

# 构建API服务器

本示例构建一个api服务器，为商户提供会员充值，结果查询两个接口。接口通过md5签名验证。

接口地址	功能说明
/order/request	充值订单提交
/order/query	充值结果查询

知识点:

- 数据库配置与操作
- 消息队列配置与发送
- 自定义服务名
- md5签名

## 1. 搭建基础代码

main.go

```
package main

import "github.com/micro-plat/hydra/hydra"

type apiserver struct {
    *hydra.MicroApp
}

func main() {
    app := &apiserver{
        hydra.NewApp(
            hydra.WithPlatName("mall"),
            hydra.WithSystemName("apiserver"),
            hydra.WithServerTypes("api")),
    }
    app.Start()
}
```

config.dev.go

```
// +build !prod
```

```
package main
```

```
func (api *apiserver) config() {  
    api.IsDebug = true  
    api.Conf.API.SetMainConf(`{"address":":8090","trace":true}`)  
    api.Conf.Plat.SetVarConf("db", "db", `{  
        "provider":"mysql",  
        "connString":"mrss:123456@tcp(192.168.0.36)/mrss?charset=utf8",  
        "maxOpen":20,  
        "maxIdle":10,  
        "lifeTime":600  
    }`)  
    api.Conf.Plat.SetVarConf("queue", "queue", `  
        {  
            "proto":"redis",  
            "addrs":[  
                "192.168.0.111:6379",  
                "192.168.0.112:6379",  
                "192.168.0.113:6379"  
            ],  
            "db":1,  
            "dial_timeout":10,  
            "read_timeout":10,  
            "write_timeout":10,  
            "pool_size":10  
        }  
    `)  
}
```

```
config.prod.go
```

```

// +build prod

package main

func (api *apiserver) config() {
    api.Conf.API.SetMainConf(`{"address":":8090","trace":true}`)
    api.Conf.Plat.SetVarConf("db", "db", `{
        "provider":"mysql",
        "connString":"#connString",
        "maxOpen":20,
        "maxIdle":10,
        "lifeTime":600
    }`)
    api.Conf.Plat.SetVarConf("queue", "queue", `{
        {
            "proto":"redis",
            "addrs":[
                #redis_addr
            ],
            "db":1,
            "dial_timeout":10,
            "read_timeout":10,
            "write_timeout":10,
            "pool_size":20
        }
    }`)
}

```

## 2. 初始化检查与服务注册

```

package main

import (
    "github.com/micro-plat/hydra/component"
    "github.com/micro-plat/hydra/quickstart/demo/apiserver11/services/order"
)

//init 检查应用程序配置文件，并根据配置初始化服务
func (api *apiserver) init() {
    api.Initializing(func(c component.IContainer) error {
        //检查db配置是否正确
        if _, err := c.GetDB(); err != nil {
            return err
        }
        if _, err := c.GetQueue(); err != nil {
            return err
        }

        return nil
    })

    //服务注册
    api.Micro("/order", order.NewOrderHandler)
}

```

### 3. 请求预处理，验证签名

```

package main

import (
    "fmt"

    "github.com/micro-plat/hydra/context"
    "github.com/micro-plat/hydra/quickstart/demo/apiserver11/modules/merchant"
)

func (api *apiserver) handling() {
    api.MicroApp.Handling(func(ctx *context.Context) (rt interface{}) {
        if err := ctx.Request.Check("merchant_id"); err != nil {
            return err
        }
        key, err := merchant.GetKey(ctx, ctx.Request.GetInt(merchant_id))
        if err != nil {
            return err
        }
        if !ctx.Request.CheckSign(key) {
            return fmt.Errorf(908, "商户签名错误")
        }
        return nil
    })
}

```

### 3. 构建服务

servers/order.go

```

package order

import (
    "github.com/micro-plat/hydra/component"
    "github.com/micro-plat/hydra/context"
    "github.com/micro-plat/hydra/quickstart/demo/apiserver10/modules/order"
)

type OrderHandler struct {
    container component.IContainer
    o          order.IOrder
}

func NewOrderHandler(container component.IContainer) (u *OrderHandler) {
    return &OrderHandler{
        container: container,
        o:        order.NewOrder(container),
    }
}

//RequestHandle 会员充值订单请求
func (u *OrderHandler) RequestHandle(ctx *context.Context) (r interface{}) {
    ctx.Log.Info("-----会员充值订单请求-----")
    ctx.Log.Info("1.检查请求参数")
    if err := ctx.Request.Check("merchant_id", "order_no", "account", "face", "num");
        return context.NewError(context.ERR_NOT_ACCEPTABLE, err)
    }

    ctx.Log.Info("2. 创建充值订单")
    result, err := u.o.Create(
        ctx.Request.GetString("merchant_id")
        ctx.Request.GetString("order_no"),
        ctx.Request.GetString("account"),
        ctx.Request.GetInt("face"),
        ctx.Request.GetInt("num"))
    if err != nil {
        return err
    }
    return result
}

//QueryHandle 充值结果查询
func (u *OrderHandler) QueryHandle(ctx *context.Context) (r interface{}) {
    ctx.Log.Info("-----充值结果查询-----")
    ctx.Log.Info("1.检查请求参数")
    if err := ctx.Request.Check("merchant_id", "order_no"); err != nil {
        return context.NewError(context.ERR_NOT_ACCEPTABLE, err)
    }

    ctx.Log.Info("2. 查询充值结果")
    result, err := u.o.Query(

```

```

        ctx.Request.GetString("merchant_id",
        ctx.Request.GetString("order_no"))
    if err != nil {
        return err
    }
    return result
}

```

## 4. 业务逻辑

```

package order

import (
    "github.com/micro-plat/hydra/component"
    "github.com/micro-plat/hydra/quickstart/demo/apiserver11/modules/const/keys"
    "github.com/micro-plat/qtask"
)

type IOrder interface {
    Create(merchantID string, orderNO string, account string, face int, num int) (ma
    Query(merchantID string, orderNO string) (map[string]interface{}, error)
}

type Order struct {
    c component.IContainer
    db IOrderDB
}

func NewOrder(c component.IContainer) *Order {
    return &Order{
        c: c,
        db: NewOrderDB(c),
    }
}

func (d *OrderDB) Create(merchantID string, orderNO string, account string, face int, nu
order, err := d.db.Create(merchantID, orderNO, account, face, num)
if err != nil {
    return nil, err
}
qtask.Create(d.c, "订单支付", order, 60, keys.ORDER_PAY)
return order, err
}

```

```

package order

import (
    "fmt"

    "github.com/micro-plat/hydra/component"
    "github.com/micro-plat/hydra/quickstart/demo/apiserver11/modules/const/sqls"
)

type IOrderDB interface {
    Create(merchantID string, orderNO string, account string, face int, num int) (map[string]interface{}, error)
    Query(merchantID string, orderNO string) (map[string]interface{}, error)
}

type OrderDB struct {
    c component.IContainer
}

func NewOrderDB(c component.IContainer) *OrderDB {
    return &OrderDB{
        c: c,
    }
}

func (d *OrderDB) Create(merchantID string, orderNO string, account string, face int, num int) (map[string]interface{}, error) {
    db := d.c.GetDB()
    input := map[string]interface{}{
        "merchant_id": merchantID,
        "order_no":    orderNO,
        "account":     account,
        "face":        face,
        "num":         num,
    }
    orderID, _, err := db.Scalar(sqls.Get_ORDER_ID, input)
    if err != nil {
        return nil, err
    }
    input["order_id"] = orderID
    row, _, err := db.Execute(sqls.ORDER_CREATE, input)
    if err != nil || row == 0 {
        return nil, fmt.Errorf("系统错误暂时无法创建订单%v", err)
    }
    return map[string]interface{}{
        "order_id": orderID,
    }, nil
}

func (d *OrderDB) Query(merchantID string, orderNO string) (map[string]interface{}, error) {
    db := d.c.GetDB()
    row, _, err := db.Execute(sqls.ORDER_QUERY, map[string]interface{}{
        "merchant_id": merchantID,
        "order_no":    orderNO,
    })
    if err != nil {
        return nil, err
    }
    return row, nil
}

```



```
}  
    return row, nil  
}
```