
Subject: Re: [PATCH] NFS: init client before declaration
Posted by Myklebust, Trond **on Tue, 22 May 2012 20:32:51 GMT**
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On Tue, 2012-05-22 at 12:43 -0400, Trond Myklebust wrote:
> On Tue, 2012-05-22 at 20:18 +0400, Stanislav Kinsbursky wrote:
> > We have another problem here.
> > nfs4_init_client() will try to create pipe dentries prior to set of NFS_CS_READY
> > to the client. And dentries will be created since semaphore is dropped and
> > per-net superblock variable is initialized already.
> > But __rpc_pipes_event() relays on the fact, that no dentries present.
> > Looks like the problem was introduced by me in aad9487c...
> > So maybe we should not call "continue" instead "__rpc_pipes_event()", when
> > client becomes ready?
> > Looks like this will allow us to handle such races.
>
> Let me rework this patch a bit...

The following is ugly, but it should be demonstrably correct, and will ensure that __rpc_pipes_event() will only be called for fully initialised nfs_clients...

8< -----
>From 90c3b9fe9faeae32c8f629e8b6cbf5f50bb9b295 Mon Sep 17 00:00:00 2001
From: Trond Myklebust <Trond.Myklebust@netapp.com>
Date: Tue, 22 May 2012 16:22:50 -0400
Subject: [PATCH 1/2] NFSv4: Fix a race in the net namespace mount notification

Since the struct nfs_client gets added to the global nfs_client_list before it is initialised, it is possible that rpc_pipes_event can end up trying to create idmapper entries on such a thing.

The solution is to have the mount notification wait for the initialisation of each nfs_client to complete, and then to skip any entries for which the it failed.

Reported-by: Stanislav Kinsbursky <skinsbursky@parallels.com>
Signed-off-by: Trond Myklebust <Trond.Myklebust@netapp.com>

fs/nfs/client.c | 10 ++++++++
fs/nfs/idmap.c | 15 ++++++*****
fs/nfs/internal.h | 1 +
3 files changed, 26 insertions(+), 0 deletions(-)

```
diff --git a/fs/nfs/client.c b/fs/nfs/client.c
index 60f7e4e..d3c8553 100644
--- a/fs/nfs/client.c
```

```

+++ b/fs/nfs/client.c
@@ -583,6 +583,16 @@ found_client:
    return clp;
}

+static bool nfs_client_ready(const struct nfs_client *clp)
+{
+    return clp->cl_cons_state <= NFS_CS_READY;
+}
+
+int nfs_wait_client_ready(const struct nfs_client *clp)
+{
+    return wait_event_killable(nfs_client_active_wq, nfs_client_ready(clp));
+}
+
/*
 * Mark a server as ready or failed
 */
diff --git a/fs/nfs/idmap.c b/fs/nfs/idmap.c
index 3e8edbe..c0753c5 100644
--- a/fs/nfs/idmap.c
+++ b/fs/nfs/idmap.c
@@ -530,9 +530,24 @@ static struct nfs_client *nfs_get_client_for_event(struct net *net, int
event)
    struct nfs_net *nn = net_generic(net, nfs_net_id);
    struct dentry *cl_dentry;
    struct nfs_client *clp;
+   int err;

+restart:
    spin_lock(&nn->nfs_client_lock);
    list_for_each_entry(clp, &nn->nfs_client_list, cl_share_link) {
+       /* Wait for initialisation to finish */
+       if (clp->cl_cons_state > NFS_CS_READY) {
+           atomic_inc(&clp->cl_count);
+           spin_unlock(&nn->nfs_client_lock);
+           err = nfs_wait_client_ready(clp);
+           nfs_put_client(clp);
+           if (err)
+               return NULL;
+           goto restart;
+       }
+       /* Skip nfs_clients that failed to initialise */
+       if (clp->cl_cons_state < 0)
+           continue;
+       if (clp->rpc_ops != &nfs_v4_clientops)
+           continue;
+       cl_dentry = clp->cl_idmap->idmap_pipe->dentry;

```

```
diff --git a/fs/nfs/internal.h b/fs/nfs/internal.h
index b777bda..3ee4040 100644
--- a/fs/nfs/internal.h
+++ b/fs/nfs/internal.h
@@ -168,6 +168,7 @@ extern struct nfs_server *nfs_clone_server(struct nfs_server *,
    struct nfs_fattr *,
    rpc_authflavor_t);
extern void nfs_mark_client_ready(struct nfs_client *clp, int state);
+extern int nfs_wait_client_ready(const struct nfs_client *clp);
extern int nfs4_check_client_ready(struct nfs_client *clp);
extern struct nfs_client *nfs4_set_ds_client(struct nfs_client* mds_clp,
    const struct sockaddr *ds_addr,
```

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1.7.7.6

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