

ICBS Re-engineering Project Cache Infrastructure Assessment Report



March 17, 2005

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Assessment Objectives

In preparation for system design and development work, the ICBS-R Team conducted an assessment of the current Information Technology (IT) infrastructure at National, Satellite and Local Area Support Caches. This IT “snapshot” will provide a baseline for system developers. The team’s objective was to query a representative sample of caches rather than conduct a comprehensive assessment of the entire cache system.

The focus of the Infrastructure Assessment (IA) included: computer and network capabilities, the level of IT and server support and any general areas of concern.

In February 2002, a more comprehensive survey was completed by fifteen Local Area Support Caches. That survey included questions on cache staffing, agency affiliation, type and volume of business, cache customers and ordering channels; as well as questions on IT. One objective of the current assessment was to see if there have been any significant changes with IT capabilities at Local Area Caches since the 2002 survey.

Questionnaire Format

The questionnaire consisted of thirty-five questions and covered the following areas:

- PCs located in the cache
- System servers that support ICBS
- The network serving the cache
- IT support received by the cache

Assessment Interviewees/Respondents

Six National Caches, one Satellite Cache and four Local Area Caches were chosen. ICBS was the inventory management system used by eight caches. The PC-based Cache Tracker application was used by three caches. The IA was sent via e-mail to each selected cache. The majority of responses were documented in a personal interview format. The hosting agencies of the various responding caches are as follows:

- US Department of Agriculture Forest Service (USFS)
- US Department of Interior Bureau of Land Management (BLM)
- Montana State Department of Natural Resources (MTDNR)
- Idaho State Department of Lands (IDL)

Although initial contact seeking permission to visit a cache was with the Cache Manager or their representative, participation in the IA

interview at some locales was done not only by the Cache Manager or ICBS Administrator, but also by a IT support person.

Assessment Results

Questions about Cache PCs

The questions asked under the Cache PCs heading was structured to get an overview on how many PCs, the age, the operating system in use, hard drive capacity, brand of PC, processor on PC, and printer type in use at the caches.

Number of PCs in Cache

Cache	Number of PCs
Helena Interagency Fire Cache	1
Central ID Fire Cache	1
Cedar City IA Fire Cache	1
Coeur d'Alene Interagency Fire Cache	6
La Grande Satellite Cache	3
Eastern Area Incident Support Cache	5
Northwest Area Incident Support Cache	9
Great Basin Area Incident Support Cache	43
Rocky Mountain Area Incident Support Cache	6
Northern Rockies Area Incident Support Cache	14
Southwest Area Prescott Incident Support Cache	10

When PCs were Last Replaced

Cache	Year/Age
Helena Interagency Fire Cache	2003
Central ID Fire Cache	2002
Cedar City IA Fire Cache	2004
Coeur d'Alene Interagency Fire Cache	2002
La Grande Satellite Cache	Oldest PC is 5years old

Cache	Year/Age
Eastern Area Incident Support Cache	2002-2004 varied
Northwest Area Incident Support Cache	<2 years old
Great Basin Area Incident Support Cache	<1 year old
Rocky Mountain Area Incident Support Cache	Oldest PC-5years old
Northern Rockies Area Incident Support Cache	1-2 years
Southwest Area Prescott Incident Support Cache	Most recent 2005

Operating System and Processor

Cache	Operating System	Computer Processor
Helena Interagency Fire Cache	Windows 2000	Pentium 3 450 MHZ-1.3GHZ
Central ID Fire Cache	Windows 2000	Pentium 3 450 MHZ-1.3 GHZ
Cedar City IA Fire Cache	Windows 2000	Pentium 2 266 -450 MHZ
Coeur d'Alene Interagency Fire Cache	Windows 2000	Pentium 3 and 4
La Grande Satellite Cache	Windows 2000	Pentium 3
Eastern Area Incident Support Cache	Windows 2000	Pentium 4 1.6-2.53
Northwest Area Incident Support Cache	Windows 2000	Pentium 3 1 Ghz plus
Great Basin Area Incident Support Cache	Windows 2000	Pentium 4-2.6 Ghz
Rocky Mountain Area Incident Support Cache	Windows 2000	Pentium-unknown
Northern Rockies Area Incident Support Cache	Windows 2000	Pentium 2-4 33.3 mhz through 1.8 ghz
Southwest Area Prescott Incident Support Cache	Windows 2000	Intel Processors

Hard Drive and Printer Information

Cache	Hard Drive Capacity	Printer Brand/Model
Helena Interagency Fire Cache	Less than 30gb	HP 1340
Central ID Fire Cache	Less than 30gb	Lexmark S 1650 Optra

Cache	Hard Drive Capacity	Printer Brand/Model
Cedar City IA Fire Cache	Less than 30gb	Prints to Dispatch Printers in another building-fast
Coeur d'Alene Interagency Fire Cache	Less than 30gb	HP Laser Jet 4100TN-fast
La Grande Satellite Cache	Less than 30gb	Lexmark Laser Jet-adequate
Eastern Area Incident Support Cache	30-49gb and 50-99gb	Lexmark C752-fast enough
Northwest Area Incident Support Cache	30-49gb	Lexmark LaserJet-fast
Great Basin Area Incident Support Cache	50-99gb	Newer HP Laser Jets/Old Okidata-all are fast enough
Rocky Mountain Area Incident Support Cache	Less than 30gb	HP laserjet
Northern Rockies Area Incident Support Cache	Less than 30gb	Lexmark Laserjet T622 printers are adequate
Southwest Area Prescott Incident Support Cache	30-49gb and 50-99gb	Lexmark Optra 1855 Lexmark Optra S2455 Lexmark Optra T 612

Internet Browser

Cache	Internet Browser
Helena Interagency Fire Cache	Internet Explorer
Central ID Fire Cache	Netscape/Internet Explorer
Cedar City IA Fire Cache	Internet Explorer
Coeur d'Alene Interagency Fire Cache	Internet Explorer
La Grande Satellite Cache	Internet Explorer
Eastern Area Incident Support Cache	Internet Explorer
Northwest Area Incident Support Cache	Internet Explorer
Great Basin Area Incident Support Cache	Internet Explorer
Rocky Mountain Area Incident Support Cache	Internet Explorer
Northern Rockies Area Incident Support Cache	Internet Explorer
Southwest Area Prescott Incident Support Cache	Internet Explorer

Questions about the System Server

A portion of the ICBS application, and the cache's unique database, is housed on a system server located at each cache (or at an agency

facility offsite). A portion of the application is installed on each user's client (PC). In many cases, ICBS application performance is negatively affected by other applications that reside on the same server.

The Cache Tracker program, used by a number of Initial Attack and Local Area Support Caches, is downloaded directly onto a PC. Those caches that had Cache Tracker answered the system server questions, but from the framework of Forest Service applications supported by a server. Therefore their frame of reference for server support may or may not change if they were using ICBS.

System Servers

Cache	Server Location	Other Server Applications
Helena Interagency Fire Cache*	In the Building	None
Central ID Fire Cache*	In the Building-for other applications in main bldg	All USFS applications
Cedar City IA Fire* Cache	No server used/BLM and USFS have servers at other offices in Cedar City.	All USFS and BLM applications
Coeur d'Alene Interagency Fire Cache	0-3 miles away	USFS applications
La Grande Satellite Cache	Other Location-Eugene, OR.	USFS applications
Eastern Area Incident Support Cache	In the Building	All USFS applications
Northwest Area Incident Support Cache	Other location-Eugene, OR.	Unknown-many databases
Great Basin Area Incident Support Cache	0-3 miles away	Server supports BLM ICBS-CBS interface and BLM stores processing
Rocky Mountain Area Incident Support Cache	0-3 miles away	All Oracle applications
Northern Rockies Area Incident Support Cache	Other location 7 miles away/located at RO	One server for all Oracle applications such as INFRA, FACTS, etc.
Southwest Area Prescott Incident Support Cache	Other location-District office 10 miles away	GIS, INFRA, and other various Oracle database applications

**These caches have Cache Tracker downloaded onto their cache computer(s). A server is not needed to run these programs.*

Server Operating System

Cache*	Operating System
Helena Interagency Fire Cache*	Windows 2000
Central ID Fire Cache*	Windows NT
Cedar City IA Fire Cache*	N/A
Coeur d'Alene Interagency Fire Cache	Windows 2000
La Grande Satellite Cache	AIX
Eastern Area Incident Support Cache	AIX
Northwest Area Incident Support Cache	AIX
Great Basin Area Incident Support Cache	AIX
Rocky Mountain Area Incident Support Cache	Oracle
Northern Rockies Area Incident Support Cache	AIX
Southwest Area Prescott Incident Support Cache	Unknown

**These caches have Cache Tracker which is downloaded directly onto their cache computers.*

Questions about the Network that Serves the Cache

The fire caches that responded to the Infrastructure Assessment all responded that network reliability was good overall. One of the concerns was that as more users entered the system on a daily basis, the system slowed to varying degrees for the different caches.

Network Information

Cache	Internet/Web Reliability	Wireless Networks at Cache
Helena Interagency Fire Cache	Good-seems very fast	None
Central ID Fire Cache	Good	None
Cedar City IA Fire* Cache	Very reliable USFS Reliable-BLM	None
Coeur d'Alene Interagency Fire Cache	Very reliable	None
La Grande Satellite Cache	90% of the time reliable-sometimes access not available	None
Eastern Area Incident Support Cache	Reliability is good-Have a T-1 line	The Fire center is set up with wireless, but not the cache at this time

Cache	Internet/Web Reliability	Wireless Networks at Cache
Northwest Area Incident Support Cache	Overall, pretty reliable and fairly fast. It slows down when in use by many	None
Great Basin Area Incident Support Cache	Very reliable unless internet connection is shut down due to Cobell Litigation	None-BLM policy does not permit wireless at this point.
Rocky Mountain Area Incident Support Cache	Good	None
Northern Rockies Area Incident Support Cache	Access is reliable; the issue is network volume and reliability. All Lotus Notes servers are located in Missoula which impacts internet use.	None
Southwest Area Prescott Incident Support cache	Reliable	No

Another factor that can affect application speed is whether or not a PC is mapped to a network drive. Application users at a cache can sometimes tell when other large applications are in use on the same drive by the slowness of the application he or she is using.

Applications Sharing Network Drives

Cache	Slow applications	Map Drives on Cache PCs
Helena Interagency Fire Cache	No	Yes-LAN system on the office-Have a main drive that is shared
Central ID Fire Cache	Slow with two windows open	Drive J,K,L
Cedar City IA Fire Cache	No, not particularly	Unknown
Coeur d'Alene Interagency Fire Cache	Rarely-no particular application is slower or faster than any other	ICBS-not sure IDL-M,P,U,X,W
La Grande Satellite Cache	Depends on how many users are on application-overall, slow all applications	Drive J, K, L-K drives are used for local files. Speed is determined by use volume
Eastern Area Incident Support Cache	They run pretty fast	Yes, they run fast

Cache	Slow applications	Map Drives on Cache PCs
Northwest Area Incident Support Cache	Most run pretty fast- ICBS seems to be the only one that sometimes runs slow.	J, K, L- The K drive is used for all local files. Busy time of year it can be really slow.
Great Basin Area Incident Support Cache	None that we know of	Yes, a shared drive, as well as a user drive which contains application data, documents, and desktop-fast.
Rocky Mountain Area Incident Support Cache	Sometimes Depending on what the Insect Lab personnel are doing on the T-1 line we share	Yes there are map drives-average speed response
Northern Rockies Area Incident Support Cache	If data is resident on PC, performance is excellent. If data or document is on server, the communication could slow performance	Yes we do. They perform slowly. Network latency (slowness)
Southwest Area Prescott Incident Support cache	Sometimes. Paycheck and ICBS are slow booting up. In addition, ICBS can be slow to print and display screens at times. There has been a marked improvement in speed performance after normal business hours when less computers are on the network	Yes, moderately fast

IT Support Questions

The IT Support question segment on the Infrastructure Assessment contained the largest compliment of questions found on the survey. This segment of the survey also brought forth the highest degree of uncertainty as to “What the Future Holds” with IT Support. In large part, this was (is) due to the new centralized Forest Service IRM structure that is currently being put into place. This new structure is called the Information Solutions Organization (ISO).

For current ICBS users these questions are relevant, but only as they pertain to ICBS-R. As the project moves forward to completion, many of these uncertainties will be answered with the passage of time. Also,

many caches are interagency in nature and could be affected by the ISO whether or not the Forest Service is the primary host agency.

IT Support

Cache	IT Support Satisfaction	Who Provides IT Support
Helena Interagency Fire Cache	Good Support	MT. DNR agency IT personnel
Central ID Fire Cache	OK in past-changes are coming	Don't Know
Cedar City IA Fire Cache	Very Satisfied-2 BLM techs on site, with USFS Tech. available at USFS SO in Cedar City	Very good support BLM Good support USFS
Coeur d'Alene Interagency Fire Cache	Fast knowledgeable, friendly, satisfied	Primarily IDL, but USFS actually controls the ICBS program at the IPNF SO
La Grande Satellite Cache	Support through EUSC has been excellent-down time has at times been longer than necessary	All support through EUSC
Eastern Area Incident Support Cache	There is a Forestry Tech in the IT position. Not real satisfied, but work gets done eventually	Superior NF IT staff
Northwest Area Incident Support Cache	All problems through EUSC. Can be frustrating, because they have no idea what ICBS is. It can take numerous phone calls and time to fix the problem.	Everything now goes through EUSC. Previously had a local IT person which worked very well.
Great Basin Area Incident Support Cache	BLM support is excellent	NIFC help desk/National Systems Development application support. When necessary, forwards ICBS problems to USFS help for resolution.

Cache	IT Support Satisfaction	Who Provides IT Support
Rocky Mountain Area Incident Support Cache	It can be limited and I expect it will get worse because of the FS IRM re-engineering. Some problems exist because IRM claims ICBS is a non-supported software package.	The cache staff, SPF computer staff, IRM staff
Northern Rockies Area Incident Support Cache	Has been variable dependent on nature of problem and skill of support person. In person support is best. But IT support changes big time Feb. 6 th , 2005	ISO
Southwest Area Prescott Incident Support cache	IT support provides both hardware and software assistance. Support is generally satisfactory	A National EUSC as well as a fire application support group

Currently some caches have access to an onsite IT support person and others depend on a person at an offsite location. The range of services (e.g. application, data, server, etc.) and skill level provided can vary considerably by location.

IT Support Location and Availability

Cache	Location of IT Support	Availability of IT Support Help
Helena Interagency Fire Cache	Helena, main MTDNR office	Yes they are available
Central ID Fire Cache	Don't know	Yes-good
Cedar City IA Fire Cache	BLM-on site/USFS at SO	Yes-home and cell phone
Coeur d'Alene Interagency Fire Cache	IDL on site/ICBS at SO	Yes, always available when they are here
La Grande Satellite Cache	Through EUSC-don't know where they are located	Yes, during normal duty hours
Eastern Area Incident Support Cache	Currently in the building with more support in Duluth at the SO	Can call them in, but at their earliest convenience

Cache	Location of IT Support	Availability of IT Support Help
Northwest Area Incident Support Cache	Local-currently IT person on base/contracted out through BLM	Not before or after normal business hours. We have a different number to call to leave a message for someone to call back-can be frustrating.
Great Basin Area Incident Support Cache	At NIFC-very close	Yes they are available
Rocky Mountain Area Incident Support Cache	2 miles away	No
Northern Rockies Area Incident Support Cache	Seven miles away at RO	No, residual support (New ISO) expected to support communications and desktop. During heavy incident activity, focus will be on incident support rather than desktop
Southwest Area Prescott Incident Support cache	National help desk personnel location unknown. USFS fire application group based in Boise, ID. I believe under the new FS ISO the closest technician will be physically located 2.5 hours away.	Yes, reported to be 24/7, 365 days a year. Most contact has been during daylight hours during slow to busy time periods.

Agency IT personnel who provide support to caches may also provide support functions to a variety of other users such as a Forest, District, or Field office personnel. The level of support provided to a fire cache may be proportional to the level of IT responsibilities to other units. By support we're mainly referring to data base backups, server maintenance and to a lesser degree, application support.

With the Forest Service transitioning to the new ISO, we asked what sort of impact, if any, cache personnel expect from this change. There is a general "feeling" that the ISO will not fully meet the needs of the cache community, as indicated by some responses that follow.

Current IT Support and Expected Changes With FS ISO

Cache	ICBS and other IT Support	ISO expected changes
Helena Interagency Fire Cache*	Area IT personnel don't provide support functions for Cache Tracker	State office-N/A
Central ID Fire Cache*	Cache Tracker has web site to help with problems	Yes, but not sure how
Cedar City IA Fire Cache*	Cache Tracker has web site/All other functions supported by BLM/USFS personnel	Change on FS side/no known change on the BLM side
Coeur d'Alene Interagency Fire Cache	Supported by same people	No changes expected
La Grande Satellite Cache	Yes, supported by same people	No changes expected
Eastern Area Incident Support Cache	Supported by the same people	We will be affected by the shift in IT support, not sure how.
Northwest Area Incident Support Cache	Yes-EUSC and a local IT person	Prior to server migration to Eugene the system worked well. During migration and for a month afterward totally unacceptable. Now working fine, but not sure how we will be affected when busy.
Great Basin Area Incident Support Cache	No, the support is with different people	Don't know
Rocky Mountain Area Incident Support Cache	Yes, ICBS is supported by the same people that provide IT support functions to other offices	Yes, no support, no one
Northern Rockies Area Incident Support Cache	No. Separate support people for network, oracle, desktop, and communications.	Yes. Largely affected by new ISO, or lack thereof.

Cache	ICBS and other IT Support	ISO expected changes
Southwest Area Prescott Incident Support cache	Yes	Yes, with no local on site support available. Expect extended delays in help, increased need for employee training, and higher employee frustration levels which are already occurring with a national help desk.

**Cache Tracker is downloaded onto a computer, and a web site is available for help*

With the current distributed architecture of ICBS, the data associated with the ICBS copy at each cache is generally backed up to a tape or disc whenever the local drive or server is backed up by the agency IRM staff. This typically occurs on a scheduled basis sometime “overnight” Monday through Friday. If a shared drive has other applications, or if a server requires additional maintenance, ICBS can be unavailable for longer periods of time. The timing, frequency and coordination of this data backup are of great importance to ICBS users.

Extended hours of cache operations can occur any time of year due to the level of fire or all risk (floods, hurricanes, or other declared disasters) incident activity. Operating 18 to 24 hours a day seven days a week can persist without letup for weeks and months before settling back down to more normal hours. Also, activity in one Geographic Area can affect caches in other Geographic Areas that are called upon to provide support.

We asked respondents how much system downtime was generally acceptable during the day or during the night at their cache.

Acceptable Down Time

Cache	Acceptable Daily Down Time	Acceptable Nightly Down Time
Helena Interagency Fire Cache*	Down time not a factor	Down time not a factor
Central ID Fire Cache*	Down time not a factor	Down time not a factor
Cedar City IA Fire Cache*	For Cache Tracker it isn't a factor	Down time not a factor

Cache	Acceptable Daily Down Time	Acceptable Nightly Down Time
Coeur d'Alene Interagency Fire Cache	Light activity-some acceptable Moderate activity-some acceptable Heavy activity-none acceptable	At night when the cache isn't manned
La Grande Satellite Cache	Light activity-some acceptable Moderate activity-some acceptable Heavy activity-none acceptable	Depends on work load-probably from 2200 hrs to 0600 hrs
Eastern Area Incident Support Cache	Light activity-acceptable Moderate activity-some acceptable Heavy activity-prefer none	We ask for 2000 hrs to before 0600 hrs. We ask for this year around.
Northwest Area Incident Support Cache	Light activity-acceptable Moderate activity-some acceptable Heavy activity-none	Night time during slow time-12 hrs Night time during busy times-2 hrs Day time during slow time-4 hours Daytime during busy times-none
Great Basin Area Incident Support Cache	GBK has no light periods of cache activity. Only acceptable down time is during non working hours. During fire season down time would be accepted only for a minimal time during the night and not every night because a night shift is in place.	Same as previous answer
Rocky Mountain Area Incident Support Cache	Light activity-24 hrs Heavy activity-4hours day or night	Same as previous answer
Northern Rockies Area Incident Support Cache	Six hours a day-night time. 0100-0600 am-during light, moderate, or heavy activity	6-8 hours during slow months, six hours otherwise

Cache	Acceptable Daily Down Time	Acceptable Nightly Down Time
Southwest Area Prescott Incident Support Cache	Light-12 hours Moderate/Heavy-8 hours maximum during night or day hours	12 hours

**Those caches with Cache Tracker are not affected by system down time, although they may be affected if a computer goes out.*

Related to scheduled system downtime is the notification process to Cache Managers from IT/server support personnel when the application will be down. Furthermore, what Standard Operating Procedure (SOP) is in place for continuing operations when the application is temporarily unavailable?

Notification and SOP for Continuing Operations

Cache	Are you notified when ICBS will be down?	SOP when ICBS is down
Helena Interagency Fire Cache	No-Cache Tracker is on computer	Pen and paper
Central ID Fire Cache	Not an issue with Cache Tracker	Waybill
Cedar City IA Fire Cache	N/A	Paper tracking
Coeur d'Alene Interagency Fire Cache	Never-we don't learn of it until it happens	Pen and paper
La Grande Satellite Cache	Whenever maintenance is scheduled	Manual system-pen and paper
Eastern Area Incident Support Cache	It only goes down when everything else goes down-not very often	Copies of hard copy resource order-this is used for picking and shipping list. Returns are processed when the system is back up.
Northwest Area Incident Support Cache	Almost never	Pen and paper. Returns/kit build up-when system is back up.
Great Basin Area Incident Support Cache	As often as it applies-help desk will coordinate with GBK before they take it down	We are unable to process any orders. Only in extreme cases will GBK process an order in ICBS after the fact.

Cache	Are you notified when ICBS will be down?	SOP when ICBS is down
Rocky Mountain Area Incident Support Cache	We've explained the need for ICBS to be up during fire activity. So far we've received good support from the IRM staff at least letting us know before the system goes down. The statement "we won't be down during business hours" directly relates to what priority the EUSC assigns our ticket and how the re-engineered IRM [ISO] handles the problem.	Paper and Pencil
Northern Rockies Area Incident Support Cache	Never. We should get e-mails when downtime is scheduled	Go manual, and then spend additional work hours to input manual data.
Southwest Area Prescott Incident Support Cache	Approximately 10-12 hours annually	Process orders manually via written resource or requisition forms submitted to the cache by fax machine.

IT Infrastructure Areas of Concern

Four areas of concern were identified during this information gathering process:

- System server personnel who don't understand the nature of the current ICBS program.
- Lack of available help beyond normal business hours.
- No clear picture on whom to call for ICBS help, particularly if the problem is external (i.e., the system going down at the server level).
- "Hand me down" computer systems. Computers that are given to the cache from a Supervisors Office or Administrative office after *they* have been updated.

More Information

For more information on this report or the ICBS Re-engineering Project, please contact Cameron Hughes at: 208-666-8657. The project website can be seen at: <http://icbs.nwcg.gov>.

Appendix A - Terminology

Term/Abbreviation	Definition
BLM	Bureau of Land Management - a Department of Interior Agency
Cache Tracker	A proprietary warehouse inventory application purchased and used by many Local Area Support Caches.
EUSC	End User Support Center – The centralized user support center for all Forest Service computer users. EUSC is a contracted service provided by IBM and is currently located in Boulder, CO.
ICBS	Interagency Cache Business System – The current national cache inventory application that is being re-engineered/improved to a more centralized system for widespread use by National and Local Area Caches.
ICBS-R	The ICBS Re-engineering Project
IDL	Idaho Department of Lands
IRM	Information Resources Management
IPNF SO	Idaho Panhandle National Forest Supervisors Office – The Headquarters of a USDA Forest Service organizational unit located in Coeur d'Alene, ID.
IT	Information Technology
ISO	Information Solutions Organization – The new centralized Forest Service information technology organization.
MTDNR	Montana Department of Natural Resources
NF	National Forest – A USDA Forest Service unit designator.
NIFC	National Interagency Fire Center – An interagency center with the mission of directing, coordinating and supporting wildland fire management activities across the U.S. NIFC is located in Boise, ID.
SO	Supervisors Office – The headquarters of a National Forest unit of the USDA Forest Service
USFS	Forest Service – a Department of Agriculture agency
Forestry Tech	A technician employed by the USDA Forest Service.
RO	Regional Office - The headquarters of a USFS Region/Geographic Area