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NORDUGRID-MANUAL-XXX

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## THE ECHO SERVICE - THE MISSING MANUAL

The Unknown Knowarcer\*

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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**<sup>2</sup> 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**<sup>3</sup> 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/arconfig/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/arched.log</cfg:File>
```

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<sup>2</sup>[http://svn.nordugrid.org/trac/nordugrid/browser/arc1/trunk/src/tests/echo/echo\\_client.py](http://svn.nordugrid.org/trac/nordugrid/browser/arc1/trunk/src/tests/echo/echo_client.py)

<sup>3</sup><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/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>

```