

Installation, Configuration and Troubleshooting of the CA Workload Automation Agents

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Installation, Configuration and Troubleshooting of the CA Workload
Automation Agents

agenda

- Agent Installation, Internals, Configuration and Environments
- Adding agents to the AutoSys topology
- Troubleshooting Agent Communications within AutoSys
- Troubleshooting Job Runs in the Agent

agenda



agent installation, internals,
configuration and environments

agent installation, internals, configuration and environments

installation

- Dedicated installer
- \$AUTOROOT/SystemAgent/WA_AGENT
 - Can be installed into any directory
- Windows
 - Installs itself as a service under Local System account
- UNIX
 - Recommended to be installed as root
 - Can be installed as any user
 - NFS is unsupported

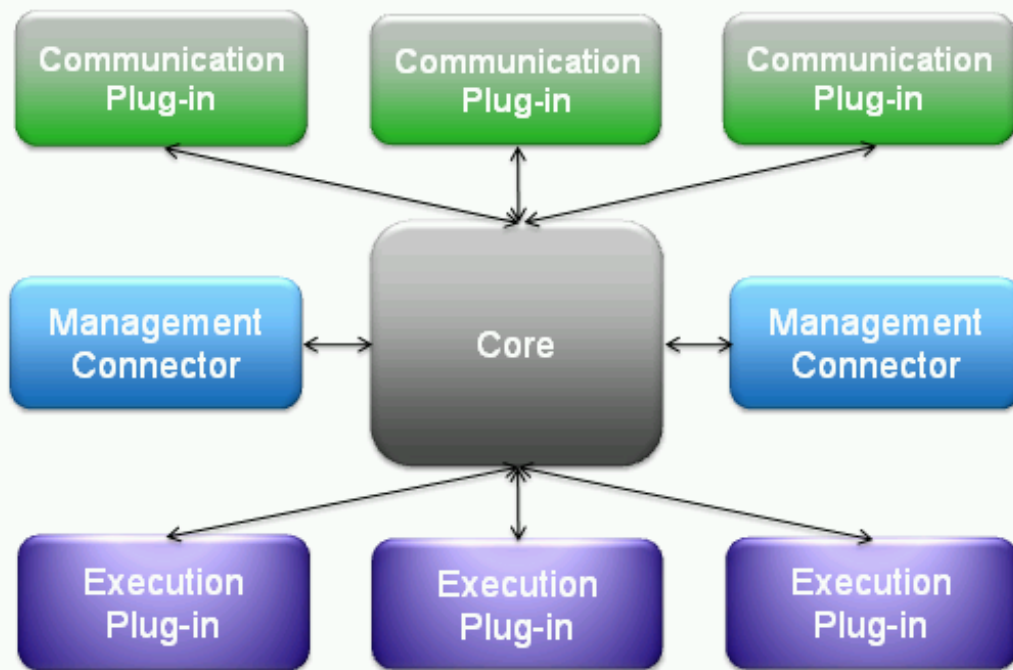
installation

installation

- Agent directory consists of the following:
- Subdirectory for Java JAR files:
 - Central Agent Core
 - Agent Plug-ins
 - Management Connectors
 - 3rd party libraries
- Agent binaries
- Agent configuration files

installation

internals



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internals

internals

- Communication Plug-ins
 - Receives requests/Sends responses
- Execution Plug-ins
 - Runs UNIX & Windows jobs
 - Monitors for files
 - Performs file transfers
- Management Connectors
 - Allow for agent monitoring and control

internals

configuration

— Configuration files:

- **agentparm.txt** – Main file (managers, TCP/IP, plug-ins, etc).
- **security.txt** – Agent ACL file
- **cryptkey.txt** – File containing encryption key

— Primary Configuration (agentparm.txt)

- Can be edited with the plain text editor
- Consists of the key=value pairs

configuration

configuration

- Agent Access Control List file (security.txt)
 - Execution of scripts and commands
 - FTP-related commands to files in specific directories
 - Control commands issued by scheduling managers
 - `cybAgent -r` will reload security file
- Agent as a built-in FTP server (ftpusers.txt)
 - Maintains own list of FTP users – `ftpusr.cfg`
 - Contains all users/password hashes
 - Does not use OS to authenticate users

environments

Levels of environments

- Login shell (\$ENV)
- Agentparm.txt
- /etc/auto.profile (Unix)
- Job attributes:
 - profile (full path to file or file in SystemAgent\WA_AGENT\profiles)
 - envvars (env=value)

environments

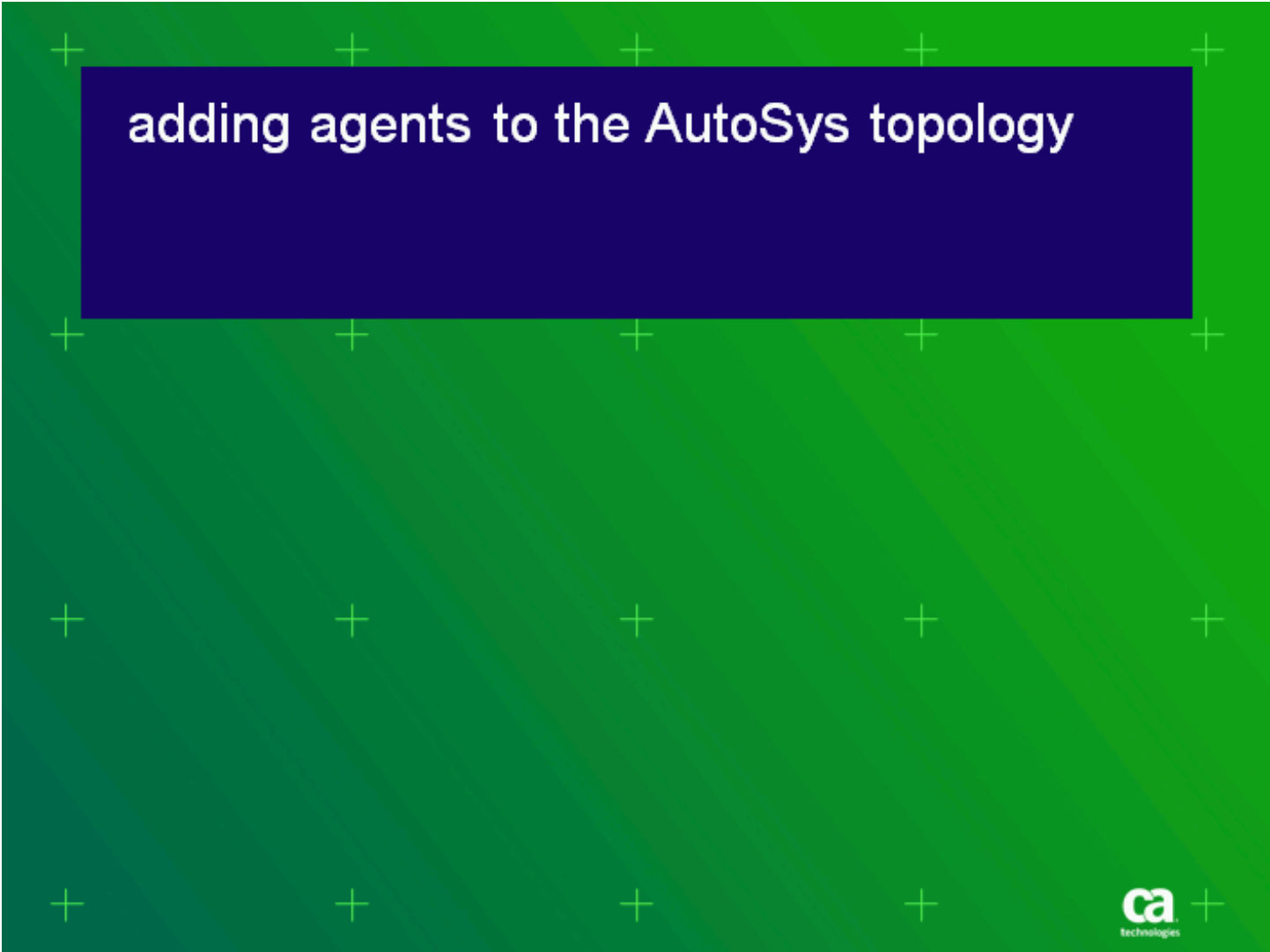
- Agentparm.txt:
- Agent-wide (all jobs/all schedulers/all users):
 - oscomponent.environment.variable
- Manager-specific (all jobs/all users/per scheduler):
 - oscomponent.environment.variable_manager_<instance_SCH>
- User-specific (all jobs/all schedulers/per user):
 - oscomponent.environment.variable_user_<userid>

environments

environments

- cybAgent forks/exec cybSpawn
- cybSpawn sources agentparm.txt and job environments
 - Executes Login shell
 - Sources /etc/auto.profile
 - Forks/execs new cybSpawn
- Second cybSpawn applies agentparm.txt and job environments

environments



adding agents to the AutoSys topology

adding agents to the AutoSys topology

topology configuration

—Agent

- agentparm.txt:
- Name
- Listener port (SSA/non-SSA)
- Encryption key (tied to agent name)

—Scheduler /Application Server

- UNIX config file/Windows admin:
- Name (App Server only)
- Listener ports (Primary/Auxiliary)

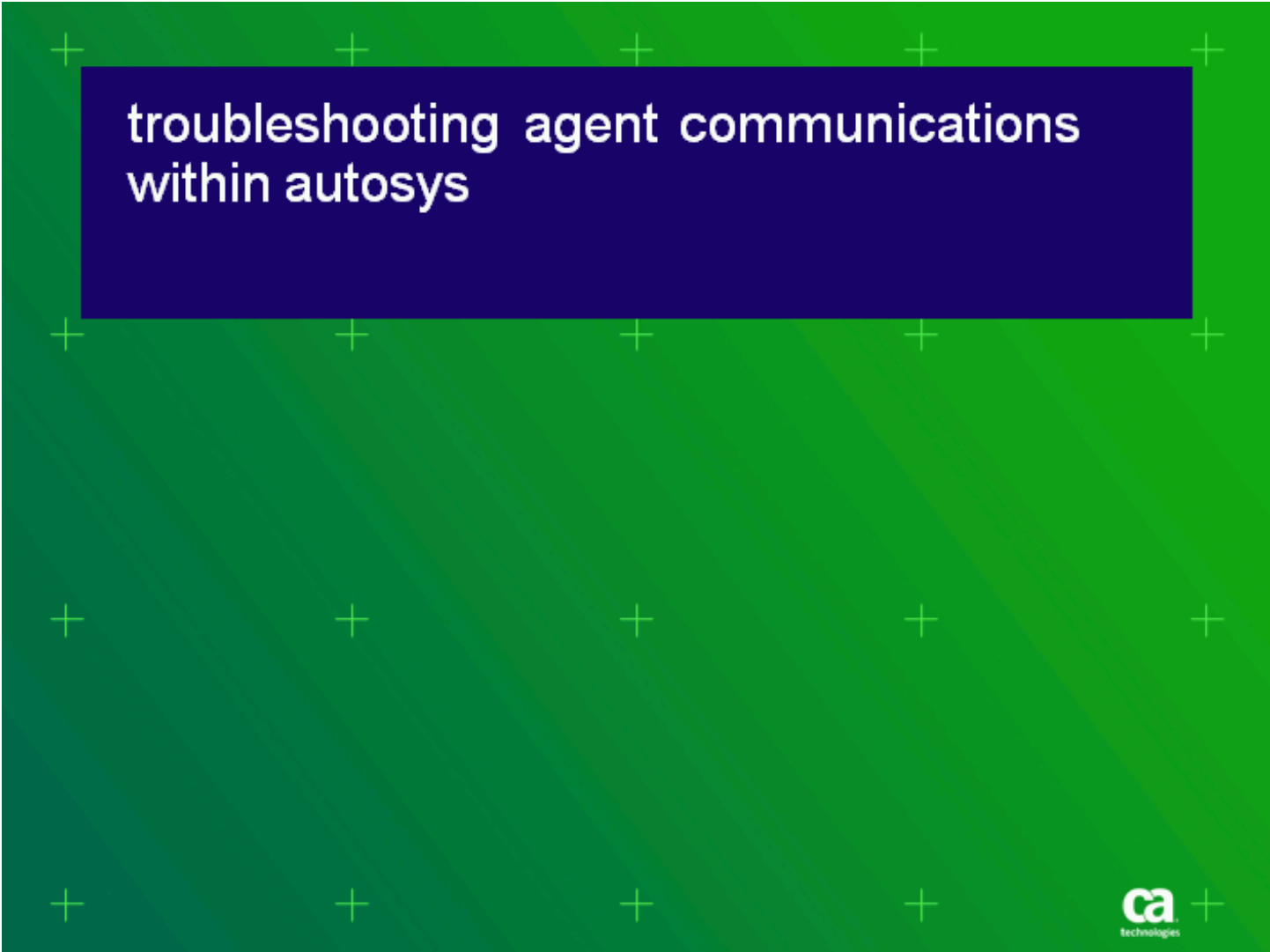
topology configuration

topology configuration

—Managers-side configuration of Agents:

- insert_machine
 - type: a
 - agent_name
 - encryption_type
 - key_to_agent
 - node_name
 - opsys
 - port

—No Agent-side configuration of managers (except zOS Agent)



troubleshooting agent communications within autosys

troubleshooting agent communications within autosys

problem analysis

- Agent communication failures manifest as:
 - Jobs fail to start
 - STARTJOBFAIL alarm
 - Machine placed in the unqualified or auto-offline state
 - MACHINE_UNAVAILABLE alarm
 - Jobs placed into PEND_MACH state
 - Jobs stuck in STARTING or RUNNING state



problem analysis

problem analysis

— Which leg of communications is failing?

- Scheduler to Agent
- Agent to Scheduler

— Why is communications failing?

- Failure to establish a connection
- Failure to send
- Failure to accept connections
- Failure to receive



problem analysis

problem analysis

—Where is communications failing?

- Network configuration
- Hardware defect
- Operating system
- Application:
 - SSA
 - Encryption/Decryption error
 - Invalid topology configuration



problem analysis

logs

— Agent:

- Logs in \$AUTOROOT/SystemAgent/<AGENT_NAME>/log
- transmitter.log/receiver.log
- nohup.stderr and nohup.stdout
- agentparm.txt: log.level=5 or 8

— Scheduler:

- \$AUTOUSER/out/event_demon.\$AUTOSERV
- ISDBGACTIV=COMM,AFM



logs

troubleshooting communications

— Can Scheduler contact Agent?

- **Autoping -m <machine>**
- Check machine definition: host, port, agent name, encryption
- Check SSA port settings (csamconfigedit)
- Check agentparm.txt for scheduler host information
- Scheduler log traces: ISDBGACTIV=AFM
- Agent receiver.log traces: log.level=5



troubleshooting communications

troubleshooting communications

— Can Agent contact Scheduler?

- **Chk_auto_up**
- Check SSA port settings (csamconfigedit)
- Check agentparm.txt for scheduler host information
- Scheduler log traces: ISDBGACTIV=AFM
- Agent receiver.log traces: log.level=5



troubleshooting communications

troubleshooting job runs in the agent

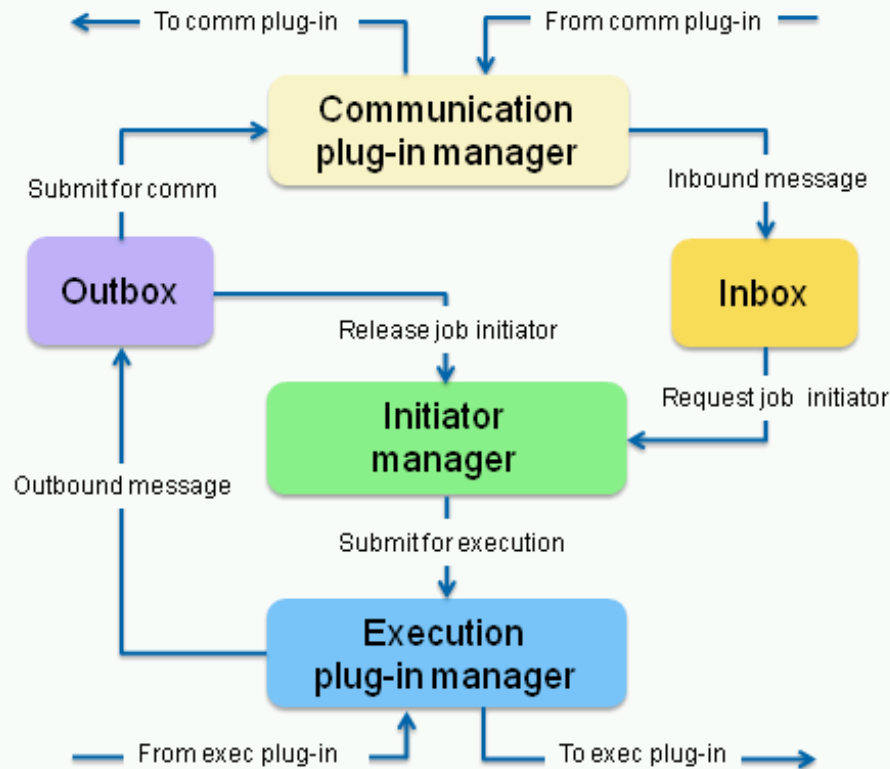
troubleshooting job runs in the agent

problem analysis

- Communication issues
- Agent configuration errors
 - Plug-in is not enabled
- Invalid job attribute values
- Local agent security (ACL) refuses to run the job
- Errors specific to job type
- All Agent initiators in use
- No available disk space

problem analysis

problem analysis



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problem analysis

logs

—Agent logs

- Every component has log
- Misc. logging goes to defaultlog_agent.log
- nohup.stderr/nohup.stdout

—Job Spool Files

- Workload Object ID (WOB ID) used to track the job
- Contains information about job startup
- Contains STDOUT/STDERR (Can be redirected)

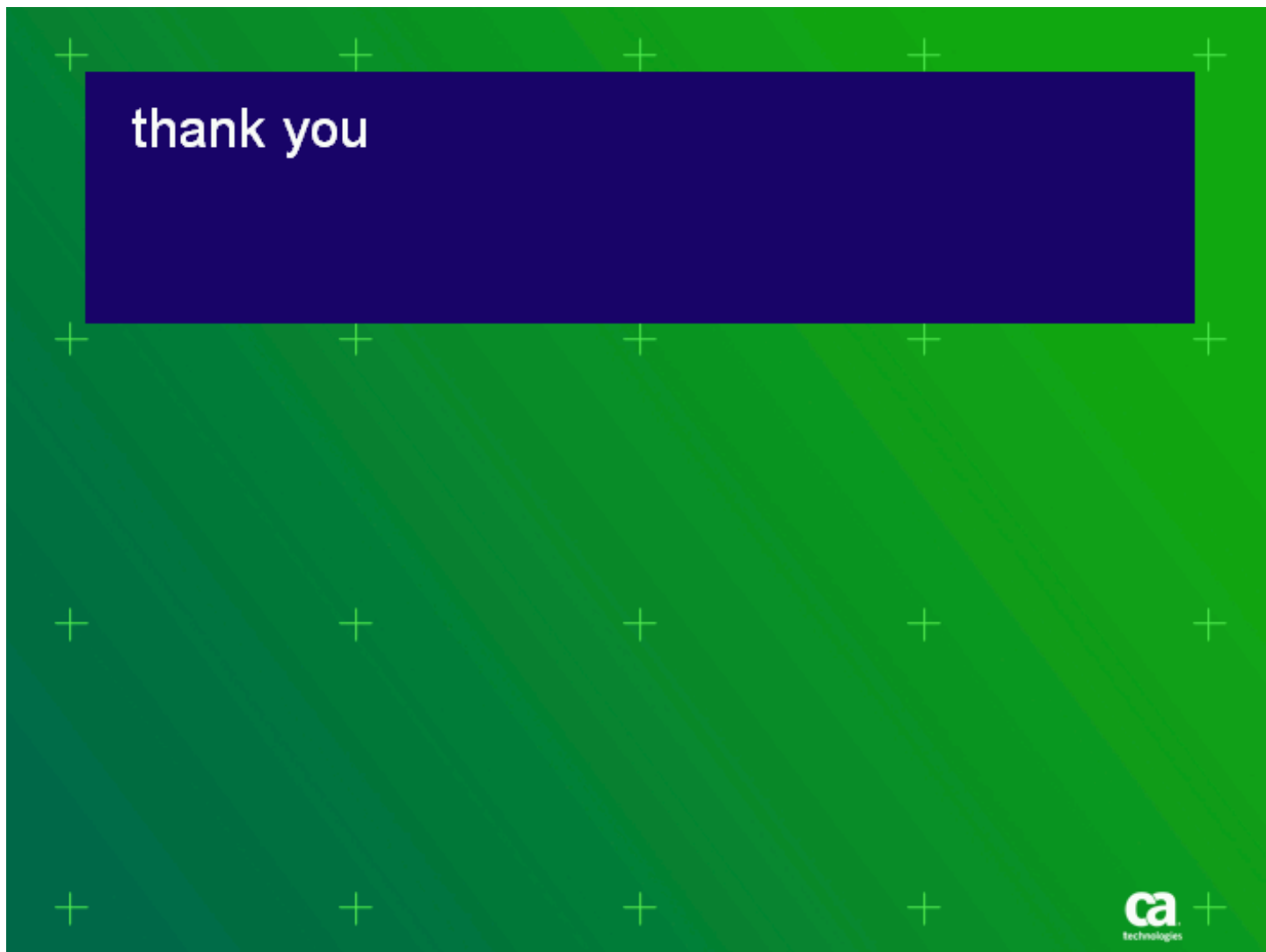
troubleshooting job runs

— Tracking job runs

- Set log.level=5 in the agentparm.txt
- Look in the receiver*.log/transmitter*.log
- Find and track job by WOB ID (<joid>.<run_num>_<ntry>)

— Disk management

- oscomponent.joblog=true
- oscomponent.joblog.success.autocleanup=true
- agent.spool.success.autocleanup=true



thank you