

Working with INAU

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Rev.	Date	By	
1.0.0	2020-04-20	Lorenzo Pivetta	Initial release
1.1.0	2020-05-21	Lorenzo Pivetta	Add UbuntuDesktop distribution
1.2.0	2020-12-22	Lorenzo Pivetta	Add GUI installation in ELETTRA example
2.0.0	2021-04-19	Lorenzo Pivetta	Changes for revised INAU service
2.0.1	2024-02-21	Lorenzo Pivetta	Add CCD and EC distributions

Client configuration

Currently INAU supports three output formats: text/html, application/json and text/plain. To setup text/plain output in your curl client, add the following lines to `~/.curlrc`:

```
header "Accept: text/plain"
write-out \n
```

For the shell completion to work, add the content in Appendix A to your `~/.bash_completion`, and add the certificate in Appendix B to `/etc/ssl/certs/ca-certificates.crt` on your system. The certificate is already available on *gaia*.

If you prefer not to install the certificate, add the option “-k” to the curl command line.

Enabling a software component

Every new software component has to be defined and enabled in INAU. Adding a new software component in INAU is in charge of INAU administrators¹. The developer has to submit a ticket or send an email or drop a message in the “cs-inau” channel on chat.elettra.eu, specifying the following information:

- Full name of the repository (e.g. *cs/ds/fake*)
- Architecture (e.g. *ppc*, *i686*, *x86_64*, *cascadelake-64*, *cortexa8hf-neon*)
- Distribution (e.g. *Ubuntu*, *UbuntuDesktop*, *CCD*, *EC*)
- Version (e.g. *18.04*)
- Type (e.g. *C++*, *Python*...)

The information above has to be specified for every 5-tuple (e.g. *repository/architecture/distribution/version/type*) for which the software component has to be installed.

Please note that enabling a repository in INAU requires the repository to be clonable, meaning that it must contain the proper repository hierarchy² or, at least, the README.md file. Thus, the proper time to request to enable a repository is **after** the initial import and **before** making any annotated tag.

UbuntuDesktop has to be specified for software components that target installation into workstations, e.g. graphical user interfaces. The supported types are *cplusplus*, *python*, *configuration*, *shellscript*.

Getting information from INAU

The following commands show the information concerning the supported architectures and distributions (including versions):

```
>curl -s https://inau.elettra.eu/v2/cs/architectures
```

¹ Currently L.Pivetta and A.I.Bogani.

² See section “Repository folder structure” in “Software development procedures and installation policy for control systems” document.



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```
name
-----
cascadelake-64
cortexa8hf-neon
i686
ppc
x86_64

>curl -s https://inau.elettra.eu/v2/cs/distributions
id  name          version
-----
1   Debian        3.0
2   Ubuntu        7.10
3   Ubuntu        10.04
4   Ubuntu        14.04
5   Ubuntu        16.04
6   Ubuntu        18.04
7   Ubuntu        10.04-caen
8   UbuntuDesktop 18.04
9   UbuntuDesktop 10.04
10  UbuntuDesktop 16.04
11  CCD           1.5-0
12  EC            1.5-0
13  CCD           2.0-0
14  CCD           2.1-0
15  CCD           2.4-0
```

List the available facilities:

```
>curl -s https://inau.elettra.eu/v2/cs/facilities
name
-----
development
diproi
elettra
fermi
infra
laser
ldm
magnedyn
padres
terafermi
timer
timex
```

List the hosts belonging to a facility, **fermi** in this example:

```
>curl -s https://inau.elettra.eu/v2/cs/facilities/fermi/hosts
name          server          facility
-----
ec-vac-usa-01  srv-ec-srf.fcs   fermi
```



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ec-bam-kg03-01	srv-ec-srf.fcs	fermi
ec-bpm-esa-01	srv-ec-srf.fcs	fermi
...		
si	srv-fs-srf-01.fcs	fermi
fadiesis	srv-fs-srf-01.fcs	fermi
ca-fermi	srv-fs-srf-01.fcs	fermi
pcl-pil-plcr-01	srv-fs-srf-01.fcs	fermi
pcl-sl-slr-01	srv-fs-srf-01.fcs	fermi
pcl-sl-slr-02	srv-fs-srf-01.fcs	fermi

List the installation history on **padres** facility:

```
>curl -s https://inau.elettra.eu/v2/cs/facilities/padres/installations
```

host	repository	tag	date	author
pcl-padres-pos-02	cs/gui/laserpss	1.1.0	Thu, 15 Apr 2021 16:48:43	-0000
lucio.zambon				
pcl-virt-padres-01	cs/gui/laserpss	1.1.0	Thu, 15 Apr 2021 16:48:43	-0000
lucio.zambon				
pcl-padres-pos-02	cs/browser/padres	1.0.26	Wed, 14 Apr 2021 11:21:25	-0000
adriano.contillo				
pcl-virt-padres-01	cs/browser/padres	1.0.26	Wed, 14 Apr 2021 11:21:25	-0000
adriano.contillo				
prv-ds-padres-01	cs/interlock/padres	1.0.26	Wed, 14 Apr 2021 11:21:25	-0000
adriano.contillo				
prv-ds-padres-02	cs/interlock/padres	1.0.26	Wed, 14 Apr 2021 11:21:25	-0000
adriano.contillo				
pcl-padres-pos-02	cs/gui/laserpsshardware	1.6.0	Sat, 10 Apr 2021 10:08:16	-0000
lucio.zambon				
pcl-virt-padres-01	cs/gui/laserpsshardware	1.6.0	Sat, 10 Apr 2021 10:08:16	-0000
lucio.zambon				
pcl-padres-pos-02	cs/browser/fermi	1.0.40	Thu, 08 Apr 2021 15:41:25	-0000
claudio.scafuri				
...				

List the installation history on **ldm** facility for the host **ec-ldm-ehf-01**:

```
>curl -s https://inau.elettra.eu/v2/cs/facilities/ldm/hosts/ec-ldm-ehf-01/installations
```

repository	tag	date	author
cs/ds/lakeshore336	1.0.0	Wed, 31 Mar 2021 16:17:51	-0000
alessio.bogani			
cs/ds/tpg256a	1.0.0	Tue, 30 Mar 2021 15:35:45	-0000
alessio.bogani			
cs/ds/procfs	1.0.0	Tue, 30 Mar 2021 14:20:38	-0000
alessio.bogani			
cs/ds/rtgentec	1.0.1	Tue, 20 Oct 2020 15:38:32	-0000
graziano.scalamera			
cs/ds/rtltf	1.1.1	Tue, 20 Oct 2020 08:14:29	-0000
giulio.gaiò			
cs/ds/wett8	1.0.1	Wed, 26 Aug 2020 15:19:57	-0000
stefano.cleva			
cs/ds/axisg2	1.18.3	Wed, 19 Aug 2020 13:39:45	-0000
alessandro.abrami			
...			



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Installing a software component

To install a software component, either a Tango device server, a panel or a configuration file, you need to provide the destination **facility**, the **annotated tag** and the **repository name**³. This also means that you already received an email by inau, stating the successful build of the repository for that specific annotated tag.

Example 1

Install the **rtevr-srv** Tango device server release **1.1.0** for all hosts in the **padres** facility⁴:

```
>curl https://inau.elettra.eu/v2/cs/facilities/padres/installations -u lorenzo.pivetta  
-d"tag=1.1.0" -d"repository=cs/ds/rtevr"␣
```

using your own LDAP authentication. Facility-wide installations are available for all hosts of the facility sharing the same architecture/distribution/version. The executable file goes into */runtime/bin* of the target systems.

Example 2

Install the **rtevr-srv** Tango device server release **1.0.0** for all hosts in the **fermi** facility:

```
>curl https://inau.elettra.eu/v2/cs/facilities/fermi/installations -u lorenzo.pivetta  
-d"tag=1.0.0" -d"repository=cs/ds/rtevr"␣
```

Replace with the proper facility name, tag and repository name as needed.

Example 3

Install the **v1720-srv** Tango device server release **1.1.1** just on the host **ec-bl-ehf-03** in the **padres** facility:

```
>curl https://inau.elettra.eu/v2/cs/facilities/padres/hosts/ec-bl-ehf-03/installations -u  
lorenzo.pivetta -d"tag=1.1.1" -d"repository=cs/ds/v1720"␣
```

The executables files for host specific installations go into */runtime/site/<hostname>/bin* of the target system, in this specific example */runtime/site/ec-bl-ehf-03/bin*.

Example 4

Install **TIMER** browser configuration file release **2.0.2** for all **workstations** in the **timer** facility:

```
>curl https://inau.elettra.eu/v2/cs/facilities/timer/installations -u lorenzo.pivetta  
-d"tag=2.0.2" -d"repository=cs/etc/browser/tmr"
```

³ Repositories have to be defined in gitlab.elettra.eu, adhering to the proper hierarchy.

⁴ More precisely, this makes the rtevr-srv component available for all hosts in the proper architecture and OS release.



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and for all **workstations** in the **padres** facility:

```
>curl https://inau.elettra.eu/v2/cs/facilities/padres/installations -u lorenzo.pivetta  
-d"tag=2.0.2" -d"repository=cs/etc/browser/tmr"
```

Example 5

Install **synoptic-elettra-gui** GUI release 1.0.0 on all ELETTRA workstations:

```
>curl https://inau.elettra.eu/v2/cs/facilities/elettra/installations -u lorenzo.pivetta  
-d"tag=1.0.0" -d"repository=cs/gui/synoptic-elettra"
```



Appendix A

```
function ispresent() {
    for item in $2
    do
        if [ $item = $1 ]; then
            return 0
        fi
    done
    return 1
}

function _curl-inau()
{
    local h options dirname basename
    h=inau.eletra.eu
    dirname=${dirname "${COMP_WORDS[COMP_CWORD]}"}
    basename=${basename "${COMP_WORDS[COMP_CWORD]}"}

#    echo -e "\n$dirname#$basename"
    case "$dirname#$basename" in
        //h/v2/cs/facilities/*/hosts/*/files#*)
            local facility=$(basename $(dirname $(dirname $dirname)))
            local host=$(basename $dirname)
            local files="$(curl -s
https://$h/v2/cs/facilities/$facility/hosts/$host/files | tail -n +3 | cut -d" " -f1)"
            options="$(for elem in $files; do echo
//h/v2/cs/facilities/$facility/hosts/$host/files/$elem; done)"
            ;;
        //h/v2/cs/facilities/*/hosts/*#files)
            local facility=$(basename $(dirname $dirname))
            local host=$(basename $dirname)
            local files="$(curl -s
https://$h/v2/cs/facilities/$facility/hosts/$host/files | tail -n +3 | cut -d" " -f1)"
            options="$(for elem in $files; do echo
//h/v2/cs/facilities/$facility/hosts/$host/files/$elem; done)"
            ;;
        //h/v2/cs/facilities/*/hosts/*#*)
            local facility=$(basename $(dirname $dirname))
            local host=$(basename $dirname)
            options="//h/v2/cs/facilities/$facility/hosts/$host/files
//h/v2/cs/facilities/$facility/hosts/$host/installations"
            ;;
        //h/v2/cs/facilities/*/hosts#*)
            local facility=$(basename $(dirname $dirname))
            local hosts="$(curl -s https://$h/v2/cs/facilities/$facility/hosts | tail
-n +3 | cut -d" " -f1)"
            ispresent $basename "$hosts"
            if [ $? -eq 0 ]; then
```



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```
options="//$h/v2/cs/facilities/$facility/hosts/$basename/installations
//$h/v2/cs/facilities/$facility/hosts/$basename/files"
else
    options="//$h/v2/cs/facilities/$facility/hosts/installations
    $(for elem in $hosts; do echo
//$h/v2/cs/facilities/$facility/hosts/$elem; done)"
fi;;

//$h/v2/cs/facilities/*#hosts)
    local facility=$(basename $dirname)
    local hosts="$(curl -s https://$h/v2/cs/facilities/$facility/hosts | tail
-n +3 | cut -d" " -f1)"
    options="//$h/v2/cs/facilities/$facility/hosts/installations
    $(for elem in $hosts; do echo
//$h/v2/cs/facilities/$facility/hosts/$elem; done)"
;;

//$h/v2/cs/facilities/*#*)
    local facility=$(basename $dirname)
    options="//$h/v2/cs/facilities/$facility/hosts
//$h/v2/cs/facilities/$facility/installations"
;;

//$h/v2/cs/facilities#*)
    local facilities="$(curl -s https://$h/v2/cs/facilities | tail -n +3)"
    ispresent $basename "$facilities"
    if [ $? -eq 0 ]; then
        options="//$h/v2/cs/facilities/$basename/hosts/
//$h/v2/cs/facilities/$basename/installations"
    else
        options="//$h/v2/cs/facilities/installations
        $(for elem in $facilities; do echo
//$h/v2/cs/facilities/$elem; done)"
    fi
;;

//$h/v2/cs#facilities)
    local facilities="$(curl -s https://$h/v2/cs/facilities | tail -n +3)"
    options="//$h/v2/cs/facilities/installations
    $(for elem in $facilities; do echo //$h/v2/cs/facilities/$elem;
done)"
;;

//$h/v2#cs | //$h/v2/cs#*)
    local subpaths="$(curl -s https://$h/v2/cs | tail -n +3)"
    options="//$h/v2/cs/installations
    $(for elem in $subpaths; do echo //$h/v2/cs/$elem; done)"
;;

/#$h | //$h#* | //$h/v2#*)
    options="//$h/v2/cs/"
;;

esac
COMPREPLY=($(compgen -W "${options}" -- "${COMP_WORDS[COMP_CWORD]}"))
compopt -o nospace
```




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```
}  
complete -F _curl-inau curl
```



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Appendix B

-----BEGIN CERTIFICATE-----

MIIE+zCCA+OgAwIBAgIQCHC8xa8/25Wakctq7u/kZTANBgkqhkiG9w0BAQsFADBl
MQswCQYDVQQGEwJVUzEVMBMGA1UEChMMRGlnaUNlcnQgSW5jMRkwFwYDVQQLExB3
d3cuZGlnaWNlcnQuY29tMSQwIgYDVQQDEExtEaWdpQ2VydCBBC3N1cmVkeiE1E1FJv
b3QgQ0EwHhcNMTQxMTE4MTIwMDAwWhcNMjQxMTE4MTIwMDAwWjBkMQswCQYDVQQG
EwJOTDEWMBQGA1UECBMTm9vcnQtSG9sbGFuZDESMBAGA1UEBxMJQWlzdGVyZGFt
MQ8wDQYDVQQKEwZURVJFTkExGDAWBgNVBAMTD1RFUkVOQSBU0wgQ0EgMzCCASIw
DQYJKoZIhvcNAQEBBQADggEPADCCAQoCggEBAMV2Dw/ZQyk7bG3RR63eEL8jwnio
Snc18SNb4EweQefCMQC9iDdFdd25AhCAHo/tZCMERaegOTuBTc9jP8JJ/yKeiLDS
lrlcinQfkioq8hLIt2hUtVhBgUBoBhpPhSn7tU08D08/QJYbzqjMXjX/ZJj1dd10
VAWgNheEEiRVY++Udy538RV27tOkWUUnh6i+0SftCuirOMo/h9Ha8Y+5Cx9E5+Ct
85XCFk3shKM6ktTPxn3mvcsaQE+zVLHzj28NHuO+SaNW5Ae8jafOHbBbV1bRxBz8
mGXRzUYvkZS/RVYJ+G1ShxwCVGEnFqTyLvRx5GG1IKD6JmlqCvGrn223zyUCAwEA
AaOCAaYwgGgIMBIGA1UdEwEB/wQIMAYBAf8CAQAwDgYDVR0PAQH/BAQDAgGGMHkG
CCsGAQUFBwEBBG0wazAkBggrBgEFBQcwAYYYaHR0cDovL29jc3AuZGlnaWNlcnQu
Y29tMEMGCCsGAQUFBzAChjdodHRwOi8vY2FjZXJ0cy5kaWdpY2VydC5jb20vRGln
aUNlcnRbc3N1cmVksURScb290Q0EuY3J0MIGBBGNVHR8EejB4MDqgOKA2hjRodHRw
Oi8vY3JsMy5kaWdpY2VydC5jb20vRGlnaUNlcnRbc3N1cmVksURScb290Q0EuY3Js
MDqgOKA2hjRodHRwOi8vY3JsNC5kaWdpY2VydC5jb20vRGlnaUNlcnRbc3N1cmVks
URScb290Q0EuY3JsMD0GA1UdIAQ2MDQwMgYEVVR0gADAqMCgGCCsGAQUFBwIBFhxod
dHRwczovL3d3dy5kaWdpY2VydC5jb20vQ1BTMB0GA1UdDgQWBBrn/YggFCeYxwnS
JRm76VERY3VQYjAfBgNVHSMEGDAwBRF66Kv9JLLGjEtUYunpyGd823IDzANBgkq
hkiG9w0BAQsFAAOCAQEAsgSg1esR71tonHqyYzyc2TxEydhTmQN0dzfJodzWvs4xd
xgS/FfQjZ4u5b5cE60adws3J0aSugS7JurHogNacyTnBVnZzbJx946nw09E02DxJ
WYsamM6/xvLYMDX/6W9doK867mZTrqqMaci+mgege9iCSzMTyAfzd9fzZM2eY/lC
J1OuEDOJcjcV8b73HjWizsMt8tey5gvHacDlH198aZt+ziYaM0TDuncFO7pdP0GJ
+hY77gRuW6xWS++McPJKele9GW6LNgdUJi2GCZQfXzer8CM/jyxflp5HcahE3qm5
hS+1NGC1XwmgmKmd1L8tRNaN2v11y18WoA5hwnA9Ng==

-----END CERTIFICATE-----