

## Appendix B

# Sample Client Program

This appendix contains a sample NMS client Java program.

### NMS Client Java Program Sample

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```
import org.tmforum.mtnm.globaldefs.*;
import org.tmforum.mtnm.common.*;
import org.tmforum.mtnm.session.*;
import org.tmforum.mtnm.emsSession.*;
import org.tmforum.mtnm.nmsSession.*;
import org.tmforum.mtnm.emsSessionFactory.*;

import org.omg.CORBA.*;
import com.redstonecom.services.corbaevents.CorbaApi;
import
com.redstonecom.services.provisioningservice.unspcorbabridge.tmf814.nmsSession.Tmf814NmsSessionImpl;
import com.redstonecom.services.provisioningservice.unspcorbabridge.nmcrx.unsprXDeviceMgr.*;
import com.redstonecom.services.provisioningservice.unspcorbabridge.nmcrx.unsprXCustomerMgr.*;

import java.util.*;
import java.lang.*;
import java.text.SimpleDateFormat;
import java.io.*;

class NmcrxPSSampleClient
{
    private CorbaApi corbaApi = CorbaApi.getInstance();

    private String[] cmd_line_args;
    private java.util.Properties properties;

    EmsSession_I emsSession_I;
    EmsSessionFactory_I emsSessionFactory_I;

    static public void main( String[] args )
    {
        NmcrxPSSampleClient client = new NmcrxPSSampleClient( args, null );

        client.start();
        if ( client.emsSessionFactory_I != null )
        {
            client.initialRequests();
            System.exit(0);
        }
    }
}
```

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private NmcRxPSSampleClient( String[] args, java.util.Properties properties )
{
    this.cmd_line_args = args;
    this.properties = properties;
}

private void start()
{
    Thread.currentThread().setPriority(Thread.MAX_PRIORITY);
    corbaApi.connectToORB( cmd_line_args, properties );
    corbaApi.connectToPOA();
    try
    {
        // Get the Name Service object:
        // Connecting to Name Service
        corbaApi.connectToNameServiceByIORFile("JuniperERXNameService.ior");
        // getEmsSessionFactoryServer
        emsSessionFactory_I = getEmsSessionFactoryServer();
    }
    catch ( Exception e )
    {
        System.out.println(
            "Connecting to Name Service failed : " + e.getMessage());
    }
}

private EmsSessionFactory_I getEmsSessionFactoryServer()
{
    try
    {
        org.omg.CORBA.Object Obj = corbaApi.findObjectForName(
            "JUNIPER_NMCRX_TMF814_EMSSSESSIONFACTORY_8384" );
        return EmsSessionFactory_IHelper.narrow( Obj );
    }
    catch ( Exception e )
    {
        System.out.println( "EmsSessionFactory Server will not be available." );
        return null;
    }
}

private void initialRequests()
{
    try{
        // Create NmsSession client_nms to pass to EmsSession
        org.omg.CORBA.Object Obj;
        Tmf814NmsSessionImpl tmf814NmsSessionServer =
            new Tmf814NmsSessionImpl(cmd_line_args);
        // Export NmsSession
        Obj = tmf814NmsSessionServer.export(
            "TMF814_NMSSESSION", false );

        NmsSession_I client_nms = NmsSession_IHelper.narrow( Obj );

        // Try to get emaSession by call getEmsSession of EmsSessionFactory
        EmsSession_IHolder emsSession_IHolder = new EmsSession_IHolder();
        emsSessionFactory_I.getEmsSession(
            "admin", "nmc-rxadmin", client_nms, emsSession_IHolder);

        // set EmsSession in NmsSession, this is not standard method, but only use it at local
        tmf814NmsSessionServer.setAssociatedSession(emsSession_IHolder.value);

        emsSession_I = EmsSession_IHelper.narrow(emsSession_IHolder.value);
    }
}

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Common_IHolder common_IHolder = new Common_IHolder();

// Try to get Device Manager
emsSession_I.getManager("UNSPRXDEVICEMGR", common_IHolder );
UnsprXDeviceMgr_I deviceMgr =
    UnsprXDeviceMgr_IHelper.narrow(common_IHolder.value);

// Try to get Customer Manager
emsSession_I.getManager("UNSPRXCUSTOMERMGR", common_IHolder );
UnsprXCustomerMgr_I customerMgr =
    UnsprXCustomerMgr_IHelper.narrow(common_IHolder.value);

// ping EMS Corba Server
emsSession_I.ping();

String IP = "65.194.140.194";
String ptp = "5/0";

NameAndStringValue_T[] objectPath = new NameAndStringValue_T[3];
objectPath[0] = new NameAndStringValue_T("EMS", "JUNIPER_NMCRX");
objectPath[1] = new NameAndStringValue_T("ManagedElement", IP);
objectPath[2] = new NameAndStringValue_T("PTP", ptp);

this.testListAllByDeviceMgr(deviceMgr, IP, ptp, "8", "2.0");
this.testListAllByCustomerMgr(customerMgr, "ABC1's");

deviceMgr = null;
emsSession_I.endSession();
emsSession_I = null;
emsSessionFactory_I = null;
}
catch(ProcessingFailureException e)
{
    System.out.println("ProcessingFailureException: " + e.errorReason );
}
catch(Exception e)
{
    System.out.println("testEmsSessionFactory failed: " + e.getMessage());
}
}

private void testListAllByDeviceMgr(UnsprXDeviceMgr_I deviceMgr, String IP, String ptp, String
index, String name)
{
    this.ListAllNode(deviceMgr);
    this.ListAllATM(deviceMgr, IP, ptp);
    this.ListAllATMSUB(deviceMgr, IP, ptp);
    this.ListAllPVC(deviceMgr, IP, ptp, index);
}

private void ListAllNode(UnsprXDeviceMgr_I deviceMgr)
{
    NameAndStringValue_T[] objectPath = new NameAndStringValue_T[1];
    NamingAttributesList_THolder namingAttributesList_THolder =
        new NamingAttributesList_THolder();
    NamingAttributesIterator_IHolder namingAttributesIterator_IHolder =
        new NamingAttributesIterator_IHolder();

    objectPath[0] = new NameAndStringValue_T("EMS", "JUNIPER_NMCRX");

    try{
        deviceMgr.listAll( objectPath,

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        UnsprRXDeviceMgrObjectType.ManagedElement,
        10,
        namingAttributesList_THolder,
        namingAttributesIterator_IHolder);
    }
    catch(ProcessingFailureException e)
    {
        System.out.println("ProcessingFailureException: " + e.errorReason );
    }
}

private void ListAllATM(UnsprRXDeviceMgr_I deviceMgr, String IP, String ptp)
{
    NameAndStringValue_T[] objectPath = new NameAndStringValue_T[3];
    NamingAttributesList_THolder namingAttributesList_THolder =
        new NamingAttributesList_THolder();
    NamingAttributesIterator_IHolder namingAttributesIterator_IHolder =
        new NamingAttributesIterator_IHolder();

    objectPath[0] = new NameAndStringValue_T("EMS", "JUNIPER_NMCRX");
    objectPath[1] = new NameAndStringValue_T("ManagedElement", IP);
    objectPath[2] = new NameAndStringValue_T("PTP", ptp);

    try{
        deviceMgr.listAll( objectPath,
            UnsprRXDeviceMgrObjectType.AtmInterface,
            10,
            namingAttributesList_THolder,
            namingAttributesIterator_IHolder);

        org.tmforum.mtnm.globaldefs.NamingAttributesIterator_I nai =
            namingAttributesIterator_IHolder.value;
    }
    catch(ProcessingFailureException e)
    {
        System.out.println("ProcessingFailureException: " + e.errorReason );
    }
}

private void ListAllATMSUB(UnsprRXDeviceMgr_I deviceMgr, String IP, String ptp)
{
    NameAndStringValue_T[] objectPath = new NameAndStringValue_T[4];
    NamingAttributesList_THolder namingAttributesList_THolder =
        new NamingAttributesList_THolder();
    NamingAttributesIterator_IHolder namingAttributesIterator_IHolder =
        new NamingAttributesIterator_IHolder();

    objectPath[0] = new NameAndStringValue_T("EMS", "JUNIPER_NMCRX");
    objectPath[1] = new NameAndStringValue_T("ManagedElement", IP);
    objectPath[2] = new NameAndStringValue_T("PTP", ptp);
    objectPath[3] = new NameAndStringValue_T("AtmInterface", "ATM" + ptp);

    try{
        deviceMgr.listAll( objectPath,
            UnsprRXDeviceMgrObjectType.AtmSubInterface,
            10,
            namingAttributesList_THolder,
            namingAttributesIterator_IHolder);

        org.tmforum.mtnm.globaldefs.NamingAttributesIterator_I nai =
            namingAttributesIterator_IHolder.value;
    }
    catch(ProcessingFailureException e)

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    {
        System.out.println("ProcessingFailureException: " + e.errorReason );
    }
}

private void ListAllPVC(UnsprXDeviceMgr_I deviceMgr, String IP, String ptp, String Index)
{
    NameAndStringValue_T[] objectPath = new NameAndStringValue_T[5];
    NamingAttributesList_THolder namingAttributesList_THolder =
        new NamingAttributesList_THolder();
    NamingAttributesIterator_IHolder namingAttributesIterator_IHolder =
        new NamingAttributesIterator_IHolder();

    objectPath[0] = new NameAndStringValue_T("EMS", "JUNIPER_NMCRX");
    objectPath[1] = new NameAndStringValue_T("ManagedElement", IP);
    objectPath[2] = new NameAndStringValue_T("PTP", ptp);
    objectPath[3] = new NameAndStringValue_T("AtmInterface", "ATM" + ptp);
    objectPath[4] = new NameAndStringValue_T("AtmSubInterface", "ATM" + ptp + "." + Index);

    try{
        deviceMgr.listAll( objectPath,
                           UnsprXDeviceMgrObjectType.AtmPvc,
                           10,
                           namingAttributesList_THolder,
                           namingAttributesIterator_IHolder);

        org.tmforum.mtnm.globaldefs.NamingAttributesIterator_I nai =
            namingAttributesIterator_IHolder.value;
    }
    catch(ProcessingFailureException e)
    {
        System.out.println("ProcessingFailureException: " + e.errorReason );
    }
}

private void testListAllByCustomerMgr(UnsprXCustomerMgr_I customerMgr, String name)
{
    this.ListAllCustomerByCustomer(customerMgr);
    this.ListAllCustSiteByCustomer(customerMgr, name);
}

private void ListAllCustomerByCustomer(UnsprXCustomerMgr_I customerMgr)
{
    NameAndStringValue_T[] objectPath = new NameAndStringValue_T[1];
    NamingAttributesList_THolder namingAttributesList_THolder =
        new NamingAttributesList_THolder();
    NamingAttributesIterator_IHolder namingAttributesIterator_IHolder =
        new NamingAttributesIterator_IHolder();

    objectPath[0] = new NameAndStringValue_T("EMS", "JUNIPER_NMCRX");

    try{
        customerMgr.listAll( objectPath,
                             UnsprXCustomerMgrObjectType.Customer,
                             10,
                             namingAttributesList_THolder,
                             namingAttributesIterator_IHolder);

        org.tmforum.mtnm.globaldefs.NamingAttributesIterator_I nai =
            namingAttributesIterator_IHolder.value;
    }
    catch(ProcessingFailureException e)
    {

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        System.out.println("ProcessingFailureException: " + e.errorReason );
    }
}

private void ListAllCustSiteByCustomer(UnspRXCustomerMgr_I customerMgr, String customerName)
{
    NameAndStringValue_T[] objectPath = new NameAndStringValue_T[2];
    NamingAttributesList_THolder namingAttributesList_THolder =
        new NamingAttributesList_THolder();
    NamingAttributesIterator_IHolder namingAttributesIterator_IHolder =
        new NamingAttributesIterator_IHolder();

    objectPath[0] = new NameAndStringValue_T("EMS", "JUNIPER_NMCRX");
    objectPath[1] = new NameAndStringValue_T("Customer", customerName );

    try{
        customerMgr.listAll( objectPath,
            UnspRXCustomerMgrObjectType.CustSite,
            10,
            namingAttributesList_THolder,
            namingAttributesIterator_IHolder);

        org.tmforum.mtnm.globaldefs.NamingAttributesIterator_I nai =
            namingAttributesIterator_IHolder.value;
    }
    catch(ProcessingFailureException e)
    {
        System.out.println("ProcessingFailureException: " + e.errorReason );
    }
}

```