Apache Dubbo 2.7 新特性

- 小马哥（mercyblitz）

议程

- 全面拥抱 Apache 社区
- 编程模型的新特性
- Cloud Native 的新特性

小马哥

浙江 杭州

扫一扫上面的二维码图案，加我微信

小马哥（mercyblitz）

一线互联网技术专家

Apache Dubbo PPMC 成员

Alibaba Nacos 架构成员

微服务架构师

擅长领域：

微服务架构设计与实践

API 设计/实现

Java 生态体系

全面拥抱 Apache 社区

- Maven GAV 调整
- Java package 调整
- ASF 信息/ LICENSE 更新

Maven GAV 调整

```
...
<parent>
    <groupId>org.apache</groupId>
    <artifactId>apache</artifactId>
    <version>19</version>
</parent>

<groupId>org.apache.dubbo</groupId>
<artifactId>dubbo-parent</artifactId>
<version>2.7.0-SNAPSHOT</version>
...
```

Java package 调整

```java
package org.apache.dubbo.demo.provider;

import org.apache.dubbo.demo.DemoService;
import org.apache.dubbo.rpc.RpcContext;

import java.text.SimpleDateFormat;
import java.util.Date;

public class DemoServiceImpl implements DemoService {

    @Override
    public String sayHello(String name) {
        System.out.println("[" + new SimpleDateFormat("HH:mm:ss").format(new Date()) + "] Hello " + name +
", request from consumer: " + RpcContext.getContext().getRemoteAddress());
        return "Hello " + name + ", response from provider: " + RpcContext.getContext().getLocalAddress();
    }

}
```

编程模型的新特性

- 基础设施
- 全面异步编程
- 全面注解驱动编程

基础设施

- Java 8+（必须）
- Netty 4（默认）
- Spring 4+（可选）

全面异步编程

- 服务端和消费端全面异步编程
- CompletableFuture 服务返回
- 消费端 CompletableFuture 异步兼容

服务端和消费端全面异步编程

```java
public class AsyncServiceImpl implements AsyncService {

    public CompletableFuture<String> sayHello(String name) {
        RpcContext savedContext = RpcContext.getContext();
        RpcContext savedServerContext = RpcContext.getServerContext();
        return CompletableFuture.supplyAsync(() -> {
            System.out.println(savedContext.getAttachment("consumer-key1"));
            savedServerContext.setAttachment("server-key1", "server-value1");
            try {
                Thread.sleep(5000);
            } catch (InterruptedException e) {
                e.printStackTrace();
            }
            return "async response from provider.";
        });
    }

}
```

```java
RpcContext.getContext().setAttachment("consumer-key1", "consumer-value1");
CompletableFuture<String> future = asyncService.sayHello("async call request");
RpcContext savedServerContext = RpcContext.getServerContext();
future.whenComplete((v, t) -> {
    System.out.println(savedServerContext.getAttachment("server-key1"));
    if (t != null) {
        t.printStackTrace();
    } else {
        System.out.println("Response: " + v);
    }
});
System.out.println("Executed before response return.");
```

消费端 CompletableFuture 异步兼容

```java
public class AsyncServiceImpl implements AsyncService {

    public String sayHello(String name) {
        System.out.println("async provider received: " + name);
        return "hello, " + name;
    }

}
```

```java
final AsyncService asyncService = (AsyncService) context.getBean("asyncService");

CompletableFuture<String> f = RpcContext.getContext().asyncCall(() -> asyncService.sayHello("async call request"));

System.out.println("async call ret :" + f.get());


RpcContext.getContext().asyncCall(() -> {
        asyncService.sayHello("oneway call request1");
        asyncService.sayHello("oneway call request2");
});
```

全面注解驱动编程

```java
@Controller("annotationAction")
public class AnnotationAction {

    @Reference(version = "${dubbo.version}", methods = {
            @Method(name = "sayName",
                    retry = true,
                    executes = 3,
                    arguments = {
                            @Argument(index = 0)
                    })
    })
    private DemoService demoService;

    public String doSayName(String name) {
        return demoService.sayName(name);
    }

}
```

```java
@Service(version = "${dubbo.version}")
public class AnnotationServiceImpl implements DemoService {

    @Method(reliable = true)
    public String sayName(String name) {
        return "annotation:" + name;
    }

    public Box getBox() {
        return null;
    }

}
```

Cloud Native 的新特性

- 服务治理
- 分布式元信息管理
- Spring Cloud 整合

服务治理

- 注册中心精简
- Metrics
- 服务短路（熔断）

注册中心精简

```
dubbo://10.122.111.22:20880/com.xxx.compose.ic.service.vas.ValueAddServiceCompose?
anyhost=true&application=goods-
compose&default.actives=400&default.delay=-1&default.dispatcher=all&default.group=online&default.loadbalan
ce=leastactive&default.service.filter=-
monitor&default.threads=400&default.timeout=2000&default.version=1.0&delay=1&dubbo=2.6.2&environment=produ
ct&interface=com.xxx.compose.ic.service.vas.ValueAddServiceCompose&logger=slf4j&methods=queryValueAddServi
ceEditVOs,auditPassByValueAddServiceIdList,getValueAddServiceVOByServiceIds,getValueAddServiceInfoByGoodsI
dList,getRuleMatchVOByGoodsIdList,getValueAddServiceEditVOById,getValueAddServiceEditVOByIds,queryValueAdd
ServiceVOs,disableValueAddService,auditRejectByValueAddServiceIdList,saveValueAddServiceEditVO,enableValue
AddService&organization=someorg&owner=somebody&pid=54812&revision=1.18.0628.3&side=provider&timestamp=1530
671441040
```

```
dubbo://10.122.111.22:20880/com.xxx.compose.ic.service.vas.ValueAddServiceCompose?
timeout=1000&group=online&version=1.0&weight=100&timestamp=1530671441040
```

Metrics

incubator-dubbo / dubbo-metrics / dubbo-metrics-api / src / main / java / org / apache / dubbo / metrics /

ralf0131 and chickenlj Merge pull request #1966, introduces dubbo metrics API module. ...

..

BucketCounter.java	Merge pull request #1966, introduces dubbo metrics API module.
Compass.java	Merge pull request #1966, introduces dubbo metrics API module.
Counter.java	Merge pull request #1966, introduces dubbo metrics API module.
Counting.java	Merge pull request #1966, introduces dubbo metrics API module.
Gauge.java	Merge pull request #1966, introduces dubbo metrics API module.
IMetricManager.java	Merge pull request #1966, introduces dubbo metrics API module.
Metric.java	Merge pull request #1966, introduces dubbo metrics API module.
MetricFilter.java	Merge pull request #1966, introduces dubbo metrics API module.
MetricLevel.java	Merge pull request #1966, introduces dubbo metrics API module.
MetricManager.java	Merge pull request #1966, introduces dubbo metrics API module.
MetricName.java	Merge pull request #1966, introduces dubbo metrics API module.
MetricRegistry.java	Merge pull request #1966, introduces dubbo metrics API module.
MetricSet.java	Merge pull request #1966, introduces dubbo metrics API module.
NOPMetricManager.java	Merge pull request #1966, introduces dubbo metrics API module.

服务短路（熔断）

- 基于 Metrics 的 Cluster 扩展，自动熔断
- 基于 Metrics 的 Loadbalance 扩展，自动识别异常节点，动态踢出或加入

分布式元信息管理

- 注册元信息
- 配置元信息
- Alibaba Nacos 整合

Alibaba Nacos 整合

- 注册中心
- 配置中心
- Dubbo 外部化配置（分布式）

Alibaba Nacos 编程模型（SDK）

```
try {
    // Initialize the configuration service, and the console automatically obtains the following
        String serverAddr = "{serverAddr}";
        String dataId = "{dataId}";
        String group = "{group}";
        Properties properties = new Properties();
        properties.put("serverAddr", serverAddr);
        ConfigService configService = NacosFactory.createConfigService(properties);
    // Actively get the configuration.
        String content = configService.getConfig(dataId, group, 5000);
        System.out.println(content);
} catch (NacosException e) {
    // TODO Auto-generated catch block
    e.printStackTrace();
}
```

Alibaba Nacos 编程模型（SDK）

```
// Initialize the configuration service, and the console automatically obtains the following parc
String serverAddr = "{serverAddr}";
String dataId = "{dataId}";
String group = "{group}";
Properties properties = new Properties();
properties.put("serverAddr", serverAddr);
ConfigService configService = NacosFactory.createConfigService(properties);
String content = configService.getConfig(dataId, group, 5000);
System.out.println(content);
configService.addListener(dataId, group, new Listener() {
        @Override
        public void receiveConfigInfo(String configInfo) {
                System.out.println("receive1:" + configInfo);
        }
        @Override
        public Executor getExecutor() {
                return null;
        }
});
```

Alibaba Nacos 编程模型（Spring+）

```java
@RunWith(SpringJUnit4ClassRunner.class)
@ContextConfiguration(classes = {
        ListenersConfiguration.class,
        NacosBeanDefinitionRegistrarTest.class,
})
@EnableNacos(globalProperties = @NacosProperties(serverAddr = "11.163.128.36")) // Integration Test
public class NacosBeanDefinitionRegistrarTest {

    @Bean
    public Config config() {
        return new Config();
    }

    @NacosService
    private ConfigService configService;

    @Autowired
    private Config config;

    @Test
    public void testBind() throws Exception {
        configService.publishConfig(DATA_ID, DEFAULT_GROUP, "id=1\n name=mercyblitz\nvalue = 0.95");
         // Wait for async change of data
        Thread.sleep(1000);
        Assert.assertEquals(1, config.getId());
        Assert.assertEquals("mercyblitz", config.getName());
        Assert.assertTrue(0.95 == config.getValue());
    }
}
```

Alibaba Nacos 编程模型（Spring+）

```java
@Configuration
public class ListenersConfiguration {

    @NacosConfigListener(dataId = DATA_ID)
    public void onMessage(String value) {
        System.out.println("onMessage : " + value);
    }

    @NacosConfigListener(dataId = DATA_ID)
    public void onInteger(Integer value) {
        System.out.println("onInteger : " + value);
    }

    @NacosConfigListener(dataId = DATA_ID)
    public void onDouble(Double value) {
        System.out.println("onDouble : " + value);
    }

    @NacosConfigListener(dataId = "user", converter = UserNacosConfigConverter.class)
    public void onUser(User user) {
        System.out.println("onUser : " + user);
    }

}
```

Alibaba Nacos 资源

- https://nacos.io
- https://github.com/alibaba/nacos
- https://github.com/nacos-group

Spring Cloud 整合

- Spring MVC REST 整合
- 网关整合
- Spring RestTemplate 适配（实验性）

Spring MVC REST 整合

```
@Configuration
@EnableRestService
public class DubboProviderConfiguration {
    ...
}
```

```
public interface DemoService {

    @RequestMapping("/say-hello")
    String sayHello(String name);

}
```

```
@Service(
        version = "${demo.service.version}",
        application = "${dubbo.application.id}",
        protocol = "dubbo",
        registry = "${dubbo.registry.id}"
)
@RestService
public class DefaultDemoService implements DemoService {

    public String sayHello(String name) {
        hold();
        return "Say : Hello, " + name;
    }

    @RequestMapping("/say-hello/{name}")
    public String doSayHello(@PathVariable String name) {
        return "Do Say : Hello, " + name;
    }
}
```

网关整合

- 中心化 REST 网关
- REST 服务导出
- 分布式 REST 网关

Spring RestTemplate 适配（实验性）

- REST 服务路由
- 协议切换（dubbo://）

资源推荐

极部落

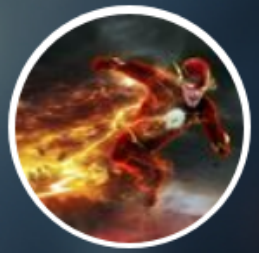
分享，彰显技术的价值！

极部落JAVA开发者大会

Netty 深入系列（视频）

Java读源码之Netty深入剖析

JavaCoder如果没有研究过Netty，那么你对Java语言的使用和理解仅仅停留在表面水平，如果你要进阶，想了解Java服务器的深层高阶知识，Netty绝对是一个必须要过的门槛。本课程带你从一个Socket例子入手，一步步深入探究Netty各个模块的源码，深入剖析Netty的工作流程和源码设计，让你不但“真懂”也要“会用”



闪电侠_

高级研发工程师

Spring Cloud 深入系列（书籍）

Spring Boot 深入系列（书籍）

小马哥新书《Spring Boot 编程思想》（即将上市）

场景分析
掌握技术选型

系统学习
拒绝浅尝辄止

重视规范
了解发展趋势

源码解读
理解设计思想

实战演练
巩固学习成果

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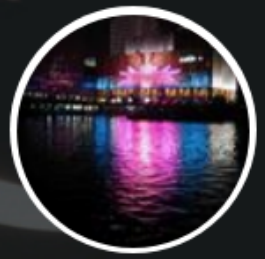
极部落JAVA开发者大会

Spring Boot 深入系列（视频）

Spring Boot 2.0深度实践之核心技术篇

课程系统性地深度探讨 Spring Boot 核心特性，引导小伙伴对 Java 规范的重视，启发对技术原理性的思考，掌握排查问题的技能，以及学习阅读源码的方法和技巧，全面提升研发能力，进军架构师队伍。



小马哥

mercyblitz

微服务架构师

了解一下？

iTechPlus

极光推送

谢　谢