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The Echo Service Manual

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1 Introduction

The capability of the echo service is to accept SOAP messages like this:

```
<?xml version="1.0"?>
<soap-env:Envelope
xmlns:soap-enc="http://schemas.xmlsoap.org/soap/encoding/" xmlns:echo="urn:echo">
    <soap-env:Body>
        <echo:echo>
            <echo:say>HELLO</echo:say>
        </echo:echo>
    </soap-env:Body>
</soap-env:Envelope>
```

Then the Echo service adds a prefix and a suffix to the message and sends it back like this:

```
<?xml version="1.0"?>
<soap-env:Envelope
xmlns:echo="urn:echo" xmlns:soap-env="http://schemas.xmlsoap.org/soap/envelope/">
    <soap-env:Body>
        <echo:echoResponse>
            <echo:hear>hi!}}</echo:hear>
        </echo:echoResponse>
    </soap-env:Body>
</soap-env:Envelope>
```

There are a C++ and a Python implementation of the Echo service, and there are configuration profiles for secure and non-secure deployments for both languages.

2 Clients

Currently in the nordugrid subversion there are at least two readily available client to test the Echo service:

- **echo_client.py**[2] is a python script which gets the credentials from the userconfig, and sends a single message to the given URL, then prints the reply
- **perftest**[3] sends as many messages as possible within a given number of seconds using a given number of threads

3 Configuration of the C++ Echo service

Here is an example configuration of a secure C++ Echo service:

```
<?xml version="1.0"?>
<cfg:ArcConfig xmlns="http://www.nordugrid.org/schemas/loader/2009/08"
xmlns:cfg="http://www.nordugrid.org/schemas/arcconfig/2009/08"
xmlns:tcp="http://www.nordugrid.org/schemas/tcp/2009/08"
xmlns:tls="http://www.nordugrid.org/schemas/tls/2009/08"
xmlns:echo="http://www.nordugrid.org/schemas/echo/2009/08">
    <cfg:Server>
        <cfg:PidFile>tmp/arched.pid</cfg:PidFile>
        <cfg:Logger>
            <cfg:File>/var/log/arc/arched.log</cfg:File>
```

[2] http://svn.nordugrid.org/trac/nordugrid/browser/arc1/trunk/src/tests/echo/echo_client.py
[3] http://svn.nordugrid.org/trac/nordugrid/browser/arc1/trunk/src/tests/perf/perftest.cpp

```
            <cfg:Level>ERROR</cfg:Level>
        </cfg:Logger>
    </cfg:Server>
    <ModuleManager>
        <Path inisections="common" initag="libpath">/usr/local/lib/arc/</Path>
    </ModuleManager>
    <Plugins>
        <Name>mcctls</Name>
        <Name>mcchttp</Name>
        <Name>mccsoap</Name>
        <Name>mcctcp</Name>
    </Plugins>
    <Chain>
        <Component name="tcp.service" id="tcp">
            <next id="tls"/>
            <tcp:Listen>
               <tcp:Interface>0.0.0.0</tcp:Interface>
               <tcp:Port>50000</tcp:Port>
               <tcp:Version>4</tcp:Version>
            </tcp:Listen>
        </Component>
        <Component name="tls.service" id="tls">
            <next id="http"/>
            <tls:KeyPath>/etc/grid-security/hostkey.pem</tls:KeyPath>
            <tls:CertificatePath>/etc/grid-security/hostcert.pem</tls:CertificatePath>
            <tls:CACertificatesDir>/etc/grid-security/certificates</tls:CACertificatesDir>
        </Component>
        <Component name="http.service" id="http">
            <next id="soap">POST</next>
            <next id="plexer">GET</next>
            <next id="plexer">PUT</next>
        </Component>
        <Component name="soap.service" id="soap">
            <next id="plexer"/>
        </Component>
        <Plexer name="plexer.service" id="plexer">
            <next id="echo">^/Echo$</next>
        </Plexer>
        <Service name="echo" id="echo">
            <echo:prefix>[</echo:prefix>
            <echo:suffix>]</echo:suffix>
        </Service>
    </Chain>
</cfg:ArcConfig>
```

4 Configuration of the Python Echo service

Here is an example configuration of a secure python Echo service:

```
<?xml version="1.0"?>
<cfg:ArcConfig xmlns="http://www.nordugrid.org/schemas/loader/2009/08"
xmlns:cfg="http://www.nordugrid.org/schemas/arcconfig/2009/08"
xmlns:tcp="http://www.nordugrid.org/schemas/tcp/2009/08"
xmlns:tls="http://www.nordugrid.org/schemas/tls/2009/08"
xmlns:echo="http://www.nordugrid.org/schemas/echo/2009/08"
xmlns:py="http://www.nordugrid.org/schemas/pythonwrapper/2009/08">
    <cfg:Server>
```

```
        <cfg:PidFile>tmp/arched.pid</cfg:PidFile>
        <cfg:Logger>
            <cfg:File>/var/log/arc/arched.log</cfg:File>
            <cfg:Level>ERROR</cfg:Level>
        </cfg:Logger>
    </cfg:Server>
    <ModuleManager>
        <Path inisections="common" initag="libpath">/usr/local/lib/arc/</Path>
    </ModuleManager>
    <Plugins>
        <Name>mcctls</Name>
        <Name>mcchttp</Name>
        <Name>mccsoap</Name>
        <Name>mcctcp</Name>
    </Plugins>
    <Chain>
        <Component name="tcp.service" id="tcp">
            <next id="tls"/>
            <tcp:Listen>
               <tcp:Interface>0.0.0.0</tcp:Interface>
               <tcp:Port>50000</tcp:Port>
               <tcp:Version>4</tcp:Version>
            </tcp:Listen>
        </Component>
        <Component name="tls.service" id="tls">
            <next id="http"/>
            <tls:KeyPath>/etc/grid-security/hostkey.pem</tls:KeyPath>
            <tls:CertificatePath>/etc/grid-security/hostcert.pem</tls:CertificatePath>
            <tls:CACertificatesDir>/etc/grid-security/certificates</tls:CACertificatesDir>
        </Component>
        <Component name="http.service" id="http">
            <next id="soap">POST</next>
            <next id="plexer">GET</next>
            <next id="plexer">PUT</next>
        </Component>
        <Component name="soap.service" id="soap">
            <next id="plexer"/>
        </Component>
        <Plexer name="plexer.service" id="plexer">
            <next id="echo">^/Echo$</next>
        </Plexer>
        <Service name="pythonservice" id="echo">
            <py:ClassName>echo_python.EchoService.EchoService</py:ClassName>
            <echo:prefix>[</echo:prefix>
            <echo:suffix>]</echo:suffix>
        </Service>
    </Chain>
</cfg:ArcConfig>
```