IIS 8 TROUBLESHOOTING FEATURES
FOR CF/RAILO ADMINS
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INTRODUCTION

- Quick review of platform support
- New Application Initialization (warm up) feature
- Enhanced Dynamic IP Address Restrictions (request throttle) feature
- Enhanced CPU Throttling feature
- Other new IIS 8 features of potential interest to admins
- Some Windows 2012 features of potential and related interest
- Some IIS 7 and 7.5 features you should investigate if you missed

- Curious: how many using IIS 8 in production today? Or 7.5? Or 7?
- Note: Slide deck and resource lists both available at carehart.org/presentations
ABOUT CHARLIE AREHART

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- 15+ yrs CF experience (30+ Enterprise IT)
- Certified Adv CF Developer, Instructor
- Adobe Forum MVP, CF CAB member
- Organizer, Online ColdFusion Meetup (coldfusionmeetup.com), 2800+ members
- Living in Alpharetta, Georgia (Atlanta)

Web home at www.carehart.org

- 100+ presentations, 80+ articles, 400+ blog entries
- UGTV: recordings of 600+ presos by 300+ speakers
- CF411.com: 1800+ tools/resources, 150+ categories
- CF911.com: CF server troubleshooting resources
- Hosting courtesy of EdgeWeb Hosting
- Consulting: available for CF troubleshooting, tuning
  - Remote or on-site; on-demand, single session ok
QUICK REVIEW OF PLATFORM SUPPORT

• IIS 7.0 supported from Windows Server 2008; Vista
  • 7.5 in Windows 7 and Windows Server 2008 R2
  • More later on interesting changes in IIS 7.0, 7.5 you may have missed

• IIS 8 supported from Windows Server 2012; Windows 8
  • Server 2012 (and IIS 8) Launched Sept 2012

• When might you start using it?
  • How long did you wait for Server 2008? Server 2003?

• On to the new features...
NEW APPLICATION INITIALIZATION (WARM UP)

FEATURE

• Can initialize web apps, so ready for first real user request
• Demo
• Configuration
  • Feature enabled on server optionally via Server Manager
  • Configure App Pool for startmode="Alwaysrunning" (default is "onDemand")
  • Configure web site for Preload enabled="true"
  • Configure applicationInitialization entry in site web.config
    <applicationInitialization remapManagedRequestsTo="pathtoshow"
    skipManagedModules="true" >
      <add initializationPage="pathtoexecute" />
    </applicationInitialization>
  • Can add multiple initpage elements
  • Can force/test by simply recycling app pool, restarting IIS, or of course restarting box
• Observations/Gotchas
  • ...
NEW APPLICATION INITIALIZATION (WARM UP) FEATURE (CONT.)

- Observations/Gotchas
  - Can use FR or other request monitor
    - User-agent: “IIS Application Initialization Warmup”
    - Can’t watch for request in IIS logs; initpage never logs in IIS!
  - I could not ever get the remapManagedRequestsTo page to ever appear
    - Still, at least the preload/initpage DOES run, so still useful for long-running initpages
  - Cannot run an http request for the initpage
  - Serious gotcha: feature only ever seems to call page on localhost. Use URL Rewrite to solve
  - ...
NEW APPLICATION INITIALIZATION (WARM UP) FEATURE (CONT.)

- Observations/Gotchas (cont.)
  - If specified initpage does not exist, there is no error. Just does not “work”
    - FR can confirm that it’s never called
  - Beware IIS default behavior to start new worker process while recycling an old one
    - Can configure “overlapped process recycling”. More in resources shared later
  - Many folks (on web) seem to expect this to make pages “run faster”
    - Not quite the right way to look at it. Causes a given page to run on pool recycle
    - Consider also that pool recycles can happen automatically
    - Still, valuable to ensure that long-running init page happens on server restart, at least, which for many is the main objective
  - …
NEW APPLICATION INITIALIZATION (WARM UP) FEATURE (CONT.)

• Observations/Gotchas (cont.)
  • Articles often show creating new app pool to use this. Not needed
    • And they often show enabling startmode/preload via config file: but both are in IIS UI, so not needed
  • When changing web.config, may need to open editor with “run as admin”
  • Can add this to IIS 7.5! More later
ENHANCED DYNAMIC IP ADDRESS RESTRICTIONS (REQUEST THROTTLE) FEATURE

• Can block access for IP addresses that exceed specified request limits, specify behavior when blocked

• Demo

• Configuration
  • Configured for server or site, in optional “IP & Domain Restrictions”
    • First as “action” (on right): “Edit Dynamic Restriction Settings”
      • Either for x concurrent requests, or x requests over y ms
    • Then as “action”: “Edit Feature Settings”
      • New “Deny Action Type”: unauthorized, forbidden, notfound, abort
      • IIS 7 and earlier versions sent Forbidden (HTTP 403.6) response

• Gotchas…
ENHANCED DYNAMIC IP ADDRESS RESTRICTIONS (REQUEST THROTTLE) FEATURE

• Gotchas/Observations

  • Optional “logging only” mode
    • simply logs reqs in IIS logs with 403 status code
  • User must (can) wait the given ms to make requests again
  • What if you are behind proxy, and all requests come from “same” IP?
    • You can enable “proxy” mode option to check x-forwarded-for header
      • For more details, on trusting that header, see
        http://blogs.iis.net/wadeh/archive/2012/08/01/dynamic-ip-restriction-proxy-mode.aspx
ENHANCED CPU THROTTLING FEATURE

• Can limit CPU/memory/bandwidth consumption by each app pool
  • Introduced in IIS 7.0
  • IIS 8 adds additional throttling options
• Configuration
  • App Pool>Advanced Settings>CPU
  • New “Limit” % (percent of time over “Limit Interval”)
    • 25000 is 25%
  • New LimitAction values: Throttle, ThrottleUnderLoad (can use more if server not under load)
    • Old action remains: KillW3wp
  • Can set using “application pool defaults” feature
• Gotchas
  • Sets a limit, not a reservation
  • Does nothing if no LimitAction is chosen
  • Doesn’t help with CF itself using high CPU, only the IIS worker process
OTHER NEW IIS 8 FEATURES OF POTENTIAL INTEREST TO ADMINS

• Server Name Indication
  • can now configure multiple host headers for SSL on same IP!
• Centralized certificates (store and access certificates centrally on file share)
• FTP Logon attempt restrictions
• NUMA-aware scalability (“Non-Uniform-Memory-Access”)
• Max URL segments option
• And more
SOME WINDOWS 2012 FEATURES OF POTENTIAL AND RELATED INTEREST: THE GOOD

• IIS supported in Windows Server Core (small footprint deployment, cmd-line only option)
• Support for higher capacity servers
• Failover clusters (in Standard edition)
• Improved Hyper-V (3), Powershell (3)
• ReFS (resilient file system; next generation file system)
• Storage spaces (grouping drives into pools; also on Windows 8)
• Automatic Maintenance (better off-peak mgt; also on Windows 8)
• Much, MUCH more, of course
  • Some perhaps beyond interest of most here
SOME WINDOWS 2012 FEATURES OF POTENTIAL AND RELATED INTEREST: THE BAD

• Ugh: Windows 8 (Metro) Interface. Anyone heard experiences with it???
• Some would say:


COMPLOTELY

UNACCEPTABLE

• Are some key things to know for effective use. See more in resources at end
  • Some cool day-to-day things in 8/2012:
    • Much improved Task Manager, better file copy/move operations, better multimonitor support, file history (new backup feature), and more
SOME WINDOWS 2008 FEATURES OF POTENTIAL AND RELATED INTEREST

• Along same lines, did you skip 2008?
  • Or did you make the most of it while you had it?
  • Some key things worth noting (and which carry forward)

• Resource Monitor (available from Task Manager)
• Reliability and Performance Monitor
• And of course lots more
SOME IIS 7 FEATURES YOU SHOULD INVESTIGATE IF YOU MISSED

• And what about IIS 7? Did you notice/take advantage of all these?
  • Most carry through to IIS 8, so they are still very valuable to know about
• Many security enhancements, minimal install by default
• New management UI
• New appcmd command line tool
• New configuration architecture (web.config, applicationhost.config)
• Each site gets new app pool by default
• Configuration history tracking
• Ability to create self-signed SSL certificates
• Worker Process request monitoring! (optionally enabled)
• But wait, there’s more! …
SOME IIS 7 FEATURES YOU SHOULD INVESTIGATE IF YOU MISSED (CONT.)

- Request filtering (optionally enabled)
- Custom Error handling (optionally enabled)
- URL Rewrite (optionally installed)
- Failed Request Tracing (optionally installed)
- ARR (Application Request Routing) (optionally configured)
- Dynamic IP Restrictions module (optionally installed), later implemented in IIS 8
- SEO Toolkit (optionally installed)
- URLScan 3.1 (optionally installed)
- Web Deploy (optionally installed)
- Web Farm Framework (WFF) 2.0 (optionally installed)
- And still more, but you get the picture!
SOME IIS 7.5 FEATURES YOU SHOULD INVESTIGATE IF YOU MISSED

• And what about IIS 7.5? Did you ever install it? Notice these?
  • Again, they mostly still apply in IIS 8
• Each app pool runs with unique, less-privileged identity
• UI in Manager for managing Request Filtering
• Configuration editor for managing config file xml entries within IIS Manager
• IIS module for Windows Powershell
• Configuration logging and tracing
• Application warmup feature (which would become App Init in IIS 8)
• Integration with Windows Server 2008 R2’s Best Practice Analyzer
  • advises on IIS best practices
• And more
WHERE TO LEARN MORE

- Hope you’re encouraged to want to check out IIS8, Windows 2012
  - And maybe revisit some things you may have missed in IIS 7, 7.5
- Who felt they learned a lot?
- Who feels overwhelmed by how much there is?
- Good news: links to substantially more info on each of these features
  - Offered in a PDF notes file, associated with this talk
  - http://www.carehart.org/presentations/#iis8
CONCLUSION

- IIS continues to evolve and improve, with enhanced security, functionality
- IIS 8 offers powerful new tools to help CF/Railo/BD admins better manage
- Don’t miss out on things new in IIS 7 or 7.5 you may have missed

- **If you need help implementing these,**
  - As well as help resolving CF/Railo/BD server problems
  - Let me help, remotely
  - See carehart.org/consulting