

Power Week 2025

18 - 19 - 20 novembre 2025

IBM Innovation Studio Paris

#pw2025



S31 – Environnement PASE sur l'IBM i, Unix-like et outils open source : Ouverture sur Ansible



open source

18 novembre 16:00 - 17:00

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IBM

common
FRANCE

Agenda

- PASE et shell
- Configuration de l'environnement shell
- YUM
- Ansible
- Playbooks et cas d'usage

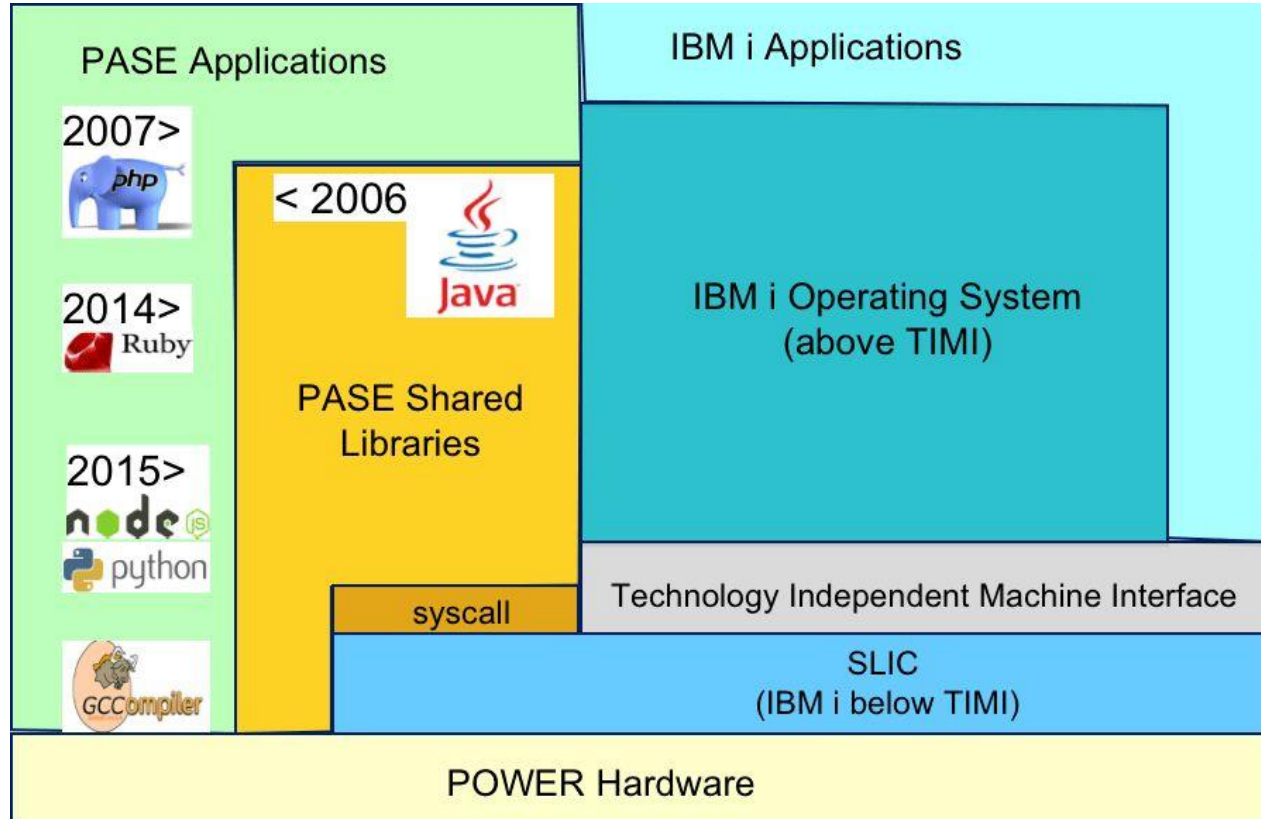
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PASE et Shell

PASE (Portable Application Solutions Environment)



Prérequis

- LPP 5770SS1 (option 33)

Display Installed Licensed Programs		
System: 		
Licensed Program	Product Option	Description
5770SS1		Library QGPL
5770SS1		Library QUSRSYS
5770SS1	*BASE	IBM i
5770SS1	1	Extended Base Support
5770SS1	2	Online Information
5770SS1	3	Extended Base Directory Support
5770SS1	7	Example Tools Library
5770SS1	9	*PRV CL Compiler Support
5770SS1	12	Host Servers
5770SS1	13	System Openness Includes
5770SS1	30	Qshell
5770SS1	33	Portable App Solutions Environment
5770SS1	34	Digital Certificate Manager
5770DG1	*BASE	IBM HTTP Server for i

- LPP 5773SC1 (option 1)

Licensed Program	Product Option	Description
5770JS1	*BASE	IBM Advanced Job Scheduler for i
5770JV1	*BASE	IBM Developer Kit for Java
5770JV1	16	Java SE 8 32 bit
5770JV1	17	Java SE 8 64 bit
5770JV1	19	Java SE 11 64 bit
5770PT1	*BASE	IBM Performance Tools for i
5770PT1	1	Performance Tools - Manager Feature
5770QU1	*BASE	IBM Query for i
5733SC1	*BASE	IBM Portable Utilities for i
5733SC1	1	OpenSSH, OpenSSL, zlib
5770ST1	*BASE	DB2 Query Mgr and SQL DevKit
5770TC1	*BASE	IBM TCP/IP Connectivity Utilities for i
5770TS1	*BASE	IBM Transform Services for i
5770TS1	1	Transforms - AFP to PDF Transform

Unix-like

- Un environnement d'exécution permettant aux applications AIX de fonctionner sur IBM i
- Se comporte de manière similaire à un système Unix
- Une interface en ligne de commande et un environnement de script de type Unix

```
Could not chdir to home directory /home/ZOUHAIR: No such file or directory  
$
```

Shell

Commande	Environnement	Usage	Interactivité	Shell
STRQSH	IBM i native Unix-like shell	Unix-like command shell	Oui	qsh
CALL QP2TERM	PASE terminal (AIX runtime)	Korn shell terminal	Oui	sh (Korn)
CALL QP2SHELL	PASE command executor	Run PASE cmd/app from CL	Non	sh (Korn)

Shell sur 5250

- STRQSH

```
QSH Command Entry  
$
```

- CALL QP2TERM

```
/Q0penSys/usr/bin/-sh  
$
```

Pour une utilisation optimale du shell, connectez-vous via SSH en utilisant un terminal comme PuTTY, ou utilisez QP2TERM

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Paramétrage de l'environnement shell

QIBM_MULTI_THREADED

- Variable qui active le multithreading pour les applications Qshell
- `ADDENVVAR ENVVAR(QIBM_MULTI_THREADED) VALUE('Y') LEVEL(*SYS)`
- `WRKENVVAR LEVEL(*SYS)`

Type options, press Enter.

1=Add 2=Change 4=Remove 5=Display details 6=Print

Opt	Name	Value
—	PATH	'/usr/bin:../QOpenSys/usr/bin:/QOpenSys' >
—	ARCAD_HOME	'/ArcadIfsPrd/arcad_home'
—	PASE_LANG	'FR_FR'
—	QIBM_PASE_CCSD	'1208'
—	ILE_DEBUGGER_1	'ALLOW_WIDE_SCREEN'
—	JAVA_HOME	'/QOpenSys/QIBM/ProdData/JavaVM/jdk' >
—	LANG	'/QSYS.LIB/FR_FR.LOCALE' >
—	QIBM_MULTI_THREADED	'Y'

.profile (\$PATH)

- `echo 'export PATH="$HOME/.local/bin:/QOpenSys/pkg/bin:$PATH:/QOpenSys/usr/bin:/usr/bin"' >> $HOME/.profile`

```
bash $ echo $PATH
/home/zouhair/.local/bin:/QOpenSys/pkg/bin:/QOpenSys/usr/bin:/usr/ccs/bin:/QOpenSys/usr/bin/X11:/usr/sbin:./usr/bin:/QOpenSys/usr/bin:/usr/bin
```

- Lors de la modification de la configuration du .profile, il est nécessaire d'activer la configuration `source $HOME/.profile` et effectuer un relogin

Comparatif Qsh, Ksh, Bash

Caractéristique	Bash	Korn Shell (ksh)	QShell (IBM i)
Origine	Bourne Again Shell, GNU project	Développé par David Korn, dérivé du Bourne Shell	Shell de type Unix développé par IBM spécifiquement pour IBM i
Conformité POSIX	Bonne conformité POSIX	Très bonne conformité POSIX	Compatible POSIX partiel
Interactivité	Très interactive (tab completion, history avancée)	Interactive avec édition des commandes et historique	Fonctionnalités limitées d'interactivité
Support scripting	Complet avec nombreuses fonctionnalités avancées	Très puissant pour scripting, avec extensions (associative arrays, floating point)	Plus limité, peut exécuter des scripts shell simples
Performances	Moins performant que ksh dans certains scripts	Très performant, proche d'awk pour le traitement texte	Suffisant pour petits scripts, moins performant
Couleur/Personnalisation	Facile à personnaliser et colorer	Personnalisable	Personnalisation limitée

BASH (Bourne-Again SHell)

- `yum install bash`

-- current user

```
CALL QSYS2.SET_PASE_SHELL_INFO('*CURRENT', '/QOpenSys/pkgs/bin/bash');
```

-- specific user (requires special authorities *USER, *OBJMGT and *SECADM)

```
CALL QSYS2.SET_PASE_SHELL_INFO('USER', '/QOpenSys/pkgs/bin/bash');
```

-- all users (requires *SECADM)

```
CALL QSYS2.SET_PASE_SHELL_INFO('*DEFAULT', '/QOpenSys/pkgs/bin/bash');
```

BASH (Bourne-Again SHell)

- `chsh -s /QOpenSys/pkgsrc/bin/bash`

```
-bash-5.2$
```

```
bash $ echo $SHELL  
/QOpenSys/pkgsrc/bin/bash
```

.profile (prompt string 1)

- `echo "export PS1="\[\e[32m\]\u@\h \$ \[\e[0m\]" >> $HOME/.profile`

```
zouhair@COMEUR $
```

- `$$\e[32m$$` : code ANSI couleur du texte en vert
- `\u` : nom de l'utilisateur courant
- `@` : séparateur utilisateur et hôte.
- `\h` : nom d'hôte
- `\$` : \$ pour utilisateur normal, # pour root
- `$$\e[0m$$` : code ANSI d'échappement (réinitialise la couleur à celle par défaut pour éviter que la couleur verte ne continue après le prompt)

.profile (language d'environnement)

English

export LANG=EN_US.UTF-8

export LC_ALL=EN_US.UTF-8

Français

export LANG=FR_FR.UTF-8

export LC_ALL=FR_FR.UTF-8

```
bash $ locale
LANG=EN_US.UTF-8
LC_COLLATE="EN_US.UTF-8"
LC_CTYPE="EN_US.UTF-8"
LC_MONETARY="EN_US.UTF-8"
LC_NUMERIC="EN_US.UTF-8"
LC_TIME="EN_US.UTF-8"
LC_MESSAGES="EN_US.UTF-8"
LC_ALL=EN_US.UTF-8
```

.profile (alias/couleurs)

- alias ll='ls -al'
- alias diff='diff --color=auto'
- alias grep='grep --color=auto'
- alias ls='ls --color=auto'
- alias tree='tree -C'

```
bash $ ll $HOME
total 48
drwx--S--- 3 zouhair 0 8192 Nov 16 19:30 .
drwxrwsrwx 12 qsys   0 8192 Nov 16 17:17 [redacted]
-rw----- 1 zouhair 0 2444 Nov 17 15:22 .bash_history
-rw-r--r-- 1 zouhair 0 305 Nov 17 15:08 .profile
-rw----- 1 zouhair 0 2 Nov 16 19:13 .sh_history
drwx--S--- 2 zouhair 0 8192 Nov 16 17:20 .ssh
```

```
bash $ ls /QOpenSys/etc
alternatives  cron.daily  cron.weekly  freetds.conf  lftp.conf  magic  mc  pki  ssh  yum.repos.d
anacrontab    cron.deny   crontab      gcrypt        locales.conf  man_db.conf  nginx  pool.conf  ssl
ca-certificates  cron.hourly  dejagnu      inputrc       logrotate.conf  mapepire    odbc.ini  profile  wgetrc
cron.d         cron.monthly  fonts        joe           logrotate.d    mariadb     odbcinst.ini  sc  yum
```

.profile (proxy)

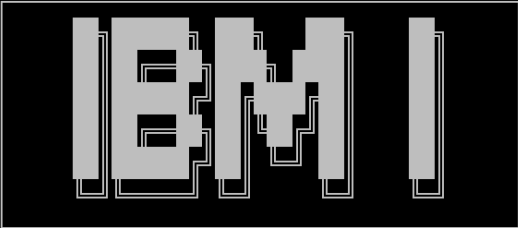
```
export http_proxy="http://x.x.x.x:80"  
export https_proxy="http://x.x.x.x:8080"  
export HTTP_PROXY="$http_proxy"  
export HTTPS_PROXY="$https_proxy"
```

```
bash $ curl -v https://www.ibm.com  
* Trying 23.201.252.108:443...  
* Connected to www.ibm.com (23.201.252.108) port 443  
* ALPN: curl offers http/1.1  
* TLSv1.3 (OUT), TLS handshake, Client hello (1):  
* TLSv1.3 (IN), TLS handshake, Server hello (2):  
* TLSv1.3 (IN), TLS handshake, Encrypted Extensions (8):  
* TLSv1.3 (IN), TLS handshake, Certificate (11):  
* TLSv1.3 (IN), TLS handshake, CERT verify (15):  
* TLSv1.3 (IN), TLS handshake, Finished (20):  
* TLSv1.3 (OUT), TLS change cipher, Change cipher spec (1):  
* TLSv1.3 (OUT), TLS handshake, Finished (20):  
* SSL connection using TLSv1.3 / TLS_AES_256_GCM_SHA384  
* ALPN: server accepted http/1.1  
* Server certificate:  
* subject: C=US; ST=New York; L=Armonk; O=International Business Machines Corporation; CN=www.ibm.com
```

Personnaliser votre bannière

- Bannière : /QOpenSys/QIBM/UserData/SC1/OpenSSH/etc/sshd_config
- Message d'accueil : /QOpenSys/etc/profile

```
PS C:\Users\ZouhairOulli> ssh user@partition
```



```
Welcome to the IBM i shell environment of "hostname"

Date and time Fri Oct 31 11:53:03 CET 2025

Filesystem      Type  Size  Used Avail Use% Mounted on
/                root  2.1T  1.1T  1.1T  52% /

You are connected with the user "profile"

Your current shell is "/QOpenSys/pkg/bin/bash"
```

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Gestionnaire de paquets YUM

YUM (Yellowdog Updater Modified)

- **ibm**: dépôt unique original (toutes les versions IBM i)
- **ibm-base**: applicables à plusieurs versions
- **ibm-release**: dépôt spécifique à une version particulière

```
bash $ yum repolist
ibmi-base | 3.6 kB 00:00:00
ibmi-release | 2.9 kB 00:00:00
repo id      repo name      status
ibmi-base    IBM i base     975
ibmi-release IBM i 7.5      2
repolist: 977
```

Configuration repository YUM

- `yum install ibmi-repos` → installation automatique du répertoire
- `yum upgrade ibmi-repos` → mettre à jour
- `/QOpenSys/etc/yum/repos.d` → installation manuelle

[ibmi-base-repo]

name=IBM i base repository

baseurl=https://public.dhe.ibm.com/software/ibmi/products/pase/rpms/repo-base-7.3/

enabled=1

gpgcheck=0

sslverify=0

Gestion des paquets

- `yum install yum-utils`
- `rpm -aq | grep <package>`

```
bash $ rpm -aq | grep nano  
nano-8.3-1.ppc64
```

- `which <package>`

```
bash $ which python  
/QOpenSys/pkg/bin/python
```

Gestion des paquets

■ yum search <package>

```
bash $ yum search curl
===== N/S Matched: curl =====
curl-devel.ppc64 : curl development files
libcurl4.ppc64 : libcurl library
python2-pycurl.ppc64 : A Python Interface To The cURL library
curl.ppc64 : command line tool and library for transferring data with URLs
```

■ yum info <package>

```
bash $ yum info bash
Installed Packages
Name      : bash
Arch      : ppc64
Version   : 5.2
Release   : 2
Size      : 8.8 M
Repo      : installed
From repo : ibmi-base
Summary   : GNU Bourne Again Shell
URL       : https://www.gnu.org/software/bash/bash.html
License   : GPL-3.0-or-later
Description: Bash is the GNU Project's shell. Bash is the Bourne Again SHell. Bash is an
           : sh-compatible shell that incorporates useful features from the Korn shell (ksh)
           : and C shell (csh). It is intended to conform to the IEEE POSIX P1003.2/ISO
           : 9945.2 Shell and Tools standard. It offers functional improvements over sh for
           : both programming and interactive use. In addition, most sh scripts can be run by
           : Bash without modification.
```

Gestion des paquets (avancé)

- `yum install <package>`
- `yum reinstall <package>`
- `yum remove <package>`

- `yum list available`
- `yum list installed`
- `yum list all`

Version des paquets

- `<package> --version`

```
bash $ python --version  
Python 3.9.18
```

```
bash $ curl --version  
curl 8.4.0 (powerpc-ibm-os400) libcurl/8.4.0 OpenSSL/1.1.1w zlib/1.2.13 brotli/1.0.9 libidn2/2.3.0 libssh2/1.9.0  
Release-Date: 2023-10-11  
Protocols: dict file ftp ftps gopher gophers http https imap imaps mqtt pop3 pop3s rtsp scp sftp smb smbs smtp smtps telnet tftp  
Features: alt-svc AsynchDNS brotli HSTS HTTPS-proxy IDN IPv6 Largefile libz NTLM SSL threadsafe TLS-SRP UnixSockets
```

```
bash $ ssh -Version  
OpenSSH_8.1p1, OpenSSL 1.1.1w 11 Sep 2023
```

Open Source Package Management

IBM i Access Client Solutions

IBM i Access Client Solutions

Fichier Edition Affichage Actions Outils Aide

Bienvenue

Système : <Sélectionner un système>

Général

- Transfert de données
- Emulateur 5250
- Système de fichiers intégré
- Navigator for i
- Terminal SSH
- Sortie imprimante

Base de données

- Schémas
- Exécution de scripts SQL
- SQL Performance Center

Console

- Console 5250
- Panneau de commande virtuel

Gestion

- Configurations système
- Gestionnaire de session 5250
- Utilitaire d'analyse de console HMC
- Gestion de modules open source

Gestion ou installation de modules open source

Gestion de modules open source

Fichier Vue Connexion Utilitaires

Connexion : @ :/

Modules installés Mises à jour disponibles Modules disponibles

Module	Version	Référentiel
ansible	2.9.10-2	@ibm
bash	5.2-1	@ibmi-base
ca-certificates	2_git20170807.10b2785-6	@ibmi-base
ca-certificates-mozilla	2022.2.58-1	@ibmi-base
charset-alias	1.14-6	@ibmi-base
chsh	1.0.1-2	@ibmi-base
coreutils-gnu	8.25-9	@ibmi-base
coreutils-pase-dummy	7.3-1	@ibmi-base
createrepo	0.10.4-4	@ibm/7.2
curl	8.4.0-2	@ibmi-base
curl-devel	8.4.0-2	@ibmi-base
db2util	1.0.12-1	installed
file-magic	5.32-7	@ibmi-base
filesystem-dummy	7.3-1	@ibmi-base
findutils	4.6.0-5	@ibmi-base
git	2.39.3-3	@ibmi-base
gnupg2	2.2.19-8	@ibm
grep-gnu	3.0-3	@ibmi-base
ibmi-repos	7.3-5	@ibmi-base
ibmichroot	2.1.3-1	@ibm
itoolkit-utils	1.1.0-1	@ibmi-base-repo
less	551-1	@ibm
libX11-6	1.7.0-3	@ibm
libX11-data	1.7.0-3	@ibm
libXau6	1.0.9-4	@ibm
libXdmcp6	1.1.3-4	@ibm
libarchive13	3.3.3-2	@ibmi-base
libassuan0	2.5.3-1	@ibm

Terminé : 197 lignes extraites

Informations Afficher les fichiers Réinstallation Retrait

Navigation en Bash

- Ctrl + L → nettoyer le terminal
- Ctrl + E → se positionner à droite (Fin sur IBM i)
- Ctrl + A → se positionner à gauche (Tab sur IBM i)
- logout → (SIGNOFF sur IBM i)

- <command> --help (F1 sur IBM i)

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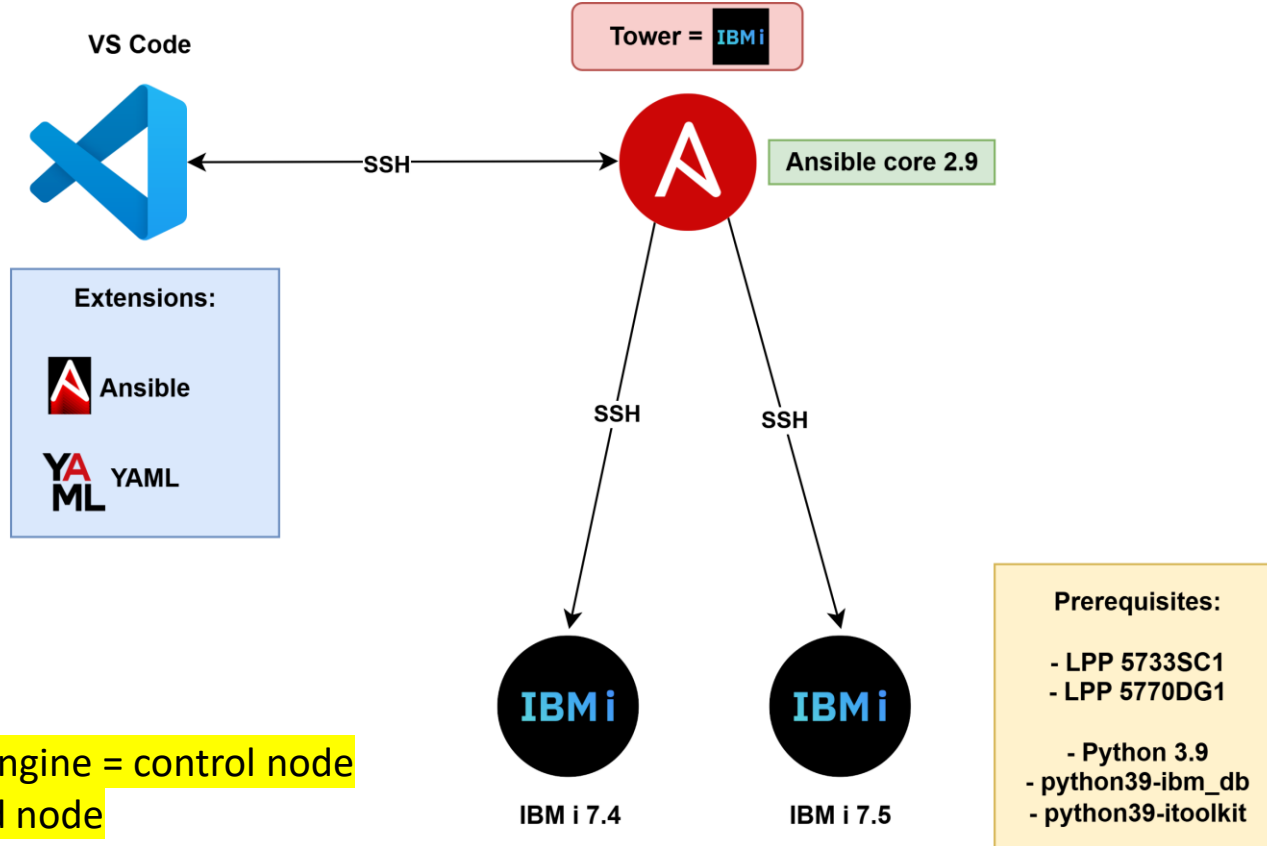
Introduction sur Ansible

Ansible

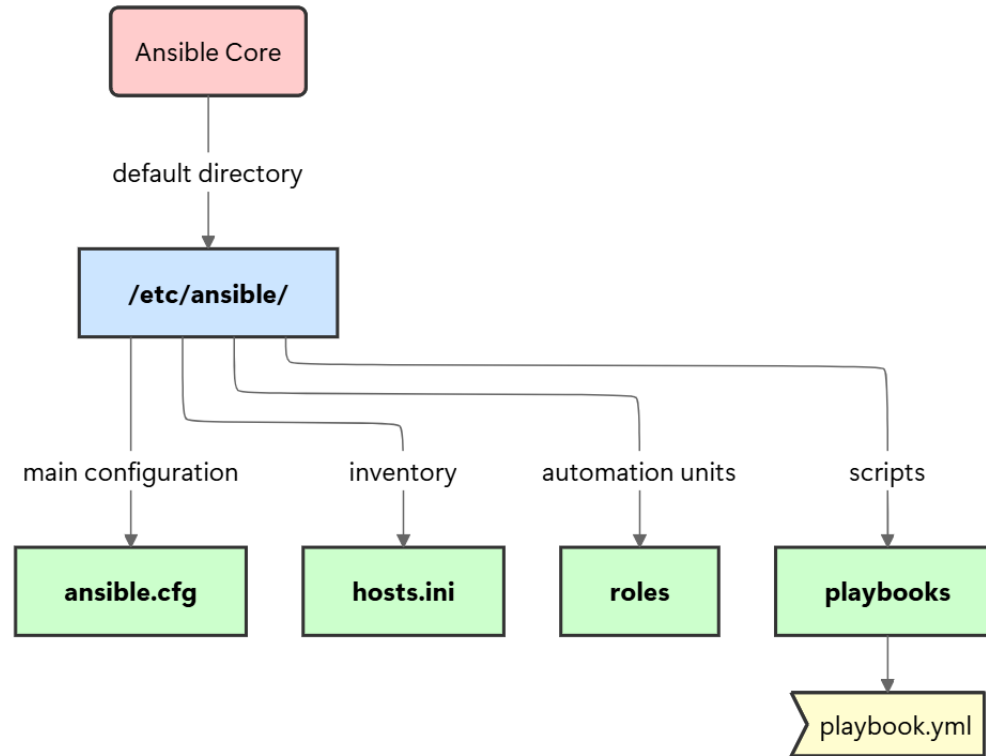


- Solution open source
- Pas d'agent requis
- Automatisation des opérations
- Intégration avec l'écosystème IT existant
- Gestion centralisée (Tower)
- Langage déclaratif pratique (Python, YAML)

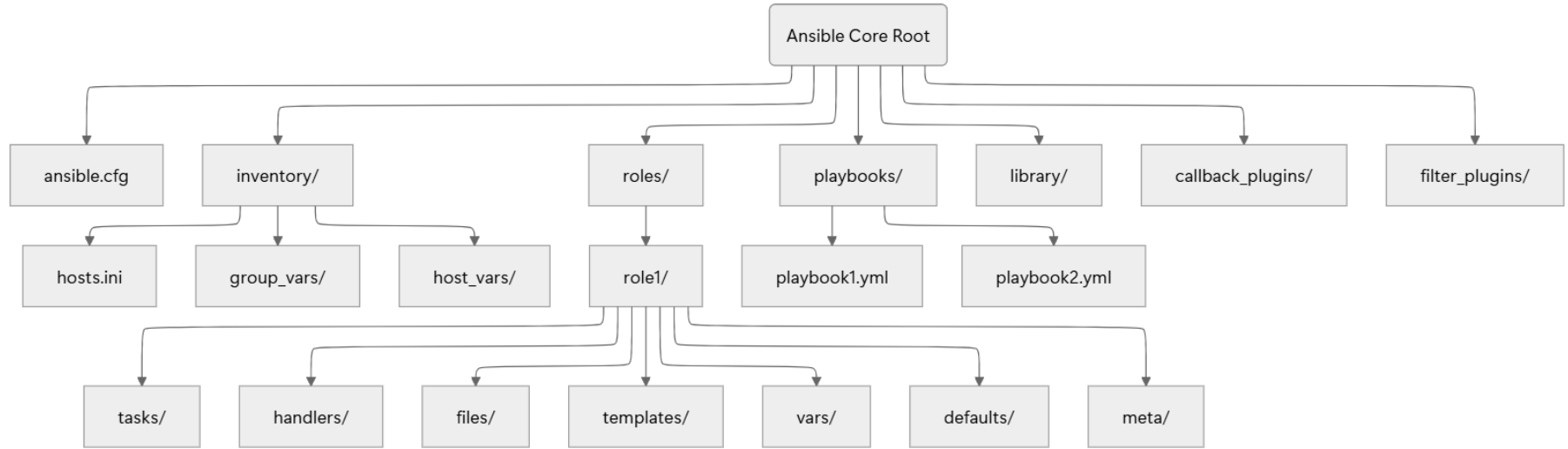
Architecture



Structure



Structure (avancée)



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Prérequis

OS IBM i (node managé)

- Product 5733SC1 (base + option 1)

```
5733SC1    *BASE    IBM Portable Utilities for i
```

```
5733SC1    1        OpenSSH, OpenSSL, zlib
```

- Product 5770DG1 (base)

```
5770DG1    *BASE    IBM HTTP Server for i
```

Paquets open source

- python39
- python39-ibm_db
- python39-itoolkkit

```
Installé :
python39.ppc64 0:3.9.21-2
python39-pandas.ppc64 0:1.3.4-1
python39-ibm_db.ppc64 0:2.0.5.15-1
python39-paramiko.noarch 0:2.7.2-1
python39-itoolkkit.ppc64 0:1.7.0-1

Dépendances installées :
python39-bcrypt.ppc64 0:3.2.0-1
python39-dateutil.noarch 0:2.8.1-2
python39-pynacl.ppc64 0:1.4.0-1
python39-cffi.ppc64 0:1.14.5-1
python39-numpy.ppc64 0:1.21.4-1
python39-pytz.noarch 0:2021.1-1
python39-cryptography.ppc64 0:3.4.7-2
python39-pycparser.ppc64 0:2.20-1
python39-six.noarch 0:1.16.0-2

Terminé !
```

Quelle version Python pour l'engine Ansible ?

Version	Support	End Of Life	Control Node Python	Target Python / PowerShell
2.19	GA: 21 July 2025 Critical: 03 Nov 2025 Security: 18 May 2026	Nov 2026	Python 3.11 - 3.13	Python 3.8 - 3.13 PowerShell 5.1
2.18	GA: 04 Nov 2024 Critical: 19 May 2025 Security: 03 Nov 2025	May 2026	Python 3.11 - 3.13	Python 3.8 - 3.13 PowerShell 5.1
2.17	GA: 20 May 2024 Critical: 04 Nov 2024 Security: 19 May 2025	EOL Nov 2025	Python 3.10 - 3.12	Python 3.7 - 3.12 PowerShell 5.1
2.16	GA: 06 Nov 2023 Critical: 20 May 2024 Security: Nov 2024	EOL July 2025	Python 3.10 - 3.12	Python 2.7 Python 3.6 - 3.12 Powershell 5.1
2.15	GA: 22 May 2023 Critical: 06 Nov 2023 Security: 20 May 2024	EOL Nov 2024	Python 3.9 - 3.11	Python 2.7 Python 3.5 - 3.11 PowerShell 3 - 5.1
2.14	GA: 07 Nov 2022 Critical: 22 May 2023 Security: 06 Nov 2023	EOL 20 May 2024	Python 3.9 - 3.11	Python 2.7 Python 3.5 - 3.11 PowerShell 3 - 5.1

Paquets open source (avancé)

Pour des cas d'usage spécifiques, vous aurez besoin de :

- python39-pandas
- python39-paramiko (pour SSH2 protocol)
- sqlite3 (pour gestion de base de données)
- libsqlite3-0

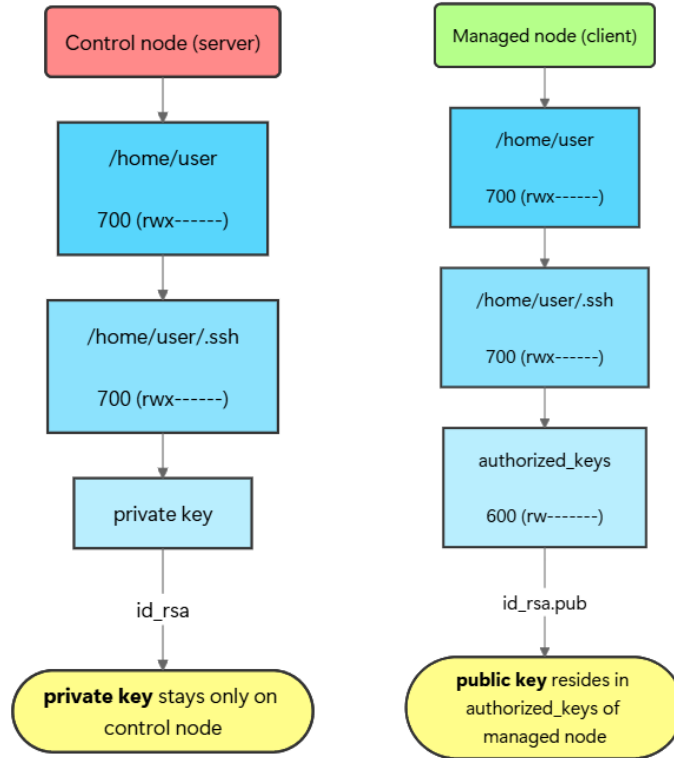
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Profil utilisateur SSH

Profil SSH générique



Quelques conseils pour SSH

- Pour une meilleure compatibilité, générez des clés en version PEM
`ssh-keygen -t rsa -N "" -C "comment" -m PEM`
- Attention aux droits sur les dossiers et fichiers (.ssh et authorized_keys)
- En cas de génération de la clé SSH sous nom différent, modifiez le fichier `/home/user/.ssh/config`

Host <ip>

User <name>

IdentityFile /home/user/.ssh/private_key

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Mise en place et configuration d'Ansible

Configuration d'Ansible (control node)

- `yum install ansible`
- `ansible --version`

```
ansible 2.9.10
  config file = None
  configured module search path = ['/home/user/.ansible/plugins/modules', '/usr/share/ansible/plugins/modules']
  ansible python module location = /QOpenSys/pkglib/python3.6/site-packages/ansible
  executable location = /QOpenSys/pkglib/bin/ansible
  python version = 3.6.15 (default, Dec 17 2021, 09:57:34) [GCC 6.3.0]
```

- `ls /QOpenSys/pkglib/bin/ansible*`

```
ansible      ansible-connection  ansible-doc  ansible-inventory  ansible-pull  ansible-vault
ansible-config  ansible-console    ansible-galaxy  ansible-playbook  ansible-test
```

Fichier de configuration (/etc/ansible/ansible.cfg)

[defaults]

inventory = /etc/ansible/hosts

library = ~/.ansible/collections/ansible_collections/ibm/power_ibmi/plugins/modules

local_tmp = ~/.ansible/tmp

remote_tmp = ~/.ansible/tmp

ansible_ssh_user = user

#comment: user is the functional/service account

remote_port = 22

force_color = true

Fichier d'inventaire (/etc/ansible/hosts) - (INI syntax)

```
# all hosts of group "PROD"
```

```
[IBMI_PROD]
```

```
PARTITION_LOCALHOST ansible_host=127.0.0.1
```

```
PARTITION_A ansible_host=10.0.0.1
```

```
PARTITION_B ansible_host=10.0.0.2
```

```
# variables applying to whole group
```

```
[IBMI_PROD:vars]
```

```
ansible_ssh_user = user
```

```
ansible_python_interpreter = "/QOpensys/pkg/bin/python3.9"
```

```
ansible_ssh_common_args = '-o StrictHostKeyChecking=no'
```

Fichier d'inventaire (/etc/ansible/hosts) - (YAML syntax)

```
---
all:
  children:
    IBMI_PROD:
      hosts:
        PARTITION_LOCALHOST:
          ansible_host: 127.0.0.1
        PARTITION_A:
          ansible_host: 10.0.0.1
        PARTITION_B:
          ansible_host: 10.0.0.2
      vars:
        ansible_python_interpreter: "/QOpensys/pkg/bin/python3.9"
        ansible_ssh_user: user
        ansible_ssh_common_args: '-o StrictHostKeyChecking=no'
```

Ansible Galaxy

■ ansible-galaxy collection install ibm.power_ibmi

Namespaces > ibm > power_ibmi

IBM **ibm.power_ibmi**

Version 3.3.0 updated 4 months ago (lat... Last updated 4 months ago ⓘ 4.4 📄 160,659 Downloads

[Install](#) [Documentation](#) [Contents](#) [Import log](#) [Dependencies](#) [Docs site](#) [Issue tracker](#) [Repo](#)

Install

Ansible Content for IBM Power Systems - IBM i provides Ansible action plugins, modules, roles and sample playbooks to automate tasks on IBM i systems.

[ibm](#) [power](#) [ibmi](#) [infrastructure](#)

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Installation `ansible-galaxy collection install ibm.power_ibmi` ⓘ
Note: Installing collections with ansible-galaxy is only supported in ansible-core >=2.13.9

Download [Download tarball](#)

Requires Ansible >=2.15.0

Ansible Content for IBM Power Systems - IBM i

Description

The **Ansible Content for IBM Power Systems - IBM i** provides modules, action plugins, roles and sample playbooks to automate tasks on IBM i, such as command execution, system and application configuration, work management, fix management, application deployment, etc.

IBM Power Systems is a family of enterprise servers that helps transform your organization by delivering industry leading resilience, scalability and accelerated performance for the most sensitive, mission critical workloads and next-generation AI and edge solutions. The Power platform also leverages open source technologies that enable you to run these workloads in a hybrid cloud environment with consistent tools, processes and skills.

Modules disponibles

Showing: [All \(117\)](#) Action (6) Module (64) Module_utils (4) Playbook (17) Role (26)

Name	Type	Description
ibmi_copy	action	
ibmi_fetch	action	
ibmi_reboot	action	
ibmi_script	action	
ibmi_synchronize	action	
ibmi_synchronize_files	action	
ibmi_at	module	Schedule a batch job
ibmi_cl_command	module	Executes a CL(Control language) command
ibmi_copy	module	Copy a save file from local to a remote IBM i node
ibmi_device_vary	module	Vary on or off target device
ibmi_display_fix	module	Displays the PTF(Program Temporary Fix) information and also get the requisite PTFs information of the PTF
ibmi_display_subsystem	module	Displays all currently active subsystems or currently active jobs in a subsystem
ibmi_download_fix	module	Download fix through SNDPTFORD
ibmi_download_fix_status	module	Checking whether the fix downloading complete
ibmi_end_subsystem	module	End an active subsystem.
ibmi_ethernet_port	module	Retrieves all the ethernet ports(both virtual and physical)information on the system.
ibmi_facts	module	Gathering ibmi facts
ibmi_fetch	module	Fetch objects or a library from a remote IBM i node and store on local

Power Week

18 -19 - 20 novembre
2025



Playbooks et cas d'usage

Ad-hoc module

- `ansible localhost -m ibm.power_ibmi.ibm_cli_command -a "cmd='CRTLIB ANSIBLE'"`

```
bash$ ansible localhost -m ibm.power_ibmi.ibm_cli_command -a "cmd='CRTLIB ANSIBLE'"
[WARNING]: No inventory was parsed, only implicit localhost is available
localhost | SUCCESS => {
  "changed": false,
  "cmd": "CRTLIB ANSIBLE",
  "delta": "0:00:00.481378",
  "end": "2025-09-30 14:12:45.767491",
  "job_log": [],
  "job_name": "574245/QUSER/QSQSRVR",
  "joblog": false,
  "rc": 0,
  "start": "2025-09-30 14:12:45.286113",
  "stderr": "",
  "stderr_lines": [],
  "stdout": "{ 'success': '+++ success CRTLIB ANSIBLE' }",
  "stdout_lines": [
    "{ 'success': '+++ success CRTLIB ANSIBLE' }"
  ]
}
```

Ad-hoc playbook

- `ansible-playbook --connection=local --inventory 127.0.0.1, playbook.yml`

```
bash$ ansible-playbook -v --connection=local --inventory 127.0.0.1, ping.yml
Using /etc/ansible/ansible.cfg as config file

PLAY [ping] *****

TASK [ping] *****
[WARNING]: Platform os400 on host 127.0.0.1 is using the discovered Python interpreter at /QOpenSys/pkgs/bin/python3.6, but future
installation of another Python interpreter could change this. See
https://docs.ansible.com/ansible/2.9/reference\_appendices/interpreter\_discovery.html for more information.
ok: [127.0.0.1] => {"ansible_facts": {"discovered_interpreter_python": "/QOpenSys/pkgs/bin/python3.6"}, "changed": false, "ping": "pong"}

PLAY RECAP *****
127.0.0.1          : ok=1    changed=0    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
```

Verboosité sur Ansible

N	Flag	Description
1	-v	Basique (task names, results)
2	-vv	+ Détails (task arguments)
3	-vvv	++ Détails (connection details)
4	-vvvv	Debug-level (SSH et détails interne)
5	-vvvvv	Maximum (connection plugin debug)

Playbook – ping test

- `ansible-playbook playbook.yml --limit ibmi`

hosts: all

gather_facts tasks:: false

- name: ping

`ansible.builtin.ping:`

```
bash$ ansible-playbook -v ping.yml --limit ibmi
Using /etc/ansible/ansible.cfg as config file

PLAY [ping] *****

TASK [ping] *****
ok: [ibmi] => {"changed": false, "ping": "pong"}

PLAY RECAP *****
ibmi                : ok=1    changed=0    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
```

Playbook - Gather facts (builtin)

```
- hosts: all
gather_facts: true
tasks:
  - debug:
      msg:
        - 'Platform: {{ ansible_distribution }}'
        - 'FQDN: {{ ansible_fqdn }}'
        - 'Python version: {{ ansible_python_version }}'
        - 'User ID: {{ ansible_user_id }}'
        - 'User UID: {{ ansible_user_uid }}'
        - 'User GID: {{ ansible_user_gid }}
```

```
TASK [Gathering Facts] *****
ok: [ibmi]

TASK [debug] *****
ok: [ibmi] => {
  "msg": [
    "Platform: OS400",
    "FQDN: partition.domain",
    "Python version: 3.9.21",
    "User ID: username",
    "User UID: 982",
    "User GID: 153"
```

- Si vous n'ajoutez pas l'option (gather_facts), défaut aura la valeur (true)

Playbook - Gather facts advanced (module)

```
- hosts: all
gather_facts: false
collections:
  - ibm.power_ibmi
```

tasks:

```
- name: system values
  ibmi_facts:
```

```
- name: print values
```

```
debug:
```

```
msg:
```

```
- 'OS Name: {{ system_info.OS_NAME }}'
- 'System Name: {{ system_name }}'
- 'FQDN: {{ system_info.HOST_NAME }}'
- 'Version Release: {{ version_release }}'
- 'System Value QCCSID: {{ system_values.QCCSID }}'
- 'Machine Type: {{ system_status.MACHINE_TYPE }}'
- 'Machine Model: {{ system_status.MACHINE_MODEL }}'
- 'Total CPU: {{ system_info.TOTAL_CPUS }}'
- 'Configured CPU: {{ system_info.CONFIGURED_CPUS }}'
- 'Total Memory: {{ system_info.TOTAL_MEMORY }}'
- 'Configured Memory: {{ system_info.CONFIGURED_MEMORY }}'
- 'ASP Storage: {{ system_status.SYSTEM_ASP_STORAGE }}'
- 'ASP Used: {{ system_status.SYSTEM_ASP_USED }}'
- 'Active Jobs: {{ system_status.ACTIVE_JOBS_IN_SYSTEM }}'
```

```
TASK [print values] *****
ok: [ibmi] => {
  "msg": [
    "OS Name: IBM i",
    "System Name: partition ",
    "FQDN: partition.server.com ",
    "Version Release: 7.3",
    "System Value QCCSID: 1147",
    "Machine Type: 9009",
    "Machine Model: 42G",
    "Total CPU: 1",
    "Configured CPU: 1",
    "Total Memory: 16384",
    "Configured Memory: 4096",
    "ASP Storage: 2290649",
    "ASP Used: 51.34",
    "Active Jobs: 233"
  ]
}
```

Playbook - CCSID verification

- hosts: all
- gather_facts: false
- collections:
 - ibm.power_ibmi
- tasks:
 - name: CCSID verification
- ibmi_sysval:
 - sysvalue:
 - {'name': 'QCCSID', 'expect': '1147'}

```
TASK [CCSID verification] *****
ok: [ibmi]

PLAY RECAP *****
ibmi                : ok=1    changed=0    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
```

Playbook - Commande native

- hosts: all
- gather_facts: false
- collections:
 - ibm.power_ibmi

tasks:

- name: create library

ibmi_cl_command:

cmd: "CRTLIB LIB(ANSIBLE)"

joblog: true

```
TASK [Create library] *****
ok: [ibmi] => {"changed": false, "cmd": "CRTLIB LIB(ANSIBLE)", "delta": "0:00:00.215290", "end": "2025-10-09 16:57:27.961063", "job_log": [], "job_name": "997331/QUSER/QSQSRVR", "joblog": false, "rc": 0, "start": "2025-10-09 16:57:27.745773", "stderr": "", "stderr_lines": [], "stdout": "{\"success\": '+++ success CRTLIB LIB(ANSIBLE)'}", "stdout_lines": [{"success": '+++ success CRTLIB LIB(ANSIBLE)'}]}
```

Playbook - Commande native

- Si on ajoute (joblog: true) dans la partie du module (ibmi_cl_command), on aura plus de log dans l'output

```
TASK [Create library] *****
ok: [ibmi] => {"changed": false, "cmd": "CRTLIB LIB(ANSIBLE)", "delta": "0:00:00.149121", "end": "2025-10-09 16:54:32.899129", "job_log": [{"FROM_INSTRUCTION": "0A68", "FROM_LIBRARY": "QSYS", "FROM_MODULE": null, "FROM_PROCEDURE": null, "FROM_PROGRAM": "QLICRLIB", "FROM_USER": "████████", "MESSAGE_FILE": "QCPFMMSG", "MESSAGE_ID": "CPC2102", "MESSAGE_LIBRARY": "QSYS", "MESSAGE_SECOND_LEVEL_TEXT": "&N Cause . . . . . : Library ANSIBLE created into auxiliary storage pool (ASP) 1, ASP device *SYSBAS.", "MESSAGE_SUBTYPE": null, "MESSAGE_TEXT": "Library ANSIBLE created.", "MESSAGE_TIMESTAMP": "2025-10-09T16:54:32.867680", "MESSAGE_TYPE": "COMPLETION", "ORDINAL_POSITION": 4, "SEVERITY": 0, "TO_INSTRUCTION": "5842", "TO_LIBRARY": "QXMLSERV", "TO_MODULE": "PLUGILE", "TO_PROCEDURE": "ILECMD EXC", "TO_PROGRAM": "XMLSTOREDP"}, {"FROM_INSTRUCTION": "8975", "FROM_LIBRARY": "QSYS", "FROM_MODULE": "QSQSRVR", "FROM_PROCEDURE": "QSQSRVR", "FROM_PROGRAM": "QSQSRVR", "FROM_USER": "████████", "MESSAGE_FILE": "QCPFMMSG", "MESSAGE_ID": "CPF9898", "MESSAGE_LIBRARY": "QSYS", "MESSAGE_SECOND_LEVEL_TEXT": "&N Cause . . . . . : This message is used by application programs as a general escape message.", "MESSAGE_SUBTYPE": null, "MESSAGE_TEXT": "SERVER MODE CONNECTING JOB IS 011842/QSECOFR/QPOZSPWP.", "MESSAGE_TIMESTAMP": "2025-10-09T16:54:32.757617", "MESSAGE_TYPE": "COMPLETION", "ORDINAL_POSITION": 3, "SEVERITY": 40, "TO_INSTRUCTION": "8975", "TO_LIBRARY": "QSYS", "TO_MODULE": "QSQSRVR", "TO_PROCEDURE": "QSQSRVR", "TO_PROGRAM": "QSQSRVR"}, {"FROM_INSTRUCTION": "8884", "FROM_LIBRARY": "QSYS", "FROM_MODULE": "QSQSRVR", "FROM_PROCEDURE": "QSQSRVR", "FROM_PROGRAM": "QSQSRVR", "FROM_USER": "████████", "MESSAGE_FILE": null, "MESSAGE_ID": null, "MESSAGE_LIBRARY": null, "MESSAGE_SECOND_LEVEL_TEXT": null, "MESSAGE_SUBTYPE": null, "MESSAGE_TEXT": "User Profile = ████████", "MESSAGE_TIMESTAMP": "2025-10-09T16:54:32.757568", "MESSAGE_TYPE": "COMPLETION", "ORDINAL_POSITION": 2, "SEVERITY": 0, "TO_INSTRUCTION": "8884", "TO_LIBRARY": "QSYS", "TO_MODULE": "QSQSRVR", "TO_PROCEDURE": "QSQSRVR", "TO_PROGRAM": "QSQSRVR"}], "job_name": "997331/QUSER/QSQSRVR", "joblog": true, "rc": 0, "start": "2025-10-09 16:54:32.750008", "stderr": "", "stderr_lines": [], "stdout": '{"success": '++ success CRTLIB LIB(ANSIBLE)}', "stdout_lines": [{"success": '++ success CRTLIB LIB(ANSIBLE)}"]}
```

Playbook - Shell command

- hosts: all

gather_facts: false

collections:

- ibm.power_ibmi

tasks:

- name: create file

ibmi_cl_command:

cmd: STRQSH CMD('/QOpenSys/usr/bin/touch /home/user/file')

```
TASK [create file] *****
ok: [ibmi] => {"changed": false, "cmd": "STRQSH CMD('/QOpenSys/usr/bin/touch /home/user/file')", "delta": "0:00:00.432284", "end": "2025-10-15 13:50:31.863521", "job_log": [], "job_name": "997513/QUSER/QSQSRVR", "joblog": false, "rc": 0, "start": "2025-10-15 13:50:31.431237", "stderr": "", "stderr_lines": [], "stdout": "{\"success\": \"+++ success STRQSH CMD('/QOpenSys/usr/bin/touch /home/user/file')\"}", "stdout_lines": [{"success\": \"+++ success STRQSH CMD('/QOpenSys/usr/bin/touch /home/user/file')\"}]}
```

Playbook - DSPUSRPRF (+ dynamic variable)

- hosts: all
gather_facts: false
collections:
- ibm.power_ibmi

tasks:

- name: Display user profile
ibmi_cl_command:
cmd: "DSPUSRPRF USRPRF({{ user }}) TYPE(*ALL)"
register: dspusrprf_result
- name: print stdout result
debug:
msg: "{{ dspusrprf_result.stdout_lines }}"

```
TASK [print stdout lines] *****
ok: [ibmi] => {
  "msg": [
    "
                                Display User Profile - *BASIC                                Pag
e      1",
    "5770551 V7R3M0 160422
53 CEST",
    " User Profile . . . . . : *username",
    " Previous sign-on . . . . . : 10-10-25 13:26:19",
    " Password verifications not valid . . . . . : 0",
    " Status . . . . . : *ENABLED",
    " Date password last changed . . . . . : 02-09-25 12:31:32",
    " Password is *NONE . . . . . : *NO",
    " Password expiration interval . . . . . : 90",
    " Date password expires . . . . . : 01-12-25",
    " Password set expired by command . . . . . : *NO",
    " Block password change . . . . . : 24",
    " Local password management . . . . . : *YES",
    " User class . . . . . : *SYSOPR",
    " Creation date/time . . . . . : 16-09-22 09:52:06",
    " Created by user . . . . . : by",
    " Change date/time . . . . . : 10-10-25 13:26:15",
    " Last used date . . . . . : 10-10-25",
    " Restore date/time : ",
    " User expiration date . . . . . : *NONE",
```

- ansible-playbook -v playbook.yml --limit ibmi -e user=name

Playbook - PTF (Download + Load + Apply)

```
- hosts: all
  gather_facts: false
  collections:
    - ibm.power_ibmi
```

tasks:

```
- name: sndptford
  ibmi_cl_command:
    cmd: "SNDPTFORD PTFID({{ptf}} {{product}} {{version}})"
  joblog: true

- name: lodptf
  ibmi_cl_command:
    cmd: "LODPTF LICPGM({{product}}) DEV(*SAVF) SELECT({{ptf}}) SAVF(QGPL/Q{{ptf}})"
  joblog: true

- name: apyptf
  ibmi_cl_command:
    cmd: "APYPTF LICPGM({{product}}) SELECT({{ptf}}) DELAYED(*YES) APYREQ(*YES)"
  joblog: true
```

Playbook - SQL query (user information)

- hosts: all
- gather_facts: false
- collections:
 - ibm.power_ibmi
- tasks:
 - name: view QSYS2.USER_INFO_BASIC
 - ibmi_sql_query:
 - sql: "SELECT * FROM QSYS2.USER_INFO_BASIC WHERE AUTHORIZATION_NAME = '{{ user }}'"
 - register: query_user_result
- name: display result from query
- debug:
 - msg: "{{query_user_result }}"

```
TASK [dsiply the result from query] *****
ok: [ibmi] => {
  "msg": {
    "changed": false,
    "delta": "0:00:01.841757",
    "end": "2025-10-10 12:51:27.106988",
    "failed": false,
    "job_log": [],
    "job_name": "997331/QUSER/QSQSRVR",
    "rc": 0,
    "row": [
      {
        "ACCOUNTING_CODE": "",
        "ASSISTANCE_LEVEL": "*ADVANCED",
        "ATTENTION_KEY_HANDLING_PROGRAM_LIBRARY_NAME": "",
        "ATTENTION_KEY_HANDLING_PROGRAM_NAME": "*SYSVAL",
        "AUTHORITY_COLLECTION_ACTIVE": "NO",
        "AUTHORITY_COLLECTION_REPOSITORY_EXISTS": "NO",
        "AUTHORIZATION_NAME": "username",
        "BLOCK_PASSWORD_CHANGE": "24",
        "CHARACTER_CODE_SET_ID": "QCCSID",
        "CHARACTER_IDENTIFIER_CONTROL": "*SYSVAL",
        "COUNTRY_OR_REGION_ID": "*SYSVAL",
        "CURRENT_LIBRARY_NAME": "Z0",
```

Playbook - SQL query (disk status)

```
- hosts: all
  gather_facts: false
  collections:
    - ibm.power_ibmi

  tasks:
    - name: view QSYS2.SYSDISKSTAT
      ibmi_sql_query:
        sql: "select * from QSYS2.SYSDISKSTAT where resource_status = 'ACTIVE' and protection_status = 'FAILED'"
        joblog: true
        register: disk_results

    - name: print output
      debug:
        msg: "Failed disk count {{ disk_results.row_count }} Results: {{ disk_results.row }}"
```

```
TASK [print output] *****
ok: [ibmi] => {
  "msg": "Failed disk count 0 Results: []"
```

Playbook - ANZDFTPWD (+ SQL query)

```
- hosts: all
  gather_facts: false
  collections:
    - ibm.power_ibmi

  tasks:
    - name: ANZDFTPWD
      ibmi_cl_command:
        cmd: "ANZDFTPWD ACTION(*NONE)"
        joblog: true

    - name: physical file QUSRSYS/QASECPWD
      ibmi_sql_query:
        sql: "SELECT * FROM QUSRSYS.QASECPWD"
        register: default_password_users

    - name: print output
      debug:
        msg: "{{ default_password_users.row }}"
```

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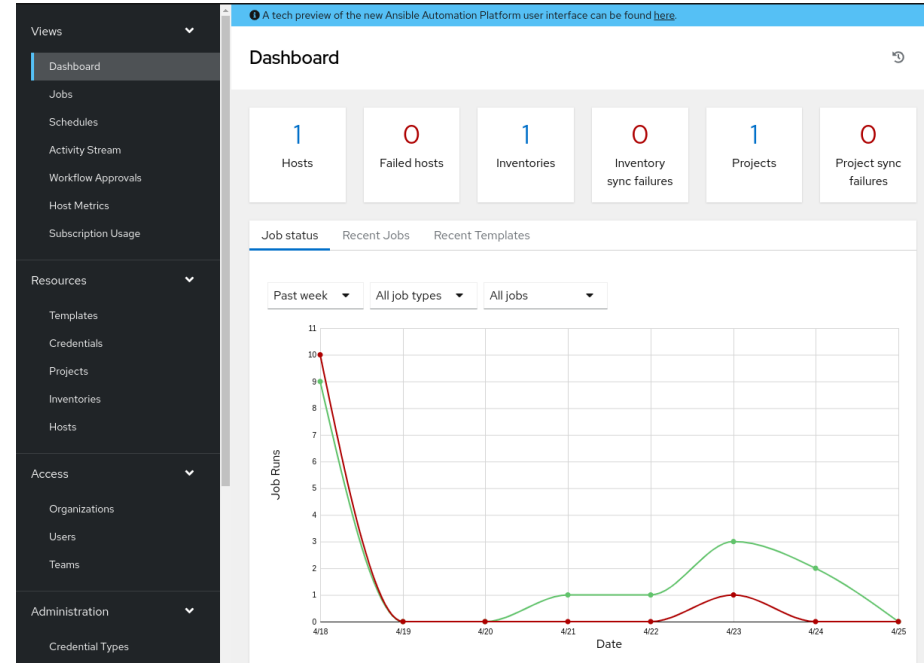
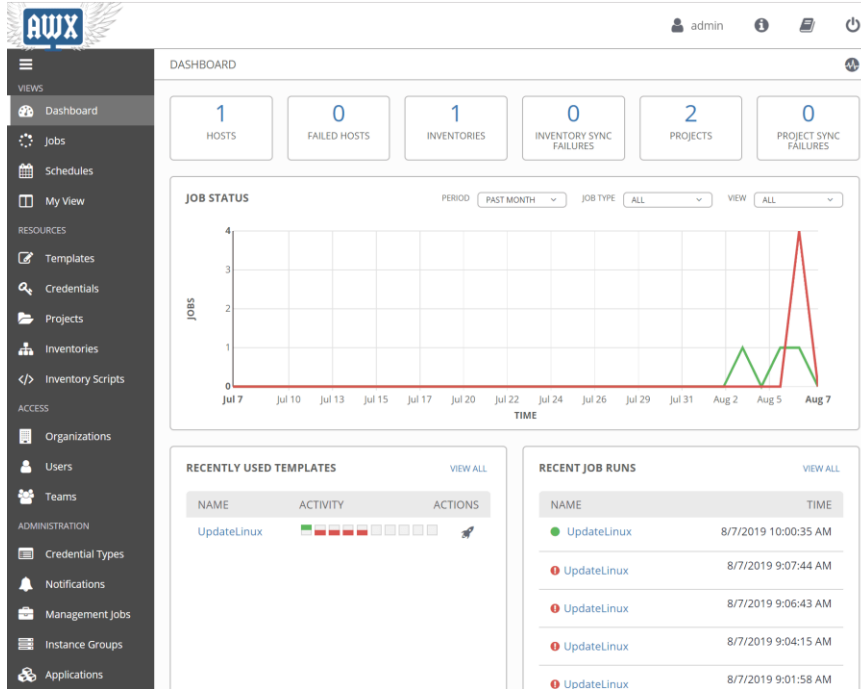
> ibmi_services

> security_management

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robjertsen1 Travis build: 538 ✖ afe940b · 4 months ago [History](#)

Name	Last commit message	Last commit date
..		
cicd-cli	Travis build: 505	7 months ago
cicd-tower	Travis build: 505	7 months ago
db2mirror_setup_via_powervc	Travis build: 505	7 months ago
fix_management	Travis build: 538	4 months ago
ibmi_services	Travis build: 538	4 months ago
security_management	Travis build: 505	7 months ago
towerapi	Travis build: 505	7 months ago
README.md	Travis build: 6491	3 years ago



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