

LaaS: Open Source Evaluation

The table below covers the features required for the LaaS. Also, adding the open-source possible for these features.

Feature List	Open Source	Feature Coverage	Comments
Service Requests	Yes	OK	Details
Change Management	Yes	OK	Details
Connection Management	Yes	OK	Details
Inventory Management	Yes	HIGH	Details
Asset Management	Yes	HIGH	Details
Process Automation	Yes	HIGH	Details
Blueprint Orchestration	Yes	HIGH	Details
Capacity Management	No		<ul style="list-style-type: none">• Open source tools are available with GPL license only.• No tool found with apache license.• Awaiting inputs from Vatroslav for the feature.• Previously handled using ngWorm tool
Reservation Management	No		

Legends:

Coverage	Approximate %
OK	91% - 100%
HIGH	76% - 90%
MEDIUM	26% - 75%
LOW	0% - 25%

Service Requests/Change Management

Tool Name	Bugzilla	Trac
Features	<ul style="list-style-type: none"> • Web based architecture • Mobile app available • API available • Email Notification • Customizable workflow and fields • Indexed full-text search • Integrated reports and charts • Capable of handling large projects 	<ul style="list-style-type: none"> • Web based architecture • Mobile app available • API available • Email Notification • Customizable workflow and fields • Inbuilt reporting • Integrated wiki • Version control system is handy
Limitations	<ul style="list-style-type: none"> • Tough to install on non-Linux platforms • It is hard to manage the logged in errors • Bug numbers are unique in a particular installation. 	<ul style="list-style-type: none"> • No Indexed full-text search • Not capable to handle large projects
Technology	Perl	Python
Data sources and integrations	MySQL, Oracle, PostgreSQL, SQLite	SQLite, PostgreSQL, MySQL
Operating systems	<ul style="list-style-type: none"> • Linux • OS X • Windows 	<ul style="list-style-type: none"> • FreeBSD • Linux • NetBSD • OS X • Windows
Authentication mechanism	Password, LDAP, Radius	Password, LDAP
Input interfaces	Web, Email, GUI, CLI, API,	web, Email
Plugin/APIs available	Yes, multiple plugin available	Yes, many plugins available
Community	Strong, Mozilla Public License	Medium, BSD license
Documentation	Highly documented	Highly documented
Links	<ul style="list-style-type: none"> • https://www.bugzilla.org/ • https://www.bugzilla.org/docs/ • https://github.com/bugzilla/bugzilla 	<ul style="list-style-type: none"> • https://trac.edgewall.org/ • https://trac.edgewall.org/wiki/TracGuide • https://github.com/edgewall/trac

Connection Management

Tool Name	Netbox
Features	<ul style="list-style-type: none">• Exposed REST APIs• Virtual Routing and Forwarding• Caching for performance improvement• Change Logging• Supports rest API• Token-based authentication.
Limitations	<ul style="list-style-type: none">• No Network monitoring• No DNS and RADIUS server• No Configuration management• No facilities management
Database supported	PostgreSQL database
Technology	Python
Authentication	LDAP authentication
Community	Apache 2.0, strong
Documentation	Average documented
Links	<ul style="list-style-type: none">• https://netbox.readthedocs.io/en/stable/• https://github.com/netbox-community/netbox

Inventory Management/Asset Management

Tool Name	Openboxes	inoERP
Features	<ul style="list-style-type: none"> • Stock movements • Inventory Tracking • Dashboard • Reporting • Permission levels by role • Email notifications • Record metadata required for proper handling of particular items. • Supports API 	<ul style="list-style-type: none"> • Dynamic Pull Based System • Custom Report Builder • Multi-Device Usage • in-Built CMS & Collaboration • Flexible Architecture
Limitations	Paid features: <ul style="list-style-type: none"> • Cloud hosting • On-Premise solution • Monitoring • Backup 	<ul style="list-style-type: none"> • Limited records can be uploaded in a single transaction • High complexity
Supported OS	Ubuntu 14.04+ Mac 10.6+ Windows 10 Ubuntu Docker	Cross-platform
Database supported	MySQL	Oracle 12c, MariaDB, MySQL
Technology	Grails, Spring, Hibernate, REST API	PHP, JavaScript
Authentication method	Cookies	sessions
Community	Medium, Eclipse Public License 1.0	Low, MPL 2.0
Documentation	Well documented	Medium documentation
Links	<ul style="list-style-type: none"> • https://openboxes.com/ • https://openboxes.readthedocs.io/en/develop/ • https://github.com/openboxes/openboxes 	<ul style="list-style-type: none"> • http://inoideas.org/ • http://inoideas.org/content.php?content_type=documentation&category_id=30 • https://github.com/inoerp/inoERP

Process Automation

Tool Name	Chef	Puppet
Features	<ul style="list-style-type: none"> • Application Deployment • Infrastructure Configuration • Network configuration management • Code-driven approach and has greater flexibility and control of configurations • The “Knife” tool lessens installation headaches • Provides extensive collection of configuration and module recipes • High scalability 	<ul style="list-style-type: none"> • The complete User Interface • Powerful reporting capabilities • Grants access to a well-established support community • High scalability • Scaling-up and scaling-down of machines dynamically • Provide centralized control over all machines • Any changes made in the configuration can be easily propagated to all related machines
Limitations	<ul style="list-style-type: none"> • Does not support push functionality • Knowledge of Ruby and procedural coding is must • Steep learning curve • High complexity 	<ul style="list-style-type: none"> • Support for pre-Ruby versions is in the process of being scaled back • Its model-driven approach and has less control of configurations • Advanced tasks require CLI • Requires knowledge of Ruby at later stage
Technology	Ruby	PuppetDSL
Availability	If primary server goes down, a backup server takes up the slack.	Incorporates a multi-master architecture
Platform supported	AIX, RHEL/CentOS, Solaris, Ubuntu, and all Linux flavors	Microsoft Windows Server, CentOS, Linux or Oracle Enterprise Ruby need to be installed
Interoperability	High	High
Ease of Setup/Management	Complex	Complex
Key Concept	Recipes and cookbooks	Manifests and modules
Methodology	Uses an imperative language.	Uses a declarative language
Community	Strong, Apache 2.0	Strong, Apache 2.0
Documentation	Highly documented	Highly documented
Links	<ul style="list-style-type: none"> • https://www.chef.io/ • https://docs.chef.io/ • https://github.com/chef/chef 	<ul style="list-style-type: none"> • https://puppet.com/ • https://puppet.com/docs/ • https://github.com/puppetlabs/puppet

Blueprint Orchestration

Tool Name	Cloudify
Features	<ul style="list-style-type: none">• TOSCA-Based Blueprint Modeling• Drag-And-Drop Graphic Editor• Access and Manipulate Data Using Templates• Custom Widgets• Snapshot Creation and Restoration• Role-Based Access Control• Tenant Management• Orchestrate Network Functions Virtualization Infrastructures• Virtualize and Orchestrate Your Infrastructure Incrementally
Limitations	<ul style="list-style-type: none">• Complex UI• Complex installation and configuration• Complex learning curve
Technology	Python, YAML, TOSCA
Authentication	LDAP
Platform supported	<ul style="list-style-type: none">• Windows• Linux• Mac• Web-based
Deployment	<ul style="list-style-type: none">• Cloud Hosted• Open API
Integrations	<ul style="list-style-type: none">• Google Cloud Platform• Docker• Kubernetes• Amazon Web Services• OpenStack• Microsoft Azure• ELK-Stack
Community	Strong, Apache 2.0
Documentation	Well documented
Links	<ul style="list-style-type: none">• https://cloudify.co/• https://docs.cloudify.co/5.0.0/