



# CONTROL

for 

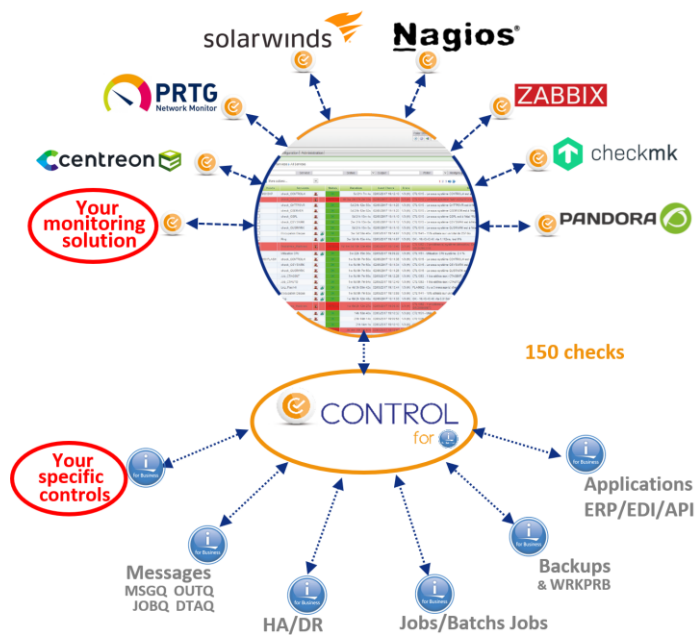
## General description of the product



### CONTROL

for 

boosts **your** monitoring solution in place...



...for the **full** control of your IBM !

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# 1 Product description

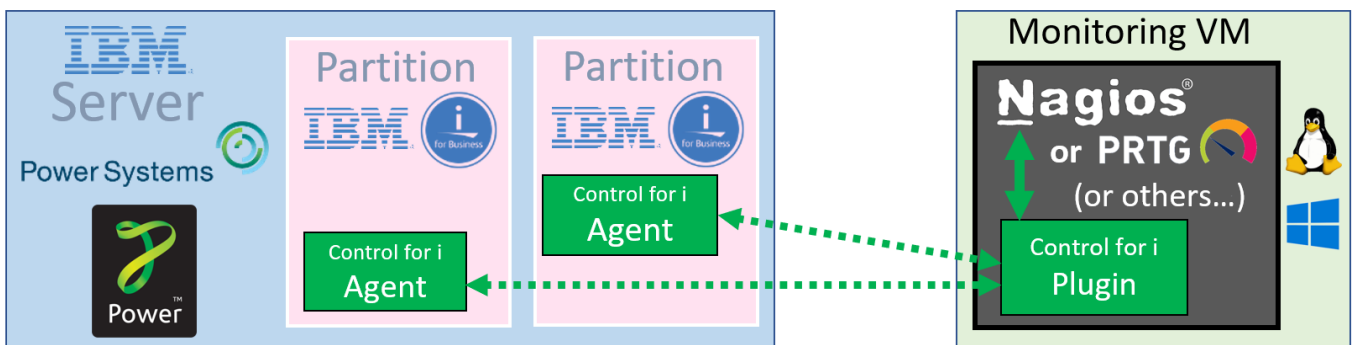
The aim of **Control for i** solution is to monitor everything on an IBM i partition, using an enterprise monitoring product that we will call : “Nagios like”. There are plenty of “Nagios like” solutions : Centrón, CheckMK, Pandora, PRTG, ServiceNav, Shinken, SolarWinds, Zabbix, and much more ...

All ‘Nagios-like’ tools have basic capabilities to monitor IBM i. For example, they check some system items: PING, CPU, power used, disk space used, ... But they cannot be used to monitor whether a subsystem has started and contains all the expected jobs, or if backups were correctly made the previous night. No need to imagine controlling the right operating of your HA solution or the good running of your ERP batches or the end of your data transfers ...

**The Control for i product is supplied with more than 150 checks which cover nearly all the needs related to IBM i, IBM i applications and middleware operations. ‘Nagios like’ products will be able to use all those checks to supervise IBM i: applications, systems, messages, HA, EDI, backups, batches, ERP, transfers, Database, logs, ...**

## Control for i architecture:

- 1 agent in each IBM i partition
- only 1 Plugin in the Monitor solution



The controls are built on the IBM i, from IBM i commands that **Control for i** provides. That means that any IBM i people will become very fast familiar with these IBM i commands.

After selecting / typing the right parameters the control can be tested immediately on the IBM i. Then the IBM i command (with its parameters) becomes the only input parameter into the ‘Nagios-like’ tool, and the controls (the commands) are scheduled and managed by ‘Nagios like’ solution.

The plugin supplied with **Control for i** enables the connection between the ‘Nagios-like’ tool and the IBM i partition.

‘Nagios like’ starts a control, sends a command to the IBM i partition which is executed on the partition. The message returned from this command will be the text displayed by Nagios (or in case of an alert, sent in an e-mail by Nagios, depending the Nagios setup).

On the IBM i partition, a **Control for i** agent is running permanently. Its role is to accept commands from Nagios, and to return the answers.

All the commands are written to be executed extremely quickly in order to avoid timeouts during checks performed by Nagios.

Note: the commands can also be used interactively in a 5250 session to test a check but also in a CLP program written by the IBM i administrator.

100% of the IBM i monitoring can be done absolutely without any development.

But (rarely) the IBM i user can prefer to create its own specific commands... It is easily possible and they will be used as new **Control for i** and Nagios checks. If useful, it is also possible to keep parts of existing control programs (in RPG, CL, ... ) already used in the company.

The **Control for i** product is available in English and French versions.

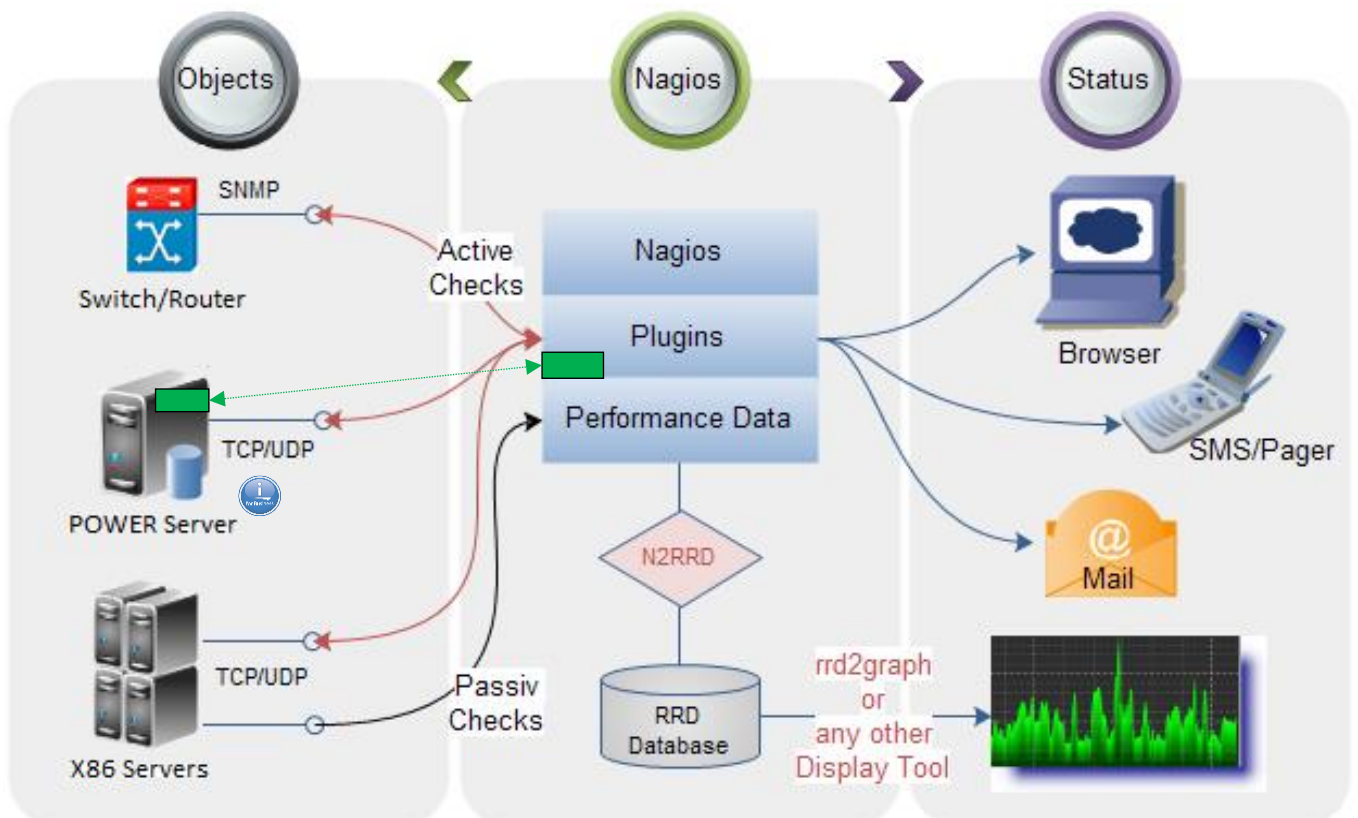
With CONTROL for i

**IBM and Nagios\* = a couple in perfect harmony**

\* or other Open-Source tools or Proprietary products or SaaS offers as:



## 2 Example of Nagios architecture



### 3 Some customers and partners who trust us

500+ LPARS are monitored with *Control for i*



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## 4 The checks available with Control for i

### 4.1 System check commands

#### CTCHKBCH

- Check if a job (defined by its name) has run in a specified time period
- Check the number of batch jobs with the same name that have run in a time period
- Check if a job has started at a specified hour
- Check that a job has ended at a specified hour, with a specified end code

#### CTCHKBRM

- Check that 1 to x BRMS control group(s) completed successfully in a specified time period
- Check that 1 to x BRMS control group(s) completed successfully in a specified time period and job name

#### CTCHKBRMDP

- Check that a DUPTAPBRM has been done successfully in a specified time period
- Check that a DUPTAPBRM has been done successfully in a specified time period by a specific job

#### CTCHKBRMEX

- Check the number of expired medias of a media class
- Check the number of expired medias of a media class in a location

#### CTCHKBRMFC

- Check if FlashCopy status of BRMS is \*STRPRC
- Check if FlashCopy status of BRMS is \*ENDPRC

#### CTCHKCERT

- Check that a Every certificate in a certificate store have a valid date

#### CTCHKCFGST

- Check the status of a device or a list of devices
- Check the status of a controller or a list of controllers
- Check the status of a line or a list of lines

#### CTCHKCPU

- Check CPU used for the entire system
- Check CPU used by jobs in a list of subsystems
- Check CPU used by jobs in a list of job names

#### CTCHKDSK

- Check disk space used in system ASP
- Check disk space used in user ASP or iASP
- Check if system disk space used is not growing too fast
- Check if ASP or iASP disk space used is not growing too fast

#### CTCHKDTAA

- Compare Data area content with a text in parameter
- Check a specific function by using a Data Area

#### CTCHKDTAQ

- Check the number of entries in a Data Queue (DTAQ)

#### CTCHKIFSNF

- Check the number of files (full name or generic name) in an IFS directory, and optionally in sub-directories.
- Check if files in an IFS directory are older than a specified duration

#### CTCHKJOB

- Check that a job is Active (by name, with or without user profile)
- Check that a job is Inactive (by name, with or without user profile)
- Check that a job is active AND not in a specified status (MSGW, LCKW, ...)

#### CTCHKJOBDU

- Check that a job is not Active for a too long time (by name, with or without user profile)
- Check that no job in a subsystem is Active for a too long time

#### CTCHKJOBQ

- Check existence and status (\*RLS, \*HLD) of a JOBQ
- Check the number of jobs waiting in a JOBQ

#### CTCHKLCKW

- Check existence of jobs in LCKW status
- Check existence of jobs in LCKW status running in a specified list of subsystems
- Check existence of jobs in LCKW status running in any subsystem except a specified list of subsystem
  - o Possible to omit a list of specified job names.

#### CTCHKLIBEV

- Check evolution of library size
- Check evolution of number of objects in a library

#### CTCHKLIBSZ

- Check library size
- Check number of objects in a library

#### CTCHKLOG

- Check if there are errors in Control for i product

#### CTCHKMSGQ

- Check a specific MSGID or MSGID list in QSYSOPR
- Check a specific MSGID or MSGID list in a Message Queue
- Check a specific MSGID or MSGID list in the system log (QHST)
- Check a specific MSGID or MSGID list in BRMS
- Check a specific MSGID or MSGID list in an active job joblog
- All those checks may include:
  - o Generic MSGID
  - o Special values for MSGID like \*ANY, \*INQ, \*NONE, \*REPLY
  - o Specify Severity
  - o Specify Job name
  - o Specify User name
  - o Specify a text to look for in the message
- Run a specific action when a MSGID occurs
  - o Send an answer
  - o Call a command
  - o Call a program

#### CTCHKMSGW

- Check existence of jobs in MSGW status (jobs in error and jobs reading MSGQ)

- Check existence of jobs in MSGW status (Only jobs in error)
- Check existence of jobs in MSGW status running in a specified list of subsystems
- Check existence of jobs in MSGW status running in any subsystem except a specified list of subsystem
  - o Possible to omit a list of specified job names.

#### CTCHKOBJ

- Check that an object exists
- Check the size of an object

#### CTCHKOUTQ

- Check that there is a minimum number of spools in an OUTQ
- Check that there is a maximum number of spools in an OUTQ
  - o Possible to select or omit spools according to their status (RDY, SAV, HLD, ...)

#### CTCHKPING

- Check if an other system answers to a PING (done from the IBM i partition itself)

#### CTCHKPRB

- Check number of Hardware problems detected (WRKPRB)
- Check number of problems for internal disks (WRKPRB)

#### CTCHKSAV

- Check that SAVLIB command completed successfully in a specified time period
- Check that SAVLIB command completed successfully in a specified time period and job name
- Check that SAVDLO command completed successfully in a specified time period
- Check that SAVDLO command completed successfully in a specified time period and job name
- Check that SAV command completed successfully in a specified time period
- Check that SAV command completed successfully in a specified time period and job name
- Check that SAVSECDTA command completed successfully in a specified time period
- Check that SAVSECDTA command completed successfully in a specified time period and job name
- Check that SAVCFG command completed successfully in a specified time period
- Check that SAVCFG command completed successfully in a specified time period and job name

#### CTCHKSBS

- Check that a subsystem is Active
- Check that a subsystem is Inactive
- Check that a subsystem is active AND has a minimum number of jobs active
- Check that a subsystem is active AND that specific jobs (by job name) are currently active

#### CTCHKSYSST

- Check total number of jobs in the system
- Check % of permanent addresses used
- Check % of temporary addresses used
- Check temporary storage used
- Check maximum of temporary storage used

#### CTCHKTIM

- Compare the partition time with the monitoring server time

#### CTCHKUSR

- Check that a specified user profile is \*ENABLED
- Check in a list of user profiles that there are less than a specified number of them that are \*DISABLED

## 4.2 Check Hight availability

### 4.2.1 Mimix

#### CTCHKMMXAG

- MIMIX Application Group, Check if Manager is active
- MIMIX Application Group, Check if Data replication is active
- MIMIX Application Group, Check procedures status

#### CTCHKMMXAU

- Check MIMIX Audits status

#### CTCHKMMXDG

- MIMIX Data Group, Check if data group is Enabled
- MIMIX Data Group, Check Communication status
- MIMIX Data Group, Check Data area process
- MIMIX Data Group, Check DB send process
- MIMIX Data Group, Check Remote journal link
- MIMIX Data Group, Check DB reader process
- MIMIX Data Group, Check number of DB apply process
- MIMIX Data Group, Check objects send process
- MIMIX Data Group, Check number of objects retrieve process
- MIMIX Data Group, Check number of objects apply process
- MIMIX Data Group, Check number of containers send process

#### CTCHKMMXDS

- MIMIX Data Group status, Check number of objects in error
- MIMIX Data Group status, Check non active objects
- MIMIX Data Group status, Check Non Journalized Objects on Source
- MIMIX Data Group status, Check Non Journalized Objects on Target
- MIMIX Data Group status, Check Files in error
- MIMIX Data Group status, Check non active files
- MIMIX Data Group status, Check IFS files in error
- MIMIX Data Group status, Check non active IFS files
- MIMIX Data Group status, Check IFS files not journaled on Source
- MIMIX Data Group status, Check IFS files not journaled on Target

### 4.2.2 Quick EDH

#### CTCHKEDH

- Check if a Quick EDD-HA environment is started
- Check if a Quick EDD-HA environment is stopped
- Check if a Quick EDD-HA environment has replication delay
- Check if a Quick EDD-HA environment has objects synchronization errors

### 4.2.3 iTera

#### CTCHKITAST

- Check the Role Swap Readiness
- Check that remote journals are active
- Check that apply jobs are active
- Check that network and subsystem are active
- Check that remote server is active
- Check disk space used by journal receivers



**CTCHKITADL**

- Check Apply latencies
- Check network latencies
- Check number of objects to resynch
- Check number of entries for jobs OBJMON1, 2 and 3
- Check Heal records processing
- Check number of waiting records for IFS
- Check number of waiting updates for spools
- Check number of waiting updates for commands
- Check that the monitoring data are updated frequently

### **4.3 M3 check commands**

Those commands are specific for the INFOR ERP called **M3**.

But we will certainly increase the number of ERP monitored with 'Control for i' at the request of our customers or partners

#### **4.3.1 Checks based on M3 'GRID'**

**CTM3APPERR**

- Check errors for all M3 applications
- Check errors for a list of specified M3 applications

**CTM3APPSTS**

- Check that all M3 applications have status OK, not OK, or not running
- Check that a list of specified M3 applications have status OK, not OK, or not running

**CTM3APPWRN**

- Check warnings for all M3 applications
- Check warnings for a list of specified M3 applications

**CTM3G\_NOD**

- Check CPU used by M3 nodes
  - o For all nodes
  - o For a list of specified nodes
- Check memory used by M3 nodes
  - o For all nodes
  - o For a list of specified nodes

**CTM3G\_SVC**

- Check that port is active or down for M3 services
  - o For all services
  - o For a list of specified services
- Check that thread is active or down for M3 services
  - o For all services
  - o For a list of specified services

**CTM3HSTSTS**

- Check memory used by M3 hosts
  - o For all hosts
  - o For a list of specified hosts

#### **4.3.2 Checks based on 'Server View'**

#### CTM3G\_NBAJ

- Checks that number of Autojobs is within limits

#### CTM3G\_JOB

- Check CPU used by M3 jobs
  - o For all jobs
  - o For a list of specified jobs
- Check activity of M3 jobs
  - o For all jobs
  - o For a list of specified jobs

### **4.3.3 Checks based on internal M3 tables**

#### CTM3CHKBCH

- Check if a M3 job (defined by its name) has run in a specified time period
- Check the number of M3 batch jobs with the same name that have run in a time period

#### CTM3JOBQ

- Check the number of jobs waiting in a M3 JOBQ

#### CTM3JOBSTS

- Check if M3 jobs are in error
- Check if M3 jobs are in status 15 or 25

## **4.4 Management commands**

Commands used to configure or display results

CTCHGMSGST	Change messages control status
CTDSPALR	Display alerts on MSGQ
CTDSPLIB	Display Libraries size
CTWRKLIB	Work with Libraries definition
CTWRKMSG	Work with Messages definition

For information, the following commands are used for internal purpose in the product Control for i.

CTADDKEY	Add licence key
CTADDLOG	Add message in Product Log
CTAGENT	Start Agent listener
CTCLEAR	Clear Historic Data
CTDSPINF	Display Product and system information
CTDSPLOG	Display Product Log
CTDPSLOG	Display Product Log
CTENDSBS	Stop CONTROL4I sub-system
CTMENU	Display menu
CTPARAM	Work with parameters
CTRSTPRD	Restore product
CTSTRSBS	Start CONTROL4I sub-system
CTWRKKEY	Work with license keys

## **4.5 New commands are delivered regularly, generally at the request of our customers or partners**