

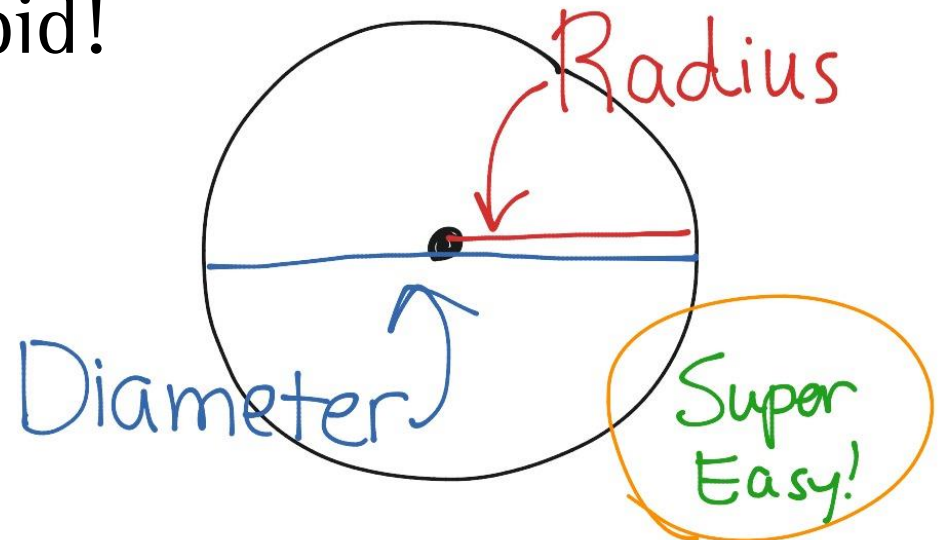
Diameter Charging with Kamailio

KamailioWorld 2016



Why Diameter Charging?

- Converged Charging: Many sources, one charging system (e.g. Data, Voice, Messages)
- Real-Time user credit-control
- Postpaid is easy, but prepaid?
- It's the standard, stupid!



Diameter Charging per RFC 4006

Scenarios according to RFC 4006:

- Quota management (Reserve, Reauthorize, Abandon)
- Simple Debit/Credit
- Balance checks
- Price inquiries

Diameter Charging per RFC 4006 (2)

Typical Scenarios:

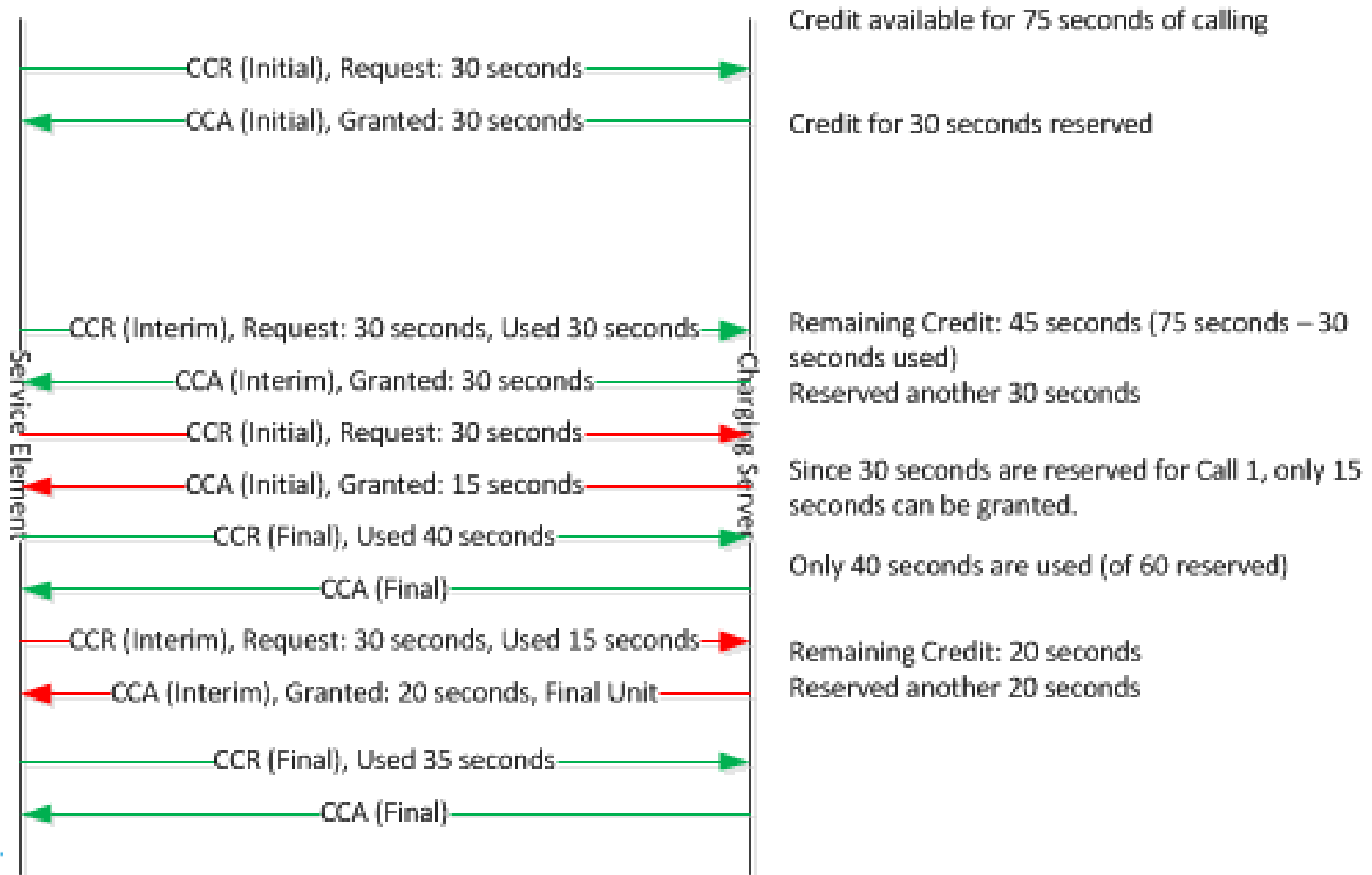
- Time (e.g. calls)
- Upload/Download Data traffic
- SMS (Text Messages)

Kamailio's "ims_charging" is currently limited to handling time (calls).

Real-Time vs. Unit-Reservation

- Real-Time account management is expensive
 - especially when it comes to concurrent service usage
- Unit-Reservation is the solution
 - requires less credit-updates
 - requires fewer credit requests
 - defined as „Session Charging with Unit Reservation” (SCUR)

A practical example



Ro-Integration with Kamailio (1)

```
loadmodule "cdp"  
loadmodule "cdp_avp"  
loadmodule "ims_charging"  
loadmodule "ims_dialog"  
  
# -- CDP params --  
modparam("cdp","config_file","/etc/kamailio/diameter.xml")  
  
# ----- ims_diameter_ro params -----  
modparam("ims_charging", "origin_host", "server.ng-voice.com");  
modparam("ims_charging", "origin_realm", "ims.voiceblue.com");  
modparam("ims_charging", "destination_realm", "ims.voiceblue.com");  
  
modparam("ims_charging","interim_update_credits",30);  
modparam("ims_charging","timer_buffer",5);  
  
# -- ims_dialog params --  
modparam("ims_dialog", "dlg_flag", FLT_DIALOG)
```

Ro-Integration with Kamailio (2)

```
$var(cc_ret) =  
Ro_CCR("CHARGING_CCR_REPLY", „orig”, 30,  
"0", "0");  
if ($var(cc_ret) < 0) {  
    sl_send_reply("402", "Payment required");  
    exit;  
}
```


Ro-Integration with Kamailio (3)

```
route[CHARGING_CCR_REPLY]
{
    xlog("cca_return code is
$avp(s:cca_return_code):
$avp(s:cca_result_code)\n");
    switch ($avp(s:cca_return_code)) {
        case 1: #success
            route(ORIG_INVITE);
            break;
    }
}
```

Ro-Integration with Kamailio (4)

```
case -1: #failure
    switch ($avp(s:cca_result_code)){
        case 4010:
            send_reply("402", "Payment required - Unsufficient funds");
            break;
        case 5006:
            send_reply("486", "Line limit exceeded");
            break;
        default:
            send_reply("402", "Payment required ($avp(s:cca_result_code))");
            break;
    }
default:
    xlog("L_ERR", "Unknown return code from CCR: [$avp(s:cca_return_code)] \n");
    send_reply("500", "Charging Error");
    break;
}
```

What's next?

- Event Charging (SMS?)
- A Charging Server, based on Kamailio
 - already being used in production
 - soon to be released as Open-Source
 - No SIP involved, only Diameter!



Questions?



Thank you!

Contact: carsten@ng-voice.com