# **SysRep**

# **(Prototype version)**

# Introduction:

SysRep in a system reporting tool which can collect information from a large number of systems and can generate report in excel format.

# Problem Statement:

Generating or Verifying system information for a large number of system, (i.e. 100 Systems in HP DemoNet Infrastructure) is a monotonous task. In HP Project scenario we need to verify systems as a weekly process and also after each demo execution by customer. This is also a time consuming task. It would take around 10 to 15 minutes for a single system as we should also find and map the storage information from 3PAR and storage specific details.

# Protocols used:

SysRep uses SSH2 protocol for discovering non windows systems and WMI, a WBEM implementation of Microsoft for discovering information about windows systems.

# Supported system types:

This program can run only on Microsoft Windows as I have used Win32COM

Currently it can discover the following type of systems

* Microsoft Windows
* All Linux distributions
* HP-UX
* ESX

Supported Storage array

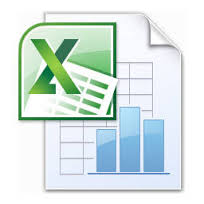
* 3PAR

# Features:

* Automatic storage mapping and storage information retrieval from 3PAR
* Don’t need to install any agent modules in Client system

# Overall working:

Input: IP Address, credentials, OS



Linux

Windows

ESX

Send details for report generation

Get all details of a System

Iterate through other systems

Retrieve basic details from the System

Retrieve 3PAR volumes mapped to the WWN

Identify 3PAR Host

Verify if storage is available

Get WWN for single system

Establish Storage connection to 3PAR using SSH2

Create connections using necessary protocols

(WMI,SSH2)

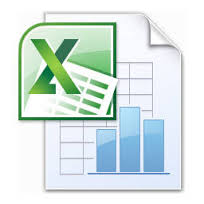
HP-UX

Classify System

Load all systems from Excel Input

Read Single System

WWN



Output: Information on System properties, Network, Storage, Hardware etc

# Drawbacks:

* Longer execution time
  + I tried to create process queue for parallel processing. Initially I had resource locking problems. I synchronized the threads and as I expected I could able to run multiple processes. But each process consumes more memory (10 MB).
* Crappy program architecture
  + Initially I started to code in a pure OOP mentality and obviously I messed it up. But still the code aggregates common functions and it is easy to maintain.

# Future scope:

Right now SysRep is fit only for HP Project. But by few small changes in code, we can retrieve almost any information and also we can make configuration changes. This tool would come handy when we need to maintain a large number of systems in future projects. Please refer to Microsoft developer networks [Win32 Classes](http://msdn.microsoft.com/en-us/library/aa394084(v=vs.85).aspx) for all possible information we can get from a system.

I would also like to share few information about some automated cloud server provisioning.

# **Server Monitoring and Management:**

When we speak about cloud, we are taking the stack only to the level of automated server deployment. These automated Server deployment includes automated OS Installation and Software installation by using some templates.

Let’s say we have provisioned 1000 systems. Still we need to make changes and configuration to the servers, operating systems or application manually to get those systems into production. Golden images and other templates like vagrant won’t help here.

This is where a hot topic ‘**Change and Configuration Management**’ comes in.

This is the real automation stuff. It can configure OS properties, application specific properties and many other tiny details for a large number of servers.

Puppet and Chef are some popular tools used for Change and Configuration Management.

All it needs is a special kind of skill called ‘**DevOps**’. (Systems engineer with Programming skills or a Programmer with Systems engineering skills are closest match, but it is more than that)

We can actually write code to create and manage infrastructure. (**Infrastructure as Code**)

These tools are used when we need to manage large number of servers (also applicable to both public and private cloud)

Ref: <http://puppetlabs.com/blog/what-is-a-devops-engineer>