REMSYS
MANAGED TECHNICAL SOLUTIONS

PUPPET CMS DEPLOYMENT AND THE REMSYS INFRASTRUCTURE MANAGEMENT PLATFORM DEVELOPMENT.

Remsys has been offering services in the IT outsourcing market for over 9 years. Our customers are very different, as well as their servers and configurations. Companies, which have large numbers of servers, at a certain point, begin to ask questions like: "How do we organize all of the chaos that we run on servers? How can the workload that the system administrators are faced with be reduced? How can IT processes be optimized?" As a growing organization, we were continuously seeking answers to these questions. And almost all of them were answered, after we discovered and got to know The Puppet. Puppet declarative language was used as a base for our Infrastructure Management Platform, or simply IMP – a product that isn't only performing simple configuration management, but does a lot more than that. Here is the story:

For a long time, all of our workloads were automatized and optimized by bash/perl scripts. Everything was fine, up to the point when we realized that maintaining these scripts sometimes took more time and resources, than just doing everything manually. In 2009, we began to search for an alternative. We investigated different options such as Cfengine, Chef, and Puppet. Finally, we decided to build our own solution based on Puppet, as it was more flexible than Cfengine and way more developed than Chef. With the help of Puppets declarative language Remsys engineers came up with an Infrastructure Management Platform or simply IMP – the solution that would automate processes within an infrastructure .

First things that were done: we automated the use of common settings, configurations, and software on all of the servers that we administered. It was rather hard for us to make the proper tool to administer the infrastructure using IMP. Before we finished with internal IMP implementation we got requests from two customers (with over 50 servers each), who wanted to implement something like Puppet in their infrastructure. It was another challenge for us, because implementing such tools in their infrastructure meant total review of the infrastructures, procedures, processes and sometimes even the approach to the concept of work. After the review, in most cases everything was updated, changed and standardized for IMP implementation.

During implementation of these 3 projects, Internal IMP and IMP for 2 clients, many interesting features were added and new concepts were developed. Thanks to IMP, Remsys and it's clients are now able to:

Industry:
- Managed Technical Solutions

Location:
- Eastern Europe

Business Challenges:
- Consistency within clients' servers environment
- Infrastructure efficiency
- Downtime risks minimization

Solution:
- Remsys IMP Implementation

Results:
- Remsys became more productive when managing servers, focusing on the company solutions and technology development, improvement and implementation.

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1. Manage SSH configuration files and SSH keys
   - Manage root login
   - Manage predefined keys
   - Manage per-server specific keys
2. Deploy perl modules through cpan
3. Manage and setup DHCPD
4. Manage sysctl (Linux, FreeBSD)
   - Maintain whole systcl.conf file, same on all servers
   - Define custom values for sysctl variables
5. Manage BSD accounting (Linux, FreeBSD)
6. Manage time zone
   - Manage time zone on servers
7. Manage and setup tftpd
8. Manage syslog
   - Install/configure rlogging software
   - Define custom per-server configuration
   - Manage server's running remote logging collect part
9. Manage /etc/resolv.conf
   - Manage system DNS resolving configurations
10. Enable/disable bsdsar (FreeBSD)
11. Manage/configure inetd/xinetd
    - Start/stop, configure needed services
12. Manage nginx
13. Manage Puppet - client configuration file and Puppet service
14. Manage NTP client
    - Install, configure and start/stop service
    - Define NTP servers
15. Manage Sudoers file
16. Manage MySQL (user and database creation)
17. Manage and setup Firewall
18. Manage lines in cofig files where lines are presented as key-value separators (for example a=b).
19. Manage FreeBSD rc.conf
    - Manage common rc.conf values and settings
20. Have an ability to determine what panel is installed (cPanel, DirectAdmin, Plesk)
21. Manage DNS
    - Managing of DNS records in simple files or MySQL databases (using Puppet manifests for nodes)
22. Manage and configure snmpd
23. Manage Cron
24. Manage Nagios
    - Perform complex integration into Puppet infrastructure (Nagios configuration being managed through Puppet)
    - Carry out automatic re-configuration
    - Achieve the ease of administration (service can be added by a 1 line define)
25. Manage Nagios Manage NRPE

About REMSYS

REMSYS has been established in 2004 on the grounds of professional competence of highly qualified engineers and the energy of a strong management team. Currently, the company offers a wide range of services and products, including infrastructure management, server management and monitoring, VPS and clustering, dedicated technical sup-port, security strengthening, consulting and others.

REMSYS offers the perfect package that transforms and standardizes the manage-ment of a server infrastructure. We are ex-ploring the hidden centralized management skills with exceptional parameters and compliance settings. Yes, we are talking about the Infrastructure Management Platform (IMP) based on Puppet that comes with a multitude of amazing functionalities to effectively reduce your workload.

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- Install, configure and manage NRPE plugins and Nagios records
26. Manage/configure Bacula server and client
   - Bacula client configuration and monitoring
27. Manage Yum Repositories
28. Manage APT repositories (for Debian based systems), and a lot more.

To allow all functions to work properly, our developers had to implement the following:

► Manage lines in files using patterns
► Manage simple configuration files (for hosts where Augeas is not available)
► Diligently work with arrays (what Puppet by default can not do or it is complicated to do)
► Diligently work with hashes (what Puppet by default can not do or it is complicated to do)
► Many custom facts.

All of these give us and our clients the possibility to free up the engineers' time for other projects. For Remsys staff, it is now much easier to administer servers. Our engineers are able to add up to 30 services, in 1 line, into monitoring. The applied concept of standardization and unification shows significant results. We already feel all the benefits of IMP implementation and are continuously enhancing the platform, as there is always room for improvement, with nothing remaining constant in the industry.