
Subject: [RFC PATCH 15/13] NFSd: make boot_time variable per network namespace

Posted by [Stanislav Kinsbursky](#) on Mon, 14 May 2012 14:00:19 GMT

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NFSd's boot_time represents grace period start point in time.

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```
fs/nfsd/netns.h    | 1 +
fs/nfsd/nfs4state.c | 47 ++++++-----
fs/nfsd/state.h    | 4 +++-
3 files changed, 32 insertions(+), 20 deletions(-)
```

diff --git a/fs/nfsd/netns.h b/fs/nfsd/netns.h

index b6deebd..65c2431 100644

--- a/fs/nfsd/netns.h

+++ b/fs/nfsd/netns.h

@@ -37,6 +37,7 @@ struct nfsd_net {

```
    struct lock_manager nfsd4_manager;
    bool grace_ended;
+   time_t boot_time;
};
```

extern int nfsd_net_id;

diff --git a/fs/nfsd/nfs4state.c b/fs/nfsd/nfs4state.c

index 7c88ee8..e858ce7 100644

--- a/fs/nfsd/nfs4state.c

+++ b/fs/nfsd/nfs4state.c

@@ -51,7 +51,6 @@

/* Globals */

time_t nfsd4_lease = 90; /* default lease time */

time_t nfsd4_grace = 90;

-static time_t boot_time;

#define all_ones {{~0,~0},~0}

static const stateid_t one_stateid = {

@@ -1011,12 +1010,12 @@ renew_client(struct nfs4_client *clp)

/* SETCLIENTID and SETCLIENTID_CONFIRM Helper functions */

static int

-STALE_CLIENTID(clientid_t *clid)

+STALE_CLIENTID(clientid_t *clid, struct nfsd_net *nn)

{

- if (clid->cl_boot == boot_time)

+ if (clid->cl_boot == nn->boot_time)

return 0;

```

    dprintk("NFSD stale clientid (%08x/%08x) boot_time %08lx\n",
-   clid->cl_boot, clid->cl_id, boot_time);
+   clid->cl_boot, clid->cl_id, nn->boot_time);
    return 1;
}

@@ -1170,8 +1169,9 @@ same_creds(struct svc_cred *cr1, struct svc_cred *cr2)
static void gen_clid(struct nfs4_client *clp)
{
    static u32 current_clientid = 1;
+   struct nfsd_net *nn = net_generic(&init_net, nfsd_net_id);

-   clp->cl_clientid.cl_boot = boot_time;
+   clp->cl_clientid.cl_boot = nn->boot_time;
    clp->cl_clientid.cl_id = current_clientid++;
}

@@ -2221,8 +2221,9 @@ nfsd4_setclientid_confirm(struct svc_rqst *rqstp,
    nfs4_verifier confirm = setclientid_confirm->sc_confirm;
    clientid_t *clid = &setclientid_confirm->sc_clientid;
    __be32 status;
+   struct nfsd_net *nn = net_generic(&init_net, nfsd_net_id);

-   if (STALE_CLIENTID(clid))
+   if (STALE_CLIENTID(clid, nn))
        return nfserr_stale_clientid;
/*
 * XXX The Duplicate Request Cache (DRC) has been checked (??)
@@ -2621,8 +2622,9 @@ nfsd4_process_open1(struct nfsd4_compound_state *cstate,
    unsigned int strhashval;
    struct nfs4_openowner *oo = NULL;
    __be32 status;
+   struct nfsd_net *nn = net_generic(&init_net, nfsd_net_id);

-   if (STALE_CLIENTID(&open->op_clientid))
+   if (STALE_CLIENTID(&open->op_clientid, nn))
        return nfserr_stale_clientid;
/*
 * In case we need it later, after we've already created the
@@ -3164,12 +3166,13 @@ nfsd4_renew(struct svc_rqst *rqstp, struct nfsd4_compound_state
*cstate,
{
    struct nfs4_client *clp;
    __be32 status;
+   struct nfsd_net *nn = net_generic(&init_net, nfsd_net_id);

    nfs4_lock_state();
    dprintk("process_renew(%08x/%08x): starting\n",

```

```

    clid->cl_boot, clid->cl_id);
    status = nfserr_stale_clientid;
- if (STALE_CLIENTID(clid))
+ if (STALE_CLIENTID(clid, nn))
    goto out;
    clp = find_confirmed_client(clid);
    status = nfserr_expired;
@@ -3199,7 +3202,7 @@ nfsd4_end_grace(struct net *net)

    dprintk("NFSD: end of grace period\n");
    nn->grace_ended = true;
- nfsd4_record_grace_done(net, boot_time);
+ nfsd4_record_grace_done(net, nn->boot_time);
    locks_end_grace(&nn->nfsd4_manager);
/*
    * Now that every NFSv4 client has had the chance to recover and
@@ -3305,9 +3308,9 @@ static inline __be32 nfs4_check_fh(struct svc_fh *fhp, struct
nfs4_ol_stateid *s
}

static int
-STALE_STATEID(stateid_t *stateid)
+STALE_STATEID(stateid_t *stateid, struct nfsd_net *nn)
{
- if (stateid->si_opaque.so_clid.cl_boot == boot_time)
+ if (stateid->si_opaque.so_clid.cl_boot == nn->boot_time)
    return 0;
    dprintk("NFSD: stale stateid " STATEID_FMT "!\n",
        STATEID_VAL(stateid));
@@ -3407,13 +3410,14 @@ static __be32 check_stateid_generation(stateid_t *in, stateid_t *ref,
bool has_s
    return nfserr_old_stateid;
}

-__be32 nfs4_validate_stateid(struct nfs4_client *cl, stateid_t *stateid)
+__be32 nfs4_validate_stateid(struct nfs4_client *cl, stateid_t *stateid,
+    struct nfsd_net *nn)
{
    struct nfs4_stid *s;
    struct nfs4_ol_stateid *ols;
    __be32 status;

- if (STALE_STATEID(stateid))
+ if (STALE_STATEID(stateid, nn))
    return nfserr_stale_stateid;

    s = find_stateid(cl, stateid);
@@ -3434,10 +3438,11 @@ __be32 nfs4_validate_stateid(struct nfs4_client *cl, stateid_t

```

```

*stateid)
static __be32 nfsd4_lookup_stateid(stateid_t *stateid, unsigned char typemask, struct nfs4_stid
**)
{
    struct nfs4_client *cl;
+ struct nfsd_net *nn = net_generic(&init_net, nfsd_net_id);

    if (ZERO_STATEID(stateid) || ONE_STATEID(stateid))
        return nfserr_bad_stateid;
- if (STALE_STATEID(stateid))
+ if (STALE_STATEID(stateid, nn))
    return nfserr_stale_stateid;
    cl = find_confirmed_client(&stateid->si_opaque.so_clid);
    if (!cl)
@@ -3534,10 +3539,11 @@ nfsd4_test_stateid(struct svc_rqst *rqstp, struct
nfsd4_compound_state *cstate,
{
    struct nfsd4_test_stateid_id *stateid;
    struct nfs4_client *cl = cstate->session->se_client;
+ struct nfsd_net *nn = net_generic(&init_net, nfsd_net_id);

    nfs4_lock_state();
    list_for_each_entry(stateid, &test_stateid->ts_stateid_list, ts_id_list)
- stateid->ts_id_status = nfs4_validate_stateid(cl, &stateid->ts_id_stateid);
+ stateid->ts_id_status = nfs4_validate_stateid(cl, &stateid->ts_id_stateid, nn);
    nfs4_unlock_state();

    return nfs_ok;
@@ -4101,6 +4107,7 @@ nfsd4_lock(struct svc_rqst *rqstp, struct nfsd4_compound_state
*cstate,
    bool new_state = false;
    int lkflg;
    int err;
+ struct nfsd_net *nn = net_generic(&init_net, nfsd_net_id);

    dprintk("NFSD: nfsd4_lock: start=%Ld length=%Ld\n",
        (long long) lock->lk_offset,
@@ -4132,7 +4139,7 @@ nfsd4_lock(struct svc_rqst *rqstp, struct nfsd4_compound_state
*cstate,
        sizeof(clientid_t));

    status = nfserr_stale_clientid;
- if (STALE_CLIENTID(&lock->lk_new_clientid))
+ if (STALE_CLIENTID(&lock->lk_new_clientid, nn))
        goto out;

    /* validate and update open stateid and open seqid */
@@ -4273,6 +4280,7 @@ nfsd4_lockt(struct svc_rqst *rqstp, struct nfsd4_compound_state

```

```

*cstate,
    struct nfs4_lockowner *lo;
    int error;
    __be32 status;
+ struct nfsd_net *nn = net_generic(&init_net, nfsd_net_id);

    if (locks_in_grace(SVC_NET(rqstp)))
        return nfserr_grace;
@@ -4283,7 +4291,7 @@ nfsd4_lockt(struct svc_rqst *rqstp, struct nfsd4_compound_state
*cstate,
    nfs4_lock_state());

    status = nfserr_stale_clientid;
- if (!nfsd4_has_session(cstate) && STALE_CLIENTID(&lockt->lt_clientid))
+ if (!nfsd4_has_session(cstate) && STALE_CLIENTID(&lockt->lt_clientid, nn))
    goto out;

    if ((status = fh_verify(rqstp, &cstate->current_fh, S_IFREG, 0)))
@@ -4434,6 +4442,7 @@ nfsd4_release_lockowner(struct svc_rqst *rqstp,
    struct list_head matches;
    unsigned int hashval = ownerstr_hashval(clid->cl_id, owner);
    __be32 status;
+ struct nfsd_net *nn = net_generic(&init_net, nfsd_net_id);

    dprintk("nfsd4_release_lockowner clientid: (%08x/%08x):\n",
        clid->cl_boot, clid->cl_id);
@@ -4441,7 +4450,7 @@ nfsd4_release_lockowner(struct svc_rqst *rqstp,
    /* XXX check for lease expiration */

    status = nfserr_stale_clientid;
- if (STALE_CLIENTID(clid))
+ if (STALE_CLIENTID(clid, nn))
    return status;

    nfs4_lock_state());
@@ -4757,7 +4766,7 @@ nfs4_state_start(void)
    */
    get_net(net);
    nfsd4_client_tracking_init(net);
- boot_time = get_seconds();
+ nn->boot_time = get_seconds();
    locks_start_grace(net, &nn->nfsd4_manager);
    nn->grace_ended = false;
    printk(KERN_INFO "NFSD: starting %ld-second grace period\n",
diff --git a/fs/nfsd/state.h b/fs/nfsd/state.h
index 29d9f0b..5946ffd 100644
--- a/fs/nfsd/state.h
+++ b/fs/nfsd/state.h

```

```

@@ -451,6 +451,7 @@ static inline struct nfs4_ol_stateid *openlockstateid(struct nfs4_stid *s)
#define WR_STATE      0x00000020

struct nfsd4_compound_state;
+struct nfsd_net;

extern __be32 nfs4_preprocess_stateid_op(struct net *net,
    struct nfsd4_compound_state *cstate,
@@ -477,7 +478,8 @@ extern __be32 nfs4_make_rec_clidname(char *clidname, struct
xdr_netobj *cname);
extern int nfs4_client_to_reclaim(const char *name);
extern int nfs4_has_reclaimed_state(const char *name, bool use_exchange_id);
extern void release_session_client(struct nfsd4_session *);
-extern __be32 nfs4_validate_stateid(struct nfs4_client *, stateid_t *);
+extern __be32 nfs4_validate_stateid(struct nfs4_client *, stateid_t *,
+    struct nfsd_net *);
extern void nfsd4_purge_closed_stateid(struct nfs4_stateowner *);

/* nfs4recover operations */

```
