

The graphic features a dark blue background with a pattern of glowing, curved lines of dots in shades of blue and purple, creating a sense of motion and data flow. The text is centered and uses a clean, sans-serif font. The word 'ZABBIX' is highlighted in a red box, while the rest of the text is white. The year ''26' is positioned to the right of 'ZABBIX'.

**ZABBIX** '26

CONFERENCE

LATIN AMERICA

**ZABBIX** '26

CONFERENCE

LATIN AMERICA

# Dos Zabbix Nodes à Orquestração de Múltiplas Instâncias Zabbix

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**Hernandes Martins**

Zabbix Trainer – Lunio – Premium Partner

# Hernandes Martins

ZABBIX '26  
CONFERENCE  
LATIN AMERICA

- Vivendo a evolução do Zabbix desde 2011
- Zabbix Trainer - ZCS-ZCP-ZCE-ZCT
- Consultor Especialista Zabbix na Lunio(Zabbix Partner)





Ajudamos empresas a evoluir seus ambientes através de projetos avançados, automações e treinamentos oficiais Zabbix.



## Mais de 12 anos

de experiencia em monitoramento em observabilidade.



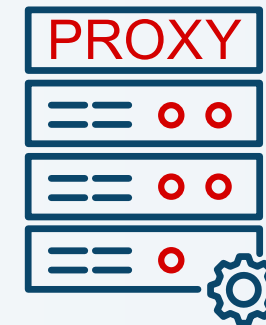
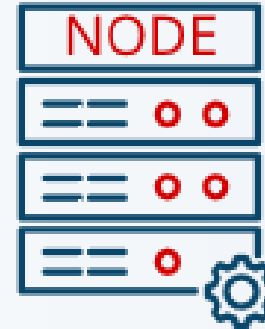
## Somos referência

em projetos de observabilidade, integrações e automações com Zabbix.



# Zabbix Nodes

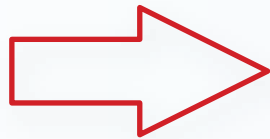
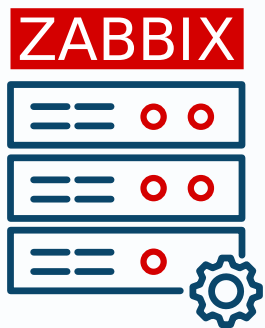
- Onde vivem ?
- O que comem ?
- Quem são ?
- O que fazem?



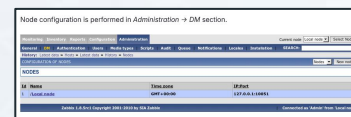
# Zabbix Nodes

O Zabbix Nodes foi o primeiro mecanismo de monitoramento distribuído do Zabbix

Os nodes eram instâncias independentes do Zabbix Server que funcionavam em uma estrutura hierárquica.



Zabbix server com NodeID



# Zabbix Nodes

Novos Nodes podiam ser adicionados ou removidos sem perda de funcionalidade, sem necessidade de reiniciar nenhum Node.

Node configuration is performed in *Administration* → *DM* section.

The screenshot shows the Zabbix Administration interface. The top navigation bar includes Monitoring, Inventory, Reports, Configuration, and Administration. The Administration section is active, and the DM (Distributed Monitoring) menu is highlighted. The current node is set to 'Local node'. The breadcrumb trail is 'History: Latest data » Hosts » Latest data » History » Nodes'. The main content area is titled 'CONFIGURATION OF NODES' and contains a table of nodes. The table has columns for Id, Name, Time zone, and IP:Port. There is one node listed with Id 1, Name '/Local node', Time zone 'GMT+00:00', and IP:Port '127.0.0.1:10051'. The footer of the interface shows 'Zabbix 1.8.5rc1 Copyright 2001-2010 by SIA Zabbix' and 'Connected as 'Admin' from 'Local node''.

Id	Name	Time zone	IP:Port
1	/Local node	GMT+00:00	127.0.0.1:10051

Distributed Monitoring Menu



# Zabbix Nodes

Local node



The screenshot shows the 'CONFIGURATION OF NODES' window in Zabbix. The window title is 'CONFIGURATION OF NODES' and it has a 'Nodes' dropdown menu. The main content area is titled 'Node "Local node"'. The configuration fields are as follows:

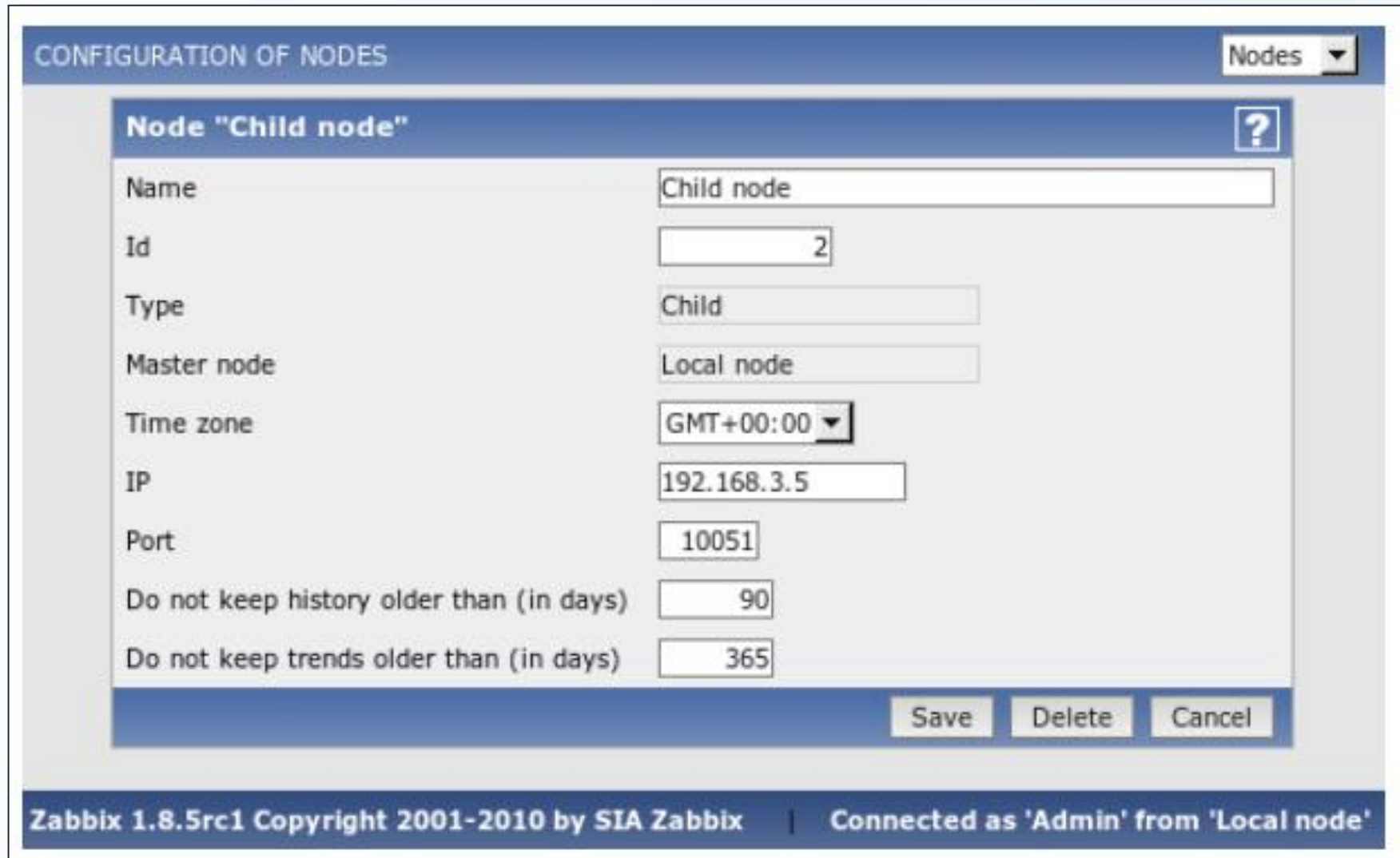
Name	Local node
Id	1
Type	Local
Time zone	GMT+00:00
IP	192.168.3.2
Port	10051
Do not keep history older than (in days)	30
Do not keep trends older than (in days)	365

At the bottom of the window, there are 'Save' and 'Cancel' buttons. The footer of the window reads: 'Zabbix 1.8.5rc1 Copyright 2001-2010 by SIA Zabbix | Connected as 'Admin' from 'Local node''.

```
31754:20070629:150342 server #16 started [Node watcher. Node ID:1]
```

# Zabbix Nodes

Child node

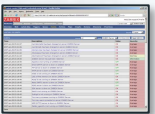


The screenshot shows the Zabbix web interface for configuring a node. The title is 'CONFIGURATION OF NODES' with a 'Nodes' dropdown menu. The form is for a 'Node "Child node"'. The fields are as follows:

Field	Value
Name	Child node
Id	2
Type	Child
Master node	Local node
Time zone	GMT+00:00
IP	192.168.3.5
Port	10051
Do not keep history older than (in days)	90
Do not keep trends older than (in days)	365

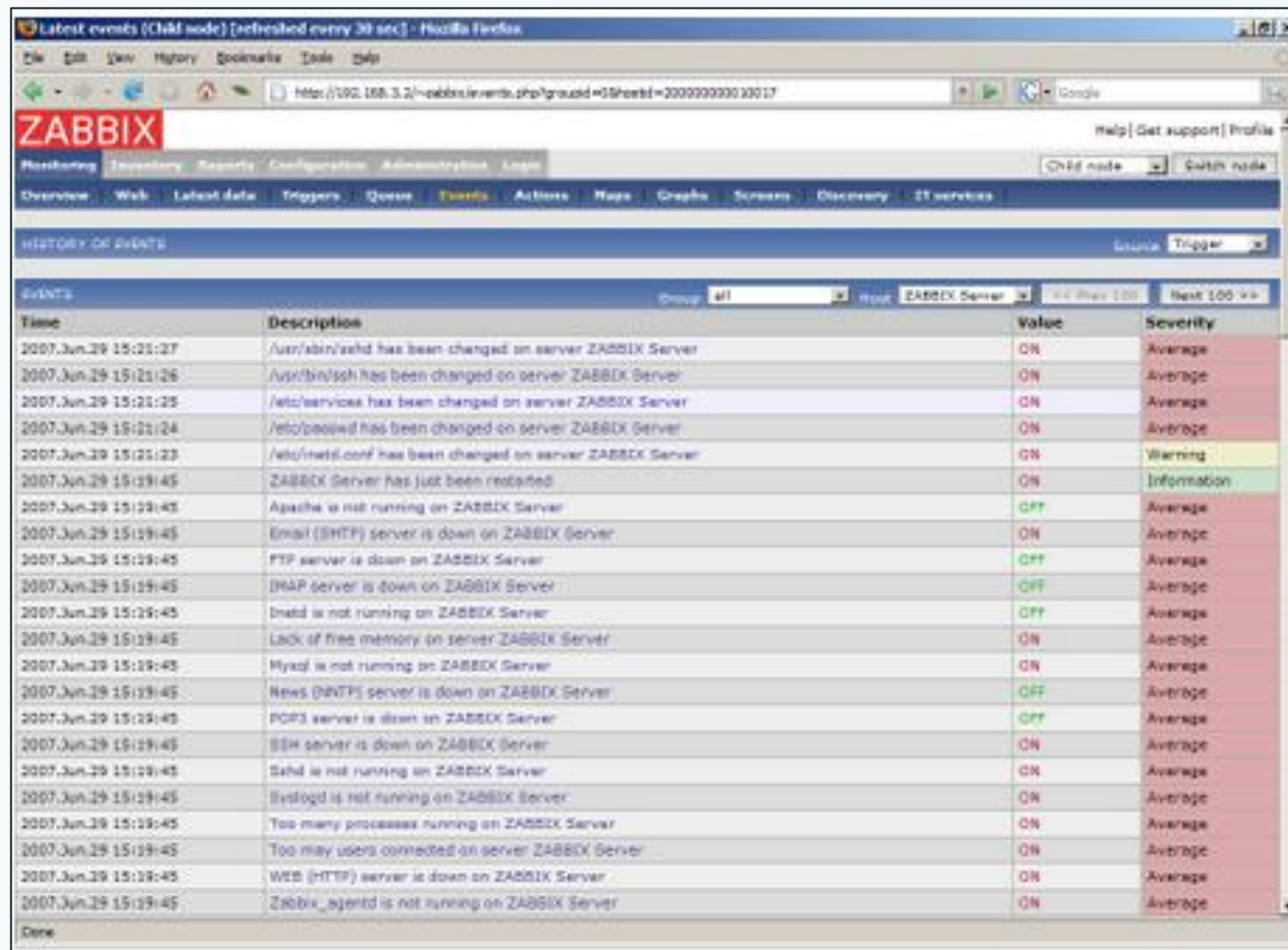
Buttons: Save, Delete, Cancel

Footer: Zabbix 1.8.5rc1 Copyright 2001-2010 by SIA Zabbix | Connected as 'Admin' from 'Local node'



# Zabbix Nodes

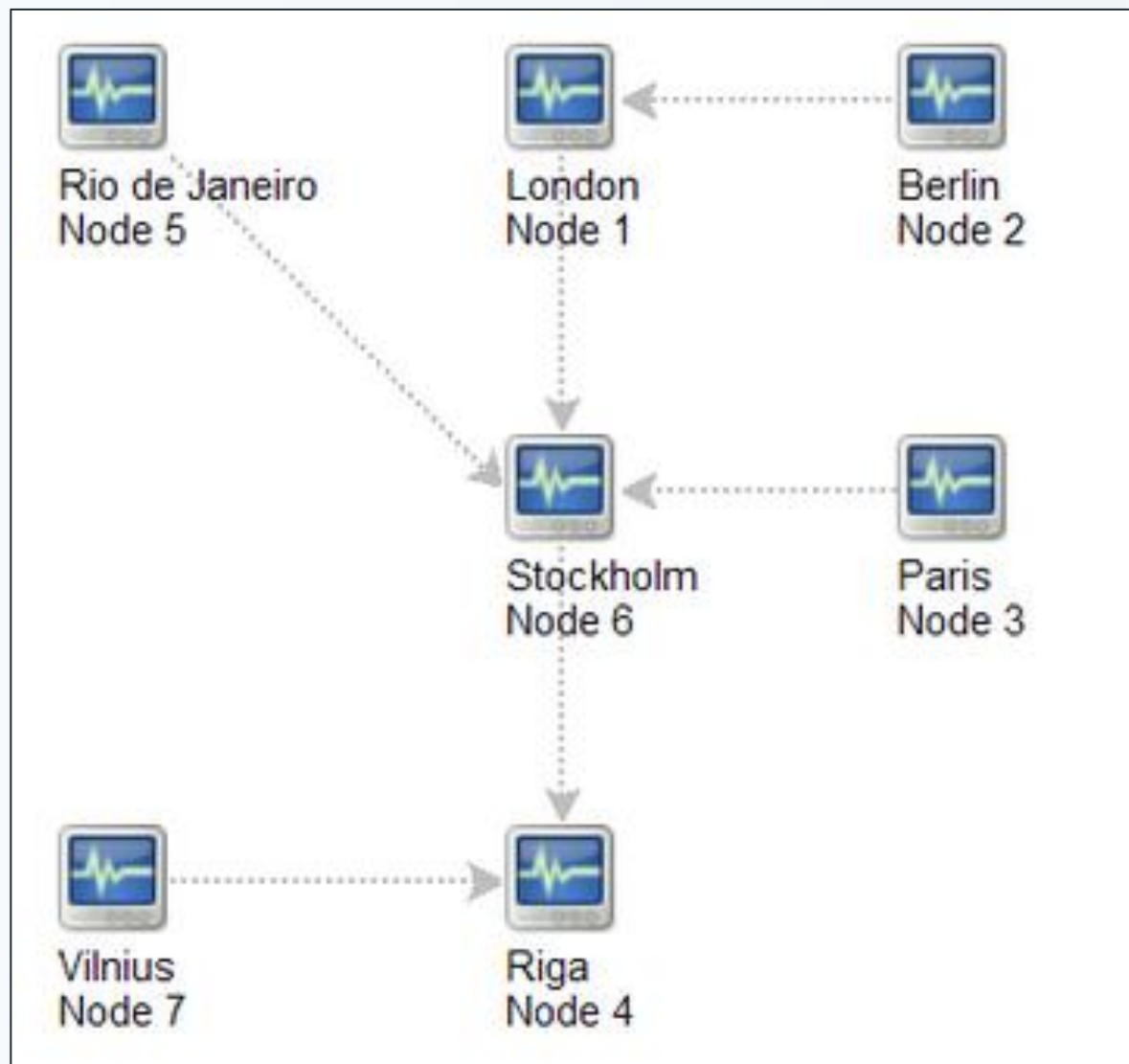
Informações históricas e eventos eram armazenados localmente, e quando a comunicação era restabelecida, os Child Nodes enviavam os dados ao Master Node.



Time	Description	Value	Severity
2007.Jun.29 15:21:27	/usr/sbin/rsyncd has been changed on server ZABBIX Server	ON	Average
2007.Jun.29 15:21:26	/usr/bin/ssh has been changed on server ZABBIX Server	ON	Average
2007.Jun.29 15:21:25	/etc/services has been changed on server ZABBIX Server	ON	Average
2007.Jun.29 15:21:24	/etc/passwd has been changed on server ZABBIX Server	ON	Average
2007.Jun.29 15:21:23	/etc/inetd.conf has been changed on server ZABBIX Server	ON	Warning
2007.Jun.29 15:19:45	ZABBIX Server has just been restarted	ON	Information
2007.Jun.29 15:19:45	Apache is not running on ZABBIX Server	OFF	Average
2007.Jun.29 15:19:45	Email (SMTP) server is down on ZABBIX Server	ON	Average
2007.Jun.29 15:19:45	FTP server is down on ZABBIX Server	OFF	Average
2007.Jun.29 15:19:45	IMAP server is down on ZABBIX Server	OFF	Average
2007.Jun.29 15:19:45	Inetd is not running on ZABBIX Server	OFF	Average
2007.Jun.29 15:19:45	Lock of free memory on server ZABBIX Server	ON	Average
2007.Jun.29 15:19:45	MySql is not running on ZABBIX Server	ON	Average
2007.Jun.29 15:19:45	News (NNTP) server is down on ZABBIX Server	OFF	Average
2007.Jun.29 15:19:45	POP3 server is down on ZABBIX Server	OFF	Average
2007.Jun.29 15:19:45	SSH server is down on ZABBIX Server	ON	Average
2007.Jun.29 15:19:45	Sshd is not running on ZABBIX Server	ON	Average
2007.Jun.29 15:19:45	Syslogd is not running on ZABBIX Server	ON	Average
2007.Jun.29 15:19:45	Too many processes running on ZABBIX Server	ON	Average
2007.Jun.29 15:19:45	Too may users connected on server ZABBIX Server	ON	Average
2007.Jun.29 15:19:45	Web (HTTP) server is down on ZABBIX Server	ON	Average
2007.Jun.29 15:19:45	Zabbix_agentd is not running on ZABBIX Server	ON	Average

# Zabbix Nodes

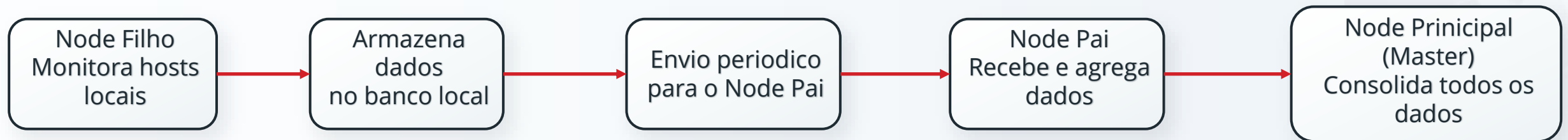
O monitoramento distribuído hierárquico permitia ter uma estrutura em árvore de Nodes. Cada Node reportava apenas ao seu Node Master.



# Zabbix Nodes

## ► Características

- Tinha seu próprio banco de dados
- Coletava dados localmente
- Periodicamente enviava dados agregados para um node superior (Pai/Master)



1.4

1.6

1.8

2.0

2.2

2.4

# A era do Zabbix Nodes

s

# A era do Zabbix Nodes

1.4

1.8

2.2

1.6

2.0

2.4

# A era do Zabbix Nodes

1.6

1.8

2.0

2.2

2.4

1.4

Zabbix Nodes  
Primeiras implementações

2007

# A era do Zabbix Nodes

1.8

2.0

2.2

2.4

1.6

Zabbix Nodes +  
Surge o Zabbix Proxy

|  
2008

1.4



# A era do Zabbix Nodes

1.8

2.0

2.2

2.4

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1.6

Zabbix Nodes +  
Surge o Zabbix Proxy

**ZABBIX 1.6 released**  
19-09-2008, 11:04

ZABBIX SIA is proud to announce the availability of ZABBIX 1.6.

We would like to thank our partners, customers and community members for the

ZABBIX is an enterprise-class open source distributed monitoring solution. ZABBIX <http://www.gnu.org/copyleft/gpl.txt>.

This document contains the release notes for ZABBIX 1.6.

The following sections describe the release in detail and provide late-breaking or

**What's New in 1.6**

## :: Better Distributed Monitoring

ZABBIX distributed monitoring has been improved for a more efficient Node synchronisation protocol. See also details on ZABBIX Proxy.

## :: ZABBIX Proxy Process

ZABBIX Proxy is a lightweight process, which collects data on behalf of ZABBIX Server. The proxies can be used in order to centralise monitoring of remote distributed environment.

ZABBIX Proxy simplifies deployment and maintenances of the centralised distributed monitoring significantly.

## :: Dashboard

ZABBIX Dashboard provides high level personalized details about the monitored environment. Now this is a central part of ZABBIX front-end.

1.4

# A era do Zabbix Nodes

2.0

2.2

2.4

1.8

Zabbix Nodes entram em  
descontinuação

2012

1.4

1.6

# A era do Zabbix Nodes

2.2

2.4

2.0

Zabbix Proxy se torna melhor modelo de monitoramento distribuído.

2012

1.4

1.6

1.8

# A era do Zabbix Nodes

2.4

2.2

Zabbix Nodes ainda é suportado



2013

1.4 1.6 1.8 2.0

# A era do Zabbix Nodes

2.4

Zabbix Nodes removido oficialmente

1.4

1.6

1.8

2.0

2.2

2014

# A era do Zabbix Nodes

2.4

Zabbix Nodes  
removido oficialmente

1.4

1.6

1.8

2.0

2.2

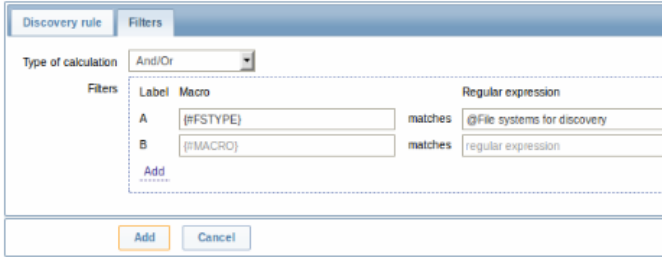
**ZABBIX Docs** Search documentation...

Zabbix Manual / 1. Introduction / 5 What's new in Zabbix 2.4.0

## 5 What's new in Zabbix 2.4.0

### Defining multiple filters for low level discovery

The filter section in low level discovery rule definition has been split out into a separate tab and, most importantly, allows to define



Label	Macro	Regular expression
A	{#FSTYPE}	@File systems for discovery
B	{#MACRO}	regular expression

For more information, see [low level discovery](#) documentation.

#### Node-based distributed monitoring removed

Previously Zabbix supported two options for distributed monitoring - using nodes and proxies. In Zabbix 2.4.0 the support of nodes and potential problems with reliability in large environments.

While a new version of distributed monitoring may be considered and developed in the future, for the time being using proxies becomes a solution has proven itself over time as reliable, while also being easier in configuration and maintenance. Many users who initially

For the remaining node-based DM users, during an upgrade to Zabbix 2.4.0, each upgraded node will be switched to a standalone node and from the child nodes as well.

To maintain uniqueness of data from non-local nodes, all the fields will be prefixed with N<nodeid>\_. If the length of the new value already exists in the database, the situation will be caught by a check on duplicates. Global macros will be processed in a special way

Nodes

g:

# Zabbix Nodes

A realidade:

- Sincronização complexa
- Replicação de dados
- Conflitos e inconsistências
- Operação difícil

Quanto mais o ambiente crescia, mais difícil ficava manter o controle.

A transição do modelo

Os Zabbix Nodes fo  
caminho para uma a

# A transição do modelo

Os Zabbix Nodes foram a primeira tentativa de escalar o monitoramento distribuído, mas sua complexidade abriu caminho para uma arquitetura mais simples e eficiente.



e.

O modelo atual

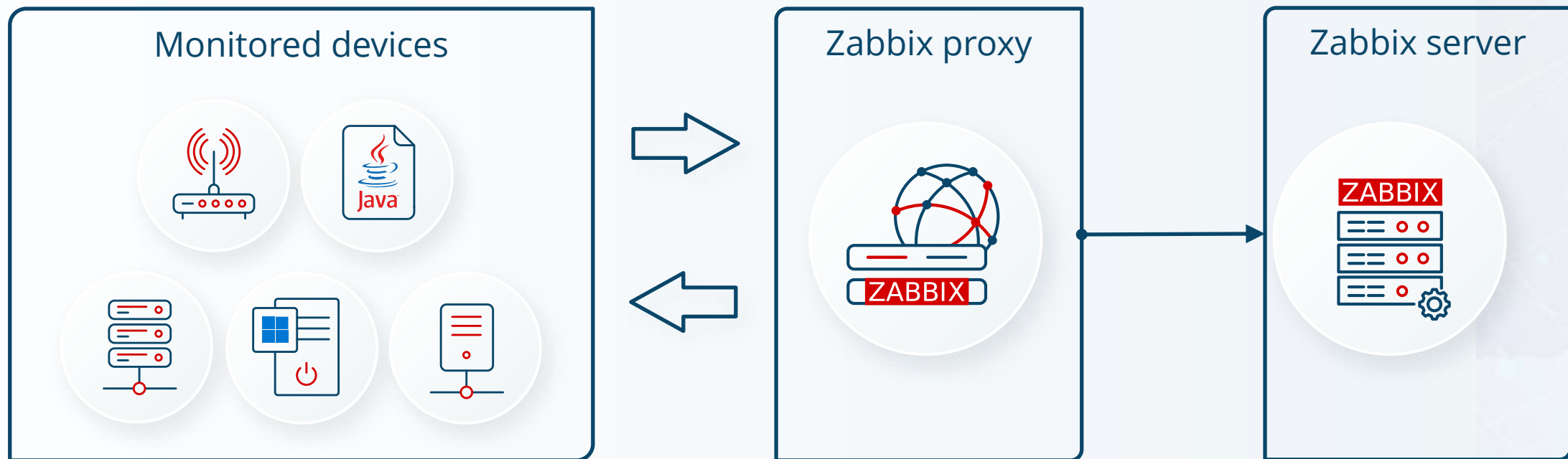
Coleta de dados por:

- Zabbix Se

# O modelo atual



Coleta de dados por:

- Zabbix Server
- Zabbix proxy



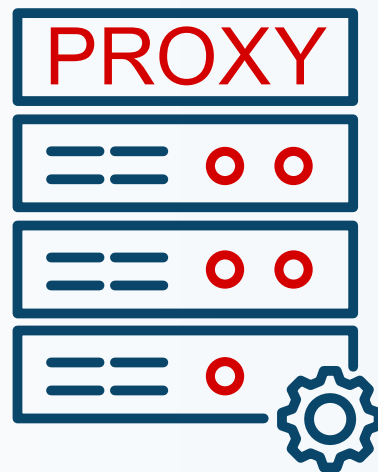
# Zabbix Proxy vs Zabbix Nodes

Tabela Comparativa

Funcionalidade	Nodes (antigo)	Proxy (atual)
 <b>Tipo</b>	Server completo	Componente leve
 <b>Banco de dados</b>	Completo	Opcional (SQLite/MySQL)
 <b>Hierarquia</b>	Sim	Não
 <b>Complexidade</b>	Alta	Baixa
 <b>Uso atual</b>	Obsoleto	Boa prática recomendado

# A arquitetura se consolida

Com a remoção dos Nodes na versão 2.4, o Zabbix consolidou sua arquitetura de coleta distribuída, resolveu dependências, simplificou operação e tornou o Proxy o pilar do monitoramento distribuído. O Proxy resolveu a coleta, resolveu a distribuição.



# Mas ainda continua faltando algo...

- Como gerenciar múltiplos Zabbix ?
- Como agregar os dados e governança dos ambientes?
- Como armazenar esses indicadores?

# Por que não o Zabbix Nodes?

**ZABBIX Docs**

- Zabbix Manual ^
- 1. Introduction ^
  - 1 Manual structure
  - 2 What is Zabbix
  - 3 Zabbix features
  - 4 Zabbix overview
  - 5 What's new in Zabbix 2.4.0
  - 6 What's new in Zabbix 2.4.1
  - 7 What's new in Zabbix 2.4.2
  - 8 What's new in Zabbix 2.4.3
  - 9 What's new in Zabbix 2.4.4
  - 10 What's new in Zabbix 2.4.5
  - 11 What's new in Zabbix 2.4.6
  - 12 What's new in Zabbix 2.4.7
  - 13 What's new in Zabbix 2.4.8
- 2. Zabbix concepts v
- 3. Installation v
- 4. Quickstart v
- 5. Zabbix appliance
- 6. Configuration v
- 7. IT services
- 8. Web monitoring v
- 9. Virtual machine monitoring v

Zabbix Manual / 1. Introduction / 5 What's new in Zabbix 2.4.0

## 5 What's new in Zabbix 2.4.0

### Defining multiple filters for low level discovery

The filter section in low level discovery rule definition has been split out into a separate tab and, most importantly, allows to define

Discovery rule
Filters

Type of calculation: And/Or

Label	Macro	matches	Regular expression
A	{PFSTYPE}	matches	@File systems for discovery
B	{PMACRO}	matches	regular expression
Add			

Add
Cancel

For more information, see [low level discovery](#) documentation.

**Node-based distributed monitoring removed**

Previously Zabbix supported two options for distributed monitoring - using nodes and proxies. In Zabbix 2.4.0 the support of node-based distributed monitoring has been removed due to its complexity and potential problems with reliability in large environments.

While a new version of distributed monitoring may be considered and developed in the future, for the time being using proxies based distributed monitoring solution has proven itself over time as reliable, while also being easier in configuration and maintenance. Many users who initially had node-based distributed monitoring have migrated to proxy-based distributed monitoring.

For the remaining node-based DM users, during an upgrade to Zabbix 2.4.0, each upgraded node will be switched to a standalone node and from the child nodes as well.

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30

# Por que não o Zabbix Nodes?

## Node-based distributed monitoring removed

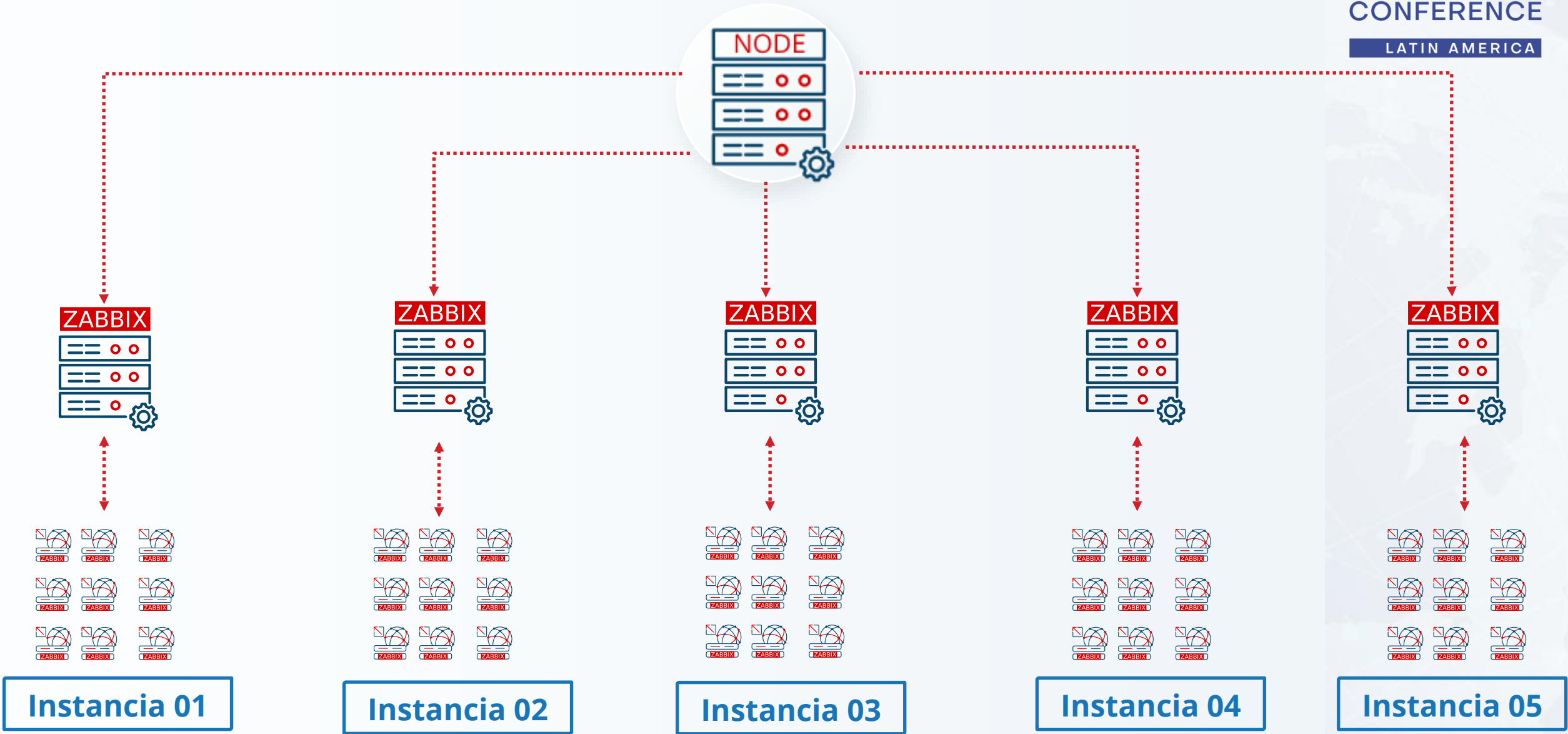
Previously Zabbix supported two options for distributed monitoring - using nodes and proxies. In Zabbix 2.4.0 the support of nodes was removed and replaced by proxies. This was done to simplify the architecture and potential problems with reliability in large environments.

While a new version of distributed monitoring may be considered and developed in the future, for the time being using proxies is the recommended solution. This solution has proven itself over time as reliable, while also being easier in configuration and maintenance. Many users have successfully migrated to proxies.

For the remaining node-based DM users, during an upgrade to Zabbix 2.4.0, each upgraded node will be switched to a proxy. The child nodes will be removed from the node and from the child nodes as well.

To maintain uniqueness of data from non-local nodes, all the fields will be prefixed with N<nodeid>\_. If the length of the prefix already exists in the database, the situation will be caught by a check on duplicates. Global macros will be processed in a special way.

# Em um momento no futuro



# Zabbix Nodes

O que ele poderia resolver?

- ▶ Ausência de ferramenta nativa para gerenciar múltiplas instâncias Zabbix
- ▶ Dificuldade operacional de acessar cada instancia individualmente para tarefas rotineiras
- ▶ Falta de visao agregada de alertas, hosts e saude dos ambientes dos clientes
- ▶ Risco de inconsistencias ao gerenciar configuracoes manualmente em multiplos Zabbix(Padronização)

# Zabbix Nodes

## Suas Características:

- ▶ Conectar em N instancias Zabbix
- ▶ Permitir administracao remota dos elementos em qualquer instancia
- ▶ Oferecer dashboard agregado com status de saúde dos os ambientes
- ▶ Gerar relatórios diários dos ambientes
- ▶ Ser extensível para novos módulos e funcionalidades no futuro

# Zabbix Nodes

## Funcionalidades:

- ▶ Gestão instâncias
- ▶ Orquestração de instancias
- ▶ Centro de gestão e controle

# Zabbix Nodes

## Funcionalidades:

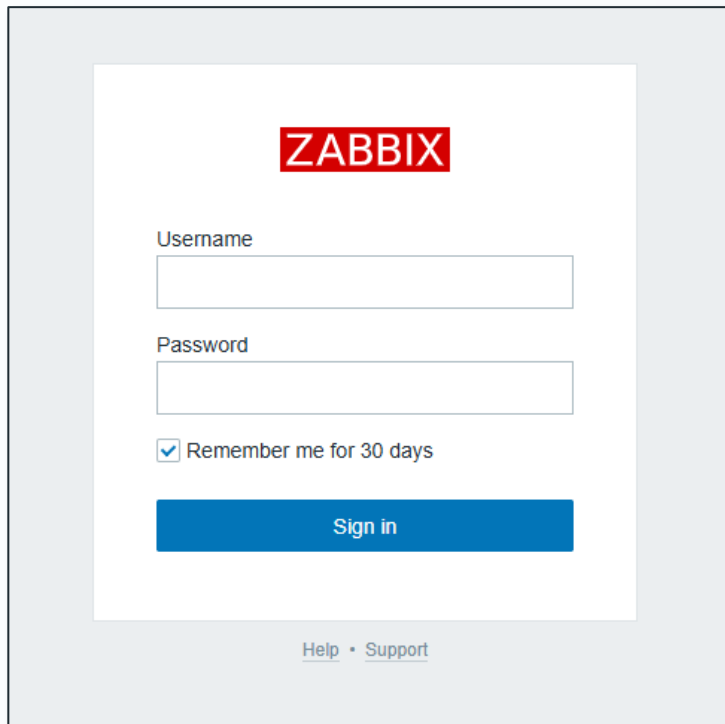
- ▶ Centro de gestão e controle
- ▶ Gestão instâncias
- ▶ Analisador de saúde das instâncias.

Como imaginamos a próxima  
evolução ou futuro do Zabbix Nodes?

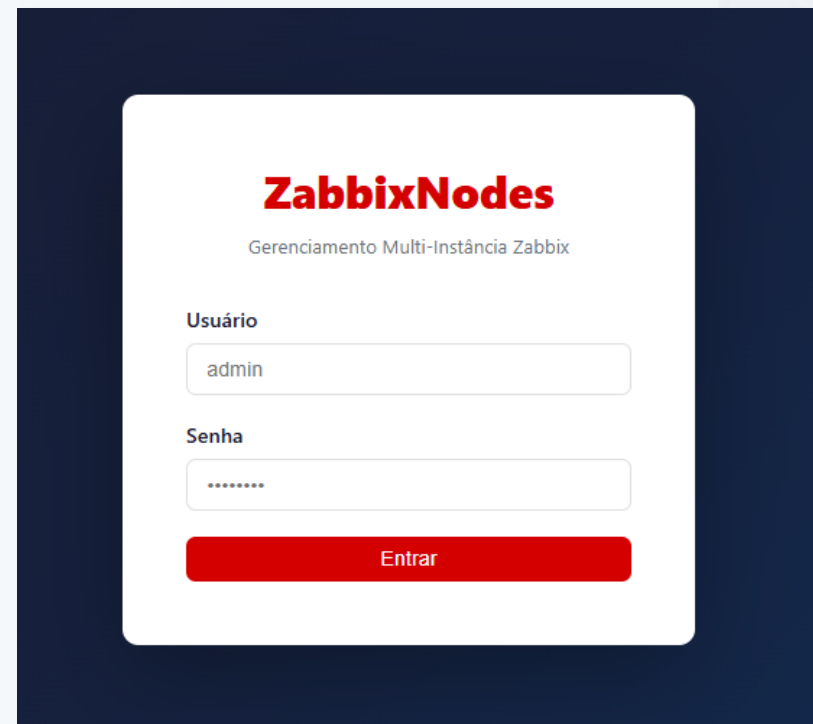
# Zabbix Nodes

Cada instancia avaliada pelo ZabbixNodes

## Centro de gestão e controle



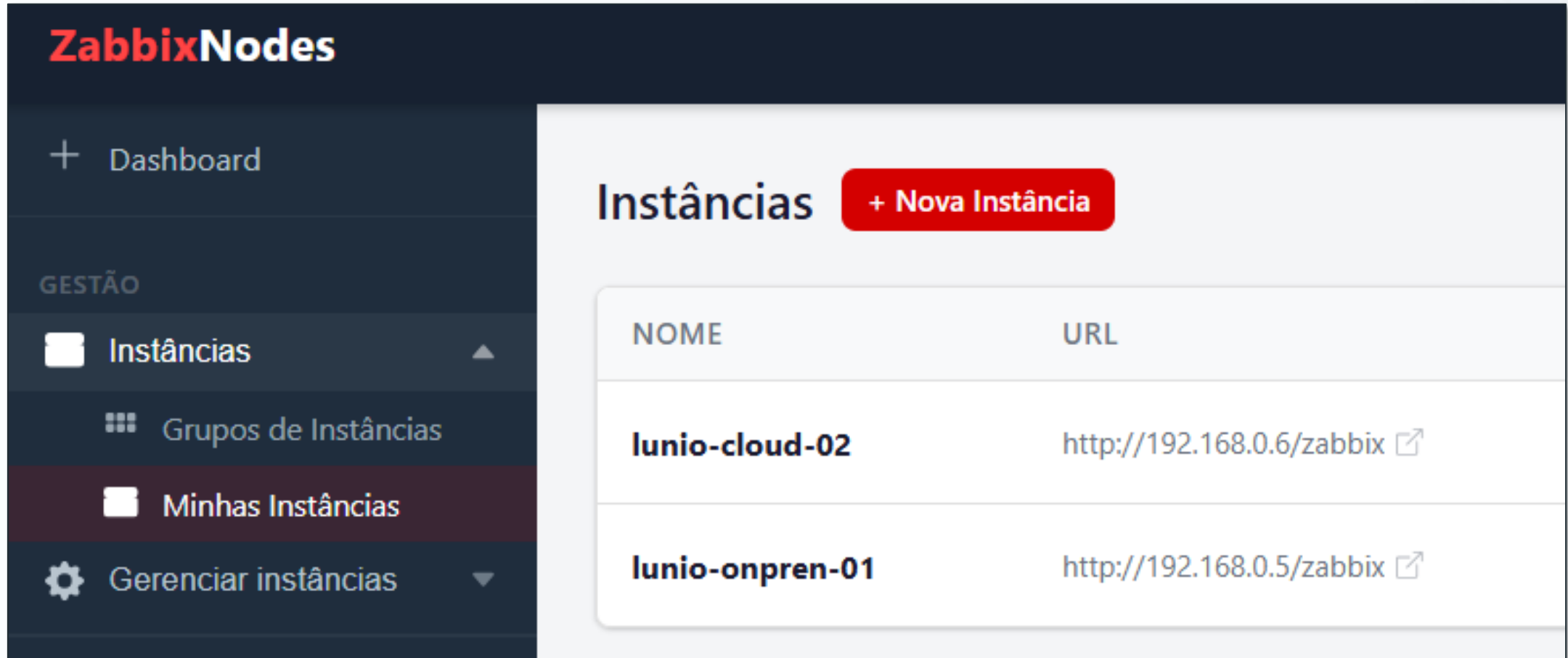
The screenshot shows the Zabbix login interface. At the top center is the ZABBIX logo. Below it are two input fields: 'Username' and 'Password'. A checkbox labeled 'Remember me for 30 days' is checked. A blue 'Sign in' button is positioned below the fields. At the bottom, there are links for 'Help' and 'Support'.



The screenshot shows the ZabbixNodes login interface. At the top center is the ZabbixNodes logo, with the subtitle 'Gerenciamento Multi-Instância Zabbix' below it. There are two input fields: 'Usuário' (containing 'admin') and 'Senha' (containing '\*\*\*\*\*'). A red 'Entrar' button is located at the bottom.

# Zabbix Nodes

Gerencie suas instâncias



The screenshot displays the ZabbixNodes web interface. On the left is a dark sidebar with the title "ZabbixNodes" and a navigation menu. The main content area is titled "Instâncias" and includes a red button for "+ Nova Instância". Below this is a table with two columns: "NOME" and "URL". The table lists two instances: "lunio-cloud-02" with URL "http://192.168.0.6/zabbix" and "lunio-onpren-01" with URL "http://192.168.0.5/zabbix".

NOME	URL
<b>lunio-cloud-02</b>	<a href="http://192.168.0.6/zabbix">http://192.168.0.6/zabbix</a>
<b>lunio-onpren-01</b>	<a href="http://192.168.0.5/zabbix">http://192.168.0.5/zabbix</a>

# Zabbix Nodes

**ZabbixNodes**

+ Dashboard

GESTÃO

- Instâncias
- Grupos de Instâncias
- Minhas Instâncias
- Gerenciar instâncias
- Hosts**
- Grupos de Hosts
- Proxies
- Templates
- Triggers Ativas

ORQUESTRAÇÃO

- Conformidade
- Orquestração

## Hosts

Instância: lunio-onpren-01 Grupo: Todos os grupos + Novo Host

HOSTNAME	NOME VISÍVEL	GRUPOS	INTERFACE
Zabbix server	—	ZABBIX SERVERS	
Training-VM-01	—	LINUX SERVERS TRAINING/SERVE TRAINING/STUDENT MACHINES	student-01.example.com
Training-VM-02	—	LINUX SERVERS TRAINING/SERVE TRAINING/STUDENT MACHINES	student-02.example.com
Training-VM-03	—	LINUX SERVERS TRAINING/SERVE TRAINING/STUDENT MACHINES	student-03.example.com
Training machines	—	TRAINING/AGGREGATION TRAINING/STUDENT MACHINES	

- Todos os grupos
- Applications
- Databases
- DianaLeon
- Discovered hosts
- Hypervisors
- Linux servers
- Lunio Default
- Training/Aggregation
- Training/Servers
- Training/Student machines
- Virtual machines
- Zabbix servers
- lunioteste01
- proxies**
- test
- webservers

**ZabbixNodes**

+ Dashboard

GESTÃO

- Instâncias
- Grupos de Instâncias
- Minhas Instâncias
- Gerenciar instâncias
- Hosts
- Grupos de Hosts
- Proxies
- Templates
- Triggers Ativas

ORQUESTRAÇÃO

- Conformidade
- Orquestração

## Conformidade de Templates

Instância de referência \*  
lunio-onpren-01

Template de referência \*  
Template Basic

Instâncias alvo  
 Todas  lunio-cloud-02

**Analisar**

✓ CONFORME: 0    ⚠ DIVERGENTE: 0    ✗ AUSENTE: 1

INSTÂNCIA	STATUS	ITENS (REFERÊNCIA)	ITENS (ATUAL)
<input checked="" type="checkbox"/> lunio-cloud-02	✗ AUSENTE	13	—

# Zabbix Nodes

CONFORMIDADE


ORQUESTRAÇÃO

e muito mais...

**Itens: Template Basic**  
lunio-onpren-01 (referência: 13 itens) vs lunio-cloud-02 (atual: 0 itens) — **13 ausentes**

Filtrar:  
 **✘ Ausentes (13)**  
 **+ Extras (0)**  
 **✔ Conformes (0)**  
Clique em uma linha para ver detalhes

STATUS	NOME	CHAVE
<b>✘</b> AUSENTE	CPU load	system.cpu.load
<b>✘</b> AUSENTE	Interface eth0: Bits received	net.if.in[enp0s10]
<b>✘</b> AUSENTE	Interface eth0: Bits sent	net.if.out[enp0s10]
<b>✘</b> AUSENTE	Memory available	vm.memory.size[available]
<b>✘</b> AUSENTE	Memory information	ssh.run[memory.report]
<b>✘</b> AUSENTE	MySQL database uptime flexible	mysql.uptime.f[{\$MYSQL.USERNAME},{MYSQL.PASSWORD}]
<b>✘</b> AUSENTE	MySQL database uptime simple	mysql.uptime.s
<b>✘</b> AUSENTE	Number of stress processes running	proc.num[stress]

 **Sincronizar 13 itens ausentes** Cria os itens ausentes no alvo com as mesmas propriedades da referência.

# Zabbix Nodes Demo

# Zabbix Nodes

## Arquitetura:

- ▶ Backend: Python, Zabbix Utils
- ▶ Frontend: HTML + CSS
- ▶ Banco de dados: PostgreSQL 16
- ▶ Deploy: Docker Compose

# Zabbix Nodes

Open source, gratuito, voltado à comunidade Zabbix. Suporta Zabbix 6.x e 7.x



[github.com/Luniobr/zabbixnodes](https://github.com/Luniobr/zabbixnodes)

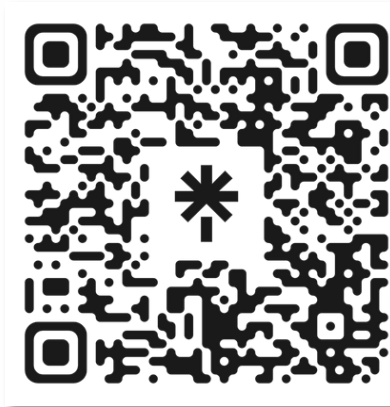
## Principais benefícios

- ▶ Ferramenta nativa para gerenciar multiplas instâncias Zabbix
- ▶ Facilidade operacional de acessar cada instancia individualmente para tarefas rotineiras
- ▶ Visão agregada de alertas, hosts e saude dos ambientes dos clientes
- ▶ Redução de inconsistencias ao gerenciar configuracoes manualmente em multiplos Zabbix(Padronização)

Obrigado



**Hernandes Martins**  
Zabbix Trainer



**Nos siga nas redes sociais**  
Lunio Zabbix Premium Partner