

EXHIBIT 1

5 JANUARY 18 2007 SCO v IBM.txt
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1 SALT LAKE CITY, UTAH; THURSDAY, JANUARY 18, 2007; 9:30 A.M.
2 PROCEEDINGS

3 THE COURT: Good morning, ladies and gentlemen. We
4 are here to consider this morning two motions, protective
5 order -- SCO's motion for a protective order regarding Jeffrey
6 Leitzinger's personal financial info, and the second motion is
7 SCO's motion related to spoliation.

8 May I ask counsel, it looks like we have some
9 different participants today, to please introduce themselves
10 for the record.

JANUARY 18 2007 SCO v IBM.txt

11 MR. JAMES: Good morning, Your Honor. Mark James of
12 Hatch, James & Dodge, on behalf of SCO. I'm here with Sachi
13 Boruchow as well as Parker Douglas from my firm.

14 MS. BORUCHOW: Good morning.

15 MR. SHAUGHNESSY: Good morning, Your Honor. Todd
16 Shaughnessy appearing for IBM. With me is Mike Burke of the
17 Cravath Swaine & Moore law firm.

18 THE COURT: Welcome.

19 Mr. Hatch, are you coming up?

20 MR. HATCH: I can sit here, Your Honor.

21 THE COURT: I didn't know if you wanted to. We're
22 just starting and we're starting a couple of minutes early.

23 I would like to begin, counsel, if it's all right
24 with you, with argument on the protective order issue regarding
25 Dr. Leitzinger's personal financial information. Let me tell

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1 you that I have reviewed in its entirety all submissions -- or
2 in their entirety, all submissions that are before me in each
3 of these two matters and believe I am conversant with the
4 issues here this morning. Please go ahead.

5 MS. BORUCHOW: Good morning, Your Honor.

6 THE COURT: Good morning.

7 MS. BORUCHOW: As you know, SCO is seeking a
8 protective order ruling that its expert, Dr. Jeffrey
9 Leitzinger, does not have to disclose to IBM his total annual
10 compensation from the firm Econ One or the compensation
11 received as a result of his status as a shareholder of Econ
12 One.

13 At his deposition, it's important to note that
14 Dr. Leitzinger fully disclosed his hourly billing rate and also
15 estimated the total amount of time that the firm, Econ One, had

JANUARY 18 2007 SCO v IBM.txt

16 billed in this case. Therefore, SCO has already provided to
17 IBM the financial information that is contemplated by Rule
18 26(a)(2)(B). And as Your Honor knows, that rule provides that
19 the expert reports shall contain the compensation to be paid
20 for the study and testimony. That is the only financial
21 information that that rule requires.

22 But IBM is seeking more from Dr. Leitzinger. They
23 are seeking his total income from the firm Econ One. This
24 personal and private financial information sought by IBM
25 intrudes into Dr. Leitzinger's private affairs. So SCO

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1 maintains it's appropriate to order a protective order to
2 protect him from that intrusion. And Rule 26(c) on protective
3 orders provides that the court may make any order which justice
4 requires to protect a person from annoyance, embarrassment,
5 oppression, or undue burden and expense.

6 And, Your Honor, courts in both state and federal
7 courts have recognized the compelling reasons not to permit
8 what IBM is seeking here. First, courts, and perhaps most
9 importantly, courts have recognized the privacy interests of
10 experts against disclosing their personal financial
11 information.

12 In the case, for example, of *In re Weir*, which was a
13 case out of the court of appeals in Texas, the court recognized
14 that the intrusion on the witness's privacy interest, the
15 burden in obtaining the information, and the impact on the
16 willingness of reputable experts to provide testimony when
17 needed and litigation outweigh any possible benefit from the
18 additional discovery order.

19 And, Your Honor, SCO feels it would be unfortunate
20 if, as a result of his work for SCO, Dr. Leitzinger was forced
21 to provide this very private and personal financial

JANUARY 18 2007 SCO v IBM.txt

22 information, and that there are important policy reasons
23 dictating that since he has expressed an interest in not
24 disclosing that information, that he should not be forced to do
25 so.

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1 A federal court, also in the Southern District of New
2 York, expressed concern that such disclosure requests could be
3 used as harassment of experts or parties. And that case was
4 the Cary Oil Company case out of the Southern District of New
5 York from 2003.

6 Courts have also expressed concern about the
7 prejudice and confusion that is likely to result from delving
8 into this personal, private information of experts. By way of
9 example, the Oregon Supreme Court held that it was an abuse of
10 discretion to allow cross-examination regarding how much an
11 expert had received from prior unrelated cases. That's what
12 IBM is seeking here, prior unrelated cases. This goes well
13 beyond what Dr. Leitzinger has received from SCO. That court
14 held that such an inquiry opened the door to purely collateral
15 matters. And it further held that if the questioning of the
16 expert on those issues had been proper, it is manifest that the
17 witness would have had the right in explanation of that
18 question to show that the fees paid to him in each case were
19 fully justified by the nature and extent of the services
20 rendered.

21 THE COURT: Are you quoting from an Oregon Supreme
22 Court case?

23 MS. BORUCHOW: I am, Your Honor. I think that while
24 it's not authoritative here or controlling, that the reasoning
25 in this case is very persuasive to the issues to be decided

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JANUARY 18 2007 SCO v IBM.txt

1 here today because, Your Honor, if IBM were to delve into this
2 information that it is seeking from Dr. Leitzinger, Dr.
3 Leitzinger would then have a right to explain that the fees
4 that he has received and the income he has received from
5 serving as an expert witness was reasonable and was tantamount
6 to the services that he has rendered. That, SCO maintains,
7 would open the door to purely collateral issues that are
8 completely peripheral to the issues in this litigation.

9 In a federal district court, I mentioned the Cary Oil
10 case, the Southern District of New York. The court recognized
11 similar concerns as the Oregon Supreme Court. That court held
12 that if a party wants to seek the type of information that IBM
13 is seeking, that it must demonstrate that over a period of time
14 an expert's opinion has materially changed in such a way so as
15 to raise a reasonable suspicion that the compensation paid to
16 such expert may have affected the subsequent opinion. And it's
17 very important that IBM has not established any variation in
18 Dr. Leitzinger's opinions based on the compensation he has
19 received. That showing that was required in the Cary Oil case
20 has not been satisfied here.

21 State courts have applied the same test. They
22 require some showing, before discovery is allowed or admitted,
23 that the fee is unreasonably disproportionate to the services
24 rendered or was so unfair as to evince an inference that the
25 interest of the witness was in the money paid and not in the

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1 probity of his opinions. There's been no showing here that Dr.
2 Leitzinger's compensation is in some way disproportionate to
3 his services. And SCO further contends that those types of
4 considerations are purely collateral here and would be highly
5 distracting and burdensome to go into at this juncture.

6 Now it's important to note that IBM represented in
Page 6

JANUARY 18 2007 SCO v IBM.txt

7 its opposition at page 2 that federal precedent is all contrary
8 to SCO's position. But, Your Honor, that is simply not true.
9 One of the federal cases that IBM cites, an opinion from the
10 District of Kansas, expressly recognizes a split of opinion in
11 that very district on this issue. And that case, Your Honor,
12 is the First State Bank of Kansas v. Deere and Company, and
13 that was a case that IBM cited, and it recognized the split in
14 authority in federal courts.

15 In addition, the Third Circuit has upheld district
16 courts' refusals to permit such information into evidence.
17 That case is United States v. 412.93 Acres of Land. That case
18 was on the admissibility. That court held that, assuming the
19 evidence was admissible, a trial judge may, in his discretion,
20 exclude that evidence because its probative value is
21 substantially outweighed by the risk that its admission will
22 create risk of undue prejudice. So that court has also
23 expressed concern. And it upheld the trial court's sound
24 discretion in refusing to permit that evidence.

25 As already discussed, the Southern District of New

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1 York has also come out against what IBM is seeking and imposes
2 a very, very strict standard before such discovery can be
3 obtained. So it's not the case that federal law is contrary to
4 SCO's position.

5 In its opposition, IBM puts a lot of emphasis on its
6 own expert, Andrew Morton, and the questions that were asked of
7 that expert. Now SCO contends that the questions that were
8 asked of him are simply not analogous to the questions that
9 were asked of Dr. Leitzinger. Mr. Morton is in an entirely
10 different situation than Dr. Leitzinger because for a period of
11 three years, as SCO set forth in its brief, with deposition

JANUARY 18 2007 SCO v IBM.txt

12 cites supporting it, Mr. Morton's income was partially funded
13 by IBM. That funding came about through IBM's funding of the
14 OSDL, which then paid part of Mr. Morton's salary. So SCO
15 contends that those two situations are completely distinct and
16 not controlling of how Dr. Leitzinger's situation should be
17 resolved.

18 It also bears mentioning that Mr. Morton never
19 objected or never expressed privacy concerns when those
20 questions were asked in his deposition. Dr. Leitzinger, on the
21 other hand, did express his profound privacy concern in his
22 deposition. So SCO feels those concerns should be respected
23 and that that information should not have to be provided.

24 In conclusion, SCO respectfully requests this Court
25 to grant its motion and order that Dr. Leitzinger does not have

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1 to provide the income information requested by IBM.

2 And, Your Honor, I would like to reserve just a
3 couple of minutes to reply at the end. Thank you.

4 MR. BURKE: Good morning, Your Honor. Michael Burke
5 on behalf of IBM. I would just like to explain, shortly, a few
6 reasons why SCO's motion should be denied.

7 First, as described in IBM's position brief, the case
8 law clearly supports the rule that experts may be required to
9 disclose their litigation-related income that is not
10 necessarily derived from the case in question.

11 The first case, and I think the leading case, is the
12 Collins case from the Fifth Circuit. That case is binding in
13 the Fifth Circuit as well as the Eleventh Circuit by virtue of
14 the split between the Eleventh and Fifth Circuit after 1981.
15 Also three cases within this circuit have followed the Collins
16 case, that is Baxter, First State Bank and Hawkins. In
17 addition, a state case that we cited, Trower v. Jones, the

JANUARY 18 2007 SCO v IBM.txt

18 Illinois Supreme Court held the same as each of those cases,
19 that an expert's financial income from litigation-related
20 testimony is discoverable. That case was based in part -- the
21 ruling in that case was based in part on the fact that the
22 Illinois Supreme Court had adopted the federal rules of
23 evidence with respect to experts.

24 THE COURT: Doesn't the federal rule say may be
25 discoverable?

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1 MR. BURKE: Correct, Your Honor, and I think in this
2 case they may be discoverable and I think they ought to be
3 discovered by IBM, which I will explain shortly.

4 Just to describe, the precedent SCO cites I don't
5 think establishes a contrary rule. In SCO's opening memorandum
6 it cites exclusively state court cases. None of those cases
7 implied that they were applying a federal standard and they do
8 not have any controlling precedent for the federal courts.

9 SCO's reply brief cases are equally unpersuasive.
10 The Weber case, again, is a state law case not applying
11 analogous federal rules. The 412.93 Acres of Land case from
12 the Third Circuit, this was an appeal following a trial ruling.
13 It wasn't a discovery ruling as this present motion is. The
14 court there held merely that the trial court did not abuse its
15 discretion in deciding that the admission of an expert's
16 contract with the government, who was a party in the case,
17 would create a substantial danger of undue prejudice or confuse
18 the issues or mislead the jury. I think as counsel for SCO
19 pointed out, the court there assumed the evidence was
20 admissible in the first place, but held that the district court
21 could not abuse its discretion in deciding that undue prejudice
22 and confusion would outweigh its relevance.

JANUARY 18 2007 SCO v IBM.txt

23 Now, Your Honor, in this case there is no issue of
24 deciding whether there is going to be confusion of the issue or
25 misleading. The issue is whether the material is discoverable,

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1 and the cases IBM cited dealt with that issue, discoverability.

2 The Cary Oil case, finally, also dealt with a motion
3 in limine in connection with the trial in the matter. There
4 was no indication in that case that the experts from whom
5 financial information was sought were the type of professional
6 experts that we contend Dr. Leitzinger is.

7 THE COURT: Mr. Burke, though, in this case, Dr.
8 Leitzinger has already provided IBM with the financial
9 information related to his work on this case; isn't that right?

10 MR. BURKE: That's correct, Your Honor. He's
11 provided, I believe, his hourly rate, the number of hours --
12 approximate number of hours he's billed, and I believe he
13 disclosed the amount of total billing that his firm, Econ One,
14 has done. I believe what we don't know is -- we know we can
15 reasonably calculate what his take home is from his hourly
16 rate. We don't know what share of the profits he receives
17 from --

18 THE COURT: Isn't that the kind of the information
19 that you could ask at the time of cross-examination at trial?

20 MR. BURKE: Well, Your Honor, there is always a
21 danger at cross-examination when you don't know the answer to a
22 question.

23 THE COURT: Yes, but you do already have directly the
24 financial information concerning his work here. What you are
25 looking for is his total income. And tell me why, why you

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1 would need to know what his yearly income is, particularly
2 where he has said that he also is engaged in management

JANUARY 18 2007 SCO v IBM.txt

3 activities, things of that sort.

4 MR. BURKE: Well, Your Honor, I believe we're only
5 seeking any income that is derived from his litigation-related
6 activities so that if --

7 THE COURT: But that's litigation outside SCO, isn't
8 it?

9 MR. BURKE: Correct. Yes, Your Honor, that is what
10 we are seeking.

11 THE COURT: Tell me why it is relevant that you know
12 what his income -- his total income is.

13 MR. BURKE: Well, Your Honor, it's relevant in
14 several respects. First of all, SCO elicited the testimony
15 from Mr. Morton about his total income. SCO, as it describes
16 in its opposition brief, wants to tell the jury that Mr. Morton
17 is biased in favor of IBM because his salary in some respect
18 was, quote, unquote, subsidized by the OSDL, who is paid by
19 IBM. Therefore, presumably, Mr. Morton has some kind of bias.

20 THE COURT: Isn't there a distinction or don't the
21 pleadings indicate a distinction between the two individuals'
22 employment record or history to where Mr. Morton may have had a
23 direct association with an IBM related company? Isn't it clear
24 from the documents and the affidavits and the testimony that
25 Dr. Leitzinger's situation is not the same?

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1 MR. BURKE: Yes, Your Honor, I agree their situations
2 are different, but I believe Dr. Leitzinger's situation makes
3 the discovery of his litigation-related income all the more
4 relevant than the discovery of Mr. Morton's income from the
5 OSDL or from Google, which I haven't seen any evidence is
6 funded by the OSDL or IBM.

7 In that respect, the cases -- the Collins case

JANUARY 18 2007 SCO v IBM.txt

8 clearly described the fact that an expert has developed a track
9 record and may tend to tailor his testimony to favor his
10 clients allows a jury to at least conclude, or perhaps
11 conclude, that he may have, in this case, slanted his testimony
12 towards his client. So I believe the rationale of the cases
13 that we've cited clearly makes the distinction and it's clear
14 that a professional witness in this type of case,
15 litigation-related income from other cases is clearly relevant.

16 THE COURT: Again, I don't understand why knowing the
17 actual amount of income is relevant and doesn't invade his
18 personal privacy. You can certainly inquire of him, and I
19 can't see that a rule of discovery that you can't ask a
20 question on cross unless you absolutely know the answer, that
21 may not be wise, but it doesn't mean that you can't inquire
22 into percentages, into different things of that nature. Why do
23 you need to know the exact amount?

24 MR. BURKE: Well, I think, Your Honor, it may put in
25 contrast the potential benefit, for example, from Mr. Morton.

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1 SCO has particular figures from Mr. Morton. If IBM attempts to
2 present to a jury that Dr. Leitzinger over the years has made
3 buckets of money or millions of dollars as a result of his
4 testimony as a professional expert witness, IBM will be at a
5 disadvantage there because we won't have the figures. The jury
6 may wonder, well, we've heard the figures from Mr. Morton, we
7 don't know the figures for Dr. Leitzinger, they must not be
8 favorable to IBM or else they would have told us that.

9 THE COURT: But IBM didn't object at the time the
10 questions were asked, did you?

11 MR. BURKE: Of Mr. Morton? What IBM did was we
12 designated a portion of the transcript that contained the
13 answers to the questions as confidential. Those were then

JANUARY 18 2007 SCO v IBM.txt

14 bound in the official deposition transcript as a separate page
15 in the transcript.

16 THE COURT: Then let me ask you this question: Isn't
17 it possible that IBM could seek the same type of relief through
18 a motion in limine?

19 MR. BURKE: Yes, Your Honor, meaning --

20 THE COURT: To keep Mr. Morton from having to
21 disclose total income, things of that nature.

22 MR. BURKE: Yes, that's correct, Your Honor, IBM
23 could do that. But the problem with -- I think that raises the
24 issue of this is more an issue of whether the information
25 should be admissible at trial as opposed to whether it should

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1 be discoverable in the first instance. The parties are several
2 months away from trial now and we have not yet determined which
3 motions in limine we would file or which issues we would like
4 the jury to see. We simply have not weighed that type of
5 calculus yet.

6 In this case, if we have the information from Dr.
7 Leitzinger, which will be protected under the confidentiality
8 order, and there is no reason that anyone from his firm should
9 have to see that information, IBM will be in the same position
10 as SCO with respect to Mr. Morton.

11 Now I've just got a couple more points, if I may.

12 THE COURT: Go ahead.

13 MR. BURKE: I mentioned the prejudice and
14 confidentiality issues that SCO has raised. The only concern
15 that Dr. Leitzinger has articulated thus far is his concern
16 that the information not be generally circulated among his
17 organization. And as I discussed, this concern is mitigated by
18 the fact that preparing the transcript to the extent that it

JANUARY 18 2007 SCO v IBM.txt

19 segregates the confidential information from the remainder
20 would separate it from having to be seen by his organization.

21 And just to close, Your Honor, I would like to
22 respectfully request that the Court deny SCO's motion and enter
23 an order described in IBM's opposition brief either requiring
24 the continued deposition or providing the requested information
25 by affidavit.

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1 THE COURT: Thank you, Mr. Burke.

2 MS. BORUCHOW: Your Honor, I just have a couple of
3 very brief points on reply.

4 The first thing I would like to point out is that
5 counsel stated that they were only seeking Dr. Leitzinger's
6 litigation-related income and not his income derived from
7 managing the Econ One firm. This is actually not the case. In
8 the deposition they sought all of his income for 2005 and also
9 the income that he derived as a result of his status as a
10 shareholder of Econ One, which would include work, as Your
11 Honor has pointed out, for other clients, and also work that
12 other experts and other analysts in his firm have billed, aside
13 from just what he has billed.

14 The second thing is that Dr. Leitzinger has disclosed
15 all of the fees that he has received from SCO, his hourly rate.
16 They are going well beyond that in seeking, of course, income
17 well beyond what SCO has provided. And that is what makes the
18 Morton situation so distinguishable. SCO simply seeks to point
19 out that Mr. Morton's salary has been funded by IBM, and that
20 is all they sought in his deposition.

21 The final point I would like to make on the case law
22 arguments that counsel made was that the Cary Oil case out of
23 the Southern District of New York, while most of the issues in
24 that case were on a motion in limine, the issue that is

JANUARY 18 2007 SCO v IBM.txt

25 relevant to this case was actually on a motion to compel, so it
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1 was actually a discovery issue, not an admissibility issue.

2 And, finally, counsel puts great weight on the
3 Collins case out of the Fifth Circuit and says that the
4 District of Kansas has followed that authority. But, in fact,
5 as the case law cited by IBM points out, there is actually a
6 split of authority in Kansas over the propriety of that
7 information. And, in addition, the Southern District of New
8 York has very persuasively set forth a much different standard
9 than was set forth in the Collins case.

10 Thank you, Your Honor, unless you have any questions.

11 THE COURT: Thank you. I do not.

12 Mr. Burke, anything you want to say?

13 MR. BURKE: I have nothing further.

14 THE COURT: I am prepared to rule on this matter. I
15 do particularly find that the Morton situation is clearly
16 distinguishable from the one at hand and that IBM has the
17 options of pursuing a motion in limine at a later time to
18 protect Mr. Morton from being examined on this issue if it
19 thinks that is appropriate. Also that IBM, I believe, has
20 ample opportunity to explore financial bias, if that is what
21 they want to do, through financial gain during
22 cross-examination.

23 For those reasons, I am going to exercise my
24 discretion and I am going to grant SCO's motion for a
25 protective order. And I am going to grant it exactly as it is

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1 stated in the proposed order, which I will read into the record
2 because I think that it limits in some way what can be asked
3 for.

JANUARY 18 2007 SCO v IBM.txt
4 Plaintiff, counterclaim-defendant, the SCO Group,
5 filed its motion for a protective order regarding Dr. Jeffrey
6 Leitzinger's personal financial information on October 20th,
7 2006. For the reasons set forth in SCO's motion and memorandum
8 and for good cause showing, this Court grants SCO's motion for
9 a protective order regarding Dr. Jeffrey Leitzinger's personal
10 financial information. Pursuant to this order, IBM is hereby
11 precluded from asking Dr. Jeffrey Leitzinger how much income he
12 derived from direct compensation from Econ One or as a result
13 of his status as a shareholder of Econ One. So that order will
14 be entered. All right.

15 Let's go on to the second motion now, which is SCO's
16 motion related to spoliation.

17 MR. JAMES: Good morning again, Your Honor. I will
18 try and be as brief as possible and then maybe take a few
19 minutes on reply, if that's okay with Your Honor.

20 THE COURT: I've always let everybody reply.

21 MR. JAMES: I am aware of that and I appreciate that.
22 Thank you.

23 As Your Honor indicated, this is SCO's motion for
24 relief for what SCO believes spoliation of evidence has
25 occurred in this case. SCO initially initiated this action,

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1 Your Honor, in March of 2003. Prior to that time, SCO has had
2 a number of discussions with IBM regarding the subject matter
3 of its complaints and ultimately SCO initiated the litigation.

4 About a month later, April 8th, 2003, Randy Swanberg,
5 an IBM representative, sent an e-mail that was addressed to
6 eight different individuals. The e-mail has been marked
7 confidential in the litigation. It's been provided to Your
8 Honor. I won't quote from it in open court. However, as Your
9 Honor will note, the e-mail was explicit. It instructed the

JANUARY 18 2007 SCO v IBM.txt

10 destruction of certain evidence, requested that certain types
11 of evidence be purged form the computers.

12 THE COURT: What is the exhibit number again?

13 MR. JAMES: It's G to the opening memorandum of SCO.

14 And I think, Your Honor, it's indisputable that the
15 instruction that was issued was for the destruction of evidence
16 that is relevant to this case. IBM does not contend that the
17 evidence that is addressed by the e-mail is not otherwise
18 relevant.

19 Central to several of SCO's claims, in fact, in this
20 case is SCO's allegation that IBM made contributions to Lunux
21 development of source code, methods and concepts in violation
22 of IBM's contractual obligations and other obligations to SCO.

23 The Tenth Circuit has made very clear that a litigant
24 has a duty to preserve evidence that he knows or should know is
25 relevant to imminent or ongoing litigation, and it made that

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1 statement in the Jordan F. Miller Corporation v. American Eagle
2 Insurance case in 1998.

3 The United States Supreme Court even has recognized
4 the spoliation sanctions may be imposed as part of the inherent
5 power of a district court, and that is a legal principle that
6 federal courts, including the Tenth Circuit, uniformly
7 recognize.

8 In the Jordan Miller case, the Tenth Circuit stated,
9 as a general rule, the bad faith destruction of a document
10 relevant to proof of an issue at trial can give rise to an
11 inference that production of the document would have been
12 unfavorable to the party responsible for its destruction.

13 Judge Stewart indicated in the Adams v. Gateway case
14 in this district that bad faith can be inferred from

JANUARY 18 2007 SCO v IBM.txt
15 circumstantial evidence.

16 Here, Your Honor, I submit we have much more than
17 circumstantial evidence. We have direct evidence in the form
18 of an explicit e-mail, instruction to destroy evidence that was
19 given soon after litigation was initiated.

20 The Tenth Circuit, and this district as well, has
21 indicated the bad faith is not required when spoliation has
22 occurred in order to impose a sanctions -- an imposition of
23 sanctions other than for the negative inference. And so while
24 bad faith is required for a negative inference, a spoliation
25 sanction is not required for any other type of spoliation

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1 sanction.

2 THE COURT: Okay. We're presuming something here,
3 and we're presuming destruction.

4 MR. JAMES: We are, and I'm going to talk about that,
5 Your Honor, here in a minute as part of the presentation.

6 THE COURT: All right. Then I will let you go ahead.

7 MR. JAMES: Thank you.

8 In determining what the appropriate sanction is where
9 there has been spoliation of evidence, courts have considered a
10 variety of factors. There are two that courts have primarily
11 looked at, the degree of culpability of the party who has
12 destroyed evidence and the degree of prejudice to the other
13 party. And, again, when we talk about the degree of
14 culpability, from SCO's perspective we are not talking about
15 circumstances where evidence was negligently destroyed or where
16 there was a failure to give an instruction to preserve
17 evidence, we're talking about, in our view, intentional
18 destruction of evidence. There is no question, Your Honor,
19 that the prejudice that occurred to SCO as a result exists in
20 this case, and I will talk about that in a few minutes.

JANUARY 18 2007 SCO v IBM.txt

21 Addressing prejudice, the Southern District of New
22 York in the MasterCard case stated as follows, relating to that
23 case: while the record does not strongly suggest that
24 MasterCard is likely to have been seriously hampered in the
25 presentation of its case by the failure of the defendants to

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1 preserve the missing e-mails, we, nonetheless, recognize the
2 very fact that the e-mails are missing leaves us in the realm
3 of speculation as to what they contained or in what manner they
4 might have assisted plaintiff in litigating its claims. And
5 the court went on to impose spoliation sanction.

6 Now, let me talk for a few minutes about IBM's
7 arguments, Your Honor, and the declarations submitted and
8 hopefully in that context we can talk about whether, in fact,
9 evidence was or was not destroyed. And that is the first
10 argument, in fact, that IBM makes, it says that SCO cannot show
11 that IBM destroyed anything. In fact, it contends that
12 Mr. Swanberg's e-mail was intended really for only eight
13 developers, none of whom were part of IBM's Linux Technology
14 Center.

15 IBM has submitted the declarations of those eight
16 developers to whom it says the e-mail at issue was intended,
17 four of whom said they did not destroy anything despite the
18 instruction that they do so. As to the other four developers
19 to whom Mr. Swanberg indicated the e-mail was intended, those
20 developers can't recall whether they deleted anything. But
21 they claim that if they did, it otherwise would have been
22 available on the IBM CMVC database which has been produced in
23 this case.

24 well, Your Honor, there is no foundation, when you
25 look at those statements in the declarations or on any other

JANUARY 18 2007 SCO v IBM.txt

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1 bases, for IBM's contention that if the sandboxes at issue were
2 deleted, that those sandboxes otherwise would have been
3 contained on IBM's CMVC database. That's just a pure
4 conclusory assertion that is made in these affidavits without
5 any foundation whatsoever.

6 And IBM wants the Court to focus on eight developers
7 who worked for one of the eight managers to whom this e-mail
8 was addressed. If you look back, Your Honor, at that e-mail,
9 what you will see is the e-mail was directed again to eight IBM
10 managers or team leaders, not to any of the eight developers
11 for whom IBM has submitted the declarations. IBM just wants
12 the Court to assume, without any evidence, that e-mail meant
13 nothing to the other managers and the developers who worked
14 under those managers to whom that e-mail also was directed.

15 while IBM has submitted the declaration of Mr.
16 Swanberg in which he asserts in paragraph 6 of his declaration
17 that what he really intended was that only three of the
18 individuals listed on the e-mail communicate the information
19 that was communicated or that was directed in that e-mail,
20 nowhere in Mr. Swanberg's declaration or in the e-mail is that
21 intent communicated or even suggested, and it simply defies
22 common sense that someone would send an e-mail to eight people
23 and later claim that it really wasn't intended for those eight
24 people, but only for developers of two or three of those eight
25 people.

25

1 Recall, Your Honor, also that the e-mail that
2 Mr. Swanberg sent was an e-mail that originated from IBM's open
3 source steering committee. That's where the instruction
4 originally came from. That committee was charged with the
5 oversight of all of IBM's contributions to open source

JANUARY 18 2007 SCO v IBM.txt

6 software.

7 Let me talk for a minute about Daniel Frye. He is an
8 IBM executive that testified as both the 30(b)(6)
9 representative and in his personal capacity in this case. He
10 testified that developers in the Linux Technology Center were
11 given a similar direction to that contained in Mr. Swanberg's
12 e-mail.

13 And if you look at pages 4 and 5, and, again, that is
14 testimony that has been marked as confidential, so if you look
15 at pages 4 and 5 of SCO's reply memorandum, we quote quite
16 extensively, Your Honor, from Mr. Frye's deposition testimony,
17 and then we go on in the next three or four pages to talk quite
18 extensively in detail about the questions that were asked and
19 the fact that those questions reflect absolutely no confusion
20 and the answers were absolutely clear, that contrary to the
21 claim made in Mr. Frye's subsequent declaration that IBM now
22 has submitted, he clearly testified about that instruction that
23 was consistent with the instruction contained in the e-mail
24 being sent to all of the developers in the Linux Technology
25 Center.

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1 There was every opportunity on the part of IBM's
2 counsel to address through cross-examination any ambiguity or
3 confusion that may have existed at the time Mr. Frye was
4 deposed. That did not occur.

5 IBM also claims that Paul McKenney, whose deposition
6 testimony SCO also cites, was confused, and that his confusion
7 arose from SCO's counsel asking Mr. McKenney the same question
8 twice during the deposition, as if that doesn't occur over and
9 over again in depositions, Your Honor. And, again, that's
10 filed under seal. We've addressed that in detail on pages 9,

JANUARY 18 2007 SCO v IBM.txt

11 10 and 11 of our reply. And there was no indication at the
12 time of Mr. McKenney's deposition that he was confused with
13 respect to the relevant answers on which SCO relies in
14 connection with this spoliation motion.

15 And, again, during Mr. McKenney's deposition, IBM's
16 counsel made no effort to correct or clarify any alleged
17 confusion. He had the opportunity to correct his deposition
18 after it was over, make any changes that he felt were
19 appropriate. None of the changes were made. Now IBM comes
20 back with the declaration of Mr. McKenney who says, I was
21 confused at the time, I didn't understand, you can't rely on
22 the deposition testimony I gave, here is really what I meant.

23 And, Your Honor, in September of this past year,
24 Judge Cassell of this court issued an opinion in a case
25 entitled *Juarez v. Utah Department of Health-Family Dental*

27

1 Plan, and in that case Judge Cassell talked about the case law
2 that addresses the submission of what the case law refers to as
3 sham affidavits or sham declarations. And he noted in that
4 regard that while the Federal Rules of Civil Procedure allow
5 nonmaterial changes to deposition testimony, material changes
6 are allowed only in certain circumstances.

7 And he referred to the test that the Tenth Circuit
8 has adopted and articulated in *Burns v. Board of County*
9 *Commissioners*, and the *Franks v. Nimmo* case, and he said that
10 there are three factors that a court looks at in determining
11 whether to accept an affidavit or a declaration that is
12 contrary to or inconsistent with testimony given in a
13 deposition: First, whether the party was cross-examined when
14 giving the prior sworn testimony; second, whether the contested
15 evidence was newly discovered or whether the party had access
16 to the evidence at the time of the previous testimony; and,

JANUARY 18 2007 SCO v IBM.txt

17 three, whether the contested evidence attempts to explain
18 confusion of earlier testimony reflected.

19 Judge Cassell went on to state, again, quoting from
20 Tenth Circuit law this time, the Garcia v. Pueblo Country Club
21 case, if Rule 30(e) -- which allows changes to depositions
22 after the deposition has been taken -- if Rule 30(e) were
23 interpreted to allow individuals to alter the statements they
24 made under oath, one could merely answer the questions with no
25 thought at all and then return home and plan artful responses.

28

1 Depositions differ from interrogatories in that regard. A
2 deposition is not a take home examination.

3 And I submit, Your Honor, if you look back at the
4 briefing and the deposition testimony that we have attached to
5 our memoranda, the deposition testimony at the time was clear.
6 There were no ambiguities in the answers that these gentlemen
7 gave. And IBM's counsel had the opportunity to cross-examine.
8 whether they took that opportunity or not, as Judge Cassell
9 says, is irrelevant. They had it. And the affidavits or
10 declarations that IBM now has submitted in which they try to
11 alter the deposition testimony, that we think clearly
12 demonstrates instructions to destroy evidence, that doesn't
13 rely on any newly discovered evidence or anything that doesn't
14 exist at the time of the deposition.

15 Your Honor, it is our contention that the clear
16 deposition testimony is much more reliable and should be
17 accepted over affidavits or declarations that have been
18 submitted after the fact in opposition to SCO's motion.

19 THE COURT: Okay. Counsel, let's presume that I do
20 accept the original testimony. The question still is based
21 upon what arguably did happen, how does that get us to the

JANUARY 18 2007 SCO v IBM.txt
22 evidence having been destroyed?

23 MR. JAMES: Okay. I was slowly getting to that.

24 THE COURT: That's where --

25 MR. JAMES: Far more slowly than Your Honor wanted me

29

1 to.

2 THE COURT: That's where my interest is. Let me just
3 tell you, so you can address that. Yesterday, as I was
4 preparing for this hearing, I ran across a portion of the
5 transcript of the hearing on February 4th of 2004. And Mr.
6 Heise, representing SCO at that hearing, stated, and I don't
7 know exactly what page it is, but he's talking about -- he's
8 handing to me a document from IBM that has been marked
9 confidential. It is regarding an item called the CMVC, which
10 stands for configuration management version control. It says
11 in the beginning that AIX development organization and through
12 the highlighted portions identified that configuration
13 management as a process of identifying managing software
14 modules as they change over time. In other words, we would be
15 able to get every version, every iteration. Control is the
16 storage of multiple visions in a single file along with
17 information versions. Then it gives a simplified description
18 at the bottom saying what it boils down to is that all levels
19 of all files are stored on a central server and are available
20 for updating by those with proper authority.

21 what that gets me to is whether or not the
22 information you are talking about has, in fact, been destroyed
23 for purposes of giving you the relief you are asking for or
24 whether it has been transferred and is otherwise reasonably
25 available.

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1 MR. JAMES: I think, Your Honor, that is an excellent
Page 24

JANUARY 18 2007 SCO v IBM.txt

2 question and I think that probably most amply falls under, I
3 guess, the issue of whether there was any prejudice to SCO
4 because obviously if SCO has access to the same information it
5 claims was lost, there wouldn't be any prejudice to SCO. But I
6 think the point, Your Honor, and I think it's an important
7 point, is this: The issue is not whether the information that
8 was contained in particular developers' sandboxes somehow ended
9 up in the CMVC and thus was maintained, the issue is this, that
10 is the value of that information to SCO in the context of this
11 lawsuit is what information, what source code did particular
12 developers have available to them at a given time as they
13 worked on developing Linux.

14 It has been IBM's position in this case that its
15 developers did not rely on AIX or Dynix/ptx code in developing
16 Linux software. Our position is that they did. The problem
17 that we have is whether software or source code exists out
18 there in a databank in the form of the CMVC doesn't answer that
19 question. We need to know what developers at a given time have
20 what on their computer, on a particular developer's computer,
21 and we can't know that.

22 THE COURT: But what I need to determine is whether
23 you can show that any evidence was lost or destroyed.

24 MR. JAMES: The evidence that was lost or destroyed
25 is what particular developers at a given time had what access

31

1 on their sandboxes in their own computer when they were working
2 on Linux code. When you take all that code and take it away
3 and dump it into a database, it doesn't do us any good because
4 the issue isn't whether the code exists or doesn't exist now,
5 the issue is access by developers at a given time, particular
6 developers at a given time to the code at issue. We can't tell

JANUARY 18 2007 SCO v IBM.txt

7 what access those particular developers had at a given time
8 because they were instructed to purge their sandboxes of that
9 information. So to say all of that code still exists doesn't
10 do us any good.

11 THE COURT: But it has not been destroyed.

12 MR. JAMES: What has been destroyed is our ability
13 from the evidence to determine what developer had access to
14 what particular source code at a given time. We do not have
15 that information, we cannot have that information. If IBM had
16 maintained the sandboxes of their developers, we would have
17 that information.

18 So while the code itself has not been lost,
19 apparently, the evidence of what code existed with respect to
20 particular developments in a particular location has been. We
21 can never get that back. That is absolutely probative to SCO's
22 claims in this case.

23 We have alleged in this case that IBM developers have
24 relied on and used AIX, Dynix, or derivatives thereof in the
25 formulation of Linux source code. Just because we now have a

32

1 database that has a bunch of information in it regarding source
2 code, doesn't tell us in any respect, Your Honor, what
3 developers had what access when they were working on their
4 computers on the Linux code, and we can't get that back because
5 it's been destroyed.

6 And I think relying even on probably what is the
7 principal case that IBM cites on this issue, the Gates Rubber
8 case, what that case says is that given the fact -- let me back
9 up. Given the fact that programmers were instructed to destroy
10 information that was in their sandboxes, again, from the Gates
11 Rubber case stating, there is at least a reasonable possibility
12 based on concrete evidence here, the deposition testimony and

JANUARY 18 2007 SCO v IBM.txt

13 the e-mail, that the lost material would have produced evidence
14 favorable to SCO's cause. And in this case, Your Honor, we
15 don't have that. We have lost the ability to determine access
16 issues, and the case law says that is a real loss.

17 And, Your Honor, let me just very briefly address
18 just the waiver issue. They have raised that. It is our
19 position this is not a discovery dispute or a discovery issue.
20 We do not contend that the discovery was inadequate. By IBM's
21 own admission, there is no evidence or documents leading to
22 discoverable evidence responsive to SCO's request that IBM
23 could turn over if ordered by the Court. We can't seek the
24 production of evidence that no longer exists in the form we
25 needed it.

33

1 IBM claims, based on the stipulation, it relies on
2 the following language, the parties have reviewed one another's
3 document production, then it conferred and agreed that there
4 are no discovery disputes between them. As indicated, this
5 isn't a discovery dispute. IBM cannot produce what it does not
6 have because it destroyed it. Waiver is the intentional
7 relinquishment of a known right. Nothing in the language of
8 the stipulation suggests that SCO relinquished the right to
9 bring an evidentiary motion.

10 Your Honor, we've asked for two different sanctions,
11 Your Honor is aware of that, one of which is an inference based
12 on what we think is bad faith and the other one doesn't require
13 bad faith. We think both are appropriate. And if you don't
14 have any further questions at this time, I will be back on
15 reply. Thanks.

16 MR. SHAUGHNESSY: Thank you, Your Honor.

17 SCO claims that IBM intentionally and in bad faith

JANUARY 18 2007 SCO v IBM.txt

18 destroyed evidence. That is, Your Honor, one of the most
19 serious and severe allegations that a party in litigation can
20 make against another. It is not an allegation that, in my
21 view, should be made lightly, and it's an allegation that both
22 I and IBM take very seriously.

23 In addition, Your Honor, the particular sanction that
24 SCO is requesting here, an adverse inference instruction along
25 with an evidentiary presumption, are the most severe sanctions,

34

1 short of dismissal, that a court can impose. For that reason,
2 as SCO concedes, the Court has to make an explicit finding of
3 bad faith before those sanctions can be imposed.

4 Now I disagree with Mr. James about whether bad faith
5 is required for both an adverse inference and an evidentiary
6 presumption. If bad faith is required for an adverse
7 inference, then the argument for requiring it for an
8 evidentiary presumption, which is something even greater than
9 an adverse inference, is even stronger.

10 Your Honor, this motion is being made in the face of
11 a discovery record from IBM that can only be characterized as
12 vast. We have produced to SCO documents from more than 260
13 separate custodians. We've produced more than 3.3 million
14 pages of documents. We have produced to SCO billions and
15 billions of lines of source code, including every version or
16 iteration of AIX since 1991, every version or iteration of
17 Dynix/ptx, hundreds and hundreds of thousands of program notes,
18 thousands of design documents.

19 Your Honor, the production, as you know, to SCO of
20 just the CMVC and the RCS systems took work by more than 400
21 IBM employees spending more than 4,700 hours. Now it bears
22 noting, Your Honor, that despite the time the Court spent with
23 that particular issue and despite the enormous amount of time

JANUARY 18 2007 SCO v IBM.txt

24 and money that IBM spent with that particular issue, it appears
25 that SCO has done absolutely nothing with CMVC.

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1 Your Honor will recall that the whole basis, as
2 Mr. Heise was talking about in the particular hearing you
3 mentioned, for SCO needing CMVC is they had to have CMVC in
4 order to be able to figure out what improper contribution to
5 technology IBM had made to AIX. As we stand here today, coming
6 on the second year anniversary of having produced CMVC, SCO has
7 identified one and only one improper contribution from AIX,
8 Your Honor, and it's a contribution that is identified in their
9 complaint.

10 Like SCO's claims with respect to the need for CMVC,
11 Your Honor, this motion in the end is truly much ado about
12 nothing. The motion is based upon assertion and speculation.
13 The only party who has come forward to offer the Court evidence
14 is IBM. And the evidence, I respectfully submit, Your Honor,
15 shows, number one, IBM never, I repeat, never directed
16 developers in the LTC to destroy anything. As counsel for SCO
17 has now conceded, no original source code has been destroyed
18 and SCO has no evidence that it has.

19 That what we are left with, Your Honor, at the end of
20 the day, at the very most, is four developers who might have
21 had old copies of source code on their machines. They are not
22 sure. And who, if they did, might have deleted them. That,
23 Your Honor, to put it in a more familiar context, is a bit like
24 Your Honor having discarded a courtesy copy of a motion you
25 ruled on a year ago knowing that Matt has a copy, knowing that

36

1 Judge Kimball's chambers has a copy, and knowing that the
2 clerk's office has a copy. That, Your Honor, is not bad faith.

JANUARY 18 2007 SCO v IBM.txt

3 As counsel has explained, there are basically three
4 subject areas, Mr. Swanberg's e-mail and the eight developers
5 to whom it applied, Mr. Frye's testimony concerning the Linux
6 technology, and Paul Mckenney's testimony. What I would like
7 to do, if I may, Your Honor, is explain the circumstances
8 surrounding each of those three and in the context of that
9 discussion demonstrate to you why it is that SCO has not come
10 close to meeting its burden to prove the three things that it
11 has to prove in order for this motion to be granted: Number
12 one, that evidence was lost or destroyed; number two,
13 critically, that IBM acted in bad faith, and, number three,
14 equally critical, that SCO has been prejudiced in any way.

15 Now with respect to Mr. Swanberg's e-mail, context is
16 incredibly important here, Your Honor. In April of 2003, IBM's
17 open source steering committee had a meeting to discuss a
18 particular project, a particular issue concerning the Linux for
19 PowerPC project. At the time of that meeting, Your Honor,
20 eight AIX developers had been assigned to do the work on that
21 project. The work that those eight AIX developers were doing
22 was writing entirely new code specific to IBM's PowerPC
23 hardware.

24 These eight developers, since they were writing new
25 code, had no need for access to AIX. During the course of this

37

1 meeting, the question came up about whether these eight
2 developers' access to CMVC had been removed. It had.
3 Mr. Swanberg knew that it had and advised the people at the
4 meeting that was the case.

5 The question then came up about whether any of these
6 developers might have local copies of AIX in their -- what are
7 referred to as sandboxes. Sandboxes, Your Honor, are a
8 development tool that is used in AIX. They are not used in

JANUARY 18 2007 SCO v IBM.txt

9 Linux. They are not used in the Linux Technology Center. A
10 sandbox is basically a tool and what it does is it allows a
11 developer to check out of CMVC a small portion of the source
12 code base on which the developer is doing work rather than
13 downloading the entire millions and millions of lines of the
14 code base.

15 So they check out of CMVC, they do the work, they fix
16 the bug, whatever it is they are doing. And if they are
17 successful in what they are doing, they check it back in to
18 CMVC. As Your Honor correctly noted, every time they do, it's
19 tracked, when they did it, what they did, when they checked it
20 out, and when they checked it back in.

21 Mr. Swanberg, as I said, knew that these eight
22 developers didn't have access to CMVC, but he didn't know one
23 way or the other, and to this day doesn't know one way or the
24 other, whether any of those eight developers may have had
25 sandboxes. So out of an abundance of caution, they said, well,

38

1 like CMVC, let's make sure they don't have access, so have them
2 get rid of those sandboxes as well.

3 Now, Your Honor, that was an eminently reasonable,
4 rational decision. The developers didn't need access to AIX
5 for the work they were doing. The developers, if they had,
6 again, if they had code on their machine, would have been the
7 exact same code that existed in CMVC.

8 Mr. Swanberg had no intent, absolutely no intent to
9 destroy evidence. SCO has not come forward with a shred of
10 evidence that any member of the LTC, or Mr. Swanberg, ever
11 entertained the thought that what they were doing by making
12 this very simple request was destroying evidence.

13 Now, as I said, Mr. Swanberg had no idea whether any

JANUARY 18 2007 SCO v IBM.txt

14 of these eight developers may have had sandboxes on their
15 machines, but what he did know, based on 11 years of
16 experience, was that if they did, the information would simply
17 be a copy. It would be the courtesy copy of the motion on Your
18 Honor's desk.

19 It turns out that Mr. Swanberg was exactly right,
20 four of the developers didn't delete anything at all. Your
21 Honor, that presumably means they didn't have a sandbox to
22 delete. The other four can't remember today, more than three
23 years ago, whether they had a sandbox or whether they deleted
24 it. But what they do know and what they are perfectly clear
25 about in their declarations is if they did, whatever they

39

1 deleted was a copy of what is in CMVC.

2 In short, Your Honor, what the open source steering
3 committee was talking about, what Mr. Swanberg's e-mail was
4 addressed to is a question of access to code. It is not
5 addressed to an issue of deleting or destroying evidence.

6 Now, Your Honor, to put this particular issue in
7 context, these eight developers and the PowerPC project on
8 which they were working had absolutely nothing to do with any
9 of SCO's claims in this case. SCO has not identified a single
10 line of this code as having been misused. As I told Your
11 Honor, the only thing they have identified as having been
12 misused from AIX is JFS, something they identified in their
13 complaint, apparently without the benefit of looking at CMVC.

14 SCO has not identified any one of these eight
15 developers as having made an improper contribution to Linux.
16 Each of the developers, Your Honor, has testified that he or
17 she never looked at or referenced any such code or any code
18 they may have had on their machines in making any contributions
19 to Linux.

JANUARY 18 2007 SCO v IBM.txt

20 The developers were writing new, original code from
21 scratch. They were not taking technology from AIX and
22 incorporating it into the work that they were doing for Linux.
23 So by no stretch of the imagination, Your Honor, could what
24 these developers were doing possibly relate to any of SCO's
25 claims. But most important, Your Honor, as I've said, nothing,

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1 nothing was destroyed.

2 Now SCO's motion as it relates to Mr. Swanberg's
3 e-mail and these eight developers is a dead end. They can't
4 meet their burden or come close to meeting their burden with
5 respect to any of the three elements. They can't show that
6 anything was destroyed. We've demonstrated, Your Honor,
7 exactly the opposite. They can't show that IBM acted in bad
8 faith. Indeed, Your Honor, they haven't even tried. They
9 can't show, Your Honor, that there has been any prejudice. The
10 work these eight developers were doing and the project they
11 were working on has absolutely nothing to do with any claim in
12 this case.

13 And, Your Honor, SCO agrees. If you look at their
14 papers, you listen to the arguments of counsel, they do not
15 even attempt to tell Your Honor that this particular project or
16 these eight developers are at issue in the case. Instead, Your
17 Honor, this motion works for SCO only if SCO is able to
18 leverage the Swanberg e-mail into the LTC. So what we're
19 talking about here is a claim by SCO that instruction was given
20 to the LTC to delete copies of source code.

21 To make out this claim, Your Honor, SCO relies
22 exclusively on what I submit is ambiguous testimony from Dan
23 Frye, which I will discuss in a moment. But what is really
24 remarkable, Your Honor, to me is what SCO doesn't offer you.

JANUARY 18 2007 SCO v IBM.txt

25 SCO didn't offer you a single document akin to the Swanberg

41

1 e-mail that suggests even remotely this occurred. Your Honor,
2 we have produced hundreds of thousands, if not millions, of
3 pages of e-mails, yet SCO cannot come forward with one document
4 to indicate that this happened.

5 Equally remarkable, Your Honor, they haven't offered
6 you the testimony of a single person who says I was told to
7 delete documents and I did. SCO has taken depositions of
8 dozens of people who work in the LTC, and I can tell you the
9 issue of spoliation has never been far from SCO's mind
10 throughout this case. They could have asked, they should have
11 asked and certainly if they got any testimony they thought was
12 helpful, they would have shared it with you.

13 Now, they rely instead, Your Honor, on Mr. Frye's
14 testimony.

15 May I approach, Your Honor?

16 What SCO ignores, Your Honor, is testimony that
17 Mr. Frye gave during his deposition. If you turn to tab one, I
18 have excerpted here, Your Honor, the instances in which Mr.
19 Frye was asked directly the question about whether anything was
20 destroyed. And I won't read them, Your Honor, but you can see
21 that he said during his deposition no less than six times, six
22 separate occasions that it didn't happen.

23 Your Honor, his testimony on this subject was so
24 clear and so precise and so well understood that if you turn to
25 tab two, you can see that SCO's lawyer, who took that

42

1 deposition, acknowledged that that was precisely what Dr. Frye
2 had said. SCO's counsel acknowledges, in the excerpt you see
3 there, that the witness has testified nothing has been
4 destroyed.

JANUARY 18 2007 SCO v IBM.txt

5 Your Honor, beyond that, Dr. Frye testified at length
6 that members of the LTC weren't instructed to destroy anything,
7 on the contrary, they were instructed to do the opposite, they
8 were instructed to preserve information. Dr. Frye testified at
9 length about that.

10 Now, what does SCO say about the testimony that I
11 have just outlined for you? If you read their opening brief,
12 they say not a word. Counsel's arguments today haven't even
13 mentioned it. If you read their reply brief, they make a
14 statement that, Your Honor, I can only say is truly remarkable.
15 Although we laid this evidence out in detail, all the numerous
16 instances in which, during his deposition, Dr. Frye said it
17 didn't happen, we laid it out in detail, SCO says at page 12 of
18 its reply memorandum, quote, other than Mr. Frye's declaration,
19 which directly contradicts his sworn testimony, IBM submits no
20 evidence to refute the direct evidence showing that IBM did
21 direct LTC members to delete such material.

22 Your Honor, that is sticking your head in the sand.
23 SCO chose in its reply memorandum and in its arguments today
24 not even to address the numerous repeated instances in which
25 Dr. Frye testified that no destruction occurred.

43

1 Now, Your Honor, this is not a case of a witness
2 testifying in deposition that the light was red and submitting
3 a declaration saying that the light was green. This, Your
4 Honor, isn't close. This is a case of a witness testifying in
5 deposition that the light was green not once, not twice, but
6 six times, then testifying that a different light was red and
7 submitting a declaration that says, when I testified in my
8 deposition six times that the light was green, I meant the
9 light was green.

JANUARY 18 2007 SCO v IBM.txt

10 Your Honor, Dr. Frye hasn't changed his testimony.
11 He has reaffirmed what he said multiple times throughout his
12 deposition that absolutely nothing was destroyed. There is no
13 basis for disregarding that declaration.

14 Your Honor, SCO's motion with respect to Dr. Frye's
15 testimony and the Lunux technology doesn't even get out of the
16 chute. SCO has utterly failed in its burden to show that
17 anything was destroyed. It relies on one line of testimony
18 from Dr. Frye, which he explains in his declaration had three
19 ideas enmeshed in it and, if you read it carefully, that is
20 exactly what it does, and that he didn't give as precise a
21 testimony as he should. And, Your Honor, that is certainly
22 true. But what he did do in the very same deposition is give
23 as precise a testimony as he could have possibly given, six
24 times on this particular subject, evidence that SCO has chosen
25 entirely to ignore.

44

1 Now, Your Honor, Mr. James said in his opening
2 comments that the Court should accept clear deposition
3 testimony, if I have written it down correctly. You know what,
4 he's absolutely right. What you have right here is as clear a
5 deposition testimony as you can possibly get, and Your Honor
6 should accept it.

7 Now with respect to SCO's burden with respect to
8 Lunux Technology Center and Dr. Frye's testimony, SCO has
9 shown, as I said, nothing, has provided you no evidence that
10 anything was destroyed. Beyond this, Your Honor, SCO has to
11 prove that IBM acted in bad faith and the Court has to make
12 explicit findings of bad faith.

13 So what has SCO said on this subject, what guidance
14 have they given Your Honor about how to go about making a
15 finding of bad faith? Well, if you look at their reply brief,

JANUARY 18 2007 SCO v IBM.txt

16 you see bad faith -- the words bad faith appear in one
17 paragraph on page 16, and the net of that paragraph is see our
18 opening brief. So you go back to SCO's opening brief and the
19 words bad faith appear once on page 5, and they appear in the
20 context of quoting the case that says that SCO has to prove bad
21 faith.

22 Your Honor, in short, other than acknowledging that
23 it has to prove bad faith, SCO's briefs are entirely silent.
24 They offer Your Honor nothing by which you could possibly make
25 a finding that IBM acted in bad faith.

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1 That is true, Your Honor, both with respect to Dr.
2 Frye's testimony and the Linux Technology Center, but it is
3 true across all of the claims that are being made.

4 Finally, Your Honor, SCO has to prove that it was
5 prejudiced, and it comes nowhere close. The original premise
6 of this motion as it was filed was that original source code
7 has been lost, we no longer have ability to look at it. In our
8 opposition, we demonstrated and SCO now concedes that nothing
9 was lost. And, in fact, the very source code that SCO claims
10 was lost has been sitting in its counsel's office on the CMVC.

11 So now, Your Honor, there is a revised premise, there
12 is a new premise of this motion. It's no longer about, well,
13 we now lost source code and don't have the ability. Now the
14 premise is, well, we may not have lost source code, but what we
15 lost is the ability no figure out which particular programmers
16 had looked at or had access to which particular AIX or Dynix
17 source code. That, Your Honor, is wrong. SCO has that
18 information in spades.

19 Precisely as you pointed out, that was the purpose of
20 producing CMVC. If SCO really cared, if SCO really wanted to

JANUARY 18 2007 SCO v IBM.txt

21 know what code a particular developer had on their machine, it
22 would be a very simple exercise to find out. SCO could have
23 easily taken the list of individuals we provided of people who
24 made contributions to AIX and Dynix and compared it to any one
25 of the other lists we provided them that identified people who

46

1 made Linux contributions or who worked in the LTC and could
2 have determined if any names were the same.

3 Having determined that names were the same, SCO could
4 have but chose not to turn the machine on and look at it.
5 Because had they done so, they would have been able to figure
6 out exactly what developer X looked at and when, what was
7 checked out, when it was checked out, and what developer X did
8 to it.

9 Your Honor, you are precisely right, they didn't make
10 any effort to look at the information that we provided them to
11 show that they were prejudiced. But, Your Honor, I submit that
12 SCO isn't really interested in the evidence. What SCO is
13 really interested in is having you make a ruling that will get
14 them to a point that the evidence can't.

15 Your Honor, with respect to Paul McKenney, I will be
16 brief because this one is truly silly. Tab six reproduces the
17 disputed Paul McKenney testimony. As I say, I won't read
18 through it. You see that the discussion here is all about
19 overriding drafts and source code. Just so Your Honor can
20 appreciate the true gravity of what it is we're talking about
21 here, Dr. McKenney, when he writes source code, will write it
22 and then he runs it through a little program to check to make
23 sure it doesn't have obvious mistakes, letters or numbers
24 transposed, things like that. If it does, then he fixes it.
25 He doesn't create a whole new version of it, he fixes the

47

JANUARY 18 2007 SCO v IBM.txt

1 change. It is, Your Honor, the equivalent of correcting a
2 spelling error. It is no different than before I file a brief
3 or before I send a brief to the printer, I run the spell-check
4 and I correct any spelling mistakes. So we're talking here,
5 when we are talking about overriding, talking about correcting
6 spelling mistakes.

7 And since no molehill isn't worth trying to dress up
8 as a mountain, we've now got lengthy testimony and all kinds of
9 argument about what was going on here. I won't read through
10 the testimony, Your Honor, you can do that should you deem it
11 necessary to do so, but what I will say, it is crystal clear,
12 both from the testimony itself and from what Dr. McKenney has
13 submitted in the form of his declaration, that he misheard the
14 question.

15 And, Your Honor, if you turn to the second page of
16 that, I direct your attention to a portion of that that appears
17 emboldened. And, Your Honor, this doesn't appear in the
18 written transcript of the deposition. This, however, is
19 recorded in the audio version of the transcript, which I have
20 included in the event the Court wishes to look at it. What you
21 can see is that after Dr. McKenney answers these series of
22 questions, SCO's lawyer, during the deposition, realizes that
23 there is an inconsistency, realizes that there is some
24 inconsistency in what the witness has just said.

25 What does SCO's lawyer taking the deposition do? He

48

1 asks Dr. McKenney two follow-up questions. Those two follow-up
2 questions are absolutely fatal to the arguments that SCO is
3 making about the destruction of evidence. SCO's lawyers asked
4 the follow-up that was necessary to clarify Dr. McKenney's
5 deposition, and they did that, Your Honor, with full knowledge

JANUARY 18 2007 SCO v IBM.txt

6 that there was some confusion in the testimony that had just
7 occurred.

8 Your Honor, finally, a very brief word on the timing
9 of this motion. During the weeks preceding the close of fact
10 discovery, I had numerous conversations, countless
11 conversations with SCO's counsel, the purpose of which was to
12 try and work through the long, long list of discovery issues
13 that were pending between the parties and to resolve as many of
14 them as possible. And to the extent they could not be
15 resolved, to preserve both parties' abilities to go forward
16 with those issues.

17 Your Honor, we attempted to put to bed all of the
18 outstanding discovery issues other than those that really
19 mattered to the parties. We signed a stipulation that did
20 exactly that on March 17th of 2006. And, Your Honor, I
21 participated in every one of those conversations. And SCO
22 never once during any of those conversations ever raised any
23 issue about needing to bring a claim about spoliation of
24 evidence.

25 SCO's response is spoliation isn't a discovery

49

1 motion. And, Your Honor, if a motion that seeks to sanction a
2 party for failing to produce evidence in discovery because it's
3 been destroyed isn't a discovery motion, then I don't know what
4 is.

5 But, Your Honor, there is a problem with timing of
6 this motion that goes beyond the fact that they stipulated it
7 away, and the problem is this: SCO didn't file this motion
8 after fact discovery closed. SCO waited to file this motion
9 until after expert discovery closed.

10 Now having waited until expert discovery closed, SCO
11 argues in its papers that they have been prejudiced because

JANUARY 18 2007 SCO v IBM.txt

12 their experts didn't have certain information or didn't have
13 access to certain information. Your Honor, if there was a
14 concern by SCO, a legitimate concern by SCO about information
15 that their experts may not have had access to, the time to
16 bring that motion and get it resolved was before expert
17 discovery concluded. So they stipulated the motion away, Your
18 Honor, and they chose, deliberately or otherwise, to wait until
19 expert discovery closed to bring it and then argue that the
20 expert discovery itself has now prejudiced them.

21 Your Honor, respectfully, there is no basis for
22 granting the motion that SCO has filed and I would request that
23 it be denied.

24 THE COURT: Thank you, Mr. Shaughnessy.
25 Mr. James.

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1 MR. JAMES: Your Honor, I am going to ask the Court
2 to do what I think is fair, and that is set aside the rhetoric,
3 set aside the discussion about SCO having stuck its head in the
4 sand, set aside all of the talk about remarkable, credible and
5 knowing the mind of Dr. Frye, and look at the evidentiary
6 record in this case.

7 I am going to start, Your Honor, with the issue that
8 Mr. Shaughnessy started with on bad faith. He has told you
9 that spoliation sanction of any type requires a finding of bad
10 faith. I am going to read to you from Judge Stewart's opinion
11 in the Adams v. Gateway case. He says, referring to Magistrate
12 Nuffer and a finding, he said that bad faith is not generally
13 required when considering other sanctions for spoliation of
14 evidence. The court finds that case was accurately cited, is
15 helpful in discussion of factors to be considered, and he says
16 in that case that bad faith is not required in order to find

JANUARY 18 2007 SCO v IBM.txt

17 spoilation other than with respect to the negative inference
18 finding. If you look at the Jordan Miller case from the Tenth
19 Circuit, that is exactly what that case states, other than in
20 the context of a negative inference, bad faith is not required.

21 Your Honor, when you look at the case law, and there
22 has been a lot of case law cited, none of the case law talks
23 about specifically what constitutes bad faith. That's
24 obviously a determination that the Court has to find. But in
25 this case what we have is an e-mail that specifically is

51

1 talking about resulting from the initiation of litigation
2 instructing the destruction of evidence. What happens is IBM
3 now comes and says that doesn't even matter, none of these
4 guys, these eight developers, none of whom were even listed on
5 the e-mail at issue, those guys weren't in the Linux Technology
6 Center and therefore it doesn't even matter. If it didn't
7 matter, why did IBM instruct the destruction, the purge of that
8 evidence.

9 And, Your Honor, if you go back and you look at Dr.
10 Frye's testimony on the instruction that was given to the LTC,
11 the Linux Technology Center, we cite that I think very
12 succinctly and carefully at the bottom of page 5 of our reply
13 memorandum, you will see that his testimony was absolutely
14 clear that that instruction was, in fact, given.

15 And, Your Honor, I think if you step back, you say,
16 wait a minute, wait a minute, if the developers didn't need
17 this access from their sandboxes, why do we have an instruction
18 to purge their sandboxes. The appropriate instruction would be
19 to save that information and remove access, not destroy that
20 information. And the problem that we have is we have counsel
21 getting up here saying you can go to CMVC and find anything and
22 everything that has been lost. And, Your Honor, I submit that

JANUARY 18 2007 SCO v IBM.txt

23 is just not true.

24 We have been denied the ability to know what access a
25 particular developer had and was using at a given time and you

52

1 cannot find that on the CMVC. And Mr. Shaughnessy wants to
2 tell you that you can. There is no declaration, there is no
3 evidence whatsoever in the record of that representation to the
4 Court.

5 The e-mail, Your Honor, at issue originated with
6 IBM's open source steering committee. It was addressed to
7 eight different team managers or team leaders. The deposition
8 testimony of Mr. Frye is unambiguous that a similar instruction
9 was given to developers in the Linux Technology Center. Both
10 Dr. Frye and Mr. McKenney had the opportunity and did make
11 corrections to their deposition testimony before this motion
12 ever arose. They made no corrections making the type of
13 clarifications and marked changes that they have made in the
14 declarations that have now been submitted by IBM in opposition
15 to this motion.

16 The value of the sandbox, once again, Your Honor, to
17 SCO is to show developers had access to AIX and Dynix/ptx as
18 they were developing Linux source code. Our ability to show
19 that access has been destroyed because IBM plainly and clearly
20 instructed developers to purge their computers of that
21 information and you cannot get that information from the CMVC.

22 THE COURT: Why?

23 MR. JAMES: Because the CMVC doesn't show the
24 information of who had access and what was in a sandbox at a
25 given time with respect to a given developer. All the CMVC

53

1 shows is all of the source code that was available. It doesn't

JANUARY 18 2007 SCO v IBM.txt

2 show who at a particular time had access, who was actually
3 accessing Dynix code and AIX code while they were developing
4 the source code of Lunux. That was the information in the
5 sandbox that is critical information.

6 Your Honor, this is not something much ado about
7 nothing. This is much ado about something. The something is a
8 very clear instruction to purge, to destroy evidence after this
9 lawsuit was filed, an instruction that came down from the IBM
10 committee -- open source steering committee that oversaw IBM's
11 contribution to all open source software.

12 Your Honor, IBM wants to stand up here and tell you
13 how many hours they have spent producing information, how many
14 millions of pages of documents they have given to SCO. That's
15 not the issue and that is not what spoliation talks about. The
16 issue before Your Honor is the fact that evidence that is
17 probative, that is important has been destroyed. And whatever
18 that evidence ultimately may mean, whatever it ultimately --
19 what impact it has on the case, the fact that IBM destroyed
20 that evidence, that is what spoliation is all about. The
21 theory says that the party who destroys that evidence is the
22 party who has to bear the risk that that evidence would be
23 negative to their case, otherwise what is the point of the
24 spoliation doctrine at all.

25 Your Honor, Mr. Shaughnessy has made a number of

54

1 representations to the Court about SCO having done nothing with
2 CMVC, and what SCO has and hasn't done. And, Your Honor, I
3 respectfully simply just disagree with that. And I think those
4 are representations by counsel. I can stand up and tell you
5 everything that I think SCO has done with the information from
6 CMVC, all of the things that -- details of the JFS disclosure
7 from AIX that are in December submissions that are beyond those

JANUARY 18 2007 SCO v IBM.txt

8 in the complaint that Mr. Shaughnessy talked about.

9 You know what, we can get up here and argue all day,
10 and that is not the point. The point is this: There is a
11 clear record we've submitted to the Court in the form of our
12 opening memorandum, along with the e-mails and declarations and
13 deposition testimony in opposition and the information that IBM
14 provided to you in that context and the reply. In our reply we
15 go through in a very detailed way and address the very same
16 arguments that Mr. Shaughnessy has made to you today. It's a
17 little difficult to get into that in open court because of the
18 confidentiality concerns and the protective order, but we've
19 laid that testimony out in the reply memorandum and we have
20 talked about how that testimony came down.

21 When Your Honor -- if you have had a chance --

22 THE COURT: I have.

23 MR. JAMES: -- to look at that, I submit that
24 deposition testimony, particularly the deposition testimony of
25 Dr. Frye, was clear. There was ample opportunity on the part

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1 of IBM's counsel if they thought it wasn't clear at the time to
2 clear it up, and they didn't do that. What the courts say is
3 you look at the deposition testimony and does it reflect
4 confusion or doesn't it. If it doesn't reflect confusion, then
5 it's not appropriate to be trying to make significant marked
6 changes in that deposition after the fact.

7 Your Honor, clearly I think when you look at the
8 e-mail and when you look at the testimony in this case, there
9 was evidence that was destroyed. The fact that it was done
10 intentionally pursuant to an instruction one month after the
11 litigation was filed, the fact that it was done as a result of
12 an open steering meeting, I submit satisfies the bad faith --

JANUARY 18 2007 SCO v IBM.txt

13 the bad faith requirement and SCO's entitlement to an adverse
14 inference as it's requested.

15 Short of that, there clearly has been spoliation I
16 believe. We have been deprived of knowing who had access to
17 what. And as a result of that, even if a bad faith spoliation
18 inference is not given in this case, that kind of an
19 instruction, the Court should still give the spoliation
20 sanction that SCO has requested that does not require the bad
21 faith finding. Thank you, Your Honor.

22 THE COURT: Thank you, Mr. James.

23 Mr. Shaughnessy anything further?

24 MR. SHAUGHNESSY: Despite being very tempted, Your
25 Honor, I would not say anything further.

56

1 THE COURT: All right.

2 I am going to find that based upon the evidence
3 before me, as it's put into context, reflects that SCO's motion
4 will be denied. It cannot show that any evidence was lost or
5 destroyed. In fact, I find that it is available and has been
6 available through CMVC. The evidence before me, when seen in
7 context, does not show that IBM acted in bad faith nor does the
8 evidence show that it has been prejudiced because the evidence,
9 as I indicated, has been and is reasonably available. So the
10 motion regarding spoliation and the adverse inference
11 instruction will be denied.

12 MR. JAMES: Your Honor, based on Mr. Shaughnessy's
13 representations, would Your Honor have any objection to asking
14 or ordering IBM to tell us how we find that in CMVC because
15 this is something that is absolutely new to us. If it's in
16 CMVC, we sure haven't been able to figure out how to get it.

17 THE COURT: That's why I pointed out to you the
18 testimony that I found yesterday which indicated that as early
Page 46

JANUARY 18 2007 SCO v IBM.txt

19 as February of 2004 you were aware of the purpose of that CMVC,
20 whatever, and that it was in your possession.

21 MR. JAMES: Okay. Maybe I had a little different
22 understanding when you read what Mr. Heise said about the
23 understanding of what CMVC potentially could do. I may have
24 misunderstood that. If I did, I apologize, Your Honor.

25 THE COURT: Anything further?

57

1 MR. SHAUGHNESSY: Nothing further, Your Honor.

2 THE COURT: Now I'm going to ask you, Mr.
3 Shaughnessy, to answer that question: what if anything is IBM
4 willing to do or do you have an obligation --

5 MR. SHAUGHNESSY: Your Honor, the day for asking for
6 that passed a long time ago. That discovery in this case is
7 closed. SCO has had that now for almost two years. And they
8 were the ones who came in and told you, Your Honor, that they
9 had to have this and that it would have the very information
10 you just described. We have given them detailed instructions
11 on how to use it.

12 And what you haven't heard, Your Honor, very
13 curiously, is SCO comes in and says, well, we haven't offered
14 evidence that, in fact, you can find this in SCO. What they
15 haven't done, Your Honor, is they haven't attempted to come in
16 and say to Your Honor in some evidentiary admissible form, we
17 tried it and we couldn't do it. But at the end of the day,
18 Your Honor, that day has passed. Fact and expert discovery in
19 this case are closed. To the extent that information was
20 important for those purposes, it should have been investigated
21 and looked into long, long, long before now.

22 MR. JAMES: Just, finally, Your Honor, and I don't
23 want to drag this out longer than it has to be, but it seems to

JANUARY 18 2007 SCO v IBM.txt

24 me that Your Honor has denied the motion in large part on Your
25 Honor's finding and belief that the evidence is available, that

58

1 it's not lost. And we've heard Mr. Shaughnessy say today that
2 it is available and it's not lost, although we have spent
3 literally hundreds of thousands of dollars trying to find that
4 kind of thing and we can't. They say it's easily findable.
5 Then Your Honor says, Mr. Shaughnessy, how about IBM, what is
6 their willingness to find that easibly findable information,
7 and we get the, well, we've represented to the Court it's
8 easily findable and we contend it's easily findable, and that's
9 the basis for the Court's rulings, but a year or two late.
10 Sorry, you're out of luck.

11 THE COURT: The standard I think is reasonably
12 available. I am going to ask IBM, in the spirit of
13 cooperation, Mr. Shaughnessy, to do what you can or have others
14 do it to see if you can assist in identifying it. That doesn't
15 mean that anything is going to change in terms of the deadlines
16 and the scheduling order cutoffs. But if there is somebody who
17 readily has that information, I would ask you to assist in
18 doing that.

19 MR. SHAUGHNESSY: Your Honor, if the Court would like
20 us to do that, I'm happy to undertake that. What I want to
21 make sure we're very, very clear about, Your Honor, is that we
22 are not reopening discovery.

23 THE COURT: I think I just said that.

24 MR. JAMES: I think Your Honor made that very clear.

25 THE COURT: I don't think that's open to question.

59

1 So with that having been said and, Mr. Shaughnessy, if you will
2 prepare a proposed order.

3 MR. SHAUGHNESSY: We would do that, Your Honor.

JANUARY 18 2007 SCO v IBM.txt

4 would you like us to prepare orders on both motions or did you
5 address an order on the prior motion?

6 THE COURT: I did not ask. I will ask SCO to prepare
7 the order on the first motion.

8 MS. BORUCHOW: We would be happy to, Your Honor.

9 MR. SHAUGHNESSY: Thank you, Your Honor.

10 THE COURT: Thank you. And we'll be in informal
11 recess. Thank you.

12 (whereupon, the proceeding was concluded.)

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EXHIBIT 2



Published on KernelTrap (<http://kerneltrap.org>)

Interview: William Lee Irwin III

By

Created Mar 12 2002 - 16:14

William Lee Irwin III, AKA "wli" on the #kernelnewbies IRC channel is one of the developers helping to implement a reverse mapping feature into the Linux kernel.

Randy Hron: How long have you been working with operating systems? Unix? Linux?

William Lee Irwin III: It depends on what you consider working with an operating system. Systems programming, i.e. writing code that runs in the kernel, I've only been doing since around the time I got hired by IBM.

I've used Linux as a userland programming environment since 1996, and my first computing experience was on the Purdue ECN lab systems in 1993, which consisted of a number of Visual Graphics X-19 terminals and Sun IPC's used as terminals for a Sequent S-81. Before 2000 I had no involvement whatsoever with kernel programming. By and large Solaris was my primary programming environment before 2000 (of course back then I had nothing to do with its or any kernel), though there was a little IRIX in there, too.

rwh: How long have you been with IBM? How has Linux' position with IBM changed over time?

wli: I've worked for IBM since April of 2000. When I started, I worked for Sequent, which was being absorbed into IBM. IBM is a very large company, so at different sites, there are different areas of specialty and focus. I can't pretend to be very knowledgeable regarding the scope or history of IBM's business plans, but at least for me, the progression was from DYNIX/ptx to AIX and then to Linux, while learning progressively more about systems programming.

For a while, there was not much focus on-site for Linux, but at some point a decision was made that that would be our site's focus, and this seems to be working out well.

rwh: How is Linux different than other projects you've been involved with?

wli: Well, Linux has a much broader userbase and also much broader visibility. By and large the issues are similar. UNIX kernels are large programs everywhere, and the programming involved is both low-level and complex everywhere. Linux is no exception. Some other issues are largely superficial from the standpoint of how it feels to participate in a project. For instance, things like the raw numbers of people and lines of code don't seem to make much difference beyond orders of magnitude. Things like coding style, while they're very important, are also superficial: each project has a style standard, and you follow it. So as far as operating systems go, the distinguishing

features of Linux don't really seem to have much impact on what it's like to program for it.

There is probably one major difference that seem to come up, but it's not something that really affect day-to-day operation. It's that Linux is a competitive environment. Many other efforts don't seem to have multiple people presenting competing solutions for the same issue, yet in Linux this is common. The primary difference this appears to make is that people who disagree about how something should be implemented have working code to show that could displace yours.

rw: What do you enjoy most about programming/mathematics?

wli: It's odd to admit it but I think that I've actually discovered more about the kind of programming I like to do and the kind of mathematics I enjoy doing now that I'm out of school than in it. Now that I have been under my own direction, the kinds of mathematics I've developed interest in have been more calculational, and the kind of programming I've developed interests in have been more side-effect-driven than what I thought I was interested in. Specifically, the mathematics I've become interested in are things like 19th-century material on elliptic functions, and the programming I've become interested in has been (of course) kernel programming. Essentially I've discovered that I actually like doing things with concretely observable results.

I think the key to understanding what I like to do is to go out and do things on whims, and then in retrospect analyze what I've done to discern what I like, and allow myself to naturally gravitate to what I want to do. This is in opposition to doing things with a preconceived notion of whether I'll like it or not, which approach I believe resulted in some missed opportunities for fun and achievement earlier on for me. There are, of course, clear limits to how far this idea should be taken.

Now, if I'm to analyze in retrospect what I like about mathematics and what I like about programming, it's hard to characterize in formal terms. With all apologies to Dijkstra, I'll have to resort to analogy. It's like I am a child in the realm of proofs and programs and syllogisms and hypotheses and lemmas and hash tables and binary search trees are my building blocks, and I play by assembling my tinkertoys into mighty mighty cathedrals, brick by brick, stone by stone. And perhaps one day after rebuilding the world within the machine sufficiently many times I'll get it right and live within a crystal palace, but I suspect that the iteration is not a finite process.

rw: It sounds like you have a background in computer science. Where did you take your education?

wli: I have a bachelor of science degree from Purdue University, where I majored in mathematics and computer science.

rw: What do you enjoy doing when you aren't working?

wli: Well, the trick is that programming is my main form of entertainment. So from one standpoint I get paid to goof off all day. =>

I do do other things though. There is the usual assortment of nightclubs to visit and concerts to listen to now and then, and I do a number of ordinary things that aren't programming, like watch anime and read fiction and so on. They're fairly distant seconds, but they're there.

There's also IRC, but that's more of a supplement (or maybe even replacement) for newsgroups and mailing lists calling people on the telephone, and a very effective one. Cutting and pasting code in realtime to people halfway around the world is extremely convenient, as is the ability to discuss algorithms and designs and so on.

rwh: You have eclectic musical taste. What music appeals to you most?

wli: I'm not sure what to say here. I'm not a particular expert in music. I do collect some and I collect what I like (of course). A list of the artists and albums would be too banal to bear stating.

It's difficult to characterize the sorts of music I like entirely in terms of genre, but there is a distinct pattern. To me content of music is neither words nor musical notes, but the atmosphere it creates and the emotional response it triggers. Whether it's calculated or a coincidence, technically advanced or crude banging on instruments, the worth of the resulting sounds is judged only by the power of the effect.

There appear to be several distinct themes that emerge from contemplating my own playlists. One is a grandiose hyperaggressive lunge toward empowerment. Another is a mournful grieving cry. And another is escapism through deliberate complexity. And of course, humor.

rwh: Any tips for the aspiring kernel hacker?

wli: Well, I believe I am still aspiring myself. =)

Everyone says persistence is key, but it's not enough. One thing I've noticed is that because the kernel is responsible for maintaining the integrity of both data and the running system image, the cost of a failure (i.e. bugs, and as with any programming, they are numerous) is that data is lost and systems go down. A big fear to overcome is that of disrupting the proper operation of a system or losing data. When a kernel crashes it destroys data and the machine goes down, and you can't be afraid to see this happen if you're going to get anywhere. Programming is error-prone, and one must be prepared to commit errors. A stumbling block for me early on was that I was too careful and obsessed on repeatedly reviewing code to be sure the system wouldn't crash when I tried to run with it.

This is ineffective. A more effective approach appears to be creating a sandbox where the data is disposable and the system nonessential and running the code and figuring out what went wrong when the system crashes. And it's not easy. Without much hardware assistance (requiring too much money to be practical) it's generally not possible to recover much of the system state after the event, so working around this by dumping state at the appropriate times or running within a simulator (fortunately, bochs is free as in beer) is required. Some infrastructures exist, e.g. kgdb and kdb. I'm already espousing perhaps heretical notions, but I don't care. And another thing is that reading code is harder than writing it (and debugging is harder than both but moving on) so a from-scratch rewrite of something will be easier than finding the small changes needed to fix real problems. For regular kernel hacking, rewrites aren't going to get anywhere, those who wrote the originals will scream bloody murder and those who have to call the stuff are terrified they'll have to deal with new bugs in unfamiliar code. But as a crutch for getting around not quite being able to read things it's fine. Maybe someone will come after me for saying so as there are bound to be frivolous rewrites of all kinds of things after any kind of public statement like this, but if people get off their butts and stop duplicating everyone else's merges of \$VM + O(1) + misc garbage to write

some actual new code, it's worth the flames.

So I look at the above and it's somewhat wordy for the intent to be clear to everyone. Write something and don't stall yourself with excessive cautiousness, and then rapidly begin testing.

Do something and do something new!

Related Links:

- [William Lee Irwin III's Home Page](http://holomorphy.com/~wli) [1] - (<http://holomorphy.com/~wli>)
- [wli's kernel.org repository](http://www.kernel.org/pub/linux/kernel/people/wli/) [2] - (<http://www.kernel.org/pub/linux/kernel/people/wli/>)

About the interviewer:

Randy Hron is a Unix/Oracle administrator who kicked Solaris off his main home computer when Mandrake 6.0 was released. His home page is <http://home.earthlink.net/~rwhron/> [3]

Source URL:

<http://kerneltrap.org/node/80>

Links:

[1] <http://holomorphy.com/~wli>

[2] <http://www.kernel.org/pub/linux/kernel/people/wli/>

[3] <http://home.earthlink.net/~rwhron/>

EXHIBIT 3

1 from them.

2 But in terms of going to the specifics of the
3 request for production, we have asked for in items two and
4 three of our requests for production, all A.I.X. and Dynix
5 versions and iterations. As I said, we have gotten zero from
6 A.I.X. and we have gotten two C.D.'s of Dynix. What was laid
7 out in I.B.M.'s response to this motion to compel, in part was
8 that would be unduly burdensome. At the last hearing they
9 told you that that could be up to 40 million pages of code and
10 how could we possible undertake that extravagant exercise to
11 get that.

12 In the limited discovery that we have gotten from
13 them it is clear why no affidavit or no supporting proof was
14 given as to this and why it is allegedly burdensome.

15 If may hand this to Your Honor?

16 THE COURT: Okay.

17 MR. HEISE: What I am handing you is a document
18 from I.B.M. that has been marked as confidential. It is
19 regarding an item called the C.M.V.C. which stands for
20 Configuration Management Version Control. As you can see,
21 Your Honor, it says in the beginning it is used by the A.I.X.
22 development organization, and through the highlighted portions
23 of the document it identifies that configuration management is
24 a process of identifying, managing and controlling software
25 modules as they change over time.

1 In other words, so that we would be able to get
2 every version, every iteration, and that version control is
3 the storage of multiple versions in a single file along with
4 information about each version. Then it gives a simplified
5 description at the bottom saying what it basically does is it
6 boils down to that all levels of all files are stored on a
7 central server and are available for viewing and/or updating
8 by those with proper authority.

9 They can get us the A.I.X. It is clear as a bell we
10 are entitled to it and they said they would give it to us and
11 we just have not gotten it.

12 With respect to request or production number 11 and
13 interrogatory number five, they are directed towards all of
14 I.B.M.'s contributions to Linux. From A.I.X. to Dynix,
15 anything that you have done, any work that you have done for
16 Linux, provide it to us. With respect to the request for
17 production the response I.B.M. has made is, quote, I.B.M. has
18 made a lot of contributions so it is going to be a daunting
19 task. I.B.M. has made a lot of contributions. That is not a
20 reason why they are not required to produce them.

21 That is a core issue to this case, as I kind of went
22 off track before under 2.01. What did you do with this
23 material that we said that you were not allowed to make
24 public? They are required to identify that. And what is a
25 critical follow up to the production of all of what they have

EXHIBIT 4
FILED UNDER SEAL

EXHIBIT 5
FILED UNDER SEAL

EXHIBIT 6
FILED UNDER SEAL

EXHIBIT 7
FILED UNDER SEAL

EXHIBIT 8
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EXHIBIT 9

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Inside IBM

Dan Frye and the Linux Technology Center

by Stephen E. Harris, Publisher, ConsultingTimes



Exploring the [JDS Linux Desktop](#)

The sharp redirection of the IBM ship to the Ocean of Linux and Open Source has to be one of the most remarkable stories in industrial archives. Of course, many people were responsible for this change in course, but as co-author of the original strategy papers on both Linux and open source, Dan Frye has to be one of the chief navigators.

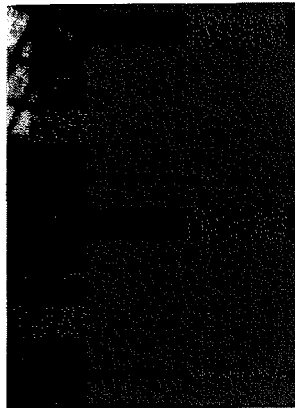
Now that the course is set for officers and crew, Dr. Frye has turned his attentions to coordinating open source developments with IBM and assuring smooth relations with the community at large. As Director of the Linux Technology Center, he oversees a variety of projects aimed at transforming Linux' fabulous technologic potential into practical business reality. Needless to say, we were delighted to talk to him.

CT: Can you please give our readers a little background on how IBM's Linux strategy came about?

Frye: Three and one-half years ago -- in the middle of '98 -- I was part of a corporate technology team that was looking at emerging technologies. I raised my hand and said "So what's our Linux strategy?" They said we didn't have one, so I got assigned to start working on it. I ended up co-authoring the original Linux and open source strategies, and I've been doing it ever since, in

one role or another. In the role I have now -- and this is something we started a while back -- I'm the director of the Linux Technology Center.

Our basic mission is to help make Linux better -- not make Linux better for IBM products, just make Linux better, period. So we have about 250 people in eight countries -- 25 cities -- around the world who work all in open source, as peers in the community. They're working on 50-60 different projects -- all aimed at making Linux better -- and most aimed at making Linux better for the enterprise in particular. So we work on volume management and scalability and security and systems management and networking -- all the various attributes of an operating system that you would normally work on if you were a commercial development shop. And I tell you, we have a great time doing it!



Our folks all work out in the community. Sometimes we bring technology from IBM -- where there is something missing or we think we have technology that's maybe better than what's out there -- we'll open source technology from one of IBM's software products. More often though, we just simply join an existing community in working on, say, ITB sets. We take some of the best programmers we've got -- they join the community, they start at the bottom, and they work their way up and contribute like other people. When we write good code it gets accepted, and when we write bad code it gets rejected, just like everybody else. We really do consider ourselves as peer members within the community.

CT: I guess we're talking about a virtual technology center, or is there some central place?

Frye: There is -- it's on the web. No, we didn't move anybody, we didn't co-locate anybody, we wanted skills from across IBM, and we have people from AIX, and OS2, and z/OS, and Websphere, and Tivoli [IBM's Technology Management software], and PTX, and Research, and so on. In an interconnected world, if the Linux community can work this way, we sure as heck can. There are some sites that have more people than others, Austin, Beaverton [OR], and Poughkeepsie in the US are the biggest sites, but we've got a dozen people in Bangalore India, we've got ten people in Böblingen Germany, half a dozen in Yamato Japan -- so yes, it's a virtual center in the sense that we're interconnected via the web and the telephone.

CT: Do you have a standard place where you do the testing?

Frye: That's a very insightful question -- I don't often get asked that question. For the individual products and projects, we test in the open source fashion, in which functional tests are the responsibility of the development team. So they test on the hardware they've got in their office or in local laboratories -- or we use the Open Source Development Laboratory in Beaverton.

We also have a system test group which is running an open source Linux Test Project. We do have a lab in Austin that's got a lot of big hardware, but you can log in from anywhere in the world and run things there.

CT: Does the code go through some centralized review before it's submitted?

Frye: Each team is different. Some teams review each other's code before it goes out, other individuals drop code directly. Just like the open source principal, it's your personal credibility that's at stake. So we don't force an internal review, but some teams do. By and large, a majority of our stuff gets accepted -- not always the first time, but that's true of everybody.

So no, we don't have an internal process. We want people to operate within the shared vision and techniques that the community has been using to develop Linux all along.

CT: And these are all internal IBM developers?

Frye: These are full-time IBM employees whose job is to make Linux better.

CT: How do they end up working for the Linux Technology Center, and are they then paid by you?

Frye: Sure, they're regular IBM employees and they report directly to me. IBM has become a very distributed team. It's quite common that people work in different locations than their managers.

CT: How do projects arrive at the center, and how do you select which ones to work on?

Frye: We look at what our customers want from Linux, by and large. Our customers will say "We want to run Linux on an 8-way SMP [Symmetric MultiProcessing] rather than a 4-way SMP." So we have people working on improving the scalability of Linux. Or a customer will say, "Linux security is pretty good, but we would like this additional feature."

Some things we work on because they're important to Linux in general, but we certainly have an eye out for how IBM customers want to use Linux. That's one of the good things about the open source community -- you work on things that are important to you. The community, on occasion, will ask us for help, and even if it's not directly in IBM's interest we'll help if we can.

CT: I take it your projects are handled in much the same way as any other open source project?

Frye: Yes, except every open source community is different. So how you work with the kernel VMM team is different than how you work with the kernel IPV6 team. We tell our folks, "It's your job to learn how the community you're in works, and work within those rules." That's how you become effective -- you deliver things in the way that unique community

works.

CT: Are your projects posted publicly, as you're working on them?

Frye: Yup, every contribution.

CT: Do you have non-IBMers contributing to them?

Frye: Absolutely. We have non-IBMers contributing to many of our projects. In fact, in some of our projects non-IBMers have become core team members where they can make decisions. We host many projects on Sourceforge, we host projects on our own developerWorks, and my team has a web site that has links to all those projects. I'll give it to you: www.ibm.com/linux/ltc. From there it will take you to whatever thing you're interested in -- you'll go find the project. Everything we do is in public view.

There isn't a formalized review process -- that's the feedback we get from the community. Are people nervous? You bet they are. The first time they go out... but that's actually one of the driving factors for quality in the system. Talk to developers and they'll say "I was just about to hit the send on that patch, but I thought I'd look at it one more time." But over time, people become more comfortable.

CT: And vice versa, IBM must be pretty comfortable with the level of technical expertise and review in the community at large?

Frye: Yes. I consider it the world's largest and best software development team. Of course, not everybody in the community is a superstar, but there's world-class programming and world-class innovation coming out of the community at a rapid rate.

CT: You've touched on this already, but have there been particular of some of IBM's proprietary systems that you've ported over to Linux -- where you say "Oh wow, that works for the enterprise and we need it over here in Linux"?

Frye: Sure. Some examples would be enterprise volume management, journal file systems, a print architecture, and a number of serviceability tools. Those are the biggest examples, and then lots of other smaller stuff as well. But by and large, I think the majority of our projects are ones where the community is already working in the right direction, we just add arms and legs and skills to make it go faster.

CT: I know you work closely with the Free Standards Group.

Frye: We work with everybody. We work not only with the Free Standards Group, and the Free Software Foundation, and the Open Source Initiative, and KDE and GNOME -- we also work with most of our competition. We're not the only ones out there. So we have projects in common with HP or Intel, or NEC, or SGI ... down the list.

CT: Right now we have a number of Linux distributions, even on the mainframe. That's great, but I think we want to go towards standards-complaint distributions that we can rely on. Are we headed in that direction, and do you see Debian playing a role in that?

Frye: Yes. The Free Standards Group has got two standards working on board: the Linux Standards Base and li18nux [Linux Internationalization Initiative]. Those have reached a significant level of maturity with some announcements last month at LinuxWorld. Enough maturity so that all the major distributors have put in place roadmaps to get them standards-compliant over the next few months. It isn't perfect yet, for standards don't cover everything, but they're rapidly maturing, and the entire industry is behind it -- not only the distributions, but the ISVs [Independent Software Vendors], etc. There's not a huge amount of difference between the distributions today -- it's pretty small -- but that difference will rapidly decrease.

CT: So that's good news.

Frye: It's good news for ISV, it's good news for customers, it's good news for people certifying Linux, it's good news for the overall ecosystem.

CT: So eventually could we see any standards-compliant Linux distribution running on the IBM hardware spectrum?

Frye: Well, we typically work with a small number of server distributions that have the biggest market share. We work formally with Caldera, Red Hat, SuSE, and TurboLinux. We also do some other things with people like Mandrake. We have a very strong, informal, technical relationship with Debian. We're pretty happy with our distribution partners today -- we're not looking to expand them, although we're always open to opportunities.

CT: Now that Linux is fully accepted and supported, it seems like the business of the day is to actually deliver solutions to customers, large and small. So what is IBM doing to track and support developers, and as an application developer, how would I get involved?

Frye: We, the community, including IBM as a founding member, started something called the Eclipse organization last November. One hundred and fifty software tools vendors, including IBM, cofounded eclipse.org. IBM donated \$40 million of open source software to start it.

The goal of that rapidly growing community is to make Linux the de facto UNIX development platform. It, in its own right, is a major event.

CT: If I'm a traditional Linux developer and I want to go make a living, I should contact this organization?

Frye: If you want to make a living selling software that runs on top of Linux, you'd go and utilize Eclipse. Is that what you're asking -- you weren't talking about people working on Linux itself?

CT: No, I meant the application developers.

Frye: That is a set tools that is extensible, standards-based, and supported by a broad range of tools companies, that should make your life much easier for doing Linux application development.

CT: Does IBM encourage and sponsor particular third-party applications?

Frye: Absolutely. We track and help customers understand which business applications are ready on Linux today. At last count, I think we were up to 2,800 applications.

CT: These are listed at an IBM web site?

Frye: Yes, you can get to them through ibm.com/linux.

CT: How do you certify the products?

Frye: Well, the applications certify themselves on Linux. They say "we support Linux" et cetera. The ones that our customers care about, are the ones where we go off and accelerate their availability on Linux.

CT: How would you do that?

Frye: We go talk to them -- it's just like supporting any other operating system. We work with them on what customers want and what the business opportunities are. It's becoming a much easier conversation than it was 2-3 years ago, with the amount of money flowing through the Linux ecosystem and the number of customers demanding Linux solutions.

CT: That's interesting, because all you hear about in the business press is about the demise of Linux-based companies.

Frye: That is a very typical startup cycle. There were 20,000 phone companies in the US in the 1920s. You do get a lot of consolidation and change, but we have seen Linux as a monotonically increasing business opportunity since the start.

We haven't seen a drop. So yes, there is change in the business ecosystem, but it hasn't affected the fundamentals -- the customer values just get stronger.

CT: How about this for an inevitable question: are we any closer to the Linux desktop?

Frye: We're not really sure what will happen with the desktop, but it is continuing to mature and there are lots of successful users of the desktop. There are literally thousands of people inside of IBM using Linux as a desktop, but as for when it will get enough market share to have a viable business ecosystem around it, we don't know yet.

The server is clearly different. The Linux server is ready for the enterprise now. The desktop, we're not as sure. It's not ready for the typical non-technical user today. It works pretty well for technical users.

CT: Are there any other interesting technical developments you'd care to relate?

Frye: Just that Linux continues to mature at a rate faster than any operating system in history. There's a very vibrant, active community working on improving the current version of Linux 2.4, working on the next version of Linux 2.5, with innovation and participation across the industry. Most of the vendors have people working full-time on Linux, as do we, and we see nothing but a bright future here.

CT: And a bright future for Linux programmers as well?

Frye: Yes. We actually see a sea change going on in universities. A few years ago, what everybody had coming out of the university was Solaris experience, at one point or another. Now, every person with a computer science or computer engineering degree has got some level of Linux experience. They're not always learning Linux in the classroom yet, but Linux is what they're using for their weekend projects, their nighttime projects, what they're experimenting with. Many of them have open source experience before they come out of college. But they all have Linux experience.

CT: Well, that pretty much covers all our questions. Thank you very much for taking the time to talk to us.

Frye: Thank you Steve.

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