



ICALEPCS 2015

International Conference on Accelerator
& Large Experimental Physics
Control Systems

Status Monitoring of the EPICS Control System at the Canadian Light Source

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WEM304



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Goal— Monitor Overall Health of the Control System

Goal— Monitor Actual Process Variable Requests and Connections

Goal— Report Anomalies Before Problems Occur (or before anyone else notices)

Goal— Don't Duplicate the Alarm Handler!

Goal— Minimize changes to Existing Applications

Goal— Improve accuracy of IRMIS database



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Data Freely Available!

EPICS IOC applications broadcast beacons that identify a unique entity:

- IP (can be translated to host name)

- TCP Port

- Counter since startup

EPICS Client applications broadcast requests for Process Variables:

- Requesting IP

- Port Identifier

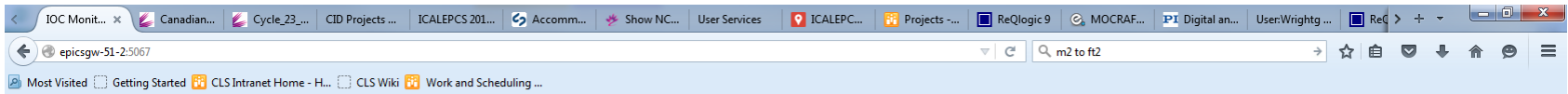
- Process Variable Name

Given a Process Variable name, `CA_PROTO_SEARCH` associates the Process Variable with an IOC Application



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It's On A Web Page!

All IOCs 409 IOCS (with 922 EPICS server apps) All IOCS

BPM12405-301 (1)	BPM12405-302 (1)	BPM12405-303 (1)	BPM12405-304 (1)	BPM12405-305 (1)	BPM12405-306 (1)	BPM12405-307 (1)	BPM12405-308 (1)	BPM12405-309 (1)	BPM12405-310 (1)	BPM12405-311 (1)	BPM12405-312 (1)
BPM12406-301 (1)	BPM12406-302 (1)	BPM12406-303 (1)	BPM12406-304 (1)	BPM12406-305 (1)	BPM12406-306 (1)	BPM12406-307 (1)	BPM12406-308 (1)	BPM12406-309 (1)	BPM12406-310 (1)	BPM12406-311 (1)	BPM12406-312 (1)
IOC0000-002 (1)	IOC0000-040 (1)	IOC0000-045 (1)	IOC0000-051 (1)	IOC0000-052 (1)	IOC0000-053 (1)	IOC0000-054 (1)	IOC0000-055 (1)	IOC0000-056 (1)	IOC0000-057 (1)	IOC0000-058 (1)	IOC0000-059 (1)
IOC0000-061 (1)	IOC0000-201 (1)	IOC0013-001 (1)	IOC0102-102 (1)	IOC0102-104 (2)	IOC0102-105 (2)	IOC0102-401 (1)	IOC0102-402 (2)	IOC0102-404 (3)	IOC0102-405 (3)	IOC0105-002 (2)	IOC0121-201 (2)
IOC1022-101 (1)	IOC1022-102 (1)	IOC1022-103 (1)	IOC1022-104 (1)	IOC1022-001 (2)	IOC1026-001 (2)	IOC1026-001 (4)	IOC1026-002 (4)	IOC1026-003 (2)	IOC1026-004 (2)	IOC1026-005 (2)	IOC1026-006 (2)
IOC1104-104 (2)	IOC1126-002 (3)	IOC1126-103 (1)	IOC1126-008 (2)	IOC1126-008 (2)	IOC1126-009 (2)	IOC1126-009 (2)	IOC1126-010 (2)	IOC1126-011 (2)	IOC1126-012 (2)	IOC1126-013 (2)	IOC1126-014 (2)
IOC1506-102 (2)	IOC1506-301 (2)	IOC1506-302 (2)	IOC1506-303 (2)	IOC1506-304 (2)	IOC1506-305 (2)	IOC1506-306 (2)	IOC1506-307 (2)	IOC1506-308 (2)	IOC1506-309 (2)	IOC1506-310 (2)	IOC1506-311 (2)
IOC1606-301 (2)	IOC1606-302 (2)	IOC1606-310 (1)	IOC1606-311 (1)	IOC1606-312 (1)	IOC1606-313 (1)	IOC1606-314 (1)	IOC1606-315 (1)	IOC1606-316 (1)	IOC1606-317 (1)	IOC1606-318 (1)	IOC1606-319 (1)
IOC1606-320 (1)	IOC1606-321 (2)	IOC1606-322 (2)	IOC1606-323 (2)	IOC1606-324 (2)	IOC1606-325 (2)	IOC1606-326 (2)	IOC1606-327 (2)	IOC1606-328 (2)	IOC1606-329 (2)	IOC1606-330 (2)	IOC1606-331 (2)
IOC1607-301 (1)	IOC1607-302 (1)	IOC1607-303 (1)	IOC1607-304 (1)	IOC1607-305 (1)	IOC1607-306 (1)	IOC1607-307 (1)	IOC1607-308 (1)	IOC1607-309 (1)	IOC1607-310 (1)	IOC1607-311 (1)	IOC1607-312 (1)
IOC1607-302 (3)	IOC1607-401 (1)	IOC1607-402 (1)	IOC1607-403 (1)	IOC1607-701 (1)	IOC1607-701 (1)	IOC1608-001 (4)	IOC1608-004 (3)	IOC1608-004 (15)	IOC1608-008 (1)	IOC1608-010 (1)	IOC1608-012 (1)
IOC1608-013 (2)	IOC1608-021 (1)	IOC1608-022 (1)	IOC1608-023 (1)	IOC1608-024 (2)	IOC1608-025 (2)	IOC1608-026 (2)	IOC1608-027 (2)	IOC1608-028 (2)	IOC1608-029 (2)	IOC1608-030 (2)	IOC1608-031 (2)
IOC1610-002 (3)	IOC1610-002 (2)	IOC1610-020 (1)	IOC1610-021 (1)	IOC1610-022 (2)	IOC1610-101 (3)	IOC1610-105 (4)	IOC1610-108 (2)	IOC1610-201 (1)	IOC1610-301 (10)	IOC1610-401 (4)	IOC1610-402 (2)
IOC1610-403 (1)	IOC1610-404 (1)	IOC1610-405 (1)	IOC1610-406 (2)	IOC1610-407 (2)	IOC1611-101 (2)	IOC1611-103 (2)	IOC1611-401 (1)	IOC1611-401 (1)	IOC1611-402 (1)	IOC1611-403 (2)	IOC1611-404 (1)
IOC1611-308 (1)	IOC1611-410 (2)	IOC1611-421 (1)	IOC1611-424 (1)	IOC1611-425 (1)	IOC1611-428 (1)	IOC1611-427 (10)	IOC1611-428 (2)	IOC1611-429 (2)	IOC1611-430 (2)	IOC1611-431 (2)	IOC1611-432 (2)
IOC1611-437 (1)	IOC1611-438 (2)	IOC1611-439 (2)	IOC1611-441 (2)	IOC1611-442 (2)	IOC1611-443 (2)	IOC1611-444 (3)	IOC1611-445 (2)	IOC2001-002 (1)	IOC2022-001 (1)	IOC2023-002 (1)	IOC2025-002 (1)
IOC2008-001 (2)	IOC2031-102 (1)	IOC2049-001 (1)	IOC2049-002 (1)	IOC2400-104 (1)	IOC2406-106 (2)	IOC2406-102 (1)	IOC2401-101 (2)	IOC2402-101 (2)	IOC2403-101 (2)	IOC2404-101 (2)	IOC2405-101 (2)
IOC2403-101 (2)	IOC2403-102 (3)	IOC2403-103 (2)	IOC2403-110 (2)	IOC2403-112 (2)	IOC2403-201 (1)	IOC2403-201 (1)	IOC2403-204 (3)	IOC2403-204 (1)	IOC2403-204 (1)	IOC2403-204 (1)	IOC2403-210 (2)
IOC2404-101 (2)	IOC2404-101 (2)	IOC2404-102 (2)	IOC2404-106 (2)	IOC2404-108 (1)	IOC2404-110 (2)	IOC2404-112 (2)	IOC2404-112 (2)	IOC2404-112 (1)	IOC2404-112 (1)	IOC2404-112 (1)	IOC2404-201 (2)
IOC2404-301 (3)	IOC2405-101 (3)	IOC2405-104 (2)	IOC2405-109 (1)	IOC2405-110 (1)	IOC2405-111 (1)	IOC2405-112 (1)	IOC2405-113 (1)	IOC2405-114 (1)	IOC2405-115 (1)	IOC2405-116 (1)	IOC2405-117 (1)
IOC2405-118 (1)	IOC2405-118 (1)	IOC2405-119 (1)	IOC2405-120 (1)	IOC2405-121 (2)	IOC2405-122 (2)	IOC2405-123 (2)	IOC2405-124 (2)	IOC2405-125 (2)	IOC2405-126 (2)	IOC2405-127 (2)	IOC2405-128 (2)
IOC2406-118 (1)	IOC2406-118 (1)	IOC2406-120 (1)	IOC2406-121 (1)	IOC2406-122 (1)	IOC2406-123 (1)	IOC2406-124 (1)	IOC2406-125 (1)	IOC2406-126 (1)	IOC2406-127 (1)	IOC2406-128 (1)	IOC2406-129 (1)
IOC2406-301 (1)	IOC2406-302 (2)	IOC2406-301 (2)	IOC2406-302 (2)	IOC2406-303 (2)	IOC2406-304 (2)	IOC2406-305 (2)	IOC2406-306 (2)	IOC2406-307 (2)	IOC2406-308 (2)	IOC2406-309 (2)	IOC2406-310 (2)
IOC2407-001 (1)	IOC2407-002 (1)	IOC2407-003 (2)	IOC2407-004 (2)	IOC2407-005 (1)	IOC2407-101 (2)	IOC2407-102 (2)	IOC2407-103 (1)	IOC2407-104 (1)	IOC2407-105 (1)	IOC2407-106 (1)	IOC2407-107 (1)
IOC2408-117 (2)	IOC2408-118 (1)	IOC2408-119 (1)	IOC2408-120 (2)	IOC2408-201 (2)	IOC2408-201 (2)	IOC2408-301 (1)	IOC2408-301 (1)	IOC2408-301 (2)	IOC2408-301 (2)	IOC2408-301 (2)	IOC2408-302 (2)
nbk-1001971 (0)	NBK-0000000 (0)	NBK-0000100 (0)	OPB013-001 (1)	OPB015-001 (1)	OPB016-001 (1)	OPB017-001 (1)	OPB018-103 (1)	OPB021-101 (2)	OPB021-102 (2)	OPB021-103 (2)	OPB021-104 (2)
OPB1051-202 (1)	OPB1028-002 (1)	OPB1051-101 (1)	OPB1051-301 (1)	OPB1052-302 (2)	OPB1055-202 (1)	OPB1055-301 (1)	OPB1055-302 (1)	OPB1055-301 (1)	OPB1055-302 (1)	OPB1055-303 (1)	OPB1055-304 (1)
OPB1057-006 (1)	OPB1057-901 (1)	OPB1058-005 (1)	OPB1058-004 (1)	OPB1058-110 (1)	OPB1058-110 (1)	OPB1058-111 (1)	OPB1058-112 (1)	OPB1058-113 (1)	OPB1058-114 (1)	OPB1058-115 (1)	OPB1058-116 (1)
OPB1010-202 (1)	OPB1010-402 (1)	OPB1011-201 (1)	OPB1011-402 (1)	OPB1011-412 (1)	OPB1011-412 (1)	OPB1011-415 (1)	OPB1011-415 (1)	OPB2017-001 (1)	OPB2022-001 (1)	OPB2022-003 (1)	OPB2026-001 (1)
OPB2036-002 (1)	OPB2049-002 (1)	OPB2051-002 (1)	OPB2077-001 (1)	OPB2078-001 (1)	OPB3001-501 (1)	OPB3001-501 (1)	OPB3001-501 (1)	OPB3001-501 (1)	OPB3001-501 (1)	OPB3001-501 (1)	OPB3001-501 (1)
Unknown (0)	Unknown (0)	Unknown (0)	Unknown (0)	Unknown (0)	Unknown (0)	Unknown (0)	Unknown (0)	Unknown (1)	Unknown (1)	Unknown (1)	Unknown (1)
Unknown (1)	Unknown (1)	Unknown (1)	Unknown (1)	Unknown (1)	Unknown (1)	Unknown (1)	Unknown (1)	Unknown (1)	Unknown (1)	Unknown (1)	Unknown (1)
VIOC2400-201 (1)	VIOC-BACHE101 (2)	VIOC1021-002 (2)	VIOC1008-001 (2)	VIOC1008-111 (1)	VIOC3010-001 (2)	VIOC3010-001 (2)	VIOC2400-110 (4)	VIOC2400-201 (2)	VIOC3000-001 (2)	VIOC3000-001 (2)	VIOC3000-001 (2)
VMS1021-001 (1)	VMS1021-001 (1)	VMS1021-001 (1)	VMS1021-001 (1)	VMS1021-001 (1)	VMS1021-001 (1)	VMS1021-001 (1)	VMS1021-001 (1)	VMS1021-001 (1)	VMS1021-001 (1)	VMS1021-001 (1)	VMS1021-001 (1)
VMS-0000000000 (0)											

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Conclusion

We Track:

- Traffic count of CA_PROTO_SEARCH
- PV names requested, number of requests, number of non-gateway requests, origin of last request
- PV name requests that never get a response
- PV name requests that used to get a response
- PV names served by more than one application
- Names that are malformed – illegal characters, or nowhere close to our naming standard
- Application serving the PV
- Computers running EPICS server applications
- The number of server applications running on a host
- When the number of applications has changed
- Uptime estimates of server applications
- Applications that are no longer broadcasting

We plan on combining this with the ability to query hosts and applications for information

See Our Poster! WEM304

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