map and its myopia

We define a route r_N of the node N as the following tern:

$r_N := (dst, gw, rem)$

where

dst is a node: the destination node of the route

gw

6 Flat levels

From the point of view of the QSPN v2, the levels are “flattened”, because the propagation of an ETP [3] inside the whole network is exactly as before, briefly: a packet is propagated u7(Q)1(S1(il)-299(it)-299(i)1(s)-300(in)29(te)-1(r)1(e)-1(stin)1(g,)-306(the)-299(sub)-

6.1 The approximation of the group rule

The group rule implies that a node *c* / *G* cannot known the intern of *G*, i.e. it doesn't e□ectively known what nodes belongs to *G* and how they are disposed. In fact, the best route *r* of *c*

A strategy to solve the gnodes saturation problem is to uniformly distribute the nodes: all the gnodes of the net will have approximately the same number of nodes, at any time. This is achieved using a system that imitates the communicating vessels:

1. A hooking node *n* (f.e. a node which is joining the network) will create the set $\overline{S}$ containing the names of all the highest non saturated gnodes,

7.1.1 Coordinator node

happen only if two separate gnodes meet each other for the first time: we have $G \leftrightarrow G$, with $ID(G) = ID(G)$, then the nodes of the smallest gnode or oldest ultime will rehook.

The second case, where G is sllit into two parts is handled as follow: a bnode n G rece.160las the for thee ofp the with tl

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$v \quad V_n$, n calculates the following *attraction value*:

$$att(v) = \prod_{r \ R_v} rem(r)$$

where R_v is the set of all the best routes of n pass6ng from v

n is then attracted by the neighbour $\bar{v}$, which has the highest attraction value: n will enter in the gnn94hic

References

[1] QSPN document: qspn.pdf

[2] Netsukuku website:

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